ICZM Status around the North Sea

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1. Introduction

The coastal area contains diverse and productive habitats important for human settlements, development and local subsistence. More than half the world's population lives within 60 km of the shoreline, and this could rise to three quarters by the year 2020. Many of the world's poor are crowded in coastal areas. Coastal resources are vital for many local communities and indigenous people.

According to the European Environment Agency (EEA, 2006), the North Sea Region is the second largest sea in Europe with its 750,000 km^2 – only exceeded by the Mediterranean Sea. However, the length of the North Sea coastline is much shorter than the Baltic and Mediterranean seas. Additionally, the North Sea Regions is characterised by: a) Highest level of urbanisation (17 % of the coastal zone); b) Highest armouring of the coast including defences and harbours; c) Severe erosion problems, with 20 % of North Sea coast eroding; d) Highest level of protection in terms of number of Natura2000 sites.

The North Sea is one of the world's most important fishing grounds, and the sea bed is also rich in oil and gas. All these resources are intensively exploited, and the anthropogenic impacts have been significant for many years. Marine ecosystems are under intense pressure from fishing, nitrogen input from air and rivers, recreational use and habitat loss. Most notable are the effects of fisheries and eutrophication. Over the last decade, there has been an increasing awareness of and concern for the impaired status of several of the North Sea's commercially important fish stocks, as well as the impact of fisheries on other parts of the ecosystem. North Sea coasts have the highest level of urbanisation with high economic and population concentrations and are most vulnerable to coastal zone flooding. Resulting inundations may become additional sources of pollution for the sea.

In 1992, at the Earth Summit in Rio de Janeiro, the need for environmental action for oceans and coastlines was recognised in chapter 17 of Agenda 21. Coastal States committed themselves to integrated management and sustainable development of coastal areas and the marine environment under their national jurisdiction. This should be achieved by: a) Providing for an integrated policy and decision-making process, including all involved sectors; b) Identifying existing and projected uses of coastal areas and their interactions; c) Concentrating on well-defined issues concerning coastal management; d) Applying preventive and precautionary approaches in project planning and implementation, including prior assessment and systematic observation of the impacts of major projects; e) Promoting the development and application of methods, such as national resource and environmental accounting, that reflect changes in value resulting from uses of coastal and marine areas, including pollution, marine erosion, loss of resources and habitat destruction; f) Provide access for concerned individuals, groups and organisations to relevant information and opportunities for consultation and participation in planning and decision-making at appropriate levels.

2. International legislation related to the coastal zone

Before examining EU policy there are several international laws that must be considered first as they have an impact on both EU policy and the UK legal framework.

The UN Convention on the Law of the Sea states the jurisdictional rights for the internationally recognised maritime zones displayed in Figure 1. The Convention also states that each coastal state has an obligation to protect and conserve all living resources in the 200 mile Exclusive Economic Zone (EEZ) limit.

The International Maritime Organisation (IMO) was established in 1948 and addresses a number of conventions concerning marine pollution from oil spills, ballast waters and the prevention of collisions at sea.

The Convention for Biological Diversity (CBD) entered into force in 1993 and has set a 2010 biodiversity target to significantly reduce the current rate of biodiversity loss at global, regional and national levels along with a 2012 target for the establishment of a global network of Marine Protected Areas (MPA).

OSPAR came into force in 1998 and is the current legal instrument guiding international co-operation of the protection of the marine environment in the North East Atlantic. Annex 5 deals with the protection and conservation of ecosystems and biodiversity in the marine area and Appendix 3 identifies known activities in relation to 5. OSPAR also has a goal of establishing an ecologically coherent network of MPA's by 2010. In relation to monitoring the marine environment, a set of ecological quality objectives for the North Sea has been produced.

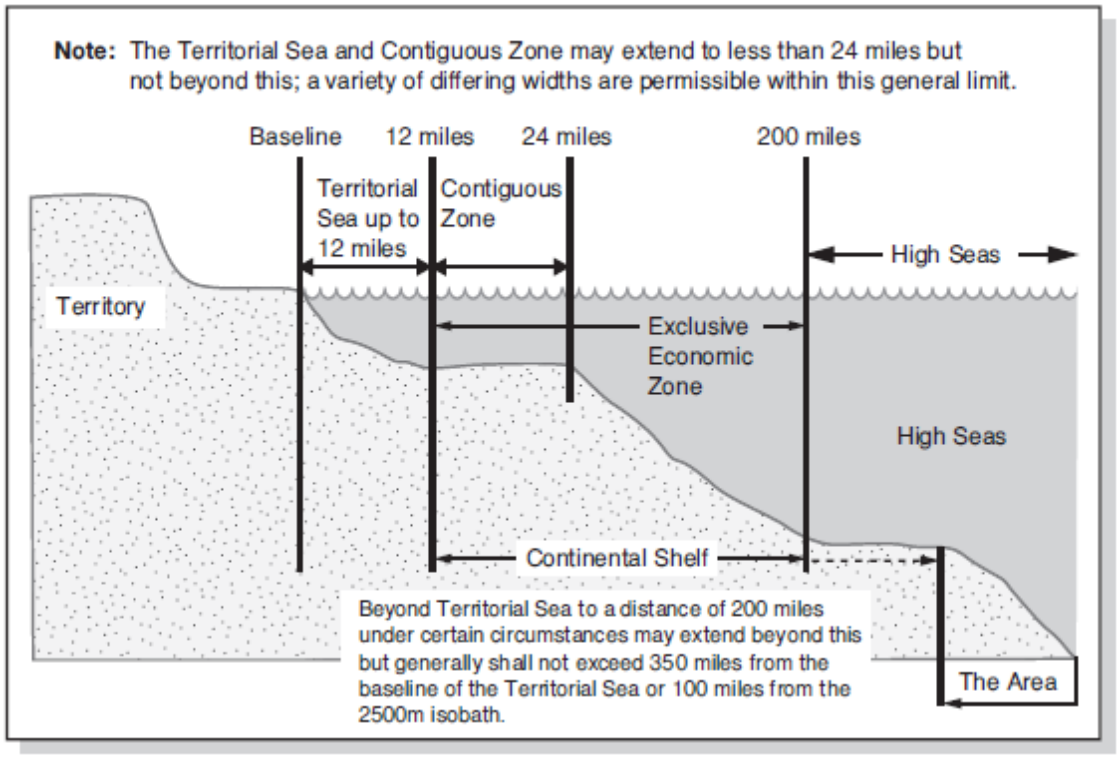

Figure 1: Jurisdiction Rights for Coastal States, (Side, 2008)

