# 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*** | **Code:**<br>***BLKBG…***<br><br>**No. of measure: 19** |
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| **Measure title** | Stimulation of development and use of innovative biotechnology of marine aquaculture production or extraction of economically valuable species untraditional for Bulgaria | |
| **Short, precise description of the measure** | The measure aims at stimulating development and use of environmental friendly techniques for artificial breeding and extraction of economically valuable species of marine organisms, in order to ensure meeting the economic needs of the population, while preserving the sustainable development of marine flora and fauna.<br>Currently, the techniques used for the extraction of marine resources (mainly rapana species by beam trawling) permanently destroy bottom habitats and organisms and cause serious damage to seabed ecosystems.<br>The measure involves a two-step process:<br>1. Stimulation of development of innovative techniques that have less negative impact to the marine environment compared to traditional application (pilot research projects for innovative extraction techniques for *rapana* species, biotechnologies for cultivation of species, which in the past have failed cultivation etc.).<br>2. Stimulating the use of such technologies (e.g. setting up a business initiative, providing incentives, adjust the legal framework).<br>Practical implementation of the measure and the subsequent effects depend on the interest and opportunities to investors, eager for business in the field of marine aquaculture. | |
| **EU measure category** | **2a** | |
| **Key Types of Measures** | KTMs as defined in the „PoM Recommendations“. Measures can be categorised in one or multiple KTMs.<br><br>**KTM 35 Measures to reduce biological disturbances in the marine** | |

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| | **environment from the extraction of species, including incidental non-target catches** |
| **Environmental targets** | *Categorisation of the measures in accordance with the nationally defined operational environmental objectives*.<br><br>**Descriptor 2 – Non – indigenous species**<br><br>Target on Criterion 2.2, indicator 2.2.1: Communities dominated by indigenous species. No newly introduced species.<br>The GES indicators defined according to Art. 10 of the MSFD need additional development in the period up until 2018. The limited knowledge of the impact of non-indigenous species on the environment, targets and thresholds need confirmation.<br><br>**D3 – State of commercial fish and shellfish stocks**<br>**PRESSURE TARGETS**<br><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 <= 0.082 (sprat)<br>• Catch-biomass ratio <= 0.033 (turbot)<br>**STATE TARGETS**<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>**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 |

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| | 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 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 is 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>**D2 – Non-native species** |

| | D3 – State of commercial fish and shellfish stocks |
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| **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>- Biological disturbance/ Selective extraction of species, including non-target catch |
| **Main drivers** | *The sectors/activities targeted by the measure*<br><br>**D2 – Non-native species**<br>Activities related to the extraction of living resources (fisheries, including fishing)<br>Activities related to the production of seafood (aquaculture)<br><br>**D3 – State of commercial fish and shellfish stocks**<br>Commercial fishery |
| **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<br>- Pelagic habitats |
| **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>Regulation (EC) № 708/2007 concerning use of alien and locally absent species in aquaculture<br>Regulation (EU) № 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species<br>CFP (Regulation (EU) 1380/2013) and its related legislations (e.g. Regulation 1967/2006, all technical measures, on fishing efforts)<br>Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning<br>Habitats Directive (Directive 92/42/EEC)<br>Birds Directive (Directive 2009/147/EC);<br>Water Framework Directive (Directive 2000/60/EC)<br><br>**<u>National legislation:</u>**<br>Fisheries and Aquaculture Act<br>Environmental Protection Act<br>Biological Diversity Act |

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| | Protected Areas Act<br>Water Act<br>and relevant regulations |
| **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>• Economic |
| **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 measure to achieving the target** | – using technical information<br><br>Implementation of the measure will reduce fishing pressure (fishing efforts) and pressure from extraction on commercially valuable species whose stocks are threatened or may be at risk to become threatened and at the same time it will contribute to creating conditions for diversification of aquaculture production.<br>The measure has **moderate** contribution for achieving the environmental targets and GES under Descriptors 2 - Non - indigenous species and 3 – Commercial fish and shellfish organisms, because its effectiveness strongly depends from number of realized projects. |
| **Transboundary impact** | Information on the impact of the measures on transboundary neighbours<br>**Positive effect:**<br>Due to this the increasing biodiversity especially of migrating species, this measure will have a beneficial effect on marine waters of neighbor countries.<br>**Negative effect:**<br>It is a local elevation of about nutrient discharges near facilities for aquaculture. The effect is evaluated only as a local and spatially limited. The negative effect is expected to be significantly lower compared with the positive effects from the implementation of the measure. |
| **Costs** | Implementation costs (administrative and technical costs)<br>For each of the projects or investment intentions should be made a separate estimate of man-hours of the people involved in.<br>For each project a separated budget should be planned. Each single project could include production of one or more species. |
| **Effectiveness** | *Effectiveness of the measure in reaching targets (either qualitative* |

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| | *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>The measure could be implemented by development, funding and conducting of pilot scientific projects and investments.<br>The measure focuses on scientific phase in the creation of biotech, which is a prerequisite for its use in the practice for producton of food. Practical implementation of the measure and the subsequent effects depend on the interest and opportunities to investors, eager for business in the field of marine aquaculture.<br>The measure has **medium effectiveness** for achieving the environmental targets and GES under Descriptor 1,4 – Non - commercial fish and 3 – Commercial fish. |
| **Indicator(s) to measure effectiveness** | Number of pilot projects for the development of biotechnology for cultivation of commercially valuable species. |
| **Socio-economic assessment** | The implementation of the measure has serious socio-economic potential by creating conditions for production of high quality food and raw materials, an alternative and sustainable livelihoods in coastal areas, increasing sector employment.<br>Indirect effects of this activity include redirecting economic interests of traditional forms of tourist activity, which mainly provides local employment in coastal communities to a more sustainable business, according to the programs of measures included in river basin management plan (RBMP) and Marine strategy.<br>Expected reduction of existing conflicts between the interests of local people and society as a whole arising from the desire for the development of large tourist resorts and providing livelihoods for local people on the one hand and the loss of biodiversity, protected areas, risks of eutrophication on the other. Moreover, the measure will contribute to overcoming the negative effects of some traditionally applied techniques of cultivation. |
| **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 |
| **Technical feasibility** | *Options:*<br>• Frequently applied, Best Available Technologies (BAT)<br>• Frequently applied; extensive experience / evidence of good practice<br>• New development |

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| **Body responsible for the measure implementation** | Ministry of Environment and Waters (MoEW), Black Sea Basin Directorate (BSBD), Regional Inspectorates of Environment and Waters - Varna and Burgas (RIEW - Varna and Burgas), Ministry of Agriculture and Food, National Agency for Fisheries and Aquaculture (NAFA), Fisheries local action groups (FLAGs), scientific institutes, universities, specialized in field of the marine biology and ecology. |
| **Financing opportunities** | National budget, Operational Programme "Environment" 2014-2020, structural funds operated by the Ministry of Agriculture and Food, respectfully National Agency of Fisheries and Aquaculture (NAFA) as European Maritime and Fisheries Fund (EMFF) (National Program for Maritime Affairs and Fisheries 2014-2020) |
| **Planning of implementation** | **Starting: 2017** |
| **Difficulties in implementation** | *Provide information on the potential challenges that could likely faced in implementation.*<br>Inability to implement planned activities due to incompatibility with other activities taking place in the marine environment or prohibitions and restrictions regarding the protected areas.<br>Delays in the financing of projects or investment intentions.<br>Absence of markets for aquaculture production. |