



Marine Strategy Framework Directive (MSFD)

Common Implementation Strategy

Reporting on monitoring programmes for MSFD Article 11

FEBRUARY 2014

Further guidance for reporting, including use of the MSFD web reporting tool and schemas is available from: <http://icm.eionet.europa.eu/schemas/dir200856ec/resources2014>.

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Reporting on monitoring programmes for MSFD Article 11

1 Introduction

Article 11 of the Marine Strategy Framework Directive (2008/56/EC) provides legally-binding requirements for Member States to establish and implement coordinated monitoring programmes for the ongoing assessment of the environmental status of marine waters. Member States are to notify the Commission of their monitoring programmes by 15 October 2014 so that the Commission can assess whether the elements notified constitute an appropriate framework to meet the requirements of the Directive.

The Directive provides no particular guidance on the format and content of the reports which need to be notified to the Commission by Member States under each stage of their marine strategies (i.e. the initial assessment, the determination of GES, the setting of environmental targets, the monitoring programmes and the programmes of measures). However, there are several key reasons why reporting structure, content and format have been discussed and agreed with Member States for each reporting round: some are directly linked to the notification obligation (the Commission needs to assess the adequacy and coherence of the reports (for Articles 12 and 16)), and some relate to actions that could be achieved through other processes but could also benefit from the reporting process (the Member States need to cooperate across the regions and subregions in implementation of their strategies and the European Environment Agency needs to draw upon the information to prepare European state of the environment reports). For all these purposes, having a structured common format for reporting is not legally binding but is a significant asset for the potential users of the reports. It can also be a help to Member States to work to a well-defined product. As has been common practice for reporting on other environmental directives, such agreed formats are developed in close cooperation with Member States and defined in what is termed a Reporting Sheet.

This reporting package has been developed with the aim of assisting and facilitating reporting by Member States in their implementation of the Directive. The reporting package does not constitute formal guidance on the interpretation of the Directive.

1.1 Development of reporting requirements

The Working Group on Data, Information and Knowledge Exchange (WG DIKE) of the MSFD's Common Implementation Strategy (CIS) initiated discussions on reporting of MSFD monitoring programmes at its meeting in October 2012 (DIKE 6/2012/12). Proposals were further developed at the Ad-hoc Monitoring meeting in January 2013 (Ad-hoc Monitoring 2013/3) and at WG DIKE in March 2013 (DIKE 7/2013/04), whilst at the same time an overall concept paper on MSFD monitoring was being developed (Ad-hoc Monitoring 2013/2; GES 9/2013/3). The main part of the reporting paper and the 10 key questions for reporting, agreed by WG DIKE in March 2013, were combined with the monitoring concept paper and presented to the CIS Marine Strategy Coordination Group

(MSCG) as a Recommendation (MSCG 10/2013/05rev). MSCG adopted the *Recommendation*, after final amendments, on 7 May 2013¹.

Based on the agreed 10 key questions in the *Recommendation*, a proposed structure, content and format for reporting has been developed as a Reporting Sheet. This proposal was discussed at WG DIKE in March 2013 and further developed by a WG DIKE drafting group on 4 June 2013; WG DIKE provided comments on a revised version (DIKE DG/2013/02rev), distributed on 19 June. A revised version (rev2), reflecting comments received from DE, DK, ES and UK, was distributed to WG DIKE on 15 July, requesting that the Reporting Sheet now be used as a basis for preparation of schemas and reporting tools. Further comments were received on rev2 from DE, FR, HR, IT, MT, RO and SE. These comments focused on issues related to reporting processes and to particular details in the Reporting Sheet, but gave overall support for preparation of schemas and reporting tools.

During August 2013 the conversion of the Reporting Sheet into schemas and a web-based reporting tool started. This began with designing a suitable database structure and web forms and identifying the term lists needed. This work has led to clarification of some of the formats and layout of questions in the Reporting Sheet, which were reflected back into the paper discussed at WG DIKE in October 2013 (DIKE 8/2013/03). A revised version of the Reporting Sheet, which accommodated the comments received at WG DIKE in October 2013, was presented to MSCG in November 2013 (MSCG 11/2013/12). Testing by Member States during October and November 2013 of the Web-form reporting tool and associated schemas for Article 11 reporting provided a series of comments (DIKE DG/2014/02), some of which were best accommodated by minor adjustment of the Reporting Sheet, as presented in DIKE DG/2014/03. A Drafting Group of WG DIKE met in January 2014 to finalize the Reporting Sheet, associated guidance and guidance on reporting mechanisms. This 'package' for Article 11 reporting is presented here.

1.2 Aim of reporting on monitoring programmes

Reporting to the Commission on MSFD monitoring programmes is a formal requirement of the directive (Art. 11(3)). According to the *Recommendation*, a key aim of this reporting is to provide sufficient information for the Commission to undertake its Article 12 assessment effectively. This will enable the Commission to verify that the monitoring programmes comply with the requirements of the Directive, particularly in relation to whether they will enable environmental status and progress with targets to be assessed, cover all relevant aspects (e.g. of MSFD Annex III), and are sufficiently coordinated, coherent and consistent with the monitoring programmes of neighbouring states in the same marine region/subregion.

The reporting therefore needs to include information about what will be monitored, where, with what spatial resolution and temporal frequency, and with what methodologies. The Commission also promoted the fact that through the reporting process, the Member States could also notify elements that would help the assessment process for article 12. For that purpose, items concerning the elaboration process of the monitoring programmes, self-assessment, and timelines for filling gaps were included, even if the Directive does not require them specifically from the Member States.

The detail of what was decided to be reported is to be based on the 10 agreed questions for reporting in Annex 3 of the *Recommendation* which in turn are directly linked to the requirements of the Directive (particularly Article 11 and Annex V). It is consequently helpful to both the Member States and the Commission to discuss and agree upon the contents and format of these reports and the means of making this information available in order to help ensure they are well suited to the needs of the Article 12 assessment.

¹ 2013. Monitoring under Marine Strategy Framework Directive: Recommendations for implementation and reporting. pp25. [MSFD recommendation on monitoring and reporting](#) [Referred to in this paper as the *Recommendation*].

However, in developing this requirement for reporting to the Commission it has been helpful also to consider other possible uses of reported information on the monitoring programmes:

- a. For national purposes to support development and implementation of monitoring programmes, including use at policy level and for technical delivery;
- b. For stakeholders and the public, to inform them of the programmes;
- c. For neighbouring countries and regional organizations (e.g. Regional Sea Conventions) to foster cooperation within the (sub)region;
- d. For EU level to inform the Commission and others of the Member State implementation.

Consideration of these other possible uses could help develop better synergies between the reporting to the Commission and other needs, where there is some commonality in requirements. These aspects were further considered in discussions with WG DIKE on decentralized reporting and joint documentation, in order to develop more effective and efficient reporting systems. Discussion on these issues has led to the need for clarity on what constitutes a formal notification under Article 11(3) and how this relates to information held at Member State level, such as in web-based information systems. This is addressed in Section 2.

2 Reporting mechanisms for MSFD Article 11

This section outlines the range of possible mechanisms for preparing the reporting information as part of the formal requirement to notify the Commission, as required under MSFD Art. 11(3), and linkages to decentralised systems.

Each Member State has the right to submit any information it considers appropriate as part of its formal notification under Article 11(3). This could include, for example, submission of documents ('text-based reports') to address all or part of the required Article 11 report; these may have also been used for stakeholder consultation and governmental approval processes. This type of report was prepared by all Member States for reporting in 2012 under Art. 8, 9 and 10².

2.1 Information structure and content needed for the Article 11 report

The content of the Reporting Sheet has been developed with the intention of accommodating all the information (structure and content) considered by the Commission as necessary to enable it to perform its Article 12 assessment. The Reporting Sheet includes:

- a. A structure for reporting on Art. 11, centred on the GES Descriptors and using a two-tier Programme/Sub-programme structure;
- b. Specific categorical information which facilitates analysis and use across Member States and regions;
- c. Textual information which explains the categorical information at (b) or adds additional relevant information;
- d. Web URL links to where additional information can be found.

Provided the Reporting Sheet is completed fully, there should be no need for additional information, other than what is specifically referred to in web URL links.

² This may in part be due to agreeing Reporting Sheets only in June 2012, therefore necessitating Member States to prepare their documentation before this time to ensure they could report on schedule in October 2012.

2.2 Format of the information

A key aim of the Reporting Sheet is also to provide the information content in a standard format as this has the following benefits:

- a. The information is in a structured format to enable easier review across multiple Member States;
- b. The information can be readily aggregated into a common database for subsequent summary and analysis (e.g. for Article 12 assessment);
- c. The information is in a common format for dissemination (e.g. through WISE-Marine).

The preferred format for reporting information is XML, which has proven to be a reliable format for the types of information (mixtures of text, categorical data and values) collected in Directive reporting and is readily processed in onward applications.

Under circumstances where the same Reporting Sheet information (content) is made available but in different formats (electronic or paper) it is not then feasible and/or practical to use it in the ways given above.

The generation of XML files requires the reported information be held in a structured database. There are three options for this for Article 11 reporting:

- Option A. In the Web-form application developed for Article 11 reporting, managed by the EEA, which automatically generates the XML and submits it to ReportNet (see DIKE 8/2013/05);
- Option B. In a web-based application (e.g. Content Management System), managed at Member State or Regional level, capable of exporting the information in the XML format;
- Option C. In a non-web-based application (e.g. database), managed at Member State or Regional level, capable of exporting the information in the XML format;

A further option (Option D) is to use formats which do not allow generation of standard XML files; this could include provision as pdf files or other electronic formats.

It is expected that many Member States will use Option A, especially where they do not have bespoke information management systems in place for MSFD implementation.

Option B has been discussed within WG DIKE and encouraged by the Commission as part of a forward process to modernise reporting processes via 'decentralised' systems (as the systems that hold the information are held by the competent authorities in the Member States or anyone mandated by them). It has the following benefits:

- a. It enables the Member State to prepare and hold its information in a manner suited to its national information systems and needs, including information additional to that needed for formal reporting to the Commission such as specifications for practical implementation of the monitoring;
- b. It provides open access to the information for all stakeholders, thereby fostering improved understanding of MSFD implementation within and across countries;
- c. It provides a mechanism for the Member State to continuously update its information from one implementation cycle to another, or, if necessary, throughout the 6-year formal reporting cycles to reflect the changing nature of some elements of the monitoring programmes, especially the aspects related to operational implementation;
- d. It enables ready generation of reporting information to the Commission in XML format (either by a manual 'push' mechanism or a more automated 'pull' mechanism);

- e. Where the information is generated and held at regional level (such as in a Regional Sea Convention), it can save resources in preparation and maintenance (the information is prepared once for multiple countries) and it fosters coherence in implementation of the Directive. In such cases, the Member States would still have the responsibility to indicate the information held at this regional level is the information they want to be considered as part of their formally reported information for their MDFD monitoring programme (see Section 2.5).

Option C will most likely be used by those Member States who maintain internal data management systems for policy delivery (and who have not yet developed web-based systems - Option B - with similar purposes).

The final Option D does not allow generation of standard XML files. Whilst use of such formats may be a helpful way to prepare draft material (e.g. prior to its incorporation into any of the three database options above), it is not the Commission's preferred format for final transmission of the information as it may provide a different report structure and the information cannot readily be integrated with that of other Member States for the purposes described above.

It is moreover acknowledged that Member States may prepare and submit a 'traditional' text-based paper report, along with submitting XML files, as such documents are anyway prepared for national/stakeholder uses. When such documents are officially adopted by the national competent authorities, the Member State may wish to consider them as the reference document for their notification to the Commission, even if part of their content has been exported into a database and reported in XML format.

2.3 Reporting language³

Member States have the right to complete the reporting sheets in any official EU language.