3. The European approach to ICZM

A sustainable development and the harmonization of nature protection with economic and social development are the main objectives of Coastal Zone Management (ICZM). The European Community plays an active role in promoting ICZM in Europe. The EC developed a strategy and funded demonstration projects in many European countries.

3.1 Developments at European level

The development of a European strategy for an integrated coastal zone management occurred in different phases. The most important key moments are mentioned in brief below. This process resulted in the approval of a European Recommendation, which was based on a number of important definitions and principles.

1994: In the **Council Resolution** of **6 May 1994** on a Community strategy for integrated coastal zone management (94/C 135/02), the European Union requested the Member States to increase the protection of coastal zones throughout the Community.

1996: The European Commission started a **demonstration programme** around sustainable coastal management. Thirty-five projects were approved and six thematic studies developed. A project was also further developed by the Flemish Region (TERRA-CZM). This programme was aimed to: provide technical information about sustainable

coastal zone management; facilitate a broad debate among the various actors involved in the planning, management or use of European coastal zones; and obtain consensus regarding the measures necessary in order to stimulate ICZM in Europe.

2000: In the **Communication of the Commission** to the Council and the European Parliament concerning integrated management of coastal zones (COM (2000) 547 definitive), a strategy was proposed to promote a joint approach to coastal zone planning and management at the European level. In this, the European Union provides leadership and guidance to support implementation of Integrated Coastal Zone Management by the Member States at local, regional and national level.

2001: Most elements had already been discussed and a joint position in the European Council concerning the draft recommendation was achieved under the Belgian presidency.

2002: On **30 May 2002** the **Recommendation** concerning the implementation of an Integrated Coastal Zone Management (ICZM) in Europe was approved by the European Parliament and the European Council (2002/413/E C, published on 6.6.2002). This Recommendation was based on article 175 of the Treaty of Nice (the European Treaty). This article provided the European Council with the possibility of elaborating measures for protection of the environment. In this Recommendation, the European Member States were requested to develop one or more national strategies for their coastal policies, taking account of the strategy for sustainable development. Drawing up a national stocktaking of the major players, laws and institutions, which influence coastal zone management, was part of this.

2006: The national strategies for ICZM from the member states should be delivered to the European Commission. During 2006 and the beginning of 2007 the Commission reviewed the experience with the implementation of the EU ICZM Recommendation.

2007: The Commission Communication of 7 June 2007 (COM, 2007) presents the conclusions of this evaluation exercise and sets out the main policy directions for further promotion on ICZM in Europe.

2008-2009: The European Commission have launched a review of the EU ICZM Recommendation. The evaluation showed that while the ICZM approach and principles were valid and could still support ICZM implementation in the immediate future, in the mid-term the need for a new or revised instrument would need to be reviewed.

2010-2011: An impact assessment is conducted to explore the need and options for future EU action and to assess potential social, economic and environmental consequences that new initiatives proposed by the European Commission may have. In March 2011 the Commission launched an on-line public consultation, to seek the views of stakeholders and all interested parties to inform the impact assessment. To complete

the consultation the European Commission organised a public hearing in May 2011 to discuss options for future EU action in the field of Integrated Coastal Zone Management. All those interested in coastal planning and management were invited to participate.

In 2010, the EU already set a significant step forward in strengthening the legal frame-work for integrated coastal zone management in the Mediterranean: On 13 September 2010, the Council adopted the decision to ratify the ICZM Protocol to the Barcelona Convention. For developing an integrated coastal zone management, use is made of the following definitions:

Integrated Coastal Zone Management: a continuous process with the overall objective of the implementation of sustainable development in the coastal zone by means of optimal management of human activities in this zone, in order to improve the condition of the coastal environment and to maintain its diversity (European Commission, 1999)

Coastal zone: the strip of land and sea of varying width that consists of a terrestrial component influenced by its proximity to the sea and a marine component influenced by its proximity to the land, and comprises the natural coastal systems and the areas where human activities involve the use of coastal resources

Coastal zone management is based on the eight principles:

- a broad overall perspective (thematic and geographic) which will take into account the interdependence and disparity of natural systems and human activities with impact on coastal areas;
- a long-term perspective which will take into account the precautionary and the needs of present and future generations;
- 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;
- 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;
- working with natural processes and respecting the carrying capacity of ecosystems, which will make human activities more environmentally friendly, socially responsible and economically sound in the long run;
- involving all the parties involved (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;
- 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. Partnerships with and between regional and local authorities should apply when appropriate; and
- use of a combination of instruments designed to facilitate coherence between sectoral policy objectives and coherence between planning and management.

According to McKenna et al. (2008) the eight principles can conveniently be divided into three groups based on their different targets: strategic principles, local principles, and procedural principles.

