**Factsheet for new measures under Article 13 of Marine Strategy Framework Directive 2008/56/EO**

*This measure fact sheet is the result of coordination between the UBA project Implementation of the Marine Strategy Framework Directive (MSFD) in Bulgaria – Development of Programmes of Measures under Article 13', carried out by Fresh Thoughts/Intersus, and the EC project (DG Environment) 'Technical and administrative support for the joint implementation of the Marine Strategy Framework Directive (MSFD) in Bulgaria and Romania – Phase 2', carried out by ARCADIS-Belgium.*

| **Measure characteristics** | **Management area:**<br>- ***Black Sea***<br><br>***Any other codes*** | **Code:**<br>**BLKBG…**<br><br>**№ of measure: 8** |
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| **Measure title** | **Long-term observation of the impacts on zones permitted for beam trawling. When necessary, change the zones boundaries and usage requirements for beam trawling** | |
| **Short, precise description of the measure** | This measure is developed as common (coordinated) measure with Romania in the scope of EC project (DG Environment) "Technical and administrative support for the joint implementation of the Marine Strategy Framework Directive (MSFD) in Bulgaria and Romania – Phase 2".<br>The amendments of the Fisheries and Aquaculture Act in 2012 allowed beam trawling is in the marine waters of the Republic of Bulgaria. According to this Act, the Minister of Agriculture and Food in coordination with the Minister of Environment and Waters determines areas prohibited for beam trawling by an order.<br>Taking into account the strong destructive impact of beam trawls on marine ecosystems as direct damage and even destruction of seabed habitats and species (flora and fauna), it is necessary long-term observations to be conducted and established a regime of exploitation in permitted areas to avoid a permanent negative impact on marine ecosystems in structurally and functionally aspect.<br>When necessary, the boundaries of the areas forbidden for beam trawling should be revised to ensure the achievement of a good status of marine environment in accordance with the MSFD requirements.<br><br>The measure includes the following steps:<br>1. Conducting of annual surveys in areas permitted for beam trawling, analysis of impacts and trends in their change within the MSFD cycle of implementation.<br>2. When necessary, development of a scientifically based proposal to change the boundaries of the areas prohibited for beam trawling in coordination to designated Natura 2000 sites and Protected Areas Act. When necessary change of the requirements for operation in areas | |

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| | permitted for beam trawling to ensure the achievement of environmental targets under MFSD. |
| **EU measure category** | *Categorisation of the measure in accordance with the "PoM Recommendations":*<br>**2a** |
| **Key Types of Measures** | *KTMs as defined in the „PoM Recommendations". Measures can be categorised in one or multiple KTMs.*<br>**KTM 27 Measures to reduce physical damage in marine waters (and not reported under KTM 6 in relation to WFD Coastal Waters)**<br>**KTM 35 Measures to reduce biological disturbances in the marine environment from the extraction of species, including incidental non-target catches**<br>**<u>Other relevant KTM under Directive WFD 2000/60/EC:</u>**<br>KTM 14 Research, improvement of knowledge base reducing uncertainty<br>KTM 20 Measures to prevent or control the adverse impacts of fishing and other exploitation/removal of animal and plants |
| **Environmental targets** | *Categorisation of the measures in accordance with the nationally defined operational environmental objectives.*<br>**D 1,4,6 – Seabed habitats**<br>**OPERATIONAL TARGETS**<br>• Target on the extraction of living resources – Ban non–precautionary fishing technologies (Black Sea Strategic Action Plan, Target 5);<br>• Target on the extraction of living resources – consider the designation of marine protected areas with a ban on bottom trawling;<br>**D3 – State of commercial fish and shellfish stocks**<br>**Pressure targets**<br>**3.1.1 Fishing Mortality (F) by reduced fishing effort are listed below referring to the concerned species:**<br>• Reducing fishing effort to F<= FMSY =0.4 (whiting)<br>• Reducing in fishing effort to F <= FMSY = 0.15 (turbot)<br>• Reducing fishing effort in the wintering areas (horse mackerel)<br>• Reducing fishing effort to F<= FMSY =0.54 (anchovy)<br>• Reducing fishing effort to F<= FMSY =0.18 (dogfish)<br>• Reducing fishing effort to F<= FMSY =0.46 (red mullet)<br>**3.1.2. Catch/biomass ratio index – maintain the threshold value of catch/biomass ratio less than:**<br>• Catch-biomass ratio <= 0.033 (turbot) |