However, reporting in English is strongly encouraged by the Commission for the following reasons:

- a. The information reported will be needed to support and enhance ongoing cooperation amongst Member States within a region or subregion (when the information is made accessible via WISE-Marine, for example); use of a common language will facilitate such cooperation.
- b. The translation of a Member State's information into a common language will support its further use in aggregation of the information to regional, European and global scales for ongoing State of the Environment reporting.
- c. The Commission has 6 months in which to undertake its Article 12 assessment. It will greatly assist this process if the information is available in a common language. This short time period means it is not feasible to have the information formally translated; consequently, translation by the Member State itself prior to submission will help avoid misinterpretation of the information reported.

Some Member States may not want to take the responsibility to submit the content of the reporting sheet in English, as there is a risk of mis-interpretation due to the translation between the adopted version (in national language) and what would be considered as the “official reported information” by the Commission that will be used for the article 12 assessment. On the other hand, translation by the Commission Services in order to undertake its Article 12 assessment is also subject to possible risks of misinterpretation of what was reported by the Member State.

³ Modified from: European Commission. 2012. Guidance for 2012 reporting under the MSFD, using the MSFD database tool. Version 1.0. DG Environment, Brussels. pp164. [MSFD 2012 reporting guidance incl database v1.0.doc](#)

2.4 Formal notification

Formal notification of the Member State's report(s) according to Article 11(3) should follow the standard practice, as follows:

The Member State's Permanent Representation to the European Commission should send to the Commission a) a suitable cover letter indicating the relevant Directive and article to which the notification refers and b) the receipt(s) obtained from ReportNet of all the reports (files) that have been deposited in relation to this notification.

The cover letter and ReportNet receipt(s) can be sent in hard copy or electronically (as pdf).

The reports deposited in ReportNet as part of the notification can be one or several of the following:

- a. Validated XML files which are generated automatically by completing the Web-forms and which hold the data and information defined in the Reporting Sheet (option A);
- b. Validated XML files which are generated from Member State databases and which hold the data and information defined in the Reporting Sheet (options B and C above);
- c. Other (text-based) reports (in pdf format) which the Member State wishes to have considered (option D);
- d. A copy of information⁴ held in a web-based data system (i.e. option B) or other web site, but which is not in XML format. This should include information which is referenced by a URL in the Reporting Sheet (i.e. which is providing information relating directly to a question in the Reporting Sheet and which the Member State considers necessary for the Commission to do its Article 12 assessment and understand the rest of the Member State report)⁵. This is required to provide a snapshot of the information held on a web-site at the time of reporting, and ensures the Commission can refer to a date-stamped version of the information that the Member State has formally included in its report.

2.5 Joint preparation of the information

Member States are required under the Directive to coordinate their monitoring programmes to ensure they are coherent and consistent within each (sub-)region. Whilst the reporting of these programmes formally remains a Member State responsibility, it is possible to prepare the required reporting information jointly (such as within the Regional Sea Convention framework). This has the following advantages:

- a. It clearly demonstrates to the Commission the level of coordination achieved (as the Member State reports would hold the same information), and
- b. It potentially reduces effort as only one documentation per programme or sub-programme need be prepared for the sub(region) for all relevant Member States.

Further discussion is required on the practicalities of delivering such joint documentation, including how Member States could use it, in combination with their national reports, to fulfil their formal reporting obligations under the directive. It can be expected that:

- a. A varying proportion of the total needs for monitoring for each Descriptor may have been developed and agreed by the Member States within a (sub)region by 2014 (e.g. via their Regional Sea Convention or other mechanisms);

⁴ There is no specified format for these copies, but formats which allow searching/extraction of text would be most helpful.

⁵ This is not intended to relate to information, such as detailed descriptions of methodologies for data collection, which is not directly answering the Reporting Sheet questions but which adds further 'in-depth' detail.

- b. The agreed elements will probably relate to particular sub-programmes, for which joint documentation could be prepared; there may additionally be some information at Programme level that can be jointly prepared.
- c. The Member State would need to prepare whatever additional information it considered necessary to report on its overall needs for each Descriptor; this is likely to address the General questions, some or all the Programme-level questions and perhaps some additional sub-programmes.
- d. Whilst the total needs for a Descriptor may not be in place at (sub)regional level for 2014, this should not detract from the benefits (short term and long term) of preparing information jointly whenever possible;
- e. The most effective way to 'combine' regional and national elements of the Art. 11 report and to formally notify it (e.g. whether it needs to be physically combined as a single XML or whether the files can be submitted separately) needs to be set out by the Member States in the region (if appropriate via the Regional Sea Convention);
- f. The preparation of joint documentation should be considered in conjunction with development of decentralised information systems, working towards the benefits of both processes.

Examples of where joint documentation is being developed are given by OSPAR (DIKE DG/2014/07) and HELCOM (DIKE DG/2014/08).

2.6 Development of decentralized information management systems

Section 2.2 highlights some of the potential benefits of developing web-based information systems (option B) at either national or regional level. The Commission considers this development, already in place in some countries for certain EU reporting, provides a modern more effective means to manage and disseminate information related to policy implementation.

In the context of Article 11, Germany initiated within WG DIKE and at the DIKE TSG meeting in July 2013 a discussion and a conceptual framework to further develop this approach, coupled with establishing mechanisms for preparation of joint documentation through the Regional Sea Conventions, using HELCOM as a test case. There was further discussion during a workshop on 16-17 October 2013, hosted by Germany in Hamburg.

For 2014 reporting, decentralised reporting is likely to be used by relatively few Member States, due to its ongoing development status. It nevertheless has potential advantages than can be further developed in future reporting rounds. The following points are relevant:

- a. The Reporting Sheet has been modified to allow reference to existing monitoring programmes (of other Directives and Conventions); this also allows reference to national web-based 'decentralised' systems. Where the information required (sub-programme question 9) is clearly available on a national web-site, or through national reports already submitted to the Commission for other relevant EU legislation, it does not need to be reported into the XML. This approach should allow those Member State wishing to use decentralised reporting to take advantage of this modification⁶;
- b. The use of fully automated 'pull' systems (e.g. via a Web Discovery Service) between the EEA's ReportNet and Member State/regional systems needs further development and

⁶ Note that in this interim phase of developing decentralised reporting, the option is provided on the basis that the information required in the Reporting Sheet is clearly held in the same format as required by the Reporting Sheet. Once Member State have completed their 2014 reporting, an evaluation will be needed to test ease of access to this information so that it can be readily used (for Article 12 assessments) and aggregated/summarised (for WISE marine dissemination).

testing. In order to benefit from such dynamic technical solutions, there will need also to be discussion and agreement with Member States on their implementation (e.g. frequency of updates and access to the updated information). Such processes could be progressively developed and implemented to improve the efficiency and effectiveness of information management and formal reporting requirements;

- c. In developing decentralised systems, it is helpful to build in an easy mechanism to make a snapshot of the information (which can be used as part of formal reporting – see Section 4), to enable its export to XML format (where it is part of a Reporting Sheet) and to ensure INSPIRE compliance;
- d. Ongoing developments in other reporting processes, particularly under WFD and SIIFs, will bring further experiences that can help with marine reporting.
- e. Experiences gained from reporting obligations under other EU Directives for which electronic reporting has been established should be considered and built upon, where appropriate, to avoid duplication of efforts.

2.7 Technical support for reporting

For details on the technical preparation of the reports, including use of the web-form application for reporting and preparation of xml schemas, please refer to the EEA ReportNet resource page: <http://icm.eionet.europa.eu/schemas/dir200856ec/resources2014>. Reporting using the web forms is split into two web forms. The first form enables reporting on the monitoring programmes as a whole, including more specific details for each of the thirteen monitoring programmes. The second form records the details of each sub-programme, each of which can be linked to one or more monitoring programmes using the unique sub-programme identifier assigned when the form is completed.

As was done for 2012 reporting, the reports are to be provided per (sub)region. Because Member States may use the same/similar monitoring programmes across several regions or subregions, the web-form application has been set up to allow a programme report to be duplicated for a second (sub)region and subsequently adjusted if necessary to reflect more minor (sub)regional differences to be expressed.

During the reporting process, a **Helpdesk** (helpdeskWISEreporting@atkinsglobal.com) will be in operation to support both content and technical queries which may arise.

3 Overview of the Reporting Sheet for MSFD Article 11

3.1 Structure, content and format for the Reporting Sheet

The Reporting Sheet is divided into three sections:

- a. General questions
- b. Programme-level questions
- c. Sub-programme-level questions

It aims to set out a 'minimum reporting requirement' against the 10 questions of the *Recommendation*, with a focus on provision of categorized information (Summary Information) that can be readily analysed and used at EU level, but is supported where necessary by brief additional explanatory text.

3.2 Building upon existing reporting structures

The reporting questions under Article 11 make links to reporting on Articles 8, 9, 10 and (in future) 13 as the monitoring programmes are closely associated to these articles; the reporting can consequently make use of information reported by Member States in 2012 under Articles 8, 9 and

10, such as established structures and term lists. This will have the advantage of enabling links to be made in the reporting database between Article 11 and these previous articles, and also in reuse of structures with which Member States are already familiar.

Therefore reuse is made of:

- a. Relevant xml schemas (e.g. geographic boundaries);
- b. Relevant term lists (e.g. lists of pressures, functional groups, habitat types), updating these where needed;
- c. Relevant aspects defined by Member States (e.g. specific indicators, environmental targets)⁷.

Data and information from the monitoring programmes are to be made available to the Commission and the EEA according to MSFD Article 19(3). Whilst there is a separate process of WG DIKE, via the Technical Group on Data, for forward implementation of Article 19(3) (e.g. to define which data/data sets are most suitable to aggregate at (sub)regional scales, how they will be accessed), it was decided that it was useful, even if not required by the directive in the framework of Article 11 reporting, to make initial links to Article 19(3) through some generic questions, whilst leaving the detail on specific datasets (e.g. metadata) to this associated process.

3.3 What is a programme and sub-programme?

A key issue for structuring the reporting sheet is to define what constitutes a 'programme' and a 'sub-programme' as this influences significantly the consistency of reporting across Member States and the level of detail and variation reported under each section of the Reporting Sheet. These two levels can be distinguished as follows:

- a. The Programmes are defined around the GES Descriptors, reflecting the different aspects of GES for which the monitoring needs to provide data;
- b. The Sub-programmes are defined around the practicalities of monitoring, reflecting different data types and ways of collecting these data.

In order to ensure consistency between Member States in how the reporting on monitoring programmes is structured and to facilitate their assessment under Article 12, an agreed common set of programmes will be used. WG DIKE discussed a proposal that there should be a 'programme' to address each of the Descriptors, i.e. one for eutrophication, one for contaminants, litter etc. For the biodiversity descriptors (D1, 4, 6) it was recognised that it may be more appropriate to structure reporting in another way, e.g. around seabed and water column habitats, and around birds, mammals, reptiles, fish and pelagic cephalopods, to reflect the inter-relationships of these descriptors. **Section 4.4** provides the agreed set of monitoring programmes to be used by all Member States for reporting.

Each programme can contain a number of sub-programmes, the number varying depending upon the complexity of the Descriptor, the extent that GES has already been achieved, the (extent of) Member State marine waters, the (variety of) associated activities, pressures and measures and the environmental targets which have been set.

An example structure for a programme and its component sub-programmes is shown in **Figure 2**. Further information on sub-programmes is provided in Annex 3.

⁷ Subject to notification, by Member States via their representations to the EU, of any changes to those definitions reported in 2012. Such change may be expected given ongoing work on the determination of GES, targets and indicators at regional level.