Strategic principles

- The first and most important of the strategic principles are the recommendation of adopting a broad holistic perspective - advocating for taking a 'systems' approach to ICZM due to the interaction between the physical, biological, cultural and socio-economic processes shaping the coastal zones. The delineation of the coast according to administrative or jurisdictional boundaries does not facilitate effective ICZM. Therefore, it is important to take a more wide-ranging perspective, which traces coastal influences to the extent of their natural and/or social boundaries (Ruppert Consult, 2006).

- The second strategic principle addressing the long-term perspective encouraging ICZM strategies that consider the future generations and long-term impact assessments of management decisions is responsible for the sustainability dimensions of integrated coastal zone management. This requires taking into account the well-established precautionary principle (McKenna et al., 2008).

- The third strategic principle takes outset in the natural processes and ecosystems of the coastal zone, in order to mitigate potential negative impacts of coastal engineering – e.g. coastal defences.

Local principles

- Besides taking the wide-ranging perspectives – spatially and temporally, it is necessary to compliment the approach by addressing the local specificity and the great diversity of the European coastal areas. This will make it possible to respond to their practical needs with specific solutions and flexible measures. The downside of local specificity is that, in practice, it is too often used as an excuse for special pleading the self-interest of individuals or small groups at the expense of the public good or long-term sustainability (McKenna et al., 2008).

- The second of the recommendations among the local principles is concerned with involving all the parties in the management process, for example by means of agreements based on shared responsibility. It is generally recognised that collaborative planning involving all stakeholders in the formulation and implementation of ICZM plans can increase the accountability. However, this principle does not introduce any-

thing new because public participation is already required according to several legal frameworks like for example the Water Framework Directive and the Environmental Impact Assessment Directive.

- The third local principle aiming at adaptive management means adjusting the ICZM process as problems and knowledge develop.

- Adaptive management during a gradual process, which will facilitate adjustment as problems and knowledge develop, constitutes the third local principle. This emphasizes the need for a sound scientific basis concerning the evolution of the coastal zone.

Procedural principles

- While the principle on participation ensures the involvement of all stakeholders in the development and implementation of ICZM, there is also a need to ensure support and involvement in the process by all responsible administrations - horizontally (between government departments) and vertically (between local, regional and central government).

- Effective implementation of ICZM involves the utilisation of multiple instruments including a mixture of legislative measures, policy programmes, economic incentives, technology solutions, research, voluntary agreements and education. The mix to be applied depends on the specific situation, which will differ according to: the geographic area, the nature of the issues to be addressed, the level of participation and cooperation among stakeholders, institutional structures, the legal basis of the initiative and the level of political and financial support available (Ruppert Consult, 2006).

Several types of integration can be achieved by the ICZM process. The terms ‘vertical integration’ (across levels) and ‘horizontal integration’ (across sectors) are commonly used to describe two primary types of integration perceived as important for effective ICZM. Other types of integration include international integration, which is particularly relevant across shared borders; integration of government and non-government organisations; and the integration of science and management. Thus public participation is a fundamental dimension of ICZM.
The Communication explains how the Commission will be working to promote ICZM through the use of Community instruments and programmes. The EU Recommendation outlines steps, which the Member States should take to develop national strategies for ICZM. The national strategies are due for spring 2006 and should involve all the coastal stakeholders.

3.2 Policies and legal frameworks models

Because Integrated Coastal Zone Management covers in practice all aspects in the coastline of Europe, ICZM will inevitably affect and be affected by several EU policies

and legal frameworks (Directives). The wide range is furthermore extended by the fact that ICZM covers as well terrestrial and marine domains. Some policies and legislation provide mutual support, whereas others counteract each other. Below, we shortly list the most important policies and legislation and discuss their role in ICZM in a European context.

