

DELIVERABLE 2.2.

ANALYSIS OF NATIONAL, REGIONAL AND EU MSFD INSTITUTIONS AND GOVERNANCE STRUCTURES: CHALLENGES AND OPPORTUNITIES FOR A RISK-BASED-APPROACH IN THE NORTH EAST ATLANTIC



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Contents

1. Introduction	4
1.1 Competent authorities (CA)	6
1.2 Regional cooperation	7
1.3 Common Implementation Strategy	7
1.4 Aim	8
2. Method.....	8
3. Results	10
3.1 National Governance structures	10
3.2 Regional Governance Structures.....	13
3.3 Common Implementation Strategy	14
4. Discussion.....	17
4.1 National accountability and capacity	18
4.2 Regional accountability, capacity objectivity and leadership	20
5. Capacity Building.....	21
6. Recommendations	21

Acronyms

CIS - Common Implementation Strategy

EEA - European Environment Agency

EBA – Ecosystem-Based Approach

EU – European Union

GES - Good Environmental Status

ICES - International Council for the Exploration of the Sea

ICGs - Intercessional Correspondence Groups

JRC - Joint Research Centre

OSPAR - Convention for the Protection of the Marine Environment of the North-East Atlantic

MS - Member States

MSCG - Marine Strategy Coordination Group

MSFD - Marine Strategy Framework Directive

RSC - Regional Sea Convention

TG - Technical Group

WG - Working Group

WG DIKE - Working Group on Data, Information and Knowledge Exchange

WG GES - Working Group on Good Environmental Status

WG POMESA - Working Group on Programmes of Measures and Economic and Social Analysis

1. Introduction

The Marine Strategy Framework Directive (MSFD¹), sets out to implement an Ecosystem-Based Approach (EBA) to marine environmental management across the European Union's marine waters. Though there are many competing definitions of EBA²³, none of which is universally agreed, in broadest terms it is intended to be:

- Holistic: applying to multiple human Drivers (activities and sectors), Pressures and Impacts in order to achieve or maintain healthy ecosystems. This is reflected in the eleven diverse Pressure and State descriptors of Good Environmental Status (GES).
- Integrated: connecting human activities and institutions to environmental state at appropriate scales. In this way the EBA incorporates the current dominant theoretical perspective on social-ecological systems⁴ recognising nested human systems (including institutions) and ecological systems and incorporating the idea of "institutional fit"⁵ (i.e. the requirement for institutions to operate on the scales appropriate to the management of the system)

As such the geographic scale and environmental scope of the MSFD represents an unprecedented level of ambition for enforceable European marine environmental management. The Directive builds on and incorporates existing legal obligations under the Habitats Directive⁶, the Water Framework Directive⁷ and the Common Fisheries Policy, amongst others, as well as expanding in new directions the technical scope for measuring and monitoring of marine environmental pressures (e.g. underwater noise, marine litter) and marine ecosystem elements (e.g. benthic habitats, food webs).

The specific pressures and environmental components (receptors, including species and habitats) addressed by MSFD have different spatial and temporal characteristics which vary region by region. For example, the pressures for eutrophication are principally land-based (point and diffuse nutrient sources). The symptoms of eutrophication depend on the specific physical and biological characteristics of a particular ecosystem or sub system⁸. In enclosed and semi-enclosed seas like the Baltic, Black and North Seas eutrophication effects may be basin-wide while in the Atlantic symptoms of eutrophication are principally confined to transitional waters and coastal margins. Similarly, in the smaller, enclosed seas, a reasonably complete picture of environmental pressures and states may be developed at relatively low costs.

The intensity of pressures and the resulting environmental problems have also played a role in the historical monitoring and measuring of the marine environment, and the first international management efforts for the North Sea began in 1882 with the signature of the North Sea Convention. In large ocean basins such as the North East Atlantic, the level of intensity of pressures and large spatial scale have resulted in a history of less intensive monitoring and measurement. Given the relative levels of human activity in areas like the North East Atlantic, the likelihood of environmental problems occurring may be lower, nevertheless MS are still obliged to ensure that GES is achieved or maintained. The MSFD therefore poses different challenges for different Member States, where some are faced with management of intensively used small areas (e.g. Slovenia with an Exclusive Economic Zones (EEZ) of 214 km²), while others have responsibility with management of vast relatively little used areas (e.g. Portugal with an EEZ of 1,700,000 km²).

¹ Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive).

² Mee, L.D., Cooper, P.C., Gilbert, A.J., Kannen, A. and O'Higgins, T. 2014. Sustaining Europe's seas as coupled social-ecological systems. *Ecology and Society*. 19(3)

³ Ryan-Enright, S and Boetler, B. In Press. The Ecosystem Approach in International Law. In *Ecosystem Based Management and Ecosystem Services: Theory, tools and practice*. O'Higgins, DeWitt and Lago Eds. Springer, Amsterdam. XX pp

⁴ Ostrom, E. 2009. A general framework for analysing sustainability of social-ecological systems. *Science*. 325, 419-422.

⁵ Young, O. 2002. *The institutional dimensions of environmental change: fit, interplay, and scale*. MIT Press, Cambridge, Massachusetts, USA.

⁶ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

⁷ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

⁸ Cloern, J.E., 2001. Our evolving conceptual model of the coastal eutrophication problem. *Marine Ecology Progress Series* 210 223-253

In states with small maritime areas (e.g. Slovenia), it may be practically feasible to measure and monitor every aspect of the marine environment relatively intensively and on a regular basis. While in the Atlantic coastal countries (e.g. Portugal, Ireland) with large EEZ and relatively lower levels of human activities, such intensity of monitoring is prohibitively expensive and not practically justifiable. As a result, a number of Member States have argued for the need to develop risk-based approaches to implementation of the MSFD, and the provision for risk-based approaches has been incorporated into the latest Commission decision on good environmental status⁹.

The Risk Based Approach proposed adopted by the RAGES project follows a standard methodology which is introduced in RAGES D2.1 and is being further developed for two descriptors (D2- Non Indigenous Species and D11- Underwater noise) the pressures for which - transport and underwater noise propagation - are also characterised by their potential to affect large spatial scales. The method is being developed with a specific focus on the North East Atlantic with its unique management characteristics (as set out above), but ideally could be replicated, where appropriate, across other marine regions and national jurisdictions. In accordance with the ISO standards on risk, the RAGES risk-based approach follows four main steps

1. Risk Identification
2. Risk Analysis - including preliminary analysis, likelihood analysis and consequence analysis
3. Risk Evaluation - where relative levels of risk can be compared in order to prioritise efforts
4. Risk Treatment - where measures are developed based on their prioritisation in the step 3

The objective of developing this Risk Based Approach is to provide a practical standardised, replicable and scientifically justifiable approach to implementation of MSFD. While risk-based approaches can rely less heavily on at-sea monitoring and measuring by focussing efforts on specific areas, in order to be effective they require integration of data from different sources and effective transferrable, intercomparable, regional approaches. As such, they require effective data flows within and between member states and these flows of data and information are mediated by human institutions and organisations. In order to be effective, regional and national institutions must be equipped to utilise the best available scientific knowledge and integrate this knowledge into management decisions nationally and regionally.

The MSFD establishes a process whereby individual Member States (MS) are responsible for developing a marine strategy for their waters in order to achieve Good Environmental Status (determined at regional or sub-regional levels) and outlines an institutional framework through which implementation should be conducted to be harmonised regionally and across all European Union (EU) MS. For that, the MSFD requires that activities are coordinated regionally, preferably through the regional sea conventions (RSC) (Oslo-Paris Convention - OSPAR, Helsinki Convention - HELCOM, Barcelona Convention – UNEP-MAP, Bucharest Convention - BSC). The whole MSFD process is steered at EU level with input from technical groups and through a regulatory committee. This institutional framework is set out through three specific articles in the Directive:

Article 7 (Competent Authorities) - mandates the designation by MS of a Competent Authority (CA) or competent authorities with responsibility for MSFD. The directive (Annex II) also makes provision for a designated competent authority (CA) to be a coordinating body for other competent authorities. All MS have now designated CA under Article 7.

Article 6 (Regional Cooperation) - mandates cooperation efforts through existing structures, including regional sea conventions (RSC). In the North East Atlantic, OSPAR represents a long-established and proven forum for individual nations (MS and third countries) to cooperate towards common goals for marine environmental management; to enable regional harmonisation as required by MSFD Article 5(2), as well as to incorporate the latest science into practical environmental management (e.g.^{10, 11}).

⁹ EC, 2017. Commission Decision (EU) 2017/848 of 17 May 2017 laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU

¹⁰ OSPAR, 2010. Quality Status Report.

¹¹ OSPAR, 2017. Intermediate Assessment.

Article 25 (Regulatory Committee) - mandates the establishment of a regulatory committee, which follows a standard European procedure¹². The regulatory committee is composed of representatives of the MS, in this case the marine coordinators (those responsible at the national level for delivery of MSFD) and chaired by a representative of the Commission.

Additionally, the MS and the Commission have adopted an agreed Common Implementation Strategy (CIS) towards the objectives of the MSFD. The structure and mandate of the CIS with its Marine Strategy Coordination Group (MSCG), its working groups (on Good Environmental Status, Data, and Programmes of Measures) and supporting technical groups (on noise, litter, data and, most recently, seabed), is described in its current strategy (MSCG, 2017)¹³.

As described above, the MSFD sets out a vision for coordination and regional harmonisation of environmental management as well as the institutional arrangements by which this coordination may take place. Yet, despite the existing coordination structures, in practice the implementation of the first cycle has fallen short of expectations. The Commission assessments of MS performance during the first cycle of MSFD¹⁴ found that, while regional cooperation was most coherent in the North East Atlantic, with OSPAR providing the basis for coherency in initial assessments, there were significant shortfalls in terms of regional cooperation on determining GES (Article 9) and setting of Environmental Targets (Article 10).

