OSPAR COMMISSION

Protecting and conserving the North-East Atlantic and its resources

OSPAR Joint Assessment and Monitoring Programme (JAMP) 2014 – 2021

(Agreement 2014-02)[1]

[1] Replaces Agreement 2010-04. Update 2016

INTRODUCTION

1. Monitoring and assessment, based on scientific knowledge, of the seas is the indispensable basis for the management of human activities in our seas. This programme describes the strategy, themes and products that OSPAR Contracting Parties are committed to deliver, through collaborative efforts in OSPAR, over the period 2014-2021 with reference to the relevant provisions of:

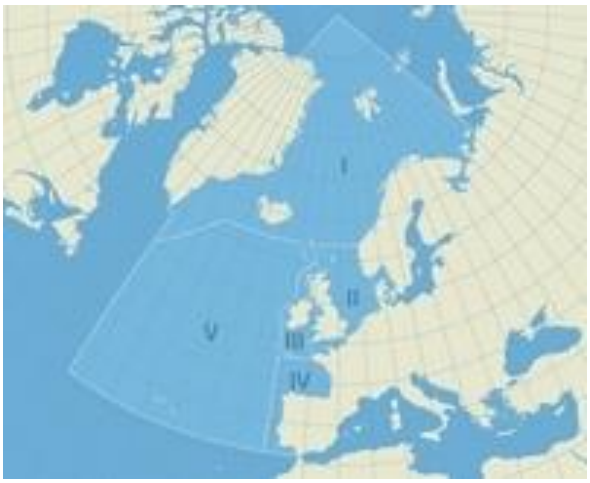
- the OSPAR Convention (Art. 6 and Annex IV, and Art. 8), in particular as support for the implementation of the OSPAR North-East Atlantic Environment Strategy ('OSPAR Strategy');
- the EU Marine Strategy Framework Directive (MSFD, Directive 2008/56/EC)[2].

2. This programme follows and replaces the JAMP 2010-2014 which was adopted at the OSPAR Ministerial meeting in Bergen, September 2010[3] and is focused around the delivery of the Intermediate Assessment 2017 and the next OSPAR Quality Status Report (QSR21).

3. The Programme is described in two sections. Section I sets out the broad strategy and generally applicable provisions. Section II starts with the Theme 'Ecosystem Approach and cross-cutting issues' and then covers monitoring and assessment in relation to OSPAR's thematic strategies.

4. Since 1994 the OSPAR maritime area has been divided into five regions for assessment purposes:

Region I – Arctic Waters
Region II – Greater North Sea
Region III – Celtic Seas
Region IV – Bay of Biscay and Iberian Coast
Region V – Wider Atlantic



[2] Acknowledging that Contracting Parties which are EU Member States are bound by provisions relating to regional cooperation (MSFD Art.6; including, for this programme, in the sphere of monitoring and assessment), whereas other Contracting Parties agreed in the Bergen Statement to facilitate this regional coordination, and they continue to take part in relevant OSPAR monitoring and assessment activities.

[3] This programme is the programme referred to in OSPAR Recommendation 2014/18.

SECTION I: STRATEGY

A. Objectives

5. The long-term objectives of the JAMP are to provide the strategic direction to:

   a. the preparation of integrated environmental assessments[4] of the status of the marine environment of the OSPAR maritime area or its regions, including the exploration of new or emerging problems in the marine environment of the North East Atlantic;

   b. the preparation of assessments of the implementation of the North East Atlantic Environment Strategy, based on the assessment of the effects of relevant measures (including OSPAR measures) on the improvement of the quality of the marine environment. These assessments will help inform the development and implementation of further measures to protect the marine environment where required;

6. The main operational objectives of the JAMP for the period 2014-2021 are:

   a. the implementation and further development of existing OSPAR monitoring programmes and, where necessary, the development of additional coordinated monitoring programmes. OSPAR monitoring needs to respond to relevant assessment requirements (see Annex 1). These requirements include the MSFD criteria, methodological standards and indicators used by Contracting Parties for the assessment of environmental status and the pressures and impacts of human activities.

   b. the development of tools and the collection of further data and information required for the delivery of integrated environmental assessments of the marine environment in the OSPAR maritime area or its regions;

   c. the development of new tools to support the understanding of emerging issues in the marine environment;

   d. the publication of an Intermediate Assessment in 2017;

   e. the publication of a Quality Status Report in 2021.

B. Guiding principles

7. As detailed further in **Annex 1**, the JAMP establishes a clear progression between data and information collection and management to assessment and decision-making. This requires:

- the definition of clear questions about important changes and cause-effect relationships;
- monitoring programmes that are scientifically and operationally robust and fit for purpose;
- a focus on the opportunities to strengthen internationally coordinated monitoring to allow assessment at the appropriate geographic scale;
- high quality data management under the OSPAR Data and Information Management System (ODIMS) to deliver high quality outputs that are accessible to a wide range of users;
- the preparation of environmental assessments of the marine environment of the OSPAR maritime area or its regions;
- where appropriate, the use of information from other sources.

[4] For the purpose of this document the term integrated environmental assessment refers to assessments that link human activities, their pressures, the state of the marine environment and management responses with the inclusion of the relevant physics, chemistry and/or biology.

Enabling conditions

8. Adherence to agreed methodologies – The monitoring data and information generated by OSPAR through its co-ordinated environmental monitoring activities form the basis for assessment of the state of the OSPAR maritime area. Data and information gathered in accordance with agreed OSPAR guidelines and procedures will be comparable across the length and breadth of the OSPAR maritime area.

9. Economy of OSPAR effort and burden sharing between the Contracting Parties – Monitoring and assessment activities carry direct costs to Contracting Parties, so must provide value. OSPAR aims to enable the use of Contracting Parties' monitoring resources as efficiently as possible. In the context of the MSFD, coordinated regional monitoring requires equitable burden sharing and joint work by Contracting Parties, from which all benefit. The benefits of a coordinated programme are that a larger scale assessment is possible, relevant both for the MSFD (e.g. Greater North Sea/North-East Atlantic) and for some marine ecosystems. In the long term coordination is expected to increase cost-effectiveness.

10. Liaison with other initiatives, synergy and optimisation – Contracting Parties should seek to increase the synergy and collaboration with other programmes and organisations, both inter-governmental and non-governmental, and at the appropriate geographic scales including neighbouring marine regions. The application of the ecosystem approach is being taken forward in a regional specific way in each of the regional seas around Europe, and there are strong benefits from (a) cooperation between OSPAR and other organisations; and (b) avoiding duplication of work. OSPAR is in particular interested in the results of work under the International Council for the Exploration of the Sea (ICES), the Helsinki Convention (HELCOM), the Barcelona Convention (UNEP-MAP), the Arctic Council (PAME, AMAP, ...) and the regional fisheries organisations in the North-East Atlantic (NEAFC, NASCO,...) as well as of global bodies dealing with marine environmental questions (IMO, ISA, ...). OSPAR will also work synergistically with technical development activities under the MSFD Common Implementation Strategy. In addition, there is a need to make use of data collected under EU Framework programmes for research, technological development and demonstration and other marine monitoring undertaken across the North-East Atlantic for a variety of purposes. In this context, access should be secured to additional quality assured data sets that can contribute to OSPAR assessments. A risk-based approach to monitoring may also help to exploit available resources more efficiently.

11. Data and information management to secure their long-term value – Information and data collected under the JAMP need to be collected and kept in an appropriate form (e.g. with the required metadata) so that they continue to maintain their value to the OSPAR community. - see next Section.

Accessible and useful outputs from the JAMP, with support from the OSPAR Data and Information Management System (ODIMS)

12. OSPAR aims to give more visibility and accessibility to the products of its monitoring and assessment work. Under the OSPAR Communication Strategy, JAMP products should be made available to inform the professionals dealing with marine environment issues (and potentially other wider target audiences including the interested public).

13. The considerable amounts of data and information continuously generated on the state of the North-East Atlantic can cover several decades and represent an important asset. The OSPAR Data and Information Management System (ODIMS), to be developed during the programme period, will be an essential tool. It should enable further improvements in the management, use and communication of data and information, in particular to support the preparation of the JAMP high-level outputs (Intermediate Assessment in 2017 and QSR in 2021) and other target products. It should render OSPAR data and information interoperable with other data and reporting initiatives e.g. under EU WISE-Marine.

14. Monitoring and assessment supporting policy, guided by policy – The assessment output of the JAMP is intended to inform and guide the development of policy for the protection and conservation of the

marine environment of the North-East Atlantic. Assessments at larger scales than the national are highly relevant given the dynamics of our seas, the transport of pollutants and the complex nature of marine ecosystems. They demonstrate the need for policy coordination and collaboration. Dialogue across the 'science-policy interface' is important to improve the relevance of OSPAR monitoring and assessment work. Assessment products should respond to feedback from Contracting Parties that reflect the needs of policy. OSPAR JAMP products should be accessible and highly useful to policy makers and a wider target audience.

Supporting an operational ecosystem approach

15. The JAMP needs to support the move towards a more operational application of the ecosystem approach. The core of this is an improved scientific understanding of the marine environment to contribute to the periodic review of policy objectives and associated targets and indicators. The JAMP should also enhance the societal relevance of assessments by incorporating socio-economic considerations. In this context the JAMP should support the development of:

a. indicators – an improved and comprehensive set of indicators building on the existing ecological quality objectives (EcoQOs) and Common Indicators to enable assessment against OSPAR's objective of a clean, healthy, biologically diverse and productive North-East Atlantic, used sustainably;

b. ecosystem assessment methodologies – building on OSPAR's existing approaches for thematic assessments, such methodologies should include a consideration of relevant ecosystem components and their interactions. Assessment criteria (especially for species) should take into account regional differences and spatial scales. To this effect, appropriate aggregation and integration techniques need to be developed;

c. relevant collection of socio-economic data that are supportive of OSPAR assessments – Socio-economic data are becoming increasingly relevant in support of assessment work. OSPAR's focus is on the sharing of data for concrete subjects, for instance related to impact assessment for regional action plans, etc.

d. integrated environmental assessments – the aim of these is to assess the environmental status of our seas, paying specific attention to the components described in the EcoQOs, Common Indicators and requirements of the other assessments undertaken by Contracting Parties.

Providing coordination under the EU Marine Strategy Framework Directive (MSFD)

16. It is particularly important that synergy is achieved between the activities under the JAMP and the equivalent requirements of the MSFD and other EU Directives (e.g. Water Framework Directive (WFD) and the Habitats and Birds Directives). Given that the overall objectives of the JAMP and monitoring for EU Directives are similar, there is an opportunity to maximise outcomes of Contracting Parties' monitoring programmes. The principal requirements under the MSFD that the JAMP is intended to assist during the period 2014-2021 are related to the Directive's articles 8, 9 10 and 11 and their updating after 6 years in the 2nd MSFD implementation cycle (Art. 17):

(1) the (initial) assessment;

(2) the determination of a set of characteristics for good environmental status (GES), in respect of each marine region or sub-region concerned;

(3) the establishment of a comprehensive set of environmental targets and associated indicators for their marine waters, in respect of each marine region or sub-region, so as to guide progress towards achieving GES;

(4) establishment and implementation of a coordinated monitoring programme for on-going assessment of the environmental status of their marine waters;

(5) facilitating access and use of data and information resulting from the coordinated assessment activities of Contracting Parties that are EU Member States (Art 19).

17. In this context, the JAMP will provide the basis for the coordination of the monitoring and assessment by EU Member States in respect of the MSFD within the same marine region or sub-Region. It will deliver assessments that are comparable between them at the same geographic scale so that while the assessment covers an appropriate geographic scale the data can be used also for national needs. Coordination activities within the frame of the JAMP include:

a. joint development of methodologies and tools – based on exchange of information by Contracting Parties;

b. joint implementation of these methodologies – using risk-based principles, across relevant geographic scales ensuring appropriate data quality and calibration between the different monitoring authorities and institutions;

c. joint reporting – in a way that clearly permits individual countries to identify the issues for their waters and to assess whether or not the programme of measures of a specific Contracting Party has helped to deliver the anticipated changes within and beyond their marine waters. JAMP products should be developed so that they can be used and referred to in relevant Contracting Parties formal reporting under the MSFD.

18. In addition to §16 above, during the period covered by this JAMP, EU Member States will also prepare the programmes of measures under the MSFD (2015 and update in 2021), regionally coordinated, where appropriate, including joint reporting. These may have implications for JAMP review and revision.

Flexibility

19. OSPAR will respond to the evolving needs of Contracting Parties by reviewing the JAMP on an annual basis to ensure that the coordinated monitoring and assessment programmes are delivering the planned outcomes. CoG can revise the JAMP as and when necessary.

Character of the main JAMP products described in Section II

20. Noting that the actual 'monitoring' is an activity undertaken by Contracting Parties, the JAMP products can be divided mainly into three groups:

Assessments

1. assessment sheets[5], especially taking into account the common indicators (agreed by OSPAR 2013 and reviewed annually);

2. other topical assessments based on regular OSPAR data and information collection, and based on assessment procedures established previously under OSPAR;

3. thematic and/or more integrated assessment reports such as Quality Status Reports; during JAMP 2014 – 2021 this will include the Intermediate Assessment 2017 (IA2017) and will culminate in the production of a Quality Status Report in 2021;

Monitoring and data management tools, assessment frameworks and tools

4. infrastructure, developed under OSPAR's data and information strategy, that facilitate the shared use of data and information, such as databases, metadata catalogues;

5. descriptions of assessment procedures covering the various OSPAR Strategies;

6. guidelines, quality assurance procedures, data reporting and management procedures;

[5] See OSPAR 2012 agreement on OSPAR Assessment Sheets and Fact Sheets (OSPAR 12/4/3).

7. developments required for any new areas of monitoring (such as associated with the MSFD, e.g. litter and noise or as may arise from identification of new pressures);

8. approaches to incorporate socio-economic data for concrete subjects that are considered to fall under the JAMP;

Operational monitoring and information collection programmes

9.a the continuation and/or development of existing OSPAR monitoring programmes overseen by the relevant OSPAR Committee, within their Terms of Reference;

9.b the development of new monitoring and information collection programmes where required (and especially for the delivery of the common indicators) and future programmes of measures;

10. agreement where data and information for an intended OSPAR product will need to be sourced from external sources, and how the OSPAR Committee intends to achieve this, including on socio-economic aspects.