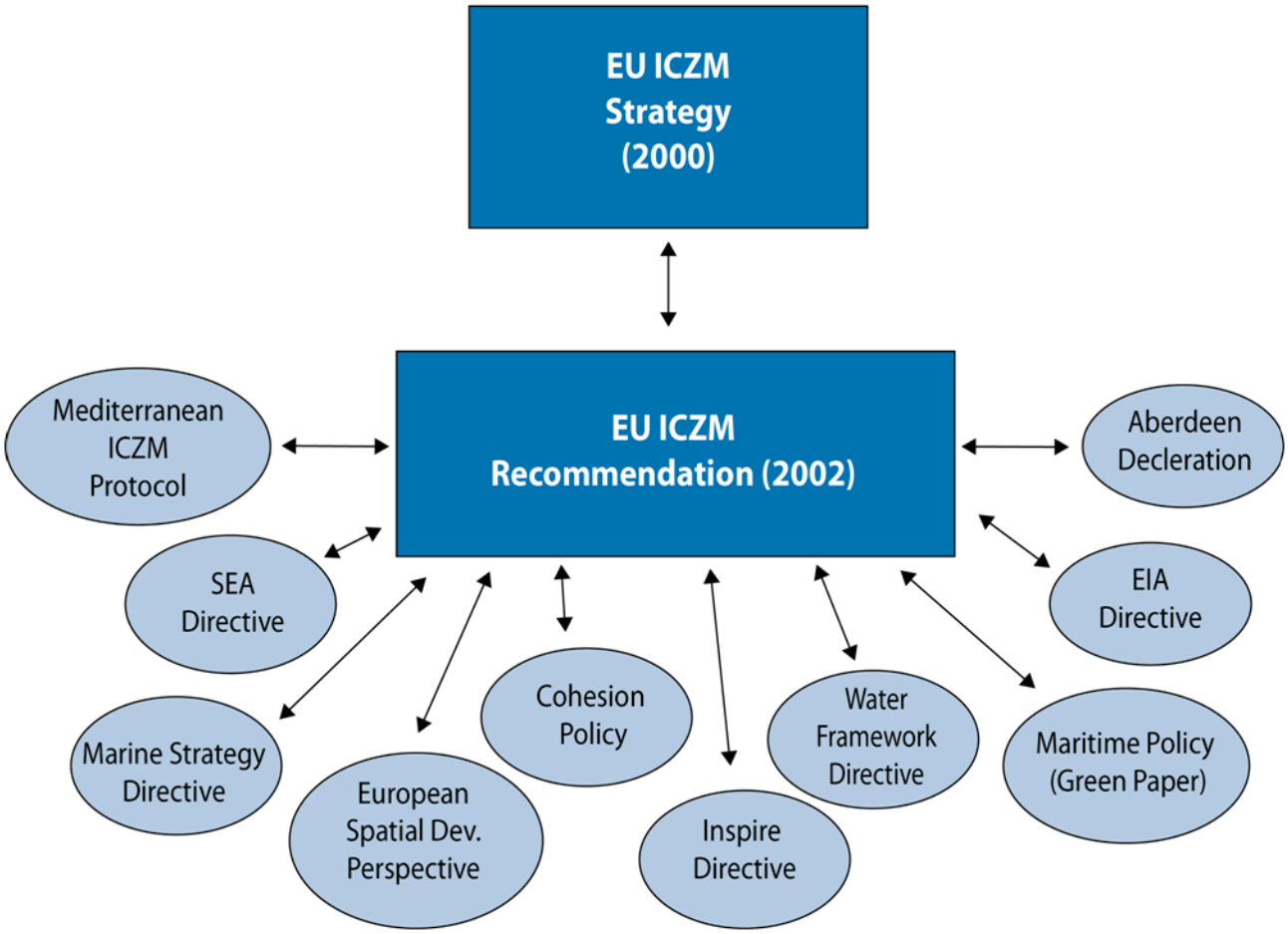

Figure 2. EU policies and directives related to ICZM

3.3 EU policies with relationships to ICZM

The Lisbon Strategy was set up by the EU as an ambition to bring about economic, social and environmental renewal in the EU by defining the target that the European Union should be the most competitive region in the world by 2020. Thus, a stronger economy shall drive job creation alongside environmental and social policies that ensure sustainable development and social cohesion. This strategy is clearly in line with the integrated approach of IZCM with equal priority to the economic, social and environmental dimensions of sustainability, however generally there has been a tendency to consider the Lisbon as an economic growth strategy, with less focus on the environment.

The European Union's so-called Cohesion Policy assumes that a redistribution of wealth between richer and poorer regions in Europe is a prerequisite for a more balanced economic integration and overall development. The Cohesion Policy financed through the Regional Funds is the second largest item in the EU budget, accounting for about 35% of total expenditures. It is argued that measures generated under this policy might e.g. be used in remote and underdeveloped areas through improving their infrastructure and making them more accessible for short-term economic exploitation and thereby violating sustainability. Because, the coastal areas of the North Sea region is less developed these areas have received financial support for many infrastructure projects during the last 20 years.

Common Agricultural Policy reform
By acknowledging that 80% of the ocean pollution results from land based human activities – not at least from agriculture - puts a clear link between marine and terrestrial environment including sea/land interface and therefore, the coastal zones.

The Common Fisheries Policy was established in 1983 and oversaw the management of fisheries and aquaculture. However it was reformed in 1992 to ensure the sustainable exploitation of all living aquatic resources using a precautionary approach to an ecosystem based management plan.

The European Spatial Development Perspective (ESDP) aims at a balanced and sustainable development of the European territory by working for economic and social cohesion, wise management of the natural resources and cultural heritage, and a more balanced competitiveness of the European territory. Thus the visions of ESDP coincide with the eight principles of ICZM as outlines above.

The launch of the Integrated Maritime Policy for the European Union in 2007 served as important factor that stimulates consolidation of coastal and marine information to support policy implementation. The policy's action plan provides approaches for maritime governance, research and planning relevant to information. In particular, roadmap for maritime spatial planning stimulates development of coastal and marine GIS.

Marine Spatial Planning is a holistic process that builds on the ecosystem-based approach and aims to secure sustainable development balancing economic, social and environmental objectives. November 2008 the European Commission adopted the Communication Roadmap on Maritime Spatial Planning: Achieving Common Principles in the EU. Maritime Spatial Planning (MSP) is a key tool to implement the new Integrated EU Maritime Policy. Marine Spatial Planning is different from terrestrial planning constantly operation in a three-dimensional environment and has to simultaneously address activities that take place (a) on the sea bed; (b) in the water column; and (c) on the water surface (Schaefer, 2009).

The EU White Paper on Adaptation to Climate Change is a framework on how to reduce Europe's vulnerability to the impact of climate change. The White Paper requires a coherent and integrated approach to maritime and coastal planning and management, including the Integrated Coastal Zone Management Recommendation being fully respected and strengthened. The follow-up to the Roadmap for Maritime Spatial Planning will also incorporate adaptation to climate change into maritime and coastal management. Over the near term, adaptation will be integrated into existing EU water legislation and policies, in particular in the development of river basin management plans under the Water Framework Directive. A guidance document with presentation of best practices was published by the end of 2009 to ensure that the River Basin Management Plans take climate change into consideration. Climate change is integrated in the implementation of the Marine Strategy Framework Directive, which requires the achievement of good environmental status for EU's marine waters by 2020.

The Water Framework Directive is complemented by the Floods Directive, which provide a more specific framework for adapting to the key water-related impacts of climate change.

3.4 Legal frameworks with relationships to ICZM

The Marine Strategy Framework Directive aims to protect and restore Europe's oceans and seas and ensure that human activities are carried out in a sustainable manner so that current and future generations enjoy and benefit from biologically diverse and dynamic oceans and seas. This directive represents a new legal instrument for the seawards side of ICZM. The Marine Strategy Directive calls for the development of a marine strategy by each Member State.

