



Coastal & Marine Research Centre  
*Ionad Taighde Cósta is Mara*



NUI Galway  
OÉ Gaillimh

## SWAN Research Project:

### Integrated Coastal Zone Management in Ireland -

### Meeting Water Framework Directive and Marine Strategy Framework Directive targets for Ireland's transitional and coastal waters through implementation of Integrated Coastal Zone Management

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This report should be cited as follows:

O'Mahony, C., Kopke, K., Twomey, S., O'Hagan, A.M., Farrell, E. and Gault, J. (2014). ***Integrated Coastal Zone Management in Ireland - Meeting Water Framework Directive and Marine Strategy Framework Directive targets for Ireland's transitional and coastal waters through implementation of Integrated Coastal Zone Management.*** Report prepared under contract for Sustainable Water Network (SWAN).

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## **Executive Summary**

This report was commissioned by the Sustainable Water Network (SWAN) to assess the potential contribution of Integrated Coastal Zone Management (ICZM) implementation in meeting the objectives of the Water Framework and Marine Strategy Framework Directives which are legally binding instruments for the conservation, protection and management of catchment, coastal and marine waters within the European Union. ICZM is a process that seeks to bring together all parties with an interest in the coast, with a view to replacing sectoral based planning and management with a more integrated approach to achieving sustainability; ICZM is underpinned by a set of principles that espouse stakeholder participation, knowledge exchange, and the need to take a holistic and long-term view.

The intention of the Water Framework Directive and Marine Strategy Framework Directive is to achieve good ecological / environmental status for aquatic environments within established timeframes. Ireland, as a Member State of the EU, is obliged to meet the requirements of the aforementioned Directives, which also extend to the need for implementation of appropriate mechanisms for stakeholder engagement, data collection and monitoring, and an ecosystem based approach to management and plan-making.

Ireland's aquatic resources are under a range of pressures driven by human activity and natural processes, and the interplay between these two factors. Understanding and

assessing cumulative impacts upon coastal environments will require the development of new and innovative methodological approaches, which will assist better decision-making by those tasked with the management of coastal resources. Addressing these pressures and their associated impacts will require the implementation of management approaches that can optimise contributions from all interested parties and bring the collective knowledge and resources of all parties to bear on meeting these challenges.

Although not a legal requirement within the EU, ICZM reflects current European coastal and marine policy which advocates a greater emphasis on integrated approaches to management. Despite commitments to ICZM being contained within policy and national level statements of strategy, coastal management in Ireland remains sectoral in nature, and experiences with ICZM, although successful, have been limited to pilot and research projects at the local level. Steps such as the formation of Inter-Departmental Marine Coordination Group represent a move towards more integrated management of marine affairs but further actions are required, particularly at operational levels, to move towards an integrated approach to coastal management.

Good practice examples such as those provided by the Coastal Partnership model in the UK, provide clear evidence of where the implementation of ICZM will yield benefits in terms of cost-effectiveness, improving opportunity for stakeholder participation and

citizen science initiatives that can advance sustainable use of coastal resources. With regard to the Water Framework and Marine Strategy Framework Directives, ICZM has immense potential in contributing to the information and participation requirements needed for effective implementation of these instruments.

A number of steps are critical to realising the full potential of ICZM in Ireland. These include the establishment of political support and the creation of a legal basis for ICZM to promote integrated ways of working within our coastal and marine environments, as well as the designation of a statutory body with responsibility for co-ordinating the implementation of ICZM in Ireland. Similarly, the development of a national policy and strategy for integrated coastal management by Government is vital. This must facilitate the full contribution of all coastal stakeholders through targeted actions so as to provide a catalyst for meeting our sustainability goals.

## **0. Rationale**

This report was commissioned by the Sustainable Water Network (SWAN) to consider (or assess) if the implementation of Integrated Coastal Zone Management (ICZM) could facilitate the national requirement to meet the objectives of the Water Framework and Marine Strategy Framework Directives. It was undertaken by a cross-disciplinary project team comprising researchers from University College Cork and the National University of Ireland, Galway in response to a competitive tender.

## **1. Introduction**

The overall purpose of the research conducted was to provide a critical analysis of EU and Irish policy, legislation, and guidance relevant to ICZM, and to recommend how best to implement ICZM in Ireland in order to meet the targets of the Water Framework Directive (WFD) and Marine Strategy Framework Directive (MSFD). These form two of the most important legal instruments for water management in Europe, covering catchment, coastal and offshore waters. Ireland, as a Member State of the European Union, is obliged to implement both these Directives. The research conducted addresses a number of issues relating to ICZM and how coastal and marine planning and management can be implemented to progress sustainable use of resources through effective policy and good practices. The research objectives were as follows:

- Provide an overview of the pressures on Ireland's transitional and coastal environment, with reference to up-to-date literature. This should include information on impacts on WFD and MSFD status, where available, including cumulative impacts (**Section 5**);
- Provide a detailed critical analysis of policy and legislative provisions governing coastal pressures and their drivers, in the context of the protection of the coastal environment and the meeting of WFD and MSFD requirements (**Sections 3, 4, and 5**);
- Provide a well referenced overview of international literature and EU (**Section 2**) and Irish policy, legislation and guidance regarding ICZM, what it entails (**Sections 6, 7 and 8**), and the potential for its application in Ireland (**Section 8**), in the context of meeting WFD and MSFD targets and with reference to past and current initiatives in Ireland and internationally;
- Outline progress in terms of ICZM incorporation into national planning and policy and identify the impediments to implementation of ICZM in Ireland to date (**Section 6**);
- Set out reasoned projections of the potential implications for the coastal environment, and for the achievement of WFD and MSFD targets, of *Harnessing Our Ocean Wealth*; the *BIM Strategy 2013-2017* and any other relevant national / regional policy (**Sections 3, 4 and 5**);

- Identify and draw extensively on quantitative case studies and European and international best practice, which are applicable to Ireland, to support these recommendations (**Sections 7 and 8**);
- Identify where possible, policy recommendations (**Section 9**), which would also provide benefits for artisan fishermen/producers and rural coastal communities (and which may find support from these stakeholders and form the basis for a common position); and,
- Draft a set of recommendations on how best to implement ICZM in Ireland to address the outlined current and projected impacts on Ireland’s transitional and coastal environment in order to meet WFD and MSFD targets (**Section 9**).

With the above objectives in mind, the project report is structured as follows. Section 2 introduces European legislation and policy relevant to coastal and marine environments and provides information on the evolution of policy and the current policy landscape pertinent to ICZM. Section 3 provides an outline of the Water Framework Directive and its implementation, with a particular focus on the link between the objectives and requirements of the Directive that are relevant to the coast. Section 4 follows a similar format to that of Section 3 and provides an outline of the Marine Strategy Framework Directive and its implementation with a particular focus on the link between the objectives and requirements of the Directive that are relevant to the coast.

Based on a review of existing literature, and supported with site-specific examples, Section 5 gives an overview of the range of pressures and impacts that currently exist in relation to Ireland’s coast, as well as potential trends due to projected uses envisaged under current national and sector-specific strategies for the marine environment and coastal waters. These pressures and impacts are presented in the context of the WFD and MSFD and their implications for achieving Good Ecological / Environmental Status (GES). Section 6 details the institutional arrangements relating to coastal and marine management and presents a background to coastal management in Ireland and primarily focuses on developments since the publication of the *Coastal Zone Management: A Draft Policy for Ireland* in 1997, followed by subsequent pilot and project-based activities focused on implementation of ICZM at the local level, through to contemporary ICZM activities, and the recent proposed revision of the Maritime Area and Foreshore (Amendment) Bill 2013, which is the single most important body of legislation for coastal management in Ireland. Section 7 introduces and reviews Integrated Coastal Zone Management (ICZM) concepts, practices and guidance, and explores key areas where ICZM could support implementation of the WFD and MSFD, namely: participation, role of citizens and stakeholders, partnership approaches to support integrated management, and the need to build the

information and knowledge base. Section 8 consolidates the key points to emerge from the previous sections which support the argument for the introduction of ICZM to ensure sustainable development of Ireland's coastal resources, and simultaneously contribute to the implementation of the WFD and MSFD. Section 8 also presents examples of good practice models for ICZM which are relevant to the institutional and cultural settings in Ireland, and are viable under the current situation of no national strategy in existence for integrated coastal management in Ireland, or a scenario where a more proactive and formalised approach to ICZM is taken at a national level. Section 9 then outlines the crucial steps required to implement ICZM in Ireland, and to capitalise on what the process can offer to WFD and MSFD implementation should ICZM be taken forward.

Each section concludes with a summary of the key points which are presented as a series of bullet points, and Section 11 lists all the material referenced within the report. The content of the report was also informed by responses from a short stakeholder survey undertaken by the project team.

## **2. EU Coastal and Marine Policy and Legislation**

Europe's coasts and marine domain have significant value and make a tangible contribution to the well-being of its citizens – they provide employment, facilitate the movement of people and goods, contain highly diverse and ecologically important habitats, represent a rich heritage and cultural importance; accommodate multiple uses and activities (often simultaneously); and in the case of coasts are the location for large urban centres and a considerable proportion of Europe's population.

The value of Europe's coastal and marine resources is reflected by the range of policy and legislation specific to their use, management and protection. Principle policies and legislation include the Integrated Maritime Policy, Blue Growth Strategy, Recommendation on Integrated Coastal Zone Management, and the Marine Strategy Framework Directive. The EU, and a number of its Member States, are also signatories to Regional Sea Conventions for waters across the continent, and strategies have been developed or are under development for Europe's sea basins (Adriatic and Ionian Seas, Arctic Ocean, Atlantic Ocean, Baltic Sea, Black Sea, Mediterranean Sea and the North Sea). Details of the aforementioned instruments and other primary pieces of policy and legislation that shape Europe's approach to planning and management of coastal and marine waters are introduced in the sub-sections below.

### *Integrated Maritime Policy (IMP)*

An IMP for the European Union was published in 2007 with the intention of advancing a more coherent approach to maritime issues, with increased coordination between different policy areas. The IMP concedes that sectoral management is no longer adequate and advocates a more integrated approach to maritime governance, and the adoption of ecosystem-based management as a contribution to achieving sustainable development (Meiner, 2010; O'Hagan 2013). To advance integration, the IMP promotes a sea basin approach whereby targeted strategies and specific measures tailored to the specificities of each sea basin can be advanced (O'Hagan, 2013). A dedicated Action Plan provides further details on the actions the European Commission proposes to take towards implementing the IMP; the Action Plan contains commitment to delivering national integrated maritime policies to be developed by Member States, and associated actions relating to maritime surveillance, climate change mitigation, European marine research, maritime transport and fisheries, and maritime spatial planning (see sub-sections below). For each of these priority areas, the Commission has stipulated the work required to ensure their advancement.

Since 2007, two progress reports on the IMP have been published - the first of these, from 2009, found that implementation of the Action Plan had progressed well with 56 of the 65 actions contained in the Plan either launched or completed (European Commission, 2009; Meiner, 2010; O'Hagan, 2013). The second progress report covers the period between 2010 and 2012 and also covers progress made on the Blue Growth strategy in relation to sectors such as maritime transport, energy, shipbuilding, fisheries and aquaculture.

### *Blue Growth*

Blue Growth is the long term strategy, published in 2012, to support sustainable growth in Europe's marine and maritime sectors as a whole, and seeks to place the blue economy firmly on the agenda of Member States, regions and civil society by identifying specific areas where dedicated action could provide added incentive (COM(2012) 494 final). The Strategy consists of three components: 1) specific integrated maritime policy measures which are consistent with the IMP in that they include maritime spatial planning, integrated maritime surveillance and marine knowledge to improve access to information about the sea; 2) sea basin strategies (as described above) to ensure the most appropriate mix of measures to promote sustainable growth that take into account local climatic, oceanographic, economic, cultural and social factors; and, 3) specific activities earmarked for additional effort targeted to deliver sustainable growth and jobs – aquaculture, coastal tourism, marine biotechnology, ocean energy and seabed mining. . Sustainable growth is an oxymoron: growth cannot be sustainable on a finite planet (Meadows et al., 1972; Daly, 1993). It may be the case that the Commission has used the terms sustainable growth and sustainable development interchangeably: such a view is supported by Article 5 of the proposed Directive on MSP and ICM which provides that one of the objectives of maritime spatial plans and ICM strategies is “*fostering the sustainable development and growth of the fisheries and aquaculture sector, including employment in fisheries and connected sectors*” [emphasis added].

### *Maritime Spatial Planning*

As a consequence of being identified as a key tool in the delivery of the IMP (Jay et al., 2013), much attention was directed towards planning for Europe's marine domain, and in 2008 the European Commission adopted a Communication titled “*Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU*”. The purpose of this document was to present a framework based on a set of principles (10 in total) which could guide implementation of maritime spatial planning (MSP) at national and EU levels (Schaefer and Barale, 2011). The principles were identified based on existing practice in MSP, as well as international and EU instruments that have to be respected while setting up a MSP process (Schaefer and Barale, 2011; Flannery and Ó'Cinnéide, 2012).

As with coastal management (see sub-section below), different Member States use diverse processes and approaches to advance MSP within their jurisdictions, these efforts have been complemented by projects at regional and cross-border levels (e.g. in the Baltic and Atlantic Seas) to investigate how multi-jurisdictional MSP might progress. Acknowledging that increasing and uncoordinated use of marine and coastal environments was likely to result in unsustainable and potentially damaging practices and uses, in 2013 the European Commission published a Proposal for a Directive establishing a framework for maritime spatial planning and integrated coastal management (see sub-section below).

### *Integrated Coastal Zone Management (ICZM)*

European policy in relation to coastal management can be traced back to the 1980s; a European Coastal Charter was adopted by the Conference of Peripheral Maritime Regions in 1981, whilst in 1986 the European Commission prepared a Communication to the Council of Ministers on integrated planning of coastal areas. A European Coastal Strategy was proposed in 1991 and followed with a series of policy and legal tools focused on improving coastal and marine management, as well as an ICZM Demonstration Programme, which ran from 1996-1999, "to show the practical conditions that must be met if sustainable development is to be achieved in the European coastal zones in all their diversity." The Demonstration Programme consisted of 35 case study projects across Europe and six thematic studies, and was intended to lead to a consensus regarding the measures necessary in order to stimulate ICZM in Europe. The experiences of the Demonstration Programme (Commission of the European Communities, 1999; Doody, 2003; King, 2003; Capobianco, 2003; Humphrey and Burbridge, 2003) contributed to the shaping of EC ICZM policy, and following the publication of the outcomes of the Demonstration Programme, the European Commission subsequently adopted two key documents advocating and supporting a more integrated approach to coastal planning and management:

- A Communication from the Commission to the Council and the European Parliament on "Integrated Coastal Zone Management: A Strategy for Europe" (COM/00/547 of 17<sup>th</sup> September 2000); and,
- A Recommendation concerning the implementation of Integrated Coastal Zone Management in Europe (2002/413/EC) explaining how the Commission intended to promote ICZM through the use of Community instruments and programmes.

The EC's Recommendation on the implementation of ICZM in Europe (2002/413/EC) in 2002 called for a more strategic approach to coastal zone planning and management in Member States in order to achieve sustainable development. The Recommendation requested coastal Member States to report to the Commission on the progress made in implementing the Recommendation and, specifically on the progress made in developing a national strategy to promote ICZM (O'Mahony et al., 2012; O'Hagan, 2013). The Recommendation contains eight principles (see Section 7) that define the essential characteristics of ICZM that are to be enshrined in national coastal management strategies. These reports were to be submitted by February 2006. Of the 20 coastal Member States, 14 submitted official reports to the Commission (COM(2007)308 final); no reports were submitted by Estonia, Ireland or Italy. For those countries which submitted official reports on ICZM, coastal use and development was said to be regulated in some form. Whilst many Member States had taken steps during 2000-2005 towards developing a more integrated planning and management approach, it was clear from the reports received that a mature and well-functioning ICZM process involving all relevant

levels of governance was still rarely observed (European Environment Agency, 2006) (**see Section 7 for additional information on the evolution and implementation of ICZM policy in Europe**).

In the Mediterranean region, the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean is a cornerstone for environmental protection and integration. In recognition of the need to promote integrated management of coastal zones, an ICZM Protocol was signed in Madrid, on January 21, 2008, and is considered a unique legal instrument for ICZM (Shipman, 2012). To date, seven countries and the EU have ratified the Protocol and consequently, on March 24, 2011, the Protocol entered into force. Ratification by the EU means that the Protocol now becomes part of EU law and consequently is legally binding. The Protocol has introduced a geographical distinction between EU Member States with regard to their position on ICZM, with northern EU Member States pursuing the implementation of ICZM through a mix of statutory and non-statutory instruments that are directly or indirectly focused on ICZM, whereas southern EU Member States (i.e. those that border the Mediterranean) have adopted a legal framework explicit to ICZM and have moved to a position where ICZM is viewed as a key tool through which solutions are being sought (Shipman, 2012).

#### *Marine Strategy Framework Directive (MSFD)*

The MSFD was adopted in 2008 and represents the environmental pillar of the EU's Integrated Maritime Policy. The overall aim of this Directive is to promote sustainable use of Europe's seas and conserve marine ecosystems through the achievement of Good Environmental Status (GES) in European marine waters by 2020 (**see Section 4 for a more comprehensive introduction to the MSFD**).

#### *Additional EU Directives*

In addition to the proposed Directive establishing a framework for maritime spatial planning and integrated coastal management, there also exists a body of legislation that, whilst not specific to marine and coastal environments, is significant to how these areas are managed; for example the Water Framework Directive as it applies to coastal and transitional waters, the Birds and Habitats Directives which provide for the protection and conservation of important habitats and species, the Bathing Water Directive, the Shellfish Water Directive, and Directives for Environmental Impact Assessment, Strategic Environmental Assessment, Environmental Liability, and Public Access to Environmental Information (Aarhus Convention). Directives associated with sectors such as offshore renewable energy and fisheries will also have a strong influence on coastal management as will that governing societal challenges such as climate change. Comprehensive reviews of EU legislation and policy which are significant to coastal management have been prepared by a number of research projects, e.g. Coastal Research and Policy Integration (COREPOINT) project (COREPOINT, 2007) and Concepts and Science for Coastal Erosion Management (CONSCIENCE) project (Bucx, 2010).

*Recent Developments in EU Maritime Policy*

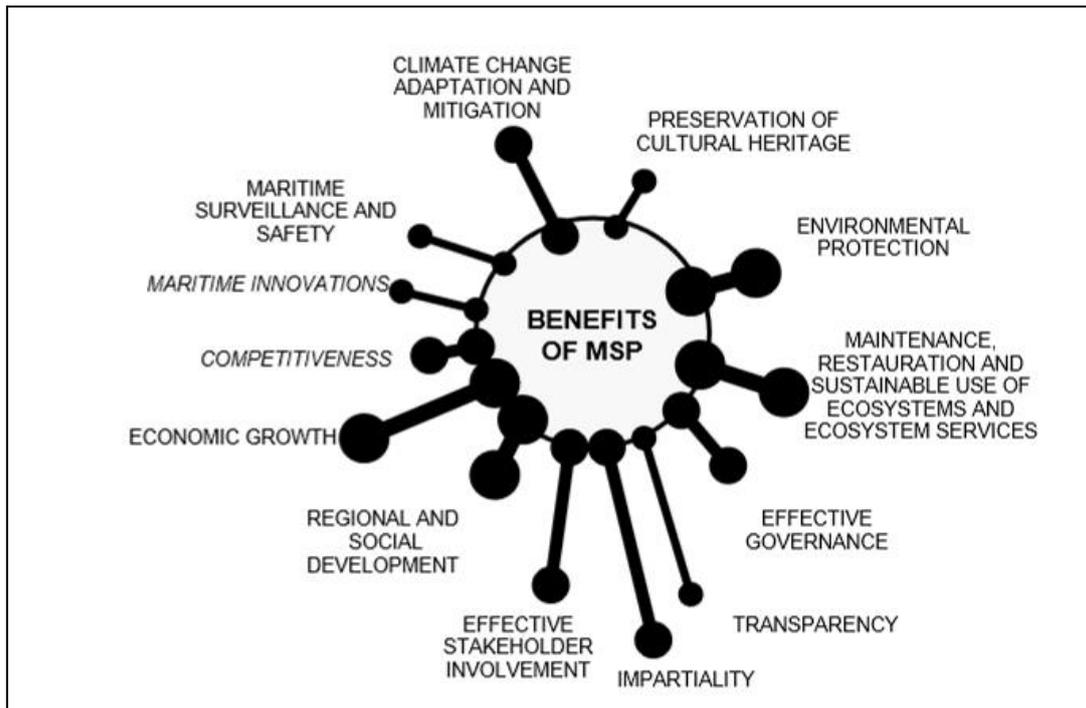
In order to further promote sustainable development of coastal zones, the Commission issued on the March 12, 2013 a draft proposal for a Directive establishing a framework for Maritime Spatial Planning (MSP) and Integrated Coastal Management (ICM)<sup>1</sup>. The proposal, if fully adopted, would oblige Member States to carry out MSP and ICM in accordance with national and international law; and will also require Member States to map human activities at sea and identify their most effective future spatial development in maritime spatial plans and to coordinate relevant policies affecting coastal areas in integrated coastal management strategies. To ensure sustainability and environmental health are advanced in marine and coastal areas, maritime spatial planning and integrated coastal management processes will have to employ an approach that respects the limits of ecosystems. The proposal specifies that:

*Maritime spatial planning and integrated coastal management should apply the ecosystem-based approach as referred to in Article 1(3) of Directive 2008/56/EC [MSFD] so as to ensure that the collective pressure of all activities is kept within levels compatible with the achievement of good environmental status and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while enabling the sustainable use of marine goods and services by present and future generations.*

Figure 2-1 details the benefits of MSP to other thematic areas of EU policy.

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<sup>1</sup> Proposed Directive on Maritime Spatial Planning on Integrated Coastal Management COM(2013) 133 final [http://ec.europa.eu/environment/iczm/pdf/Proposal\\_en.pdf](http://ec.europa.eu/environment/iczm/pdf/Proposal_en.pdf)



**Figure 2-1:** The benefits of MSP to thematic areas covered by EU policy and approaches to governance. Note: the thickness of the connector is proportional to importance of the beneficial relationship (the thicker the connector the more beneficial the relationship) (European Commission, 2011a).

*Marine Strategy Framework Directive and the Integrated Maritime Policy*

Although both of these instruments reflect Europe’s position in terms of marine policy, there are subtle differences in how each espouses the delivery of marine planning which has implications for how sustainability may be achieved. According to Qiu and Jones (2013) the MSFD and IMP prescribe two different approaches to MSP in Europe. The MSFD provides for an ecosystem-based approach for achieving Good Environmental Status (GES), and requires different sectoral activities to be managed in a way that achieves GES. Whilst the MSFD does provide for sustainable development, it does not explicitly promote economic development in contrast to, for example, the IMP which seeks to deliver sustainable development but is almost wholly economic in focus. The MSFD is legally binding on all Member States, and although it does not explicitly require MSP, this requirement being limited to marine protected areas (MPAs), it provides a basis for ecosystem-based MSP. By comparison, the IMP envisages MSP as being an instrument for cross-sectoral management and providing predictability for future investments, in addition to implementing the ecosystem-based approach (Douve, 2008; Suárez de Vivero and Mateos, 2012).

**Table 2-1:** Comparison between the Marine Strategy Framework Directive and Integrated Maritime Policy (Qiu and Jones, 2013).

	<b>MSFD</b>	<b>IMP</b>
<b>Overarching aim</b>	A framework for achieving good environmental status of marine waters through the implementation of an ecosystem-based approach	A framework for promoting maritime economic development and integrated management of different activities
<b>Role of MSP</b>	MSP as a mechanism to apply spatial and temporal distribution controls and in that way to assist in achieving 'good environmental status'	MSP as a mechanism for balancing different uses of sea space
<b>Role of MPAs</b>	Conservation through MPAs at the core of its implementation	Conservation and MPAs as one of the uses of sea space
<b>Legal Power</b>	Legally binding (Member States can be taken to the European Court of Justice for non-compliance)	Soft policy (no legal actions will be taken for non-compliance)
<b>Authority</b>	DG Environment	DG MARE
<b>Approach to Sustainability</b>	Based on 'hard' sustainability	Based on 'soft' sustainability

A number of authors draw a distinction between different forms of sustainability (Robinson, 2004; Hopwood et al., 2005; Mee et al., 2008). The IMP can be interpreted as being based on 'soft' sustainability, whereby MSP is more likely to be developed as an integrated use framework for balancing the needs of different sectors and ensuring that strong growth in certain maritime sectors does not lead to undesirable consequences for other sectors. In contrast, the MSFD can be interpreted as being based on 'hard' sustainability, in which ecosystem conservation is the foundation of the ecosystem-based approach. In line with the precautionary principle<sup>2</sup>, MSP which follows the approach of MSFD is more likely to be used as a preventative strategy to conserve ecosystem health, often in countries that do not have large maritime industries (Suárez de Vivero and Mateos, 2012). Table 2-1 provides a comparison between the MSFD and the IMP in relation to certain aspects, e.g. aims, role of MSP, and approach to sustainability.

Underlining the issue of potential tensions between the MSFD and IMP is that they fall under the responsibility of different European Commission departments. The Directorate-General for the Environment (DG Environment) oversees the implementation of the MSFD and in the past was responsible for the *Council Recommendation on Integrated Coastal Zone Management* in 2002<sup>3</sup> and

<sup>2</sup> Principle 15 of the Rio Declaration of the UN Conference on Environment and Development (UNCED, 1992) states that "in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall be not used as a reason for postponing cost-effective measures to prevent environmental degradation".

<sup>3</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002H0413:EN:NOT>

support to the *Protocol to the Barcelona Convention on Integrated Coastal Zone Management*<sup>4</sup>, ratified by the EU in 2010. The Directorate-General for Maritime Affairs and Fisheries (DG MARE) oversees the implementation of the IMP, along with the Common Fisheries Policy (CFP) and the newly proposed Directive on MSP and ICM. MSP-related initiatives commissioned under the two bodies seem to have little connection with each other, leading to a degree of uncertainty regarding the strategic direction(s) for MSP in Europe.

As it stands, DG MARE and DG Environment receive scientific advice from different advisory bodies, creating barriers in terms of information flow and shared decision-making. For example, in relation to fisheries, DG MARE's scientific input is received from the Scientific, Technical and Economic Committee for Fisheries (STECF), and the International Council for the Exploration of the Sea (ICES). Stakeholder input is obtained from the Advisory Committee for Fisheries and Aquaculture (ACFA) and Regional Advisory Councils (RACs). In comparison, DG Environment receives expert guidance relating to conservation issues by a Habitats Committee comprising representatives from all Member States and the European Commission. This Committee includes a Habitats Scientific Working Group and its focus is on supporting implementation of the Habitats Directive. However, given its membership, it is not an independent scientific authority, nor is it a true stakeholder forum (De Santo, 2010).

The potentially contrasting approaches to MSP, as prescribed in the IMP and the MSFD combined with possible disconnections between the two main Commission bodies responsible for marine management, are likely to be key issues in the development of a more coherent policy landscape for MSP in Europe.

#### *Current<sup>5</sup> Status - Proposed Directive on MSP and ICM*

The proposal for a Directive on MSP and ICM was published in March 2013. The proposal was then subject to mandatory consultation with the European Economic and Social Committee and the Committee of the Regions, in September and October 2013 respectively. In addition, the ordinary legislative procedure involves the European Commission consulting with the various Standing Committees who will suggest amendments and provide reports. The Committee on Transport and Tourism are responsible for this proposal but other Standing Committees have the option of providing input. On 12<sup>th</sup> December 2013 the European Parliament, on its first reading, adopted 81 amendments to the proposal for a Directive. The Parliament then referred the matter back to the competent committee, namely the Committee on Transport and Tourism (TRAN), for re-consideration. The Parliament wanted the framework for MSP *to involve* ICM aiming at promoting the sustainable development and growth of maritime and coastal economies and the sustainable use of marine and

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<sup>3</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:22009A0204%2801%29:EN:NOT>

<sup>4</sup> This is current to March 2014.

coastal resources, in particular by supporting the priority areas identified in the Blue Growth Communication (Amendment 21, Council of the EU, 2013) [*emphasis added*]. Seas at Risk (2013) have stated that the European Parliament voted to “*increase the emphasis on short-term economic growth in the proposed Directive on Maritime Spatial Planning (MSP) and Integrated Coastal Management (ICM)*”.