21. Annex 1 gives further details of the links between those components of the framework established within this JAMP. It provides guidance for the consistent and coherent development of monitoring and assessment in order to ensure the quality of the results and an optimal use of the resources made available by the Contracting Parties.

C. Monitoring programmes under the JAMP 2014 - 2021

22. All marine environmental monitoring will be covered under a single OSPAR coordinated environmental monitoring programme. This implies that the existing Coordinated Environmental Monitoring Programme (CEMP) will be revised so that the generally applicable parts become the responsibility of the Coordination Group (CoG) and the issues addressed (currently: hazardous substances (CEMP and pre-CEMP), eutrophication (Eutrophication Monitoring Programme as part of CEMP), ocean acidification (pre-CEMP) and litter (pre-CEMP)) become the management responsibility of the respective thematic Committee (or CoG, e.g. for ocean acidification). This will also require additional monitoring arrangements to be added to the OSPAR Coordinated Environmental Monitoring Programme, e.g. the existing monitoring programme for concentrations of radioactive substances in the marine environment and the developing biodiversity monitoring programme, as well as new initiatives to develop coordinated OSPAR monitoring for underwater noise and marine litter. When setting up and executing this Coordinated Monitoring Programme, all elements of the checklist as at § 16 of Annex 1 should be taken into account.

Section II – The Themes and the target output

1. Section I above forms the basis for the overall programme management by the OSPAR Coordination Group (CoG) in close collaboration with the other main Committees. This Section II is divided into themes, with Theme A under the overall responsibility of CoG, and Theme B under joint responsibility of the Biodiversity Committee (BDC) and the Environmental Impact of Human Activities Committee (EIHA). Themes E, H, O and R fall under the responsibility of the Hazardous Substances and Eutrophication Committee (HASEC, E and H), the Offshore Industry Committee (OIC, O) and the Radioactive Substances Committee (RSC, R) respectively.

2. Under each theme, the main issues are set out as objectives of monitoring and assessment, followed by the target products based on proposals, provided in 2013-14, from the relevant Committees.

Theme A: Ecosystem Approach and cross-cutting issues

Objective of monitoring and assessment

3. Annex IV of the OSPAR Convention embraces all aspects of the health of the marine environment. To fulfil the requirements of Annex IV, some broad questions must be answered:

a. What is the overall quality status of the OSPAR maritime area, and is it changing?

b. How can we distinguish between anthropogenic effects and natural background variations in the marine environment and its biological communities?

c. What changes in the OSPAR maritime area can be attributed to long-term climate change?

d. What are the future threats to the marine environment and can improvements be made to our ability to foresee them?

e. How can ecosystem health be assessed in order to determine the extent of human impact (including by using socio-economic data and information)?

4. Work under this theme is therefore concerned with integrating the work under the other themes into a wider perspective, alongside more general studies of the seas that are being done in other programmes, both within OSPAR and elsewhere. It will draw on a wide range of sources, but will not itself generate specific major programmes for generating information. This theme will also cover the work needed to ensure the overall coherence, consistency and comprehensiveness of the JAMP, with a view to maintaining scientific standards.

Overview of products for Theme A: Ecosystem Approach and cross-cutting issues

Ref.	**Product name and short description –** ***For products where there is no further table in this Section, the Coordination Group should develop the planning further.***	**Delivery**
Ref.	Product name and short description – *For products where there is no further table in this Section, the Coordination Group should develop the planning further.*	Delivery
A-1	Intermediate Assessment 2017 OSPAR will prepare an Intermediate Assessment in 2017 (IA2017). This will support the regional coordination by Contracting Parties of the update to their MSFD assessments due in 2018. This assessment will build in the first place on Assessment Sheets reporting the results for identified OSPAR 'common indicators' (and possibly, priority candidate indicators). IA2017 aims to lessen burdens and costs for Contracting Parties that are EU Member States in delivering the MSFD requirements, will serve OSPAR JAMP/QSR needs and serve non-EU states in their national marine status and human marine pressure assessments. It will consider data from the most recent monitoring (where possible up to the end of 2016). The use of prioritised	2017

	candidate indicators will be part of IA2017 if sufficient information is available to describe the status in one or more of the five OSPAR regions, and will afford an opportunity for the trialling of such indicators For EU reporting purposes, the final technical version of the Intermediate Assessment 2017 (and any associated underlying datasets, metadata, ...) will be such that the product is suitable for use by Contracting Parties in EU reporting by [mid-2018].	
A-2	Quality Status Report 2021 (QSR21) OSPAR will prepare a Quality Status Report in 2021 (QSR21; see also product A-10) which will ensure that the assessment of the environmental status of the North-East Atlantic is updated to inform the further work under the Convention. This QSR will aim in particular to assess the achievement of the objectives of the OSPAR North-East Atlantic Environment Strategy. The QSR21 will also report on the further development and implementation of common indicators, based on the outputs of IA2017 and developments since IA2017 was published, with a continuing emphasis on requirements to achieve 'Good Environmental Status' by 2020. The QSR21 will aim to exemplify OSPAR's ambitions for a comprehensive approach to marine environmental assessment and drive the implementation of the ecosystem approach. There may be opportunities to develop a 'state of the art' integrated regional assessment in delivering this. The QSR21 will identify whether there are new or emerging threats to the marine environment of the North-East Atlantic and set out a basis for a follow-up to the North East Atlantic Strategy. These main assessments are established to inform the debate on the development of further appropriate measures to manage human marine activities, taking account of existing measures. The QSR21 will also assess the changing uses of the marine environment and the increasing application of marine planning, especially in the coastal zone, to deliver a sustainable marine environment both at the local scale and at greater geographical scales	2021
A-3	Assessment of climate change impacts in the marine environment, including where possible climate change aspects addressed in thematic assessments	To be determined further in CoG and Committees.
A-4	Ocean acidification assessment framework including where possible assessment criteria	2015
A-5	Assessment of the data on uses of the marine environment and costs of degradation (in cases of collaborative OSPAR action)	2016 and 2020
A-6	Cumulative Effects Assessment (CEA):	2016 and 2020
	A6a - complete CEA Marine Spatial Planning (MSP) pilot project	2015
	A6b - state of development of CEA, or 'cases study' within OSPAR	2017
	A6c - Final results of OSPAR CEA Project	2019
	A6d - CEA component to the QSR21	2021
A-7	Ocean acidification assessment and monitoring strategy for OSPAR	subject to CoG agreeing on proposal(s) from SGOA[6]
A-8	OSPAR Data and Information Management System (ODIMS)	on-going
A-9	OSPAR Science Agenda The OSPAR Commission established the initial version of its Science Agenda in 2014 as a separate instrument and intends to seek partnerships and stimulate progress on the items included. This will contribute to improving the science-policy interface within the workings of the OSPAR Commission and the EU MSFD Common Implementation Strategy.	2014- and updates
A-10	Agreement on the methodology to be used for the ecosystem assessment to be used in QSR21	2018

[6] Joint OSPAR-ICES Study Group on Ocean Acidification with terms of reference to work from 2012 to 2014.

CoG	Theme A: Ecosystem approach and cross-cutting issues	Product A-1

Product name: Intermediate Assessment 2017

Aim and objectives: IA2017 will provide an update on progress in delivering the OSPAR North-East Atlantic Environment Strategy. As an intermediate assessment it will serve OSPAR JAMP/QSR and MSFD needs ('multipurpose') prior to the next full Quality Status Report planned for 2021.

A key purpose of IA2017 is to support EU Member States at a N-E Atlantic regional sea level in delivering the 2018 update of their initial assessments under the MSFD and serve non-EU states in their national assessments. As such, the IA2017 will address the requirements for assessments of environmental status under development in the MSFD CIS process.

The implementation of both the OSPAR Strategy and the MSFD has made the science requirements more specific. The IA2017 will be based on the OSPAR common indicators, and assessment sheets established for them, by MSFD descriptor, and will consider the data from the most recent monitoring (where possible, up to the end of 2016). As a stepping stone to QSR21, the IA2017 will also provide a review of the status of the development and implementation of the common indicators at the North-East Atlantic and regional/subregional scales. This should also identify where there is a need to consider further action. Gaps in the coverage of the main ecosystem components, the range of relevant pressures and its suitability for assessing ecosystem functioning and cumulative effects will also be reported such that monitoring and research agendas will be informed. When it is (a) relevant for MSFD assessment updating; and/or (b) relevant as progress information regarding the OSPAR Strategy objectives, content from thematic assessment will be included (see 'relies on' set of assessments). IA2017 will also interweave socio-economic assessments where appropriate.

IA2017 will include a simple and high level summary clearly putting the information into context.

CoG will decide by 2016 whether there is merit in reflecting methodological advances in the assessment of cumulative effects and the use of socio-economic data, e.g. with successful case studies.

A key consideration, which should govern both the nature, length and structure of the IA2017 as well as the indicators and thematic assessments to be covered, will be that Contracting Parties are able to use the information from IA2017 in preparing and reporting on the review and update of their MSFD Art. 8 assessments and any associated reporting sheets which the MSFD CIS develops. IA2017 should also demonstrate OSPAR's formal role as a coordination vehicle under the MSFD. Finally the assessment should consider development of cumulative effects methodology, including the incorporation of common indicators with a possible limited example. A chapter describing development of the ecosystem approach should be included, but an ecosystem assessment itself would not be conducted until QSR2021.

The development of IA2017 will, as far as possible, be relevant and coherent with parallel work by the other European Regional Seas Commissions within which OSPAR Contracting Parties are working (i.e. HELCOM, Barcelona Commission/MAP).

Relies on:	**Contributes to:**
Indicator assessment sheets (products B-1, B-2, B-10, E-12, H-11, H-14) Thematic assessments (products A-5, A-6, B-6, B-11, E-13, O-1, O-2, O-3, O-4, R-1)	

Target dates: Publication at the time of OSPAR 2017

Responsible for activity: CoG

Background: OSPAR has produced periodic assessments of the status of the North-East Atlantic for many years. Quality Status Report 2010 (QSR 2010) was the most recent of these. There is a changing landscape with the introduction of the Marine Strategy Framework Directive (MSFD) as well as OSPAR presenting a clearer vision through the North-East Atlantic Environment Strategy (OSPAR Strategy). In this context there is a need to make future reports multi-functional, such that both the direct OSPAR strategies and the requirements of the MSFD can be met within one report. This objective will first be explored in this IA2017 which will also be the vehicle for reporting on the development, implementation and implications of the outputs from the use of the Common Indicators, some of which will be introduced during the production of IA2017. As such, IA2017 will provide the forum in which to review the progress in delivering metrics that correctly link pressures to state and also provide an indication of the measures required.

Role of Committees The role of the Committees will be to provide relevant assessments (components of the IA2017) for their specific Theme. These will be primarily based on the agreed Common Indicators (including any relevant targets, MSFD boundaries, regional and sub-regional considerations). Where possible, the Committees should provide an assessment of progress in relation to the OSPAR Strategy priorities coupled with other developments to meet the implementation of the ecosystem approach including e.g. updates from the most recent current monitoring data, the EcoQOs, outputs from the Common Indicators and other relevant information. OSPAR intends to include contributions from all Committees where the data/information has matured sufficiently by 2017 and when it is (a) relevant for MSFD assessment updating; and/or (b) relevant as progress information regarding the OSPAR Strategy objectives. This implies that the 2017 deadline (being driven by the MSFD) should not force assessments unrelated to the MSFD to be done in time for 2017.

Three periods correspond to the three annual OSPAR meeting cycles separating the adoption of this JAMP (June 2014) from the

adoption of the Intermediate Assessment in the first half of 2017. The period immediately after the adoption and publication of the Intermediate Assessment (by the OSPAR Commission meeting or according to a mandate decided by the OSPAR Commission) will be used further for ensuring that all materials constituting the Intermediate Assessment 2017 are available in formats that are suitable for EU-level reporting under the MSFD.
The tasks for the Committees and Task Group during each Period are as follows:

- Period from July 2014 to June 2015:

CoG	ICG MAQ	Committees
Review progress based on a report from ICG MAQ	ICG MAQ to prepare a progress report on development of guidance for production of the IA2017, including: a. proposed structure of IA2017, b. proposed content of the IA2017, c. proposed format of the assessment sheets, based on reports received from Committees on implementation of the JAMP, and the publication medium to be used, d. proposed hierarchy of geographic assessment and reporting scales.	Committees to review implementation of monitoring programmes in line with JAMP 2014 – 2021 and provide progress reports to ICG MAQ. This will be part of a developmental process culminating in the delivery of the final product in 2017. The reporting should include Indicator assessment sheets which the Committees are scheduled to produce. The internal reports will be used as an early assessment of progress with the monitoring programmes. Committees to prepare brief progress reports on implementation of the JAMP 2014-2021 (existing and new monitoring programmes etc.) to be submitted to ICG MAQ by April 2015.

- Period from July 2015 until June 2016:

CoG	ICG MAQ	Committees
To decide by end of 2015 whether there is merit in reflecting methodological advances in the assessment of cumulative effects and the use of socio-economic data, e.g. with successful case studies To review progress based on a summary report from ICG MAQ. To finalise the consolidated CEMP.	ICG MAQ prepare a report for CoG(1)2016 on progress and development of the IA2017, including: a. structure and content of IA2017, b. outcomes of any pilot assessments of common indicators, c. progress with 'top' and 'tail' chapters d. collaboration with European Commission, European Environment Agency and other RSCs, e. alignment of EU Art.8 reporting sheets with the IA2017 structure.	Basically repeat previous year's activities with enhanced reporting; specifically, consideration should be given to reporting on the development of indicators and any initial assessments that have been made using these indicators as well as preliminary outcomes of on-going assessments.

- Period from July 2016 until publication of the Intermediate Assessment in the first half of 2017:

CoG	ICG MAQ	Committees
Report to be reviewed by CoG(1)2017 and prepared for submission and sign-off at or on behalf of OSPAR 2017. This to include a mock-up of the final product	ICG MAQ to bring report together at a 1 week workshop in advance of CoG(1)2017	Committees prepare relevant chapters of the IA2017, including assessments of all indicators within their remit, for submission to the ICG MAQ in advance of the 1 week workshop which will precede CoG(1)2017. Committees should include a discussion on the added value of the common indicators from an ecosystem approach perspective.