By 2012, they must provide a comprehensive assessment of the state of the environment, identifying the main pressures on their respective marine regions, and defining targets and monitoring indicators. By 2015, they will have to develop coherent and coordinated programmes of measures. To reach the 2020 target, they will have to achieve efficient communication and close cooperation, notably through regional sea conventions like the Helsinki Convention and the Barcelona Convention.

The Water Framework Directive (WFD) has the purpose of establishing framework legislation for the protection of inland surface waters, transitional waters, coastal waters and ground water. For each river basin district a river basin management plan shall be established and updated every six years. The main target of the WFD are inland waters, but coastal waters up to one nautical mile off the coastal baseline are explicitly included. The Water Framework Directive and the EU ICZM Recommendation provide good opportunities for coupling coastal zone management with river basin management.

The objectives of the Birds Directive are to protect, manage and regulate all bird species naturally living in the wild within the European territory of the Member States, including the eggs of these birds, their nests and their habitats, and regulate the exploitation of

these species.

The Habitats Directive is intended to maintain biodiversity in the Member States by defining a common framework for the conservation of wild plants and animals and habitats of Community interest. The Directive establishes a European ecological network known as Natura2000. The Habitat Directive provide together with the Birds Directive important legal instruments for protection of coastal ecosystems.

The Renewable Energy Directive sets ambitious targets for all Member States, such that the EU will reach a 20% share of energy from renewable sources by 2020 and a 10% share of renewable energy specifically in the transport sector. Wind energy is one of the most promising renewable energy technologies, and is an area in which there have already been many developments and improvements to make electricity generation more effective. Between 1995 and 2005, cumulative wind power capacity in the EU increased by an average of 32% per year. However, recently there has been a shift from land based wind energy plants to offshore wind parks. This development necessitates a holistic integrated planning in the coastal zone. Within the field of renewable energy in the coastal zone ocean energy has gained attention, and the European Commission has launched several demonstration projects to potential of electricity production from waves, tides, marine currents, salinity gradient and temperature gradient.

The EU Floods Directive from 2007 requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. With this Directive also reinforces the rights of the public to access this information and to have a say in the planning process. The Flood s Directive Requires Member States to take a long-term planning approach to reducing flood risks in three stages: a) by 22 December 2011, Member States shall complete a preliminary flood risk assessment for each of their river basins and associated coastal zones; b) by 22 December 2013, Member States shall ensure that flood hazard maps and flood risk maps for the areas identified under the preliminary flood risk assessments as areas where potential flood risk exist are completed These maps will identify areas with a high or low probability of flooding; c) by 22 December 2015, Member States shall ensure that flood risk management plans for the areas identified above are completed.

The role of the Strategic Environmental Assessment (SEA) Directive is to provide for a high level of environmental protection and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes. The purpose of the SEA-Directive is to ensure that environmental consequences of certain plans and programmes are identified and assessed during their preparation and before their adoption. The Directive is essential for addressing conflicts in the long-term development of coastal zones and for creating synergies with ICZM.

The Environmental Impact Assessment (EIA) Directive aims to ensure that environmen-

tal consequences of projects are identified and assessed before approval of a project or an investment. The EIA procedure ensures that environmental consequences of projects are identified and assessed before authorisation is given to a project or an investment.

The INSPIRE Directive came into force on May 2007 and is a framework directive that will be implemented step-by-step until 2019.

The objectives of the INSPIRE directive are to create a spatial data infrastructure for the European Union. This will enable the sharing of environmental spatial information among public sector organisations and better facilitate public access to spatial information across Europe.

A European Spatial Data Infrastructure will assist in policy-making – including Integrated Coastal Zone Management across boundaries.
INSPIRE is based on a number of common principles:

- Data should be collected only once and kept where it can be maintained most effectively.
- It should be possible to combine seamless spatial information from different sources across Europe and share it with many users and applications.
- It should be possible for information collected at one level/scale to be shared with all levels/scales; detailed for thorough investigations, general for strategic purposes.
- Geographic information needed for good governance at all levels should be readily and transparently available
- Easy to find what geographic information is available, how it can be used to meet a particular need, and under which conditions it can be acquired and used

GMES - the European Global Monitoring for Environment and Security was established by a special GMES Regulation in 2010. GMES aims to deliver information on environment and security, which corresponds to user needs. The GMES services can be divided into:

- land, marine and atmosphere services - providing systematic monitoring and forecasting the state of the Earth's subsystems at regional and global levels
- emergency and security services - providing support in the event of emergencies and humanitarian aid needs, in particular to civil protection authorities, also to produce accurate information on security related aspects
- climate change service - helping to monitor the effects of climate change and assessing mitigation measures.

4. National ICZM practices around the North Sea

The International and EU legislation regarding the coastal zone define the frame within which the national policies and practices can be developed. Not at least the policies and directives from the European Union limit the room for serving national and local inter-

ests. Nevertheless, there are many significant differences between the national implementations. Below we explore and describe the national ICZM implementations in the EU Member States Denmark, Belgium and United Kingdom, and Norway which not member of the EU but generally follow and implement many EU policies in their national legislation.

4.1 ICZM in Denmark

Denmark has a long tradition for regulation and planning in the coastal zone. This situation explains the relatively well-preserved natural and cultural heritage of Danish coastal landscapes.

Many interests are today at stake in the Danish coastal zone. The majority of the population is resident in urban zones in the coastal areas, and the greater part of the summer cottages and other holiday and recreation facilities are situated here. At the same time, the near-shore waters and the interface between land and sea are the basis for fishing, marine aquaculture, extraction of raw materials, land and sea transport, harbour activities, agriculture etc.