Example structure for a Monitoring Programme

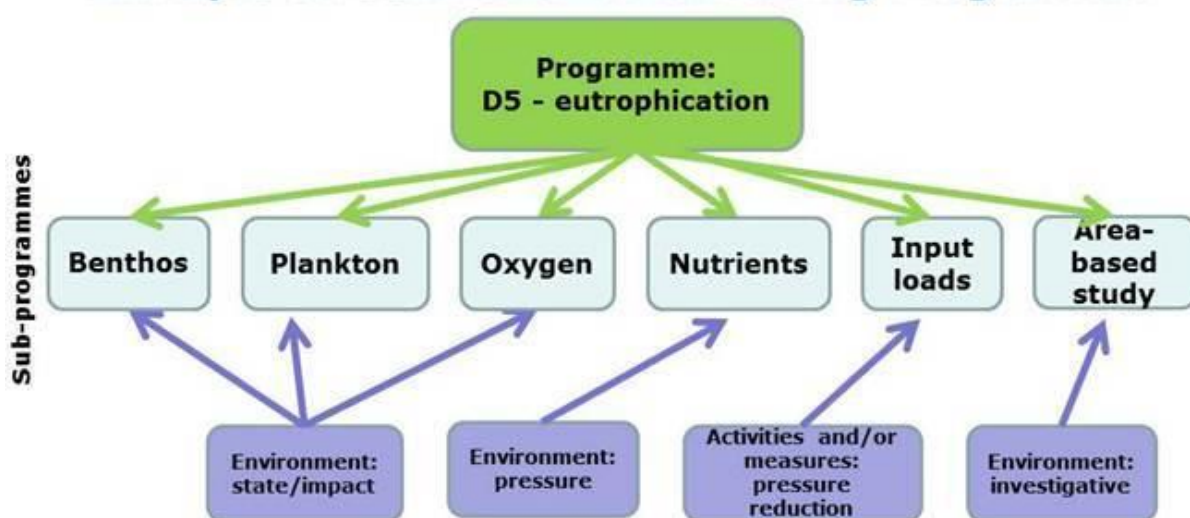


Figure 2: Structure for a monitoring programme for a particular descriptor (except for D1, 4 and 6) (example here is for D5 - eutrophication), with an illustrative set of sub-programmes directed towards monitoring aspects of state/impact, pressures, activities and measures and, if appropriate, one-off and/or investigative studies. Note that the sub-programmes in the illustration have been further modified in the indicative list of sub-programmes provided in Annex 3.

To facilitate comparison between Member States at sub-programme level an indicative list of sub-programmes has been developed, based on input from four Member States and one Regional Sea Convention on how they organise their monitoring in practice (Annex 3). Member States are encouraged to follow this list as a guide, whilst recognising that it may need adjustment to suit each Member State's circumstances and that some Member States have already developed alternative approaches to organising their reporting on monitoring.

The sub-programmes typically aim to address one or more topics:

- aspects of ecosystem state/impact (to assess if GES has been met and whether environmental state is changing);
- the pressures upon the ecosystem that can cause impacts on environmental state (e.g. to assess if environmental targets are being met);
- the activities and uses of the marine environment which may be giving rise to the pressures, and
- the measures⁸ which are in place to address pressures and impacts (to assess whether the measures are effective in managing the activities) (recognising that new measures that Member States put forward under Article 13 in 2016 would not be addressed in monitoring programmes established in 2014 and that, in 2014, the process of identifying existing measures relevant for MSFD implementation will still be under way).

⁸ As the MSFD programmes of measures have not yet been adopted, the way of linking monitoring to measures has still to be defined, in coherence with what is decided on the methodology for assessment of the efficiency of measures. The first discussions on the subject suggest that the key linking tools between measures and monitoring may be the environmental targets and not necessarily the pressures, impacts or activities themselves.

4 Reporting sheet and associated guidance

4.1 Introduction

The tables in the following sections convert the 10 questions for reporting from the *Recommendation* into a Reporting Sheet, based on the three-section structure: general, programme and sub-programme. The relationship of the Reporting Sheet fields to the 10 questions is given in Annex 1. The Reporting Sheet is organised into a logical sequence, starting with some broad generalised questions relating to the monitoring programmes as a whole and then a set relevant to each programme and to each sub-programme (i.e. likely to differ per programme/sub-programme). Questions 1 to 3 and 4a-4c are general questions, questions 4d-4f and 5-8 relate to each monitoring programme, and questions 4g-4l and 9-10 relate to each sub-programme. There are text fields for every section (1e, 2b, 3a-e, 4c, 4f, 5f, 5h, 6d, 6f, 7b, 7d, 4j, 4l, 9d, 9i, 10b, 10d), excepting Question 8 where any text detail should be provided in Question 4l. Additional guidance on how to respond to the questions is provided, focusing solely on the content of the information to be reported.

4.2 Linking the reports to geographic areas

Each report needs to be linked to a spatially defined geographic area. This is identified by a MarineUnitID which has already been reported as part of the 2012 reporting for Articles 8, 9 and 10 (in the 4Geo.xml file and included in the GIS file of assessment areas). If the areas to be used for Article 11 reporting are not already available in the 2012 reporting files, these files should be updated and resubmitted to ReportNet when submitting the Article 11 report. If the areas have already been reported they do not need to be submitted again; simply make a reference to these via the MarineUnitID.

A single MarineUnitID is required for each Programme report per (sub)region. All relevant sub-programmes are associated to a Programme; a separate MarineUnitID is not required at sub-programme level.

It is expected that each programme will typically cover the entire Member State part of the (sub)region, but in some cases it may be appropriate to extend it beyond this (for example into neighbouring states for joint programmes or onto land for relevant pressure monitoring). Whilst the programme may address this entire area of marine waters, the actual sampling in sub-programmes may be more restricted and can be expressed via Questions 4i and 9g for each sub-programme.

If the Member State wishes to subdivide their part of a (sub)region for reporting at Programme level (i.e. the information will be different for different parts of the marine waters), a separate Programme report needs to be prepared with a separate MarineUnitID. This approach is not encouraged as it leads to more reporting (and assessment) effort.

4.3 General description of the monitoring programmes (questions 1-4 of Recommendation)

The purpose of this section of the reporting sheet is to:

- a. Ask general questions that do not relate to a specific monitoring programme, such as the overall adequacy of the monitoring programmes for assessing progress towards GES and achievement of the targets, and to describe how the monitoring programmes will be able to identify new and emerging issues.
- b. Identify any gaps in coverage of the monitoring programmes and explain how and when these will be addressed.

The general description section consists of four questions which aim to give an overview of the monitoring programmes being implemented by the Member State. Question 1 is concerned with identifying any gaps in the set of programmes established in 2014, together with outlining plans and timescales to fill such gaps. Question 2 is specifically about the public consultation required under MSFD Article 19(2). Question 3 is about a range of additional information that should be considered by the Member State when establishing the monitoring programmes, but which is not specific to particular programmes. Question 4 relates to Competent Authorities and association delivery organisations.

General questions:

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary information	
Question 1: Overall adequacy of the programmes				
1a	Overall adequacy	Do the monitoring programmes as a whole constitute an appropriate framework to meet the requirements of the MSFD? If not, please complete the questions on gaps below.	Yes/No	<p>Question 1 is focused on the overall coverage of the 2014 monitoring programmes and the identification of any gaps. Reporting on coverage is done against each of the descriptors and criteria of GES, against the environmental targets defined by the Member State, and against the elements of MSFD Annex III. Responses need to indicate whether the element is already addressed in the 2014 programmes or whether it still needs to be addressed or is not relevant. If some elements are not yet covered, plans to fill the gaps reported should be included in the final section of Question 1.</p> <p>Note: any gaps in the programmes may be easier to identify at the end of the 'report', i.e. once what is to be addressed by each of the monitoring programmes has been documented. Since each programme will address different aspects of GES, targets and Annex III elements, it is recommended to go through them all at the end to identify if anything has been left out by mistake.</p>

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary information	
1b	Gaps: GES descriptors and criteria (art. 9)	Which GES descriptors and criteria relevant for your marine waters (as included in your Member State report for Art. 9) are not yet adequately covered by your Monitoring Programmes?	<p>For each Descriptor and Criterion indicate one of the following:</p> <ol style="list-style-type: none"> It is adequately covered in your 2014 monitoring programmes; It will be addressed: <ul style="list-style-type: none"> In time for the next assessment due in 2018 In time for the updating of monitoring programmes due on 2020 Later than 2020 It is not relevant. 	<p>It is for the Member State to define which GES criteria are relevant to monitor for each Descriptor, and to assess if its programmes are adequate for each relevant criterion. There is no need to address each indicator of the GES Decision.</p> <p>If the Member State has identified gaps that will be addressed after 2014, it has already concluded the programmes are not yet adequate for the particular criterion.</p>
1c	Gaps: targets (art. 10)	Which targets and associated indicators for your marine waters (as included in your Member State report for Art. 10) are not yet adequately covered by your Monitoring Programmes?	<p>For each target, indicate one of the following:</p> <ol style="list-style-type: none"> It is adequately covered in your 2014 monitoring programmes; It will be addressed: <ul style="list-style-type: none"> In time for the next assessment due in 2018 In time for the updating of monitoring programmes due in 2020 Later than 2020. It is not relevant. 	<p>See guidance for Q1b.</p> <p>Only the targets which were reported in 2012 under Article 10 are available to the Member State to list here.</p> <p>If monitoring of targets reported under Article 10 is indicated as 'not relevant' in this question, provide a suitable reason under Q1e.</p>
1d	Gaps: Annex III elements (art 8)	Which elements from MSFD Annex III relevant for your marine	For each Annex III element indicate one of the following:	<p>See guidance for Q1b.</p> <p>For Habitats the list is not based on previous reporting – all predominant</p>

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary information	
		waters (as reported in your Member State report for Art. 8) are not yet adequately covered by your Monitoring Programmes?	a. It is adequately covered in your 2014 monitoring programmes; b. It will be addressed: <ul style="list-style-type: none"> In time for the next assessment due in 2018; In time for the updating of monitoring programmes due in 2020; Later than 2020. c. It is not relevant.	habitat types are listed and can be ticked if relevant. For pressures, the term list used for 2012 reporting is provided. Each pressure 'theme' has the specific categories related to Table 2 of MSFD Annex III (e.g. Physical disturbance – noise) and a general category for use if needed.
1e	Gaps and plans	Explain the gaps and describe your plans to complete coverage. Provide justification for not including specific GES criteria, environmental targets and Annex III characteristics in your monitoring programmes which you have reported under Art. 8, 9 and 10 as being relevant to your Member State waters (e.g. based on risk assessment)	Free text description or URL link or section in paper report	If responses to Q1b, 1c and 1d all indicate that the monitoring programmes are fully in place by 2014, there is no need to report on gaps and plans here. In cases where you have reported under Articles 8, 9 and 10 that particular GES criteria, targets and Annex III elements are relevant to your Member State waters, but you have indicated 'Not relevant' under Q1b, 1c or 1d, provide a justification as to why they are not included in your monitoring programmes.
Question 2: Public consultation				
2a	Public consultation dates	Public consultation dates:	From: DD/MM/YYYY To: DD/MM/YYYY	Question 2 records the details of the Public consultation required under MSFD Article 19(2c) on the establishment of the monitoring programme.
2b	Public consultation	Describe the public consultation process	Provide URL web link to the consultation.	Member States can simply provide a web link to its public consultation, but if it wishes it can also describe how it has done the consultation. If a paper report is being submitted and it contains a section on the

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary information	
	description		Free text description or section in paper report (optional)	consultation, this should be referred to here. Member States always have the possibility to upload any documents they wish in support of their electronic reports.
Question 3: Other information				
3a	Regional cooperation	Where can additional information be found on your regional cooperation on monitoring programmes (if information is additional to that already provided under article 6, 7, 8, 9 and 10)? Describe issues on cooperation that have not been reported before (under Art. 7 or Art. 8, 9 and 10), such as consistency in methodology.	Provide URL web link or section in paper report.	Question 3 is for additional information that is required but not applicable at the monitoring programme or sub-programme level.
3b	Transboundary impacts and features	Where can additional information be found on your consideration of transboundary impacts and features in monitoring programmes (Article 11.2b)?	Provide URL web link or section in paper report	
3c	Major environmental changes and emerging issues	Where can additional information be found on the ability of the monitoring programmes to identify major changes in the environment (Annex V.11) and on the ability of the monitoring programmes to identify new and emerging issues (Annex V.11)?	Provide URL web link or section in paper report	