The period immediately after the adoption and publication of the Intermediate Assessment (until end of 2018 when Contracting Parties report their updated MSFD Art. 8 assessment):

CoG	ICG MAQ	OSPAR Secretariat and contractors
Guide and decide on any principal issues arising from IA2017.	Oversee and trouble-shoot any technical difficulties in the process to make the IA2017 materials available for electronic reporting.	Ensure that all materials constituting the Intermediate Assessment 2017 are available in formats that are suitable for reporting under the MSFD

7. The above will need further consideration around costing, support role of the OSPAR Data and Information System (ODIMS) etc.; this will be addressed in the work of ICG MAQ and CoG.

Product format: The Intermediate Assessment will be an electronic report. It is useful to conclude at an early stage the final form of the report so that the design of which ever format is adopted can be initiated at an early stage in the process.

CoG	Theme A: Ecosystem approach and cross-cutting issues	Product A-4, A-7

Product name: OSPAR Ocean Acidification monitoring and assessment

Aim and objectives: (Specifications of the aim and objectives of OSPAR monitoring and assessment with regard to ocean acidification can be considered to be under development as part of the on-going work)

Relies on: Three reports of the Joint OSPAR-ICES Study Group on Ocean Acidification (SGOA; November 2012, October 2013, October 2014)	**Contributes to:** A-2 (QSR21)

Target dates:

Responsible for activity: CoG
The SGOA is active until October 2014. The OA monitoring strategy from the SGOA report will be examined by Committees and working groups, particularly BDC, HASEC and MIME, to further consider what was needed to develop and implement the strategy. CoG(1) 2016 will set out the next steps and terms of reference for follow-up activity.

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	Ocean acidification assessment framework including where possible assessment criteria	pre-CEMP since 2012 and continuing	under development; partly ICES
2015/2016	Ongoing work at ICES; continuing consideration at OSPAR Committees.	Workshop on Quality Assurance (QA) for inorganic carbon system measurements held February 2016	Ongoing work at ICES
2016/2017	Ocean acidification assessment and monitoring strategy for OSPAR finalised		
2017/2018			
2018/2019			

CoG	Theme A: Ecosystem approach and cross-cutting issues	Product A-5
Product name: Assessment of the data on uses of the marine environment and costs of degradation (in cases of collaborative OSPAR action)		
Objective: Present baseline socio-economic data to aid the assessment of the potential impacts of MSFD and other relevant policy measures		
Relies on: National data		**Contributes to:** IA2017 and QSR21
Target dates: June 2016 and 2020		
Responsible for activity: CoG and ICG ESA		
Current data management: Overview of OSPAR Regional Economic and Social Analysis Data, 2013		

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- possible action to improve data quality, e.g. improve estimations of damage costs - (further work on) consistency (in the application in North-East Atlantic region (NEA) of methodologies		
2015/2016	- review of Contracting Party data on marine uses		
2016/2017	- finalisation of input to the Intermediate Assessment 2017 - manipulation into consistent and comparable format and finalisation of contribution to the Intermediate Assessment 2017		
2017/2018			
2018/2019	- possible action to improve data quality, e.g. improve estimations of damage costs - further conclusions on consistency in the application in NEA of methodologies		
2019/2020	Background Assessment for the QSR21		

CoG	Theme A: Ecosystem approach and cross-cutting issues	Product A-6

Product name: Cumulative Effects Assessment (CEA)

Objective: This product aims to develop and apply methodologies to undertake an assessment of the cumulative pressures on the OSPAR Marine Environment and their effect upon the ecosystem to contribute to QSR21.

Relies on:

- Agreement on what OSPAR defines as cumulative effects, thereby developing a rationale for what is (and is not) included in the assessment;
- A commitment of funds / resources from Contracting Parties
- An acceptance by CPs that this is innovative and that the outcomes cannot be predicted.
- Proactive working between Committees;
- Realistic expectations on what can be achieved with the available data (noting innovative uses of data and modelling are an integral part of this);
- Close working with ICES – in particular working groups on integrated assessment

Contributes to:
QSR21 and MSFD implementation; Work by BDC, OIC, ICG-COBAM, ICG-MSP, ICG-MSFD, ICG-POSH and CoG.

Target dates: 2016 and 2020

Responsible for activity: EIHA (but will require close working with BDC, OIC, HASEC, ICG-COBAM, ICG-MSP, ICG-MSFD, ICG-POSH and CoG)

Current data management: Data on human activities, pressures and ecosystem components is held across OSPAR (e.g. BDC, OIC, ICG-COBAM, ICG-MSP, ICG-MSFD and CoG), ICES and Contracting Parties. This work will require a coordinated work plan to draw this information together into a CEA.

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- agreement on what OSPAR defines as "cumulative effects", thereby developing a rationale for what the scope is of the assessment - analysis of the difference between additive and independent action methodologies - develop confidence mapping methodology - common terminology for use in OSPAR CEA - complete CEA Marine Spatial Planning (MSP) pilot project (including workshop to agree recommendations on CEA to OSPAR) - *consideration of incorporating risk-based methodologies in CEA, e.g. Bow-tie analysis approach*[7]		Determine what data management is relevant for undertaking the OSPAR work in this area. This may rely on work in Contracting Parties, such as through linking with UK project on pressure mapping
2015/2016	- *basic CEA considerations to be included in the preparations for the Intermediate Assessment 2017* (NB. This should be considered as a trial run for the CEA approach(es)) – this may only be for a subset of pressures focused on what CEA can provide for overall assessment of quality status - common approach to pressure mapping - clear understanding of what	(Note: Assessment to be undertaken based on available data)	Collection of existing data

[7] The Bow-tie analysis is one of the risk assessment techniques of the ISO 31000 Risk Management suite of standards.

	product can contribute to the Intermediate Assessment 2017		
2016/2017	- state of development of CEA, or 'cases study' within OSPAR for the Intermediate Assessment 2017 - CEA strategy for the QSR21 finalised - agreement on project to undertake an OSPAR wide CEA for QSR21	(Note: Assessment to be undertaken based on available data) Develop data collection plan for OSPAR wide CEA	Approaches refined based on experiences from sourcing and applying data in the preparation of a product for the Intermediate Assessment 2017
2017/2018	- completion of 'basic' CEA on the basis of the Intermediate Assessment 2017 - start project to undertake an OSPAR wide CEA for QSR21	(Note: Assessment to be undertaken based on available data) Develop further data collection plan for OSPAR wide CEA	Develop data storage and GIS layers for the pressures and ecosystem components
2018/2019	Implementation and progression of CEA strategy for QSR21 and CEA project	Work with other OSPAR groups to ensure that data outputs are available	Collect data required to establish OSPAR wide CEA
2019/2020	Final results of OSPAR CEA Project Background Assessments for the QSR21 should be finished		
2020/2021	Contribution and finalisation of CEA component of the QSR21 by early 2021		

Theme B: Biodiversity and Ecosystems

Objective of monitoring and assessment

5. Annexes II and V of the OSPAR Convention and the Biological Diversity and Ecosystems Strategy provide the basis for this part of the programme. The overall objective of the work under the Biodiversity and Ecosystems Strategy is to halt and prevent further loss of biodiversity in the OSPAR Maritime Areas by 2020, and to protect and conserve ecosystems, and to restore, where practicable, marine areas which have been adversely affected by human activities.

6. The monitoring and assessment activities in this programme will aim to take OSPAR towards improved understanding of the following issues:

a. what are the pressures that result from human activities, what is their extent, intensity and duration, and are they changing over space and time? (c.f. revised list below);

b. what is the status of the marine ecosystems and its biodiversity components and how are they changing?

c as far as possible, an assessment of ecosystem health;

d. how far can effects on ecosystems and biological diversity be linked, wholly or partly, to a specific cause (e.g. natural or human induced change)?;

e. for human induced pressures that are adversely affecting specific species and habitats, or specific ecological processes and functions, how are these pressures changing over space and time?

f. where human induced change exists, can this be linked to individual, or combinations of, human induced pressures (including those not already being assessed under the JAMP)?

g. what are the measures that are being taken to improve the status of the marine ecosystem and its biodiversity components? What are the effects of these measures?

Products in 2014–2021

7. Over the programme period, the focus will be on:

a. building on the outcome of the QSR 2010 and assessments prepared under the 2010-2014 JAMP;

b. ensuring that the monitoring and assessment infrastructure (monitoring programmes, indicators, assessment tools, data management and quality assurance) is in place to enable delivery of the OSPAR Strategy and MSFD;

c. ensuring that JAMP products provide data that can be incorporated into integrated assessments, especially cumulative effects assessments;

d. delivery of products for the Intermediate Assessment 2017 and QSR21.

Overview of products for Theme B: Biodiversity and ecosystems

Ref.	Product name and short description	Delivery
B-1	Assessment of the quantities, types, sources and trends of marine litter, including the impact of litter on the marine environment	2016 2020
B-2	Assessment of the pressure from underwater noise	2016 2020
B-3a	Review of the effects of human activities and pressures on the OSPAR List of Threatened and/or Declining Species and Habitats as articulated in the Background Documents	2016
B-3b	Assess adequacy of current measures to protect and conserve threatened and/or declining species and habitats	2016

B-3c	Assessment of the status of Threatened and/or Declining Species and Habitats (includes impact of Human Activities)	2020
B-4	Assessment of environmental impacts of fishing	2020
B-5	Assessment of environmental impact of shipping	2020
B-6a	Trend assessments of annual data on dumping of waste or other matter at sea from 2008- 2014	2015
B-6b	Assessment of the impact caused by deposits of dredged material on the marine environment	2020
B-7	Assessment of the effect of dumped chemical and conventional munitions on the marine environment	2020
B-8	Assessment of the environmental impact of Offshore Renewable Energy	2020
B-9	Assessment of other human activities outlined in Theme B Table I of the JAMP	2020
B-10a	Assessment of common biodiversity indicators	2016 2020
B-10b	Agreement on a coordinated biodiversity monitoring programme to support common indicators	2015
B-11a	Biennial Assessment of the Status of the OSPAR network of MPAs	Biennial
B-11b	Assessment on whether the OSPAR Network of MPAs is well managed	2016
B-11c	Evaluation of the OSPAR MPA Network	2020

8. The human activities and associated pressures to be considered under the JAMP 2014-2021 are those listed in the Tables I and II, which maps OSPAR JAMP human activity categories to MSFD Reporting Categories for human activities. This consideration should take into account the experience gained from previous assessments of these activities within the OSPAR framework. Development of pressures from further human activities should be kept under review, and where necessary the impacts of these activities should be considered further.

Table I - Human Activities		
OSPAR JAMP Human Activity Categories	**EU MSFD Human Activity Reporting Categories**	
Installations and structures – offshore wind farms and other marine energy developments	Marine-based renewable energy generation (wind, wave & tidal power)	Energy production
Exploration for and exploitation of oil and gas and placement and decommissioning of structures for the exploitation of oil and gas	Marine hydrocarbon extraction (oil & gas)	
	Energy production - other	
Fisheries[8]	Fisheries incl. recreational fishing (fish & shellfish)	Extraction of living resources
	Seaweed and other sea-based food harvesting	
	Extraction of genetic resources/bioprospecting/maerl	
	Extraction of living resources - other	
Sand and gravel extraction Exploration and exploitation of deep sea mineral resources, including deep sea mining	Marine mining (sand, gravel, rock)	Extraction of non-living resources
Dredging for navigational purposes	Dredging	
	Desalination/water abstraction	
	Extraction of non-living resources - other	
Mariculture	Aquaculture (fin-fish & shellfish)	Food production
	Food production - other	
	Industry (discharges, emissions)	Land-based activities/industries
	Agriculture & forestry (run-off, emissions)	

[8] See OSPAR Convention Annex V Article 4(1) on questions relating to the management of fisheries.

	Urban (municipal waste water discharge)	
	Land-based activities/industries - other	
Land reclamation Coastal defence	Land claim, coastal defence	Man-made structures (incl. construction phase)
	Port operations	
Construction or placement of artificial reefs	Placement & operation of offshore structures (other than for energy production)	
Placement of cables and pipelines (Any assessment of this activity will include an assessment of the scope for action under other international law)	Submarine cable & pipeline operations[9]	
Installations and structures - other than for oil and gas and offshore wind-farms but including artificial islands	Man-made structures (incl. construction phase) - other	
	Recurrent defence operations	Military
Dumped past chemical and conventional munitions	Dumping of unwanted munitions	
	Military - other	
Tourism and Recreational activities (these activities will be examined with the aim of identifying whether specific activities within this group would require a further assessment)	Tourism & recreation incl. yachting	Recreation
	Recreation - other	
Marine scientific research	Marine research, survey & educational activities	Research and survey
Maritime transportation[10]	Shipping	Transport
	Transport - other	
Dumping of wastes or other matter (as well as deposits of dredged materials)	Solid waste disposal incl. dredge material	Waste disposal
	Waste Disposal- other	
Carbon Capture and Storage in sub-seabed geological structures	Storage of gases	
	Other marine uses and activities	Other marine uses and activities

Table II - Pressures

The following indicative pressures should be taken into account, as appropriate.

OSPAR pressure	**MSFD pressures reporting categories**	
Physical loss (to land or freshwater habitat)	Physical loss	A - Physical loss
Physical loss (to another seabed type)	Physical loss (smothering)	
Physical loss (to another seabed type)	Physical loss (sealing)	
Changes in suspended solids (water clarity)	Physical damage	B - Physical damage
Siltation rate changes, including smothering	Physical damage (changes in siltation)	
Penetration and/or disturbance of the substrate below the surface of the seabed, including abrasion	Physical damage (abrasion)	
Habitat structure changes – removal of substratum (extraction)	Physical damage (selective extraction)	
Electromagnetic changes	Physical disturbance (other)	C - Other physical disturbance
Introduction of light		
Barrier to species movement		

[9] Operations are interpreted to include the placement phase

[10] See OSPAR Convention Annex V Article 4(2) on questions concerning maritime transportation.