Significant changes in the Danish planning system – including planning for coastal areas – has taken place due to a restructuring of local and regional authorities. The so-called structural reform reduced the number of local authorities from 274 to 98 and at the same time to reduce the 14 regional authorities in number to 5 with less power and scope. Planning and environmental responsibilities formerly vested in the regional authorities have been transferred to local and state authorities in 2007.

Integrated management of the coastal zone may be difficult to identify in legislation as well as in management practice. The legal and regulatory framework for the Danish coastal zone is scattered across a number of different regulatory systems. The most characteristic feature is the fairly clear split in powers as regards management on land and sea respectively. The regulatory system that governs land areas and land-based activities is characterised by powers vested in the local authorities and by a comprehensive planning system embedded in the Planning Act. The regulatory system that governs sea areas is characterised by a sectoral approach – harbours, fishery, navigation, energy installations etc – and by powers vested in national authorities embedded in the State Supremacy over the sea. There are only few co-ordination or integration requirements between these two regulatory systems.

The most important laws for protection of the coastal land areas are the Planning Act (8) and the Nature Protection Act (9). The Planning Act establishes a 3-kilometre inland coastal planning zone (outside urban zones) in which planning for new activities, etc. is restricted. Planning for new recreational facilities, urban areas etc. require a specific planning-related or functional justification.

Within existing urban areas the visual interference with coastal areas should be given particular attention. The Planning Act does not, however, require separate coastal zone planning – coastal protection considerations should be integrated into regional, municipal and local planning. The Nature Protection Act lays down a 300-metre in-land prohibition zone along almost the entire Danish coast. However, in summer cottage areas the protection zone is reduced to 100 metres and urban areas are exempted from the regulation. A National Beach Protection Commission has recently determined the exact delimitation of the 300-metre beach protection zone. New activities, construction works, afforestation etc. are prohibited in the beach protection zone, unless particular circumstances indicate a need to grant an exemption. The Nature Protection Act also ensures public access to the coast.

Relevant authorities according to the Planning Act and the Nature Protection Act are national and local authorities. The Planning Act also provides for public participation in planning procedures and environmental impact assessment procedures.

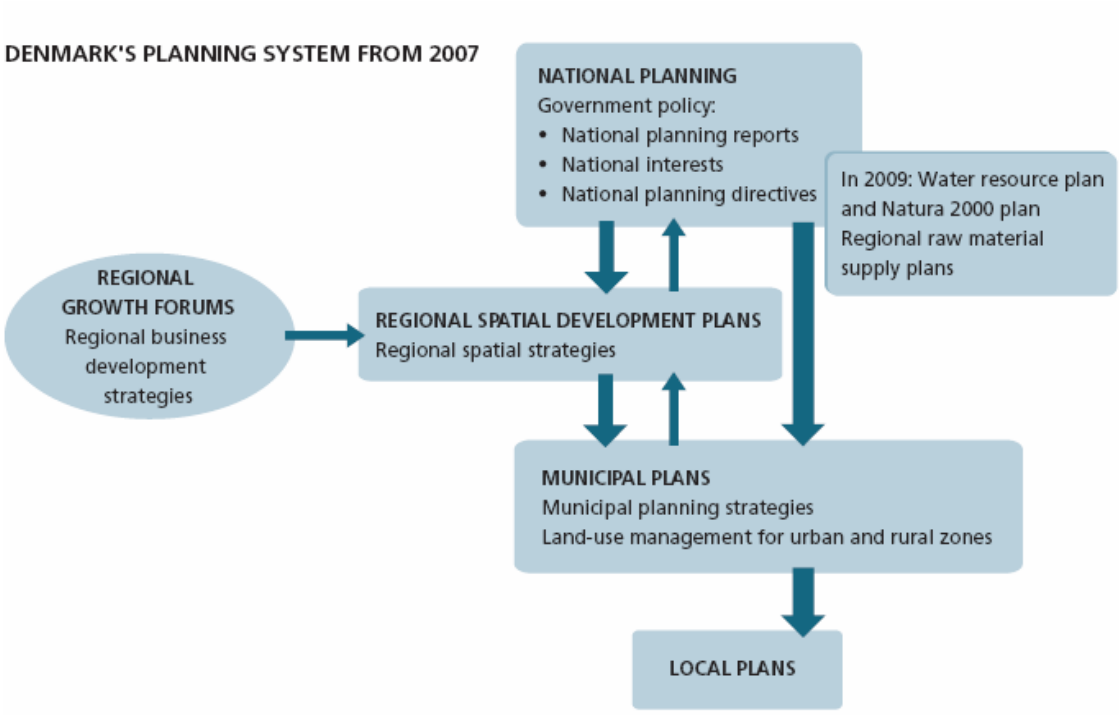

Figure 3: Planning structure in Denmark (Ministry of the Environment, 2006)

The Planning Act, however, focuses on land-based activities. Municipal planning aims to co-ordinate different land use interests, which are regulated more specifically by other pieces of legislation, e.g. the Environmental Protection Act, the Raw Materials Act (11), the Water Supply Act, the Forest Act and the Agricultural Act (14). The Municipal plans provide guidelines for administration and planning by the local authorities.

Sea-based activities are mainly regulated by sectoral laws, e.g. the Marine Environment Protection Act, the Raw Materials Act, the Harbour Act and the Fishery Act. The relevant level of decision-making is normally the state authorities. The Coast Protection Act deals with primarily coast erosion issues and the Danish Coastal Authority under the Ministry of Transport administers the Act. The Danish Coastal Authority also controls and administers the State Supremacy of the sea and may grant permits for different kinds of activities on the sea territory.

The legal and regulatory framework thus displays an array of different laws, measures and authorities relevant to the coastal area. Together with the relatively strong separation of powers as regards land-based and sea-based activities, there is a clear obstacle to integrated coastal zone management, which has been confirmed in management practices.

