

**A series of two Workshops to develop a suite of management options to reduce the impacts of bottom fishing on seabed habitats and undertake analysis of the trade-offs between overall benefit to seabed habitats and loss of fisheries revenue/contribution margin for these options (WKTRADE3)**

**2020/WK/HAPISG07** WKTRADE3 responds to a special request from DG Environment. The two Workshops will be chaired by Josefine Egekvist\*, Denmark; and Jan Geert Hiddink\*, UK, and will be held by correspondence, 4–5 March 2021 and 6–9 April 2021.

In preparation for the Workshops, a Core Group, consisting of the two Chairs of WKTRADE3, invited experts and members of the ACOM Leadership and the ICES Secretariat will be established. The Core Group will prepare a TRADE3 Working Document Draft 1, designed to describe the potential management options and the methodologies for undertaking the trade-off analysis. This Working Document will be built up incrementally to facilitate additions and modifications at each of the steps set out in the ToRs below.

TRADE3 Working Document Draft 1 will be based on the demonstration assessment contained in the 2017 ICES advice, *“EU request on indicators of the pressure and impact of bottom-contacting fishing gear on the seabed, and of trade-offs in the catch and the value of landings”* ([sr.2017.13](#)). It will receive input from WGFBIT, in particular on how the developing process described therein can be made operational. The document will be amended by the Core Group into TRADE3 Working Document Draft 2.

TRADE3 Working Document Draft 2, will be presented to the European Commission’s (EC) Technical Subgroup on seabed habitats and sea-floor integrity (TGSeabed) for comment and input. Following this, TRADE3 Working Document Draft 3 will be prepared by the Core Group. The TRADE3 Working Document Draft 3 will be peer-reviewed to ensure the best available, credible science has been used and to confirm that the analysis provides a sound basis for the developing advisory product.

TRADE3 Working Document Draft 3 will be used as the input to the first of the TRADE3 Workshops, the Stakeholder Workshop scheduled for 4-5 March 2021.

**ToRs for the March 2021 WKTRADE3 Stakeholder Workshop are:**

- a) Present TRADE3 Working Document Draft 3 to the workshop participants to inform them of the progress to date and the ICES process to finalise the TRADE3 Advice response to the EC.
- b) Review the management options identified to reduce the impact of Mobile Bottom Contacting Gears on seabed habitats (e.g. are there options missing) and the criteria used for their prioritisation.
- c) Input from the workshop participants on whether the proposed trade-off analyses in TRADE3 are informative and produce outputs that stakeholders need.

Participants for invitation to the Stakeholder Meeting will be selected in conjunction with DGENv.

Following WKTRAD3 Stakeholder Workshop, the Core Group will update the working document to TRADE3 Working Document Draft 4. This will be used as input to the TRADE3 Technical Workshop, scheduled for 4 days during April 2021.

**ToRs for the April 2021 WKTRADE3 Technical Workshop are:**

- a) Review TRADE3 Working Document Draft 4 to the workshop participants.
- b) Review and evaluate for each management option identified in TRADE3 Working Document Draft 4 any potential consequences to the ecosystem, including commercial fish stocks that could arise, if greater areas of seabed are left undisturbed by bottom fishing.
- c) Conduct an analysis of spatial and temporal variation in fishing intensity appropriate to assess the footprint of mobile-bottom contacting fishing gears in a six-year management cycle. The analysis should include an estimation of the proportion of 'core fishing grounds' and should determine the spatial variation in 'core fishing grounds' over time.
- d) Produce an estimate, where possible, of the revenue and contribution margin associated with the fishing activity per area by integrating fisheries economics data (e.g. STECF AER) with VMS/logbook data for all mobile-bottom contacting fishing gears and per gear grouping in (sub)regions.
- e) Produce regional-specific assessments of pressure and impact of bottom-contacting fishing gears on the seabed and of trade-offs in fisheries and seafloor habitats, based on available data and building on the 2017 demonstration advice "*EU request on indicators of the pressure and impact of bottom-contacting fishing gear on the seabed, and of trade-offs in the catch and the value of landings*" (sr.2017.13). The assessments will follow the methodology set out in the TRADE3 Working Document Draft 4. For data poor areas, only part of the assessment will be run, and key data/knowledge gaps will be identified. The assessments should include a trade-off analysis between fisheries and seafloor habitats, i.e. overall benefit to the seafloor, relative to loss in revenue/contribution margin, for prioritized management options identified in the TRADE3 Working Document Draft 4.

Experts from ICES WGs (WGSFD, WGFBIT, WGECON), as well as, other regional-specific experts will be encouraged to contribute to the Technical Workshop. Participants for invitation to the Technical Workshop will be selected by the Core Group.