Social scientific analysis of the difficulties arising in regional harmonisation of MSFD describe two sources of “institutional ambiguity” (van Leeuwen et al, 2012¹⁵, van Tatenhove, 2013¹⁶). First, while Art 6 provides for MS to use any regional institution to enable regional coordination, and MS are obliged to coordinate across the (sub)region rather than the EU, the formal rules governing the interactions between the EC and the regional conventions are not described in detail, resulting in uncertainty as to the exact role of the conventions in the MSFD. Second, the framework nature of the MSFD allows MS some latitude in determining GES, environmental targets and measures and the capacity of the EC to steer the process is therefore limited. With respect to the individual articles establishing the MSFD management structure, each has the potential to contribute to the holistic EBA envisaged in the directive, but by contrast aspects of the process at every level (national, regional and EU) have the potential to undermine effective implementation in the North East Atlantic, and are summarised in the following sections. Therefore, understanding the institutional make up for delivering MSFD may provide insights into ways in which these institutions may be strengthened and providing a better prospects of achieving the goals of the directive.

1.1 Competent authorities (CA)

In an individual MS, technical capacity for different elements of the MSFD are not located within one single government department or agency since:

- under the Directive a CA may be a coordinating organisation;
- there are numerous cross-walks between the MSFD and other environmental directives;
- the descriptors have implications for several important economic sectors (e.g. maritime transport, fishing, farming, aquaculture) which fall under different ministries.

As a result, in order to fully comply with the requirements for implementation, designated CAs require inputs or actions from other government departments or agencies with differing priorities. Thus, effective delivery of MSFD objectives depends on institutional (interdepartmental and interagency) interactions and relationships and these interactions

¹² Council Decision of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission (1999/468/EC).

¹³ Marine Strategy Coordination Group (MSCG), 2017. Marine Strategy Framework Directive Common Implementation Strategy 2016-2019.

¹⁴ EC, 2014 COMMISSION STAFF WORKING DOCUMENT Annex Accompanying the document Commission Report to the Council and the European Parliament The first phase of implementation of the Marine Strategy Framework Directive (2008/56/EC) - The European Commission's assessment and guidance /* SWD/2014/049 final */.

¹⁵ Van Leeuwen, J. van Hoof, L. and van Tatenhove, J. 2012. Institutional ambiguity in implementing the European Union Marine Strategy Framework Directive. Marine Policy 36, 636-643.

¹⁶ Van Tatenhove, J.P.M. 2013. Turning the tide: developing legitimate marine governance arrangements at the level of the regional seas. Ocean and Coastal Management 71 296-304

may be beyond the direct control of the designated CA, leading to choke points. Section 3.1 of this document provides analysis of the national institutions required for delivery of MSFD in the four RAGES partner countries.

While MSFD implementation results in an administrative burden in terms of the collation of information, this data gathering and synthesis also provides an opportunity for a more cohesive approach to environmental management. MS share a common legislative framework (under the EU nature directives) and the national processes of MSFD implementation can add value to national and regional understanding and management of marine ecosystems, contributing to more effective, holistic conservation and use of these systems, which provide many essential ecosystem goods and services resulting in economic and social benefits to member states.

1.2 Regional cooperation

The role of the RSC has evolved due to the introduction of the MSFD. For example, some elements of OSPAR activity now may carry increased legislative weight, where activities within the frame of the OSPAR Convention potentially contribute, for example, to regional thresholds. If these thresholds are to be linked with GES achievement, this would lead to the situation where OSPAR plays a new, but as yet unclear role in determining compliance with MS European legal obligations. While it is not OSPAR's responsibility to deliver directly to the EU, MS have the ultimate responsibility to implement MSFD and to report their thresholds (developed through regional cooperation in a forum such as OSPAR), the clear direct synergies between the processes contribute to the aforementioned institutional ambiguity.

OSPAR (as well as other regional organisations such as HELCOM and the Regional Fisheries Management Organisations) provides a forum where the latest results of scientific monitoring and measuring, as well as the latest developments in the analysis of data on marine ecosystems can be presented. Participation in OSPAR therefore offers potential for building capacity and for harnessing synergies between the OSPAR and EU processes and thereby improving the economy and efficiency of delivering MSFD.

The scope of the OSPAR Convention includes but goes beyond that of MSFD and there are many different OSPAR Intercessional Correspondence Groups (ICGs) covering different areas of marine management relevant to MSFD implementation. However, the level of participation, and the degree of leadership by individual contracting parties (CP) within regional seas conventions, depends on national capacities as well as national governmental priorities, limiting the extent to which the Convention can effectively contribute to delivery of common environmental objectives in a regionally balanced way. These may be driven partly by national priorities but also by historical legacy, some countries have been cooperating in the area of marine management under the North Sea Convention since 1882¹⁷. This may also contribute to "institutional ambiguity": while RSCs provide the forum where CPs, having both technical capacity and appropriate geographic scale, can contribute to address regional implementation, the level of regional coordination desired by MS in the task of actually implementing the Directive (a national competence) may vary, depending on the extent to which their interests are fully represented within the RSC.

1.3 Common Implementation Strategy

At the level of EU cooperation, the two implementation strategies^{8, 18} contain calls for enhanced synergies and efficiency between activities conducted under the regional seas conventions and the EU MSFD process and recognise the need to avoid duplication of effort. There have also been calls for improved central leadership at the EU level¹⁹.

The Commission is guided by its scientific branch, the Joint Research Centre (JRC) and takes scientific advice from the European Environment Agency (EEA), and the International Council for the Exploration of the Sea (ICES), agencies with no direct responsibility for delivering MSFD. Therefore, information flows between member states, the JRC and EEA may be critical ensuring convergence in the direction of MSFD implementation. A lack in such information flow can

¹⁷ while other countries did not come into existence until 40 years later.

¹⁸ Marine Strategy Coordination Group (MSCG), 2013. Marine Strategy Framework Directive Common Implementation Strategy. Strategic document including a work programme for 2014 and beyond.

¹⁹ Van Leeuwen, J. van Hoof, L. and van Tatenhove, J. 2012. Institutional ambiguity in implementing the European Union Marine Strategy Framework Directive. Marine Policy 36, 636-643.

also result in divergent positions between the Commission and MS when decisions need to be taken regarding the implementation of the MSFD. As in the regional seas conventions, the technical capacity within MS may affect their ability to participate in the technical groups which support the MSCG, resulting in national under. Nevertheless, MS also stand to build capacity and enhance synergies with existing activities by fully participating in the processes.

As such the introduction of the risk-based approach for the second cycle of MSFD has the potential to mitigate some of the capacity problems which may have been experienced by member states in the first cycle, by enabling more focussed analysis. In the case of the North East Atlantic, the co-development of a common approach to a risk-based methodology for MSFD also offers the potential for an achievable regional process agreed by the relevant competent authorities meeting both the requirements of the Commission and the MS.

1.4 Aim

The overall aim of this document is to produce an assessment of governance structures for the implementation of MSFD within the RAGES study area and assess their implications for the development of effective risk-based approaches to MSFD for the region. The study will focus on all three articles defining the governance structures for MSFD and involves three subtasks:

1. Identification and characterisation of actors, departments and agencies in the national MSFD implementation process (Article 7).
2. Identification and characterisation of the level of participation in OSPAR and its Committees and ICGs (Article 6).
3. Characterisation of MS participation in CIS including participation in Working and Technical Groups.

The remainder of this document is set out as follows

Section 2 sets out the rationale for a method and steps for a data gathering exercise (see below and Annex 1) which was conducted at the first RAGES steering committee meeting (July 2019) with representatives from each of the RAGES partner competent authorities (and experts).

Section 3 presents the results of the institutional analysis

Section 4 discusses the implications of the current institutional arrangements and identifies areas where the process may be vulnerable to differences in national capacities.

Section 5 is about capacity building

Section 6 makes recommendations for how a risk-based approach may help to alleviate some of the institutional issues by co-development of a standardised risk-based approach.

2. Method

The process of adaptive management under the EBA can be viewed in two contrasting ways. Traditionally management of a commons (such as Europe's seas, or the North East Atlantic) is viewed in terms of power sharing arrangements between states and resource users (e.g. the MSFD directs the MS to designate a competent authority and achieve GES). Alternatively, Carlsson and Berkes²⁰ argue that rather than focussing on the formal structures, research should concentrate on the functional management of a system recognising that individual states are often fragmented, comprised of hierarchies of individuals, authorities and agencies that operate together to form a state. These authors identify 6 steps in the analysis of co-management regimes:

- Step 1 - Identification of the system to be analysed
- Step 2 - Identify the tasks to be performed
- Step 3 - Identify the participants in the co-management and related problem-solving process

²⁰ Carlsson, L. and Berkes, F. 2005. Co-Management: concepts and methodological implications. *Journal of Environmental Management*. 75 65-76

- Step 4 - Analyse the links between actors
- Step 5 - Define capacity building needs
- Step 6 - Prescribe remedies

In the case of RAGES D2.2, the system to be analysed (step 1) is the national, regional and EU MSFD institutional process. The main tasks to be performed (step 2) are -the development of marine strategies Art 5(2), including their various elements; Article 8 (initial assessments); Articles 9 (determination of GES); Article 10 (setting of environmental targets) and Article 13 (programmes of measures)²¹ of the MSFD. Identification of the participants in the co-management and problem-solving process (step 3) made up the data gathering phase of our study and was conducted through a survey involving three exercises. Information regarding the institutions and personnel from the competent authorities and other institutions involved in implementation of MSFD was elicited from RAGES partner MS. The exercises were first developed and tested with the Irish national competent authority for MSFD in Ireland and are briefly described below. Templates for conducting each exercise are provided at the end of this document, in Appendix 1.

Exercise 1 focused on CAs (Article 7) and was designed to elucidate the functional relationships within national government which are required to complete the MSFD process and identify common patterns and choke points in institutional structures across nations, which may result from the Directive itself. This exercise works through the individual descriptors of the MSFD to identify institutions (departments, agencies and subgroupings) with specific competencies in those individual descriptors or criteria.

Exercise 2 focused on regional cooperation (Article 6) and was designed to find out which (and how many) individuals from each country, competent authority and other agencies, take part in various aspects of regional cooperation under the auspices of the OSPAR Commission.

Exercise 3 was designed to examine the interrelationships between OSPAR activity and MS participation in the EU level CIS activities by identifying levels of participation in MSCG, Working Groups (WG) and Technical Groups (TG) and their overlap/complementarity with OSPAR activities.