Death or injury by collision		
Underwater noise changes	Underwater noise	
Litter	Marine litter	
Water flow (tidal current) changes – local, including sediment transport considerations	Interference with hydrological processes (other)	D - Interference with hydrological processes
Emergence regime changes – local, including tidal level change considerations		
Wave exposure changes - local		
Temperature changes - local	Changes in thermal regime	
Salinity changes - local	Changes in salinity regime	
	Contamination by hazardous substances (other)	E - Contamination by hazardous substances
Synthetic compound contamination (inc. pesticides, antifoulant, pharmaceuticals)	Introduction of synthetic compounds	
Transition elements and organo-metal (e.g. TBT contamination	Introduction of non-synthetic substances and compounds	
Hydrocarbon and PAH contamination		
Radionuclide contamination	Introduction of radio-nuclides	
Introduction of other substances (solid, liquid or gas)	*Systematic/intentional release of substances*	F - Systematic and/or intentional release of substances
Deoxygenation[11]	Nutrient and organic matter enrichment (other)	G - Nutrient and organic matter enrichment
Nutrient enrichment	Inputs of fertilisers and other N- and P-rich substances	
Organic enrichment	Inputs of organic matter	
Visual disturbance	Biological disturbance (other)	H - Biological disturbance
Genetic modification and translocation of indigenous species		
Introduction of microbial pathogens	Introduction of microbial pathogens	
Introduction or spread of non-indigenous species	Introduction of non-indigenous species and translocations	
Removal of target species	Selective extraction of species, including non-target catches	
Removal of non-target species		
	Other pressures	I - Other pressures

[11] Currently allocated to the MSFD pressure category “Nutrient and organic matter enrichment (other)” as an effect of “nutrient and organic matter enrichment"; needs further consideration.

EIHA	Theme B: Biodiversity and Ecosystems	Product B-1

Product name: Assessment of the quantities, types, sources and trends of marine litter, including the impact of litter on the marine environment

Objective: Monitor levels of beach litter in the OSPAR maritime area, assess quantities, types, sources and trends of marine and beach litter and assess whether the introduction and levels of litter in the marine environment and on beaches causes harm. This relates to MSFD Descriptor 10*"properties and quantities of marine litter do not cause harm to the coastal and marine environment"*

Relies on: Beach litter monitoring, monitoring of plastic particles in stomachs of fulmars and other marine organisms, seabed monitoring, microplastics monitoring	**Contributes to:** MSFD assessments and cumulative effects assessment

Target Dates: 2016 and 2020

Responsible for activity: ICG-Marine Litter

Current Data Management: Beach litter Website and Database hosted by the Marine Conservation Society, UK; **Fulmar** hosted by IMARES, NL; **Seabed Litter** hosted ICES

Meeting cycle	Assessment	Monitoring	Data management
2016/2017	- finalise Intermediate Assessment 2017 contributions - develop microplastics indicator(s) - develop a candidate indicator for plastic particles in turtle stomachs for region IV - assessment of the indicators for beach litter, fulmar (for North Sea) and IBTS/Seabed litter - review MSFD TG Marine Litter guidance on harm - Assessment Sheets		
2017/2018	- assessment of the indicators for beach litter, fulmar (for North Sea), and IBTS/Seabed litter) - develop/finalise microplastics indicator(s) and identify other biota for areas outside the natural range of the fulmar	Develop a microplastics monitoring programme	Develop a database for microplastics monitoring
2018/2019	- assessment of indicators on beach litter, fulmar (for North Sea), other biota (outside NS), IBTS/ Seabed litter and microplastics - review of indicators	- implement a monitoring programme for microplastics and for other biota - review and, if required, modify all monitoring programmes - literature review on the impact of marine litter on biota	
2019/2020	- assessment of impact of marine litter (based on common indicators beach litter, fulmar (for North Sea), other biota (outside NS) and IBTS/Seabed litter) for QSR 21		
2020/2021	Finalise QSR21 section on marine litter		

2018/2019	- assessment of indicators on beach litter, fulmar (for North Sea), other biota (outside NS), IBTS/ Seabed litter and microplastics - review of indicators	- implement a monitoring programme for microplastics and for other biota - review and, if required, modify all monitoring programmes - literature review on the impact of marine litter on biota	
2019/2020	- assessment of impact of marine litter (based on common indicators beach litter, fulmar (for North Sea), other biota (outside NS) and IBTS/Seabed litter) - Assessment Sheets		
2020/2021	Finalise QSR21 section on marine litter		

EIHA	Theme B: Biodiversity and Ecosystems	Product B-2
Product name: Assessment of the pressure from underwater noise		
Objective: Assess whether the introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment in the OSPAR maritime area. This relates to 4.2(h) of the Offshore Oil and Gas Strategy; 1.2(e) in the Biodiversity Strategy; and MSFD Descriptor 11		
Relies on:		**Contributes to:**
Target dates: 2016 and 2020		
Responsible for activity: EIHA, ICG-NOISE with support from OIC		
Current data management: None		

Meeting cycle	Assessment	Monitoring	Data management
2016/2017	finalisation of Intermediate Assessment 2017 Assessment Sheet on noise Investigate the development of additional indicators on impact of impulsive noise	Continue with implementing an ambient noise monitoring programme including coordinating monitoring points, through projects, based upon the OSPAR Ambient Noise Monitoring Strategy, guidance from TG Noise, and other relevant projects (e.g. BIAS)	ensure that data management of ambient noise monitoring across the OSPAR region is coordinated
2017/2018	Assessment Sheet impulsive on noise		
2018/2019	Assessment Sheet on impulsive noise develop a spatial pressure assessment methodology for ambient noise	Review monitoring programme	
2019/2020	- assessment of the levels of impulsive noise in the North East Atlantic - assessment of levels of ambient noise - assess whether the introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment in the OSPAR maritime area	Implement changes to monitoring programme	Update databases on ambient and impulsive noise
2020/2021	Finalise QSR21 section based on underlying assessment		

BDC/EIHA	Theme B: Biodiversity and Ecosystems	Product B-3
Product name: Threatened and/or declining species and habitats (includes impact of Human Activities)		
Objective: To assess: - the status of threatened and/or declining species and habitats and whether it is changing; - the main pressures from human activities (e.g. fisheries) affecting species and habitats on the OSPAR List are changing; - whether the actions and measures taken to address these pressures have been effective		
Relies on: input from ICG COBAM[12], assessment of fisheries pressures, input from EIHA		**Contributes to:** Cumulative Effects assessment
Target dates: 2016 and 2020		
Responsible for activity: BDC/EIHA		
Current data management: Habitat Database: task manager UK. No species database. ICES Data Centre		

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- review of existing assessment procedures of species and habitats - develop and finalise the methodology to review and assess the effects of human activities and pressures on the OSPAR List of threatened and/ or declining species and habitats; review potential input from cumulative effects work as a contribution to the assessment in 2015/2016	- review existing monitoring, including common OSPAR Biodiversity indicators, habitats Directive and Birds Directive - review existing monitoring on human activities and pressures relevant to listed species and habitats	- review and revision of the OSPAR Habitat database - review the availability of species data from Contracting Parties and other organisations - review the availability of data on pressures and human activities affecting the marine environment, especially OSPAR Listed species and habitats
2015/2016	- develop and finalise methodology for assessing status of species and habitats (link where possible to MSFD work – e.g. seabirds, fish, mammals) - review of the effects of human activities and pressures on the OSPAR List of Threatened and/or Declining Species and Habitats as articulated in the Background documents [13]	- develop a strategy for information collection on OSPAR Listed features (NB How to draw on monitoring under relevant MSFD Common indicators; MPA work, implementation of OSPAR Recommendations on species and habitats) - data from Habitats and Birds Directives reporting	Develop data management strategy for species and habitats data
2016/2017	- assess whether the current range of measures (including OSPAR Recommendations; and measures associated with relevant EU legislation and other appropriate national legislation) is adequate to protect and conserve threatened and/or declining species and habitats against the adverse effects of human activities and pressures - develop a methodology to assess the effectiveness of measures - overview assessment of compliance reporting against OSPAR Recommendations on species and habitats	Collect data based upon status assessment methodology	Implement the data management strategy for species and habitats data

[12] Intersessional Correspondence Group on the Coordination of Biodiversity Assessment and Monitoring (ICG-COBAM)

[13] This is a task articulated in the North East Atlantic Environment Strategy (4.2g). Timing wise the results will be needed to contribute to the assessment of adequacy of the measures

	- review the status of OSPAR listed Species and habitats		
2017/2018			Review availability of data for change in human activities and pressures over time that effect listed species and habitats
2018/2019	- an assessment of the status of threatened and/or declining species and habitats and whether it is changing (relying on available data prepared for HD Art 17 report) - preparatory work on changes in the main human activities and pressures affecting the marine environment that effect listed species and habitats	Preliminary data from Article 17 Habitats Directive (HD) reporting	
2019/2020	- finalise the assessment of changes in the main human activities and pressures affecting the marine environment that effect listed species and habitats, taking account of the OSPAR JAMP B-4 arrangements - evaluation of the response of OSPAR Listed species and habitats to human pressures - on the basis of the reviewed status of threatened and/or declining species and habitats and the impact of human activities, assess opportunities for where restoration may be applicable - determine whether the actions and measures being taken have been effective - develop and implement a programme of work to enable the reporting of the biodiversity aspects of the QSR21		Updated data for OSPAR Listed habitats and OSPAR Listed species
2020/2021	- drafting and finalisation of input to QSR21 - update to assessments of Listed species and habitats		

EIHA/BDC	Theme B: Biodiversity and Ecosystems	Product B-4

Product name: Assessment of environmental impacts of fishing

Objective:

1. Assess impact of fisheries on the marine environment taking into consideration:
   a. physical impacts;
   b. biological impacts;
   c. sustainability of fish stocks;
   d. ecosystem effects of fisheries.
2. Assess the implementation of ecosystem-based management within fisheries in the North-East Atlantic.

(To be implemented in line with Annex V Art 4.1 of the OSPAR Convention)

Relies on: Biodiversity Monitoring	**Contributes to:** Cumulative Effects

Target dates: 2020

Responsible for activity: EIHA/BDC

Current data management: ICES Data Centre

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	Assessment of the intensity of bottom fishing	- data collection on fishing intensity - Common Fisheries Policy data (CFP) on incidental catch	Ongoing data collection
2015/2016	- assessment of relevant D1, D4 and D6 biodiversity Indicators - assessment of fisheries related biodiversity indicators (including those relating to incidental catch of all species, including threatened and/or declining species).		
2016/2017	Relevant fisheries biodiversity indicators and assessment of the intensity of bottom fishing taken up within the Intermediate Assessment 2017		
2017/2018		Data collection on fishing intensity, CFP data on incidental catch	
2018/2019	Prepare requests to ICES for relevant assessments		
2019/2020	- draft Assessment of the Environmental Impact of Fisheries taking into consideration: physical impacts; sustainability of fish stocks and assessment of biodiversity indicators (including those relating to incidental catch of all species, including Threatened and/or declining species) - develop and implement a programme of work to enable the reporting of the biodiversity aspects of the QSR21		
2020/2021	Final QSR21 Chapter		

EIHA	Theme B: Biodiversity and Ecosystems	Product B-5
Product name: Assessment of environmental impacts of shipping		
Objective: Assess the environmental impact of shipping on the marine environment taking into consideration the physical, chemical and biological impacts including *inter alia*: air pollution, antifoulants, incidental spills, marine litter, noise, ship strikes, ballast water and non-indigenous species. (to be implemented in line with Annex V Art 4.2 of the OSPAR Convention)		
Relies on: information from ICG-Noise, ICG-Marine Litter, BDC (Non-Indigenous Species), HASEC		**Contributes to:** Cumulative effects
Target dates: 2020		
Responsible for activity: EIHA/BDC		
Current data management: OSPAR Marine Litter Database, ICES		

Meeting cycle	Assessment	Monitoring	Data management
2014/2015			
2015/2016			Update the Joint HELCOM/OSPAR Ballast Water Exemptions database and decision support tool
2016/2017		Develop a common methodology for collection and processing of Automatic Identification System (AIS) data	
2017/2018		Develop a strategy for the assessment of the environmental impacts of shipping	
2018/2019		AIS data collection and analysis on intensity of shipping	Data stored by Secretariat
2019/2020	Assessment of the environmental impact of shipping	Input of data from other JAMP assessments and data collection on environmental impacts	
2020/2021	Draft QSR21 chapter		

EIHA	Theme B: Biodiversity and Ecosystems	Product B-6

Product name: Trend assessments of annual data on dumping of waste or other matter at sea from 2008-2014 (2016) and assessment of the impact caused by deposits of dredged material on the marine environment (2020)

Objective: To assess the pressures from dredging and deposits of dredged material in terms of:
(a) volumes of dredged material deposited in the marine environment, areas affected and trends in contaminants and/or contaminant concentrations (e.g. concentrations in relation to the range of national (upper) action levels and distribution of potential areas of concern);
(b) locations of deposit sites and impacts caused by deposits of dredged material, including physical, chemical and biological change, introduction of noise;
(c) overview on beneficial uses of placed dredged material and in relation to dumping;

Relies on: Annual reporting of data on dumping of waste and other matter at sea	**Contributes to:** Cumulative effects assessment, seafloor integrity indicator

Target dates: 2016 and 2020

Responsible for activity: EIHA

Current data management: Dumping Database at Secretariat

Meeting cycle	Assessment	Monitoring	Data management
2014/2015		Undertake monitoring with new OSPAR guidelines	Update database in line with new reporting format
2015/2016	Trend assessments of annual data on dumping of waste or other matter at sea from 2008- 2014 and first view to placement.		
2016/2017	Contribution for Intermediate assessment		
2017/2018			
2018/2019		Collect data on the environmental impact of deposits of dredged material	
2019/2020	Finalise underlying assessment for QSR including trend assessment for contaminants in dredged material		
2020/2021	Finalise QSR21 Chapter		

EIHA	Theme B: Biodiversity and Ecosystems	Product B-7

Product name: Assessment of the effect of dumped chemical and conventional munitions on the marine environment

Objective: To assess the pressure from dumped chemical and conventional weapons in terms of:
(a) numbers and locations of encounters with munitions either washed up on beaches or encountered by other human activities;
(b) identifying clusters of encounters and assessing if further management measures are need to prevent further encounters
(c) impacts of munitions on the marine environment;
(d) providing input to a cumulative effects assessment of human activities;

Relies on: Annual reporting on encounters with dumped chemical and conventional munitions in line with OSPAR recommendation 2010/20	**Contributes to:** Cumulative effects, seafloor integrity, underwater noise

Target dates: 2020

Responsible for activity: EIHA

Current data management: The database on encounters with dumped chemical and conventional munitions is managed by the OSPAR Secretariat.