On 12 March 2014, the Permanent Representatives Committee approved the draft Directive establishing a framework for MSP endorsing the compromise reached between the Greek presidency and representatives of the European Parliament on 6th March 2014 (Council of the EU, 2014). The text of the compromise is not yet in the public domain; however, the associated press release does not mention ICM. Rather it states that in establishing maritime spatial plans, Member States “must take into account land-sea interactions, as well as environmental, economic, social and safety aspects” (Council of the EU, 2014). The Council of the EU’s version of the proposed Directive now goes back to the European Parliament for its second reading where they can accept the amendments made and approve it or suggest further amendments and return it to the Council.

## Section 2 – Summary of Key Points

- A wide range of European policy and legal instruments relate to the management of marine and coastal environments.
- European marine and coastal policy advocates the implementation of more integrated approaches to planning and management.
- Member States are expected to adopt approaches that reflect EU perspectives on integrated management and planning for coastal and marine environments.
- The relationship between certain instruments, tools and processes are not yet fully resolved, e.g. maritime spatial planning and integrated coastal zone management.
- Current marine and coastal policy is framed within the delivery of sustainable development; however, integrating objectives for development and growth against the need to safeguard ecological integrity and environmental quality will remain a challenge for marine planning and coastal management communities.
- Certain concepts linked to marine management (e.g. MSP) seem to be interpreted differently by the various Commission bodies which has the potential to impact negatively on future implementation by Member States.

### **3. Water Framework Directive (WFD)**

Water management and the use of water and water resources became the focus of European action through policy approaches initiated during the 1960s, subsequently related early-stage EC legislation focused on qualitative aspects leading to Directives to protect water intended for specific uses, e.g. drinking water. These Directives provided quality objectives predominantly linked to the use in question: e.g. freshwaters needing protection or improvement in order to support fish life (78/659/EEC); water intended for the abstraction of drinking water (75/440/EEC); quality required of shellfish waters (79/923/EEC); quality of bathing water (76/160/EEC); and, quality of water intended for human consumption (80/778/EEC).

Legislation that followed began to address pollution from point sources (i.e. dangerous substances, urban waste water) and diffuse sources (i.e. nitrates and pesticides) aiming to ensure the protection of water against: e.g. pollution caused by certain dangerous substances discharged into the aquatic environment (76/464/EEC) and daughter Directives; urban waste water treatment (91/271/EEC); protection of waters against pollution caused by nitrates from agricultural sources (91/676/EEC); and, placing of plant protection products on the market (91/414/EEC). A subsequent third type of legislation began to make reference to the need for an integrated approach; the Integrated Pollution Prevention and Control Directive (96/61/EC) aimed to address all environments (including water) that receive pollution (Boymanns, 2002).

In 1995, in response to unresolved problems regarding the implementation and application of the water-focused Directives in Member States, the European Council of Ministers asked for reform of the existing water policy (Boymanns, 2002) to address problems in a more coherent way, beginning with an open consultation process. The consultation process acknowledged the progress made through the existing Directives, which addressed specific issues of water management and use but also highlighted the fragmentation in European water policy and legislation in terms of their objectives and implementation (Boymanns, 2002). The process underlined the need for a legal framework to integrate and consolidate management objectives where, for example, competing sectors are using limited water resources e.g. industry, agriculture, domestic use (Kaika, 2003; Boymanns, 2002) and nature conservation.

#### *Background*

The Water Framework Directive (WFD) adopted in 2000 (2000/60/EC) seeks, as stated in Article 1, to establish a framework for the protection of Community waters: "*For surface fresh water, estuaries, coastal waters and groundwater it aims at preventing further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and promotes sustainable water consumption based on a long-term protection of available water resources*". The central objective of the WFD is to prevent the deterioration of ecological quality and the restoration of polluted surface and groundwaters by the end of 2015 with

comprehensive environmental objectives prescribed in Article 4 (European Commission, 2003). Article 4 of the WFD allows for exemptions in special cases and sets out the specific criteria whereby, for a given water body, the requirements of the Directive can be relaxed in a number of ways:

- The **extension of the deadline**: Good status may be achieved by 2021 or 2027 at the latest (Article 4.4);
- The achievement of **less stringent objectives** under certain conditions (Article 4.5);
- The **temporary deterioration** of the status in case of natural causes or "force majeure" (Article 4.6); and,
- **New modifications** to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater, or failure to prevent status deterioration of a body of surface water (including from high status to good status) as a result of new sustainable human development activities (Article 4.7).

Common to these exemptions are strict conditions which must be met. These are clarified in the EU WFD Guidance Document on Exemptions (European Commission, 2009). In summary:

- Member States are only allowed to apply **extended deadlines** on the condition that there is no further deterioration in the status of the water body and if they can demonstrate that the improvements required can only be achieved in phases exceeding the timescale, for reasons of technical feasibility; or that completing the improvements within the timescale would be disproportionately expensive; and,
- Member States may aim to achieve **less stringent environmental objectives** for specific bodies of water provided that there is no further status deterioration and when they are so affected by human activity or their natural condition is such that the achievement of objectives would be infeasible or disproportionately expensive.

Member States are required to adopt River Basin Management Plans (RBMP) in order to set objectives for catchment bodies with regard to ecological status, quantitative status, chemical status and protected area objectives, which have to be reached within a certain timeframe. As part of this approach the characteristics of each river basin are assessed and the impact of human activities on the status of the water in the basins is reviewed in order to estimate the effect of existing legislation and evaluate the discrepancy to meeting the objectives for each basin. Consequently a set of measures is designed to overcome the discrepancy and achieve the objectives within the required timeframe. Plans developed under the WFD will be valid from 2009 until 2015, and are then to be reviewed and adapted every six years.

The river basin management planning approach represents an important departure from traditional approaches to water management, which were based rather on administrative or political boundaries while the RBMPs are based on the natural geographical and hydrographical unit (the river basin)

(O'Hagan, 2013). Another new quality of the WFD compared to traditional water management Directives is the requirement for the involvement of the public in the implementation of this Directive. For example, DG Environment have issued guidance on the implementation of the Birds and Habitats Directives in estuaries and coastal zones with an emphasis on port development and dredging, in which they have stated the need for port authorities located along rivers or estuaries, along with other stakeholders, to be "*actively involved in the consultations on river basin management issues, inter alia, in the context of drafting the river basin management plans*" as required by the WFD (European Commission, 2011b). Article 14 of the WFD covers the timetable and process for public participation and ensures that stakeholder involvement would be an element of the work programme for developing the RBMPs, and for the associated phases of consultation; subsequently they would be involved in the identification of significant water management issues for their river basin and then consultation on the draft river basin management plan.

#### *Transposing Regulations of the Water Framework Directive*

The Water Framework Directive was transposed into Irish law by the European Communities (Water Policy) Regulations 2003, (Statutory Instrument No. 722) on December 22, 2003, and has been amended on numerous occasions since. The Irish Environmental Protection Agency (EPA) assumed the responsibility of coordinating the scientific and technical issues, while the Department of the Environment, Community and Local Government (DECLG) retains responsibility linked to policy and budgetary control and steering the implementation of the Directive (Earle and Blacklocke, 2005) in correspondence to the implementation timetable (see Table 3-1 below), which was established for all EU Member States. Furthermore, Ireland's local authorities were notified to the EU as the competent authorities under Article 3 of the Directive (Earle and Blacklocke, 2005). The Marine Institute (MI) has been involved with the implementation of the WFD, particularly in terms of coastal and transitional waters, in an advisory capacity as well as in the development of ecological quality elements for coastal and transitional waters. Furthermore, the MI has also initiated a joint programme with the EPA on advanced technologies for water quality monitoring.

From a European perspective, the WFD has a long-term and clear vision; however, transposing the Directive into national law does not necessarily imply immediate transfer of these aspects of the Directive, as national characteristics influence the process and its success (Boymanns, 2002). River Basin Management Plans in Ireland were finalised for each of the seven identified river basin districts in July 2010. Implementing the plans requires coordination and integration of actions across public bodies; however fragmented administration is identified within Irish RBMPs as a barrier to their implementation (Sustainable Water Network, 2012a; Irvine and Ní Chuanigh, 2010). Furthermore, while the Irish Government fulfilled all basic consultation requirements at different stages of WFD implementation, it has been argued that this did not lead to meaningful public participation (Sustainable Water Network, 2012a; Irvine and O'Brien, 2009). WFD stakeholder advisory councils established in 2006 were the main fora for stakeholder engagement; however, these were limited in

their scope, and with respect to the influence they had over RBMP content (Irvine and O'Brien, 2009). These councils were dissolved in 2009, mid-way through the consultation on the draft RBMPs and have not been re-established. A review of Irish water governance involving the Department, local authorities, the EPA and other relevant bodies is underway (Environmental Protection Agency, 2012) to ensure better integration of roles and policies between the key government departments, the EPA and the lead local authorities (Environmental Protection Agency, 2012).

**Table 3-1:** Implementation timeframe (2000-2015) for the WFD.

Year	Element / Step	Reference Article
2000	Directive entered into force	Art.25
2003	Transposition into national legislation Identification of River Basin Districts and Authorities	Art.23 Art. 3
2004	Characterisation of river basin: pressures, impacts and economic analysis	Art. 5
2006	Establishment of monitoring network Start public consultation	Art. 8 Art. 14
2008	Present draft river basin management plan	Art. 13
2009	Finalise river basin management plan including programme of measures	Art. 13 and 11
2010	Introduce pricing policies	Art. 9
2012	Make operational programme of measures	Art.11
2015	Meet environmental objectives First management cycle ends Second river basement management plans and first flood risk management plan	Art. 4

#### *Coastal and Transitional Waters*

In the WFD, transitional waters are defined in Article 2(6) as “*bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows*” while coastal waters are defined in Article 2(7) as “*surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters*” (2000/60/EC).

Article 2(6) specifies coastal waters to be identified and assigned to the nearest or most appropriate river basin district or districts. The Directive allows in Article 13(5) that river basin management plans “*may be supplemented*” with more detailed programmes and management plans for sub-basin, sector, issue or water type, in order to include and accommodate characteristics of water management specific to these aspects (2000/60/EC). Such a provision within the Directive gives management authorities flexibility (O’Hagan, 2013) and could be a significant opportunity to address, for example, issues of coastal management and allow for improved integration of policies and legislation relevant to the Irish coast.

In the WFD reporting period 2007-2009, 121 transitional and coastal water bodies were assessed for Ireland, 46% of those were classified as high or good, while 51% were classified as moderate and 3% received a poor status classification (Environmental Protection Agency, 2012). The reduction of nutrient inputs was identified as key to improving the status of these waters. Improvement of the water quality of some transitional and coastal waters in coastal towns was directly attributed to the new wastewater treatment plants, e.g. for Sligo Bay and the Liffey estuary (Environmental Protection Agency, 2012). On the other hand many coastal towns were identified as lacking adequate treatment levels, some of them being important tourist destinations. The EPA is addressing these issues ensuring that secondary treatment will be put in place, for example, for discharge licensing in Clifden (Co. Galway) and Youghal (Co. Cork) (O’Boyle, 2010); estimated completion dates vary per location but for several large urban areas completion of works are projected for 2015 and 2016 (Environmental Protection Agency, 2014). In addition, the control of nutrient inputs from inland diffuse and point sources were also identified as crucial to facilitate improvement of water quality in Irish estuaries and bays (Environmental Protection Agency, 2012).

*Interactions between the MSFD and the WFD*

The European Commission has invested in the preparation of guidance for various legal instruments and how these relate to each other and what links need to be considered, e.g. Habitats/Birds Directives and MSFD (European Commission, 2012) or for a number of Directives such as MSFD, WFD, Floods Directive and policies such as the IMP in the context of enabling climate adaptation efforts in the coastal and marine environment (Kopke and O’Mahony, 2011). Both, the MSFD and the WFD incorporate certain common principles such as integration, ecosystem-based approach and public participation. Furthermore, the MSFD specifically mentions that its requirements have to be implemented in association with other EU legal instruments such as the WFD and the Habitats Directive, reaffirming integration as a central theme (O’Hagan, 2013). Table 3-2 summarises common and related aspects of both Directives. For each a Common Implementation Strategy was designed to address pre-identified challenges to cooperative and coordinated working between Member States and the Commission (O’Hagan, 2013).

**Table 3-2:** Summary of common and related aspects for the MSFD and the WFD

MSFD	WFD
Marine Strategies	River Basin Management Plans
6 year review cycle for marine strategies	6 year review cycle for management plans
Initial assessment and determination of Good Environmental Status (GES) and the environmental targets in 2012 plus every 6 years	Environmental and Economic Analyses
Monitoring 2014	Monitoring 2006
Measures 2015/16 plus every 6 years	Measures 2012/15 plus every 6 years
Good Environmental Status by 2020	Good Ecological Status by 2015

Both Directives work within an over-arching management framework such as the RBMPs adopted under the WFD or the marine strategies created under the MSFD. The ecosystem-based approach via the eco-region (as in the WFD, Annex XI) or the marine region or sub-region (MSFD, Article 4) provides for a regional application focus (O'Hagan, 2013).

A geographical overlap is anticipated for the scope and provisions of the WFD and the MSFD, which is intended to support complementary working rather than become an issue leading to less than optimal interactions or a duplication of effort (O'Hagan, 2013). Article 3(1) of the MSFD defines marine waters as "*(a) waters, the seabed and subsoil on the seaward side of the baseline from which the extent of territorial waters is measured extending to the outmost reach of the area where a Member State has and/or exercises jurisdictional rights... (b) coastal waters as defined by Directive 2000/60/EC, their seabed and their subsoil, in so far as particular aspects of the environmental status of the marine environment are not already addressed through that Directive or other Community legislation*". The latter clearly acknowledges the potential overlap of the MSFD with the WFD; however, the MSFD does not apply to transitional waters such as estuaries, even if GES under the WFD may be different and some estuarine waters have a predominantly 'marine' character (O'Hagan, 2013). Furthermore, the definition of coastal waters is complex (Sas et al., 2010; Nichols, 1999) and does not lend itself to easy interpretation or application which could potentially result in a situation whereby neither the WFD nor the MSFD apply to coastal waters (O'Hagan, 2013).

Similarly, problems may arise even if high level principles are common or related, e.g. the WFD and nature conservation themed Directives have a common principle to protect ecosystems, however specific objectives, measures and tools are not necessarily complementary, which Article 4(2) of the WFD tries to address by specifying that if conservation objectives of the Habitats Directive are more stringent than the requirements of the WFD, those of the former will apply. A comparable prescriptive interaction between the MSFD and the WFD is not provided and while a potential overlap of both Directives is recognised e.g. for coastal areas, the absence of instructions on which Directive would take precedent puts the responsibility to realise a consistent integrated approach for such areas up to the Member States (Borja et al., 2010). Implementation of ICZM would benefit any attempts to achieve such an integrated approach, providing a basis for cooperation between relevant agencies, and clear designation of responsibilities. Consequently, potential conflict areas in relation to a spatial overlap in the coastal zone have to be identified, acknowledged and addressed for example the different meanings of a good status under each Directive and how it is assessed and monitored (elements versus descriptors) as well as the underlying ecological approaches relating to the final assessment e.g. WFD taking a structural compared to the MSFD functional approach (Borja et al., 2010).

*WFD and Proposed Directive on MSP/ICM*

The proposed ICM and MSP Directive states that MSP and ICM will contribute, inter alia, to achieving the aims of a host of EU legal instruments covering energy, fisheries, transport, biodiversity, resource efficiency, adaptation to climate change and, with respect to water, both the WFD and MSFD (COM(2013) 133, Recital 16, p.10). This appears in Recital 16 and the WFD is not mentioned anywhere else in the text of the proposed Directive. The European Parliament on its first reading of the proposal for a Directive adopted an amendment adding the Birds and Habitats Directives to this list.

In terms of scope of application, the proposed Directive will apply to all marine waters and coastal zones. The term 'coastal zone' in the proposed Directive was amended by the European Parliament, during their first reading,<sup>6</sup> to mean the seashore to the limit of the territorial seas as defined by Member States in their respective laws. In Ireland the seashore is legally defined as "the foreshore and every beach, bank, and cliff contiguous thereto and includes all sands and rocks contiguous to the foreshore", the foreshore being the area below the line of high water of ordinary or medium tides to the 12 nautical mile (territorial sea) limit.

"Marine waters" in the proposed Directive means the waters, the seabed and subsoil on the seaward side of the baseline extending to the outermost reach of the area where a Member State has/or exercises jurisdiction which is usually the 200 nautical mile limit. The proposed MSP and ICM Directive does not use, or refer to, the definitions contained in the WFD specifically transitional waters or coastal water.

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<sup>6</sup> Note this may change as the proposal progresses through the ordinary legislative procedure.

### Section 3 – Summary of Key Points

- The Water Framework Directive (WFD) provides a legal basis (which includes provision for exemptions) for holistic and integrated water policy, its primary objective is to achieve good ecological status for surface and groundwaters by preventing deterioration in ecological quality, and restoring the quality of waters exposed to pollution.
- Implementation of the WFD is delivered through a river basin management planning approach which represents an important departure from traditional approaches to water management, and places emphasis on natural and hydrographical conditions over administrative or political boundaries.
- Implementation of river basin management in Ireland is challenged by fragmented administrative structures and a review of Irish water governance is currently underway to ensure better integration of roles and policies.
- Articles within the Directive provide the appropriate management authorities with flexibility that could present opportunities for coastal management and allow for improved integration of policies and legislation relevant to the coast.
- Public participation is a cornerstone of WFD implementation and provision is made for stakeholder involvement, which is considered an important element in the development of river basin management plans.
- In Ireland public consultation requirements under the WFD were met, but have received criticism as being limited in scope and concerning the extent to which stakeholder input was incorporated during the development of river basin management plans.
- A degree of overlap is anticipated between the WFD and MSFD which is considered by the European Commission to support complementary working rather than being a case of duplication of effort; however, this remains to be fully tested in practice and within operational settings.

#### **4. Marine Strategy Framework Directive (MSFD)**

European marine waters cover an area that is larger than the European land mass, with a coastline three times that of Africa (Thiel, 2013). Many of the threats facing Europe's seas require cooperation between Member States to tackle them effectively. The European Commission (EC) has developed its own marine policy framework in parallel to a set of international conventions that cover all marine waters. The MSFD was introduced by the European Commission to address the environmental quality of Europe's seas, and came into force in 2008 with the overall aim to promote sustainable use of the seas. The main goal is to achieve or maintain 'Good Environmental Status' (GES) in the marine environment by 2020; this is based upon 11 qualitative descriptors:

- Descriptor 1: Biological diversity
- Descriptor 2: Non-indigenous species
- Descriptor 3: Population of commercial fish / shell fish
- Descriptor 4: Elements of marine food webs
- Descriptor 5: Eutrophication
- Descriptor 6: Sea floor integrity
- Descriptor 7: Alteration of hydrographical conditions
- Descriptor 8: Contaminants
- Descriptor 9: Contaminants in fish and seafood for human consumption
- Descriptor 10: Marine litter
- Descriptor 11: Introduction of energy, including underwater noise.

##### *Background*

The EU's 6th Environmental Action Programme (2002-2012) identified the protection of the marine environment as a key policy concern. Following the publication of the *Thematic Strategy on the Protection and Conservation of the Marine Environment* in 2005, the EU initiated a process of transition towards a more strategic approach to protection of the marine environment. However, in order to achieve the objectives of this strategic approach, it was considered essential that a binding legal instrument was required, ambitious in its scope but not overly prescriptive (Roose et al., 2011).

After a long development and approval process, the Directive establishing a Framework for Community Action in the field of Marine Environmental Policy (Marine Strategy Framework Directive or MSFD) was adopted in June 2008. One of the key objectives of the Directive is to contribute to the fulfilment of international commitments by both the EU and the Member States in the field of protection of marine waters. The Directive provides the legal impetus for the EU to protect its seas and oceans as part of an integrated strategy for the sustainable management and use of our seas. The Directive was due to be transposed into national legislation by the relevant Member States by July 15, 2010, and strives to establish an integrated approach to maritime activities and provide a long-term policy vision for Europe's marine environment. The key concepts of the MSFD are outlined in Box 4-1.

**Good Environmental Status (GES):** The overarching goal is to achieve or maintain GES of the EU's marine environment by 2020, thus protecting the resources on which marine-related economic and social activities depend.

**Ecosystem Approach:** The Directive prescribes an ecosystem-based approach to the management of all human activities that have an impact on the marine environment.

**Regional Approach:** The Directive stipulates a regional approach to MSFD implementation and establishes European Marine Regions on the basis of geographical and environmental criteria. Member States must adopt *common approaches* by:

- Working to a common and ambitious timeline to meet GES by 2020,
- Developing Marine Strategies in cooperation with neighbouring countries using existing regional cooperation structures,
- Adopting an adaptive management approach so that strategies are kept up-to-date and reviewed on six year cyclical basis.

**Box 4-1:** Key concepts of the MSFD (adapted from European Commission, 2011c).

These key concepts are also addressed or even originated from existing international agreements or political initiatives. These international instruments, to which the EU and Member States are Party, need to be implemented in the legal order of the EU, and then transposed in the national law of the Member States. Such international instruments can be of a global nature, such as the Convention on Biological Diversity (CBD) or of a regional nature, such as the relevant regional sea conventions (e.g. OSPAR, in the case of the North-East Atlantic).

#### *Transposition of the MSFD into Irish Law*

The MSFD came into effect on June 17, 2008. The deadline for its transposition into the domestic law of Member States was July 15, 2010. Following a formal notice from the European Commission to the Irish Government in November 2010 and a Reasoned Opinion in April 2011, the MSFD was finally transposed into Irish law through the European Communities (Marine Strategy Framework) Regulations 2011<sup>7</sup> on May 31, 2011.

#### *Competent Authority*

The relevant government authority (or 'Competent Authority' as referred to in to MSFD) in Ireland fulfilling a statutory remit as set out in the Directive is that of the Department of the Environment, Community and Local Government (DECLG). Although not underpinned by the regulations of the MSFD, because of the cross-cutting nature of marine issues, four other Departments are intrinsically linked into the process– Department of Agriculture, Food and the Marine (DAFM), Department of Transport, Tourism and Sport (DTTS), the Department of Arts, Heritage and the Gaeltacht (DAHG) and the Department of Communications, Energy and Natural Resources (DCENR). In addition, the Marine Institute<sup>8</sup> (MI), drawing on its expertise in the areas of: Fisheries Ecosystem Advisory Services; Marine

<sup>7</sup> (Marine Strategy Framework) Regulations 2011, Ireland.  
<http://www.environ.ie/en/Environment/Water/WaterQuality/Marine/RHLegislation/FileDownload,26552,en.pdf>

<sup>8</sup> The Marine Institute is the national agency responsible for Marine Research, Technology Development and Innovation (RTDI) in Ireland and has a statutory role "to undertake, to co-ordinate, to promote and to assist in marine

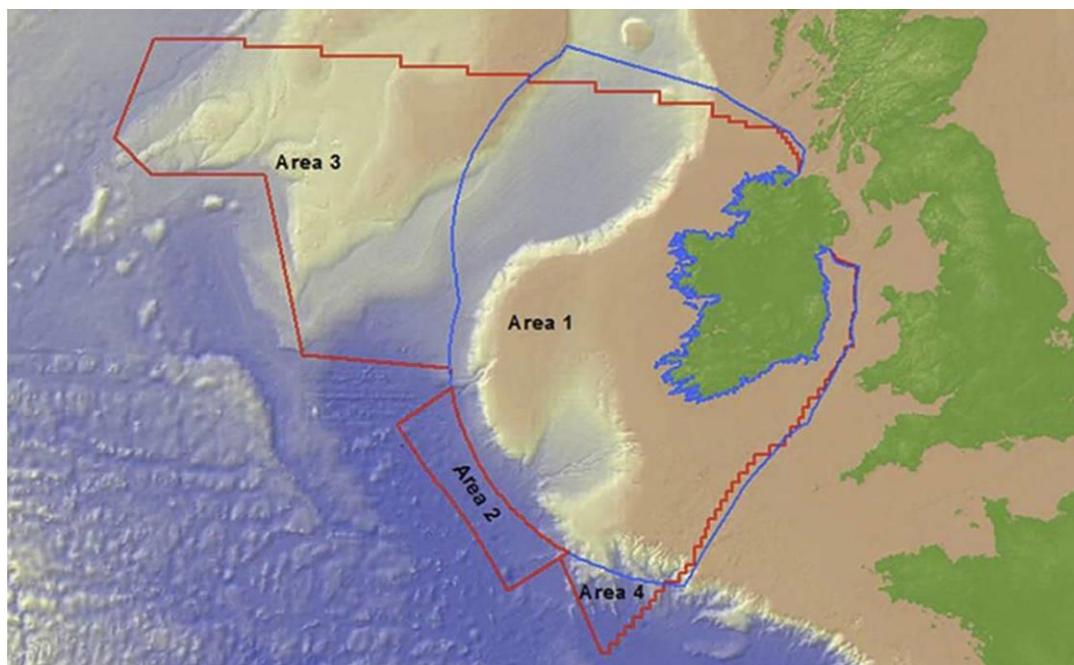
Environment and Food Safety Services; and Ocean Science and Information Services, has a major role to play in the delivery of the Directive (although specifically through its marine monitoring activities as well as representation in all of the MSFD Working Groups).

#### *Defining the Extent of Marine Waters*

All EU Member States must define the extent of their marine waters in line with the obligations set under the MSFD. For the purpose of the Directive ‘marine waters’ are defined as the:

*seabed and subsoil on the seaward side of the baseline from which the extent of territorial waters is measured extending to the outmost reach of the area where a Member State has and/or exercises jurisdictional rights, in accordance with the United Nations Convention on the Law of the Sea (UNCLOS or Law of the Sea Convention).*

The extent of the Ireland’s marine waters can be seen in Figure 4-1. For the purposes of the MSFD Ireland’s assessment area is deemed to consist of the combined spaces of Area 1 and Area 2, a total of 490,000km<sup>2</sup>. Ireland’s Exclusive Economic Zone (EEZ) is shown as Area 1, while Ireland has a limited form of jurisdiction over the natural resources located in, on or under the seabed of an area of the continental shelf adjoining the Porcupine Abyssal Plain (Area 2). Areas 3 and 4 are agreed to 200 miles but beyond that decisions on the final outer continental shelf limits have yet to be sanctioned by the UN under international law (Law of the Sea Convention).