The exercises were distributed at the first RAGES steering committee meeting (Lisbon, July 2019). A representative from each MSFD CA was asked to complete the exercises. Initially the process was facilitated by a (non-competent authority) member of the RAGES team, and following the workshop, the representatives of the CA were asked to complete the remainder of the exercises in consultation with others directly involved in the implementation of the MSFD process.

Following the data gathering, step 4 involved the analysis of links between actors. First, data from exercise 1 for each country were analysed individually to understand the existing national governance arrangements. Data from exercise 1 relating to the national governance structures for MSFD and then were visualised using R (programme for statistical computing) ggplot library using hierarchical clustering and Circle packing software to enable inter-comparison of the hierarchical structures between countries.

To understand the links between actors at the regional scale, the data from exercises 2 and 3 were used to populate and generate a network analysis by identifying the links between institutions and individual actors and their roles in the CIS and OSPAR processes. This network was visualised using the open source network analysis software Gephi 0.9.2 (<https://gephi.org/>).

Data from all three exercises were used to identify capacity building needs (step 5)

Finally, the Nolan Principles²² were used as a critical framework for the assessment for analysis of the results and development of recommendations (step 6).

²¹ Data were collected under the categories, assessment monitoring and programmes of measures. In terms of analysis, we found that the social networks were fully represented by considering assessments and monitoring.

²² Nolan, 1995. First Report of the Committee on Standards in Public Life. London HMSO. 18. Pp

3. Results

3.1 National Governance structures

The (Article 7) CAs for MSFD in each country are as follows:

- **Ireland** - Department of Housing Planning and Local Government (DHPLG). Specific responsibility for the delivery of MSFD within the DHPLG lies with the Marine unit.
- **Portugal** - *Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos* (DGRM) which translates to Directorate General for natural resources, safety and maritime services. DGRM is part of *Ministério do Mar* (Ministry for the Sea, re-established in 2015).
- **France** - The MSFD competent authority for France is the *Ministère de la Transition Ecologique et Solidaire* via its *Direction de l'eau et de la biodiversité subdivision* (MTES/DEB).
- **Spain** - The MSFD competent authority in Spain is the *Dirección General de Sostenibilidad de la Costa y del Mar* (DGSCM) and the *Subdirección General para la Protección del Mar* (SGPM) has specific competence in MSFD. The General Subdirectorate for the Protection of the Sea is one of the three Subdirectorates integrated in the General Directorate for the Sustainability of the Coast and the Sea from State Secretary of Environment from the Spanish Ministry for the Ecological Transition (MITECO). It is the CA for the MSFD implementation, marine biodiversity protection and Marine Protected Area designation and management. It is also the main actor for representation of Spain in OSPAR.

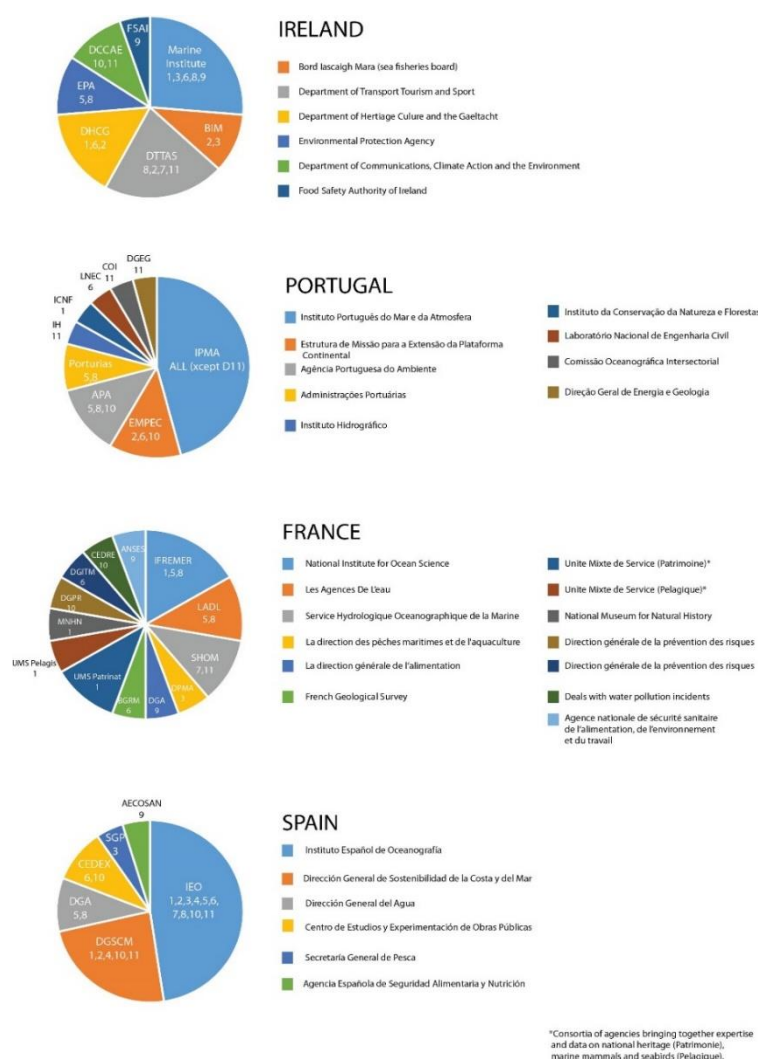


FIGURE 1: NUMBER OF AGENCIES (EXCLUDING COMPETENT AUTHORITIES, SINCE THEY HAVE COMPETENCE IN ALL DESCRIPTORS) INVOLVED IN THE DELIVERY OF EACH DESCRIPTOR IN EACH OF THE RAGES COUNTRIES (BASED ON THE RESULTS OF EXERCISE 1. REGIONAL DATA (AZORES AND MADEIRA) FOR PORTUGAL NOT ILLUSTRATED.

IRELAND

- DHPLG
- MARINE All
- EPA 5,8
- DTTAS 8,2,7,11
- FSAI 9
- DCCAE 10
- PAD 11
- NPWS 1,6
- DHCG
- DAFM
- BIM 2,3
- MI
- MEFSS 8,9
- FEAS 1,3,6
- NBDC 2

PORTUGAL

- MPI
- Polite
- NEC
- MdD
- MD 11
- DSAM 8
- INF 1
- MATE
- APA 5,8,10
- DGPM
- DGRM All
- IMEC 2,6,10
- FMA All
- DGEG 11
- CDK
- MCTES
- DRM DRP
- U score
- MADEIRA
- AZORES

FRANCE

- MGA
- SHOM 7,11
- MHNM 1
- UMS PELAGIC 1
- UMS PATRINAT 1
- MAA
- DPMA 3
- DGA 9
- MTES
- DEB All
- DGPR 10
- DGTM 6
- LADL 5,8
- IPREMER 1,5,8
- CEDRE 10
- ANSES 9
- BGRM 6

SPAIN

- AECOSAN 9
- AUTONOMOUS REGIONS 3
- SGP 3
- MAPA
- MFOM
- CEDEX 6, 10
- MICINN
- IEO 1,2,3,4, 5,6, 7, 8, 10, 11
- DGBMN
- DGSCM 1,2, 4, 10, 11
- DGA 5, 8
- MITECO

Figure 2 illustrates the hierarchical structure of institutions involved in delivering MSFD in each country, and the relationships between different departments and agencies. The remits for different descriptors frequently lie within government departments external to the competent authority. The additional level of institutional complexity introduced by the regional MSFD in Portugal is evident from the large numbers of regional institutions required.

TABLE 1: NUMBER OF INSTITUTIONS REPORTED BY EACH RAGES PARTNERS CA WITH A ROLE IN DELIVERING EACH MSFD DESCRIPTOR

Descriptor		Member State				Total
		IE	PT	FR	ES	
D1	Biodiversity	3	3	5	2	13
D2	Non-indigenous species	2	3	1	2	8
D3	Commercial Fisheries	3	2	2	3	10
D4	Food Webs	1	2	1	2	6
D5	Eutrophication	2	3	3	2	10
D6	Sea Floor integrity	3	3	3	2	11
D7	Alterations to hydrography	2	2	2	1	7
D8	Contaminants	3	4	3	2	12
D9	Contaminants in seafood	3	2	3	1	9
D10	Marine Litter	2	4	3	3	12
D11	Energy and Noise	3	4	2	2	11

Table 1 summarises the number of institutions contributing to the delivery of each descriptor in each country, including the Competent Authorities (which have legal competence in all descriptors). Portugal reported two institutions (DGRM and IPMA) with roles in all descriptors, while for Spain the CA (MITECO) reports roles in just 7 descriptors.

While the number and type of institutions involved in delivering MSFD varies between the different countries, and number of institutions contributing to a particular descriptor does not necessarily imply a greater capacity in a particular scientific area, a number of similarities exist. For descriptor 3 (Commercial Fish and shellfish), in Ireland, France and Spain there are dedicated sea fisheries institutions, which are under the remit of agriculture and food departments and separate from the MSFD CAs. Only in the case of Portugal, both fisheries and the MSFD are under the same ministerial department, the *Ministério do Mar* (Ministry for the Sea). These institutional structures reflect the administrative and technical requirements resulting from the long history of management and regulation under the Common Fisheries Policy. In all countries both descriptors 5 (eutrophication) and 8 (contaminants) are dealt with by the same agencies. The governance infrastructure developed to meet the needs of the Water Framework Directive (WFD) is well established and quite similar between countries, and is leveraged for MSFD. In Ireland, the *Environmental Protection Agency* has this responsibility, in France *Les Agences de L'eau* are regional bodies with the same role, and in Spain this work is carried out by the *Dirección General del Agua* (DGA). In Portugal the work of the *Agência Portuguesa do Ambiente* (APA, Portuguese Environment agency) is supplemented by the national ports (*Administrações Portuárias*) which have localised responsibilities for WFD delivery. Thus, in coastal waters, for D5 and D8, the well-established framework for delivery of WFD, results in the involvement of relatively few agencies. A similar situation can be observed for descriptor 9 (contaminants in Seafood), for which existing European public health legislation (e.g regulation 1831/2003 setting maximum levels of contaminants to foodstuff)²³ has resulted in a situation where the institutions already exist with the capacity (and obligation) to deliver the relevant information for MSFD (FSAI in Ireland, IPMA in Portugal, ANSES in France and AECOSAN in Spain).