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| | **State targets**<br><br>**3.2.1. Spawning stock biomass of sprat** - STECF EWG 13-12 (Sampson et al., 2013) does not offer reference points as regards SSB for the sprat stock but according to the results from the regional assessment SSB varied between 200 000 and 500 000 tons. The proposed trend for this indicator is increasing of the SSB at regional level; The indicator needs additional development and will be operational at regional level toward 2018 (Population size (spawning stock biomass - SSB) of sprat (thousand tons)).<br><br>**3.2.1. Spawning stock biomass (SSB**) - increasing the SSB at regional level at the level of Black Sea region for whiting (Merlangius merlangus euxinus), turbot (Psetta maxima), horse mackerel (Trachurus mediterraneus ponticus), anchovy (Engraulis encrasicolus), dogfish (Squalus acanthias), red mullet (Mullus barbatus ponticus) (thousand tons).<br><br>**3.2.2. Biomass indexes** - maintain increasing trend of the biomass values above the reference level of 55 thousand tons (sprat) in front of Bulgarian Black Sea coast. Basic reference state was for 2007-2011.The indicator needs additional development and will be operational at national level toward 2014 (Species abundance (biomass) of sprat (Sprattus sprattus) (CPUE, kg/h)).<br><br>**3.2.2. Biomass indexes** - increasing trend of the values of the biomass indices at national level. Levels of the index should not be lower than reference level of 1700 tons (turbot) (Species abundance (biomass) of turbot (Psetta maxima) (CPUE, kg/h)).<br><br>**3.2.2 Biomass indices are listed below referring to the concerned species (Species abundance (biomass) of Sprat (Sprattus sprattus) and turbot (CPUE, kg/h))**: Maintaining the sprat stock at values of approximately 60000 tonnes at the Bulgarian littoral; Recovery of the turbot stock to value of 1500-2000 tonnes at the Bulgarian littoral.<br><br>**3.3.1.Proportion of fish (sprat) larger than the mean size of first sexual maturation** – The trend to sustain of the proportion at reference level of 68% (sprat).Basic condition for calculations of the limit reference points the contemporary state of the populations have been used. The indicator needs of additional development and will be operational toward 2014 (Size of individuals of sprat (Sprattus sprattus), cm)<br><br>**3.3.1. Proportion of fish (turbot) larger than the mean size of first sexual maturation** - The proportion of fish with length higher than the mean at sexual maturation (42 cm), and to be over the reference value of 74% (Size of individuals of turbot (Psetta maxima), cm)<br><br>**3.3.1. Mean length of fish (turbot)** in the catch should not be under the reference level of 56 cm (± 10 %) (Size of individuals of turbot (Scophthalmus/Psetta maxima), cm).<br><br>**3.3.3. 95% from the observed length structure of the species (sprat)** in the research surveys– the indicator needs of additional development and will be fully operational at national level toward 2018. The main lack of |

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| | data and knowledge is the inability to calculate this indicator before 2012, due to the differences of the length structure and methodological issues. The lack of the genetic effects on the population due to overexploitation are also obstacles (Size of individuals of sprat (Sprattus sprattus), cm).<br><br>**3.3.3**. 95% percentile from the observed length structure of the species (turbot) in the research surveys – 95% percentile from length structure of the population to show stable trend with mean reference value of 62 cm for turbot (Size of individuals of turbot (Psetta maxima) (cm). |
| **Descriptors** | *Categorisation of the measures to the descriptors in lined with Annex 1 MSFD. The descriptors are identified by their short form:*<br><br>**D3 – State of commercial fish and shellfish stocks**<br>D1- Biodiversity<br>D4 – Food web<br>D6 – Seafloor integrity |
| **Main pressures** | Using the analysis carried out in 2012 as a basis, categorisation of the measures in accordance with the pressures defined in Annex 3 MSFD, Table 2:<br><br>• Physical damage<br>- abrasion (e.g. impact on the seabed of commercial fishing, boating, anchoring);<br>- selective extraction (e.g. exploration and exploitation of living and non-living resources on seabed and subsoil).)<br><br>• Biological disturbances as selective extraction of species, including incidental non-target catches (e.g. by commercial and recreational fishing). |
| **Main drivers** | *The sectors/activities targeted by the measure*<br><br>Activities extracting living resources (fisheries including commercial and recreational on fish and shellfish).<br>Activities extracting other living resources (seaweed and other sea food)<br>Activities extracting of genetic resources |
| **Characteristics** | *Using the analysis carried out in 2012 as a basis, categorisation of the measures in accordance with the characteristics defined in the "PoM Recommendations":*<br><br>- Fish<br>- Benthic habitats |