In preparation for the workshop meeting, the Core Group will facilitate coordination and consolidation of work. The Core Group will also ensure that the workshop reports are finalized.

### Supporting information

Priority	High, in response to a special request from DGENV on a set of management options to reduce the impact of mobile bottom contacting fishing gears on seafloor habitats, and to provide a trade-off analysis between fisheries and the seafloor. The advice will feed into ongoing efforts to provide guidance on the operational implementation of the MSFD.
Scientific justification	The demonstration assessment within the 2017 ICES advice (sr.2017.13) provided aggregate values for four types of bottom-contacting fishing gear groupings at the scale of the entire Greater North Sea region and in relation to the 2004 EUNIS habitat classification. In order to better understand the relationship between catch/value of landings and the levels of physical disturbance for MSFD purposes, this 'trade-off' analysis needs to consider the following two aspects: 1) Mobile bottom contacting fishing: at the level of fishing gear grouping, on the basis that this is likely to be a more appropriate resolution for management purposes. 2) Footprint/Impact on the seafloor: at the resolution of seabed habitat assessments required by the GES Decision (EU)

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2017/848 (i.e. the MSFD broad habitat types, based on the EUNIS 2016 classification, and subdivisions of an MSFD (sub)region).

WKTRADE3 will review a suite of options to reduce impacts of mobile bottom contacting fishing gears on seabed habitats (ToR b in Stakeholder and Technical workshop). This review should include any wider benefits/consequences to the ecosystem, including commercial fish stocks that could arise, if greater areas of seabed are left undisturbed by bottom fishing. This should include an exploration of the empirical evidence of options presented in two recent publications (Collie et al 2017; McConnaughey *et al.* 2020). Potential consequences (positive and negative) to the wider ecosystem should be identified to provide some ecosystem perspective to the trade-off question. Based on the review, WKTRADE3 will produce a prioritized list of management options for trade-off analysis and include the criteria used to prioritize. WKTRADE3 will develop a methodology that explains how each option is implemented in the trade-off assessment.

WKTRADE3 will provide analyses of spatial and temporal variation in fishing intensity, catch and landings in a way appropriate to assess the footprint of mobile-bottom contacting fishing gears in a six-year management cycle (Technical Workshop ToR c-i). The analyses should be done for all mobile-bottom contacting fishing gears together and per métier grouping, covering different MSFD (sub)regions (Greater North Sea, Baltic Sea, Celtic Seas, Bay of Biscay and Iberian Coast) and the subdivisions of these MSFD (sub)regions. The analysis should summarize the results for the entire assessment region and per MSFD broad habitat type within the region, based on the EUNIS 2016 classification. The analysis should include an estimation of the proportion of area fished that covers 90% of value/landings (i.e. core fishing grounds) for each métier and per MSFD (sub)region/subdivision and should determine the spatial variation in 'core fishing grounds' over time. The analysis of fishing footprint and core fishing grounds will be estimated for (sub)regions and per métier grouping where VMS and logbook data is available.

WKTRADE3 will review available data that can be used to estimate the revenue and contribution margin associated with the fishing activity per area (Technical Workshop ToR c-ii). Revenue and contribution margin associated with fishing activity will be estimated for one region by integrating fisheries economics data (e.g. STECF AER) with VMS/logbook data for all mobile-bottom contacting fishing gears and per gear grouping. This analysis will also be done, where possible, for other (sub)-regions. Results will be incorporated in the trade-off assessment sheets, with recommendations on how to improve the dataflow.

WKTRADE3 will produce a prioritized list of management options, and for each option provide a trade-off analysis between fisheries and seafloor habitats, i.e. overall benefit to the seafloor, relative to loss in revenue and contribution margin (Technical Workshop ToR c-iii).

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Resource requirements	ICES secretariat and advice process.
Participants	Stakeholder Meeting with relevant stakeholders from DG-Environment, DG-Mare, NGO's, National Fisher Organizations and representatives from national agencies.  Technical Workshop with researchers and RSCs investigators.  If requests to attend exceed the meeting space available ICES reserves the right to refus

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	participants. Choices will be based on the experts' relevant qualifications for the Workshop. Participants join the workshop at national expense.
Secretariat facilities	Data Centre, Secretariat support and meeting room
Financial	Covered by DGENV special request.
Linkages to advisory committees	Direct link to ACOM.
Linkages to other committee or groups	Links to WGFBIT, WGSFD, WGECON CSGMSFD and SCICOM.
Linkages to other organizations	Links to OSPAR and HELCOM.