The synergies between these well-established directives and policies with the MSFD are clear and embedded in the process of MSFD, while for other descriptors, there is no clear trans-national pattern in the approach. Where descriptors are less well understood (Energy and noise, food webs, marine litter) or there is no pre-existing legislation, few if any institutions have capacity to deliver a descriptor. For example, neither Ireland nor Spain reports any agency

²³ Directive 2006/113/EC of the European Parliament and of the Council of 12 December 2006 on the quality required of shellfish waters

(other than the competent authority) with responsibility for food webs (D4) and France and Portugal report only one agency with expertise.

For all countries, the distributed nature of the capacity may contribute to complexity of regional coordination. While the information required for national reporting on MSFD may flow between departments in order to meet national reporting requirements, the expertise is still maintained within institutional silos. Thus, when it comes to the requirement for regional harmonisation specific to MSFD it may prove difficult to coordinate regional approaches since the individual experts at the national level do not have a direct accountability for regional reporting. Thus mechanisms to bring together regional expertise and to systematically collate information, such as through the use of a risk based approach specifically in the frame of MSFD, could be of key importance in improving regional coordination into the future.

3.2 Regional Governance Structures

The OSPAR Convention is the RSC for the north east Atlantic envisioned under (Article 6) for the promotion of regional MSFD coordination in this region.

Figure 3 illustrates the organisational structure of OSPAR. This structure can be broken into three main parts, the first comprises the commission itself and its advisory groups the Heads of Delegation (HoD), the main decision-making arm of OSPAR, the Coordination Group (CoG), the Chairmen and Vice Chairmen (CVC) and the Jurists and Linguists (JL) groups. The second part is comprised of the five committees which provide material to CoG, and these committees are in turn supported by the third group, an array of currently 32 Intercessional Correspondence Groups (ICGs), Working Groups and Expert Assessment Panels.

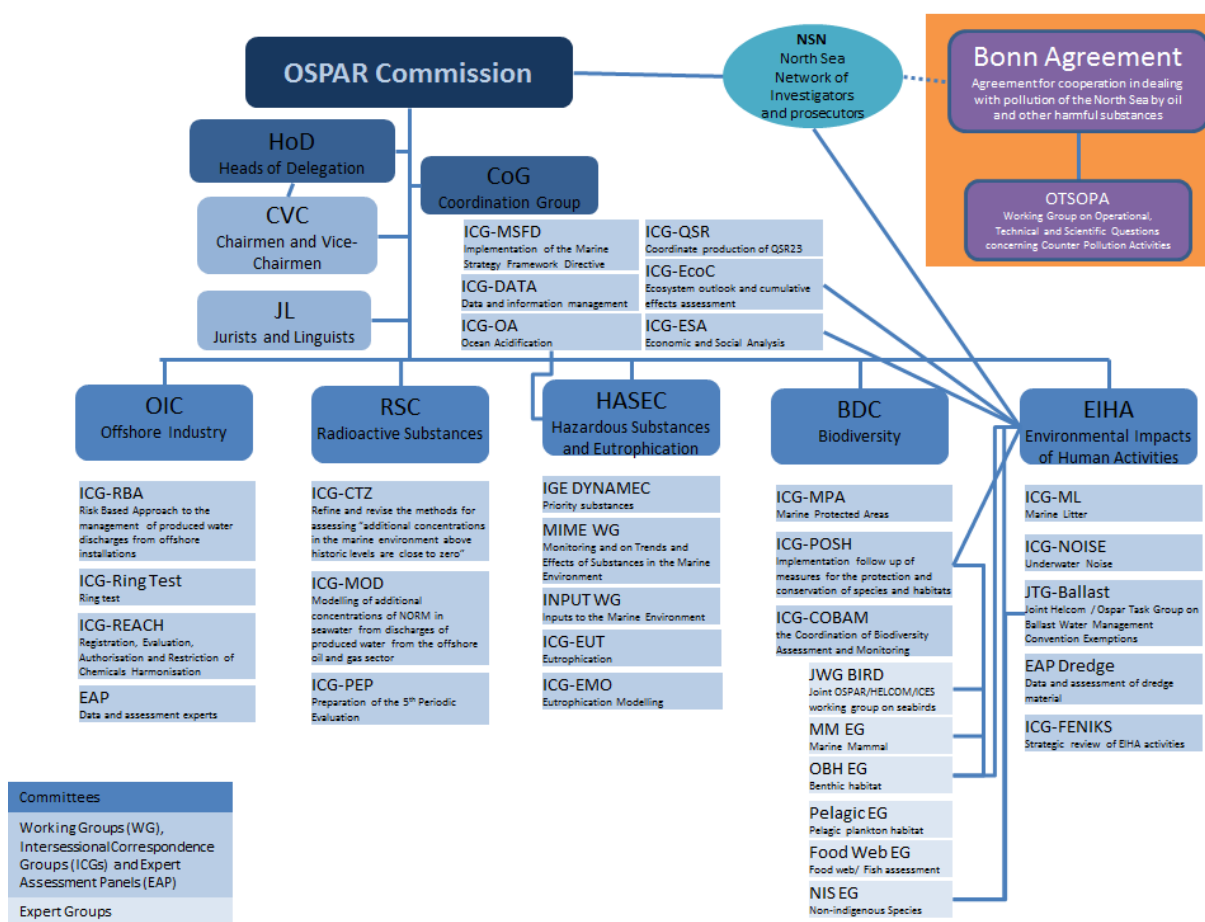


FIGURE 3: STRUCTURE OF THE OSPAR

Table 2 (based on exercise 2) illustrates the rates of participation in OSPAR activities by the four RAGES partner countries uncovering the differences in the levels of OSPAR engagement between these. As shown capacities vary greatly between these four OSPAR Contracting Parties (CP): of the 40 potential OSPAR positions (including roles in the Commission, Committees and ICGs), Irish members occupied the most roles (32) of the four countries, but this involved each Irish participant performing two or more roles within the process. French members, instead, participated in 27 roles but with a higher number of individuals. Levels of participation for Portugal and Spain were lower with Spain participating in 22 roles, and Portugal being represented in only 10 OSPAR groups.

TABLE 2: PARTICIPATION BY RAGES COUNTRIES IN OSPAR ACTIVITIES. ROLES SHOWS THE TOTAL NUMBER OF ROLES PLAYED BY EACH COUNTRY IN OSPAR, INDIVIDUALS GIVES THE TOTAL NUMBER OF PEOPLE IN EACH COUNTRY FILLING THE ROLES. ROLES PER PERSON IS THE NUMBER OF ROLES PER PARTICIPANT; % GROUPS SHOWS THE NUMBER OF GROUPS PARTICIPATED IN OUT OF THE TOTAL NUMBER (44). ICG'S LISTS THE GROUPS PARTICIPATED IN BY EACH COUNTRY

Nation	Roles	Individuals	Roles /person	% of groups	ICGs
IE	32	15	2.1	73	MIME, INPUT, CZ EAC MOD COBAM MPA POSH ML NOISE C, Renewables
FR	27	17	1.6	61	MIME, INPUT, EUT, CTZ, EAC, MOD, COBAM, POSH, ML, NOISE, C, FENIKS MSP, QSR, CHEMICALS
ES	22	18	1.2	20	MIME INPUT, EUT, COBAM, MPA, POSH, ML, NOISE, Renewables, QSR
PT	10	10	1.0	20	EUT, INPUT, COBAM, MPA, ML, MSFD, ESA

Table 3 (data from exercises 2 and 3) provides a breakdown of national participation in the main OSPAR activities (Commission, Committees, and ICGs/WGS).

TABLE 3: NUMBER OF INDIVIDUALS FROM EACH COUNTRY INVOLVED IN THE DIFFERENT ASPECTS OF THE OSPAR PROCESS AND THE TOTAL NUMBER OF UNIQUE INDIVIDUALS (SINCE SOME PARTICIPATE AT SEVERAL LEVELS)

Groups	IE	PT	FR	ES	Total
COMMISSION	2	2	1	2	7
COMMITTEES	4	1	4	4	13
ICGS	9	5	13	9	36
Unique individuals	12	7	17	18	54
of which CA	6	4	10	9	29

While countries have similar levels of participation in the Commission and Committees (Portugal being an exception by being represented only at the Biodiversity Committee), the levels of participation in ICGs and Working groups vary but represent the largest contribution of human resources toward the OSPAR process with Ireland and France contributing the most. National involvement within OSPAR is generally of two types. Civil servants (generally from MSFD competent authorities) sit on the committees while scientists from a range of agencies may sit on a variety of WGs and ICGs. The number of unique individuals in Table 3 differs from the totals because, in some cases particular individuals may participate at several levels representing the committees and the ICGs/WGs simultaneously.

National capacity and priorities tend to dictate the levels of participation in the working groups and ICGs.

3.3 Common Implementation Strategy

Figure 4 (a) illustrates the organisational structure of the CIS. In this process, the Marine Directors is the highest-level decision-making body for the process and involves CA representatives from each country. The Marine Strategy Coordination Group coordinates the joint activities between the EC and the EU MS to support the MSFD and is

informed by the Working groups (WG) on Good Environmental Status (WG GES), Data, Information and Knowledge Exchange (WG DIKE) and the Programmes of Measures and Economic and Social Analysis (WG POMESA). The Technical groups (TG) on noise, litter, seabed and data inform, in turn, the WGs.

Simultaneously, at the request of the EC DG Environment, scientific advice is provided by the Joint Research Centre (JRC) MSFD Competence Centre (a part of the Commission) as well as by the European Environment Agency (EEA) and the International Council for the Exploration of the Sea (ICES), which are comprised of scientific experts external to the formal implementation of MSFD. While expert networks are comprised of individuals nominated by MS, as with OSPAR ICGs, participation levels may differ between MS depending both on capacity and priority. The advice provided by the TG will be brought to the WG and forwarded to the MSCG for approval of the Marine Directors may resolve issues, endorse deliverables or conclude on issues which are referred to them (MSCG, 2013)²⁴.