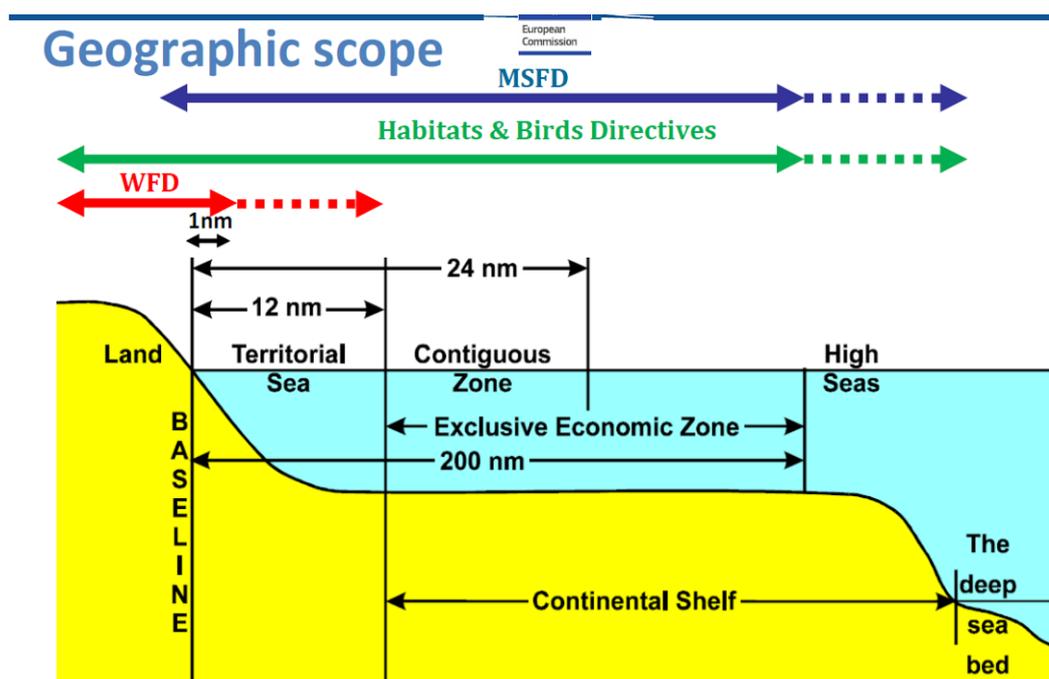
**Figure 4.1:** The extent of Ireland’s marine areas including the MSFD Assessment Area (DECLG, 2012a).

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research and development and to provide such services related to research and development that, in the opinion of the Institute, will promote economic development and create employment and protect the marine environment”

### MSFD Limits per Jurisdiction: Interactions with the WFD

The MSFD defines marine waters as “waters, the seabed and subsoil on the seaward side of the baseline from which the extent of territorial waters is measured extending to the outmost reach of the area where a Member State has and/or exercises jurisdictional rights” and coastal waters as defined by the WFD, their seabed and their subsoil, in so far as particular aspects of the environmental status of the marine environment are not already addressed through that Directive or other Community legislation. The latter essentially means that the MSFD will apply only where the WFD definition does not. The requirements of the MSFD and WFD overlap in coastal waters (Figure 4-2).



**Figure 4-2:** Geographic scope of the MSFD in relation to other EU Directives and marine jurisdictional zones (Cronin, 2013).

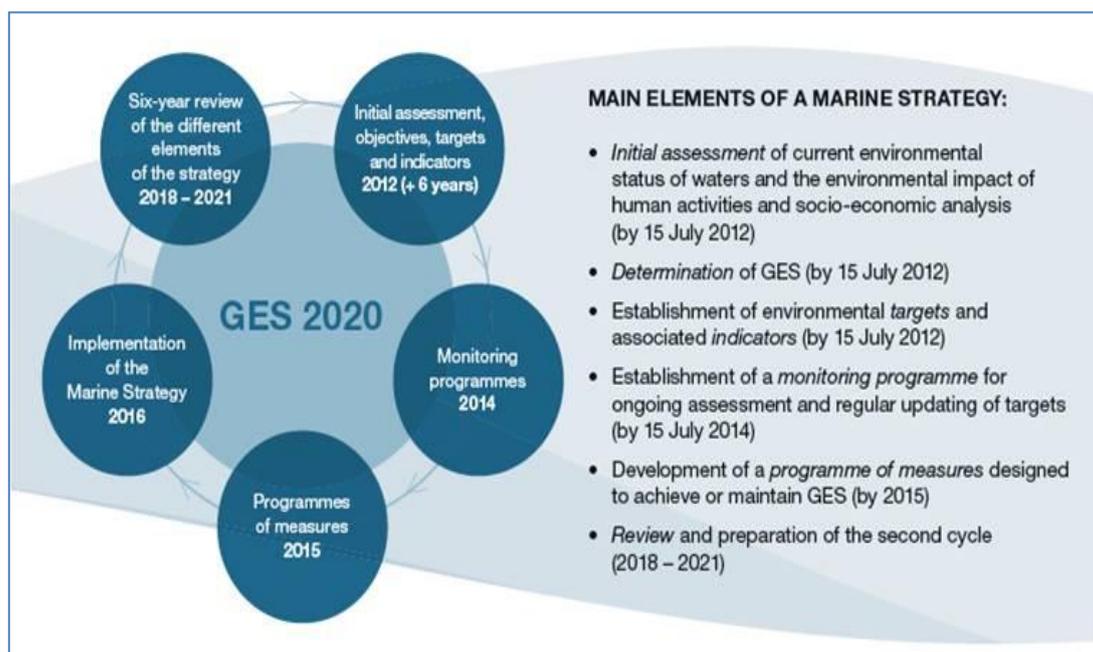
The upper limit of the MSFD is the baseline which is normally the low water mark but can be a straight baseline where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity (Article 7(1), UN Law of the Sea Convention).

#### *Initial Assessment, Determination of GES, and Identification of Environmental Targets and Indicators*

As defined by the Directive, three important preparatory steps (Figure 4-3) in the implementation cycle were due to take place in 2012. For this crucial deadline, the Member States were due to submit to the Commission by 15 October 2012 their reports on the following elements:

- Initial assessment of the current environmental status of their marine waters (Art. 8 MSFD);
- Determination of what GES means for the marine waters of relevant marine regions and sub-regions (Art. 9 MSFD); and,
- Identification of environmental targets and associated indicators to guide progress towards achieving GES by 2020 (Art. 10 MSFD).

According to Article 12 of the Directive, the Commission will then assess whether these reported elements constitute an appropriate framework to meet the requirements of the Directive.



**Figure 4-3.** Key targets legally imposed on Member States by the Marine Strategy Framework Directive (European Commission, 2011a).

Following Ireland’s late transposition of the Directive into domestic law, the Competent Authority, the DECLG did not fully complete the three initial elements by the 2012 deadline. According to the EIONET Central Depository, the required reports were submitted on April 26, 2013, some six months after the legal deadline. The DECLG stated that prolonged delay in completing these legal obligations was due to a lack of available resources. In recent years, budgets and staffing levels within the Department have been significantly reduced. Implementation of the MSFD thus has to be considered in the context of the resource constraints as a result of the current economic climate (Brady et al., 2013). It is also important to highlight that the DECLG provided funding to the Irish Marine Institute who in turn engaged a private environmental consultancy, RPS, to prepare Ireland’s submission to the European Commission. At the end of December 2012, the DECLG published ‘Ireland’s Marine Strategy Framework Implementation’ developed as part of a public information process which aims to promote awareness of MSFD implementation in Ireland. The totality of public consultation in the MSFD process in Ireland from December 2012 to October 2013 amounts to an online invitation to comment on an information booklet and the 133 reporting sheets submitted to the European Commission.

Ireland’s MSFD Initial Assessment Report was published in late October 2013 (see Box 4-2 for key findings of report). The core objective of the Initial Assessment was to establish a baseline – to complete a stock-take of existing data holdings and data gaps; no new research was carried out

during the assessment exercise. The report drew on a large range of data and information sources, including national monitoring and assessment reports, e.g. Marine Institute (2010), Tully and Clarke (2012), national survey results, e.g. An Taisce (2009), Folegot et al. (2013), and scientific literature, e.g. Hynes and Farrelly (2012), together with State, consultancy and academic expert knowledge. Ireland's Marine Atlas which collates relevant data and information on the marine environment was also launched at the same time as the publication of the Initial Assessment Report.

- In general, seabed habitats are considered to be in a healthy condition
- The main human sources of nutrient enrichment into the Irish assessment area are agricultural activities, waste water discharges and run-off from unsewered properties. The overall nutrient status is considered good and consistent with the achievement of GES;
- Seafood from Irish waters consistently complies with maximum standards set in EU law for non-synthetic contaminants;
- The level of radio-nuclides in shellfish samples is very low with the majority of measurements being close to or below limits of detection;
- In terms of increasing marine acidification, there is evidence to suggest that the pH level in Ireland's offshore waters is decreasing;
- Bathing water quality is generally high in Ireland with 93% of designated bathing waters meeting the minimum standard under the EU Bathing Water Directive;
- Current evidence suggests a minimal impact of marine litter on cetacean and seal populations, though the relationship between the volume and type of marine litter and the impact on the marine environment is not fully understood;
- As offshore exploration and renewable energy activity increases, a corresponding increase in impulsive and continuous noise is likely in the marine environment.

**Box 4-2:** Key findings of Ireland's Initial Assessment report (DECLG, 2013).

#### *Public Consultation*

On November 1, 2013, Mr Phil Hogan T.D., Minister for the Environment, Community and Local Government, announced a public consultation process related to the MSFD, the purpose of which was to foster engagement and to achieve a greater awareness of the MSFD and its implementation in Ireland. A public consultation workshop hosted by the DECLG was held in Dublin on November 11, 2013. However, it is important to note that:

- Certain stakeholders were targeted directly and an open invitation to attend this workshop was not advertised on the DECLG website; and,
- During the workshop, stakeholders were informed that the document (on which comment was originally invited on or before January 10, 2014) was the final version and no changes would be

incorporated based upon the current consultation process, or the outputs from that workshop (Sustainable Water Network, 2014).

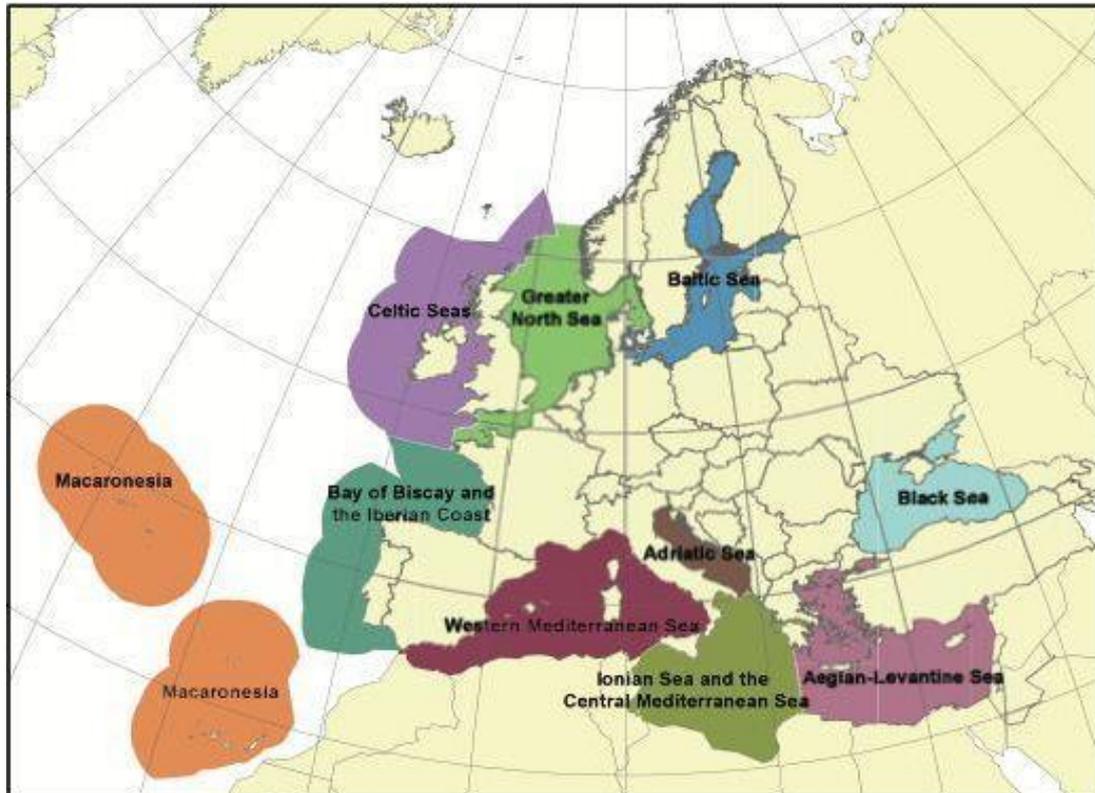
A response to the public consultation in January 2014 was submitted by SWAN which outlined how the current consultation process for MSFD in Ireland is fundamentally flawed since interested parties were invited to comment on a document that had already been finalised, (Sustainable Water Network, 2014). Furthermore, the inadequacies of the consultation process to date are of particular concern when considered against the fact that the next opportunity for public participation in this phase of MSFD implementation (initial assessment, determination of GES and setting of environmental targets) is in six years (Sustainable Water Network, 2014).

**Table 4-1:** Summary of the current status of Ireland’s progress-to-date in terms of legal and procedural obligations under the Marine Strategy Framework Directive.

Marine Strategy Framework Directive Action	Deadline	Actual Completion Date
<a href="#">Transposition</a> (Article 26, 27)	15 July 2010	31 May 2011
Competent Authority	15 July 2011	15 January 2011
<a href="#">Initial Assessment</a> (Article 8)	15 July 2012	26 April 2013
Determination of GES (Article 9)	15 July 2012	26 April 2013
Targets and Indicators (Article 10)	15 July 2012	26 April 2013
<a href="#">Summary for Public Consultation</a> (Article 19) and <a href="#">Marine Atlas</a>	15 July 2012	31 Oct 2013
Public Consultation Workshop	15 Oct 2012	11 November 2013

*Coordination with Neighbouring Member States*

The Directive recognises that, in certain situations, action by Member States alone will be insufficient and that measures will need to be taken at a regional and sub-regional level (Mackelworth et al., 2011). While each Member State is responsible for developing a strategy specific to its own waters, each national strategy must be consistent with, and reflect the broader outlook of, the Marine Region of which it is part (see Figure 4-4) and thus contribute to the delivery of GES at three different scales; the national, the sub-regional (Celtic Seas) and the regional (North-East Atlantic).



**Figure 4-4:** Marine sub-regions under the MSFD (Roxburgh et al., 2012)

A key challenge for sub-regional coordination in this area is the number of jurisdictions with a complex range of political, administrative and management boundaries. Figure 4-5 refers to countries (and the Isle of Man which is a self-governing British Crown Dependency) which share boundaries in the Celtic Seas marine sub-region; these countries will need high levels of cooperation, particularly in relation to data-sharing issues. However under the requirement of the Directive, cooperation is required between all Member States within a marine sub-region even if they do not share borders. Although governed by British law, the Isle of Man (IOM) is not part of the UK or a direct member of the European Union and therefore not legally required to implement the MSFD in its marine waters.<sup>9</sup>

#### *Next Steps*

According to Article 12 of the Directive, the Commission will now assess whether these reported elements constitute an appropriate framework to meet the requirements of the Directive. It has yet to be seen if the Member States have adequately addressed the first three steps of the preparatory phase of MSFD implementation.

<sup>9</sup> Under the MSFD, IOM is classed as a non-EU country or *third country* and the Directive calls on Member States to cooperate with third countries in the same region, making use 'where practical and appropriate' of the relevant regional pollution commission and other relevant regional bodies and agreements.

		UNITED KINGDOM						
		<i>UK Government</i>	<i>Wales</i>	<i>Scotland</i>	<i>N. Ireland</i>	<i>Isle of Man*</i>	<b>Ireland</b>	<b>France</b>
<b>U K</b>	<i>England/ UK Government</i>							
	<i>Wales</i>							
	<i>Scotland</i>							
	<i>N. Ireland</i>							
	<i>Isle of Man*</i>							
	<b>Ireland</b>							
	<b>France</b>							

**Figure 4-5:** Matrix of cooperation (indicated by shaded boxes) required under MSFD obligations across the seven jurisdictions in the Celtic Seas sub-region (Twomey and O’Mahony, 2013).

As indicated in Table 4-1, Ireland has failed to meet all of the deadlines for MSFD implementation to-date. This delay is likely to have a ripple effect for the wider Celtic Seas sub-region in the long term, in that if Member States are to cooperate with their neighbouring countries, they can only do so effectively if they are all at the same stage in the MSFD implementation process simultaneously. The next stage of implementation, which is to be completed by 15 July, 2014, is the establishment of a monitoring programme for ongoing assessment and given the delays to date it is unlikely that Ireland will have this in place by this deadline. To get back on track, the preparatory (overdue) stage would need to be completed expeditiously before developing the monitoring programme. However, *early and effective stakeholder participation* is a fundamental aspect of the ecosystem approach and ICZM (see Section 7), and is also a legal requirement under the MSFD, as well as the Convention on Biological Diversity<sup>10</sup>, Aarhus Convention<sup>11</sup> and OSPAR’s North-East Atlantic Environment Strategy (OSPAR, 2010). Therefore, whilst acknowledging the time pressure it is under, the Irish Government must ensure that all stakeholders with an interest in the marine environment are involved as this process moves forward.

<sup>10</sup> COP 6 Decision VII/19 <http://www.cbd.int/decision/cop/default.shtml?id=7193>

<sup>11</sup> UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, commonly referred to as the [Aarhus Convention](#).

#### **Section 4 – Summary of Key Points**

- The Marine Strategy Framework Directive places a legal requirement on European Member States to deliver and maintain Good Environmental Status of marine environment by 2020 – the status is based upon 11 criteria (Descriptors) that cover physical, biological and chemical aspects of marine environmental quality.
- A timeline has been established for the implementation of the Directive between now and 2020, which Member States have to adhere to and report on progress.
- Ireland has not met the deadlines to date, but has completed the steps involving: transposition of the Directive; designation of a competent authority (Department); and, submission of the Initial Assessment report; and is currently working towards developing a monitoring programme, noting that the deadline for completion is 15<sup>th</sup> July 2014.
- Early and effective stakeholder participation is a legal requirement of the Directive (Article 19(1)); to date, participation regarding the Directive in Ireland has been limited.
- Variation between Member States in relation to the timescale of implementation will have implications for meeting the objectives of the Directive, as each national strategy must be consistent with and reflect the broader outlook of the Marine Region of which it is part, and cooperation is required between all Member States within a marine sub-region.

## **5. Pressures Facing Ireland's Coastal Environment**

Ireland's coastal regions accommodate multiple human activities, are the location for Ireland's largest cities, contain key infrastructure (e.g. power stations, ports, road and rail networks) and strategic industrial locations (Falaleeva et al., 2011). While some activities can benefit from having a coastal position and access to coastal resources, the success of other sectoral activities is specifically linked to the coast, e.g. marine / coastal recreation and tourism, fisheries and aquaculture, shipping and port related industry, commerce and trade (Connolly et al., 2001; Cummins et al., 2004; O'Mahony et al., 2009). The range of human activity within coastal areas will operate at different scales and can have multiple and cumulative effects on coastal natural environments, these typically relate to inappropriate coastal development, impacts and pressures arising from multiple resource-dependent uses, interference with natural processes, as well as point source and diffuse-based pollution (Connolly et al., 2001; Crowe et al., 2012), all of which contribute to the degradation of coastal habitats. Furthermore, sectors of activity may cause specific pressures which can be:

- Physical in nature e.g. direct destruction or reduction in integrity of coastal habitat (Rees et al., 2013; Conde et al., 2010);
- Chemical, such as introduction of contaminants and nutrients (Ulén et al., 2007);
- Biological by removing organisms living in this environment or introducing pathogens or non-native species into the environment;

or, a combination of these three categories (Connolly et al., 2001; Robinson et al., 2008; Crowe et al., 2012).

It should be acknowledged that the aforementioned potential pressures and impacts on the coast occur in an environment in which natural change is continuous and can often be dynamic, sudden and unpredictable (Carter, 2002). Therefore, impact and change driven by human activity can exacerbate natural change (and vice versa) – issues relating to coastal erosion and climate change perhaps offer contemporary examples of this relationship between human and natural induced change. Scientific evidence strongly supports the finding that 'natural' pressures will also require management strategies in the future; and this should be considered when developing any management intervention. Based on multidisciplinary approaches it has been well documented that these 'natural' pressures drive non-linear marine and coastal dynamics across very different temporal and spatial scales. For example, the non-linearity means that perceived trends in ecosystem indicators may only be short-lived and other important variables often display a delayed response time to pressures and large-scale climate drivers.

Indeed, multi-disciplinary scientific investigations have shown that statistically robust trend analysis requires long-term time-series datasets and that a high variance of ecological indicators can reduce the statistical power for detecting trends in series of less than 10 years (Blanchard et al., 2010). While long-term data collection and analysis is an important contribution to identifying critical trends of environmental change (e.g. International Waterbird Census (IWC) and associated monitoring activities

operated by Wetlands International; see Finlayson et al. (2001)) and delivering effective management intervention (Henson et al., 2010), the current available evidence does suggest that marine and coastal resources are under pressure from human activity, and developing management strategies and responses based upon best available information while continuing to improve understanding of how these complex relationships operate is an appropriate course of action.

The remainder of this section characterises sectoral pressures and provides evidence of the associated impacts upon Ireland’s coastal environment, coupled with an outline of projected pressures likely to arise from increased use of the marine and coastal environment. Pressures and impacts associated with human activity represent a major challenge for coastal management in Ireland, in addition to the natural pressures as described above. The scale of the management challenge becomes clearer in terms of integrating policy driven coastal and marine economic development with legal requirements (e.g. for conservation), while for many coastal areas robust data for coastal systems and human driven interactions are lacking. However coastal managers will still have to make decisions and take action and would ideally do so through an approach that facilitates the application of all available resources (e.g. human, information).

*Sectoral Pressures on Ireland’s Coast*

Table 5-1 provides an overview of the pressures exerted by key sectors of activity on coastal and marine habitats types (adapted from Crowe et al., 2012). Overall, the sectors identified as exerting potential or actual pressure on coastal and marine habitats were: Fisheries; Aquaculture; Waste management (specifically sewage discharge); Agriculture (specifically discharge); Industry (specifically discharge); Construction and Development; Shipping; Recreation and Tourism; and, Energy (Crowe et al., 2012).

**Table 5-1:** Pressures exerted on coastal habitats in relation to individual sectors of activity and operations undertaken by these sectors (adapted from Crowe et al., 2012).

Sector	Associated Activity	Potential Pressure on Coastal Habitats
Fisheries - active	Biomass is removed with the use of mobile gear through trawling and/or dredging.	<ul style="list-style-type: none"> <li>- Physical pressure: Habitat change (to another marine habitat); Physical disturbance; Siltation rate changes; Litter;</li> <li>- Chemical pressure: Non-synthetic compounds; Synthetic compounds;</li> <li>- Biological Pressure: Removal of target and non-target species</li> </ul>
Fisheries - passive	Biomass is removed with the use of stationary gear such as potting, staked nets and lines.	<ul style="list-style-type: none"> <li>- Physical pressure: Physical disturbance; Siltation rate changes; Litter;</li> <li>- Chemical pressure: Non-synthetic compounds; Synthetic compounds;</li> <li>- Biological Pressure: Removal of target and non-target species</li> </ul>
Aquaculture – fin	Cultivation, in suspended cages, of finned fish such as salmon.	<ul style="list-style-type: none"> <li>- Physical pressure: Habitat change (to another marine habitat); Physical disturbance; Siltation rate changes; Water flow; Wave exposure changes-local; Litter;</li> <li>- Chemical pressure : Non-synthetic</li> </ul>

		<p>compounds; Synthetic compounds; De-oxygenation; Inorganic nutrients; Organic enrichment;</p> <ul style="list-style-type: none"> <li>- Biological Pressure: Introduction of pathogens; Introduction/spread of non-indigenous species</li> </ul>
Aquaculture - shellfish	The cultivation of bivalves such as oysters and mussels on bottom and suspended substrata.	<ul style="list-style-type: none"> <li>- Physical pressure: Habitat change (to another marine habitat); Physical disturbance; Siltation rate changes; Water flow; Wave exposure changes-local; Litter;</li> <li>- Chemical pressure : Non-synthetic compounds; De-oxygenation; Inorganic nutrients; Organic enrichment;</li> <li>- Biological Pressure: Introduction of microbial pathogens; Introduction/spread of non-indigenous species; Removal of target and non-target species</li> </ul>
Waste management (specifically sewage discharge)	Includes the discharge of raw, primary and secondary treated effluent and of storm water runoff from roads.	<ul style="list-style-type: none"> <li>- Physical pressure: Habitat change (to another marine habitat); Physical disturbance; Siltation rate changes; Temperature change; Salinity change; Litter</li> <li>- Chemical pressure : Non-synthetic compounds; Synthetic compounds; De-oxygenation; Inorganic nutrients; Organic enrichment</li> <li>- Biological Pressure: Introduction of microbial pathogens</li> </ul>
Agricultural (specifically discharge)	Includes diffuse inputs of nutrients from land, often via freshwater systems.	<ul style="list-style-type: none"> <li>- Physical pressure: Habitat loss (to land); Siltation rate changes; Synthetic compounds</li> <li>- Chemical pressure : De-oxygenation; Inorganic nutrients; Organic enrichment</li> <li>- Biological Pressure: Introduction of microbial pathogens</li> </ul>
Industry (specifically discharge)	Includes effluent (not sewage) resulting from industrial activities such as brewing, pharmaceuticals, metal works and food processing.	<ul style="list-style-type: none"> <li>- Physical pressure: Habitat change (to another marine habitat); Siltation rate changes; Temperature change; Salinity change; Water flow Litter</li> <li>- Chemical pressure : Non-synthetic compounds; Synthetic compounds; De-oxygenation; Inorganic nutrients; Organic enrichment</li> </ul>
Construction and Development	Construction of coastal infrastructure and activities related to this; including navigational dredging, aggregate extraction, sea defences, barrages, weirs, marinas and harbours and beach replenishment.	<ul style="list-style-type: none"> <li>- Physical pressure: Habitat loss (to land); Habitat change (to another marine habitat); Physical disturbance; Siltation rate changes Water flow; Wave exposure changes-local; Litter</li> <li>- Chemical pressure : Non-synthetic compounds; Synthetic compounds</li> <li>- Biological Pressure: Removal of target and non-target species</li> </ul>
Shipping	Includes shipping in industrial sectors such as oil and gas and container shipping.	<ul style="list-style-type: none"> <li>- Physical pressure: Physical disturbance; Water flow; Wave exposure changes-local; Litter</li> <li>- Chemical pressure : Non-synthetic compounds; Synthetic compounds</li> <li>- Biological Pressure: Introduction of microbial pathogens; Introduction/spread of non-</li> </ul>

		indigenous species
Recreation and Tourism	Activities include angling, bait collection and the use of small motor craft for pleasure.	<ul style="list-style-type: none"> <li>- Physical pressure: Habitat loss (to land); Physical disturbance; Wave exposure changes-local; Litter</li> <li>- Chemical pressure : Synthetic compounds</li> <li>- Biological Pressure: Introduction of microbial pathogens Removal of target and non-target species</li> </ul>
Energy	Includes power stations where cooling water maybe produced and the construction of marine based renewable energy structures such as wind, tidal and wave turbines.	<ul style="list-style-type: none"> <li>- Physical pressure: Physical disturbance; Siltation rate changes; Temperature change; Salinity change; Water flow</li> <li>- Chemical pressure : Non-synthetic compounds; Synthetic compounds</li> <li>- Biological Pressure: Introduction/spread of non-indigenous species; Removal of target and non-target species</li> </ul>

#### *Sectoral Impacts on Ireland's Coast*

In summary substantial impacts on coastal and marine habitats in Ireland relate to physical habitat loss, disturbance, displacement and change; biological pressure from introduced non-native species and chemical pollution from discharge and run offs. The most direct and permanent impacts to the extent of coastal habitats are caused by physical pressures such as habitat loss, change and disturbance. These pressures originate from sectors such as fisheries and aquaculture and the construction industry especially in relation to coastal development and defences (Connolly et al., 2001; Crowe et al., 2012). For example, such permanent habitat loss was recorded for the industrial development of Marino Point in Cork Harbour in 1974/75, where mudflats were reclaimed during the doubling the size of the development in question from about 25ha to approximately 45ha; which in later legislation would have been protected from such practice through designation as SACs, being part of the Natura 2000 network (Kopke, 2005). Physical installations associated with aquaculture, the construction and development industry, as well as shipping and the energy sectors can cause disturbance of the habitats by, for example, changing water flow and tidal emergence regimes as well as shading (Connolly et al., 2001; Crowe et al., 2012). In addition there may be knock on effects on connected habitats as for example any deepening of estuarine channels to facilitate installations could allow salt water to penetrate further upstream, affecting the ecological balance of connected ecosystems (Connolly et al., 2001). For example, a study of benthic habitat before and after pipeline construction in Clonakilty Bay, West Cork showed major impact on the sediment composition and benthic invertebrates, and led to the conclusion that construction work resulted in the death of most individual invertebrates, and one of the previously three dominant taxa of invertebrates failed to recolonise the area within the timeframe of the study (Lewis et al., 2002).