However, a number of new legislative instruments may promote integration of coastal zone interests. Such instruments are, inter alia, planning and co-ordination requirements, environmental impact assessment requirements, hearing and cooperation procedures and requirements for public participation. It is possible to distinguish between two different tendencies of integration in legislation - namely (a) strengthening of the role of planning and (b) incorporation of cultural heritage, environment and nature protection interests into sectoral legislation.

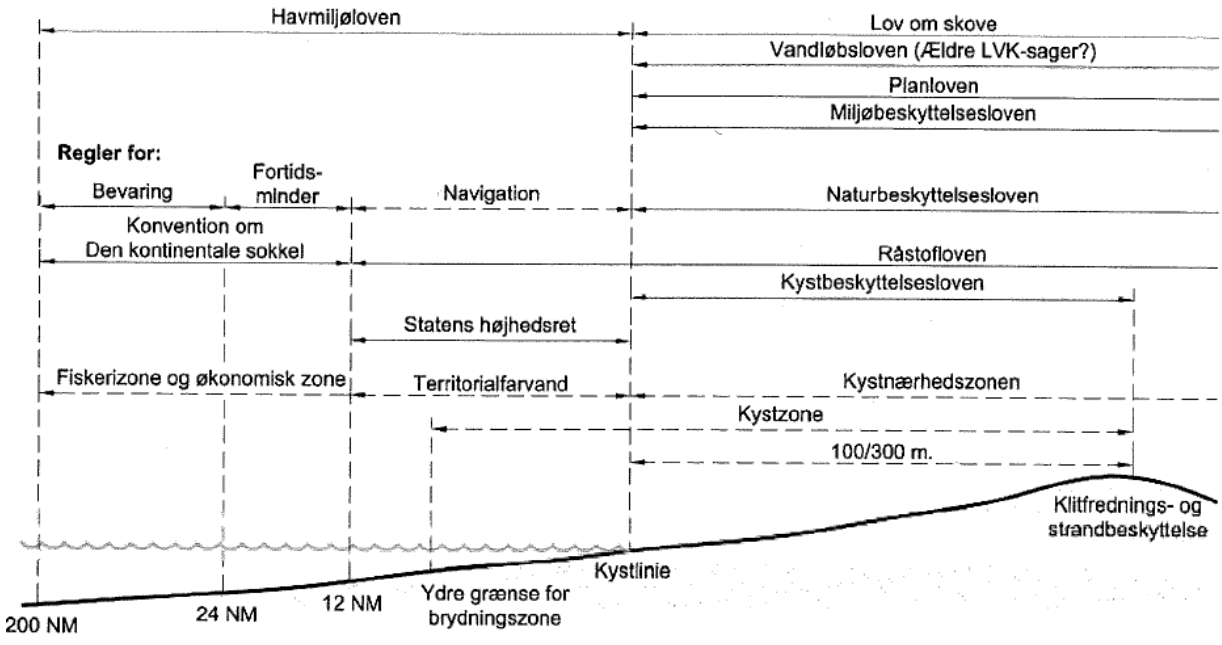

Figure 4. A summary of laws around the Danish shoreline (Slagelse Municipality, 2009)

Planning is generally an integrative instrument as regards vertical and horizontal integration. There is a general trend of integration via the planning process. Environmental provisions and co-operation requirements have increasingly found their way into sectoral legislation. Examples of this include high-speed ferries, coastal protection measures, raw material extraction, agriculture etc. However, some inadequacies are still found, e.g. as regards harbours and other sea-based installations. In these circumstances there are no formal co-ordination or integration requirements apart from a general consultation between State authorities.

Sector Planning	**Land**	**Sea**
National Level	Coastal protection	Fishing
	Sea defence	Shipping
	Nature protection	Exploitation of resources
	Exploitation of resources	Raw materials
	Military	Navy
Regional Level	Raw materials	
	Contaminated land	
Local Level	Nature protection	
	Waste management	Harbour owner and administration
	Water catchment planning	
	Cultural heritage	

Figure 5. Examples of sector planning at three levels of government

Environmental impact assessment (EIA) is an integrative instrument, which comprises both horizontal and vertical integration aspects, i.e. between different sectors and between levels of decision-making, including public participation. Assessments of both projects and plans are important in this respect. The EU Strategic Impact Assessment Directive requires strategic environmental assessment of i.e. municipal plans. Since the procedural requirements differ it is necessary to distinguish between assessment of land-based activities according to the Planning Act and assessment of sea-based activities according to sectoral legislation.

According to the Planning Act extensive consultation of relevant authorities and public participation is required during the EIA process whereas public participation and consultation requirements are much weaker as regards sea-based activities.

Procedures for *consultation or hearing* of relevant authorities and organisations are often part of the legislative requirements, e.g. in relation to environmental impact assessment,

or part of more informal procedures, e.g. co-operation between authorities and establishment of ad-hoc fora.

Consultation requirements often intend to achieve horizontal integration of sector interests. It may, however, also reflect a vertical integration, in particular when planning authorities at various levels are involved.

The Danish administrative culture that emphasizes informal personal contacts cutting across different authorities and levels of administration also represents an important, yet informal and not very transparent, integrative element.

4.2 ICZM in Belgium

Developments on the Belgian level

This chapter goes into more detail on the way in which a concrete form is given to integrated coastal zone management in Belgium, by the creation of new (or the adaptation of existing) management and cooperation structures on the one hand, and by the development of projects and other initiatives on the other. However, in order to avoid confusion, it is important to begin with a brief sketch of the often complex division of jurisdictions between the various governments in Belgium

The division of responsibility

The management of the coastal area is a matter in which the national (federal), regional (Flemish), Provincial and local (municipal) governments have jurisdictions and responsibilities. This necessitates close cooperation between federal state and region in determining coastal policy and management.