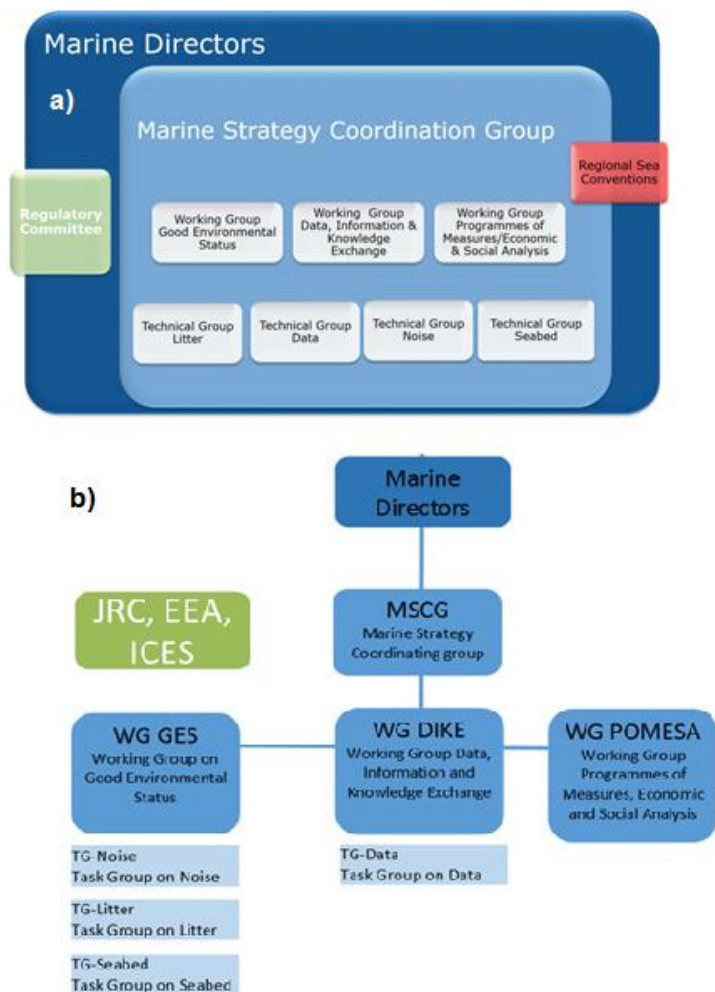


FIGURE 4: A) INSTITUTIONAL STRUCTURE OF THE MSFD COMMON IMPLEMENTATION STRATEGY AS ILLUSTRATED ON THE COMMISSION WEBSITE. B) HIERARCHICAL STRUCTURE OF THE MSFD COMMON IMPLEMENTATION STRATEGY. TGS SEABED LITTER AND NOISE CAN FEED INTO ALL WGS AND HAVE INTERACTION WITH TG DATA.

The Commission assisted by the regulatory committee, is empowered to amend MSFD Annexes III, IV and V, as well as lay down methodological standards for application of MSFD Annexes I, III, IV and V and technical formats for transmission and processing of data, in accordance with the regulatory procedure.

Table 4 indicates the national participation levels in the Directors, MSCG and WGs and TGs for each of the RAGES partner countries.

²⁴ Rules of procedure of the informal commission group of experts on the implementation of the MSFD: Marine Strategy Coordination Group adopted on 4th February 2013 by the MSCG.

TABLE 4: PARTICIPATION RATES IN COMMON IMPLEMENTATION STRATEGY.

	Groups	IE	PT	FR	ES	Total
MSFD	DIRECTORS	1	1	1	2	5
	MSCG	1	2	2	1	6
	WGS	2	5	6	4	17
	TGS	4	8	6	6	24
	Unique individuals	6	11	15	13	45
	Of which in C/A	6	6	6	10	28

By contrast to the OSPAR process, participants in the EU MSFD process are chiefly comprised of competent authorities, with some contributions to Technical Groups and Working groups from non-CA institutions. While participation rates are more balanced than in OSPAR, France still leads in terms of the level of human resource dedicated to the process. The contribution of unique individuals to the overall process in Ireland stands out as significantly lower than in the

other countries. Figure 5 illustrates the institutions and numbers of individuals participating in the OSPAR and central MSFD processes from each of the RAGES project partner countries.

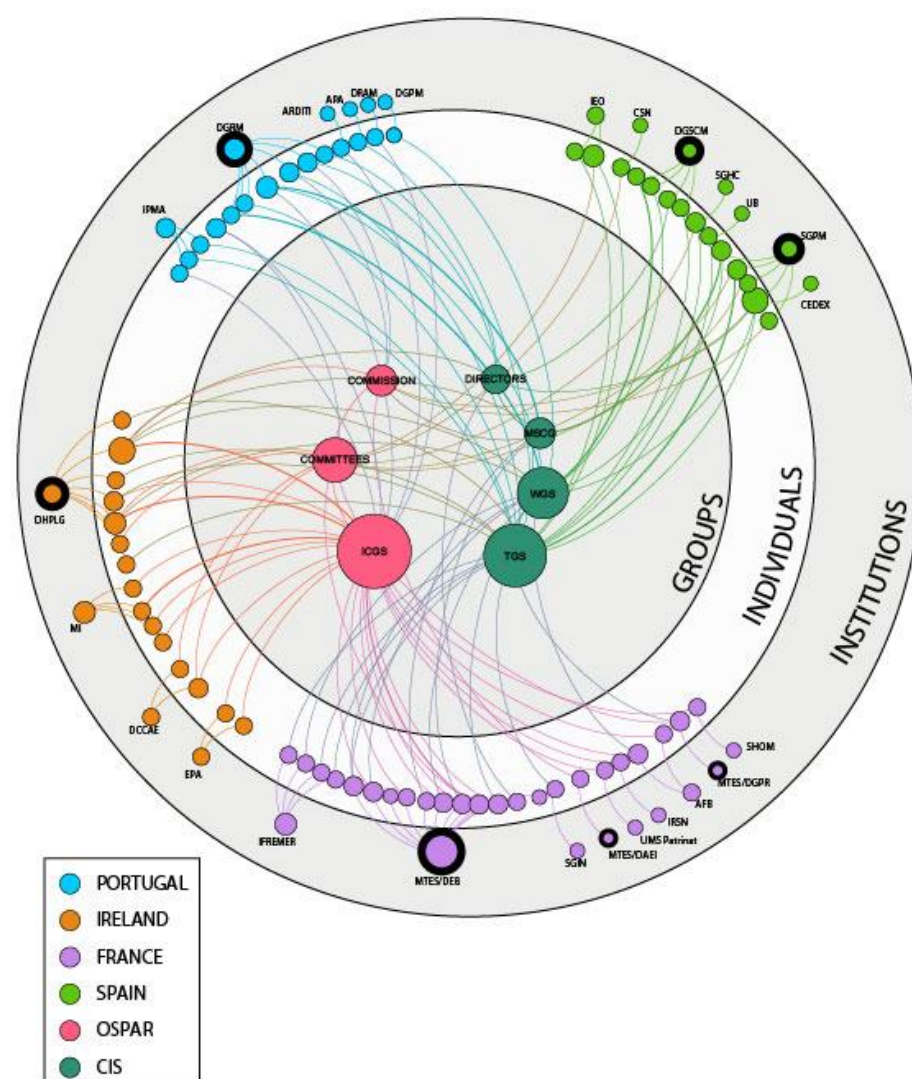


Figure 5: Simplified Network diagram comprised of nodes (circles) and edges (lines) showing relationships between institutions (outer circle), individuals (middle layer) and the processes of OSPAR and CIS (inner layer). Competent authorities are shown with a thick black outline. Nodes are scaled according to the number of connections with other nodes.

There is a notable difference in the number of national institutions involved in regional marine environmental cooperation and those involved in the national processes. Figure 5 illustrates the 25 identified institutions (through exercise 2 and 3) that contribute to the regional marine management efforts (both through OSPAR and the CIS), which stands in contrast to the 36 institutions identified at the national scale (Figure 1) required for national delivery across the four countries. The diagram also clearly

indicates the national differences in human resources dedicated to the process. While Portugal, Ireland and Spain direct similar levels of human resource to these processes, the many institutions involved in France contribute greater numbers to the ICGS, TGs and WGs.

Of particular note is the difference between the number of individuals involved in the overall process (Figure 5) and those with accountability for MSFD. In total about 66 non-CA individuals are involved in the process with only 36 individuals from CAs participating.

4. Discussion

Navigating the institutional complexity of MSFD in the four RAGES partner countries results in a bewildering array of (multilingual) acronyms (see appendix 2) and understanding the full intricacy and dynamics of institutional complexity is the work of many (if not all) individual careers, and it is certainly beyond the scope of this analysis! The exact participation by individuals is dynamic and may vary over time (depending on varying manpower and in institutional capacity), and the multiple roles played by individuals at different levels within the regional and European processes complicates both the description and analysis of the processes. Nevertheless, the analysis above provides a snapshot characterising the current levels of participation in the MSFD process from the four RAGES partner countries. Identifying the institutions and networks of individual actors at national, regional and EU scale, required to deliver MSFD in these four countries can enable an analysis of the potential choke points in MSFD implementation and development of recommendations.

In the RAGES partner countries, the institutional infrastructure is in place to implement MSFD. All four countries have a designated competent authority with responsibility for implementing MSFD. While the institutional arrangements for delivering different aspects of European nature legislation and the distribution of competencies vary between countries, the analysis of national institutions clearly indicate some commonalities, for example in delivery of WFD, habitats directive and food safety aspects of MSFD.

The complexity of institutional interactions necessitated by the MSFD at the national level is undoubtedly a challenge to MS. This may result in part from the historical legacy of single sector management which is illustrated by the many departments and agencies involved in each national process. Holistic Management of the full suite of human activities and their cumulative effects is both a defining characteristic and a fundamental challenge in the practice of Ecosystem Based Management. This holistic, integrated approach simultaneously defines the impressive ambition of MSFD, but it is also the thing that makes it so challenging to achieve. Given this complex institutional environment and the requirement under the directive for regionally harmonised approaches, the value of developing a simple standard approach with a clear set of steps comes into sharp focus. Such a standard can provide a template for CA to identify which data are needed and where they fit into the analytical process. The advantage of a risk-based approach is that it can enable the incorporation of many types of data (from measurements to expert judgement) enabling the implementation of the directive even in data poor situations (or where national capacity is lacking). This also can serve to prioritise capacity building or measurement and monitoring priorities in future iterations of the directive.