Biological pressure on habitats through the introduction of non-native species with the potential to become invasive is a threat to all coastal habitats, which is mainly linked to shipping, recreational boating and aquaculture (Crowe et al., 2012). The recent discovery of a non-native fresh water jellyfish found in small numbers at three locations in Lough Derg (Inland Fisheries Ireland, 2013; Doyle et al., *in prep.*) reiterates how easily non – native species travel and can establish themselves within

Irish aquatic environments. Concerning the aquaculture sector the introduction of non-native species is a major concern relating to imported bivalves (Connolly et al., 2001). There are numerous examples of non-native as well as invasive species in Irish coastal and marine habitats such as the brown macro-alga *Sargassum muticum*, a native to Japan and one of the most successful introduced seaweed species in Europe. *Sargassum muticum* is thought to have been imported along with the Japanese Oyster and was first found in Ireland in 2001; however, only five years later the species has been recorded in a number of Irish coastal counties (Baer and Stengel, 2010).

Influx of inorganic nutrients and organic matter related to agricultural and industrial discharges and sewage as well as the aquaculture sector lead to eutrophication and deoxygenation of coastal habitats and are especially problematic for habitat types such as muddy sands, seagrass communities and sheltered rocky reefs (Crowe et al., 2012). In the latest EPA assessment concerning the trophic status of Irelands coastal and estuarine waters of the 89 examined water bodies, 9 (10.1%) were classed as eutrophic, 5 (5.6%) as potentially eutrophic, 31 (34.8%) as intermediate and 44 (49.5%) were unpolluted (O'Boyle, 2010).

The aquaculture sector is associated with pressures such as sea lice infestation of wild fish stock, e.g. as reported for sea trout in Ireland (Gargan, 2003). Aquaculture is also linked to increased faecal production and pseudo faecal production by oyster trestles and clam trays impacting on the benthos and the waste generated by fish farms, which in turn could contribute to increased frequency of algal blooms and generation of toxins responsible for shellfish contamination (Connolly et al., 2001). A recent study of salmon farms in Mulroy Bay, Co. Donegal showed modifications in the benthic community structure and decreased diversity below the fish cages due to organic enrichment (Callier et. al, 2013).

In Ireland, run offs and biocides from agriculture are known to impact negatively on biodiversity, however, recent studies (e.g. Sectoral Impacts on Biodiversity and Ecosystem Services (SYMBIOSIS) project, 2008 - 2013) indicate that agriculture as an extensive industry practiced near or at the coast has more capacity potential to affect coastal and marine biodiversity in comparison to other human activities (Crowe et al., 2012). Silage effluent enriches and deoxygenates coastal lagoons, estuaries and bays, where the increase in nitrogen and phosphorous in coastal waters intensifies primary production and the growth of algae, which also increases water turbidity, slime production and oxygen depletion that can cause fish and benthic fauna death. Although there have been improvements with fewer water bodies being classed as eutrophic when compared to previous EPA assessments, some water bodies showed a decline directly caused by the negative effects of excessive nutrient enrichment, e.g., such as Inner Dundalk Bay, Upper Barrow estuary, Malahide Bay, Colligan (Dungarvan) estuary, Moy estuary, and Ballysadare Bay and estuary (O'Boyle, 2010). In addition other agricultural practices such as grazing on dune systems and wetlands can lead to erosion and loss of biodiversity (Connolly et al., 2001). However, fixed dune habitats require a certain amount of grazing

pressure as dominant shrub and grass species will take over without this practice being continued, which demonstrates the importance of correct management and guidance in order to preserve ecosystem biodiversity.

#### *Cumulative Effects of Sectoral Pressures and Subsequent Impacts*

The identified pressures and associated impacts within Ireland's coastal and marine environments have potential to generate cumulative effects. Cumulative effects can be spatially dependent, brought about by multiple sources, temporal in nature or additive (Kershaw et al. *in prep.*). For example inorganic nutrients and organic matter that lead to eutrophication associated with agricultural and industrial discharges, sewage and aquaculture could potentially be caused by all those sectors simultaneously if they operate in the area at the same time (Crowe et al., 2012). In addition, a pressure may affect a habitat only once or repeatedly e.g. siltation events associated with construction of new infrastructure may occur only once, but siltation is recurrent when an area is exposed to regular dredging of a shipping channel (Crowe et al., 2012). Furthermore, cumulative effects may also occur due to infrastructural development associated with a specific sector of activity such as tourism and recreation where habitats and species (e.g. wild birds protected under the Birds Directive) may be subjected to a certain pressure during construction and coastal development which is compounded by further pressures on completion of the development, when the associated facilities become operational. In some areas, cumulative pressure may be similar and seasonal e.g. from vehicles, pedestrians and caravan-use associated with recreational users of the coasts during the summer month, leading to increased instability of coastal habitats such as dune systems (Connolly et al., 2001).

Quantifying cumulative effects and subsequent impacts is very difficult (van der Wal et al. 2006; Stelzenmüller et al., 2010; Crowe et al., 2012) and is acknowledged as being a Europe-wide issue in relation to environmental management and assessment (GHK Technopolis, 2008; European Commission, 2009). For instance, a number of minor disturbances may have a greater impact compared to one major disturbance event (Crowe et al., 2012). European Member States are required under the MSFD to assess the status of marine waters, including analysis of cumulative effects (Stelzenmüller et al., 2010; Foden et al., 2011); however, single sector assessments are useful to inform and guide management for an area of interest, especially if certain sectors are predominant (Foden et al., 2011). In general, most individual sectors exert more than one type of pressure in any coastal area, which may have cumulative effects; and multiple activities are coinciding in most coastal areas exerting multiple pressures linked to a variety of sectors. The exerted pressures interact and may have greater or lesser impacts on any given habitat of interest as their interaction may have a synergistic (additive) or antagonistic (interactive) effect (Crowe et al., 2012). While scientific research is underway presenting methods on how to assess cumulative effects and impacts, information for specific coastal areas in terms of interactions between pressures exerted and cumulative effects is mostly absent (Stelzenmüller et al., 2010; Foden et al., 2011; Crowe et al., 2012). Without reliable

data and evidence, coastal managers and decision makers should follow a precautionary approach and consider potential additive or synergistic interactions and subsequent impacts (Crowe et al., 2012); while simultaneously giving consideration to a process such as ICZM which can bring together data and information from different sources through stakeholder cooperation, while also developing an agenda for research to address data gaps (Stojanovic et al., 2009) and improve understanding of coastal environments (Santoro et al., 2013).

*Sectoral Pressures and WFD and MSFD Implementation Status*

Annex I of the MSFD details the eleven descriptors (see Table 5-2) which define what marine waters will look like when GES has been achieved by 2020. In Table 5-2 these descriptors have been linked to the sectors potentially exerting pressures on the status of individual descriptors based on the information given in Table 5-1. Similarly for the Water Framework Directive (WFD) (2000/60/EC) in Table 5-3 the water quality elements for coastal and transitional waters are related to the sectors that potentially impact on the status of these elements based on information from Table 5-1.

Both tables illustrate that the identified pressures and associated sectors can be linked to the descriptors and elements that define the status of associated waters specified for each Directive. While such undertaking provides valuable information in terms of implementing both Directives, it also shows that both Directives would benefit from an assessment of cumulative effects given that the majority of elements and descriptors are potentially impacted by several sectors of activity, and the explicit requirement for such in the MSFD. A cumulative assessment also corresponds to the Directives emphasis on integrated ecosystem objectives (OSPAR, 2008). In relation to the management of a specific coastal area and the previously mentioned absence of required data and information on cumulative impacts, the need for a precautionary approach is essential, which is specifically recognised in the preamble of WFD.

**Table 5-2:** Influence of sectoral pressures and impacts on specific MSFD Descriptors.

Descriptor No.	MSFD Descriptor Name	Sectors exerting pressure with potential impact on descriptor
1.	Biological diversity (species and habitats maintained)	Fisheries; Aquaculture; Waste management; Agriculture; Industry; Construction and Development; Shipping; Recreation and Tourism; Energy
2.	Non-indigenous species (levels are minimised)	Aquaculture; Shipping; Energy; Recreation and Tourism (as a vector of spread)
3.	Population of commercial fish/shellfish (within safe biological limits - healthy stocks)	Fisheries; Aquaculture; Waste management; Agriculture; Coastal Industry
4.	Elements of marine food webs (all elements at normal abundance and diversity)	Fisheries; Aquaculture

5.	Eutrophication (excessive nutrient input from human activities is minimised)	Aquaculture; Waste management, Agriculture; Industry; Shipping; Recreation and Tourism;
6.	Sea floor integrity (species, habitats and structures and functions are not adversely affected)	Fisheries; Construction and Development; Shipping; Recreation and Tourism; Energy
7.	Alteration of hydrographical conditions (changes in physical conditions of waters does not affect marine ecosystems)	Aquaculture, Waste management; Industry; Construction and Development; Shipping; Recreation and Tourism; Energy
8.	Contaminants (levels do not give rise to pollution effects)	Fisheries; Aquaculture, Waste management; Agriculture; Industry; Shipping
9.	Contaminants in fish and seafood for human consumption (levels do not exceed standards)	Fisheries; Aquaculture, Waste management; Agriculture; Industry; Shipping; Recreation and Tourism
10.	Marine litter (quantities do not cause harm to the environment)	Fisheries; Aquaculture, Waste management; Industry; Construction and Development; Shipping; Recreation and Tourism
11.	Introduction of energy, including underwater noise (levels do not affect the environment)	Industry; Construction and Development; Shipping; Recreation and Tourism; Energy

The MSFD and the WFD are both based on integrative management elements and on a high level seem complementary; however realisation of both Directives is the responsibility of the individual Member States and one of the challenges to be faced in Ireland will be the operational integration of the objectives of both Directives (O’Hagan, 2013). As mentioned previously in Section 3 some areas of interactions between both Directives are open to interpretation, which may lead to confusion and are significant for coastal areas that fall under the provisions of both e.g. good status is defined, assessed and monitored differently and contradictory results (with regards to initial assessment and subsequent monitoring) for such an area are possible. Recent scientific publications are providing valuable information on how status assessment and monitoring could be integrated and reconciled (e.g. Borja et al., 2010; Borja and Rodríguez 2010; Hoey et al., 2010). However, to make best use of this knowledge in the context of MSFD and WFD implementation, certain criteria are required for the application of such forms of information management to coastal settings and the range of sectoral activities they host. For example, essential criteria would include political support for more integrated approaches to the management of coasts, (which many argue is lacking in a European context, e.g. see Jewell et al. (1999), Ballinger et al. (2010), Moksness et al., 2012)) and institutional capacity (in Ireland it can be argued that the absence of a national policy undermines institutional capacity building)

**Table 5-3:** WFD water quality elements for coastal and transitional waters in relation to the sectors that potentially impact on the specific element.

Transitional and Coastal Waters	WFD water quality element	Sectors exerting pressure with potential impact on element
Biological:	Phytoplankton	Aquaculture; Waste management, Agriculture; Industry; Shipping; Recreation and Tourism
	Aquatic Flora	Waste management; Agriculture; Industry; Shipping; Recreation and Tourism; Energy
	Benthic invertebrate fauna and fish	Fisheries; Aquaculture, Waste management; Agriculture; Industry; Construction and Development; Shipping; Recreation and Tourism; Energy
Hydrological:	Morphology	Aquaculture, Waste management; Industry; Construction and Development; Shipping; Recreation and Tourism; Energy
	Tidal regime	Construction and Development
Physico – Chemical:	General (oxygen, temperature, nutrient, turbidity )	Aquaculture; Waste management, Agriculture; Industry; Shipping; Recreation and Tourism
	Synthetic pollutant	Fisheries; Aquaculture, Waste management; Agriculture; Industry; Construction and Development; Shipping; Recreation and Tourism; Energy
	Non-Synthetic Pollutants	Fisheries; Aquaculture, Waste management; Industry; Construction and Development; Shipping; Energy

*Projected Pressures on Ireland’s Coast*

In 2012 the Irish Government published a roadmap titled ‘Harnessing Our Ocean Wealth - An Integrated Marine Plan (IMP) for Ireland’, describing high level goals and the government’s vision to supports a diverse maritime economy (Department of Agriculture, Food and the Marine, 2012). The policy document emphasises the scope to expand the Irish ocean economy by setting significant targets to double the ocean economy via a boost in related sectoral activity such as Fisheries, Aquaculture, Seafood Processing, Maritime Commerce and Ship Leasing, Marine and Coastal Tourism and Leisure, Marine ICT and Biotechnology, Ports and Maritime Transport Services, Maritime, Manufacturing, Engineering, Offshore Oil and Gas and other marine industries (Department of Agriculture, Food and the Marine, 2012). These are many of the sectors of activity identified in the previous sub-sections of the report which currently exert pressures on the coastal and marine habitats of Ireland (see Table 5-1) and which have potential to negatively impact on the status of MSFD descriptors (see Table 5-2) and WFD quality elements (see Table 5-3).

The individual as well as overall economic targets, such as the significant 78% increase in volume of aquaculture production by 2020 (Department of Agriculture, Food and the Marine, 2012) are anticipated by the Department to move Ireland to a position where it will use more of its extensive marine resources. These projections have to be viewed within the context of the pressures which sectors are already exerting on the Irish coastal and marine environment (see Table 5-1) and which

will subsequently yield, under the projected growth scenarios. Circumstances such as these emphasise the importance of joined up thinking for marine and coastal planning, using best available information and knowledge within participative planning processes which are fundamental elements of ICZM (see Section 7). The publication of the most recent BIM strategy and action plan resonates with the economic targets of *'Harnessing Our Ocean Wealth - An Integrated Marine Plan (IMP) for Ireland'* aiming to deliver 1200 jobs within, and €1 billion seafood sales from, the Irish seafood sector (Bord Iascaigh Mhara, 2013). Ensuring compliance with environmental legislation (e.g. Birds and Habitats Directives) is viewed as a constraining factor on the ability to distribute licences and funding for aquaculture, again highlighting the necessity of management and planning processes, such as ICZM, that can identify opportunities for co-location and develop solutions to user conflict.

The results of the public consultation process contained contributions from SWAN and An Taisce (Sustainable Water Network, 2012b; An Taisce, 2012) some of which were noted in the final publication of *'Harnessing Our Ocean Wealth - An Integrated Marine Plan (IMP) for Ireland'* in terms of acknowledging the importance of compliance with national and international environmental legislation to protect and conserve Irelands marine ecosystems (Department of Agriculture, Food and the Marine, 2012), which is also reflected in the BIM Strategy (Bord Iascaigh Mhara, 2013). However details of how to address cumulative sectoral pressures and impacts arising from the envisioned economic growth were not incorporated in the two policy documents. Within the *Our Ocean Wealth* document, both the implementation of the MSFD and the continued implementation of the WFD are listed in the 12 key actions to enable Goal 2 'Healthy Ecosystems' (Department of Agriculture, Food and the Marine, 2012), but specific concerns voiced in the public consultation e.g. the limits to the capacity of the environment to absorb pressures and impacts from a significant expansion of the aquaculture sector (Sustainable Water Network, 2012b) are not addressed in either the Roadmap or the BIM Strategy. A number of concerns and points raised in the public consultation process for *'Harnessing Our Ocean Wealth - An Integrated Marine Plan (IMP) for Ireland'* were not adopted within the final publication and some of these relate directly to subject matter addressed in this section of the report, such as the lack of definite proposals on how to address cumulative environmental impacts, to consider an 'Ecosystem Approach' and to apply the 'Precautionary Principle' (Sustainable Water Network, 2012b) to the expansion of any sectoral activity.

## Section 5 – Summary of Key Points

- Ireland's coast is subject to a number of pressures and impacts due to the wide range of activities taking place within the coastal and marine environment.
- Understanding of natural pressures within coastal environments should be incorporated within the management of pressures arising from development and activity.
- Developing management strategies and responses based upon best available information while continuing to improve understanding of how these complex relationships operate is an appropriate course of action.
- European Member States are required to assess the status of marine waters, including analysis of cumulative effects but quantifying cumulative effects and subsequent impacts is very difficult.
- Cumulative effects present a management and planning challenge in terms of managing existing and future development, and achieving objectives set out under the WFD and MSFD in the absence of reliable data on cumulative effects in Ireland.
- Unless suitable methodologies are developed and implemented within planning practices, the projected increases in the use of Ireland's coastal and marine domain are likely to exacerbate the environmental impacts, especially when considered in a cumulative context.
- An integrated approach to coastal management and planning would ensure best use of available data and knowledge, and has the potential to overcome existing data gaps and improve our understanding of coastal systems, which would include the management of existing and projected pressures in a way that facilitates achieving the objectives set out under the WFD and MSFD.

## **6. Coastal Management in Ireland**

This section explains the evolution of coastal management in Ireland over the last number of decades as a means to inform any subsequent discussions regarding the potential for ICZM in Ireland, and how it might contribute to the delivery of key objectives set out in the WFD and MSFD. As an island, the importance of our coasts is clear – the coastline of approximately 6,500km (5,800km in the Republic) accommodates the movement of goods and people through ports; provides space for the (re)development of coastal land for settlement, hosts sites of inward and outward migration for many forms of animal and sealife, and acts as hubs for traditional (fishing) and emerging enterprises (offshore energy). Despite being largely rural in character with scenic landscapes and seascapes, Ireland's coast is also the location where major population centres are concentrated, including the key port cities of Dublin, Cork, Galway, Waterford and Limerick.

### *Background to Coastal Management in Ireland*

The 1960s represent an important period for coastal management in Ireland (Cummins et al., 2006), when An Foras Forbartha (the Planning Institute) and Bord Fáilte (the Tourist Board) commissioned the first study of the entire coastline of the Republic (Cummins et al., 2006; Brady et al., 1972). The study was undertaken due to the increasing awareness at the time of the pressures on the coastal zone arising from increasing development and population needs. The objective of the study was '*To determine the best use of the coastline...to recommend by zones and stretches the limits of conservation and development appropriate to the areas in question*' (Brady et al., 1972). The study made a number of recommendations to reconcile changing land use demands with conservation requirements, at the national, regional and local authority levels. However, there was limited uptake of any of the strategies proposed as there was no formal mechanism for the results of the study to be incorporated into the statutory planning system of the day (Martin, 2004).

In the decades since, coastal management has continued to advance through various Government Departments with the involvement of State agencies, despite the regulatory and remit landscape frequently changing between different insitutional bodies, an emphasis persisted on a centrally-administered 'top-down' form of governance. A strong divide between marine and terrestrial planning frameworks became apparent (O'Mahony et al., 2009), and it can be perhaps argued that this continues to endure, albeit in a more reduced form, to present day coastal planning and management. Two separate planning regimes, which set out differing systems for planning applications, decisions and appeals processes, existed for the foreshore and terrestrial environments. Lack of coherency between the two planning regimes is compounded by the fact that coastal and marine activities are managed according to sectors / to a sectoral approach, often with no coordination between activities (O'Mahony et al., 2012).

In tandem with the evolution of coastal management policy and practice in Europe from the 1990s onwards, approaches in Ireland began to reflect an awareness of challenges involved in relation to

coastal management, e.g. provision of sound scientific data on which to base decision-making processes. Following the Demonstration Programme on ICZM (see Sections 2 and 7) which comprised 35 case study projects in Europe (two of which were in Ireland – Bantry Bay Coastal Charter and Donegal Rural Beach Management) and ran from 1996-1999, many Member States, including Ireland, began to develop national positions on how best to progress a more integrated approach, with a view to achieving more co-ordinated and effective forms of coastal management, for example, a conference organised in 1994 by Coastwatch Ireland, put forward proposals for a stakeholder-based CZM and information handling structure for the Republic of Ireland, as well as recommendations on and cross border CZM (Carroll and Dubsy, 1995). International conventions regarding natural resource use and nature conservation, for example, were also beginning to advocate more integrated forms of management to achieve policy goals and objectives, and sustainable development was to become an important agenda for the international community.

For Ireland, the growing focus on integrated approaches to coastal management culminated in the publication of two landmark documents: *Towards a Marine Policy for Ireland – Proceedings of the Consultative Process* (Marine Institute, 1996); and, *Coastal Zone Management: A Draft Policy for Ireland* (Brady Shipman Martin, 1997). Both of these documents represented a move towards a strategic and integrated model for decision-making to support coastal planning and management (Cummins et al., 2006). Recommendations within the draft policy on Coastal Zone Management (CZM) included options to move towards integrated management, to overcome the sectoral approach and the aforementioned strong land/marine divide, which characterised the national approach to coastal management (Brady Shipman Martin, 1997). A phased approach to the introduction of ICZM in Ireland was proposed, involving:

- The establishment of an inter-departmental committee to initiate a process; increased awareness of CZM, and identification of issues;
- The establishment of an inter-departmental unit with dedicated staff, supported by a Coastal Zone Management Advisory Committee;
- Ongoing support for inter-departmental unit or independent unit, following 18 month review; and,
- An operational, independent unit directed by a council representing a wide range of coastal interests.

Despite encapsulating elements of good practice of the time and representing one of the earliest responses by a Member State to the outcomes of the Demonstration Programme, the draft policy

recommendations of 1997 were never officially adopted, despite numerous statements of support for a coherent national approach to ICZM (see Table 6-1). Considering the positive light in which the two Irish Demonstration Programme projects were held nationally and internationally, it can be argued that the awareness of the need for ICZM was clear, but what followed was the persistence of a policy vacuum relating to integrated coastal management in Ireland, whereby ICZM was conducted primarily at a local scale using time bound projects as the model of implementation (O'Hagan and Ballinger, 2010). Despite the difficulties presented by such an approach, particularly in the absence of a national policy providing an over-arching framework, valuable learning and capacity building was, and continues to be, achieved through the completion of such projects which included statutory and non-statutory stakeholders working in partnership (Cummins et al., 2004; O'Hagan and Ballinger, 2010; see Section 7 for a broader discussion of the implications of relying on time bound projects to deliver ICZM).

Following the completion of the two Demonstration Programme projects in Ireland – Bantry Bay and Donegal Beaches – additional ICZM themed projects and initiatives were rolled out across Ireland, addressing various aspects of coastal management while using ICZM or ICZM type approaches – these were wholly focused on Ireland and initiated by research groups, community bodies, non-governmental organisations, harbour and local authorities, State agencies - or involved partner organisations from Ireland working with other European partners supported under various EU programmes (e.g. LIFE, INTERREG, Framework). For example, the Coastal Communities Network (CoCoNet) project (2003-2004; Cummins et al., 2004), Atlantic Network for Coastal Risks Management (ANCORIM) project (2009-2012), and the Clew Bay Marine Forum represent initiatives with a focus on partnership and networks for ICZM. Capacity building to progress the development and implementation of ICZM was a primary focus of the Coastal Research and Policy Integration (COREPOINT) project (2004-2008), while projects such as AQUAREG (2003-2006) and COEXIST (2010-2013) applied integrated coastal planning and management processes to aspects of the fisheries and aquaculture sectors. Similarly, Co-ordinated Local Aquaculture Management Systems (CLAMS), contains elements of ICZM in its implementation and represents the only agency-led approach to the management of coastal areas in Ireland (O'Hagan and Ballinger, 2010); however, CLAMS is primarily focused on aquaculture and can be considered as a basis for but not the endpoint of ICZM (Cummins et al., 2004; Phyne, 2009). The Dingle Bay Harbour Resource Study (Connolly et al., 2002; Buchanan et al., 2005) and Shannon Estuary Strategic Integrated Framework Plan represent place-based initiatives that incorporate ICZM into the methods used and approaches employed.

Across Europe, Integrated Coastal (Zone) Management is again becoming a focus for discussion in relation to policy development, albeit on the back of its relationship with maritime spatial planning (MSP) which Member States, including Ireland, are examining closely with a view to developing mechanisms for implementation. Many Member States are currently engaged in pilot marine planning exercises, some of which incorporate analysis of the relationship between ICZM and MSP

(O'Mahony, 2013). The sub-sections below detail recent changes in Ireland to marine governance in particular but which have implications for how ICZM may feature in future systems for coastal and marine planning.