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- Assessment Sheet to be compiled on temporal and spatial analysis of reported encounters - development of assessment criteria for when management measures should be investigated		Revised spreadsheet to be circulated to CPs to improve quality of reporting.
2015/2016	Assessment Sheet to be compiled on temporal and spatial analysis of reported encounters.		
2016/2017	Assessment Sheet to be compiled on temporal and spatial analysis of reported encounters.		
2017/2018	Assessment Sheet to be compiled on temporal and spatial analysis of reported encounters.		
2018/2019	- Assessment Sheet to be compiled on temporal and spatial analysis of reported encounters - review existing information on impacts of munitions on the marine environment	Additional data and information to be collected on impacts of munitions on the marine environment	
2019/2020	Assess the pressure from dumped chemical and conventional weapons		
2020/2021	Finalise QSR21 Chapter		

EIHA	Theme B: Biodiversity and Ecosystems	Product B-8
Product Name: Assessment of the environmental impact of Offshore Renewable Energy		
Objective: Assess the pressure from offshore renewable energy developments (wind, wave and tidal technologies)		
Relies on: Reporting by Contracting Parties on Offshore Wind farms and data collection for other sources		**Contributes to:** Cumulative effects
Target dates: 2020		
Responsible for activity: EIHA		
Current data management: Offshore Wind farm Database held by OSPAR Secretariat		

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- review of the current state of knowledge of the environmental impacts of offshore wind energy production - review of the current state of knowledge of the environmental impacts of wave and tidal energy production		
2015/2016		Consider inclusion of wave and tidal energy developments in the OSPAR windfarm database.	Update database and reporting formats as required.
2016/2017			
2017/2018			
2018/2019	Review the need to undertake assessments on offshore renewable energy developments.	Consider the need for additional data collection on offshore renewables and their pressures.	Develop required data handling where data is not already collected by OSPAR.
2019/2020	Undertake assessments of offshore renewable energy developments and their pressure including contributing the cumulative effects assessment.		
2020/2021	Finalise QSR21 sections on offshore renewable energy.		

EIHA	Theme B: Biodiversity and Ecosystems	Product B-9
Product name: Assessment of other human activities outlined in Theme B Table I of the JAMP		
Objective: Assess the pressure from the following human activities on the marine environment: Carbon Capture and Storage (CCS), Dredging, Sand and gravel extraction, Mariculture, Cables, Tourism, Land reclamation and coastal defence, Artificial reefs and Exploration and exploitation of deep sea mineral resources		
Relies on: data collection for other sources		**Contributes to:** Cumulative effects
Target Dates: 2020		
Responsible for activity: EIHA		
Current Data Management: N/A		

Meeting cycle	Assessment	Monitoring	Data management
2014/2015			
2015/2016			
2016/2017			
2017/2018	Consider future assessments based upon ongoing development in cumulative assessment methodologies.		
2018/2019	Review the need to undertake assessments on individual human activities and their pressures in Theme B Table I of JAMP.	Data collection on human activities and their pressures, including spatial and temporal data.	Develop required data handling where data is not already collected by OSPAR.
2019/2020	Undertake assessments of human activities and their pressure including contributing to the cumulative effects assessment.		
2020/2021	Finalise QSR21 sections on human activities.		

BDC	Theme B: Biodiversity and Ecosystems	Product B-10

Product Name: Assessment of common biodiversity indicators

Objective: To deliver OSPAR's biodiversity assessment and monitoring work under the guidance of the Biodiversity Committee, with a particular focus on the requirements of the Marine Strategy Framework Directive (MSFD) in relation to the biodiversity aspects (Descriptors 1, 2, 4 and 6), which includes:
i. development of common biodiversity indicators;
ii. development of joint monitoring and assessment programmes for these indicators

Relies on: EIHA for the link with pressures and EU Common Fisheries Policy's Data Collection Monitoring and Assessment Programme ('DC MAP') for monitoring issues, list of Threatened and Declining Species and Habitats assessments, national implementation of MSFD and other relevant national programmes	**Contributes to:** [list of Threatened and Declining species & habitats, national implementation of MSFD and other relevant national programmes]

Target dates: 2016 and 2020

Responsible for activity: ICG-COBAM

Current data management: Very limited at present and is now urgent and a strategy for data flows and protocols needs to be developed and agreed as a priority within the JAMP

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- test and evaluate biodiversity indicators and select which of these can be proposed for implementation to contribute to the IA 2017 - highlight potential gaps in the selected suite of indicators in relation to the MSFD Commission Decision	Agree monitoring /data collection for the common OSPAR biodiversity indicators, including where there are opportunities to integrate and coordinate across CPs.	- agree biodiversity data flow requirements. - develop data management protocols in alignment with ODIMS
2015/2016	- undertake an assessment of each of the indicators - contribute to Intermediate Assessment 2017	Continue the development of appropriate monitoring for new common indicators as they are agreed.	Continue to develop and implement data management protocols for the common indicators.
2016/2017	- contribute to the final editing of the Intermediate Assessment in 2017 - review JAMP Product and extract lessons learnt to inform (i) the process to adopt common indicators across sub-regions; (ii) the CPs uptake of the OSPAR Intermediate Assessment in their national reporting; (iii) on the basis of the gaps identified in 2014/15 and lessons learnt to start a process to fill the gaps, for example new indicators - revise the JAMP according to the lessons learnt		
2017/2018	- continue to develop assessment requirements for those indicators still under development - identify any additional assessment requirements for the OSPAR QSR21	Review the monitoring for common biodiversity indicators and agree on coordinated monitoring programme within applicable sub-regions. Identify where further development is needed.	Identify gaps and start a process to fill those gaps for data handling in relation to assessment requirements.
2018/2019	- develop and implement a programme of work to enable the reporting of the biodiversity aspects of the QSR21 - update technical specifications of	Update assessment and monitoring requirements.	

	indicators and of data and information requirements		
2019/2020	Contribute to the editing of the QSR21 Assessment.		Continue to collection and improve of technical specifications and of data and information requirements.
2020/2021	Finalise QSR21 sections on assessment of biodiversity indicators.		

BDC	Theme B: Biodiversity and Ecosystems	Product B-11

Product name: Marine Protected Areas (MPAs) / Evaluation of the OSPAR MPA Network

Objective:
(a) Further OSPAR's work on marine protected areas with the view of achieving a network of marine protected areas which:

i. is ecologically coherent, includes sites representative of all biogeographic regions in the OSPAR maritime area, and is consistent with the Convention on Biological Diversity target for effectively conserved marine and coastal ecological regions;

ii. is well managed (i.e. coherent management measures have been set up and are being implemented for such MPAs that have been designated up to 2012);

(b) provide input in the form of MPA data layers to relevant integrated assessments e.g. cumulative effects of human activities

Relies on: products, including those under other themes, that must be completed for this to progress	**Contributes to:** the MPA data layer will contribute to integrated assessments

Target dates: June 2016 and June 2020

Responsible for activity: ICG-MPA

Current data management: OSPAR MPA database co-administered by Germany and France

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- Assessment: Status of the MPA network 2014. (to include the ecological coherence assessment on the basis of existing criteria) Assessment sheet: Update of status of MPA network - assessment tool development: Revised criteria for ecological coherence - new knowledge: advice delivered on improving criteria for connectivity related to ecological coherence		- data input: All attributes relating to management of MPAs complete for MPAs designated up to 2012 - update OSPAR MPA Database attributes according to MPA reporting requirements (2003/3, 2010/12 to 17 and 2012-1)
2015/2016	- Assessment Sheet: Update of status of MPA network	Assessment to be undertaken on the basis of data held in the OSPAR MPA database.	
2016/2017	- Assessment: OSPAR MPA network is well managed by 2016 (for all MPAs designated up to 2012) on the basis of the 2014 workshop on the procedure to assess, whether the OSPAR Network of MPAs is well-managed - Assessment: Status of the MPA network 2016. (to include a more detailed ecological coherence assessment on the basis of new criteria) - Assessment Sheet: Update of status of MPA network - assessment tool development:	Evaluation of the MPA JAMP Product and revision as necessary.	- data infrastructure: review of OSPAR MPA database - update OSPAR MPA Database attributes according to MPA reporting requirements (2003/3, 2010/12 to 17 and 2012-1)

	Revision of criteria for assessment of MPA management		
2017/2018	Assessment Sheet: Update of status of MPA network.	Identify indicator related monitoring that could improve the assessment output (e.g. typical species composition, etc.).	Update OSPAR MPA Database attributes according to MPA reporting requirements (2003/3, 2010/12 to 17 and 2012-1).
2018/2019	Assessment: Status of the MPA network 2018 (to include detailed ecological coherence assessment on the basis of new criteria).		Update OSPAR MPA Database attributes according to MPA reporting requirements (2003/3, 2010/12 to 17 and 2012-1).
2019/2020	QSR21 Assessments: Update to the 2018 Status report with any additional data up to 1 October 2019: a. area coverage; b. ecological coherence; c. management; d socio-economic analysis.		Update OSPAR MPA Database attributes according to MPA reporting requirements (2003/3, 2010/12 to 17 and 2012-1).

Theme E: Eutrophication

Objective of monitoring and assessment

9. The Eutrophication Strategy and the Common procedure for the identification of the eutrophication status of the maritime area (Common Procedure (COMP), updated in 2013) provide the basis for this part of the programme. The overall objective is the achievement in 2020 of a healthy marine environment where eutrophication does not occur. In the programme period, the progress made towards achieving this overall objective will be evaluated.

10. Therefore, the following issues will be addressed:

    a. What is the eutrophication status for the different parts of the OSPAR maritime area, i.e. what are the problem areas, the potential problem areas and the non-problem areas with respect to eutrophication? What are the developments in such problem areas and potential problem areas of the factors covered by the Comprehensive Procedure of the Common Procedure?

    b. Are the anthropogenic sources of nutrients and/or the associated inputs changing in nature, timescale or magnitude? What are the implications of these changes for minimising the adverse effects of eutrophication and achieving the target of a healthy marine environment where eutrophication does not occur?

    c. The main anthropogenic sources of nutrients affecting problem areas are e.g. agriculture, sewage, aquaculture, industry, transport and energy production and consumption. Information on the levels of discharges, emissions and losses from these sources are required and will be sourced, where necessary, from other organisations together with an understanding of the pathways of nutrients into the marine environment.

Products in 2014 – 2021

11. Over the programme period, the focus for monitoring will be on the annual implementation of the Eutrophication Monitoring Programme (part of the CEMP), the Riverine Inputs and Direct Discharges Monitoring Programme (RID) and the Comprehensive Atmospheric Monitoring Programme (CAMP). The main focus for the assessment work will be the 2016/17 application of the COMP and any associated annual/periodic products on Common Indicators, based on OSPAR monitoring and information collection programmes. Further work will also be carried out on tools needed to support or enhance the monitoring, information collection and assessment work. The work under the programme will be carried out taking into account the conclusions of the QSR 2010 and its supporting assessments, and any more recent assessments prepared under the 2003 and 2010 Joint Assessment and Monitoring Programmes.

12. In view of preparing the required assessment products, particular attention will be paid to the data management and efficiency of work streams (especially the combination of COMP application and common indicators).

Table A setting out a simple overview of the timetable for production of the common indicators and the OSPAR Common Procedure was revised at HASEC 2015.

Table A – Linkages and steps in the 3rd COMP application 2012–2017

	2015	2016	2017
Interim products – pilot common indicators assessment[1]	To be completed Dec 2015		
Common indicator assessments – final for IA2017[2]		HASEC Mar 2016	
COMP reporting guidance	Establ'd		
CP national-level COMP reports ready[3]		National reports Mar 2016	
OSPAR Integrated COMP report		Draft ready for ICG EUT Jan 2017, final version for HASEC Mar 2017	
Update of MSFD Article 8 Initial Assessment			Integrated report available to CPs for 2018 MSFD update of initial assessment

[1]For time period, common indicator trend assessment starting 1990

[2]Intermediate Assessment 2017 (IA2017)

[3]Common Procedure (COMP) time period 2006–2014 inclusive

TABLE B – Relation between COMP application and common indicators

Parameters	3rd COMP Application	Common Indicators
'nutrient inputs'	Synergy required between national COMP assessment and INPUT assessment for Greater North Sea and Bay of Biscay and Iberian coast – the latter for aquatic nutrient inputs only	
'winter nutrients' 'chlorophyl' 'oxygen'	Synergy required between national COMP assessment and indicator assessment – OSPAR wide	
'nuisance algae: *Phaeocystis*'	Synergy required between national COMP assessment and *Phaeocystis* South-Eastern North Sea assessment	
Other COMP assessment parameters	Undertaken nationally, only in COMP	