The skills and expertise held within OSPAR can form the basis for building capacity and tailoring existing best practices to meet the needs of national governments in implementing MSFD. Specific ICGs on noise, Non-Indigenous Species, ballast water and risk-based approaches as well as initiatives such as the OSPAR Impulsive Noise Registry and the development of impulsive and continuous noise indicators present excellent opportunities for synergy with MSFD as well as a centralised location for the development of regional cooperation. Moreover, initiatives such as the development of a RBA, specifically designed to address the needs of countries with large marine territories in the North East Atlantic, combined with the expertise, data and information available nationally and through OSPAR has the potential to deliver an agreed systematic approach to MSFD at the regional scale.

TABLE 5: THE 7 PRINCIPLES OF PUBLIC LIFE (NOLAN ET AL. 1995)

Principle	Definition
1. Selflessness:	Holders of public office should take decisions solely in terms of the public interest
2. Integrity:	Holders of public office must avoid placing themselves under any obligation to people or organisations that might try inappropriately to influence them in their work. They should not act or take decisions in order to gain financial or other material benefits for themselves, their family, or their friends. They must declare and resolve any interests and relationships.
3. Objectivity:	Holders of public office must act and take decisions impartially, fairly and on merit, using the best evidence and without discrimination or bias.
4. Accountability:	Holders of public office are accountable for their decisions and actions to the public and must submit themselves to the scrutiny necessary to ensure this.
5. Openness:	Holders of public office should act and take decisions in an open and transparent manner. Information should not be withheld from the public unless there are clear and lawful reasons for so doing.
6. Honesty:	Holders of public office should be truthful.
7. Leadership:	Holders of public office should exhibit these principles in their own behaviour. They should actively promote and robustly support the principles and be willing to challenge poor behaviour wherever it occurs.

The 7 principles of public life (Table 5; the Nolan Principles) provide a useful lens for the critique of the MSFD process. While the selflessness, integrity and honesty (personal traits) of those responsible for implementing MSFD is not in question, and in some countries, these civil servants are legally bound to these principles, the effectiveness of the management arrangements to foster Objectivity, Accountability and Leadership within the process make a useful starting point for critical analysis.

4.1 National accountability and capacity

Legally, under Article 7, responsibility for Implementation of MSFD falls to the competent authorities of each MS. Marine Directors, are those with direct responsibility for implementing the Directive within the CA and are indirectly accountable (generally through a strict hierarchical structure) to a minister who in turn is accountable to the public via the democratic process. The democratic accountability of politicians results in a high burden of confidence in making decisions which involve the use of public funds and are traded off at the national level amongst multiple competing priorities. As a result, rather than taking risky or potentially costly alternatives in decision making, politicians and by proxy civil servants often tend towards the status quo, requiring a high burden of certainty to choose alternative pathways. The chain of command within ministries also means that the alignment of priorities of a particular public body is with those of a particular minister and varies between departments depending on their remit and over time as governments change.

At the national scale, in each of the countries analysed above, the breadth of the MSFD requires inputs from a range of institutions with different areas of expertise and more importantly, different remits and areas of accountability. In all cases, the national MSFD process relies on institutions that are not accountable for delivering the MSFD, which may result in choke points in MSFD delivery where institutional priorities are not aligned. While it is true that national governments chose the CA for MSFD, given the broad scope of the directive (incorporating elements including nutrient management, fisheries management, public health and plastics waste) it is unlikely that in any case the complete MSFD remit would fall under one department. For example, obligations under the Habitats Directive or Water Framework Directive occur on different timelines to the process of the MSFD and as a result the institutional priorities of the responsible parties for each directive are not aligned in time. Furthermore, in some cases the institutional priorities may be conflicting. For example, in three of the four countries analysed, the remit for Descriptor 3 (commercial fish and shellfish) lies within ministries whose chief priority is food security rather than environmental protection. It follows that for the assessment of Descriptor 3, the MSFD CA of Ireland, Spain and France rely on the cooperation and capacity of the respective department of food and agriculture. The principal (first) objective of the CFP is (Art 2) is *"that fishing and aquaculture activities are environmentally sustainable in the long-term and are managed in a way that is consistent with the objectives of achieving economic, social and employment benefits, and of contributing to the availability of food supplies"* while, objective 5(j) mandates that the CFP is coherent with the MSFD, the extent which this goes beyond the common goal of MSY is not made explicit. As such, these departments are required at

the national scale to contribute to a process for which they are not directly accountable, and for these vital contributors MSFD is likely to be of lower priority than other obligations under their direct remit (their primary objective). In many cases descriptors may require inputs from several departments or agencies for suitable implementation, which further complicates the problem of accountability.

While in general, there are national codes of conduct or legal requirements which regulate the behaviour of civil servants and their interactions (e.g. SIPO, 2008²⁵), the internal machinations of interdepartmental and interagency cooperation at national scales are beyond the scope of this document. From a European perspective, there is no indication from the analysis above that there is any ambiguity in relationship between MSFD and the other directives which contribute to individual descriptors, and the existence of these synergies may be seen as a strength of the MSFD.

However, the number of institutions involved in delivery does not necessarily reflect national capacity for delivering MSFD. The involvement of several institutions in a particular descriptor does not imply high national capacity for a specific topic but could result from the fact that several institutions hold small amounts of relevant information. The development of such pockets of expertise may have evolved from the interplay between pre-existing governance structures, national administrative requirements and political processes. Thus, MSFD implementation at the national scale relies on interdepartmental cooperation and departmental capacity. Overcoming the legacy of sectoral thinking which is ingrained in national institutions is a challenge to the more holistic approaches advocated through EBM, a challenge not unique to the MSFD and one that has been widely recognised academically (eg. Folke et al. 2007²⁶).

Finally, for some descriptors in some countries, national capacity can also be an issue, and this is evident in the national governance structures available to address specific descriptors. While all the MS analysed here have a long history of experience with the Habitats Directive (Descriptor 1); Common Fisheries Policy and its targets of Maximum Sustainable Yield (Descriptors 3); the Water Framework Directive with its Good Ecological Status (Descriptors 5 and 8), as well as the assessment of contaminants through the regulation 1881/2006 setting maximum levels of contaminants to foodstuff (Descriptor 9), the assessment, monitoring and determination of targets for Non Indigenous Species (Descriptor 2), marine litter (Descriptor 10) and energy and noise (Descriptor 11) are new areas where manpower is lacking. For these, capacity is still developing and where the burden of certainty has not yet reached the thresholds that can elicit concerted action nationally. As such, these areas should be prioritised in terms of national capacity building, measurement and monitoring.

Figure 5 illustrates the number of individuals with the legal responsibility for delivery of MSFD Good Environmental Status. Given the ambition and scope of the directive, designed to protect all of Europe's sea territories and the vital importance of the marine environment in delivery of benefits to European Societies, the problem of institutional capacity is put into sharp focus. However, there are relatively few individuals in CAs directly responsible for delivering MSFD who possess a complete picture of the overall machinations of the MSFD process. Figure 5 also illustrates significant numbers of individuals from each MS with indirect involvement in the process. This situation presents an opportunity for improved synergy between different activities (of OSPAR/MSFD) through improved communication. Formal or informal plenary meetings of all relevant scientists, at the national, regional or even at the European scale, could provide more transparency and clarity of the overall process to those peripherally involved and increase the sense of "ownership" and thereby accountability in the overall process.

While the evolution of institutional structures from their current sectoral silos toward more holistic institutions best-suited to deliver ecosystem-based management is likely to be a slow (or even static) process, national fora for communication of progress towards the GES objective may go some small way toward this objective.

²⁵ SIPO, 2008. Civil Service Code of Standards and Behaviour. Dublin. www.sipo.gov.ie

²⁶ Folke, C., L. Pritchard, F. Berkes, J. Colding, and U. Svedin. 2007. The problem of fit between ecosystems and institutions: ten years later. *Ecology and Society* 12(1): 30. [online] URL: <http://www.ecologyandsociety.org/vol12/iss1/art30/>

4.2 Regional accountability, capacity objectivity and leadership

Analysis of the participation rates and institutional contributions to the OSPAR process illustrate varying levels of participation. Just as in the national context, accountability is a key issue in the OSPAR process. While all OSPAR CP should follow the decisions of the OSPAR commission and contribute to its activities, the scientific agenda is driven by the contributions to the ICG's. The level of representation within ICGs varies according to national capacity, leading to situations where certain countries are over-represented and therefore may dominate the scientific agenda. In addition, where ICGs are comprised mainly of non-CA participants, a lack of accountability may be the result. ICGs may set their own agendas and are not directly responsible for delivering the obligations of CP under OSPAR. While the four nations surveyed in this study illustrate a variety of capacity and manpower contributing the OSPAR process, other nations (e.g. UK, DE) typically commit even higher levels of manpower to the OSPAR process. For example, preliminary results from a similar exercise conducted by OSPAR indicate that some countries regularly contribute with over 40 participants to the OSPAR process and this is predominantly through participation in the ICGs and WGs. In this way, data rich nations with historical legacies of well-funded science may dominate the outputs of ICGS/WG producing high quality science which is not necessarily replicable across all countries and this may lead to a democratic deficit within OSPAR, all of which can impede progress toward MSFD objectives.

Fundamentally, the reward system in professional science relates to the publication of novel research findings, innovations in methodologies and approaches, subsequently approved by the CoG. While this ensures the progression of scientific knowledge, CAs may prefer the certainty that goes with well-established methods and results when making choices that will require the disbursement of public funds. This leads to a tension between the acquisition of new knowledge and established techniques.

Of particular note is the number of non-CA institutions with roles in the various ICGs and WGs of OSPAR. For some countries where relatively few individuals participate, the levels of effort committed to OSPAR may potentially drain resources from the MSFD process rather than complement it. Under such circumstances deficits in national capacity should be addressed.