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary information	
3d	Source of contaminants in seafood	Where can additional information be found on chemical contaminants in species for human consumption linked to commercial fishing areas (Annex V.5)?	Provide URL web link or section in paper report or reference the relevant sub-programme for Descriptor 9.	This may also be addressed under Descriptor 9 at the sub-programme level, in which case a reference to that sub-programme should be made here.
3e	Access and use rights	Where can additional information be found on how you intend to provide access and use rights in respect of data and information from the monitoring programmes (Article 19 (3)), including: <ul style="list-style-type: none"> - the type of data - method/mechanism used to make it available - use rights for EC/EEA - INSPIRE standards used - when the data will first be available - frequency of update of the data. 	Provide URL web link or section in paper report	
Question 4: Competent Authorities				
4a	Responsible Competent Authority	Name of a Competent Authority which is <u>responsible</u> for the monitoring programmes and who will act as a contact point for the Commission.	Name of Competent Authority (select from CAs reported under Art. 7)	Reporting under MSFD Art. 7 in 2011 required the formally-appointed Competent Authorities to be identified. Question 4a is to identify which one of these has overall responsibility for implementation of the monitoring programmes. In cases where several Competent Authorities share equally this responsibility, give one of these who will act as the contact point, if needed, for the Commission. Note that the Competent Authority may differ from the organisation(s)

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary information	
				that actually undertake the monitoring, such as research institutes or consultants. This can be indicated in Q4b.
4b	Responsible organisation	Optional: If the delivery of the monitoring programmes is delegated to other organisations, these can also be listed.	Name(s) of responsible organisations	Some Member States typically have their monitoring undertaken or managed by other organisations, either delegated to government institutes and research establishments or contracted out. Additionally some of the monitoring may be undertaken by or through industry operators in agreement with the CA. In these cases, the Member State can (optionally) provide details of which organisations are actually undertaking the monitoring in Q4b and 4c. Where the monitoring is sub-contracted to a number of consultants, which may vary from year to year, it is not recommended that these be reported here.
4c	Relationship to CA	Optional: Explain the relationship of the responsible organisations to the relevant CA (e.g. an agency of the CA).	Free text or URL web link or section in paper report	

4.4 Reporting on monitoring programmes (questions 4-8 of *Recommendation*)

Reporting on the Monitoring Programmes is organised by the Descriptors of GES, except for the 'Biodiversity' descriptors (D1, 4 and 6) which are grouped according to the main species groups and habitat types. The following monitoring programmes are to be reported:

Descriptor	MSFD Monitoring Programme
D1, 4	Biodiversity – birds
D1, 4	Biodiversity – mammals and reptiles
D1, 4	Biodiversity – fish and cephalopods ⁹
D1, 4	Biodiversity – water column habitats
D1, 4, 6	Biodiversity – seabed habitats ¹⁰
D2	Non-indigenous species
D3	Commercial fish and shellfish
D5	Eutrophication

⁹ Refers to pelagic cephalopods

¹⁰ Including seafloor integrity

Descriptor	MSFD Monitoring Programme
D7	Hydrographical changes
D8	Contaminants
D9	Contaminants in seafood
D10	Litter
D11	Energy, including underwater noise

The purpose of this section of the reporting sheet is to:

- a. Ask questions that are specific to each programme, but apply generally to all of its sub-programmes;
- b. This includes aspects on the adequacy of the programme for assessment against GES and progress with targets, (optional) links to (existing) measures and to existing monitoring programmes for other policies.

The information collected in this section of the reporting sheet aims to describe the individual monitoring programmes in a more detailed and systematic manner than the general questions, with the intention that all questions are typically relevant to each programme. For each monitoring programme there are fields for a general description and metadata about the programme.

The main purpose of the monitoring programmes is to provide data to enable an assessment of environmental status in relation to what is defined as GES and to enable assessment of progress on the environmental targets set to achieve GES. Each monitoring programme is therefore assigned to a GES descriptor (or several for biodiversity topics), and potentially to particular criteria and/or GES characteristics [indicators]. It is also necessary to link the monitoring programme to the features (e.g. species, habitats) and/or pressures to which it is relevant. Lastly, many programmes will also aim to provide data in relation to particular environmental targets and this linkage should be indicated.

Because the GES descriptors and criteria (Art. 9), ecosystem features and pressures (Art. 8), and environmental targets and associated indicators (Art. 10) are already reported, good use should be made of existing data structures in the reporting system (MSFD database) to enable linkages to be made from the Article 11 reporting. This can be achieved through reuse of term lists and, where appropriate, already reported information (e.g. geographical assessment areas, lists of targets, etc.).

This section of the Reporting Sheet covers questions 4 to 8 of the *Recommendation* and focuses on the links between the monitoring programmes and other parts of the MSFD implementation process, including the determination of GES (Art. 9), the establishment of environmental targets (Art. 10) and the programmes of measures (Art. 13). Question 8 allows links to be made to monitoring programmes from other EU policies and international conventions, thereby fostering an integrated and efficient approach to monitoring requirements for the marine environment.

Programme-level questions:

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
Question 4: About the Programme				
4d	Programme name	Give name of monitoring programme.	Select one from List: Monitoring programmes	After selecting one of the specified monitoring programmes, identify the geographic area covered by the programme (i.e. its' MarineUnitID). It is possible to copy the information from a previously entered programme report. The link to relevant sub-programmes is also established here.
4e	Programme ID	Provide a unique identifier for programme.	Use sub(region) and MS code (e.g. BALDE) <u>plus</u> MS-defined alpha-numeric code (e.g. MADIT-D08)	
4f	Programme description	Describe the overall approach of the monitoring programme, including: <ul style="list-style-type: none">The rationale for your balance between monitoring of state/impact, pressures, activities and measures?How it adapts to new and emerging environmental problems (pressures and impacts) in relation to the relevant Descriptor(s). Include references/web-links where possible.	Free text description or URL link or section in paper report	The description of the approach to the monitoring programme should indicate which parts of the DPSIR model are being addressed, and any reasoning for not addressing all parts. More information on the DPSIR model is available here . It is not intended that responses should be lengthy, but rather that the issues raised have been considered. Care should be taken not to repeat information that is required later under other questions about the monitoring programme or at the sub-programme level.
Question 5: Links to Art. 8 & 9 (GES and its assessment)				
5a	Relevant GES criteria	Which GES criteria are addressed by the programme?	Select all relevant from list in Decision	Q5f and 5h are free text fields, where explanations to the responses given here can be provided if necessary.

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
5b	Relevant GES characteristics [indicators]	Which GES characteristics (indicators) are addressed by the programme?	<p>Select all relevant from list in Decision.</p> <p>Select all relevant from those defined by your Art. 9 report</p>	<p>Q5b should reflect what was reported under Article 9, but the monitoring programmes may include additional indicators (e.g. from more recent work in Regional Sea Conventions) which will be used in future (2018) assessments, as well as indicators which provide supplementary information (e.g. on salinity and sea temperature) to support assessments.</p> <p>Q5f and 5h are free text fields, where explanations to the responses given here can be provided if necessary.</p>
5c	Relevant features, pressures and impacts from MSFD Annex III	Which elements of Annex III (ecosystem components, pressures/impacts) are addressed by the programme?	<p>Select all relevant features and pressures from the Lists:</p> <ul style="list-style-type: none"> • Functional groups • Predominant habitats • Physical and chemical features • Pressures 	<p>It is for the Member State, in conjunction where appropriate with neighbouring states in the (sub)region, to define which Annex III characteristics are selected for monitoring purposes on the basis of their relevance to assessing GES and progress on targets.</p> <p>The categories provided under Q5c are broad (as per the term lists for 2012 reporting), e.g. synthetic/non-synthetic substances. The specific elements being monitored within these broad categories should be reported under Q9a.</p> <p>The functional group categories should only be used for birds, mammals, reptiles, fish and pelagic cephalopods. Benthic invertebrates and macrophytes are part of the seabed habitats. Pelagic phyto- and zooplankton are part of the water column habitats. Use the 'reduced salinity' category for water column habitats in the Baltic Sea and Black Sea regions.</p>
5d	Adequacy: for assessment of GES (Art. 8 & 9)	Will the programme provide adequate data and information to enable the periodic assessment of environmental status, and distance from and progress towards GES, including whether environmental status is improving, stable or deteriorating?	<p>Adequate data: Yes or no?</p> <p>Established methods for assessment: Yes or no?</p> <p>Adequate understanding of GES: Yes or no?</p> <p>Adequate capacity to perform assessments: Yes or no?</p>	<p>'Data and information' refers to the information needed to assess whether GES has been achieved and if not, the distance to GES.</p> <p>If the answer is 'no' to one or more of the questions within Q5d, it suggests there are some gaps in the programme; some explanation of how the inadequacy will be addressed should be given in Question 5h.</p> <p>'Capacity' in this question refers to the necessary expertise and resources being available to perform assessments.</p>

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
		If not, then complete Q5h.		
5e	Natural variability	How does the programme address natural variability?	Select all relevant from List: Monitoring natural variability	
5f	Description_GES	Describe how the programme: <ul style="list-style-type: none"> a. addresses assessment needs for the relevant Descriptor(s) and targets; b. meets the needs of providing data/ information to support assessment of the Descriptor (or particular biodiversity component programme for D1, 4, 6); c. contributes to determining distance from GES and trends in status; d. addresses natural and climatic variability and distinguish this from the effects of anthropogenic pressures; e. responds to risks of not achieving GES. 	Free text or URL web link or section in paper report	The determination of whether a descriptor is at GES or not is one of the main purposes of establishing monitoring programmes under the MSFD; this question should be answered so that it can be seen how the monitoring programme will contribute to determining GES. If GES has not been achieved, then it should be possible to establish the distance from GES.
5g	Gap-filling date_GES	If not yet considered adequate for data and information needs, when will the programme be considered fully adequate?	Select one: <ul style="list-style-type: none"> a. Considered adequate in 2014 b. In time for the next assessment due in 2018; c. In time for the updating of monitoring programmes due in 2020; d. Later than 2020 	

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
5h	Plans_GES	If the programme is not considered fully adequate, what plans are in place to make it adequate (e.g. to fill gaps in data, methods, understanding or capacity)?	Free text or URL web link or section in paper report	
Question 6: Links to Art. 10 Targets				
6a	Relevant targets (from Art. 10)	Which target(s) are addressed by your programme?	Select all relevant target(s) (from the Member State report on Art. 10)	The list of targets provided is as reported by the Member State in 2012.
6b	Adequacy: for assessment of progress with targets (Art. 10)	Will the programme provide suitable and sufficient data and information to enable assessment of progress towards achievement of the relevant environmental targets (using indicators identified by the Member State under Art. 10)	<p>Suitable and sufficient data: Yes or No?</p> <p>Established methods for assessment: Yes or No?</p> <p>Adequate capacity to perform assessments: Yes or No?</p>	<p>‘Suitable and sufficient data and information’ refers to the information needed to assess whether the targets are being achieved.</p> <p>If the answer is ‘no’ to one or more of the questions within Q6b, it suggests there are some gaps in the programme; some explanation of how the inadequacy will be addressed should be provided in Q6f.</p>
6c	Target updating	Will the data and information collected enable the regular updating of targets?	Yes or No?	
6d	Description_T targets	Explain how the programme will contribute to the assessment of progress with targets.	Free text or URL web link or section in paper report	The linking of monitoring programmes to targets, and showing how they contribute to the assessment of progress with the targets is one of the main purposes of the monitoring programmes.
6e	Gap-filling date_Targets	If not yet considered adequate for data and information needs, when will the programme be considered fully adequate?	<p>Select one:</p> <p>a. Considered adequate in 2014</p> <p>b. In time for the next assessment due in 2018;</p> <p>c. In time for the updating of monitoring programmes</p>	