Overview of products for Theme E: Eutrophication		
Ref.	**Product name and short description**	**Delivery**
E-1	Data management infrastructure Contribution to establishing fully functional data and information systems for OSPAR data streams, including in particular for HASEC the upgraded RID database facilities and improved arrangements for management of eutrophication monitoring data (See HASEC 2014 on improvements of RID database and on arrangements with ICES for data handling)	Early years
E-2	Data reporting Annual reporting by Contracting Parties of their CAMP, RID and eutrophication monitoring data to the respective data centres in line with agreed reporting procedures (This is required for the planned assessments based on the data reported to OSPAR)	Annually
E-3	CAMP Data report **(**To continue as currently being prepared, most likely with a content specification that allows the preparation of the common indicator assessments / assessment sheets)	Annually
E-4	RID data report (to restart once the upgraded database is operational, with a content specification that allows the preparation of the common indicator assessments / assessment sheets.)	Annually
E-5	Revision of the Comprehensive Atmospheric Monitoring Programme (CAMP) (continuation and finalisation of the on-going process as soon as practical)	2015
E-6	Continuation of the preparation of 'joint documentation' on monitoring for RID and CAMP Annual reviews of the extended E1 and E2 CEMP appendices that include regional information relevant to MSFD Art.11 monitoring programme reports by EU Member States. (to continue taking account of further developments in regional MSFD coordination in OSPAR and changes in RID and CAMP and eutrophication monitoring)	2020
E-7	Review and eventual revision of identified (parts of) HARP NUT Guidelines (in accordance with arrangements discussed by HASEC 2014)	Early years
E-8	**Revision of the JAMP Eutrophication Monitoring Guidelines on Phytoplankton Species composition** (In accordance with arrangements discussed by HASEC 2014 and taking account of any monitoring needs under BDC)	Early years
E-9	**RID nutrients trend assessment (as input to third COMP application)** **(specifications still under development)**	2016
E-10	**Atmospheric nutrient deposition modelling results derived from EMEP modelling** **(further discussion on specification required & planned in INPUT and its CAMP Review Group)**	2016
E-11	**ICG EMO modelling target output based on renewed terms of reference**	Pending decisions at OSPAR (2017)
E-12	Agreed common indicator-based assessment (see **Table B**) (trend Assessment results of common indicators in conjunction with 3rd COMP application)	2016-17 and possibly annually thereafter
E-13	National reports and OSPAR integrated eutrophication status report following the 3rd COMP application (see **Tables A and B**) (the next OSPAR eutrophication assessment is targeted to be taken up in the 2017 Intermediate Assessment: - by mid-2015: guidance for national reports and practical arrangements for any joint work; - by mid-2016: national reports finalised for subsequent examination by eutrophication experts in OSPAR; - by mid-2017: consolidation into an OSPAR integrated report - linkage with the final version of the first generation of common indicators - and uptake in the Intermediate Assessment 2017	2016-17
E-14	Advice contributions to EU level work on methodological issues in the sphere of monitoring and assessment under the MSFD (see OSPAR contribution to EU MSFD CIS work plan for 2014 and beyond)	As and when

HASEC	Theme E: Eutrophication	Products E-1, E-7 – E-8, E-12 – E-13

Product Name: Eutrophication status assessment (following the third COMP application) and delivery of indicator-based assessment for common indicators

Objective: the preparation of adequate common indicators in conjunction with the preparation of the third application of the Common Procedure for the Identification of the Eutrophication of the Maritime Area

Target Date: 2017

Responsible for activity: groups responsible for the work on eutrophication monitoring, data handling and assessment.

Current data management: OSPAR CEMP data management at ICES

Meeting cycle	Assessment	Monitoring	Data management
2013/2014	E-12 Preparatory work on technical specifications for common indicators	See EMP; E-7; E-8 Data for COMP stop end 2014	E-1 Work on reporting of data
2014/2015	E-13 Preparatory work including guidance for national reports	See EMP	E-1 Work on reporting of data
2015/2016	E-13 Work at national level for Third COMP application and on common indicators	See EMP	Continuous data management
2016/2017	E-12 and E-13 - Indicator assessment sheets and Integrated Report on eutrophication for Intermediate Assessment 2017	See EMP	Continuous data management
2017/2018	E-12 regular update of Common Indicator assessment sheets	See EMP	Continuous data management
2018/2019	E-12 regular update of Common Indicator assessment sheets	See EMP	Continuous data management
2019/2020	…		
2020/2021			

Theme H: Hazardous Substances

Objective of monitoring and assessment

13. The Hazardous Substances Strategy provides the basis for this part of the programme. It operates at two levels: chemicals for priority action, and hazardous substances in general**.** The following issues will be addressed:

a. What are the concentrations of hazardous substances in the marine environment? Are those hazardous substances monitored at, or approaching, background levels for naturally occurring substances and close to zero for man-made substances? How are the concentrations changing over time? Are the concentrations of either individual substances or mixture of substances such that they are not giving rise to pollution effects?

b. What are the sources, what are the levels of discharges, emissions and losses and what are the pathways to the marine environment for individual OSPAR chemicals for priority action and other hazardous substances listed by e.g. the Stockholm Convention and the MSFD? Are the discharges, emissions and losses from sources of these substances to the marine environment continuously decreasing, and are they moving towards the target of cessation by 2020?

c. How to improve and extend OSPAR's monitoring framework and better link it with the understanding of biological effects and ecological impacts of individual substances and the cumulative impacts of mixtures of substances?

Products in 2014–2021

14. Over the programme period, the focus will be on the annual implementation of OSPAR monitoring and information collection programmes CEMP, the Riverine Inputs and Direct Discharges Monitoring Programme (RID) and Comprehensive Atmospheric Monitoring Programme (CAMP) , annual or periodic data products and assessments based on OSPAR monitoring and information collection programmes and tools needed to support or enhance monitoring, information collection and assessment work. The work under the programme will be carried out taking into account the conclusions of the QSR 2010 and its supporting assessments, and any more recent assessments prepared under the 2003 and 2010 Joint Assessment and Monitoring Programmes.

TABLE A – OVERALL VIEW OF RELATIONS BETWEEN CEMP BASED ASSESSMENT PRODUCTS

OSPAR intersession	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**
CEMP roll-over SIMPLE[14]	X	X ↓	X				
CEMP roll-over FULL[15]		↓		X		X (for QSR) – GES Focus	
INDICATOR Assessment Sheets		X (trial) "COMMON INDICATOR ASSESSMENT 1"	X "COMMON INDICATOR ASSESSMENT 2"			↓	X
						Are we going towards GES?	

[14] 'SIMPLE' means that the assessment report includes a discussion only for selected determinands, not all..

[15] The assessment of all CEMP determinands is discussed.

TABLE B - Overview of products for Theme H: Hazardous substances		
Reference	**Product name and short description**	**Delivery**
H-1	Contribution to establishing fully functional data and information systems for OSPAR data streams, including in particular for HASEC the upgraded RID database facilities (see HASEC 2014 on improvements of RID database and on arrangements with ICES for data handling)	Early years
H-2	Annual reporting by Contracting Parties of their CAMP, RID and CEMP data to the respective data centres in line with agreed reporting procedures (this is required for the planned assessments based on the data reported to OSPAR)	Annually
H-3	CAMP data report (To continue as currently being prepared, most likely with a content specification that allows the preparation of the common indicator assessments / Assessment Sheets)	Annually
H-4	RID data report (to restart once the upgraded database is operational, with a content specification that allows the preparation of the common indicator assessments / Assessment Sheets)	Annually
H-5	Revision of the Comprehensive Atmospheric Monitoring Programme (CAMP) (continuation and finalisation of the on-going process as soon as practical)	2015
H-6	Continuation of the preparation of 'joint documentation' on input monitoring for RID and CAMP Annual reviews of the extended CEMP appendices that include regional information relevant to MSFD Art.11 monitoring programme reports by EU Member States. (to continue taking account of further developments in regional MSFD coordination in OSPAR and changes in RID, CAMP and CEMP monitoring)	2020 Annually
H-7	Evaluation report on the 3-year trial application of the JAMP Integrated Guidelines (adopted by HASEC 2012)	2015
H-8	Revised CEMP to take account of recent EU legislation implementation developments	2015-16
H-10	Revision of the CEMP Assessment Manual	2015-16
H-11	Trend Assessment results of common indicators for Hg, Cd and Pb inputs via water and air	2016-17
H-12	Simple CEMP roll-over Assessment (i.e. not aiming to address trends and status of all determinands)	2015, 2016, 2017 and 2019
H-13	CEMP assessment undertaken as much as possible on the basis of the requirements established for the Common Indicators (Common Indicator assessment 1,"trial run" to sort out any remaining issues and address them before 2017; focus on trend)	2016
H-14	Final D8 common indicators' assessment (also including any useful candidate indicators) (common indicator assessment 2, focus on trend)	2017
H-15	Full CEMP roll-over assessment report (intention to also include status assessment for contaminants for which there are robust assessment criteria)	2018
H-16	Full CEMP roll-over assessment report (GES focus, towards QSR21, with an Assessment Sheet for wider public)	2020
H-17	Advice contributions to EU level work on methodological issues in the sphere of monitoring and assessment under the MSFD (see OSPAR contribution to EU MSFD CIS work plan for 2014 and beyond)	As and when
H-18	Evaluation of OSPAR cessation target (feasibility to be determined taking account of WFD-driven data sources, and OSPAR reports such as on Hg from chlor-alkali)	Later years

HASEC	Theme H: Hazardous Substances	Products H-12 – H-16

Product name: CEMP Assessments

Objective: to continue the momentum of the annual CEMP roll-over assessment during the entire period of the JAMP 2014-2021, with use of the same assessment process for making the common indicators related to MSFD D8 operational at the same time.

Relies on: CEMP monitoring data reported by Contracting Parties to the ICES database	**Contributes to:**

Target Dates: OSPAR 2015, OSPAR 2016, OSPAR 2017, OSPAR 2018, OSPAR 2019 (via HASEC)

Responsible for activity: MIME (Working Group on Monitoring and on Trends and Effects of Substances in the Marine Environment)

Current data management: OSPAR CEMP data management at ICES

Meeting cycle	Assessment	Monitoring	Data management
2013/2014	CEMP roll-over assessment on-going	CEMP – continuous	ICES for OSPAR – continuous under annual ICES Work Programme. Data extraction led by UK
2014/2015	H-12 CEMP roll-over Assessment SIMPLE, 2015 version, including illustrative examples on use of different assessment criteria	"	"
2015/2016	H-13 Common Indicator assessment 1 (trial)	"	"
2016/2017	H-14 Common indicator assessment 2	"	"
2017/2018	H-15 CEMP roll-over assessment report, including if possible also status	"	"
2018/2019	H-12 CEMP roll-over Assessment SIMPLE	"	"
2019/2020	H-16 Full CEMP roll-over assessment report with GES focus		
2020/2021			

HASEC	Theme E: Eutrophication Theme H: Hazardous Substances	Products E-3/H-3; E-4/H-4; E-12/H-11; E-10

Product name: Preparation of common indicators on inputs and the evolution of the CAMP and RID data reports

Objective – the annual CAMP and RID data reports should evolve to become more directly useful for assessment products, thus enhancing the efficiency of OSPAR work.

Target date: 2017

Responsible for activity: INPUT

Current data management: OSPAR CAMP data management at NILU (Norway) and RID annually contracted, currently at NIBIO (Norway)

Meeting cycle	Assessment	Monitoring	Data management
2013/2014	E-12 and H-11 Indicator specifications drafted	(RID and CAMP continuous) RID updated H-5 and E-5 CAMP under review	RID database upgraded Specifications for modelling data products developed
2014/2015	E-12 and H-11 Indicator specifications agreed	Updated RID being implemented H-5 and E-5 CAMP updated	RID database possibly further improved H-4 RID data report contains draft data products for the common indicators E-10 Specifications for modelling data products agreed E-3 and H-3 CAMP data report contains draft data products for the common indicators
2015/2016	E-12 and H-11 Testing of indicators with actual data		E-3 and H-3 CAMP data report contains modelling data products for the common indicators
2016/2017	E-12 and H-11 Common indicators assessments agreed > Assessment Sheets and Intermediate Assessment 2017		
2017/2018	E-3 and H-3 E-4 and H-4 CAMP and RID reports contain indicator based assessments		
2018/2019			
2019/2020	…		
2020/2021			

Theme O: Offshore Oil and Gas Industry

Objectives of monitoring and assessment

15. The Offshore Oil and Gas Industry Strategy provides the basis for this part of the programme. The following issues will be addressed:

a. what activities of the offshore oil and gas industry may impact on the marine environment, including biota, and how are those activities and impacts changing?

b. what are the inputs of hydrocarbons and hazardous materials from offshore installations to the sea, and are they changing?

c. what are the concentrations of hydrocarbons and hazardous materials in environmental compartments – focusing on areas influenced by offshore installations – and are they changing?

Products in 2014–2021

16. Over the programme period, the focus will be on the annual implementation of OSPAR monitoring and information collection programmes, annual or periodic data products and assessments based on OSPAR monitoring and information collection programmes, improved evidence base for assessments of the impacts of the offshore oil and gas industry on the marine environment and tools needed to support or enhance monitoring, information collection and assessment work. The work under the programme will be carried out taking into account the conclusions of the 2016 overall assessment and its supporting assessments prepared under the JAMP 2014-2021.

Overview of products for Theme O: Offshore Oil and Gas Industry

Number	Product name	Delivery
0-1	Assessment of impacts of certain pressures from the offshore oil and gas industry on the marine environment (2016 OIC stock-taking report)	2016
0-1bis	Assessment of impacts of certain pressures from discharges, spills and emissions from offshore installations	2017
0-2	Assessment of impacts of discharges of oil and chemicals in produced water on the marine environment (MSFD = "pollution effects")	2019
0-3	Assessment of the impacts of decommissioned pipelines on the marine environment and on other users of the sea	2019
0-4	Assessment of impacts of decommissioning on cutting piles	2019
0-5	Assessment of impacts of the offshore oil and gas industry on the marine environment (2020 OIC overall assessment)	2020

OIC	Theme O: Offshore Oil And Gas Industry	Product: O-1bis
Product Name: Assessment of impacts of certain pressures from discharges, spills and emissions from offshore installations		
Objective: The purpose is to assess progress against the objective of the Offshore Oil and Gas Industry Strategy (§1.1) and to contribute to the overall assessments of the impacts of offshore oil and gas activities in the North-East Atlantic for the Quality Status Report 2021.		
Relies on: Data collection to enable assessments on status and trends of discharges of oil and other hazardous substances from produced water on the marine environment		**Contributes to:** O-2, O-4, O-5, the Intermediate Assessment 2017
Target date: OIC 2017		
Responsible for activity: OIC[16]		
Current data management: Secretariat		

Meeting cycle	Assessment	Monitoring	Data management
2015/2016	Development of draft assessment sheet based on country specific assessments of discharges, spills and emissions from offshore installations		Data streams maintained in OSPAR database on discharges, spills and emissions (including data on Risk-based Approach (RBA)).
2016/2017	Delivery of the 2017 assessment.		

[16] RSC should lead on collecting data on discharges and environmental concentrations, and assessing these data and the impacts of discharges on the marine environment.