4.3 EU Process and accountability

While the composition of the Working Groups and Task Groups which contribute to the MSFD process is perhaps more balanced in favour of CA participation and does not fall foul of the same accountability issues apparent in OSPAR, the participation of the EEA and ICES does introduce some accountability issues in terms of MSFD implementation. While these organisations have strong reputations for objective science, they lack accountability within the MSFD process, and may provide advice to the process which may not be within the capacities of Marine Directors. For example, some measures which may improve MSFD objectives such as the dampening of the acoustic characteristics of commercial vessels, have far-reaching economic consequences outside the control of those responsible for day to day implementation of MSFD. As in the national and OSPAR context, EEA and ICES are not accountable for delivery of MSFD; rather they provide advisory and steering role, while Marine Directors who participate in the national process are aware of their own, national capacity and priorities and limitations.

At the highest level, the tension between different descriptors has still not been fully resolved. While descriptor 3 dictates that fisheries should be at maximum sustainable yield, the environmental impacts of achieving or maintaining this target directly affects other descriptors. For example, how can sea floor integrity be maintained while large scale commercial fishing continues? How can food webs be in balance if the largest fish are systematically removed? Inherent trade-offs in the elements within the MSFD are only gradually being recognised and addressed. For example, the competing objectives of the CFP result in additional source of uncertainty for the risk-averse marine directors.

While the potential for lack of accountability in the regional and CIS process has been adverted to above, this accountability runs both ways. The lack of a single institution with overall expertise and competency in individual nations also results in potential for lack of accountability (where other institutions can be implicated in the failure to achieve specific goals objectives or targets). JRC expert working groups provide the opportunity to have a national

voice contributing to steering the Common Implementation Strategy before they reach Marine Directors thereby improving accountability. There is a role for member states in ensuring that available national capacity is fully engaged with the MSFD process.

5. Capacity Building

The results of this governance exercise illustrate some clear areas where there are requirements for enhanced capacity, and these chiefly lie in areas where the EU legislation deals with novel and less well understood descriptors such as non-indigenous species (D2) and food webs (D4), for which some countries lack a defined institution with competency.

There is a clear imbalance in the numbers of competent authorities participating particularly at the regional (OSPAR) scale but also at the EU level. Of the four countries surveyed, France clearly has the largest capacity to dedicate human resources and this imbalance could potentially be redressed by enhancing capacity in the countries which dedicate least human resource to the process and through arrangements to share burden between countries when capacity is lacking.

6. Recommendations

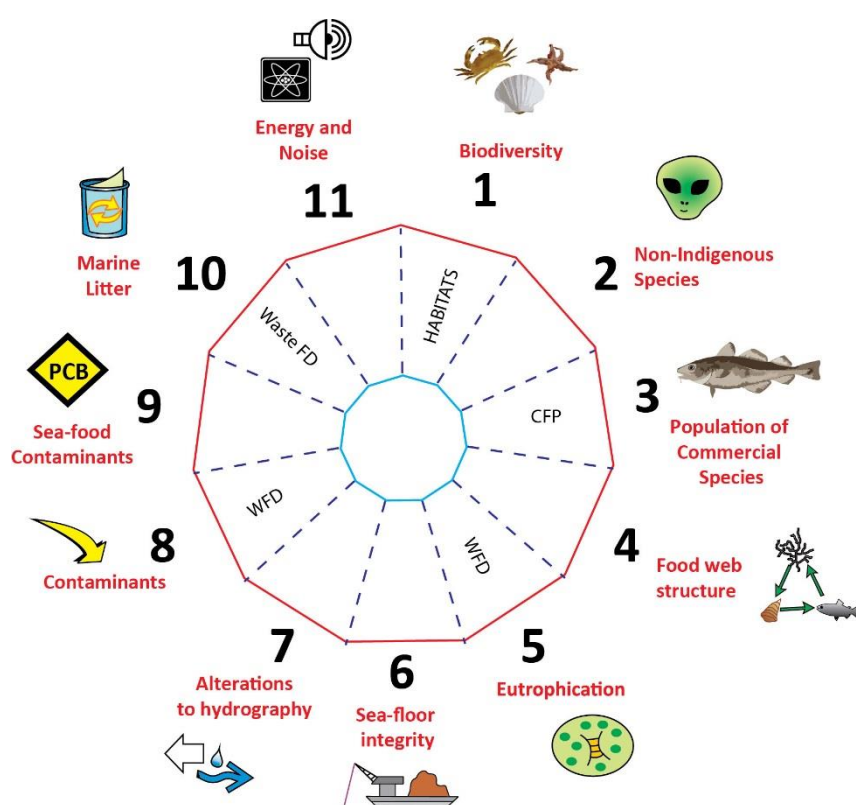
- At the national level it is clear that for all CAs implementation of MSFD requires significant interagency cooperation and coordination. Development of specific dedicated agencies with overall capacity and responsibility of MSFD could potentially improve efficiency of implementation.
- Many of the agencies required to deliver MSFD are not involved in the regional or EU level processes- harnessing existing national capacity to increase national representation could improve interagency cooperation and national engagement with the MSFD and OSPAR processes. National and regional strategies to harness synergies and existing expertise should be employed, these could include annual plenary sessions involving all scientist engaged in MSFD/OSPAR activities, nationally or at the regional scale.
- The requirement for multi-agency coordination results in situations where those who are not accountable for MSFD have important roles in its implementation. Harmonisation between directives of timelines and targets, as well as underlying criteria and assessment methods may help to alleviate some of the potential issues in national inter-agency cooperation and the problem of accountability at the national scale.
- Within OSPAR the role of the various groups in contributing to MSFD has not been codified. Definition of the relationship between OSPAR process and MSFD process is essential.
- In particular, the role of ICGS in setting the scientific agenda at OSPAR should be harmonised with the requirements of the MSFD. Definition and codification of ICG contributions to the MSFD process should be prioritised.
- At the European level, better definition of roles and responsibilities would enhance the delivery of the process and improve accountability. Inputs to the process from bodies with no accountability for MSFD should be tailored to meet the needs of those who are accountable by ensuring full MS participation in all task groups working groups and expert networks.
- There is a need for MS to prioritise descriptors with limited national capacity at present

- Gaps in science funding are usually addressed through the H2020 and its predecessors but while these build national scientific capacity, they do not fully plug the capacity gap since researchers are not accountable in the process.
- JPI programmes could be developed to enhance regional cooperation and capacity building on specific MSFD focus areas
- Where national capacity is lacking, dedicated funds to build and maintain national scientific capacity should be incorporated in the national process
- While short term projects (e.g. DG ENV calls under the EMFF to support MSFD implementation) have the clear ability to develop the RBA, such efforts should be sustained rather than sporadic.
- MS should use the RBA to identify and prioritise data gaps for measuring and monitoring
- Where MS have limited national capacity to participate in regional seas conventions, co-ordinated regional strategies may be effective in fostering regionally harmonious approaches across the NEA.
- Capacity and priority are recurring themes in the analysis, OSPAR ICGs and JRC expert networks are ideal fora for progressing coordination and harmonisation of MSFD approaches, increased national capacity, and increased levels of prioritisation could both contribute to improved accountability.
- Improve national representation on JRC expert networks.
- To promote an holistic approach you need participants to understand what they are involved in – as each actor plays his or her role in the a particular ICG or WG, their role in the overall MSFD process may become obscure. Regular plenary MSFD sessions could promote the type of holistic approaches required in MSFD.
- Accountability runs both ways - MS should actively contribute to all aspects of the CIS process including the formation of expert groups.

Exercise 1: Article 7 Competent authorities and policy cross-walks.

The aim of this exercise is to identify at the national (and sub-national) level the relevant competent authorities for MSFD and for overlapping policy areas and processes (CFP, Habitats Directive, Water Framework Directive) and their related institutions, departments and agencies and to identify how information flows between these processes and institutions.

Method: This exercise requires two facilitators (one interviewer and one scribe) and one expert from a competent authority. A white board or flipchart and markers should be made available. The image in Figure 1 should be used as a starting point for a semi-structured interview.



STEP 1: First identify the designated competent authority for MSFD (in the centre of Figure 1).

- STEP 2:**
- 2.1** Starting with D1 - identify any other department or agency with a specific competency for the Habitats Directive.
 - 2.2** State the agencies which supply data or information to this department.
 - 2.3** Repeat steps 2.1 and 2.2 for Descriptors 3,5,8 and 10 and their related policies.²⁷
 - 2.4** Next identify any relevant department(s) or agency/ies for D2, 4,6,7,9, and 11.

²⁷ The initial descriptors are selected because of known interrelations with other EU policies which are likely to result in different institutions for each case.

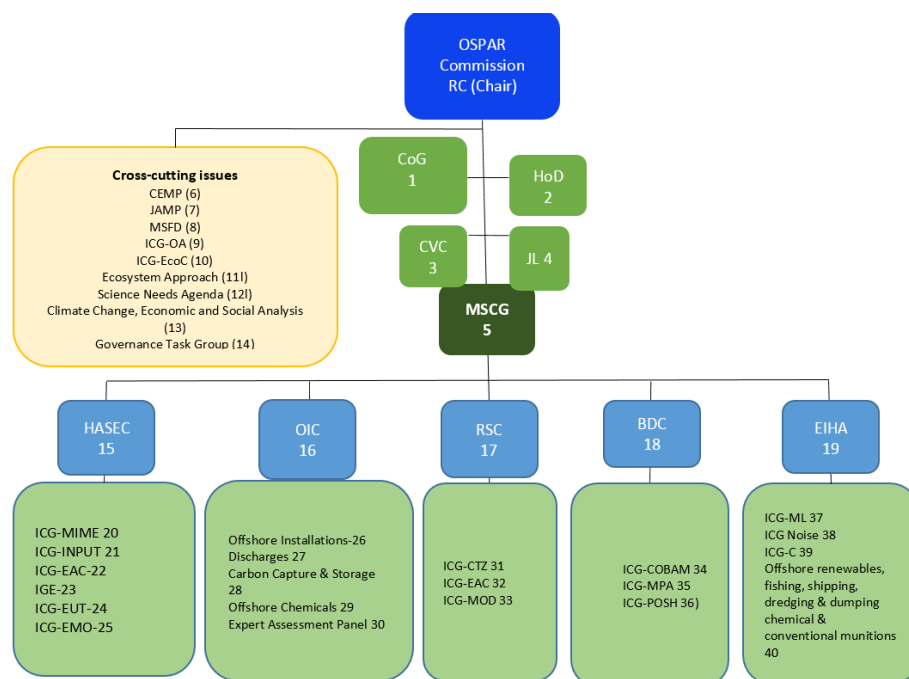
Appendix 1

Descriptor		Assessments	Monitoring	Programmes of Measures
1	Dept: Agency: Group:			
2	Dept: Agency: Group:			
3	Dept: Agency: Group:			
4	Dept: Agency: Group:			
5	Dept: Agency: Group:			
6	Dept: Agency: Group:			
7	Dept: Agency: Group:			
8	Dept: Agency: Group:			
9	Dept: Agency: Group:			
10	Dept: Agency: Group:			
11	Dept: Agency: Group:			

Exercise 2: Article 6: Regional cooperation and representation in OSPAR

The aim of this exercise is to identify levels of participation from individual member states in the OSPAR process as well as to identify overlaps with MSFD activities.