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
			due in 2020; d. Later than 2020	
6f	Plans_Targets	If the programme is not considered fully adequate, what plans are in place to make it adequate (e.g. to fill gaps in data, methods or capacity)?	Free text or URL web link or section in paper report	
Question 7: Links to Art. 13 Measures¹¹				
7a	Relevant activities (from Art. 8.1c)	Which activities will the programme address?	List of relevant activities to be monitored (select from List: Activities from Art. 8.1c reports)	MSFD Annex V refers to monitoring of activities to inform the need for measures (V.4) and to monitoring of activities to confirm measures are effective (V.6) – this monitoring could occur on land or at sea.
7b	Description_Activities	Describe the nature of activity and/or pressure monitoring (e.g. addressing spatial distribution, intensity and/or frequency of the activity) and how the programme is considered adequate to assess which activities and/or pressures are causing environmental change (degradation) and hence help identify possible new measures, if needed.	Free text or URL web link or section in paper report	Q7b asks for detail about the activities listed under Q7a. It is not intended that responses should be lengthy, but rather that the issues raised have been considered.
7c	Relevant measures	Optional: Which existing measures will the programme address?	List existing relevant measures that the monitoring programme	As measures under MSFD Article 13 are to be defined for the first time by 2015, any existing measures reported here are without prejudice to

¹¹ As the MSFD programme of measures has not yet been adopted, the elements in this section (7c to 7f), which are related to measures, programmes of measures and assessment of the efficiency of measures can be reported by the Member States if they wish, but they remain optional. Moreover, as the methodology for assessment of the efficiency of measures (and subsequently, the way to link monitoring to measures) has still to be defined, those first proposed elements have to be considered as provisional and will be reviewed (initial discussions suggest that the key linking tools between measures and monitoring may be the environmental targets).

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
			addresses	<p>Member State decisions on what is relevant for MSFD under Article 13. However, where monitoring of existing measures is already in place and these measures are expected to be included as MSFD measures in 2016, they can (optionally) be identified here.</p> <p>In subsequent reporting rounds (i.e. 2020 update on monitoring programmes), links to MSFD measures reported in 2016 can be made.</p>
7d	Description_M easures	Optional: Describe the nature of monitoring of measures and how the programme enables their effectiveness (impact) in relation to delivering desired changes in environmental status to be assessed (e.g. what processes are in place to prove corrective measures are having the desired effect, and how is uncertainty quantified)?	Free text or URL web link or section in paper report	<p>MSFD Annex V refers to monitoring to assess 'impact' (effectiveness) of measures (V.3). It is logical that there is some means to know if the measures taken are achieving their aims. If the programme is monitoring measures (as opposed to the marine environmental condition affected by the measures) then these could be on land or at sea.</p> <p>The text here could show how the monitoring programmes are quantifying the relationship between the response part of the DPSIR model and the other elements of the model, namely the Drivers, Pressures, State and Impacts.</p> <p>It is not intended that responses should be lengthy, but rather that the issues raised have been considered.</p>
7e	Adequacy for assessment of measures (Art. 13)	Optional: Will the programme provide adequate data and information to enable the identification of activities and/or their pressures that are causing environmental degradation (and consequently suitable measures if needed) and the effectiveness of existing measures?	<p>Adequate data: Yes or no?</p> <p>Established methods for assessment: Yes or no?</p> <p>Adequate understanding of GES: Yes or no?</p> <p>Adequate capacity to perform assessments: Yes or no?</p> <p>Addresses activities/pressures: Yes or no?</p> <p>Addresses effectiveness of measures: Yes or no?</p>	
7f	Gap-filling	If not yet considered adequate for	Select one:	The 'data and information needs' are what the Member State considers

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
	date_Activities_Measures	data and information needs, when will the programme be considered fully adequate?	a. Considered adequate in 2014; b. In time for the next assessment due in 2018; c. In time for the updating of monitoring programmes due in 2020; d. Later than 2020.	necessary to meet the objectives of the monitoring programme (i.e. here in relation to assessing the effectiveness of measures).
Question 8: Links to existing monitoring				
8a	Links to existing monitoring programmes	Which existing monitoring programmes already established under Community legislation or international agreements contribute to and are compatible with your MSFD programme? Note: specific details are captured at sub-programme level – question 4m)	Select the relevant instrument from List: Monitoring other Directives/Conventions	These are existing programmes for EU policies or for international conventions. This question is to provide a high-level link only to these other relevant monitoring programmes. As each policy may encompass a number of different monitoring programmes, specific details on which of these is being included in the MSFD programmes should be captured at sub-programme level under Q4l.

4.5 Reporting on Sub-programmes (questions 4, 9 and 10 of Recommendation)

The purpose of this section of the reporting sheet is to:

- Ask questions that are specific to each sub-programme;
- This will typically address the specific aspect or features being addressed and the methods, spatial resolution and temporal periodicity of the monitoring.

It is common to consider monitoring programmes as addressing different needs (e.g. assessment of environmental state/impacts, pressures, activities and effectiveness of measures). For any particular Descriptor, it is possible that these differing types/purposes of monitoring may be needed in combination in order to meet the overall needs for the Descriptor and associated targets.

A monitoring programme may thus have multiple sub-programmes associated with it and each may, for example have different frequencies of sampling and methodologies. At this level it is possible to capture some of the different methodologies and give an indication of the level of effort, e.g. density of stations in the assessment area, or the number of surveys that are performed over a 6-year reporting period.

Because it is possible that some monitoring surveys will collect data of relevance to several Descriptors (e.g. plankton monitoring for use in D1, D4 and D5), there is a need to cross reference the sub-programme to other Programmes. In this way it is only reported once, but clearly associated to several Descriptors.

The reporting on monitoring sub-programmes focuses on the actual data and information collected and is organised according to similarity of purpose, elements monitored, data type and methodology. Because some data and information can be used for multiple purposes, such as to meet the needs of different GES Descriptors, the sub-programmes are reported separately to the Programmes and can be associated to several Programmes where relevant.

Each sub-programme covers Question 4 which asks for metadata, mostly on the scope of the sub-programme, and then Question 9 enables the methodology of the sub-programme to be described and Question 10 addresses the data generated by the sub-programme.. The linking of sub-programmes to a monitoring programme is done at the monitoring programme level.

Sub-programme report:

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
Question 4: About the sub-programme				
4g	Sub-Programme ID	Provide a unique identifier for sub-programme.	Use sub(region) and MS code (e.g. BALDE) <u>plus</u> MS-defined alpha-numeric code (e.g. MADIT-D08-01)	<p>Each sub-programme ID for each (sub)region/Member State must be unique. Where a Member State has the same sub-programme in several subregions, only the subregion part of the code need be different, e.g. ANSDE-D0146-01, BALDE-D0146-01.</p> <p>The addition of a short name to the end of the 'code' part can make it more understandable for ongoing use, e.g. BALSE-D08-01_HeavyMetalsInSediment, BALSE-D08-02_OrganicPollutantsInBiota</p> <p>When a sub-programme is jointly reported for a (sub)region (e.g. prepared via the Regional Sea Convention), this should be reflected in the code, e.g. BALSE-D08-02_HELCOM_OrganicPollutantsInBiota.</p>
4h	Temporal scope	Provide the start date of the sub-programme (past or future) and, if appropriate, an end date, or	Start date: YYYY End Date: YYYY, 9999 (ongoing)	<p>Only one start date and end date is permitted.</p> <p>The start date should be the earliest date that the sub-programme</p>

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
		indicate the programme is ongoing		<p>started, going back as many years as possible before 2014. Whilst data quality issues may have improved over time (i.e. data from long past may be of lesser quality) such past data nevertheless can usefully contribute to a time-series dataset for this sub-programme.</p> <p>It is expected that most sub-programmes reported in the 2014 reporting cycle will at present have no planned end date– in such cases, enter 9999. This situation may change in future reporting cycles to reflect changing needs of the monitoring.</p> <p>There will be cases where the earliest start date varies amongst elements/parameters of the same sub-programme. Here, the earliest starting date of a particular element/parameter of the sub-programme should be used. If additional detail or clarification is required, this should be provided in Question 4j.</p> <p>The following example from Poland illustrates possible variations in start dates: the sub-programme on nutrient levels started in 1979 (within the then HELCOM BMP), although only in the offshore area. It was included in the National Monitoring Programme only in 1990. Since 1999 it was extended into the entire Polish sector of the Baltic Sea, including the coastal zone. For MSFD, enter 1979 as the start date and provide the additional detail in Q4j.</p>
4i	Spatial scope	Indicate the coverage of the sub-programme according to the four jurisdictional zones of MSFD Marine Waters (or outside this, either landward or beyond marine waters if appropriate, e.g. for pressures).	Select all relevant from List: Monitoring zones	<p>This question is intended to give only a coarse categorization of the areas (zones) covered by the sub-programme. If only a proportion of the selected category is covered by the sub-programme this should be reflected under Q9g which accommodates more specific geographic information, including the density of sampling within these zones.</p> <p>“Terrestrial part of MS” refers to any monitoring above the high water mark.</p> <p>“Continental shelf (beyond EEZ)” refers to monitoring of MS seabed/subsoil beyond the zone where the Member State has jurisdiction over the water column (e.g. beyond 200nm of EEZs or the</p>

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
				<p>Territorial Waters/Contiguous Zone of some Mediterranean states).</p> <p>“Beyond MS Marine Waters” refers to monitoring in Areas Beyond National Jurisdiction (ABNJ), including monitoring in the water column/air above MS Continental Shelf areas (i.e. high seas). It can also be used for monitoring in waters of neighbouring countries.</p>
4j	Description_Spatial Scope	Briefly describe the rationale for the geographic scope of the programme (e.g. in relation to relevant environmental characteristics, such as distribution of a species or habitat, to pressures or to relevant activities and measures).	Free text or URL web link or section in paper report	If the area covered by the sub programme varies from the reporting area (MarineUnitID) for the Programme (reflects also what is entered for Q4i), then an explanation should be provided here, e.g. where the distribution of a pressure or the distribution of the monitored species or habitat is restricted compared with the reporting area.
4k	Purpose	For what purpose is this sub-programme aimed at collecting data and information?	Select all relevant from List: Monitoring purpose	The categories provided are related to the DPSIR model and are intended to reflect the main focus of the sub-programme. As sub-programmes should be defined separately according to the main elements being monitored (e.g. particular species/functional groups or habitats, specific pressures), it is expected that typically only one category will be relevant per sub-programme. However, monitoring of certain naturally occurring elements (e.g. nutrients, underwater sound) is sometimes considered as ‘state monitoring’, whilst the reason for this monitoring is to assess whether the levels are raised above natural levels (i.e. whether it is acting as a pressure) – in these cases, the category ‘pressure’ should be selected. Where the elements monitored are being changed due to a pressure (e.g. oxygen levels resulting from nutrient enrichment), they should be categorised as ‘state/impact monitoring’.
4l	Links to programmes of other directives &	If monitoring for other Community legislation or international agreements is contributing to your MSFD programme (as indicated in	Free text (for programme name and description) and URL web link(s) or indicate Not relevant (to this sub-programme).	<p>This question compliments the information submitted in Q8a, for the monitoring programme as a whole, by asking for more specific information relevant to a particular sub-programme.</p> <p>If Q4l is completed satisfactorily, with the information required for each</p>