OIC	Theme O: Offshore Oil And Gas Industry	Product: O-2

Product Name: Assessment of impacts of discharges of oil and chemicals in produced water on the marine environment (MSFD= "pollution effects")

Objective: Assess the impacts of oil and other hazardous substances (excluding Naturally Occurring Radioactive Materials - NORM) discharged with produced water on the marine environment in the OSPAR maritime area. This relates to §1.3 (a), and § 4.2 (a)-(b), (d)-(e) and (g) of the OSPAR Offshore Oil and Gas Strategy; and §1.2 (a)-(b) of the OSPAR Hazardous Substances Strategy. This also relates to OSPAR Recommendations 2001/1 on produced water as amended and 2012-5 on a Risk-based Approach (RBA) as well as MSFD Descriptor 8 (contaminants).

Relies on: Product O-1 and Product O-1 bis	**Contributes to:** O-5

Target dates: 2019 (contribution to OIC overall assessment 2020)

Responsible for activity: OIC

Current data management: None

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- assessment of the results of Risk-based Approach (RBA) - assessment of the results of seabed and water column monitoring	Continue seabed and water column monitoring according to OSPAR Guidelines for monitoring environmental impacts of offshore oil and gas activities (OSPAR Agreement 2004/11).	- explore the need for a data management system for environmental monitoring data and information - input from data streams maintained in OSPAR database on discharges, spills and emissions, including data on the Risk-based Approach (RBA) - input from 2015 country specific assessments on discharges, emissions and spills
2015/2016	develop and/or identify tools to monitor and assess the effects of chronic low level exposure in key elements of the ecosystem - assessment of the results of the Risk-based Approach (RBA) - assessment of the results of seabed and water column monitoring	- continue monitoring of seabed and water column according to OSPAR Guidelines for monitoring environmental impacts of offshore oil and gas activities (OSPAR Agreement 2004/11) - initiate monitoring for effects of chronic low level exposure in key elements of the ecosystem	- decide on appropriate management system for environmental monitoring data and information and implement the system - Input from data streams maintained in OSPAR database on discharges, spills and emissions, including data on the Risk-based Approach (RBA) - input from 2016 country specific assessments on discharges, emissions and losses
2016/2017	- if decided, to revise OSPAR Guidelines on monitoring environmental impacts of offshore oil and gas activities (Agreement 2004/11) - assessment of the results of the Risk-based Approach (RBA) - assessment of the results of seabed and water column monitoring Assessment sheet on impacts of	- continue monitoring of seabed and water column according to OSPAR Guidelines for monitoring environmental impacts of offshore oil and gas activities (OSPAR Agreement 2004/11). - continue monitoring for effects of chronic low level exposure in key elements of the ecosystem.	- use, if appropriate, of data management system for environmental monitoring data and information - input from data streams maintained in OSPAR database on discharges, spills and emissions, including data on the Risk-based Approach (RBA)

	discharges of oil and chemicals in produced water on the marine environment		
2017/2018	- assessment of effects of chronic low level exposure in key elements of the ecosystem - assessment of the results of the Risk-based Approach (RBA) - assessment of the results of seabed and water column monitoring	- initiate revised program for seabed and water column monitoring according to OSPAR Guidelines on monitoring of environmental impacts of offshore oil and gas activities (Agreement 2004/11) (as revised)	- use, if appropriate, of a data management system for environmental monitoring data and information - input from data streams maintained in OSPAR database on discharges, spills and emissions, including data on the Risk-based Approach (RBA)
2018/2019	- assessment of the results of the Risk-based Approach (RBA) - assessment of the results of seabed and water column monitoring	Continue seabed and water column monitoring according to (revised) OSPAR Guidelines for monitoring environmental impacts of offshore oil and gas activities (OSPAR Agreement 2004/11).	- use, if appropriate, of data management system for environmental monitoring data and information - input from data streams maintained in OSPAR database on discharges, spills and emissions, including data on the Risk-based Approach (RBA)
2019/2020	- evaluate impact of discharges from offshore oil and gas activities against the developed definition of harm/ pollution effects. - assessment of the results of the Risk-based Approach (RBA) - assessment of the results of seabed and water column monitoring - update assessment sheet on impacts of discharges of oil and chemicals in produced water on the marine environment - contribution to 2020 OIC overall assessment (Product O-5)		- use, if appropriate, of data management system for environmental monitoring data and information - input from Data streams maintained in OSPAR database on discharges, spills and emissions, including data on the Risk-based Approach (RBA)

OIC	Theme O: Offshore Oil And Gas Industry	Product: O-3

Product Name: Assessment of the impacts of decommissioned pipelines on the marine environment and on other users of the sea

Objective: To research the impacts of decommissioned pipelines on the marine environment and on other users of the sea in the OSPAR maritime area. (Relevant Stakeholders: (1) OSPAR countries Fishermen's organisations/Federations. Other users of the sea across OSPAR countries, including Offshore Renewables development and (2) Other related agencies within OSPAR countries. Ascertain levels of national reporting of total disused pipe network, including mapping of the network, with regard to suspended pipelines, unused pipelines and pipelines left in situ post decommissioning.

Relies on:	**Contributes to:** O-5

Target dates: 2019 (contribution to OIC overall assessment 2020)

Responsible for activity: OIC

Current data management: None

Meeting cycle	Assessment	Monitoring	Data management
2014/2015	- initiate a scoping exercise to determine specific areas of study around the impacts and considerations of the disused pipeline network in all its stages. Including: (1) work to quantify the effects of disused pipelines on other users of the sea; (2) map the disused pipe network and the post decommissioning pipe network; (3) examine monitoring of deterioration of in situ post decommissioning pipelines; and (4) quantify environmentally sensitive areas; - identify and describe the impacts, based on monitoring and assessment results, in line with relevant targets and indicators	Determine whether current level of monitoring is appropriate .e. is there a need to increase/decrease it?	National monitoring reports.
2015/2016	- consider and assess other potential uses of pipelines, e.g., CCS/Offshore renewables - pipeline bundles: assess lessons learned regarding decommissioning programmes for pipeline bundles - evaluate any need for additional tools for monitoring - continue to identify and describe impacts: develop/identify tools to monitor and assess the effects on other users of the sea – e.g. impact on development of offshore renewable energy	Develop monitoring tools to identify impacts.	National monitoring reports.

2016/2017	- quantify effects of different materials and sizes of pipelines– on movability - continue to identify and describe impacts	Continue monitoring to determine impacts.	National monitoring reports.
2017/2018	Interim assessment of exercise to determine value of work to date and determine most effective way forward	Continue monitoring to determine impacts.	- interim assessment report - national monitoring reports
2018/2019	- continue with monitoring of impacts - take forward further work identified in interim assessment	Continue monitoring to determine impacts.	National monitoring reports.
2019/2020	- preparation of fact or Assessment Sheet, if appropriate - contribution to 2020 OIC overall assessment (Product O-5)	Continue monitoring to determine impacts.	National monitoring reports.

OIC	Theme O: Offshore Oil And Gas Industry	Product: O-4
Product Name: Assessment of impacts of decommissioning on cutting piles		
Objective: Compiling and assessing research data on disturbance of cuttings related to decommissioning. Relevant research data will include spreading of cuttings and contaminants and remobilisation and associated biological effects on the seabed and in the water column.		
Relies on: Product O-1 and Product O-1bis		**Contributes to:** Product O-5: 2020 overall assessment for the QSR21
Target dates: 2019 (contribution to OIC overall assessment 2020)		
Responsible for activity: OIC		
Current data management: None		

Meeting cycle	Assessment	Monitoring	Data management
2015/2016	Further develop assessment tools and establish the need for additional tools.	- conduct literature review to establish how to do reliable field studies monitoring the leakage from cutting piles - develop monitoring tools to identify impacts	National monitoring reports.
2016/2017	- interim assessment of exercise to determine value of work to date and determine most effective way forward	Continue monitoring to determine impacts	- interim assessment report - national monitoring reports
2017/2018	Take forward further work identified in interim assessment monitoring.	Depending on the outcome of the interim assessment, assess the need for further monitoring to determine impacts.	National monitoring reports.
2018/2019		If appropriate, continue monitoring to determine impacts.	National monitoring reports.
2019/2020	Contribution to 2020 OIC overall assessment (Product O-5).	If appropriate, continue monitoring to determine impacts.	- national monitoring reports - final close out report

OIC	Offshore Oil And Gas Industry Theme	Product: O-5
Product Name: Assessment of the impacts of the offshore oil and gas industry on the marine environment (2020 OIC overall assessment)		
Objective: The purpose is to compile the assessments carried out under product numbers. O-1 – O-4, to make an overall assessment of the impacts of the offshore oil and gas industry on the marine environment and to produce a final assessment report to be used for the QSR21.		
Relies on: Products O-1 to O-4		**Contributes to:** QSR21
Target dates: 2020 (Input to QSR21)		
Responsible for activity: OIC		
Current data management: None		

Meeting cycle	Assessment	Monitoring	Data management
2020/2021	- assessment of impacts of discharges of oil and chemicals in produced water on the marine environment (MSFD= "pollution effects") (P. O-2) - assessment of the impacts, of decommissioned pipelines on the marine environment and on other users of the sea (P. O-3) - assessment of impacts of decommissioning on cutting piles (P. O-4) - assessment of adverse effects on the marine environment other than pollution - preparation of Assessment Sheet on 2020 overall assessment		

Theme R: Radioactive substances

Objective of monitoring and assessment

17. The Radioactive Substances Strategy provides the basis for this part of the programme. The following issues will be addressed:

a. what are the anthropogenic sources of radionuclides, and are they changing?

b. what are the discharges, emissions and losses of radioactive substances from the nuclear and non nuclear sectors, and what are their temporal trends?

c. what are the concentrations of radioactive substances in environmental compartments, and are they changing?

d. what are the effects of radioactive substances on man and biota, and are they changing?

Products in 2014–2021

18. Over the programme period, the focus will be on the annual implementation of OSPAR monitoring and information collection programmes, annual or periodic data products and assessments based on OSPAR monitoring and information collection programmes and tools needed to support or enhance monitoring, information collection and assessment work. The work under the programme will be carried out taking into account the conclusions of the Fourth Periodic Evaluation and its supporting assessments prepared under the JAMP 2014-2021.

Overview of products for Theme R: Radioactive Substances

Number	Product name	Delivery
R-1	Assessment of trends in discharges of radioactive substances from nuclear and non-nuclear sources (Fourth Periodic Evaluation)	2016
R-2	Assessment of impact of Naturally Occurring Radioactive Materials (NORM) in produced water (and possibly, subject to a decision in 2016, in scales and sludges)	2018
R-3	Assessment of trends in discharges of radioactive substances from nuclear and non-nuclear sources and status and trends in their concentrations and impacts in the marine environment (Fifth Periodic Evaluation)	2020

RSC	Theme R: Radioactive Substances	Product: R-1

Product Name: Assessment of trends in discharges of radioactive substances from nuclear and non-nuclear sources (Fourth Periodic Evaluation)

Objective: Assess progress made in reducing discharges, emissions and losses of radioactive substances in the OSPAR maritime area, with the ultimate aim of concentrations in the environment near background values for naturally occurring radioactive substances and close to zero for artificial radioactive substances (§1.1 Theme Radioactive Substances of the OSPAR Strategy)
Ensure that by the year 2020 discharges, emissions and losses of radioactive substances are reduced to levels where the additional concentrations in the marine environment above historic levels, resulting from such discharges, emissions and losses, are close to zero (§1.2 Theme Radioactive Substances of the OSPAR Strategy)

Relies on: monitoring, data management/tools, and assessment products listed below.	**Contributes to:** Intermediate Assessment 2017

Target dates: 2016

Responsible for activity: RSC

Current data management: Secretariat

Meeting cycle	Assessment	Monitoring	Data management
2014/2015		- consideration of the inclusion of RSC monitoring methodologies in CEMP *- decision on the need to continue the assessment and reporting of emissions from the medical sector/university and research centres*	- all environmental concentration data reported in correct format. Continuation of the need to fill data gaps - all RSC data streams maintained in OSPAR database - development of necessary automated routines for assessment of RSC data streams via the OSPAR information system - review of the adoption of appropriate trend detection techniques to assess trends in RSC data streams - demonstration of the methodology for establishing Environmental Assessment Criteria (EACs) *- decision on the further use of the EAC methodology*
2015/2016	- Fourth Periodic Evaluation + Synthesis of Fourth Periodic Evaluation for inclusion in Intermediate Assessment 2017 - Assessment Sheet on the Fourth Periodic Evaluation		Inter-comparison exercises for QA of environmental concentration data.

RSC	Theme R: Radioactive Substances	Product: R-2

Product Name: Assessment of impact of Naturally Occurring Radioactive materials (NORM) in produced water (and possibly, subject to a decision, in scales and sludges)

Objective: Assess progress made in reducing discharges, emissions and losses of radioactive substances in the OSPAR maritime area, with the ultimate aim of concentrations in the environment near background values for naturally occurring radioactive substances and close to zero for artificial radioactive substances (§1.1 Theme Radioactive Substances of the OSPAR Strategy)

Ensure that by the year 2020 discharges, emissions and losses of radioactive substances are reduced to levels where the additional concentrations in the marine environment above historic levels, resulting from such discharges, emissions and losses, are close to zero (§1.2 Theme Radioactive Substances of the OSPAR Strategy)

Relies on: monitoring, data management/tool, and assessment products listed below.	**Contributes to:** 5th Periodic Evaluation and OIC Overall Assessment 2020

Target date: 2018

Responsible for activity: RSC

Current data management: Secretariat

Meeting cycle	Assessment	Monitoring	Data management
2014/2015		Review of current practice regarding disposal of low specific activity scales and sludges.	- data streams maintained in OSPAR database - demonstration of the methodology for establishing EAC - *decision on the further use of the EAC methodology*
2016/2017		*Decision on need for the assessment of the impact of discharges of NORM in low specific activity scales/sludges on the environment.*	- Derivation of additional concentrations of NORM in seawater from discharges of produced water. - Review of the use of detection limits and uncertainties for discharge data from offshore subsector.
2017/2018	Assessment of impact of NORM in produced water (and possibly, subject to a decision, in scales and sludges).		