**Table 6-1:** Statements of support for ICZM from national government documents over the period 1996-2006.

Reference	Quote
Marine Institute (1996)	<i>"There was widespread support for a more integrated approach to the management of the nearshore, on-shore and coastal hinterland areas including, where appropriate, the catchments of major rivers discharging into the coastal zone".</i>
DoE, 1997: 137	<i>"This Strategy recognises...the need for integrated assessment of coastal zone development issues".</i>
Brady Shipman Martin (1997)	<i>"The need for a formal Integrated Coastal Zone Management system arises from the necessity to address a wide range of existing and future issues in the coastal zone, and in particular the increasing competition for the use and control of coastal resources".</i>
Department of Agriculture and Food, 1999: 6	<i>"In relation to marine and other natural resources, the strategy is to maximise the long term contribution of the fisheries sectors to the national economy, protect and develop the Irish coast through Coastal Zone Management, support the processing sector, implement the recommendations of the National Minerals Policy Review group and implement an effective Research, Technology, Development and Innovation Strategy for the marine and natural resources".</i>
Environmental Protection Agency, 2000: 240	<i>"...the Government is preparing a National Coastal Zone Management Policy. There is a pressing need for coherent action in this area, not least because of the rapidly increasing developmental, tourism and recreational pressure on the coast and predicted increase in coastal erosion".</i>
Costello, 2000: 22	<i>"Marine biodiversity is most used and abused in the coastal seas. It is thus necessary for it to be managed as part of a wider system of coastal zone management...Local communities must be involved in CZM on a continuous basis, and be empowered to manage their local resources within the scope of policies and regulations established at wider levels".</i>
Department of Marine and Natural Resources, 2001	<i>"... the Department is committed to developing, as a priority, in cooperation with other relevant Departments, and integrated coastal zone management strategy and legislative framework".</i>
Department of the Environment and Local Government, 2001:65	<i>"The need for ICZM is accepted by Government as a commitment in its Action Programme for the Millennium and the Department of the Marine and Natural Resources, as lead Department, is charged with preparing (after consulting all relevant Departments etc.) policy and legislative proposals for Government consideration".</i>
Anon, 2002	<i>"We will develop new devolved service structures to support the sustainable management, development and protection of the marine coastal zone and seafood resources".</i>
Department of the Environment and Local Government, 2002: 116	<i>"ICZM provides a holistic approach to the interactions between sectors, agencies and local codes. The articulation of an integrated coastal zone management strategy will be taken forward by the Government Departments concerned, drawing on EU Recommendations on the implementation of ICZM and</i>

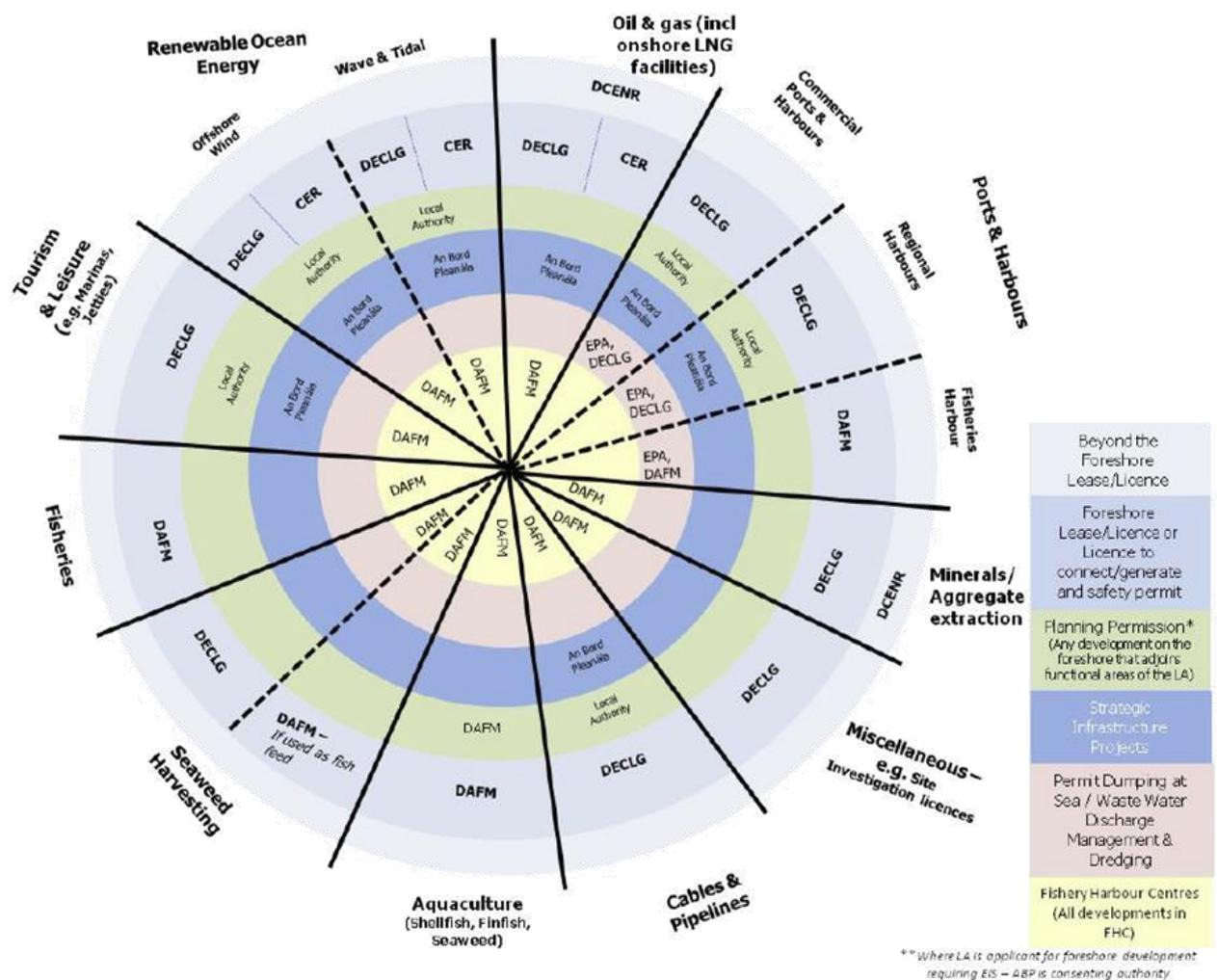
	<i>national and international ICZM research experience”.</i>
Department of Arts, Heritage, Gaeltacht and the Islands, 2002: 35	<i>“Prepare and adopt a National Integrated Coastal Zone Management Strategy making specific provision for the conservation of biodiversity”.</i>
Department of Communications, Marine and Natural Resources, 2003: 52	<i>Strategic objective three (Coastal Zone Management): To work with other relevant Departments and public bodies in bringing about more integrated and coordinated approaches to coastal management.”</i>
Department of Communications, Marine and Natural Resources, 2005:43	<i>“...work in the context of the EU Recommendation on Integrated Coastal Zone Management, towards the development of more integrated and co-ordinated approaches to coastal zone management” (Strategic Objective 4).</i>
Boelens <i>et al.</i> , 2005: 33	<i>“The predicted effects of climate change should be incorporated as a major consideration into County Development Plans, including coastal zone management plans”.</i>
Heritage Council, 2006:22	<i>“The Heritage Council would strongly endorse the development of a governmental support framework for (any such) local ICZM initiatives”.</i>
Cawley <i>et al.</i> , 2006: 22	<i>“Promote local area management strategies and the Coastal Zone Management Approach”</i>

#### *Current Policy Context and Institutional Mapping*

Marine governance in Ireland is centrally administered via a number of Government Departments and affiliated State bodies (Figure 6-1). At present, Ireland does not have an over-arching marine and coastal policy and numerous statutory bodies continue to have a management and/or planning remit in the Irish coastal environment (MacLeod *et al.*, 2000; O’Mahony *et al.*, 2009). There are however moves towards improved co-ordination and integration, principally in relation to marine planning and management, but which have the potential to yield benefit for coastal planning and management. As stated, historically the regulation of marine activities at government level has been dealt with sectorally and in a fragmented manner (O’Mahony *et al.*, 2009) which continues to the present day. Responsibility for marine activities is currently spread across six Government Departments and in excess of 17 organisations (as listed in Table 6-2) with little formalised integration taking place at the institutional level in terms of either marine or coastal management. The marine sector in particular has experienced considerable change over the last decade in terms of marine functions being transferred across different Government Departments and Departments also undergoing a series of portfolio changes reflecting the changing manner in which marine governance is administered - this has to some extent hampered efforts to progress a more integrated and coherent approach to marine management in Ireland.

In 2010, the Department of the Environment, Heritage and Local Government (now Department of Environment, Community and Local Government) assumed the majority of foreshore (e.g. seaward of the mean high tide mark) responsibilities; with the result that, for the first time in the history of the State, responsibility for terrestrial planning (including Environmental Impact Assessment), coastal management, heritage, Water Framework Directive implementation and foreshore licensing all fall within the remit of the same Government department (O’Mahony *et al.*, 2012). Curiously in 2011 functions relating to nature conservation and heritage were transferred to the Minister for Arts,

Heritage and the Gaeltacht. The Department of Environment, Community and Local Government has since been tasked with implementation and coordination of the Marine Strategy Framework Directive, while also being the parent Government Department for local authorities overseeing the operation of the local government system and implementing policy in relation to local government structures, functions, human resources and financing.



**Figure 6-1:** Current licensing and development consenting authorities for marine Activities in Ireland (DAFM, 2012: 6).

#### Inter-Departmental Marine Coordination Group

An additional step taken at Government level to promote the sustainable use of Ireland’s marine resources and increase coordination between Government departments with marine responsibilities led to the establishment of an Inter-Departmental Marine Coordination Group (MCG) in April 2009. This group’s remit is to pursue progress on (DAFF, 2009):

- Safeguarding employment protection and employment generation potential;
- Transposition and implementation of EU Directives;
- Safety and surveillance;

- Legislation issues;
- Protection of the marine environment; and,
- Developing indigenous resources and harbours.

The Group comprises the most senior civil servants from the Departments of Agriculture, Fisheries and Food; Communications, Energy and Natural Resources; Defence; Enterprise, Trade and Employment; Environment, Heritage and Local Government; Transport; Arts, Sport and Tourism; and Community, Rural and Gaeltacht Affairs. It sits under the aegis of the Department of the Taoiseach, is chaired by the Minister for Agriculture, Food and the Marine and secretariat is provided by the Marine Institute. The Group meet monthly to discuss/coordinate issues that require inter-departmental action (Government of Ireland/MCG, 2012). To date the only published information on the Group is the press release, announcing its establishment, released by the [then] Department of Agriculture, Fisheries and Food on 29 April 2009.

#### *Our Ocean Wealth and Progress Made*

The MCG has prepared '*Our Ocean Wealth – Towards an Integrated Marine Plan for Ireland*' a document intended to initiate debate on how best to stimulate growth from Irish marine resources (Government of Ireland/Marine Coordination Group, 2012). While the implementation of the MSFD is one of the 39 key actions of *Harnessing Our Ocean Wealth*, the central focus is increasing GDP and economic growth. The Water Framework Directive is also included as an Action item: specifically "continue to implement the EU Water Framework Directive through the River Basin Management Plans" in the "short-medium" term, responsibility resting with DECLG and other appropriate departments and agencies. No mention is given to ICZM in the documentation despite the fact that the Plan is intended to represent a move towards integrated planning. MSP, however, is identified as an example of how the State could work to achieve greater coordination and integration of marine resource management. The MCG is responsible for overseeing the implementation of *Our Ocean Wealth* and report quarterly on the actions across all relevant departments and associated agencies. These reports are available on the *Our Ocean Wealth* website (MCG, 2013a and 2013b). In addition to specific Actions, *Our Ocean Wealth* also provided for the creation of two independently-chaired task forces, one enabler focused and one development focused, with defined terms of reference and duration.

The Enablers Task Force will focus on a specific action(s) identified around the enabling actions identified in *Our Ocean Wealth*. To date the Enablers Task Force has been working on developing a Marine Spatial Planning framework for Ireland. The Marine Institute, to facilitate this work, have commissioned a number of reports on various aspects of MSP including best practice and legal aspects. These reports will inform the work of the Task Force and as yet are not in the public domain. The work of the Development Task Force focuses on developing growth and jobs in targeted emerging

sectors that require a high degree of integration (Government of Ireland/Marine Coordination Group, 2012). They have responsibility for ensuring the implementation of a number of actions in *Our Ocean Wealth*, particularly preparation of an enterprise strategy for emerging market opportunities and tasks relating to messages that promote Irish marine products and services (MCG, 2013b). Essentially the task forces supplement the work of the MCG and report directly to it, which might explain why there is limited information from both groups in the public domain.

In terms of progress made to date on implementation of the actions contained in *Our Ocean Wealth*, the first of these published in June 2013 states that the first-cycle of river basin management plans (to 2015) were finalised in July 2010. The EPA sent a progress report on the implementation of the associated Programme of Measures to the European Commission in quarter 1 of 2013 (MCG, 2013a). The second progress report on implementation of *Our Ocean Wealth* from September 2013 states that work on the second cycle of RBMPs (2016-2021) has “been delayed pending the finalisation of new governance arrangements for the implementation of river basin management plans” (MCG, 2013b). With respect to the MSFD (Action 9), the first progress report refers to MSFD implementation as a *project* which will run for three years and support delivery of all technical aspects of the Directive up to and including development of a monitoring programme for the ongoing assessment of the environmental status of Irish marine waters (MCG, 2013a). The second progress report reiterates the fore-going information and adds that the Marine Atlas was nearing completion and will be circulated to ENGOs for comment prior to publication on the Department’s website (MCG, 2013b). One could argue that treatment of EU legal requirements as a project will not embed the implementation of the Directive into the operating practice of the Department nor develop a sustainable institutional capacity on its application and implementation, which is essential if management is to change as a result.

#### *Programme for Government and Progress Made*

The Programme for Government 2011-2016 (2011) sets out the Government’s commitments on a range of sectors. Specifically a number of commitments were made that are relevant to marine and coastal management. These are to:

- Provide an efficient foreshore licensing and leasing process for marine energy;
- Require local authorities to carry out a flood risk report in the preparation of their City and County Development Plans and for them to manage flood risk through sustainable planning and development;
- Merge marine responsibilities under one Department, for better co-ordination in policy delivery;
- Develop an integrated marine and coastal planning process in order to maximise the potential of Ireland’s coastline in fishing, aquaculture, ocean energy and tourism.

A dedicated office in the Department of the Taoiseach monitors the implementation the commitments contained in the Programme for Government (PfG) across all Departments. It also ensures that all Departmental Strategy Statements reflect the PfG commitments for which that Department is responsible. In March of every year, the office publishes a report on the progress made towards meeting those commitments and may also outline priorities for the coming year.

The progress report for 2013 highlights the publication of *Our Ocean Wealth* and the role of the MCG in implementing that plan. It also refers to the Department of the Environment's on-going work on marine licensing stating that it has development guidelines, standard operating procedures, prioritisation and a pre-application consultation process. Regulations have also been introduced putting a time limit (4-8 weeks) on consultations with prescribed bodies. The guidelines and details of the licensing process are available on the Department's website (Foreshore section). Despite these efforts, foreshore licensing and leasing remains a recognised non-technical barrier to development by many industries, for example, marine renewables and aquaculture. This is discussed further in the next section.

In 2012, the Department of the Environment, Community and Local Government published "*Putting People First*", an Action Programme for Effective Local Government (DECLG, 2012b). This sets out a new vision for local government so as to lead "economic, social and community development, delivering efficient and good value services, and representing citizens and local communities effectively and accountably" (DECLG, 2012b). Specifically in relation to coastal planning and management the Action Programme proposes that certain matters should be devolved from central government to local government including "*foreshore licences, non-commercial small harbours, non-national (heritage) parks, protection of historical and archaeological sites, and maintenance of public buildings*" (DECLG, 2012b). At the time of publication of the Action Programme, a number of people engaged in coastal management in operational and research contexts (including the authors of this report) anticipated that the forth-coming Foreshore and Marine Area Development Bill (see next subsection) would take these actions forward.

#### *Maritime Area and Foreshore (Amendment) Bill 2013*

With the exception of fishing and shipping, the principal legislative framework for regulating activities on the foreshore is almost 80 years old and predates planning legislation. The Foreshore Acts, 1933-2012 regulate property rights in State-owned foreshore. The foreshore is defined as the area below the high water mark of ordinary or medium tides to the 12 nautical mile limit. The Acts define foreshore, seashore and tidal lands and provide for development planning through the granting of foreshore licences and leases. A licence is needed for a temporary and non-exclusive use of the foreshore whilst a lease is needed for permanent structures and exclusive uses. The legal system, as currently structured, is fragmented and, in the case of developments which straddle the high water

mark or which incorporate an onshore element, can lead to a duplication of effort. This is because jurisdiction is dependent on the position of the high water mark: above the high water mark, local authorities have planning and management responsibilities, below the high water the State, usually the Department of the Environment has the planning and management remit depending on the activity concerned<sup>12</sup>. If a development has both offshore and onshore elements, for example, two EIAs may be necessary as well as separate public consultation exercises which can have implications for project planning and finance. The *General Scheme of the Maritime Area and Foreshore (Amendment) Bill*<sup>13</sup> was published in October 2013. The new Bill is listed in Section A of the Government's Legislative Programme for the Spring/Summer Session announced on January 15, 2014 – the intention being that it will be published in full in the Spring/Summer session. The Bill has two overarching aims, which are to:

- Align the foreshore consent system with the planning system; and,
- Provide a coherent mechanism to facilitate and manage development activity in the State's Exclusive Economic Zone (EEZ) beyond the Territorial waters/Foreshore and on the Continental Shelf, including in relation to strategic infrastructure projects, such as oil and gas, ports and offshore renewable energy.

The Bill defines the “maritime area” as “the area of sea comprising the foreshore, the exclusive economic zone of the State and any area for the time being standing designated by order under section 2 of the Continental Shelf Act 1968” (MAFB, 2013, Head 2(2)(a)). Consent from An Bord Pleanála will be required for developments in the maritime area that are:

- (a) identified strategic infrastructure projects;
- (b) require an Environmental Impact Assessment or Appropriate Assessment, with the exception of developments related to exploration or prospecting for petroleum;
- (c) located entirely or partially beyond the outer limit of the foreshore, and which may or may not be connected to land by a cable; and
- (d) located entirely beyond the nearshore area, and which may or may not be connected to land by a cable, except those to which exceptions apply [Head 19].

Consent from the Bord will be required for smaller scale projects which do not require an EIA or AA but which are located wholly beyond the outer limit of the nearshore area. The nearshore area is a new term which did not previously exist in the Foreshore Act 1933, as amended. The Bill defines the “nearshore” as:

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<sup>12</sup> The Department of Agriculture, Food and the Marine have functions relating to use, development or support of Fishery Harbour Centres, Aquaculture and sea-fish or products manufactured from sea-fish.

<sup>13</sup> [http://www.environ.ie/en/Foreshore/PublicationsDocuments/FileDownload\\_34315.en.pdf](http://www.environ.ie/en/Foreshore/PublicationsDocuments/FileDownload_34315.en.pdf).

“the bed and the shore, below the line of high water of ordinary or medium tides **and above the line of low water of ordinary or medium tides**, of every tidal river and tidal estuary and of every channel, creek and bay of the sea and of any such river or estuary (Head 14 (1)), [Bold font indicates the new text].

Applications to the Board in respect of the above developments will be subject to similar procedural requirements as those in the existing Strategic Infrastructure Development regime as contained in the Planning and Development (Strategic Infrastructure) Act, 2006. It should be noted that the Bill proposes to separate the role of property conveyancing from consent. Essentially this means that a developer will need to have consent from An Bord Pleanála before applying for a foreshore licence or lease. In considering applications for a foreshore licence or lease the Minister will not then require an EIA or AA thereby eliminating duplication of effort.

Developments which are located either completely in the nearshore area or those which are partially on land and partially in the nearshore area but are not strategic infrastructure or which do not require and EIA or an AA will need planning permission from the local planning authority. This will be a change to the current situation whereby only developments on the foreshore which are connected to land (with some exceptions) come within the remit of local planning authorities. The Bill also proposes that the Minister may make regulations assigning responsibility for consenting of minor developments beyond the nearshore but within the foreshore to local planning authorities (MAFB, 2013, Head 4). This could include, for example, deployment of navigational aids and buoys. In addition to this, it is proposed that mandatory objectives for “development in the nearshore area” are included within County Development Plans. The text of the Bill does not detail what this might incorporate but notes to the provisions state that such objectives might include (MAFB, 2013 Head 7 – Notes):

- (a) support the objectives of government strategies, policies and plans such as Harnessing Our Ocean Wealth, the Offshore Renewable Energy Development Plan, the National Ports Policy, the Action Plan for Jobs, the National Biodiversity Plan, and Our Sustainable Future;
- (b) other plans which may be prescribed in future, such as a National Maritime Spatial Plan;
- (c) promotion of marine and coastal tourism;
- (d) coastal protection and flood risk management;
- (e) protection of the marine environment;
- (f) navigational safety; and
- (g) protection of fisheries resources.

It should be noted here that there is no reference made to Integrated Coastal Management in the Bill though presumably this does not mean that it cannot be included.

Another new component introduced by this Bill is the requirement for a maritime option. This is defined as a time-bound and conditional interest in the maritime area which can be granted by the Minister for a specified development in a specified part of the maritime area, including the foreshore and nearshore areas [Heads 14 and 15]. To obtain a maritime option a developer will have to meet specific criteria including his/her technical, financial and managerial capabilities. The option will provide the holder with exclusive or non-exclusive rights over the area concerned and essentially introduces a stage gate process whereby certain obligations must be met within a specified timeframe if the option is to be retained. Such obligations will include, for example, the requirement to apply for and secure development consent from An Bord Pleanála or the planning authority. Ultimately grant of a foreshore licence or lease will be dependent on the applicant having first held a maritime option and having obtained consent from An Bord Pleanála or the local planning authority. An applicant may not “significantly alter the characteristics of a proposal that has been granted a maritime option when applying to a planning authority or the Board for development consent, nor in any way alter the characteristics of a proposal that has been granted development consent when seeking a lease or licence from the appropriate Minister” (MAFB, 2013, Head 15 (8)(a) and (b)). Note that minister is this regard refers to the Minister for the Environment, Community and Local Government or the Minister for Communications, Energy and Natural Resources, depending on what type of development is proposed.

The Bill provides that certain activities may be exempt from licensing by the Minister, subject to certain thresholds, where deemed appropriate (MAFB, 2013, Head 19 (1)). Such activities could include filming, tag rugby, horse races, boat mooring and emergency work relating to sea defences but these are listed as possible examples in the Bill and should not be interpreted as definitive. Small scale scientific research devices are also included in this list but no further explanation is given. Head 21 of the Bill proposed that certain functions are transferred in their entirety to local authorities. This will be achieved through amendment of the original sections (noted in brackets) of the Foreshore Act, 1933 and include:

- Prohibiting by order the removal of beach material from seashore (s.6);
- Prohibiting by notice the removal of beach material from foreshore (s.7);
- Making regulations in respect of the public use of foreshore (s.8);
- Authorisation of sea defence works on seashore not belonging to the State (s.9);
- Erection of structures on tidal lands not belonging to the State (s.10);
- Removal of dilapidated structures from foreshore, whether belonging to the State or not (s.11);
- Removal of structures unlawfully erected on foreshore belonging to the State (s.12);
- Prohibiting the deposit of material on seashore or foreshore (s.13); and
- Prohibiting the deposit of noxious articles on tidal lands or into the sea (s.14).

Arguably, the transfer of these functions to local authorities will enable them to take a make robust approach to planning and management of activities in the nearshore and foreshore areas for which they are responsible, and scope may exist for local authorities open to exploring ICZM to progress the concept through their planning policies. It is important to highlight, however, that with added functions comes added responsibilities which will obviously have a financial and resource implication for the local authorities concerned.

Other miscellaneous amendments included in the Bill relate to the designation of shellfish waters under the Shellfish Waters Directive and the designation of Marine Protected Areas as required by the Marine Strategy Framework Directive. According to Head 23 of the Maritime Area and Foreshore (Amendment) Bill 2013, the Bill will not cover the development consent role for aquaculture, sea fisheries or developments within fishery harbour centres which remains the responsibility of the Minister for Agriculture, Food and the Marine. This would appear to be a major failing given the contribution of these activities to the maritime economy and the need to include all maritime activities and their potential environmental impacts in an integrated planning and management system.

In December 2013 the Shellfish Waters Directive will be repealed in accordance with the provisions of the Water Framework Directive (WFD). From January 2014 the requirements of the Shellfish Waters Directives are covered by the WFD, specifically its provisions relating to the analysis and protection of hydrographic basins. The Department of the Environment, Community and Local Government will continue to be responsible for its implementation including powers to designate and re-designate shellfish waters, to prescribe public bodies and transboundary provisions, to define the responsibilities of the Minister and local authorities, to manage public information requirements as well as to set and/or amend the mandatory and guide water quality standards (MAFB 2013, Head 24 – Notes).

Only one paragraph [Head 25] covers designation of marine protected areas. This states that the “appropriate Minister may make regulations to designate MPAs within the meaning of the MSFD and prescribe the measures to be implemented in relation to the management and protection of MPAs”. The notes accompanying this Head, which is intended to explain the provision, reiterates verbatim what appears in Recital 6 of the MSFD:

“The establishment of marine protected areas, including areas already designated or to be designated under Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (5) (hereinafter referred to as the ‘Habitats Directive’), Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (6) (hereinafter referred to as the ‘Birds Directive’), and under international or regional agreements to which the European Community or Member States concerned are Parties, is

an important contribution to the achievement of good environmental status under this Directive.”

The term “appropriate Minister” could be viewed as vague and may lead to confusion. The Bill states that ‘Minister’ is to be interpreted as the Minister for the Environment, Community and Local Government but generally site designation in Ireland comes under the remit of the National Parks and Wildlife Service section of the Department for Arts, Heritage and the Gaeltacht and its Minister.

Part 5 of the Maritime Area and Foreshore (Amendment) Bill 2013 contains a significant number of provisions amending the Dumping at Sea Acts, 1996-2012. One amendment will, if enacted, exempt maintenance dredging, loading and dumping operations, permitted by the EPA under the Dumping at Sea Act, from the requirement to obtain a foreshore licence from the Minister. Parts 6, 7 and 8 of the Bill are devoted to Offshore Natural Gas Storage; Amendment of the Gas Act, 1976 and the Petroleum and Other Minerals Development Act, 1969 and Amendment of the Energy (Miscellaneous Provisions) Act, 1995 respectively. These sections are not considered in this report.

There is no mention of public participation or consultation in the Bill. As the Bill essentially transfers large scale marine development into the strategic infrastructure development regime, it is expected that the public consultation requirements of that system will also apply to marine development following enactment of the legislation but this is a presumption with no indication that this will be the case from the actual text.

The Oireachtas Joint Committee on the Environment heard submissions on the new Bill from interested parties in November 2013. The Committee then submitted their report to Government in February 2014. The Committee’s report made a number of recommendations on the Bill. These include clearer definitions, more responsibilities to local authorities, the need for technical expertise, clarification of public consultation and engagement processes and reconsideration of the inclusion of fisheries and aquaculture.

In conclusion, whilst the Maritime Area and Foreshore (Amendment) Bill 2013 was heralded as the mechanism to reform foreshore planning and management, it could be said that the Bill in its current format does not fully achieve this, by focusing predominantly on procedural aspects of strategic infrastructure development and adding new categories of development and their location to this regime. It is procedural in nature and does not provide a legal basis for integrated coastal management. In addition it would appear that the new Bill takes somewhat of a catch-all approach by proposing amendments to at least seven existing Acts.

**Table 6-2:** Irish Government Departments and related Agencies/ Organisations with a coastal and / or marine remit, and a role in MSFD/ WFD Implementation.

Government Departments	Agencies/Organisations	Examples of Marine Remit	MSFD/ WFD Implementation
Department of Agriculture, Fisheries and the Marine (DAFM)	Marine Institute (MI)	Marine Research and development	WFD/ MSFD
	Bord Iascaigh Mhara (BIM)	Sea Fisheries and Aquaculture	MSFD
	Sea Fisheries Protection Authority (SFPA)	Conservation	MSFD
	Food Safety Authority of Ireland (FSAI)	Sea Food Safety and Hygiene	WFD/ MSFD
Department of Environment, Community and Local Government (DECLG)	Environmental Protection Agency (EPA)	Bathing Water Quality	WFD
Department of Communications, Energy and Natural Resources (DCENR)	Petroleum Affairs Division (PAD)	Oil and Gas Exploitation	MSFD
	Geological Survey of Ireland (GSI)	Sea-bed Mapping	MSFD
	Sustainable Energy Authority of Ireland (SEAI)	Ocean Energy	MSFD
	Commission for Energy Regulation (CER)	Grid Access for Offshore Developments	MSFD
Department of Transport, Tourism and Sport (DTTS)	Irish Maritime Development Office (IMDO)	Shipping Services	MSFD
	Irish Coastguard (IRCG)	Marine Emergency Management	MSFD
	Maritime Transport Division	(Ports and Harbours)	MSFD
	Maritime Safety Directorate	Preservation of the Marine Environment	MSFD
	Tourism Ireland	Marine Leisure and Tourism (All-Island level)	WFD/ MSFD
	Fáilte Ireland	Marine Leisure and Tourism	MSFD
Department of Defence (DoD)	Irish Naval Service (INS)	Maritime Defence; Fisheries Protection	MSFD
Department of Arts, Heritage and the Gaeltacht (DAHG)	National Parks and Wildlife Service (NPWS)	Marine Licensing; Marine Research, Protected Site Designation	WFD/ MSFD
	National Monuments Service	Protection of Ireland's Archaeological Heritage	

### *Strengths and Weaknesses of Current Approaches to Coastal Management*

As it stands, no national plan or strategy is in place to implement a programme of actions to deliver sustainable development of Ireland's coastal resources and communities. The national Draft Strategy prepared in 1997 has never been taken forward, and Ireland was one of only three coastal EU Member States to not submit a national report in response to the EC's Recommendation on the implementation of ICZM in Europe (2002/413/EC) (see Section 2). Current approaches to coastal management in Ireland are sector-based (Table 6-2), with each sector operating within a non-integrated framework to fulfil their specific targets in terms of development. Despite recurrent aspirations and commitment to develop a national level policy, and move towards a more integrated approach (Table 6-1, and as stated within the current Programme for Government 2011-2016) Ireland continues to have no legislative or policy basis for ICZM.

However, certain strengths are evident in the context of advancing ICZM, and a number of positive steps have been taken that can improve how coastal management is undertaken in Ireland. With regard to the former, it is clear that notwithstanding the existence of policy vacuum, coastal stakeholders in Ireland (e.g. community groups, local authorities, research and education organisations, state agencies, and NGOs) have delivered sound ICZM processes within project-based initiatives which are representative of good practice and have contributed to an improved understanding of ICZM at European and international levels; therefore a body of practitioners are in place to share experience and develop capacity which could be applied to efforts taking forward any national programme or plan for (I)CZM in Ireland.