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
	conventions	<p>Question 8a), give details as follows:</p> <ul style="list-style-type: none"> • Name of other programme • A specific URL web link(s) to where the information required for each part of Question 9 can easily be found and is directly relevant for your marine waters. • Describe how the existing monitoring will contribute to MSFD needs including how it is integrated into your MSFD programme. <p>This field can also be used to link to a national programme.</p> <p>If the information required for each part of Question 9 is maintained on a permanent official web site, Question 9 does not need to be completed.</p>		<p>part of Question 9 maintained on a permanent official web site (decentralised reporting on either a national or regional web site), then Q9 does not need to be completed.</p>
Question 9: Methodology				
9a	Elements monitored	Which elements (ecosystem components, pressures from MSFD Annex III) are monitored?	List the specific elements (e.g. particular species or contaminants) <u>within</u> the broad categories reported under Question 5c.	<p>This question links to the broad categories given at Q5c but should not repeat what is reported under Q5c. Q9a asks for more specific information on the particular elements to be monitored <u>within</u> the broad categories reported under Q5c (e.g. specific species, habitats, chemicals). These could, for example be the specific species, habitats, contaminants or nutrients used in Art. 8 and 9 reporting.</p> <p>For example, under Q5c, the relevant predominant habitat types should be selected and under Q9a more specific habitat types (or even specific benthic species) within these broad categories can be listed. Similarly,</p>

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
				<p>under Q9a specific chemical substances such as Pb, Hg and Cd can be listed, which correspond to the broad category 'non-synthetic substances' reported under Q5c.</p> <p>If you wish to report the monitored element in a certain order (e.g. taxonomic order), then 'Add monitored elements after selected' can be used in the web form to insert elements where required.</p> <p>If subsequent questions in Q9 become complex (e.g. different responses are needed for every element monitored, such as for hazardous substances) a simple table could be prepared to address the Q9 questions. This could be provided on another website if Q4I is used or provided as a 'paper' report.</p>
9b	Parameters measured	What parameters of the elements are measured?	Choose from the List: Monitoring parameters, e.g. concentration in sediment, population size, intensity of pressure [full list to be developed].	'Intensity of pressure' is a generic term for all pressures. Pressures can be measured either as <u>inputs</u> to the environment (cf 2012 reporting sheets) or as (<u>output</u>) levels in the environment. For example, for D5, it could refer to nutrient input loads or to nutrient concentrations in the sea.
9c	Monitoring method	What is the method used for monitoring (data collection) in the field and, where appropriate, any subsequent laboratory processing?	Provide a reference to a published method or, if unpublished, describe the method used.	The choice of sampling and laboratory methods can depend on multiple conditions, which could require lengthy and detailed explanation. Therefore, this question requires only a simple reference to a published or publicly available document or URL link (such as one given in the JRC monitoring guidance ¹²), and not an explanation as to why a particular method has been chosen. For example, for monitoring of contaminant concentrations, a simple reference can be made to the relevant OSPAR or HELCOM technical monitoring guidance.

¹² N. Zampoukas, A. Palialexis, A. Duffek, J. Graveland, G. Giorgi, C. Hagebro, G. Hanke, S. Korpinen, M. Tasker, V. Tornero, V. Abaza, P. Battaglia, M. Caparis, R. Dekeling, M. Frias Vega, M. Haarich, S. Katsanevakis, H. Klein, W. Krzyminski, M. Laamanen, J.C. Le Gac, J.M. Leppanen, U. Lips, T. Maes, E. Magaletti, S. Malcolm, J.M. Marques, O. Mihail, R. Moxon, C. O'Brien, P. Panagiotidis, M. Penna, C. Piroddi, W.N. Probst, S. Raicevich, B. Trabucco, L. Tunesi, S. van der Graaf, A. Weiss, A.S. Wernersson, W. Zevenboom. 2014. *Technical guidance on monitoring for the Marine Strategy Framework Directive*. European Commission Joint Research Centre Scientific and Policy Report EUR 26499 EN. Luxembourg, Publications Office of the European Union.

[Technical guidance on monitoring for the MSFD.pdf](#)

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
9d	Method alteration	Describe the methods used if they deviate from the published method provided. If this field is left blank it is assumed the method used is according to the published method given in Q9c.	Free text or URL web link or section in paper report	If this field is left blank (or 'Not relevant' is entered), it is assumed that the method used is according to the standard method referenced under Q9c.
9e	Quality Assurance (QA)	In addition to a specified method, is there any additional Quality Assurance used?	Select one from List: Monitoring QA	This question (on QA) and the next (on QC) go hand in hand, but they are different and so deserve a separate response. QA can be considered as the guidance on procedures (how to collect the data) put in place before monitoring is started, whilst QC is undertaken during/afterwards to check if the outcomes of the monitoring (the data or products) are of sufficient quality. The list provided is from the SeaDataNet controlled vocabulary (L151) and is not likely to cover all situations. Use the same text box for both 'National' and 'Other' standards, to add additional QA standards, as needed.
9f	Quality Control (QC)	What type of Quality Control is used?	Select one from List: Monitoring QC	The list provided is from the SeaDataNet controlled vocabulary (L121) and is not likely to cover all situations. Use the same text box for both 'National' and 'Other' standards, to add additional QA standards, as needed.
9g	Spatial resolution (density) of sampling	What is the proportion of the geographic scope (given in Q4i) which is covered by sampling? This question is intended to provide a broad indication only of expected sampling density, as information on actual sampling locations, once collected, should be linked to Art. 19.3 on access to the	Approximate proportion (%)	This question is intended to provide only a broad indication of expected sampling coverage and density, as information on actual sampling locations, once collected, will be linked to Article 19.3 on access to the monitoring data. For Q9g, 'proportion' addresses sampling area covered within the reporting area (MarineUnitID), whilst 'number of samples' addresses sample density within the area sampled. Some monitoring is carried out on a risk-based approach which could reduce the geographic coverage of the sampling, but 'high risk areas'

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
		monitoring data]		<p>may be sampled more frequently and in more detail (higher density of samples).</p> <p>‘Proportion’ may be difficult to define for some types of monitoring. Absolute precision is not needed here and an estimate, to nearest 10%, is sufficient to indicate the anticipated areal coverage. If the samples taken (even if very few) are intended to be representative of the entire reporting area, give 100%.</p>
		What is the density of sampling within the proportion given above?	Approximate number of samples expected to be taken from the assessment area (No./year)	<p>Absolute values are not required here, just an indication of the number of samples which are expected to be taken per year* (see below). More detailed information will come from the data required under Article 19.3.</p> <p>‘Sample’ can mean a station, transect, or sampling area, depending on the methodology/parameter/indicator used. The following are illustrative examples:</p> <ul style="list-style-type: none"> • for macroalgae/angiosperms – 1 sample from 4 locations = 4 samples • for macrozoobenthos – 1 sample from 17 locations = 17 samples. <p>If replicates are taken at the same station (e.g. 3 or 5 replicate grabs for macrozoobenthos), treat these as one sample.</p> <p>Given the likely variation in what might be reported as a ‘sample’, further details should be expressed under Q9i.</p> <p>*If sampling is not to be undertaken every year (once or more frequently within the year) then explain in Q9i the length of time covered by the value given (e.g. YY samples over the 6-year reporting cycle).</p>
9h	Temporal resolution (periodicity) of sampling	What is the temporal frequency of the sub-programme?	Select one from List: Monitoring frequency	

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
9i	Description_S ub- programme	<p>Where the information for Questions 9a-9h varies within the sub-programme (e.g. spatially or temporarily), provide details. This could include, for example:</p> <ul style="list-style-type: none"> • variation in relation to risk across the area (e.g. coastal/offshore, pressure-related) • variation due to differing management regimes (e.g. MPAs or other management zones) 	Free text or URL web link or section in paper report	Risk is most likely linked to pressures (and hence ultimately to risk of not achieving GES). If the reporting scale (MarineUnitID)) is large, then there may be smaller areas (such as HELCOM sub-basins, WFD water bodies, etc.) where sampling is more intense than other areas subject to lower risk from pressures.
Question 10: Monitoring data				
10a	Aggregation of data	At which scale can the data from the sub-programme be aggregated for environmental assessments?	Select one from List: Monitoring data aggregation scale	This refers to the ability to aggregate the data (in raw or processed form) from several sources (different Member States) so that it can be used/interpreted/mapped at a scale beyond the source scale, e.g. to contribute to an indicator assessment at (sub)regional scale. This ability to aggregate indicates that the data format has been agreed with other countries (e.g. for submission to international databases or for use in (sub)regional indicator assessments). If the aggregation level beyond the national level does not fit one of the categories provided, please describe the scale it can aggregated to in Q10b.
10b	Description_D ataAggregatio n	<p>If 'other' is selected, describe the scale.</p> <p>If the data cannot be aggregated (beyond the national scale), give reasons?</p>	Free text or URL web link or section in paper report	
10c	Access to data	Nature of data/information to be made available:	Select one or more from List: Data type	Questions 10c and 10d refer directly to the responsibilities of Member States under Article 19.3, and thus it is for Member States to decide how best to respond to these points. Note, however, that the work

Reporting Sheet				Additional guidance
No.	Topic	Question	Summary Information	
				within the Technical Group on Data, led by the EEA, is helping to define this process (within an agreed framework); this work may offer answers to some of these questions.
		What method/mechanism will be used to make the data available?	Select from List: Data access mechanism	
		Will the EC/EEA have use rights?	Select one from List: Data access rights	
		Which INSPIRE standard is/will be used?	Select one from List: INSPIRE standards	A list of guidelines available can be found at http://inspire.ec.europa.eu/index.cfm/pageid/2 . Annex II and III standards were adopted in April 2013 http://inspire.jrc.ec.europa.eu/index.cfm/newsid/11001 .
		When will the data first become available?	Date: MM/YYYY	Enter the date of reporting, or even a past date if desired.
		How frequently are the data expected to be updated thereafter?	Select one from List: Monitoring frequency	As a minimum, the data should be updated at least every six years, in time for use in Article 8 assessments.
10d	Description_DataAccess	Describe how the data and information from the programme will be made accessible to the EC/EEA, indicating whether this is in place already or under development.	Free text or URL web link or section in paper report	

Annex 1: Links between *Recommendation* and Reporting Sheet

The following table shows the link between the 10 agreed questions for reporting from Annex 3 the *Recommendation*¹³ and the fields in the Reporting Sheet for MSFD Article 11. The question number/topic corresponds directly to that in the Reporting Sheet.

From Recommendation		Reporting Sheet	
Directive	Questions for reporting	No.	Topic
General questions:			
Article 11.1 Article 12	Question 1 Do the monitoring programmes as a whole constitute an appropriate framework to meet the requirements of MSFD? If not, what further development is needed:	1a	Overall adequacy
	a. What are the significant monitoring gaps in GES Descriptor and Criteria coverage? What plans are there to fill the gaps and by when?	1b	Gaps: GES descriptors and criteria (art. 9)
	b. Which targets (from MS Art. 10) are not addressed by the monitoring programmes? What plans are there to fill these gaps and by when?	1c	Gaps: targets (art. 10)
	c. What are the significant monitoring gaps in Annex III coverage? What plans are there to fill the gaps and by when?	1d	Gaps: Annex III elements (art 8)
		1e	Gaps and plans
Article 19.2	Question 2 When (dates) and how (web link) has a public consultation been undertaken?	2a	Public consultation dates
		2b	Public consultation description
	Question 3 Where can additional information be found (e.g. via a web link) on the following:		
Article 6	<ul style="list-style-type: none"> Regional cooperation on monitoring programmes (if information is additional to that already provided under article 6, 7, 8, 9 and 10) 	3a	Regional cooperation
Article 11.2b	<ul style="list-style-type: none"> Consideration of transboundary impacts and features in monitoring programmes (Article 11.2b) 	3b	Transboundary impacts and features
Annex V.11	<ul style="list-style-type: none"> The ability of the monitoring programmes to identify major changes in the environment (Annex V.11) The ability of the monitoring programmes to identify new and emerging issues (Annex V.11) 	3c	Major environmental changes and emerging issues
Annex V.5	<ul style="list-style-type: none"> Information on chemical contaminants in species for human consumption linked to commercial fishing areas (Annex V.5)? 	3d	Source of contaminants in seafood

¹³ 2013. Monitoring under Marine Strategy Framework Directive: Recommendations for implementation and reporting. pp25. [MSFD recommendation on monitoring and reporting](#)