RSC	Theme R: Radioactive Substances	Product: R-3

Product Name: Assessment of trends in discharges of radioactive substances from nuclear and non-nuclear sources and status and trends in their concentrations and impacts in the marine environment (Fifth Periodic Evaluation)

Objective: Assess progress made in reducing discharges, emissions and losses of radioactive substances in the OSPAR maritime area, with the ultimate aim of concentrations in the environment near background values for naturally occurring radioactive substances and close to zero for artificial radioactive substances (§1.1 Theme Radioactive Substances of the OSPAR Strategy).
Ensure that by the year 2020 discharges, emissions and losses of radioactive substances are reduced to levels where the additional concentrations in the marine environment above historic levels, resulting from such discharges, emissions and losses, are close to zero (§1.2 Theme Radioactive Substances of the OSPAR Strategy)

Relies on: monitoring, data management/tool, and assessment products listed below.	**Contributes to:** QSR21

Target Dates: 2020

Responsible for activity: RSC

Current Data Management: Secretariat

Meeting cycle	Assessment	Monitoring	Data management
2014/2015			Data streams maintained in OSPAR database.
2016/2017		Methodology for determining whether additional concentrations above historic levels are close to zero.	Review the use of agreed statistical methodologies for RSC data streams.
2017/2018		Decision on review of national plans.	
2018/2019	- review the need to assess the various sub-sectors for which discharge data is currently reported. - investigate and assess transboundary input of radionuclides	Provide rationale for not using sediment concentration data for RSC assessments.	
2019/2020	- Fifth Periodic Evaluation - Assessment sheet on the Fifth Periodic Evaluation		Review of the practical aspects of the EAC methodology.
2020/2021	Synthesis of the Fifth Periodic Evaluation for inclusion in the QSR21		

Annex 1: Common understanding of the approach for putting monitoring and assessment in a single framework

Nature of assessments

Purpose and scope

1. 'Assessment' is both a process and its product. As a process, a marine environmental assessment is a procedure by which information is collected and evaluated, often against specific targets using particular indicators. Its product is an assessment report, which is a document synthesising information, presenting the findings of the assessment including the evaluation of the effectiveness of existing measures and making recommendations for action for future work. Assessments should include both a scientific/technical assessment and an executive summary fit to inform those charged with implementing the recommendations.

2. This product can either be a thematic assessment dealing with one aspect of the marine environment, or a wider assessment of all aspects of that environment. A key feature of both types of assessment should be the linking of human activities and their pressures, the state of the marine environment impacted by such human pressures and management responses in the form of integrated environmental recommendations.

3. A general assessment of the quality of the OSPAR maritime area or its regions is defined as:

“a statement of the whole or part of the current knowledge of the health of the environment of a defined maritime area and its coastal margin as defined by OSPAR. A complete statement includes an analysis of the region’s hydrodynamics, chemistry, habitats and species with an evaluation of the impact of humans over space and time against a recognised background of natural variability. All aspects of significant human influence on the maritime area concerned should be examined. The evaluation of the effectiveness of measures taken and planned for the protection of the marine environment and the identification of priorities for action should also form part of it.”

4. The purpose of both kinds of assessment is to provide:

a. a concise summary of contemporary knowledge (both natural science and socio-economic) and current management;

b. an identification of significant gaps in knowledge which can provide an authoritative basis for defining priorities for further natural scientific, socio-economic and other investigations; and

c. a basis for judging the effectiveness and adequacy of environmental protection measures and for making any necessary adjustments.

To achieve this, JAMP assessments will take into account of all available, relevant information. Where appropriate quality assurance procedures have not been applied, caution will be needed in drawing conclusions.

5. In view of the objectives of the OSPAR Convention and those of the North-East Atlantic Environment Strategy, assessments should focus on:

a. the extent to which contamination and other adverse effects of human activities occur;

b. whether human health is safeguarded by the current processes and procedures;

c. whether the biological diversity of marine ecosystems is conserved, and the various components of the marine environment are being used in a sustainable way;

d. the effectiveness of the measures taken; and

e. priorities for action, including the implementation of planned measures and an assessment of their effectiveness.

6. The OSPAR Commission has adopted in 2013 a first set of 'common indicators and candidate indicators' in conjunction with its role as a regional platform for coordination of the implementation of the EU's Marine Strategy Framework Directive (MSFD). These indicators will be an important structuring element for OSPAR's monitoring and assessment activities in the period 2014-2021, especially in the developing area of biodiversity and food webs. The approach builds on the earlier adopted 'Ecological Quality Objectives' for which the work of the North Sea Conferences was an important driver. The OSPAR Commission will develop the individual indicators with a view to their use in the Intermediate Assessment 2017.

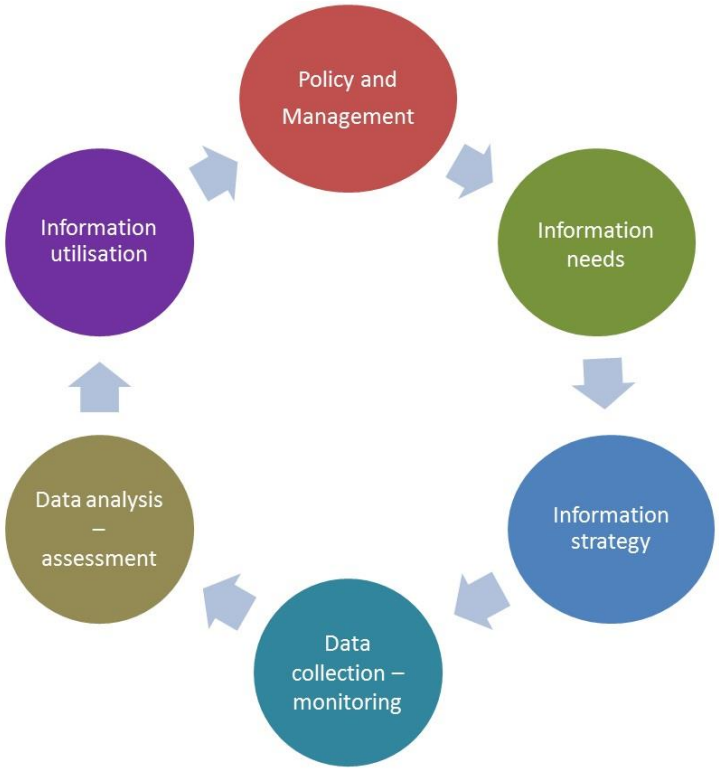


Figure: Monitoring and assessment supporting, and guided by, policy and management

Use of assessments for JAMP management action and to identify OSPAR interests in scientific development

7. Assessments are the result of a chain of activities, and their planning and delivery provide the drivers of the monitoring and information collection needed. The delivery of assessments will be used by the OSPAR Commission and its subsidiary bodies as an opportunity to provide feedback on the level and quality of marine environmental knowledge so as to guide the management of coordinated monitoring programmes, identify gaps in knowledge (see OSPAR Science Agenda) and inform related research and development. Weaknesses in the chain of activities (and gaps in knowledge) may limit the ability to provide accurate and focused assessment information. Given the limitation in resources available, the OSPAR Commission aims to ensure that management action steers the development of monitoring and assessment so it results in the largest possible added value. OSPAR Committees will justify proposals to the OSPAR Commission with this principle in mind.

Preparation of monitoring and data management tools, assessment frameworks and tools

8. "Tools" covers all the procedures and techniques that are needed for collecting information, QA, and interpretation and assessment of data. To ensure the quality of the final OSPAR assessments, OSPAR will ensure that appropriate procedures and techniques are developed (or adopted from other sources) for all

monitoring programmes and the major information collection and assessment exercises. In this task, the available tools will need to be considered by the relevant OSPAR Committees against the aims of the monitoring or information collection programmes.

9. Assessments arising from monitoring data are critically dependent upon practical mechanisms for handling data from different activities that ensure that documents, data and products are managed consistently and are easily available to users. This will support joint assessment, for example from integrated biological and chemical programmes, or linking the observed changes in spatial distribution and temporal trends in substances, or their effects, to inputs into the OSPAR maritime area.

10. The data storage and handling centres are therefore central in the process, and it is important that their role is clear and continuously developed and strengthened. A starting point is that data will be accessible to the OSPAR community along with any additional relevant information relating to its quality and comparability. Data management activities should contribute to the data policy of the MSFD, in co-operation with other conventions, governmental and non-governmental institutes, the EC and the European Environment Agency (EEA).

11. Information collection systems covers the collection of information to complement, augment and support the data and resulting assessment information that OSPAR derives through its core monitoring activities. In specifying any monitoring and information collection programme, it is essential to optimise the use of the limited resources (particularly ship-time at sea) by promoting synergies between different types of monitoring and information collection, including the use of data from satellites and ships of opportunity and cooperation between neighbouring countries.

Assessment criteria and assessment procedures

12. Assessment procedures and criteria need to be available for a proper assessment, and the process of development of monitoring requirements and indicators should be used to prepare them where necessary (see § 16 checklist question 7). Where there are existing international regulatory assessment criteria and procedures in place, the OSPAR Commission will take them into account so as to avoid the general public receiving potentially conflicting assessment information. Where new assessment criteria are required, there is a prioritisation required such that appropriate time can be devoted to develop these assessment criteria, the devlopment to include testing and the implemnetation of quality assurance procedures.

Operational monitoring and information collection programmes

13. The OSPAR Convention (Annex IV, Article 1) defines monitoring as “the repeated measurement of:

a. the quality of the marine environment and each of its compartments, i.e. water, sediments and biota;

b. activities or natural and anthropogenic inputs which may affect the quality of the marine environment; and

c. the effects of such activities and inputs.”

14. Monitoring may be focused on the measurement of either spatial distributions or temporal trends. Both constitute important elements of a monitoring programme. The ecosystem approach requires that monitoring of separate phenomena is progressively better informed by scientific understanding of the relevance and dynamics of component (sub-)systems of the marine environment (and the human influences upon it) and how they relate to, and influence, each other. While operational monitoring can be a ‘stand alone’ activity, the greatest benefit is expected from monitoring that is well embedded in an integrated approach. This integration starts with organising the relevant assessments by drawing on the different relevant disciplines.

15. The range of scales on which relevant phenomena need to be studied (from single indicators to integrated assessment of the state of the marine environment) and the changing scientific understanding

thus structure the OSPAR Commission field of action in developing adequate monitoring programmes, taking account of relevant action by other organisations.

16. Monitoring of identified indicators or phenomena (e.g. a specific pressure-impact relationship) needs to be focused on providing the answers to specific questions and testing specific hypotheses. To maximise the 'return on their investment' in developing new joint monitoring activities Contracting Parties will give prior consideration to the robustness of the entire chain of activities required to achieve a successful assessment, and will in particular, address the following checklist with regard to the monitoring requirements (some of which may need to be developed along the way):

CHECKLIST
Is the assessment question(s) and the objective and purpose of any monitoring clear?
Is the monitoring strategy (spatial and temporal coverage in relation to statistical demands and representativity) clear?
Are the monitoring parameters determined (incl. any necessary control variables17) in relation to the assessment need?
Are adequate18 sampling or observation methodologies available?
Are adequate analytical methodologies available?
Are QA/QC methods available?
Are assessment tools available (as the case may be: statistical analysis tools, assessment criteria)
Has the scope for pooling monitoring infrastructures and resources been established?
Are there arrangements for the monitoring metadata and data management at national level and at OSPAR level, georeferencing of the data?
Is it clear how change management (modifying important features, such as adding or removing parameters, changing coverage, …) should be addressed at OSPAR level?

17. Appropriate statistical approaches and methods will be used in the design and implementation phases of the monitoring and information collection programmes. A risk-based approach or an evaluation of the potential for adverse effects to the marine environment should be introduced to make best use of available resources. Monitoring efforts could be focussed on, or redeployed to areas where there is the greatest likelihood of significant change (in either direction) as a result of changes in drivers (pressures) determining the local or (sub)regional situation. One should be cautious with decreasing the monitoring frequency in cases where possible trends are of concern, but it may be considered for locations where established time series show status to be well below risk levels concern, and without any deteriorating trend over a number of years. In terms of the monitored parameters, a selection process should be introduced to assess the potential impact after which a risk characterisation could indicate whether further monitoring is required and at which scale. Where possible, modelling could fill in the gaps of non-successive years.

18. Regional differences in human uses, ecosystem structure and functioning, the general level of scientific information on the OSPAR maritime area, and in national monitoring programmes, may mean that certain temporal and spatial programmes and the application of specific indicators will be region-specific.

[17] Such as those necessary to document the relationship with status or changes in the prevailing conditions that might affect the monitoring parameter (e.g. GES Descriptor 1).

[18] 'adequate' means 'fit for purpose in the context of the agreed collective assessment objectives'

Subdivision of the OSPAR Maritime Area for the purposes of monitoring and assessment

19. The five OSPAR regions (see JAMP §4) will continue to serve as the overall geographical basis for future regional assessments by OSPAR, taking into account, where relevant, the boundaries for marine regions and subregions defined through the MSFD implementation process. Appropriate geographical scales and aggregation rules for the determination and assessment of good environmental status under the MSFD (sensu MSFD Art.9), as well as those chosen by States with regard to the applicability of their environmental targets and indicators (MSFD: Art. 10) should inform OSPAR's work. Regions II, III and IV broadly cover EU Member States' waters in the equivalent MSFD sub-regions in the North-east Atlantic Ocean. However, what is becoming increasingly clear is that the relevant scale for assessments under the MSFD will not be constant but will be related to the determinands, be they chemical, biological or physical. As such, the JAMP needs to take account of the parameters, associated metrics and the scale when providing monitoring guidance. It will be crucial during the development of JAMP programmes that the appropriate assessment scale is specified. On occasions this is likely to be less than the sub-regions, however, on other occasions the relevant OSPAR region will be an appropriate scale. As such, the JAMP 2014 – 2021 should ensure that assessments are performed at a scale appropriate to the measurements being made and provide clear justification for this process. Management measures may also require different scales of operation, be it local, (sub)regional or even at a global level (e.g. IMO) Ways of working need to be developed where the MSFD and OSPAR Regions are not coincident. Although there have been discussions around this in the past further work is necessary to determine which geographic aggregation is required for which assessment product. JAMP 2014 – 2021 should be clear about the boundaries and be clear when the MSFD and OSPAR boundaries are not coincident. The impact of any difference should be considered in the assessment.