In terms of positive steps, although not going as far as providing a legal basis for integrated coastal management, the recent proposed revision of foreshore planning within Ireland, in the form of the Maritime Area and Foreshore (Amendment) Bill 2013, will provide local authorities with increased planning functions in the nearshore and foreshore areas and presents an opportunity for ICZM to be advanced within local authorities open to exploring the concept through their planning policies (a number of which have already participated in ICZM initiatives, e.g. Cork County Council, Fingal County Council, Mayo County Council, Wexford County Council).

Furthermore, the establishment of the Inter-Departmental Marine Coordination Group (MCG) represents a positive move in terms improving communication between Government Departments with a marine and coastal remit; however, the beneficial impact of the MCG on coastal governance in Ireland is tempered by the fact that the group does not have a more operational level sub-group(s) that can focus on thematic areas presenting management challenges for Ireland's coast. Secondly, representation of non-governmental actors is not extensive within the associated structures of the MCG (e.g. Enablers Task Forces linked to the implementation of *Our Ocean Wealth*), and it could be argued that valuable input in the form of experience held by other stakeholders is not being fully

optimised for the purposes of taking forward integrated marine planning in Ireland. In addition, the heretofore limited reporting information on the activities of MCG available in the public domain is not conducive to transparent processes, and there is the potential for the work of the group to not be realised by the wider coastal community, and therefore the potential for added value that can be achieved through stakeholder interactions and participation is lost.

With regard to public participation, Ireland has ratified the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (the Aarhus Convention) and full compliance, if achieved, should result in improvements in this area; but significant in the context of coastal management, it should be borne in mind that the Maritime Area and Foreshore (Amendment) Bill 2013 contains no mention of public participation or consultation. Additionally, the participative processes associated with the MSFD have to date been less than optimal (see Section 4) and have not provided opportunity for all interested parties to positively contribute to the implementation efforts to date.

Both the WFD and MSFD are in the process of implementation at present – albeit at very different stages – the WFD is approaching the end of its first cycle of implementation within EU Member States, whereas the MSFD is at a more preliminary stage of its implementation timeline. Both Directives have in common the targets of achieving good status in relation to environmental quality, the need for transboundary working across jurisdictions, emphasise on taking an integrated approach, and the need to involve stakeholders within the implementation process (see Sections 3 and 4). By considering elements of these common targets (Table 6-3) the implications of current coastal management in Ireland for the implementation of the WFD and MSFD can be examined, and the potential contribution of ICZM, were it to become operational in one guise or another, in Ireland can be explored.

**Table 6-3:** Strengths and weaknesses of current coastal management in Ireland in relation to the MSFD and WFD and the potential contribution offered by ICZM in relation to key targets of the MSFD and WFD. \*Note the ecosystem based approach to management requires strong stakeholder participation but this is dealt with as a separate point in the table below.

Directives' Target	Strengths	Weaknesses	Contribution of ICZM
Implementing an Ecosystem Based Approach*	Non-statutory coordination at Government Department is in place and a group (MCG) is specifically tasked with implementation of integrated marine planning for Ireland.	Ireland is not well placed to deliver the ecosystem based approach to management as mandated by the MSFD.  The extent to which the activities of the MCG in implementing <i>Harnessing Our Ocean Wealth</i> address coastal management is at best unclear and an integrated marine and coastal planning process for Ireland is not yet in place.	The emphasis on horizontal (i.e. across sectors / departments) and vertical (i.e. between local, regional and national level structures) integration within the ICZM process would yield benefits in terms of improved co-ordination in the management of human activities, habitats and species, physical processes and other elements of the ecosystem.
Transboundary Working	Experience of transboundary working in relation to aquatic resources exists through the cross-border RBMPs developed under the WFD.  International and North-South Cooperation is one of the eight key areas (enablers) necessary to achieve the objectives of <i>Harnessing Our Ocean Wealth</i> which contains a number of key actions [No.'s 36 -39] that focus on the international dimension of marine planning and policy.  Bodies with a cross-border remit extending to the management of coastal waters are in place (e.g. Loughs Agency) and have prior experience in developing ICZM processes.	Northern Ireland is the only other jurisdiction with which Ireland shares a land and sea boundary and there is a mis-match between capacity for coastal management between the two jurisdictions, Northern Ireland has in place policy (Marine Policy Statement), legislation (Marine and Coastal Access Act) and structures (Northern Ireland Coastal and Marine Forum) to support marine and coastal planning and ICZM, these elements are all lacking in Ireland.	The implementation of ICZM in the Republic of Ireland would allow for more co-ordinated coastal management between the two jurisdictions on the island of Ireland and yield benefit, for example, in terms of identifying pressures, impacts and opportunities, cumulative effects, strategic planning, and data sharing and harmonisation to support improved decision-making.
Stakeholder Participation	Ireland has ratified the Aarhus Convention which opens up significant potential for improvements to participatory processes associated with aquatic environmental protection and management of aquatic resources.	The MSFD calls for early and effective stakeholder participation – this requirement has not been met to date, and clear pathways for stakeholder participation in the continued implementation of the	Participation is a fundamental element of ICZM; different models of ICZM have in common the fact that they provide opportunity for stakeholder dialogue and interaction; which in turn

	<p>In relation to the WFD, previous members of the now dissolved stakeholder fora (Advisory Councils, see Section 3) may represent a potential network of interested parties which could be invited to participate in any new structures set up under the current water governance review (noting that the full potential of these mechanisms were not realised, and scope exists for extending stakeholder participation beyond that previously undertaken).</p>	<p>Directive remain unclear.</p> <p>Current approaches and processes do not sufficiently involve stakeholders to deliver well-supported outcomes, savings in public resources and meeting of targets and deadlines.</p> <p>The reduced level of stakeholder participation (particularly in relation to the MSFD) removes potential for increased access to data, information and knowledge that can support effective implementation through: identification of impacts and pressures; assessment; and, contributions to monitoring and measures.</p> <p>This reduced emphasis on stakeholder participation has the potential to negatively affect efforts to improve public awareness of the: importance of marine and coastal resources; and, measures in place to deliver sustainable development of the coastal and marine environment.</p>	<p>presents opportunity to address knowledge and information gaps (an issue of particular concern in relation to MSFD implementation in Ireland, as reported in Article 12 Technical Assessment submitted to the European Commission).</p> <p>Partnership working within ICZM has demonstrated (e.g. Coastal Partnerships Network, 2013; Stojanovic and Barker, 2008) the clear benefits that can emerge from different stakeholder groups coming together to work towards mutual objectives (e.g. research and academic centres working with regulatory bodies; government organisations working with NGOs and/or coastal user groups representing certain sectors such as leisure, conservation and energy).</p> <p>ICZM can support stakeholder participation in identifying and developing measures which are fair, enforceable and supported.</p> <p>ICZM is a suitable process for ensuring the role of the citizen is proactively encouraged in coastal and marine management (Environment Canada, 2003) through for example, education and outreach, programmes to support coastal and ocean literacy and community / citizen-based science.</p>
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<p>Achieving Good Environmental / Ecological Status</p>	<p>A number of the descriptors (MSFD) and water quality elements (WFD) have a strong coastal element and currently benefit from coastal management initiatives in place (e.g. those targeting biological diversity and marine litter; MSFD Descriptors 1 and 10 respectively, both of which could benefit from the activities of Coastwatch and Coastcare groups).</p>	<p>For a number of the MSFD descriptors (e.g. Descriptor 6 – sea floor integrity; Descriptor 11 – Introduction of energy, including underwater noise) the application of coastal management to efforts supporting GES will be of less significance.</p>	<p>The emphasis on partnership working and joined up approaches to management provided by ICZM has led to the successful development of codes of conduct (e.g. see Table 7-1) to reduce harmful effects of certain activities and behaviours on coastal and marine environments – a national ICZM strategy or plan for Ireland could encourage the development of similar-type initiatives and coordinate them in such a way that their potential to contribute to the programme of measures for achieving GES is fully realised.</p> <p>Similarly, ICZM models of implementation such as the partnerships and fora developed in the UK (see Good Practice Example [2], Section 8) have been shown to support increased stewardship of coastal resources by stakeholders, and assist compliance via monitoring and reporting measures (voluntary and non-voluntary).</p>
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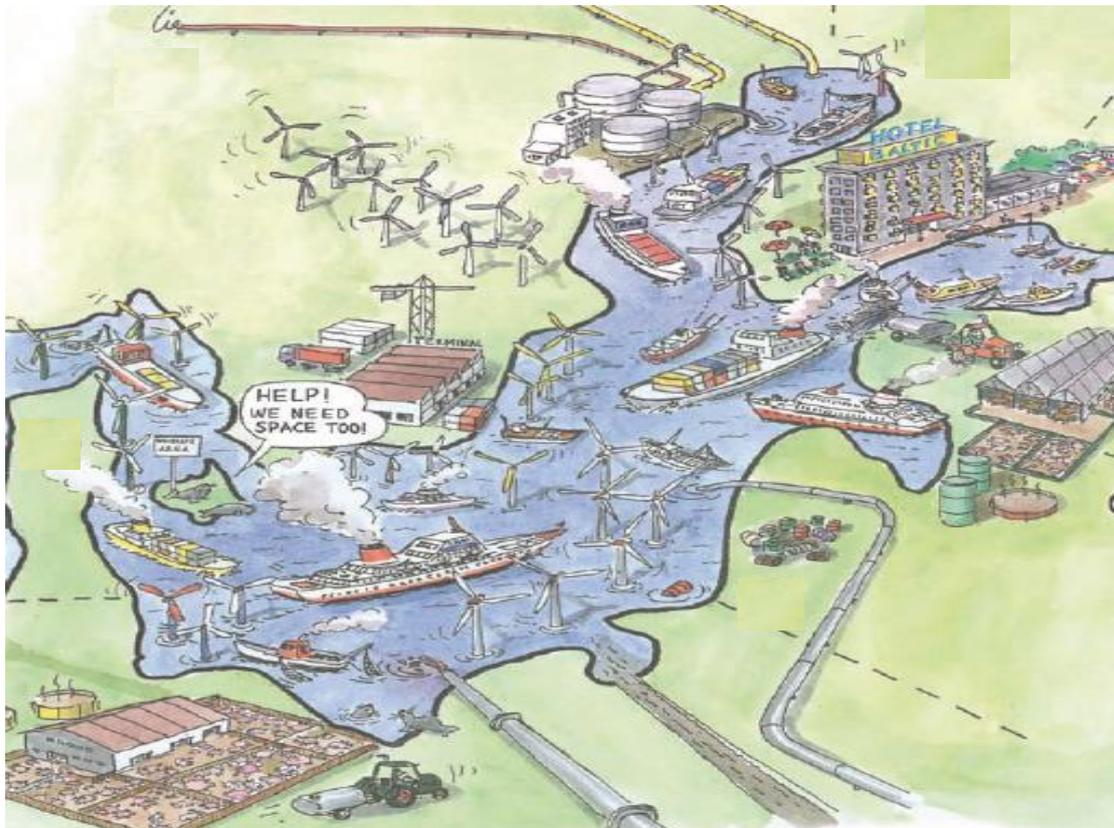
## Section 6 – Summary of Key Points

- No national strategy or policy is in place to deliver the sustainable development of Ireland's coastal resources.
- Approaches to coastal management in Ireland remain sector-based.
- No national strategy or policy is in place for ICZM in Ireland.
- Commitment to ICZM is contained within policy and national level statements of strategy but this has been largely communicated as an aspiration rather than mandatory.
- ICZM in Ireland has been progressed primarily through project-based time bound initiatives and with a local focus.
- Numerous organisations have a statutory role within marine and coastal governance in Ireland, and until the recent establishment of the Marine Coordination Group there was little formal co-ordination between the different organisations involved at a Governmental level.
- In the context of ICZM, a community of practice does exist within Ireland, which has participated in the successful implementation of ICZM and developed a portfolio of good practice experience.
- The recent proposed revision of foreshore planning within Ireland, in the form of the Maritime Area and Foreshore (Amendment) Bill 2013, is a step towards alignment of the foreshore consent system with the planning system.
- While the Bill does not deliver a legal mechanism for ICZM it does provide Local Authorities with increased planning functions in the nearshore and foreshore areas and presents an opportunity for ICZM to be advanced within local authorities open to exploring the concept through their planning policies.

## **7. Integrated Coastal Zone Management – Concepts and Practice**

Integrated Coastal Zone Management (ICZM) has numerous definitions (e.g. Cicin-Sain, 1993; European Commission, 1997; Cicin-Sain and Knecht, 1998; Cummins et al., 2004 (and references therein); Skourtos et al., 2005 – see Box 7-1.) but essentially it represents a participative process which supports the sustainable use of coastal resources, and places emphasis on integrated approaches over sectoral-based practices, in order to better facilitate co-ordinated working and improve understanding of how coastal resources can be used in a sustainable manner. The use of the term *integrated* can relate to collaboration and joint working between coastal stakeholders (i.e. partnership – statutory and / or non-statutory based), sharing of knowledge and information (e.g. the different datasets collected by numerous organisations operating within the coast, or combining the professional experiences of those who work in a coastal environment), encouraging joined up thinking (e.g. coherent policy for different aspects of coastal management, or strategic planning) and using multiple skill-sets and instruments to deliver effective coastal management.

Taking an integrated approach to coastal management provides opportunity to better co-ordinate the various activities that can take place within coasts, and to involve all parties, and foster partnership between the various stakeholders who depend on the coast for their quality of life (Lymbery, 2008).



**Figure 7-1:** – A typical multi-use coastal environment with competing demands for resources and space by different sectors of activity (modified from WWF Germany (2010)).

Any given stretch of coast is likely to accommodate a number of activities, will have a number of agencies and authorities involved in its management, each progressing objectives through individual plans and strategies – a situation that can quickly become complicated and difficult to manage if a sectoral approach prevails; Figure 7-1 illustrates the extent of the challenge facing those tasked with the management of multi-use environments such as coasts. The remainder of this section covers the principles and practice behind effective ICZM, as well as outlining issues that can hamper implementation.

As socio-environmental challenges facing many coastal areas became more widespread, such as the degradation of habitats, loss or reduction of certain coastal livelihoods, new approaches to coastal management were required. One of the earliest moves towards management specific to the coasts emerged in the United States of America with the introduction of the Coastal Zone Management Act in 1972, since then other members of the global community have initiated and advanced management relating to the coast. For example, in 2006 a national implementation plan for ICZM was introduced in Australia to support an integrated and strategic approach to coastal planning and environmental management (Lazarow et al., 2006) for its coastline spanning over 35,000km in length. Canada - which has the longest coastline of any country in the world - embarked from the late 1990s onwards on a path to incorporate integrated coastal management efforts within a strategic approach to ocean and coastal planning (Ricketts and Harrison, 2007). Similarly, integrated approaches to coastal management have become more mainstream in countries such as New Zealand (Kay and Alder 1999), Norway (Tiller et al. 2012) and across regions (e.g. Mediterranean Basin – Section 2; House, 2010), see Nobre (2011) for an overview of major ICZM initiatives worldwide.

<b>Definitions for Integrated Coastal Zone Management</b>
<p><i>ICZM aims to preserve coastal resources, their ecological functioning and ultimately their values by applying adequate land use planning within a social, institutional and economic context.</i> (Skourtos et al., 2005)</p>
<p><i>Integrated coastal management is a process that recognises the distinctive character of the coastal area -itself a valuable resources- and the importance of conserving it for current and future generations.</i> (Cicin-Sain and Knecht, 1998)</p>
<p><i>A continuous process with the general aim of implementing sustainable development in coastal zones and maintaining their diversity. To this end, it aims, by more effective management, to establish and maintain optimum (sustainable) levels of use, development and activity in coastal zones and eventually to improve the state of the coastal environment.</i> (European Commission 1997)</p>
<p><i>A holistic approach, in which the ecosystem as a whole (all the biotic and abiotic components) and all kinds of coastal use, as well as all use -use and use- ecosystem relationships are included.</i> (Vallega, 1993)</p>
<p><i>A continuous and dynamic process that recognises the distinctive character of the coastal zone - itself a valuable resource- for current and future generations.</i> (Cicin-Sain, 1993)</p>

**Box 7-1:** Examples (non-exhaustive) of definitions for ICZM.

ICZM or derivatives of, for example, Integrated Coastal Management (ICM), Integrated Coastal Area Management (ICAM) (Hénocque and Denis, 2001); Integrated Marine and Coastal Area Management (IMCAM) (Klaus et al., 2003) reflect the shift towards policy and practice that advocates a more integrated or holistic approach to coastal management. Despite the subtle differences in the naming of these concepts, they all retain the ethos of ICZM within their implementation (e.g. they are participative, holistic in nature, support sustainability), and for the large part these terms can be used inter-changeably (Creel et al., 1998). However, for the purposes of this report, the term Integrated Zone Coastal Management (ICZM) is used throughout, as much of the literature, legislation and policy cited, particularly in a European context, contain references to ICZM.

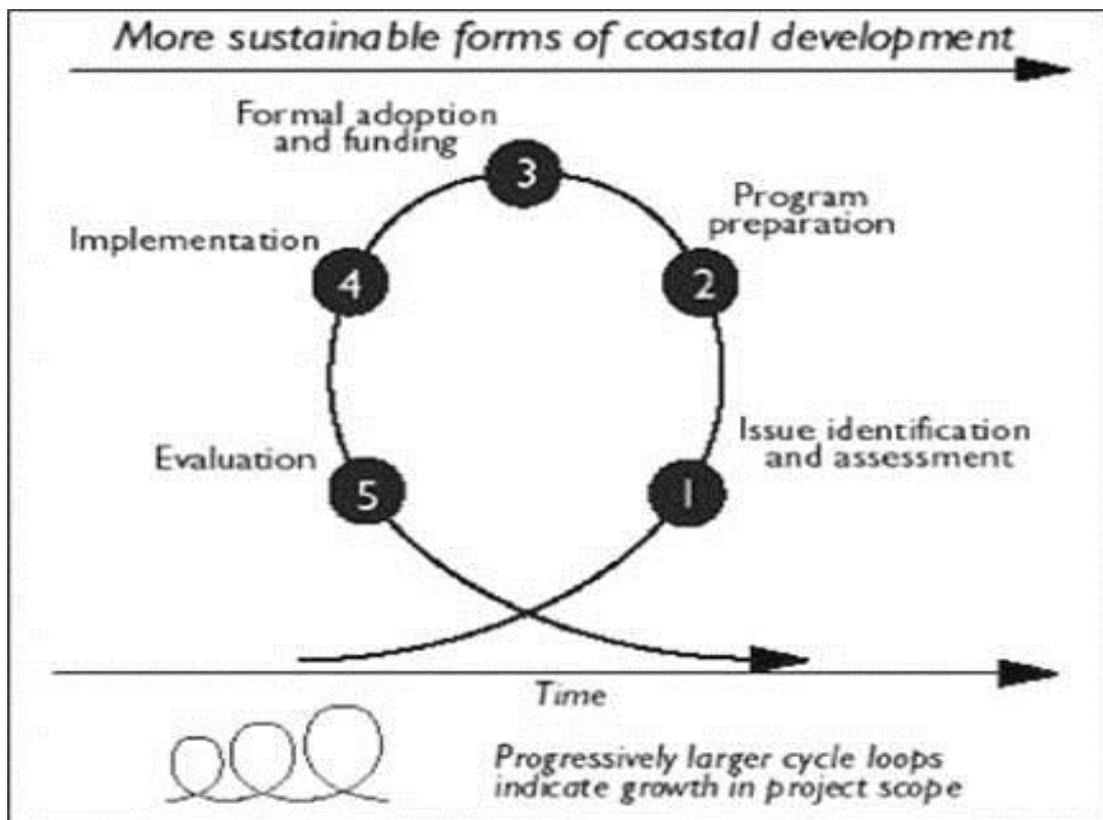
#### *ICZM Principles of Good Practice*

Section 2 sets out the evolution of coastal policy in Europe, a landmark being the completion of the Demonstration Programme on ICZM, which led to the development of a set of principles to communicate key elements of good practice in delivering effective coastal management (European Parliament and Council 2002):

- *Principle 1* - A broad overall perspective (thematic and geographic) which will take into account the interdependence and disparity of natural systems and human activities with an impact on coastal areas.
- *Principle 2* - A long-term perspective which will take into account the precautionary principle and the needs of present and future generations.
- *Principle 3* - Adaptive management during a gradual process which will facilitate adjustment as problems and knowledge develop. This implies the need for a sound scientific basis concerning the evolution of the coastal zone.
- *Principle 4* - Local specificity and the great diversity of European coastal zones, which will make it possible to respond to their practical needs with specific solutions and flexible measures.
- *Principle 5* - Working with natural processes and respecting the carrying capacity of ecosystems, which will make human activities more environmentally friendly, socially responsible and economically sound.
- *Principle 6* - Involving all the parties concerned (economic and social partners, the organisations representing coastal zone residents, non-governmental organisations and the business sector) in the management process, for example by means of agreements and based on shared responsibility.
- *Principle 7* - Support and involvement of relevant administrative bodies at national, regional and local level between which appropriate links should be established or maintained with the aim of improved coordination of the various existing policies. Partnership with and between regional and local authorities should apply when appropriate.

- *Principle 8* - Use of a combination of instruments designed to facilitate coherence between sectoral policy objectives and coherence between planning and management.

In practice, the principles are to be implemented within an ICZM process (Ballinger et al., 2010) that typically follows a number of iterative stages, which form part of a policy or strategy development cycle: 1. Issue identification; 2. Plan preparation; 3. Formal adoption and funding; 4. Implementation; and, 5. Monitoring and evaluation (see Olsen et al. 1997; GESAMP, 1996; Figure 7-2). Mature ICZM programmes are those that have completed a sequence of management cycles to achieve improvements in coastal management and ultimately in integrating coastal management across key sectors and administrative levels (Cummins et al., 2004). The concept of ICZM as a process has since been further elaborated (e.g. Varghese et al., 2008) and proposals regarding a means of evaluating the ICZM process for the purposes of improved outcomes have been introduced and tested (Baarse et al., 2001; Olsen 2003; Pickaver et al., 2004; Stojanovic et al., 2004; Billé 2008; Jones et al., 2008; Pickaver, 2009). The principles as stated above provide coastal planners and managers with a series of objectives against which to develop their ICZM response, but in essence they reflect what can be broadly considered as elements of good governance in natural resource management (e.g. working with stakeholders (Lebel et al., 2006; Walker et al., 2002), taking an ecosystem-based approach (Douvere 2008; Folke et al., 2005) and thinking strategically (Bowen and Riley, 2003).



**Figure 7.2:** The iterative ICZM process cycle (GESAMP, 1996).

The importance of the ICZM principles was strengthened with their inclusion in the EC's Recommendation on the implementation of ICZM in Europe (2002/413/EC) which requested coastal Member States to report to the Commission on the progress made in implementing the Recommendation, and specifically on the progress made in developing a national strategy to promote ICZM (see Section 2); these national coastal management strategies were to be guided by the principles. Therefore, the principles were given significant status in terms of ICZM implementation at national strategy making and local project implementation levels.

#### *ICZM and Participation*

Participatory processes are fundamental to ICZM (Hildebrand, 1997; King, 2003; Cummins et al., 2004; Cliquet et al., 2010; Areizaga et al., 2012). Relevant to ICZM are legal instruments at international (e.g. Aarhus Convention<sup>14</sup>) and European (e.g. Directive 2003/35/EC<sup>15</sup>) levels which require public participation with respect to environmental decision-making and management. With respect to ICZM within Europe, the importance of participation is reflected by the principles of good practice (see previous sub-section) and the EC ICZM Recommendation, the latter also advocates the principle of subsidiarity (Gibson, 2003) whereby governments are urged to support the empowerment of local communities, including local government, to secure sustainability of the coastal environment. The principle of subsidiarity recommends that important policy decisions should always be taken as close to the citizen as possible (Schaefer, 1991; Olsen, 2003; Hoverman et al., 2003). Therefore, the rationale for public participation within ICZM is incontestable.

With respect to the ICZM principles of good practice, Principle 6 calls for the involvement of “*all parties*” concerned while Principle 7 recommends ensuring the “*support and involvement of relevant administrative bodies at national, regional and local levels.*” Thus, the scope for participation within what is considered effective ICZM can extend to include, for example: local and regional authorities and the representatives of other statutory agencies (e.g. with responsibility for fisheries, aquaculture, tourism, environmental protection and rural development); special interest groups (e.g. conservation, heritage); NGOs; community and citizen organisations; research and higher education institutes; professional and thematic networks (e.g. local planner association); and, representatives of business and commerce. The above listed examples of representative entities provide a number of options for the public to become directly or indirectly involved in participatory processes linked to ICZM.

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<sup>14</sup> The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters was adopted on 25th June and entered into force on 30<sup>th</sup> October 2001. Ireland ratified the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, commonly referred to as the Aarhus Convention, on 20<sup>th</sup> June 2012.

<sup>15</sup> Directive 2003/35/EC of the European Parliament and of the Council of 26<sup>th</sup> May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC.

Putting participation into practice requires the building of trust between organisations, individuals and communities, as without this factor, the process, ICZM or otherwise, are unlikely to yield the full range of benefits (discussed below) arising from stakeholder involvement. Extensive guidance exists for methods and tools for stakeholder participation within coastal and marine management (e.g. Whelan, 2004 (but see <https://app.secure.griffith.edu.au/03/toolbox/index.php> for full description of tools); Department for Environment, Food and Rural Affairs, 2006; National Oceanic and Atmospheric Administration, 2007; Whyte et al., 2011; Roburgh et al., 2012); however, it should be borne in mind that specific methods are not always universally appropriate, and requirements will vary between locations and under differing circumstances. However, certain elements are crucial to effective stakeholder participation processes (see Box 7-2) and should be considered when developing any such processes.

<b>Accountability:</b>	Ensuring a transparent and auditable process to all involved.
<b>Effectiveness:</b>	Ensure agreed prioritisation of issues with timely interventions.
<b>Equity:</b>	Ensuring dialogue and building consensus based on equally valued contributions.
<b>Flexibility:</b>	Including opportunity to revise activities and re-visit issues.
<b>Governance:</b>	Ensuring a transparent process of decision-making.
<b>Inclusiveness:</b>	Providing for all views to be represented increasing the legitimacy and credibility.
<b>Learning:</b>	Providing a means for a learning approach.
<b>Legitimacy:</b>	Requiring democratic, transparent, accountable, equitable processes.
<b>Ownership:</b>	Generating ownership for decisions.
<b>Engagement:</b>	Bringing together and promoting engagement by all stakeholders.
<b>Partnership:</b>	Networks between stakeholders developing shared power and responsibilities.
<b>Societal gains:</b>	Creating trust to overcome stereotypical perceptions and prejudice.

**Box 7-2:** Key elements of stakeholder participation process within ICZM, (ENVISION, undated).

With an effective process in place, the advantages of participatory-based management extend to aspects of transparency in decision-making and planning, ensuring solutions to management challenges are locally specific, improving the knowledge base and data holdings to support decision-making (Govan and Hambrey, 1995), and can include, for example:

- Improved likelihood of commitment to, and acceptance of, ICZM strategies and plans;
- Increased credibility in the ICZM process and outputs / outcomes;

- Cost effectiveness through the sharing of resource costs (financial and human) with respect to information gathering, planning, routine management and enforcement;
- Potential to incorporate citizen science contributions to management and decision-making, and improve societal understanding of the value and importance of coastal and marine resources;
- Processes for decision-making and planning that better reflect local, social, economic and environmental conditions in coastal areas;
- Effective use of local knowledge and existing networks and working arrangements; and,
- Increased equity can enhance the legitimacy of management and planning.