From Recommendation		Reporting Sheet	
Directive	Questions for reporting	No.	Topic
Article 19.3	<ul style="list-style-type: none">How you intend to provide access and use rights in respect of data and information from the monitoring programmes (Article 19 (3))?	3e	Access and use rights
Art. 7	Question 4 Metadata about each programme: <ul style="list-style-type: none">Which organisation within the MS is responsible for the establishment and the implementation of the programme in that country	4a	Responsible Competent Authority
		4b	Responsible organisation
		4c	Relationship to CA
Programme-level questions:			
	Question 4 Metadata about each programme:		
	<ul style="list-style-type: none">Programme name	4d	Programme name
	<ul style="list-style-type: none">Reference code	4e	Programme ID
	<ul style="list-style-type: none">Description	4f	Programme description
Art. 5.2a Article 11.1 Annex V.1 Annex V.12	Question 5 Will the programme enable the periodic assessment of environmental status, and distance from and progress towards GES, taking account of natural variability (Art. 8 with regard to Art 9)? 5a: Which GES criteria are addressed? 5b: Which GES characteristics [indicators] are addressed? 5c: Which elements of Annex III (ecosystem components, pressures, impacts) are addressed?	5a	Relevant GES criteria
5b		Relevant GES characteristics [indicators]	
5c		Relevant features, pressures and impacts from MSFD Annex III	
5d		Adequacy: for assessment of GES (Art. 8 & 9)	
5e		Natural variability	
5f		Description_GES	
5g		Gap-filling date_GES	
5h		Plans_GES	
Art. 5.2a Article 11.1 Annex V.2 Annex V.12	Question 6 Will the programme (or several, if appropriate) provide suitable and sufficient data and information to enable assessment of progress towards achieving environmental targets (using indicators identified by MS) established under Art. 10 and enable their regular updating? 6a: Which target(s) is addressed (art. 10)?	6a	Relevant targets (from Art. 10)
6b		Adequacy: for assessment of progress with targets (Art. 10)	
6c		Target updating	
6d		Description_Targets	
6e		Gap-filling date_Targets	
6f		Plans_Targets	
Annex V.3 Annex V.4 Annex V.6	Question 7 Will the programme monitor: a. relevant activities and/or their pressures (spatial distribution, intensity and frequency), which are causing	7a	Relevant activities (from Art. 8.1c)
7b		Description_Activities	
7c		Relevant measures	

From Recommendation		Reporting Sheet	
Directive	Questions for reporting	No.	Topic
	environmental changes, to enable the identification of possible measures, if needed? b. relevant measures to determine their effectiveness (impact) in relation to delivering desired changes in environmental status?	7d	Description_Measures
		7e	Adequacy for assessment of measures (Art. 13)
		7f	Gap-filling date_Activities_Measures
Article 11.1 Annex V.10	Question 8 With which monitoring programmes under Community legislation or international agreements is the programme compatible? How has this been implemented?	8a	Links to existing monitoring programmes
Sub-programme report:			
	Question 4 Metadata about each programme:		
	<ul style="list-style-type: none"> Reference code 	4g	Sub-Programme ID
	<ul style="list-style-type: none"> Year started (or due to start); year ended (if appropriate) 	4h	Temporal scope
	<ul style="list-style-type: none"> Geographical coverage via a GIS polygon or grid (as per reporting on assessment areas for Art. 8) and by reference to the four zones in Table 1 of the "concept paper" (Recommendation) 	4i	Spatial scope
		4j	Description_Spatial Scope
		4k	Purpose
		4l	Links to programmes of other directives & conventions
Article 11.2a, 11.4, 5.2 Annex V.8 Annex V.9	Question 9 How does the monitoring programme ensure consistency and comparability? In particular:		
	<ul style="list-style-type: none"> Which elements (e.g. ecosystem components, pressures) are monitored and which parameters are measured? 	9a	Elements monitored
		9b	Parameters measured
	<ul style="list-style-type: none"> What is the method used for monitoring (data collection)? 	9c	Monitoring method
		9d	Method alteration
	<ul style="list-style-type: none"> What QA and QC procedures are being used? 	9e	Quality Assurance (QA)
		9f	Quality Control (QC)
	<ul style="list-style-type: none"> What is the density of sampling within this area? 	9g	Spatial resolution (density) of sampling
	<ul style="list-style-type: none"> What is the frequency of sampling? 	9h	Temporal resolution (periodicity) of sampling

From Recommendation		Reporting Sheet	
Directive	Questions for reporting	No.	Topic
		9i	Description_Sub-programme
Annex V.7	Question 10 At which scale can the data be aggregated for environmental assessments? <ul style="list-style-type: none"> • Subregion • Region • EU • Other If the data cannot be aggregated (beyond the national scale), give reasons?	10a	Aggregation of data
Annex V.8		10b	Description_DataAggregation
Annex V.9			
Art. 19(3)		10c	Access to data
		10d	Description_DataAccess

Annex 2: Term lists for Article 11 reporting

A number of term lists from the 2012 reporting sheets (on Art. 8, 9, 10) are also relevant to 2014 reporting on monitoring programmes. The lists below are additional to those used in 2012 reporting.

List	List_Short_Name	List_Long_Name
Monitoring gap-filling date	By 2014	Adequately covered by 2014
Monitoring gap-filling date	By 2018	In time for the next assessment due in 2018
Monitoring gap-filling date	By 2020	In time for the updating of monitoring programmes due on 2020
Monitoring gap-filling date	After 2020	Later than 2020.
Monitoring gap-filling date	NotRelevant	Not relevant
Monitoring programme name	D1, 4 Birds	Biodiversity – birds
Monitoring programme name	D1, 4 Mammals/Reptiles	Biodiversity – mammals and reptiles
Monitoring programme name	D1, 4 Fish/Cephalopods	Biodiversity – fish and cephalopods
Monitoring programme name	D1, 4 Water column habitats	Biodiversity – water column habitats
Monitoring programme name	D1, 4, 6 Seabed habitats	Biodiversity – seabed habitats
Monitoring programme name	D2 NIS	Non-indigenous species
Monitoring programme name	D3 Commercial fish/ and shellfish	Commercial fish and shellfish
Monitoring programme name	D5 Eutrophication	Eutrophication
Monitoring programme name	D7 Hydrographical changes	Hydrographical changes
Monitoring programme name	D8 Contaminants	Contaminants
Monitoring programme name	D9 Contaminants in seafood	Contaminants in seafood
Monitoring programme name	D10 Marine litter	Litter
Monitoring programme name	D11 Energy, incl. underwater noise	Energy, including underwater noise
Monitoring natural variability	Quantitative	In a quantitative process
Monitoring natural variability	Qualitative	In a qualitative process
Monitoring natural variability	Expert opinion	Expert opinion
Monitoring natural variability	Other	Other
Monitoring other Directives/Conventions	BWD	Bathing Water Directive
Monitoring other Directives/Conventions	CFP-DC-MAP	Common Fisheries Policy - Data Collection Framework (DC-MAP)
Monitoring other Directives/Conventions	Habitats	Habitats Directive
Monitoring other Directives/Conventions	Birds	Birds Directive
Monitoring other Directives/Conventions	NiD	Nitrates Directive
Monitoring other Directives/Conventions	UWWTD	Urban Waste Water Treatment Directive
Monitoring other Directives/Conventions	WFD	Water Framework Directive
Monitoring other Directives/Conventions	BarCon	Barcelona Convention UNEP/MAP
Monitoring other Directives/Conventions	BuchCon	Bucharest Convention

List	List_Short_Name	List_Long_Name
Monitoring Directives/Conventions other	HELCOM	Helsinki Convention
Monitoring Directives/Conventions other	OSPAR	OSPAR Convention
Monitoring Directives/Conventions other	WaddenSea	Trilateral Wadden Sea Cooperation
Monitoring Directives/Conventions other	Other	Other (specify)
Monitoring zones	MS land/FW	Terrestrial part of MS
Monitoring zones	WFD TW	Transitional waters (WFD)
Monitoring zones	WFD CW	Coastal waters (WFD)
Monitoring zones	Territorial waters	Territorial waters
Monitoring zones	EEZ (or similar)	EEZ (or similar, e.g. Contiguous Zone, Fishing Zone, Ecological Protection Zone)
Monitoring zones	CS (beyond EEZ)	Continental shelf (beyond EEZ)
Monitoring zones	Beyond MS waters	Beyond MS Marine Waters
Monitoring purpose	State/impact	Environmental state and impacts
Monitoring purpose	Pressures	Pressures
Monitoring purpose	Activities	Human activities causing the pressures
Monitoring purpose	Measures	Effectiveness of measures
Monitoring parameters		See separate list
Monitoring QA	BEQUALM	Biological Effects Quality Assurance in Monitoring Programmes
Monitoring QA	COMBINE	Helsinki Commission Cooperative Monitoring in the Baltic Marine Environment manual of measurement protocols
Monitoring QA	ICESDataTypeGuide	ICES Data Centre Data Type Guides
Monitoring QA	IODE	IOC Manual of Quality Control Procedures for Validation of Oceanographic Data
Monitoring QA	JGOFSL1	Joint Global Ocean Flux Study core measurement protocols
Monitoring QA	QUASIMEM	Quality Assurance of Information for Marine Environmental Monitoring in Europe
Monitoring QA	National	National standard (specify)
Monitoring QA	Other	Other standard (specify)
Monitoring QA	Unknown	Unknown
Monitoring QC	DelayedValidation	Delayed mode validation on the data
Monitoring QC	NoValidation	No validation on the data
Monitoring QC	Real&DelayedValidation	Real-time plus delayed mode validation on the data
Monitoring QC	RealValidation	Real-time validation on the data
Monitoring QC	Other QC	Other type of QC (specify)
Monitoring QC	Unknown	Unknown
Monitoring frequency	6-yearly	Every 6 years
Monitoring frequency	3-yearly	Every 3 years
Monitoring frequency	2-yearly	Every 2 years
Monitoring frequency	Yearly	Yearly
Monitoring frequency	6-monthly	6-monthly

List	List_Short_Name	List_Long_Name
Monitoring frequency	3-monthly	3-monthly
Monitoring frequency	Monthly	Monthly
Monitoring frequency	2-weekly	2-weekly
Monitoring frequency	Weekly	Weekly
Monitoring frequency	Daily	Daily
Monitoring frequency	Hourly	Hourly
Monitoring frequency	Continually	Continually
Monitoring frequency	One-off	One-off
Monitoring frequency	As needed	As needed
Monitoring frequency	Other	Other (specify)
Monitoring frequency	Unknown	Unknown
Monitoring data aggregation scale	Subregion	Subregion
Monitoring data aggregation scale	Region	Region
Monitoring data aggregation scale	EU	EU
Monitoring data aggregation scale	Other	Other (specify)
Monitoring data aggregation scale	Unknown	Unknown
Data type	UnprocessedData	Unprocessed/raw data
Data type	ProcessedData	Processed data sets
Data type	DataProducts	Data products
Data type	Modelled data	Simulated (modelled) data
Data access mechanism	URLview	Providing URL to view data
Data access mechanism	URLdownload	Providing URL to download data
Data access mechanism	Location national DC	Provide location of data in national data centre
Data access mechanism	Location international DC	Provide location of data in international data centre (e.g. RSC, ICES, EEA, EMODnet)
Data access rights	Open	Open access
Data access rights	Moratorium	Moratorium
Data access rights	RestrictedGeneral	Restricted by general licence
Data access rights	RestrictedSpecific	Restricted by specific licence
Data access rights	Not available	Data will not be available
INSPIRE standard	Hydrography	Hydrography
INSPIRE standard	ProtectedSites	Protected sites
INSPIRE standard	AquacultureFacilities	Agriculture and aquaculture facilities
INSPIRE standard	ManagementZonesReportingUnits	Area management/restriction/regulation zones and reporting units
INSPIRE standard	EnvMonitoringFacilities	Environmental monitoring facilities
INSPIRE standard	Geology	Geology
INSPIRE standard	HabitatsBiotopes	Habitats and biotopes
INSPIRE standard	LandCover	Land cover
INSPIRE standard	LandUse	Land use
INSPIRE standard	OceanographicFeatures	Oceanographic geographical features
INSPIRE standard	SeaRegions	Sea regions
INSPIRE standard	SpeciesDistribution	Species distribution