Fill out the organogram below giving the initial and institutional affiliation of the individuals from your country who participate in the different activities of the OSPAR Commission. If you do not wish to identify individuals in person please use an alphabetised list to identify different individuals and institutions.

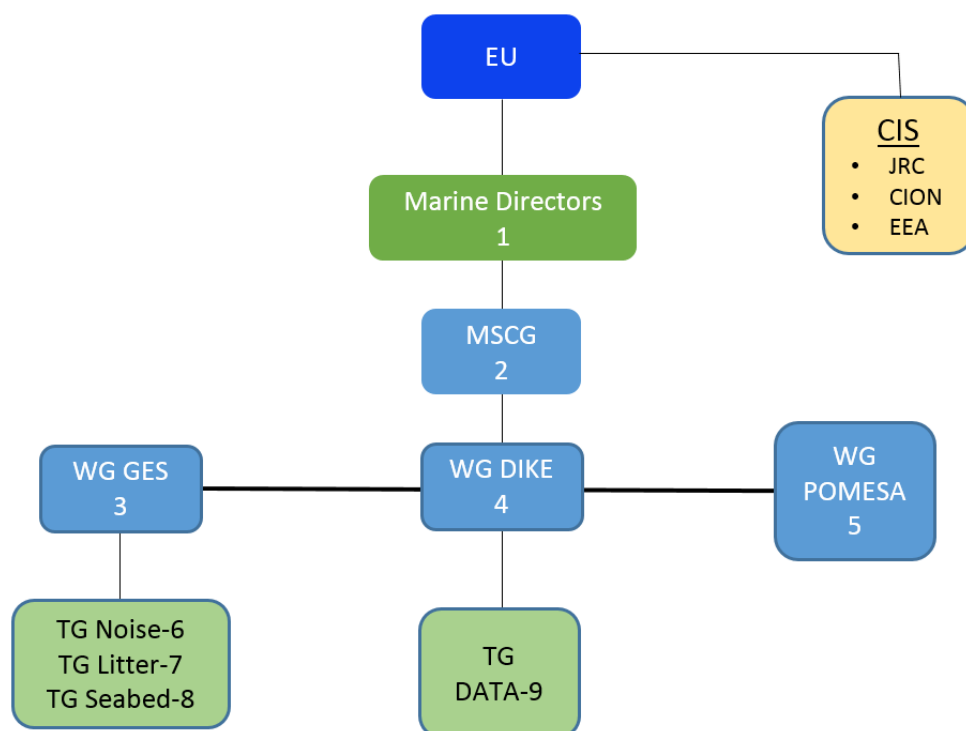


No	Initials	Institution	Number	Initials	Institution
1			23		
2			24		
3			25		
4			26		
5			27		
6			28		
7			29		
8			30		
9			31		
10			32		
11			33		
12			34		
13			35		
14			36		
15			37		
16			38		
17			39		
18			40		
19					
20					
21					
22					

Exercise 3: Article 25 RAGES partner relations between OSPAR and the Regulatory Committee.

The aim of this exercise is to identify levels of participation from individual member states in the common implementation strategy.

Fill out the organogram below giving the initial and institutional affiliation of the individuals from your country who participate in the different activities of the CIS. If you do not wish to identify individuals in person, please use an alphabetised list to identify different individuals and institutions.



Acronym	No.	Group	INITIALS	INSTITUTION
MD	1	Marine Directors		
MSCG	2	Marine Strategy Coordination Group		
WG-GES	3	Working Group on Good Environmental Status		
WG-DIKE	4	Working Group on Data, Information and Knowledge Exchange		
WG-POMESA	5	Working Group on Programmes of Measures, Economic and Social Analysis		
TG-Litter	6	Task Group on Litter		
TG-Noise	7	Task Group on Noise		
TG- Seabed	8	Task Group on Seabed		
TG-Data	9	Task Group on Data		

Appendix 2- Acronyms

	Acronym	Name	Country
1	AFB	French Biodiversity Agency	France
2	ANSES	Agence Nationale de Sécurité, Sanitaire de l'Alimentation, de l'Environnement et du Travail	France
3	BGRM	French Geological Survey	France
4	CEDRE	Deals with Water Pollution Incidents	France
5	DEB*	Direction de l'eau et de la biodiversité	France
6	DGA	La Direction Générale de l'Alimentation	France
7	DGITM	Directorate-General for Infrastructure, Transport and the Sea	France
8	DGPR	Direction Générale de la Prévention des Risques	France
9	DPMA	La Direction des Pêches Maritimes et de l'Aquaculture	France
10	IFREMER	National Institute for Ocean Science	France
11	IRSN	Institute for Radiological Protection and Nuclear Safety	France
12	LADL	Les Agences De L' eau	France
13	MAA	Ministère de l'Agriculture et de l'Alimentation	France
14	MdA	Ministère des Armées	France
15	MNHN	National Museum for Natural History	France
16	MTES	Ministry for the Ecological and Inclusive Transition of France	France
17	SGIN	Secrétariat général (SG) Haut fonctionnaire de défense et de sécurité	France
18	SHOM	Service Hydrolanique Oceanographique de la Marine	France
19	UMS Patrinat	Unite Mixte de Service (Patrimoine)	France
20	UMS Pelagis	Unite Mixte de Service (Pelagique)	France
21	BIM	Bord Iascaigh Mhara	Ireland
22	DAFM	Department of Agriculture, Food and the Marine	Ireland
23	DCCAE	Department of Communications, Climate Action and Environment	Ireland
24	DHCG	Department of Heritage, Culture and the Gaeltacht	Ireland
25	DHPLG*	Department of Planning, Housing and Local Government	Ireland
26	DTTAS	Department of Transport, Tourism and Sport	Ireland
27	EPA	Environmental Protection Agency	Ireland
28	FEAS	Fisheries Ecosystems Advisory Services	Ireland
29	FSAI	Food Safety Authority of Ireland	Ireland
30	Marine	Marine Division	Ireland
31	MEFSS	Marine Environment and Food Safety Services	Ireland
32	MI	Marine Institute	Ireland
33	NBDC	National Biodiversity Data Centre	Ireland
34	NPWS	National Parks and Wildlife Services	Ireland
35	PAD	Petroleum Affairs Division	Ireland
36	AMN	National Maritime Authority	Portugal
37	APA	Agencia Portuguesa do Ambiente	Portugal

Appendix 2- Acronyms

	Acronym	Name	Country
38	ARDITI	Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação	Portugal
39	COI	Comissão Oceanográfica Intersectorial	Portugal
40	DGAM	Direção-Geral da Autoridade Marítima	Portugal
41	DGEG	Directorate General for Energy and Geology	Portugal
42	DGPM	Direção-Geral de Política do Mar	Portugal
43	DGRM*	Directorate-General for Natural Resources, Safety and Maritime Services	Portugal
44	DRAM	Direção Regional para os Assuntos do Mar Do Governo Regional dos Açores	Portugal
45	DROTA	Território do Governo Regional da Madeira	Portugal
46	DRP	Regional Directorate for Fisheries	Portugal
47	EMPEC	Task Group for the Extension of the Continental Shelf	Portugal
48	HI	Hydrographic Institute	Portugal
49	ICNF	Portugese Institute for Nature Conservation and Forests	Portugal
50	IPMA	Instituto Português do Mar e da Atmosfera	Portugal
51	INEC	National Lab for Civil Engineering	Portugal
52	MARE	Centro de Ciências do Mar e do Ambiente	Portugal
53	MATE	Ministry for Environment and Energy Transition	Portugal
54	MBM	Museo Ballena Madeira	Portugal
55	MCTES	Ministry of Science, Technology and Higher Education	Portugal
56	MdoM	Ministeria do Mar	Portugal
57	Porturias	National Ports	Portugal
58	SRA	Secretaria Regional de Agricultura e Pescas	Portugal
59	SRAP	Secretaria Regional de Agricultura e Pescas	Portugal
60	SRMCT	Secretaria Regional do Mar, Ciência e Tecnologia	Portugal
61	U. Acores	University of the Acores	Portugal
62	AECOSAN	Agencia Espanola de Seguridad Alimentaria y Nutrición	Spain
63	CEDEX	Centro de Estudios y Experimentación de Obras Públicas	Spain
64	CSN	Spanish Nuclear Safety Council	Spain
65	DGA	Dirección General del Agua	Spain
66	DGBMN	Directorate-General for Biodiversity and Environmental Quality	Spain
67	DGSCM*	Dirección General de Sostenibilidad de la Costa y del Mar	Spain
68	IEO	Instituto Espanol de Oceanografía	Spain
69	MAPA	Ministerio de Agricultura, Pesca y Alimentación	Spain
70	MFOM	The Ministry of Development	Spain
71	MICINN	Ministry of Science, Innovation and Universities	Spain
72	MITECO	Ministry of Environment	Spain
73	SGHC	Subdirección General de Hidrocarburos	Spain
74	SGP	Secretaría General de Pesca	Spain
75	SGPM	Subdirección General para la Protección del Mar	Spain
76	UB	University of Barcelona	Spain