A further advantage of the participatory-based approach behind ICZM is the contribution that can be made to implementation of Directives such as the WFD and MSFD; the former encourages the “*active involvement of all interested parties*” in its implementation (Article 14), while the text of the latter states that “*all interested parties are given early and effective opportunities to participate in the implementation of this Directive of this Directive*” (Article 19). As well as containing requirements for the involvement of interested parties, both Directives also require a substantial amount of data and information collection as part of their implementation. Stakeholder participation as a contribution to the implementation of the MSFD was explored for the Celtic Seas region (Roxburgh et al., 2012); a number of opportunities emerged (e.g. implementation of voluntary measures in support of policy objectives, support for assessment and monitoring; providing evidence on efficacy and cost-effectiveness of measures). Delivering such participation within an ICZM process has the added benefit of mobilising stakeholders from different backgrounds and sectors to collectively identify the critical issues associated with MSFD and WFD that affect their coastal area, and to formulate responses in the form of solutions and management intervention (e.g. tackling marine litter from terrestrial and offshore sources by developing codes of conduct, and building partnerships comprising all parties concerned to support implementation of code). Similarly, greater interaction between relevant stakeholders - those tasked with preservation, development and control within the marine environment and those with similar responsibilities on land – will ensure River Basin Management Plans developed under the WFD better reflect the need for a joined up approach to deliver sustainable development (Canney, 2007). The role of coastal partnerships in the UK in contributing towards the successful implementation of the WFD has been acknowledged (Coastal Partnerships Network, 2003) and the potential and value of the participatory mechanisms put in place by coastal partnership is expected to a similar contribution to the implementation of the MSFD (L. McGowan and S. Kidd, pers. comm., March 05, 2014). Table 7-1 details examples of where stakeholder participation within an ICZM process can contribute to the objectives of the MSFD and WFD.

**Table 7-1:** Examples of the contribution of stakeholder participation within ICZM to achieving Good Environmental/ Ecological Status (GES) under the MSFD and WFD respectively.

Participatory Elements of ICZM	Example	Achieving GES - MSFD & WFD
Development of cross-sectoral linkages and working arrangements.	The Northern Ireland Coastal and Marine Forum aims to bring together those organisations (statutory and non-statutory) which have a responsibility for managing the activities of the coastal and marine environment of Northern Ireland in a sustainable manner. This extends to engendering consultation/discussion between Departments on the development or review of strategies, policies or legislation (including Directives) which affect the coastal zone.	✓
Identification and agreement on local level issues and management actions.	For many coastal areas the threats posed by non-native species are of particular concern. Responding to this issue requires the actions of multiple stakeholders in terms of their activity but also with respect to monitoring and management. In 2010, the Loch Etive ICZM Group (Scotland) co-ordinated the production of a management plan (Argyll and Bute Council, 2010), developed through stakeholder cooperation, to identify the issues facing the coastal community and foster an integrated approach in addressing these issues. With respect to non-native species, the management plan consolidated all information regarding the roles and responsibilities of different parties, provided advice on good practices and put forward recommendations focused on local action.	✓
Raising awareness of management challenges within different user groups	Pembrokeshire Coastal Forum (PCF) is a multi-sector partnership working with stakeholders to promote a sustainable approach to the planning, management, use and development of the coast. In light of the tourism value of the Pembrokeshire coast and the range of outdoor activities that attract high numbers of visitors, the Forum initiated a project which led to the development of the Pembrokeshire Outdoor Charter Group. The Group is a collection of outdoor activity businesses, environmental education centres, conservation groups and organisations who work together to develop agreed codes of conduct and best practice for activities, with a view to reducing impact on biological diversity, ecological quality, as well as working towards environmental accreditation schemes to address waste and litter.	✓
Identifying and realising connections to support mutual goals.	Morecambe Bay (UK) is designated as a Special Protection Area (SPA) and Special Area of Conservation (SAC) under the Habitats Directive; such a designation requires that a single scheme of management be developed to protect the wildlife features of designated sites. Typically the development of such a management plan involves intensive stakeholder interaction with potential for conflict. However, a pre-existing ICZM process - Morecambe Bay Partnership – resulted in positive working relationships being forged by the Partnership between the relevant authorities and user groups around the Bay, and played a fundamental role in taking forward the development of the European marine site Management Scheme (Morecambe Bay Partnership. 2009).	✓

While improved stakeholder participation leads to benefits such as greater transparency in decision-making, transfer and sharing of knowledge and information, and wider buy in to planning and management strategies developed for the coast; there are also direct financial benefits to emerge from partnership working at the coast. The nature of the ICZM process (statutory or non-statutory) can have a bearing on the extent to which ICZM will deliver a financial return, for instance a time-bound ICZM pilot project may be expected to deliver less of an economic impact than a programme instigated, developed, and supported at a governmental level, particularly in the long-term. However, despite the many ways in which ICZM processes can be developed, evidence exists to support the financial benefit of implementing ICZM. In 2008, the Government of South Africa passed the Integrated Coastal Management Act, and its enforcement and implementation via a number of national, provincial and local programmes led to the generation of 14,599 jobs (by 2011) and also resulted in the training and education of people while maintaining and improving the ecological quality of coasts, e.g. by tackling alien invasive species (Grover and Rohe, 2012).

In the early 1990s, authorities in Canada developed the Atlantic Coastal Action Program (ACAP) in response to environmental and development challenges facing a number of coastal communities along Canada's Atlantic coast, many of which were caused by the collapse of the fisheries sector or as a result of pollution problems (Robinson, 1997). ACAP had a clear community-based focus (Ellsworth et al., 1997; McNeil et al., 2006), whereby stakeholders cooperated to put in place plans to address the site-specific issues facing their particular coastal location and community - community organisations were established at 14 sites within Canada's four Atlantic provinces. As part of the ACAP, schemes were also put in place that spanned the 14 sites, e.g. the ACAP Science Linkages Initiative was a programme that created working partnerships between the ACAP organisations and scientists from Environment Canada<sup>16</sup> (Environment Canada, 2003). Start-up support funds were supplied by Environment Canada but community stakeholders also contributed to their local initiatives through volunteerism, in-kind contributions and financial resources. Following an assessment conducted in 2002, it emerged that Environment Canada obtained a substantial return on their investment in ACAP, and the programme was an effective economic instrument to support community-based coastal management that delivered sustainable development and enterprises (O'Mahony et al., 2008; Gardner Pinfold Consulting Economists Limited, 2002). Results of the ACAP assessment indicated that it would have cost Environment Canada 12 times their then ACAP expenditure if they had used direct delivery to accomplish what the 14 ACAP initiatives delivered during 1997-2002 (Gardner Pinfold Consulting Economists Limited, 2002; Stewardship Centre for British Columbia; 2007).

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<sup>16</sup> Environment Canada is the department of the Government of Canada with responsibility for coordinating environmental policies and programs as well as preserving and enhancing the natural environment and renewable resources.

Coastal fora and partnerships in the UK have been the dominant model for the development and implementation of ICZM and are recognised as making a valuable contribution to many aspects of coastal management: stakeholder engagement; education and training; environmental protection; sustainable tourism; ecological protection; and, policy support (see Good Practice Example [2], Section 8). While progress in these areas illustrates the clear benefits of partnership working, assigning a direct financial value to these services and outcomes is not always a straightforward exercise. The Coastal Partnership Network – a representative body for coastal fora and partnership organisations in the UK – commissioned a study to quantify the financial benefits of coastal partnerships and found that the value of services to a single local authority and other stakeholders (e.g. coastal industries) was a minimum of £448,500 GBP per annum (Coastal Partnership Network, undated); Table 7-2 contains examples of these services and their indicative financial benefit.

**Table 7-2:** Examples of services provided by coastal partnerships and indicative financial benefits to accrue from each service (modified from Coastal Partnership Network, undated). Note: values are in GBP.

Coastal Partnership Services	Financial Return (£GBP) per annum
Provision of services to local authority (e.g. community engagement, public events, beach clean schemes)	(at least) 89,000
Assisting regulatory bodies	(up to) 2,200
Contribution to conservation themed activities	(at least) 130,000
Assistance to environmental consultancy	(up to) 32,000
Intermediary role between different coastal industries, and between industries and communities	(up to) 12,500

*ICZM Implementation - From Principles to Practice*

Although no universal definition for ICZM implementation exists (European Environment Agency, 2013), establishing the principles of good practice (formally adopted by the European Union in 2002) and the concept of ICZM as being an iterative process (i.e. cycle), provided practitioners with an understanding of what constituted effective implementation, and those tasked with the management of coastal areas now had a clearer sense of how ICZM might work in practice. Throughout the subsequent decade, the body of ICZM practice continued to develop with projects and initiatives being advanced within much of Europe’s coastal domain. However, the relationship between the ICZM principles and process was perhaps not as fully understood or adequately tested through implementation efforts and learning; for example, at what stage of the ICZM process do you apply the principle of involving all parties – at the issue identification step, and / or the implementation step, or at every step of the process? While the answer to this may vary from situation to situation and will often need to be tailored to certain circumstances, the implications of the decision taken will have an impact, e.g. in terms of: securing adequate resourcing (human and financial) for an ICZM process; the range of experience and expertise that can be incorporated into the process; and; the extent of the issues which the ICZM process can realistically address.

To support capacity building and training, a range of guidance documents were produced to further assist coastal management practitioners and to further elaborate the steps involved in implementing an ICZM process and how these may be approached (Portman and Fishhendler, 2011; DEFRA, 2004). Additionally, a number of reviews of good practice were produced which communicated the success and failure factors associated with ICZM implementation (e.g. Steijn et al., 2012; Grover and Rohe, 2012; Rupprecht Consult and International Ocean Institute, 2006; Cummins et al., 2004; Vodden et al., 2003; Olsen et al., 2002; Meltzer, 1998), while others have focused on aspects of ICZM implementation (e.g. participation, Edwards et al., 1997), and specific applications (e.g. conservation, Veersalu et al., 2011; erosion, Bucx, 2010; climate adaptation, Falaleeva et al., 2011). Similarly, the emergence of coastal networks at sub-national (e.g. coastal partnership network and coastal fora in the UK, Fletcher, 2003, 2007; Fletcher and Pike, 2007; Stojanovic and Barker, 2008), national (e.g. CoastNet (UK); Irish Coastal Network – ICoNet (Ireland); NCK (Netherlands), Claus et al., 2007) and European (e.g. ENCORA) levels provided the basis for information and knowledge exchange using the experiences and practices of those engaged in ICZM across Europe and further afield. Many of these networks or projects (e.g. CoastLearn (Krelling et al., 2008), Coastal Practice Network – CoPraNet (O’Mahony et al., 2006), OURCOAST (Steijn et al., 2012)), which focused on communication and exchange between coastal management practitioners, developed online databases of good practice which could be queried and updated by members of the ICZM community; thus, providing greater scope for coastal managers to find guidance that suited their specific (e.g. geographical, financial, regulatory, institutional) circumstances.

An additional factor associated with the implementation of ICZM is identifying a means of measuring or gauging the effectiveness of the process (step 5 in Figure 7-2). This crucial step can sometimes be neglected, or relegated in importance, at the expense of efforts directed at initial implementation of an ICZM process, and also due to the fact that the evaluation becomes potentially less significant if the process is being delivered through a stand-alone project (i.e. there is the possibility that the ICZM process cycle does not go beyond a single iteration). However, good practice dictates that ICZM takes a long-term view; therefore, it is not unreasonable for participants engaged in ICZM to expect further iterations of the process as detailed in Figure 7-2, and for their management effort to be perpetuated as part of an ongoing planning or decision-making process. With this in mind, the evaluation step becomes vital as the results of such an analysis will strengthen the legitimacy and effectiveness of subsequent cycles of the ICZM process. Future ICZM will benefit from a meaningful analysis of the process to date by considering questions such as: what were the initial issues facing a coastal community / location; how were these addressed; to what extent do they remain relevant; and, what have we learned in terms of the process, the range of stakeholders engaged, the methods employed? This form of evaluation, critique and reflective analysis supports the concept of adaptive management whereby a gradual process has the capacity to facilitate adjustment as problems and knowledge

develop (Ehler, 2003; Pickaver and Ferreira, 2008) – in other words learning by doing, allowing knowledge and understanding to accrue, and incorporating this learning into future management and planning endeavours.

To date, evaluation of ICZM has involved a number of indicator-type assessments comprising different categories of criteria used within the assessment frameworks, e.g. physical condition / state of the coast (Lescrauwaet et al., 2006), process and outcomes (Burbridge, 2003; Henocque, 2003; Olsen, 2003; Pickaver et al., 2004) and management systems (Gallagher, 2010; Dronkers and de Vries, 1999). Within Europe, the European Commission has endorsed the concurrent use of a state of the coast (Lescrauwaet et al., 2006) and process-based approaches (Pickaver et al., 2004), and proposed their use as part of the roll out of national coastal strategies as per the EC ICZM Recommendation (see Section 2). However, it has been argued that some of the tools developed to monitor and evaluate ICZM are overly academic (Steijn et al., 2012) and/or reductionist in their approach (Gallagher, 2010), and are not ideally suited to the day-to-day operational needs of coastal management practitioners (Steijn et al., 2012). Indicator-based approaches in particular have encountered difficulties in relation to scale, data availability and accessibility; issues which become acute when attempting to perform a comparative analysis between Member States or European regions (sub-national and supra-national; O'Mahony (2009); O'Mahony et al. (2009)). Therefore, any indicator-based evaluation tool should be accompanied with clear instructions on how to interpret, apply and compare data to overcome subjectivity (O'Mahony et al., 2009; Gallagher, 2010) and avoid decision support that is predicated on over-simplified analysis (Bell and Morse, 1999). One recommendation would be that during discussions on issue identification (as per step 1 in Figure 7-2), the practitioners themselves give over some time to discussing the metrics for evaluation – this can of course be informed by what exists in the literature covering established methods of evaluation available and tested from practice elsewhere, but the discussion will allow for a tailored (geographic, data, governance) approach to this aspect if and where needed.

#### *ICZM Implementation - Challenges and Considerations*

Implementation of ICZM has revealed the many facets of the process that can present challenges to those tasked with initiating and delivering an integrated approach to coastal management. While a considerable body of practice now exists to illustrate what works in terms of implementation, coastal managers and communities should be aware that what works in one setting isn't always immediately transferable to another, and no rigorous definition of implementation is in place (European Environment Agency, 2013). The basic building blocks of the ICZM process (e.g. issue identification, emphasis on participatory working, focus on sustainability) are recognised, what is advisable is for practitioners to take stock of the body of practice that exists and identify the niche elements that may work best for their set of circumstances. However, it can be argued that a number of challenges have hampered the use of ICZM, some of which persist to this day and others that have perhaps had a

legacy impact on the implementation and uptake of ICZM; therefore, it is prudent to highlight these and make practitioners aware of these constraints so as to provide the opportunity to mitigate where possible.

Evidence suggests that the ICZM community has not clearly communicated its value as a sustainability tool, and the process has instead often been perceived as an environmental management tool (Steijn et al., 2012); which narrows the scope for application of ICZM, can reduce its potential impact, and can make engagement with certain sectors of society more difficult. Possible reasons for this might include the fact that traditionally many issues which instigate an ICZM process were environmental in character (e.g. concerns over coastal water quality, loss of valued habitats and species, impacts caused by pollution, ecological restoration) – in fact almost all of the 35 projects that made up the Demonstration Programme on ICZM (1996-1999) contained themes and objectives linked to environmental concerns. This trend was noticeable in many ICZM initiatives that followed the Demonstration Programme. Coastal areas face numerous environmental impacts and pressures (see Section 5); however, these are just one component of the challenges that coastal communities often face and look to address – placing ICZM in the context of a process that delivers sustainable development (which includes safeguarding ecological and environmental quality) but also addresses livelihood themed issues such as development, employment, professional development, social learning and education.

As acknowledged above, the ICZM principles provided a valuable steer to Member States in how they should approach the implementation of ICZM, and which emerged from the outcomes of the 35 projects that formed the Demonstration Programme on ICZM (Doody, 2003; King, 2003; Capobianco, 2003; Humphrey and Burbridge, 2003). However, the content and context of the principles remained unquestioned and were perhaps not critiqued in a constructive manner in the period that followed their publication. McKenna et al. (2008) discuss how the adoption of the principles with the minimum of critical review contributed to uncertainty regarding their application. A primary issue was that the principles offered a mix of strategic and local focused principles, without prioritisation within or between these groupings, which “*can produce irreconcilable differences in strategy*” (McKenna et al., 2008). Furthermore, while the intention behind the principles was to provide guidance modelled on good governance and they do not advise any action that might be deemed as supporting unsustainable resource use or poor coastal management, the language used to communicate the principles was open to a range of interpretations. This can result in the weakening of their effectiveness as it allowed those using the principles to potentially apply specific elements only, advance a particular policy position based on their interpretation (which may differ to that of other stakeholders in the process) or in some cases foster unrealistic aspirations. McKenna et al. (2008) also argue that the value of the principles is only fully realised if they “*inform a coherent integrated strategy at national level*”, which in the case of many EU Member States, including Ireland, is absent.

The absence of a national policy or statutory basis to support integrated coastal management provides an example of the significant role and impact of external factors on ICZM activity. The existence of a policy vacuum, often leads to a lack of adequate resource (financial and human) and political support, which can undermine success even in situations where the principles have been almost fully applied (O'Mahony et al., 2012; Falaleeva et al., 2011, O'Hagan and Ballinger, 2010; Cummins et al., 2004). Early successes in the implementation of ICZM across Europe yielded examples of good practice and valuable experience, but which subsequently failed due to examples of such external factors (e.g. Bantry Bay Charter, Ireland). In the absence of a national level policy framework, practitioners are unable to fully optimise the value of their work and bottom-up efforts at the local level, as a lack of national policy means local level activity is provided with no guidance or direction.

Similarly, the over reliance on a project-based approach to deliver ICZM perhaps undermined the effectiveness of ICZM as it often led to a "start-stop" model of delivery which can result in stakeholder frustration and loss of momentum in terms of perpetuating the process and building a long-term approach (McKenna and Cooper, 2006; O'Hagan and Ballinger, 2010). The project-based approach is only likely to achieve maximum impact and value if the initiative fits within an institutional structure or governance model geared towards long-term sustainable development and management of coastal resources. Otherwise, the risk is one of promoting sustainability through an unsustainable approach (i.e. short-term time bound projects). This is not to detract from the valuable work produced by ICZM projects, but to flag the importance of support and commitment to ICZM at national governmental level. This challenge facing coastal practitioners perhaps forced a rethink in terms of how ICZM should work, and how best to communicate the added value of the concept, and how to better embed ICZM within the coastal planning and management structures of Member States.

#### *ICZM Implementation – Future Directions*

The stock of ICZM practice and implementation from over two decades of activity in Europe alone indicates that the basic tenets of ICZM good practice remain as valid today as ever before – participatory approach, utilisation of all available expertise and information, adopting different methods and tools where appropriate (e.g. Pickaver et al., 2010), tailoring approaches and reflecting specificity in the approach undertaken. While a number of factors, as outlined above, require attention in terms of implementation, it should be recognised that ICZM is not a wholly fixed process, and continued development, refinement and review are essential steps to ensuring ICZM is advanced in a useful and effective manner (Le Tissier and Hills, 2010); indeed as part of the iterative nature of ICZM it is important that lessons learned and challenges to be overcome are incorporated into the ongoing implementation of ICZM and dealt with as part of the subsequent management cycle (as per description of adaptive management in the context of Figure 7-2 above). Realisation of the aforementioned challenges and considerations has contributed to how coastal management practitioners frame the value of ICZM and approaches taken in practice.

Recent changes in opinion and perspectives of what can be considered to constitute the best way forward for ICZM implementation have introduced a number of important findings, for example: making the added value of ICZM more explicit, either as a support to other policy areas or in terms of economic return (e.g. Steijn et al., 2012; Shipman, 2012); as part of its evolution, continue to explore the use of technology as a means to assist ICZM (e.g. European Environment Agency, 2013) but also as a contribution to participatory approaches (e.g. Pickaver et al., 2010); developing appropriate and clear means to measure impact and benefit in socio-environmental terms; establishing its relevance in strategic terms (e.g. Shipman, 2012); and, provide clear pathways to users and practitioners so they can comprehend the process, and easily access the information appropriate to their needs from the vast body of experience and practice that is available.

## Section 7 – Summary of Key Points

- ICZM represents an iterative process which supports the sustainable use of coastal resources and places emphasis on integrated management.
- Over twenty years of ICZM effort within Europe and further afield has yielded a considerable body of practice from which lessons regarding implementation can be taken.
- It is important to put in place structures (e.g. networks) that allow practitioners to easily access the vast body of learning that already exists, and facilitate the contribution of their experiences to the existing body of experience.
- Implementation of ICZM is guided by a series of principles and process steps that are representative of good governance.
- Processes are needed that can: facilitate the levels of participatory engagement required to accommodate dialogue between different stakeholders and sea-users; identify and promote the pursuit of common objectives; allow for the sharing of different viewpoints ; and, integrate disparate knowledge sources to better inform decision-making.
- Stakeholder participation processes are a fundamental element of effective ICZM.
- While a considerable body of practice now exists to illustrate what works in terms of implementation, coastal managers and communities should be aware that what works in one setting isn't always immediately transferable to another.
- ICZM is not a wholly fixed process, and continued development, refinement and review are essential steps to ensuring ICZM is advanced in a useful and effective manner.
- National policy and political support are vital elements for the effective implementation of ICZM, as this will ensure appropriate institutional support and administrative structures are put in place to support an integrated approach.

## **8. Making a Case for ICZM in Ireland**

Taking into consideration the key points raised in the previous sections of the report, this section further builds the case for ICZM by providing examples of where its implementation would make a valuable contribution to coastal and marine governance in Ireland (including the implementation of WFD and MSFD), with discussion focusing on particular facets that resonate with the challenges and opportunities highlighted within the previous sections. A number of salient points regarding ICZM to emerge from the earlier sections, such as participation, role of citizens and stakeholders, partnership approaches to support integrated management, and the need to build the information and knowledge base are discussed and further elaborated upon.

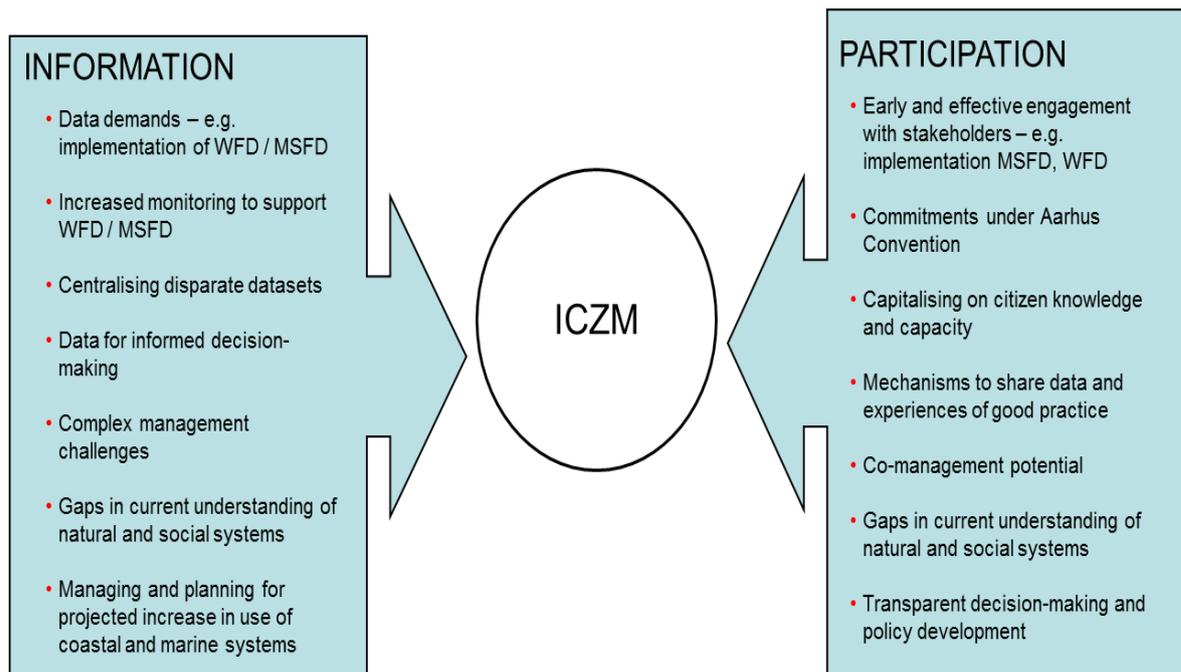
This section concludes with the provision of examples of good practice that act as potential models for delivery of ICZM in Ireland – these have been chosen on the basis of the specific circumstances of the Irish context (e.g. institutional and cultural elements) and represent models that are easily transferable and feasible in terms of implementation, covering situations whereby status quo was to be maintained (i.e. continued policy vacuum, unsecured funding) to where a more proactive and formalised approach to ICZM is taken at a national level (i.e. development of a national strategy and / or policy, integration with current spatial planning procedures).

From Sections 2-7 we can surmise that a number of key issues face Ireland's coastal communities, and are central to any discussion centred on ICZM and its implementation, for example:

- Ireland's coast experiences a range of impacts and pressures (see Section 5), a number of which lead to reduced quality of life and ecological integrity; some of these pressures and impacts are very likely to persist and even increase under situations of projected use levels and natural conditions, and it is likely that current pressures and challenges will feature into the future.
- Meeting the challenges facing Ireland's coastal communities and environments will require best use of and access to available knowledge, data, experience and expertise, which is held by many parties – therefore there is a role for many stakeholders (see Section 7), and a need for a process that can accommodate this form of working and co-management.
- ICZM can make a meaningful contribution (e.g. through the provision of a readymade participatory process, sharing of information – see Section 7, and Figure 8-1) to ensuring progress in marine and coastal policy.

- No statutory basis yet exists for ICZM (see Section 6), although the range of legal obligations with regard to participation (see Section 7) and information pertaining to coastal waters under the WFD and MSFD (see Sections 3 and 4) already provides adequate scope for use of ICZM.
- Despite the absence of a national policy or legislative basis for ICZM, a community of practice exists within Ireland (see Section 6), which has contributed to the development of good practice and represents a valuable source of experience in the context of knowledge application to coastal management.
- The increasing interest in use of Ireland's coastal and marine domain (indicated by policy developments and sectoral expansion, e.g. see Section 5) implies a greater awareness of the socio-economic value of these resources, presenting opportunity for ocean literacy and greater citizen involvement (which is inherent in all European environmental legislation).
- For legal instruments whose implementation are heavily data dependent, e.g. MSFD and WFD (see Sections 3 and 4), ICZM could make improvements to consultation and data gathering requirements to support effective implementation. This is particularly important as we move further towards regionalised management.
- As both the MSFD and WFD address coastal waters within their implementation (Sections 3 and 4), the use of ICZM would contribute to efforts for achieving a more joined-up approach, providing a basis for cooperation between relevant agencies, and clear designation of responsibilities (e.g. with regard to stakeholder participation).
- Data sharing and harmonisation will support our ability to deliver sustainable development of coastal resources; integrated management can facilitate attempts to advance better data management and monitoring programmes that underpin the datasets used in coastal management (see Section 7).

The above issues provide justification for the adoption of a more integrated approach to coastal and marine management in Ireland and indicate some of the opportunities for ICZM in Ireland (discussed in more detail in the sub-sections below). In particular, two salient issues are evident: 1) improved information to support management and decision-making; and, 2) the benefit arising from a management model that is participatory focused (Figure 8-1).



**Figure 8.1:** Examples (non-exhaustive) of issues under the headings of Information and Participation that provide justification for a more integrated approach to coastal management in Ireland.

#### *ICZM and Marine Planning - Why an Integrated Approach is Essential*

In the two year period from 2007 and 2008, the EU delivered the Integrated Maritime Policy, a European Strategy for Marine and Maritime Research, and the Marine Strategy Framework Directive, which has the achievement of Good Environmental Status (GES) of European marine waters by 2020 as an objective. Thus, it is clear that marine planning and marine environmental protection are currently high on the policy agenda of most coastal European Member States; while the MSFD legislates for the latter, the former is being progressed at differing rates and in varying ways by individual Member States. Despite this variation in approach it is clear that marine planning has the potential to contribute to the delivery of MSFD objectives, and the coast which is the interface between the land and sea is a critical element of any planning process.