Monitoring parameters:

List	List_subgroup	List_long_name
State/impact	Species distribution	Species distributional range/pattern
State/impact	Species distribution	Migration patterns
State/impact	Species population size	Population size (abundance)
State/impact	Species population size	Population size (biomass)
State/impact	Species population characteristics	Size of individuals (length or weight)
State/impact	Species population characteristics	Sex
State/impact	Species population characteristics	Age at maturity
State/impact	Species population characteristics	Diet
State/impact	Species population characteristics	Life history stage (e.g. egg, juvenile, adult)
State/impact	Species population characteristics	Reproduction rate
State/impact	Species population characteristics	Survival rate
State/impact	Species population characteristics	Mortality rate
State/impact	Species impacts	Composition and number of retained/landed catch
State/impact	Species impacts	Composition and number of discards
State/impact	Species impacts	Composition and number of incidental/by-catch
State/impact	Species impacts	Mortality/injury rates by a pressure (e.g. ship strikes, litter entanglement, noise)
State/impact	Species impacts	Predation rates on eggs, juveniles and/or adults
State/impact	Species impacts	Disturbance rates by human activities
State/impact	Species impacts	Alterations to habitat (e.g. to breeding areas)
State/impact	Habitat distribution	Habitat distributional range/pattern
State/impact	Habitat extent	Areal extent of habitat
State/impact	Habitat extent	Area of dead biota (e.g. rhizomes or dead "matte" of <i>Posidonia</i> meadows, dead maerl or coral)
State/impact	Habitat condition-physical/chemical	Temperature
State/impact	Habitat condition-physical/chemical	Salinity
State/impact	Habitat condition-physical/chemical	Tidal range/level
State/impact	Habitat condition-physical/chemical	Current velocity
State/impact	Habitat condition-physical/chemical	Wave action
State/impact	Habitat condition-physical/chemical	Concentration of oxygen
State/impact	Habitat condition-physical/chemical	Transparency / turbidity of water column
State/impact	Habitat condition-physical/chemical	pH
State/impact	Habitat condition-physical/chemical	pCO ² - alkalinity
State/impact	Habitat condition-physical/chemical	Marine climatology
State/impact	Habitat condition-physical/chemical	Bathymetric depth
State/impact	Habitat condition-physical/chemical	Physical structure of habitat (e.g. sediment characteristics, topographic structure)
State/impact	Habitat condition-physical/chemical	Hydrological conditions of habitat
State/impact	Habitat condition-physical/chemical	Freshwater input rates from rivers
State/impact	Habitat condition-biological	Species present (whole community or selected species only)
State/impact	Habitat condition-biological	Species abundance (numbers or cover)
State/impact	Habitat condition-biological	Species abundance (biomass)
State/impact	Habitat condition-biological	Concentration of Chlorophyll a

List	List_subgroup	List_long_name
State/impact	Habitat condition-biological	Proportion of habitat covered by habitat-defining species (e.g. a seagrass, biogenic reef-forming species)
State/impact	Habitat condition-biological	Stability of edges to community (e.g. of seagrass, biogenic reefs)
State/impact	Habitat impacts	Mortality/damage rates to species from a pressure
State/impact	Habitat impacts	Extent of man-made/artificial habitat
Pressures	Pressure input	Input level of chemical/nutrient/pollutant from atmosphere
Pressures	Pressure input	Input level of chemical/nutrient/pollutant from land-based sources
Pressures	Pressure input	Input level of chemical/nutrient/pollutant from sea-based sources
Pressures	Pressure output	Spatial distribution/extent of pressure
Pressures	Pressure output	Concentration of chemical/nutrient/pollutant in biota
Pressures	Pressure output	Concentration of chemical/nutrient/pollutant in water column
Pressures	Pressure output	Concentration of chemical/nutrient/pollutant in/on seabed substrate
Pressures	Pressure output	Quantity and type of non-indigenous species
Pressures	Pressure output	Quantity and type of microbial pathogens
Pressures	Pressure output	Quantity and type of litter items
Pressures	Pressure output	Quantity and type of micro-particles
Pressures	Pressure output	Quantity and type of litter in animal stomachs
Pressures	Pressure output	Intensity and temporal frequency of underwater noise
Activity	Activity	Spatial distribution/extent of activity
Activity	Activity	Intensity of activity
Activity	Activity	Temporal changes in activity
Activity	Activity	Type of activity (within broad category of, e.g. fisheries, tourism/recreation)
Other	Other	Other parameter

Annex 3: Indicative list of MSFD monitoring sub-programmes

An indicative list of sub-programmes is provided here to promote consistency between Member States in the structure and level of detail of reporting at the sub-programme level. This will help to support (sub)regional coordination and regional/inter-regional comparability and is also relevant for ensuring that decentralised documentation is structured in a manner that allows linking up with the information required at sub-programme level.

The list has been developed based on input by several Member States and from the HELCOM and OSPAR Conventions on how monitoring is organised in practice.

The set of sub-programmes is indicative only; some Member States have already developed alternative approaches to organising their reporting on monitoring.

Note the following:

- a. The sub-programmes are formulated in a generic way and should thus have wide applicability across the regions; the titles could be made more specific if required via the Sub-programme ID (Q4g);
- b. The list is unlikely to be definitive and Member States can add further sub-programmes as needed;
- c. Not all sub-programmes are relevant for every Member State;
- d. In some cases, Member States may wish to define several sub-programmes within the ones listed – perhaps to reflect different target elements (functional groups/species/habitats), differing areas/intensity of monitoring (e.g. MPAs, outside) or differing methods or internal organisation (e.g. inshore by a Member State agency, offshore through international programme);
- e. As the list is intended to provide structure to the reporting to assist comparison and cooperation across Member States it is not recommended that several sub-programmes are aggregated, unless the aggregation is proposed and agreed by Member States in a region (e.g. via a Regional Sea Convention).

The list of sub-programmes below has been categorised according to the main purpose of the monitoring, the main elements and parameters monitored and the relevant GES Descriptors and criteria. The relevant questions in the Reporting Sheet for these are given.

Sub-programmes	Purpose	Elements/features monitored		Parameter(s)	Descriptor	Criteria
Q4g	Q4k	Q 9a Broad categories only noted here		Q9b Typical parameters measured	Indicative only	
Mobile species - abundance and/or biomass	State/impacts	Highly mobile species	Species groups/function al groups or individual species of: Birds, mammals, reptiles, fish (including commercial species), cephalopods	Species composition Species abundance (numbers of individuals and/or biomass) Species distribution (location)	D1, D2, D3, D4	1.1, 1.2, 2.1, 4.1, 4.3
Mobile species - population characteristics				Body size (length, weight), age, sex, fecundity rate, survival rate, mortality rate	D1, D3, D4	1.3, 3.2, 3.3, 4.2
Mobile species - health status					D8	8.2
Mobile species - state of habitats				Habitat for the species (extent, suitability)	D1, D3	
Mobile species - mortality/injury rates from fisheries (targeted and/or incidental)				Rates of mortality, injury or other adverse effects from anthropogenic activities	D1, D3	1.2, 3.1
Mobile species - mortality/injury rates from other human activities					D1, D10	1.2, 10.2
Seabed habitats - distribution and extent		Seabed habitats/ sea-floor	Seabed habitats (incl. habitat-forming species and biogenic reefs)	Habitat distribution Habitat extent (mapping) - for single (targeted) habitat(s), or for all habitats Habitat volume	D1, (D4), D6, D7	1.4, 1.5, 6.1
Seabed habitats - physical/chemical characteristics				Substrate type/structure, topography, bathymetry, organics, oxygen levels	D1, (D4), D5, D6, D7	1.6, 5.3, 6.1, 7.2
Seabed habitats - community characteristics				Species composition, abundance (numbers of individuals or coverage of seabed), including species extracted by fishing	D1, D2, (D4), D5, D6	1.6, 2.2, 3.1, 5.2, 5.3, 6.1, 6.2, 7.2
Benthic species - abundance and/or biomass					D8	8.2
Benthic species - health status						
Water column - physical characteristics		Water column	Oceanography - physical	Temperature, salinity, turbidity, transparency	D5, D7	5.2, 7.1
Ice cover				Ice cover, duration, thickness		
Water column - hydrological characteristics				Wave action, currents, sea level	D7	7.1
Water column - chemical characteristics			Oceanography - chemical	Nutrients, O ₂ , pH/pCO ₂	D5	5.3

Sub-programmes	Purpose	Elements/features monitored		Parameter(s)	Descriptor	Criteria
Q4g	Q4k	Q 9a Broad categories only noted here		Q9b Typical parameters measured	Indicative only	
Pelagic habitats - community characteristics			Oceanography - biological (phytoplankton, zooplankton)	Species composition, abundance and/or biomass	D1, D2, D4, D5	1.6, 2.2, 5.2
Plankton blooms (biomass, frequency)				Chlorophyll a levels, bloom frequency/extent	D4, D5	4.1, 4.3, 5.2
Non-indigenous species inputs - from specific sources	Pressures	Level of pressure <u>at source</u>	Nutrients, Litter, [noise], contaminants, [pathogens], non-indigenous species	Input quantity per area per time	D2	
Nutrient inputs - land-based sources					D5	
Nutrient inputs - from atmosphere					D5	
Nutrient inputs - sea-based sources					D5	
Contaminant inputs - from atmosphere					D8	
Contaminant inputs - land-based sources					D8	
Contaminant inputs - sea-based sources					D8	
Contaminant inputs - sea-based acute events, incl. oil spills					D8	8.2
Litter inputs - land-based (riverine) sources					D10	
Non-indigenous species - abundance and/or biomass		Level of pressure <u>in marine environment</u>	Nutrients, Litter, noise, contaminants, pathogens, physical loss, physical damage, [extraction of species incl. by-catch]	Distribution/extent in space and time, concentration	D2	2.1
Nutrient levels - in water column					D5	5.1
Physical loss - distribution and extent (from e.g. infrastructure, coastal protection)					D6	6.1
Physical disturbance - from bottom trawling					D6	6.1
Physical disturbance - from dredging and disposal of dredged material					D6, (D8)	6.1, (8.1)
Physical disturbance - from sand and gravel extraction					D6	6.1
Contaminant levels - in water/sediment					D8	8.1
Contaminant levels - in species, including seafood					D8, D9	8.1, 9.1
Microbial pathogen levels - in water column (bathing waters)						
Microbial pathogen levels - in biota (seafood)						
Litter - characteristics and abundance/volume					D10	10.1
Litter microparticles - abundance/volume					D10	10.1
Acute underwater noise - distribution, frequency and levels					D11	11.1
Diffuse underwater noise - distribution, frequency and levels					D11	11.2

Sub-programmes	Purpose	Elements/features monitored		Parameter(s)	Descriptor	Criteria
Q4g	Q4k	Q 9a Broad categories only noted here		Q9b Typical parameters measured	Indicative only	
Activities extracting living resources (fisheries including recreational, maerl, seaweed)	Activities	Activity	See list for 2012 reporting	Distribution/extent in space and time, intensity	All	All
Activities extracting non-living resources (sand, gravel, dredging)						
Activities extracting non-living resources (desalination)						
Activities producing food (aquaculture)						
Activities with permanent infrastructures (e.g. renewable energy, oil & gas, ports) or structural changes (e.g. coastal defences)						
Sea-based mobile activities (shipping, boating)						
Coastal human activities (e.g. tourism, recreational sports, ecotourism)						
Land-based activities						
Effectiveness of measures	Measures	Measures	Existing measures		All	All