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| **Link to other directive/legislation/ policy** | *Aligning objectives with other legal commitments*<br><br>Convention on Biological Diversity<br>Convention for the Protection of the Black sea against pollution<br>Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea (2009)<br>The Black Sea Biodiversity and Landscape Conservation Protocol to the Convention on the protection of the Black sea against pollution, 2002 (for Bulgaria in force from 20 June 2011).<br>the EU's Common Fisheries Policy and Integrated Maritime Policy<br>EU Blue Growth initiative<br>Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS)<br>Directive of maritime spatial planning (2014)<br>Habitats Directive (Directive 92/42/EEC)<br>Birds Directive (Directive 2009/147/EC);<br>Water Framework Directive (Directive 2000/60/EC)<br>Common Fishery Policy (CFP)<br>Commission Regulation (EC) No 1799/2006 of 6 December 2006 amending Regulation (EC) No 26/2004 on the Community fishing fleet register<br>CFP (Regulation (EU) 1380/2013) and its related legislations (e.g. Regulation 1967/2006, all technical measures, on fishing efforts);<br>Regulation (EC) № 1198/2006 of the European Parliament and of the Council of 27 July 2006 on the European Fisheries Fund.<br>Fisheries and Aquaculture Act of Bulgaria<br><br>**National legislation of Bulgaria:**<br>Fishery and acuaculture Act<br>Environmental Protection Act<br>Biological Diversity Act<br>Protected Areas Act |
| **Necessity for transnational regulation** | *Information as regarding the necessity for regulations at EU, regional and international level to achieve MSFD environmental objectives.*<br><br>No |
| **Mode of implementation** | *Stating the implementation process in line with the „PoM Recommendations"; multiple options possible:*<br>• Technical<br>• Political |
| **Implementation zones** | *i.e. the spatial impact of the measure: MS land/FW, WFD TW, WFD CW, Territorial waters, EEZ, CS (beyond EEZ), Beyond MS waters*<br><br>coastal waters (WFD CW*)* and territorial waters of Republic of Bulgaria |
| **Contribution of the** | **Negative side effects from the implementation of the measure:** |

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| **measure to achieving the target** | The implementation of the measure is not expected to have negative effects on the marine environment.<br>**Positive side effects:**<br>The measure will help for more sustainable exploitation of Black sea fish stocks.<br>The implementation of the measure will contribute directly to protecting the seabed integrity, reducing of physical damage to seabed habitats and related changes in of marine ecosystems functioning, including interactions between different trophic levels respectively will reduce the direct and indirect loss of biodiversity as a result of bottom trawling.<br>The measure will contribute to decreasing the trend regarding the spatial extent of the area and predominant habitats affected by continuous changes because of trawling and to reducing the existing negative changes in dominant habitats (spawning, breeding and feeding areas, migration routes of fish, birds and mammals).<br>Although there is already established regime to regulate the spatial extent of beam trawling respectively of its effect, the measure will provide specific information for more effective regulation of this activity.<br>Considering the wide spatial coverage (whole marine aquatory of Bulgaria) and the importance of this type of pressure and the impact of bottom trawling, it is expected the measure to have **high (significant) contribution** to achieving the targets defined under Descriptors 1 (Biodiversity), 3 (State of commercial fish and shellfish stocks) and 6 (Seafloor integrity). At this stage has no defined environmental targets concerning Descriptor 4 (Food webs), but the contribution of the measure to achieve / maintain a good status of marine environment under this Descriptor is undoubted.<br>A quantitative assessment of the contribution of this measure for achieving the targets cannot be made yet. |
| **Transboundary impact** | *Information on the impact of the measures on transboundary neighbours*<br><br>The implementation of the measure is not expected to have negative effects on the marine environment of neighbors.<br>The measure is expected to have a beneficial effect, which would affect the marine waters of other neighbors by gradually increasing stocks of Black sea migratory commercial fish species and shelfish species.<br>The measure is expected to have a beneficial impact, which would affect the marine waters of other neighbors by protecting / increasing the biodiversity, with impact on the aquatory of other Black Sea countries related to highly mobile species and to maintain / increase stocks of migratory commercial fish species in the Black Sea. |
| **Costs** | **First rough assessment: high (>1 million €)**<br><br>1. Conducting of annual surveys in areas permitted for beam trawling, analysis of impacts and trends in their changes.<br>2. When necessary, development of a scientifically based proposal to change the boundaries of the areas where using of beam trawls is prohibited. |