In terms of marine planning, Ireland is no different to many other Member States in that it is in the process of exploring options to advance maritime spatial planning and the Government have committed to the production of a national marine spatial plan. While, developments in relation to MSP are at a very early stage, there does not yet appear to be any clarity on the extent to which the coast or coastal planning / management will feature within a national marine plan; this reflects the wider European situation whereby the relationship between ICZM and MSP is currently being debated. In the Commission’s MSP Roadmap (COM(2008) 791 final), the need for coherence between terrestrial planning, including the planning of coastal activities, and maritime planning systems is acknowledged as a challenge and consequently it is stated that “*terrestrial spatial planning should be coordinated with MSP*”. Subsequent debates at Committee and Parliament level, as well as Member

State, on the proposed MSP and ICM Directive indicate that many parties are concerned about the interplay between both processes and how they could impact upon national planning competencies. Although MSP and ICZM are separate processes, they do exhibit a degree of commonality (to encourage stakeholder participation and adopt a holistic outlook), and it can be argued that a strong case exists for coherency between the two processes; based upon:

- Adhering to an ecosystem-based approach to marine management (as stated in the MSFD);
- The activities of many sectors operating in the marine environment (e.g. offshore renewable energy, aquaculture) are also dependent on the coast for the transfer of goods and services, location of associated infrastructure, and movement of people; and,
- Ensuring terrestrial – coastal – marine planning processes are aligned.

As marine and coastal sectors grow and expand as anticipated (see Section 2 (*Blue Growth* and *Integrated Maritime Policy*, and Section 7 (*Projected Pressures on Ireland's Coast*)), integrated decision making and cross-sectoral cooperation will be increasingly crucial to ensure that stakeholder needs and/or expectations are achieved and that knowledge from a range of sea-users, regulators and members of the scientific community is made available to the policy process. Over a decade ago, the ICZM EU Demonstration Programme traced the continued degradation and mismanagement of Europe's coastal areas to a set of problems which remain evident to the present day:

- Insufficient or inappropriate information, both from state of coastal zones and also the impact of human activities;
- Insufficient coordination between different levels and sectors of administration, and their policies; and,
- Insufficient participation and consultation of the relevant stakeholders.

Since this time, much has happened in terms of scientific progress and the development of the European science and maritime policy landscape (see Section 2). MSP and ICZM are concepts that have developed over the last number of decades with methods for implementation and good practice continuing to evolve. The problems outlined above remain relevant today (EUCC, 2011) and can be considered applicable to those currently tasked with planning and management in coastal and marine locations; however, what is available to practitioners is a growing body of practice and experience from which to identify solutions suited to their particular circumstances. Although coastal regions are diverse in terms of their physical characteristics, quite often the management issues that arise are similar (e.g. working with multi-users and an array of interest groups, obtaining sufficient data to support decision-making, having adequate legal and policy supports in place) and there is significant potential for knowledge exchange and continued co-learning between coastal managers from different regions. Providing mechanisms to enable this exchange of knowledge and experience are

critical to obtaining maximum benefit from the learning that has accrued to date, this issue is discussed further in a sub-section below.

#### *ICZM and implementation of MSFD / WFD*

ICZM has a role to play in the EU legislative 'arsenal' to protect the interface of territorial and marine environment (Rouam, 2011). In particular, ICZM as a tool can contribute to the objectives of the MSFD (e.g. see Table 7-1), which calls for a comprehensive and integrated approach to the protection of all European coasts and marine waters (Camarsa et al., 2012). The MSFD is, furthermore, the environmental pillar of the Integrated Marine Policy (IMP), which aims to provide a more coherent approach to maritime issues and to develop a thriving maritime economy and the full potential of sea-based activities in an environmentally sustainable way.

MSP has a similar function for the sea as ICZM has for the land-sea space, namely to regulate all human uses while protecting ecosystems, to balance competing interests and to improve the quality of decision-making. There is a need for coherence between the two instruments in areas where they overlap (i.e. coastal waters). As a result, ICZM can be seen as a link between the EU Integrated Maritime Policy and the MSFD on the marine side and WFD and other relevant policy instruments on the land side (Camarsa et al., 2012).

More recently, the European Commission has reported that ICZM will contribute to better coordination between different policies and therefore not create additional obligations, but rather facilitate the implementation of existing legislation and obligations (European Commission, 2013b). This is particularly relevant because ICZM addresses the land and the sea simultaneously. Linkages between the 'dry side' (land) and 'wet side' (sea) of the coast are such that integration of different policies that address either land or sea will facilitate the management of human activities in coastal areas, making it easier to achieve objectives across different policy domains.

The ecosystem approach requires an integrated perspective, strong stakeholder participation and an appreciation and understanding of the value of ecosystem goods and services (International Council for the Exploration of the Sea, 2005; Roxburgh et al., 2012). Governance tools, such as ICZM which advance integration and participation (with the potential to increase awareness of the value of ecosystems via the latter) are therefore needed to deliver the ecosystem approach within coastal and marine environments. However, it is important to note that there is no mention of ICZM in Ireland's MSFD Initial Assessment or Summary Report. Implementation of ICZM in Ireland should play a crucial role in promoting a continuum of integrated planning and management for river basins, coastal zones, marine regions and regional seas, incorporating both the environmental and socio-economic aspects of planning (see *Recommendations* on steps necessary to act on this opportunity, and *Good Practice Examples* for potential models of ICZM implementation in Ireland).

### *ICZM Supported Through Science*

The global economic crisis has become a relevant actor in driving the *EU policy agenda* (Directives) that has become more focused on *high-level societal challenges* such as food and energy security, sustainable transport, human health, and climate change (European Marine Board, 2013). Therefore, the governance arrangements relating to Irish coastal waters and seas have high relevance across all these sectors. Applied, problem-oriented research must be complemented by an improved knowledge of the natural system upon which these sectors depend. The functioning and resilience of Irish coastal and marine ecosystems, and their response to changes in anthropogenic and natural pressures, can only be understood through multi-disciplinary, integrative approaches. Only then, can we design and implement policy to achieve sustainability in the rapidly expanding coastal and marine sectors.

Building working relationships and partnerships between science and policy communities (and other stakeholders for that matter) to support a more integrated and joined up approach to coastal management can be achieved through a number of means, for example:

- Enhance knowledge transfer between knowledge producers (e.g. research community), knowledge providers (e.g. research performing organisations, NGOs, industry) and knowledge users (e.g. policy makers); for example, science-policy interfaces (SPIs) have been defined as “social processes which encompass relations between scientists and other actors in the policy process, and which allow for exchanges, co-evolution, and joint construction of knowledge with the aim of enriching decision-making” (Van den Hove, 2007). Implementing processes that can deliver effective (i.e. relevant, credible, legitimate) models such as SPIs is crucial to engaging all relevant stakeholders in delivering on policy commitments.
- Coordinate the development of bottom up and top down approaches that focus on participatory processes, leading to improved levels of engagement, better communication between all parties involved, and clearer direction in terms of how different stakeholders can collectively work towards shared objectives, for example:
  - bottom-up approaches: to engage all stakeholders from all relevant sectors to optimize access to relevant knowledge for the decision-making process. The co-production of knowledge from multi-disciplinary stakeholder engagement is paramount to achieving long term sustainability, good practices and literacy in coastal and marine environments; it will also lead to the co-design of research programmes that meet both scientific and societal needs resulting in more cost-effective policy implementation.

- top-down approaches: to communicate recommendations from policy makers including policy decisions and future needs to identify gaps in current knowledge and drive new knowledge production that is fit for purpose. Communicating the value of using the knowledge base both in the policy process and for wider marine activities can ensure the long term success of integrative approaches in the management of our transitional and coastal waters.
- Promote new training e.g. in environmental science and policy, to ensure that policy makers of tomorrow are science-literate and scientists are policy-literate, to move beyond linear and fragmented approach; promote interdisciplinary work between the natural and social sciences to foster knowledge transfer and literacy between these domains (European Marine Board, 2013).

#### *ICZM and Citizen Science*<sup>17</sup>

How we manage our coastal environments and ensure sustainable use of coastal resources will continue to be a challenging undertaking for coastal management practitioners and policy-makers. The natural complexity of coasts coupled with the multiplicity of management and institutional structures suggests that achieving sustainable development of coasts will necessitate the involvement of many stakeholders; thus, pointing to the value of a joined-up approach, the ICZM process and the adoption of transdisciplinary methods and approaches (see Torkar and McGregor (2012) for application of transdisciplinarity in the case of nature conservation where the authors advocate a changing the role of 'stakeholders' to 'stake-sharers'), e.g. survey programme undertaken by Coastwatch Europe.

A key element in broadening the participatory base in coastal management is engagement of citizens, and bringing their capacity, knowledge and expertise into the management and planning process in a more meaningful and expansive manner. Citizen science themed activity has experienced considerable growth in recent years (Roy et al., 2012; Silvertown, 2009) and citizen scientists are now recognised as important contributors to increasing data holdings (e.g. Bramanti et al., 2011; Delaney et al., 2008) that can assist and inform decision-making at management levels (Cohn, 2008; Gallo and Waitt, 2011). In Ireland, for example, the successful Cetacean Sightings and Strandings Schemes operated by the Irish Whale and Dolphin Group, and the jellyfish sightings Facebook page supported by scientists at the Coastal and Marine Research Centre, demonstrate how data collected by citizens

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<sup>17</sup> For the purposes of this report the term citizen science refers to the collection and analysis of data relating to the natural world by members of the general public, typically as part of a collaborative project with professional scientists for the purposes of engagement, environmental monitoring, research, education, etc. Depending on the quality control protocols put in place for any given programme or initiative this may include data that equate to peer-review standards.

can improve our understanding of coastal environments, as well as inform and guide human activity within the coastal zone.

In Ireland, many citizens are already committing their time to improve their understanding of our coastal and marine environments, and to contribute towards sustainable management, e.g. Clean Coast initiatives supported through An Taisce, records of data collected by members of dive clubs; Coastwatch groups, Transition Town networks, coastal community associations, and development organisations in rural and urban settings. Coupled with this, is an increasing interest within society of the importance of our coastal and marine resources, as part of Ireland's continued image but also as a means to generate employment through sectors such as offshore renewable energy, seafood and tourism. Therefore, a strong basis already exists from which to grow and expand the role of citizens, with ICZM, as a participatory process, possessing the potential to bring these groups together within a working or collaborative relationship.

While citizen scientists can collect and supply data pertaining to numerous aspects of coastal resource use and management, certain management challenges within coastal and marine environments (e.g. addressing marine litter and non-indigenous species under the Marine Strategy Framework Directive) provide more immediate opportunity for citizen science to directly support administrative bodies tasked with responsibility for coastal and marine management, and to build capacity in this regard. The increased availability and access to technology that can facilitate rapid and detailed data collection as well as the use of social media, and ubiquitous computing and mobile technology greatly enable citizens to participate in data collection and analysis (Gouveia et al., 2004). It can be argued that citizen-based action can also make a meaningful contribution to coastal and marine management in terms of stewardship of natural assets and aiding compliance with legal instruments. Although there will be legislative demands on stakeholders and human activities across Ireland's transitional and coastal waters, there also needs to be commensurate monitoring effort to force or encourage individuals, industry and governments to adhere to the regulatory requirements and have full compliance across all sectors. Compliance incentives include all economic and other benefits, including access to natural resources and increased security. Conversely, non-compliant behaviour should risk legal and economic sanctions as well as social rejection and/or exclusion (Boelaert-Suominen and Cullinan, 1994). In Ireland, the fear of social rejection as a result of non-compliance with socially acceptable standards of behaviour can be a powerful factor inducing compliance among individuals (Cullinan, 2006). This process has already evolved in relation to compliance with the smoking ban in working areas and efficient waste management, including recycling.

#### *ICZM Models of Good Practice*

While the discussion above (and content of previous sections) provides a strong case for ICZM in Ireland, taking this forward will require some consideration in terms of appropriate models of

implementation. This sub-section presents a number of models that can deliver ICZM in Ireland, and which are also considered to represent examples of good practice. The examples chosen represent contemporary ICZM initiatives that have proven to be successful, particularly in relation to: stakeholder engagement and participatory processes; bridging science-policy interface; informing coastal policy, planning and strategy; education and capacity building; use of technology; and, communication.

The first good practice example is taken from Cork Harbour in Ireland, where a multi-stakeholder initiative led by a partnership comprising science and policy organisations resulted in the development and implementation of an integrated management strategy for Cork Harbour. The second good practice example presents the UK Coastal Partnership model which has brought about continuity in the delivery of ICZM, has been a mainstay of UK coastal planning policy for over a decade and in many instances brought numerous stakeholders together within a participatory process.

## **Good Practice Example [1]: Cork Harbour Integrated Management Strategy**

**Approach and Process:** The process that underpinned the development of the Strategy was undertaken as part of the Coastal Research and Policy Integration (COREPOINT) project (2004-2008) - Cork Harbour was one of the initial study sites within the project - and subsequently implemented under the Innovative Management for Europe's Changing Coastal Resource (IMCORE) project (2008-2011). The approach involved a leadership and facilitation role by the local project partners (Coastal and Marine Research Centre and Planning Policy Unit of Cork County Council). A process of stakeholder identification and engagement was initiated by the project partners to ascertain the need and desire for an integrated approach to management in the Harbour area. This led to the establishment of the Cork Harbour Forum (comprising local stakeholders) and a Strategic Advisory Group (representatives of organisations with key management / regulatory roles in the Harbour). Consultation with all stakeholders over the course of a series of workshops and meetings formed the basis for the development and content of the Strategy which was launched in 2008.

A key aim of the Strategy was to bring together all those involved in the development, management and use of Cork Harbour in a framework which encourages the integration of their interests and responsibilities to achieve common objectives in a sustainable manner. Following completion of the Strategy development phase of the process, the Strategic Advisory Group was expanded to form the Harbour Management Focus Group; the body tasked with implementation of the Strategy (2008 – present).

### **Key Elements:**

- Involvement of Local Authority which allowed for the learning from a non-statutory process (development of Strategy) to be incorporated into spatial planning policy for local and County Development Plans. Local Authority can also facilitate access to elected representatives, enabling engagement with political audiences.
- Collaboration between science and policy organisations to ensure research is applied to real-world management issues (e.g. re-use of brownfield sites, capacity for marine recreation), and that policy-making is informed as best as possible by science.
- Model of collaboration and participation that facilitates the: sharing of information between multiple stakeholders; identification of mutual objectives and opportunities for combination of resources (human and financial) between different stakeholders; development of a lobbying voice; and fosters a culture of dialogue and engagement.
- Partnership can accommodate flexibility and can enable all parties to turn their focus towards emerging challenges (e.g. climate change, economic upturn).
- Open door policy – which ensured all interested parties were provided the opportunity to participate within Forum and Focus Group.
- Allowed for consolidation of data pertaining to Harbour and created a focal point for information regarding coastal management within the Harbour.
- Model can be rolled out within current institutional and legal frameworks; therefore, the approach taken in Cork Harbour can be replicated at other coastal locations in Ireland.

## Good Practice Example [1]: Cork Harbour Integrated Management Strategy

**Key Outcomes:** An integrated management strategy (Cork Harbour Integrated Management Strategy) was developed for the Harbour, and is currently being implemented on a voluntary basis (at present no statutory basis exists for ICZM in Ireland). The development and subsequent implementation of the Harbour Strategy represents the fruition of the local scale activities of the COREPOINT and IMCORE projects, and involved extensive stakeholder consultation, fostering of partnership working between various sectors and administrative / regulatory bodies, and effective use of science to underpin coastal planning and management.

The Cork Harbour strategy process represents the only example of contemporary ICZM at work in Ireland on this scale, and has yielded significant outputs in the context of good practice examples (e.g. Expert Couplet Node model of partnership bringing science and policy organisations together in a collaborative arrangement) and capacity building relevant to national and international arenas. Similarly, the value and strength of the partnership approach and capacity building associated with the strategy process is perhaps best evidenced by the fact that the stakeholder group continues to meet and collaborate for 1) sharing of information and optimising resources for coastal management; and, 2) purposes of tackling emerging management challenges facing Cork Harbour, e.g. climate change and adaptation planning.

### Further Information:

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- [www.corkharbour.ie](http://www.corkharbour.ie)
- <http://corepoint.ucc.ie>



## Good Practice Example [2]: UK Coastal Partnerships

**Approach and Process:** Coastal Partnerships (CPs) began to emerge in the UK during the 1980s, with a considerable number being set up from the 1990s onwards in response to the increased attention and prioritisation being afforded to ICZM across Europe at the time. Coastal Partnerships reflect the participatory ethos of ICZM and contribute to the delivery of the EU principle of subsidiarity. Within the UK, the partnerships were viewed as a preferred model for delivering ICZM in response to coastal management issues (e.g. user conflict, loss of ecological integrity for key habitats, inappropriate planning and dissatisfaction with levels of stakeholder engagement).

Partnerships were instigated in a number of different ways but can be considered as representing a “bottom-up” participatory model that is inclusive and brings together all parties within an interest in coastal management for a particular geographical area which can range from national (e.g. Scottish Coastal Forum) to regional (e.g. North West Coastal Forum, Pembrokeshire Coastal Forum), and local (e.g. Morecambe Bay Partnership, Thames Estuary Partnership) but can also include multi-jurisdictions (e.g. England and Wales in the case of the Severn Estuary Partnership). Membership of coastal partnerships covers many special interest groups as well as representatives from statutory and non-statutory organisations; thus, ensuring a diverse composition of backgrounds, experience and knowledge.

While Coastal Partnerships can function under different administrative and operational structures (e.g. some will have Terms of Reference, different staffing arrangements, financing, etc.), the basic model of bringing diverse stakeholders together to advance ICZM has yielded many examples of good practice and a comprehensive body of experience relating to successful implementation of ICZM.

### **Key Elements:**

- Provision of a geographically specific ‘one-stop-shop’ for information and contacts relevant to coastal management in an area.
- Ability to link local level effort in the context of ICZM to regional and national government policy and vice versa.
- Statutory and non-statutory representation within partnerships provides opportunity for effective dialogue, outside formalised consultation processes, regarding coastal management issues.
- Dedicated Partnership Officer in place to ensure work programmes are agreed and adhered to by all partnership members.
- Have led to the development of agreed management plans and various strategies which members of the partnership then take responsibility to implement.
- Coastal Partnerships are viewed as impartial and able to foster working relationships across sectors.
- Capacity to mobilise support and involvement for issues of concern / interest, and fill gaps where there is no sectoral responsibility.

## Good Practice Example [2]: UK Coastal Partnerships

**Key Outcomes:** Within the UK, Coastal Partnerships have made a positive contribution with respect to policies, working practices, and capacity building relating to ICZM and coastal management in general. Coastal Partnerships, although not immune to the pressures and challenges associated with securing funds for sustained operations, have in many cases provided longevity that is critical to taking a long-term view, facilitating strategic thinking, and ensuring adaptive management is practiced. Notable outcomes of Coastal Partnerships also include the bringing together of government bodies working on the landward and seaward side of the coastal zone to ensure more coherent planning, and this function is again becoming relevant in the context of MSP and the need to ensure consistency between marine and terrestrial planning processes. Coastal Partnerships have also delivered practical achievements in areas of: stakeholder engagement and facilitating consultative processes; education and training (e.g. Pembrokeshire Coastal Forum; research; monitoring; assessment; surveillance; raising awareness of sustainable development in coastal communities; and, promoting community-based initiatives aimed at more effective coastal management (e.g. Morecambe Bay Partnership).

UK Coastal Partnerships have now organised themselves into a collective Coastal Partnerships Network (CPN) to improve the links between the individual partnerships. The Coastal Partnerships Network exists to encourage the exchange of information and debate between Coastal Partnership Officers and to establish links with other coastal stakeholders. The UK body with responsibility for marine planning – the Marine Management Organisation (MMO) has publicly endorsed the stakeholder engagement and communication roles that the CPN and its member partnerships can provide as part of the marine planning process; and it can be argued that similar potential exists for stakeholder engagement related to implementation of the Marine Strategy Framework Directive.

### Further Information:

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- [www.coastalpartnershipsnetwork.org.uk](http://www.coastalpartnershipsnetwork.org.uk)
- [www.coastalpartnershipsnetwork.org.uk/2013/10/17/baseline-report-on-developing-partnership-working-at-the-coast/](http://www.coastalpartnershipsnetwork.org.uk/2013/10/17/baseline-report-on-developing-partnership-working-at-the-coast/)
- [ec.europa.eu/environment/iczm/ourcoast.htm](http://ec.europa.eu/environment/iczm/ourcoast.htm)



## **9. Recommendations**

A number of the elements to implement ICZM are already in place in Ireland (e.g. community of practice, capacity at local and regional levels where local and regional authorities together with other stakeholders have gained experience in ICZM via projects), and progress in areas such as inter-departmental working in relation to the marine, are positive steps that have potential for coastal management.

However, a number of critical elements remain lacking, such as clear political support for ICZM and a legal basis explicit to ICZM in Ireland. In terms of next steps, the following recommendations reflect the findings to emerge from this study and provide a basis for taking forward ICZM in Ireland, and for further dialogue on the potential contribution ICZM can provide in relation to realising the potential of our coastal resources and citizens, meeting obligations set out in the WFD, MSFD and other European Directives, and achieving sustainable development. The recommendations fall into the three broad categories listed as A, B and C below; however, a number of the recommendations apply to more than one category and for that reason each recommendation is coded accordingly.

- A.** Governance – legislation – administrative -policy support;
  
- B.** Public awareness – communication – participation -citizen engagement; and,
  
- C.** ICZM as a tool to support WFD/MSFD implementation.
  - 1.** A national coastal policy and strategy to progress integrated management of coastal resources should be developed by the Government; as a minimum this should meet the requirements set out in the EC Recommendation on ICZM, but also take the opportunity to use and build upon existing experience (e.g. from projects involving Irish partners that demonstrated good practice) and human capacity (held within local and regional government, state agencies, NGOs and other participants within ICZM initiatives) to place Ireland at the forefront of effective coastal management in Europe. [A] [B] [C]
  
  - 2.** Designate a statutory body with responsibility for co-ordinating the implementation of ICZM in Ireland; such an organisation should be in a position to call on the support of other statutory or non-statutory bodies as required. [A]
  
  - 3.** Whilst the Marine Coordination Group signifies progress in improving communication on marine management across responsible Government departments and agencies, arguably it operates at too high a governance level. An argument could be made for an

additional 'operational' level group that focus on problematic thematic areas such as coastal protection, development planning and cumulative impacts of proposed development. [A]

4. Create a legal basis for ICZM in Ireland; the heads of the Maritime Area and Foreshore (Amendment) Bill provide for amendment of the consenting process as it applies to, predominantly, energy infrastructure. Whilst streamlining of consenting is to be welcomed, the Bill in its currently format does not address many of the other issues associated with foreshore management (see Section 5) and does not represent a way of delivering more integrated coastal (zone) management in particular. [A]
5. Use the opportunity afforded through the Maritime Area and Foreshore (Amendment) Bill 2013 – whereby local authorities will be granted more responsibility for coastal planning – to instigate a process of capacity building (e.g. within local authorities) for ICZM. The experiences of local authorities already engaged in ICZM oriented initiatives should be incorporated into any such initiatives. [A]
6. In taking forward marine planning for Ireland, the Government and competent authorities should develop planning processes whereby the coastal node is to be incorporated into future marine-related plans to ensure coherency between terrestrial and marine planning, and avoid potential for a two pronged ineffective approach to planning (as exemplified by the disparity that existed land-use planning and foreshore consenting for a number of years). [A] [C]
7. Within any process to advance marine planning (and coastal management) there needs to be some form of cross-compliance mechanism to ensure that the objectives of all the various marine plans, strategies and laws (e.g. the WFD and MSFD) are achieved or at least reported upon in a coordinated manner – this would assist in identifying synergies as well as any inconsistencies that may exist between the various instruments relevant to catchment, coastal and marine environments. This would also complement actions currently undertaken under the auspices of the Regional Seas Conventions such as OSPAR. [A]
8. Use implementation of ICZM and the advantages the process can provide (e.g. improved stakeholder engagement and participation, consolidation of datasets, generation of data through monitoring conducted by coastal stakeholders) to support the implementation of European Directives, such as the Marine Strategy Framework Directive and Water Framework Directive. [B] [C]

9. Use implementation models for ICZM such as coastal partnerships and coastal fora (see Good Practice Examples) as a means for all interested parties to investigate best options for co-management of coastal resources, and co-existence between multiple users of coastal space within specific areas; such an approach would contribute to providing greater clarity to those wishing to invest in coastal development and enterprises and support more strategic planning. [A] [B] [C]
10. The development of a national coastal policy and strategy for Ireland should contain a strong commitment to participation, and should use the experience to date from partnership working and stakeholder engagement processes to support the development of coastal networks at national and regional and local scales as a means of delivering effective management through: stakeholder engagement and dialogue; capacity building; knowledge exchange; sharing of experiences; and, fostering collaborative working relationships between all interested parties. [A] [B]
11. Prioritise full compliance with the Aarhus Convention by all bodies with a responsibility for the coastal and marine environment as a contribution to improving stakeholder participation in coastal related management and planning. [A] [B] [C]
12. Ensure the role of the citizen is proactively encouraged in coastal and marine management in Ireland and initiate the development of programmes and initiatives (e.g. focused on awareness raising and training) that ensure the contribution of the citizen is optimised, and there is opportunity for statutory bodies to incorporate citizen science as part of their obligations for reporting and data collection. [B] [C]
13. Utilise the participatory focus of ICZM as a suitable model for engaging stakeholders and use this to raise awareness of all interested parties on the obligations and requirements set out under European Directives (e.g. WFD and MSFD) and as a basis for developing a potential network of interested parties which could actively contribute to and support implementation of the WFD and MSFD. [B] [C]
14. Government Departments with responsibility for coastal management should apply the lessons learned from experiences in successful working relationships between science and policy organisations (e.g. such as that detailed in Good Practice Example [1]) as means of developing more formalised working relationships between research / academia and local / regional / national government. [A] [B] [C]

15. Methodologies for assessing cumulative impacts of coastal and marine developments need to be adopted. The Commission has already identified this as an issue within implementation of, and compliance with, the Environmental Impact Assessment Directive. Appropriate long term data and ecological monitoring are required to fully assess sectoral and cumulative impacts. [A] [C]
  
16. Data and information to support coastal and marine management, and to implement related legislation, are held by many different organisations - therefore the development of a publicly accessible centralised resource should be initiated (or adaptation of existing resources such as the Marine Irish Digital Atlas (MIDA) – [http:// http://mida.ucc.ie](http://mida.ucc.ie)) as a means of collating this information for better decision-making for coastal management and planning. [B] [C]
  
17. Ensure clarity when communicating key concepts linked to coastal and marine management, for example, the European Commission tends to use the term “*sustainable growth*” in many of its IMP related policies such as Blue Growth. This has the potential to confuse regulators tasked with implementation, as well as marine stakeholders and sea-users: sustainable growth and sustainable development are not the same. [B]
  
18. Communicate ICZM as “sustainability for the coast”, a process that can address social, economic, environmental and governance issues faced by coastal communities; and an approach that can meet a number of challenges e.g. climate change adaptation, rejuvenation of coastal economies, decline in social resilience, balancing development with ecological quality). [A] [B]

## **10. Acknowledgements**

The authors would like to thank the Project Steering Committee and Co-ordinator Office of the Sustainable Water Network (SWAN) for their support and feedback over the course of the research. Thanks to Caroline Salthouse of the North West Coastal Forum (UK) for providing a critique and valuable comments on Section 8. Thanks are also owed to those individuals who gave their time to participate within interviews and surveys, and whose input informed the research undertaken.

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