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| | 3. Administrative costs for measure implementation – conducting of periodic meetings (travel costs, daily costs, other organization costs) between the competent authorities (Ministry of Agriculture and Food / National Agency of Fisheries and Aquaculture and Ministry of Environment and Waters / Black sea Basin Directorate).<br>4. Costs to fishery sector: <u>not possible to determine sectoral costs in advance</u><br><br>**Total one off costs within MSFD cycle (6 years): > 1 million €** |
| **Effectiveness** | *Effectiveness of the measure in reaching targets (either qualitative description, or according to indicators: indicators for environmental targets and for GES, proposal for statistical indicators in support of Art. 18 interim reports*<br><br>Although there is already established regime to regulate the spatial extent of beam trawling respectively of its effect, considering the wide spatial coverage (whole marine aquatory of Bulgaria) and the importance of this type of pressure and the impact of bottom trawling, it is expected **the measure to have high (significant) effectiveness** for achieving the targets defined under Descriptors 1 (Biodiversity), 3 (State of commercial fish and shellfish stocks) and 6 (Seafloor integrity).<br>High effectiveness is assessed as "**potentially**", because it depends if fishermen respect the prohibitions and restrictions in designated zones. |
| **Indicator(s) to measure effectiveness** | *Should be based on existing indicators.*<br>1. Number of conducted researches.<br>2. Number of developed proposals for change of the boundaries of zones, permitted for using beam trawls.<br>3. Number of decisions (orders or other legislative documents) for change of the requirements for exploitation of zones, permitted for using beam trawls. |
| **Socio-economic assessment** | **Cost Effectiveness Assessment: Cost effective**<br>**Cost Benefit Assessment: high**<br><br>The measure is expected to have high efficiency to achieve overall MFSD targets. At the same time, public costs for the implementation of the measure are also high.<br>Unfortunately, a quantitative assessment of the cost effectiveness of the measure cannot be made as the information on the benefits (in quantitative form) is not available.<br>Additional socio-economic benefits of this measure:<br>- potentially improvement of abundance (number) of economically important marine species, positively affected relavant sectors (fishery sector, recreational fishery of fish and shellfish, etc.);<br>- improvement of the provided ecosystem services. |

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| **Coordination level** | *Selection of the governance level that will coordinate the implementation of the measures i.e. Local, Sub-national, National, Bilateral, Sub-regional, Regional, EU level, International*<br><br>at local level<br>at national level<br>at bilateral level with Romania |
| **Technical feasibility** | *Options:*<br>• Applied; limited experience / uncertainties |
| **Body responsible for the measure implementation** | Ministry of Agriculture and Food, National Agency for Fisheries and Aquaculture (NAFA) |
| **Financing opportunities** | *Including EU-cofinancing*<br>Public and EU funds (National Programme for Maritime Affairs and Fisheries 2014-2020 under European Maritime and Fisheries Fund (EMFF), EU projects (ex. HORIZON 2020 program) |
| **Planning of implementation** | **Start: 2017**<br>**End: 2021** |
| **Difficulties in implementation** | *Provide information on the potential challenges that could likely faced in implementation.*<br><br>Possible objections in limiting the scope of the areas permitted for beam trawls.<br>Refusal by fishermen to respect the prohibitions and restrictions for fishing in defined areas. |