Coastal zone management on land falls under federal and Regional jurisdiction, whereas the federal government (barring a few exceptions) is competent for taking management measures at sea. The dividing line between land and sea is formed by the provincial frontier of West Flanders, which is bounded on the seaward side by the baseline or the mean low-water line along the coast.

However, divergent laws can assign jurisdictions at sea to the Flemish Region. For example, the Law of 8 August 1988 (B.S. 13 August 1988) provides explicitly for the execution of activities and works in the Belgian part of the North Sea that are necessary for the exercise of regional powers (waterways, harbours, coastal defence, pilot services, rescue and towing services at sea). Jurisdiction for fisheries was also transferred in 2001 from the federal state to the regions.

Evolution in management and cooperation structures

A number of management and cooperation structures that play or have played a part in the implementation of sustainable and integrated coastal zone management in Belgium are outlined here. It is important to point out that the success of a cooperation formula

must be seen in relation to a spirit of good cooperation between the members within these structures.
The list in this chapter is not a limited list, there are a lot of other management an cooperation structures that are playing a role in the implementation of sustainable and integrated coastal zone management (for more information: http://www.west-vlaanderen.be/provincie/beleid_bestuur/gebiedsgerichte_werking/kustbeheer_en/Documents/kustbeheer_ICZM_rapport_ENG.pdf).

2001: Establishment of the Coordination Centre for Integrated Coastal Zone Management (ICZM)
As a continuation of the TERRA Coastal Zone Management project (see below), in 2001, in the context of the Objective-2 Coast Programme (European Fund for Regional Development), an application was submitted for the “establishment and development of a Coordination Centre for Integrated Coastal Zone Management”. Resources were allocated for three years. The partners in this project were the province of West Flanders (project leader) and Department of Nature (department of the Environment and Infrastructure) of the Ministry for the Flemish Community.

For the period 2004-2007, in addition to the province of West Flanders and the Department of Nature, and also the Marine and Coastal Services, Coastal Division (MCS-Afdeling Kust) signed a new agreement for the continuation of the Coordination Centre. Both departments have a key role in the management of the coastal zone. In view of the fact that the European Recommendation mainly emphasises the environmental aspects of Coastal Zone Management with the objective of pursuing an integrated national implementation, whereby not only regional but also Provincial and municipal levels are highly involved, the FPS Environment decided at the end of 2004 to take part in the activities and to help finance the operation of the Coordination Centre for Coastal Zone Management (See also further).

2003: Belgium given a Minister for the North Sea
This minister assumes the political coordination between the actors involved in the management of Belgian Marine areas.

2003: Establishment of the Coastguard
With a view to improved coordination of the actions of the Belgian State at sea, a national coastguard was set up in 2003, under the Minister of Internal Affairs (Royal Decree of 13 May 2003). The “coastguard” structure consists of a policy body, a permanent secretariat and a consultative platform. Decisions are taken by consensus.

In the exercise of State jurisdictions in Belgian marine areas (the coastguard only operates at sea), several federal government departments (FPSs), programming government departments (PPSs) and ministries were working together. In this system, Flanders was an observer. Representatives of the Flemish government attended the meetings. In or-

der to achieve efficient exercise of powers, it is important that these departments can work together and operate in a coordinated way, can call on each other's expertise as well as on the information that each of these departments have at their disposal.

2004: Establishment of the Marine Environment Department within FPS Environment

FPS Environment established a new Marine Environment Department to follow up inter alia the above recent developments in a coherent and centralised manner. This department subsequently also became a partner of the ICZM Coordination Centre and in addition contributed to the financing of this structure.

2006: The Establishment of the Agency for Maritieme Services for the Coast

On 1 April 2006, the Agency for Maritime Services for the Coast became operational. It is a collaboration of the Coastal Division 'Coastal defence and yacht harbours', the Flemish hydrography and Hydrometeo and the departments Fleed and Shipping Assistance Division.

The Agency for Maritime Services and for the Coast (MCS) of the Flemish authorities sees to the smooth and safe shipping traffic to and from the Flemish ports. MCS is responsible for the securing of the Flemish Coast against floods and works for the integrated and sustainable management of the coastal zone.

Its core task comprises three strategic objectives :

- Optimising cost-efficient services to the shipping traffic in order to facilitate the smooth and safe shipping traffic to the Flemish sea ports.
- Initiating and supporting assistance in order to safeguard and protect the public domain, next to primary rescues at sea.
- Implementing a seawall programme in order to protect the population against floods, thereby taking into account the other social functions of the coastal zone.

Other relevant projects, initiatives and institutes

Innovation in coastal zone management is realised on the one hand by setting up of new management or cooperation structures. However, on the other hand, certain projects and initiatives also make a considerable contribution. The number of projects that have as their main objective strengthening integration of coastal zone policy has increased steadily in recent years.

The projects respond to priorities which emerge in the process of European or federal scientific policy-making. In view of fact that priorities are defined by this process, the results of the projects must be able to support the developed policy orientations directly. In addition, although projects are always of a limited duration, their results often remain visible in the long term. It is striking that in recent years the main orientations regarding subsidy programmes are no longer formulated on a sectoral basis, but instead sustainability and cross-sector thinking are put centre stage. This creates a fertile climate for integrated projects.

In recent years, various network projects have also been set up, such as ENCORA and CoPraNet. These developments are meticulously followed up in Belgium.

The list in this chapter is not a limited list, there are more institutes, projects and initiatives that also can be placed in this list (for more information: www.kustbeheer.be http://www.west-vlaanderen.be/provincie/beleid_bestuur/gebiedsgerichte_werking/kustbeheer_en/Documents/kustbeheer_ICZM_rapport_ENG.pdf).

1998: Pilot project on Integrated Coastal Zone Management
The TERRA-Coastal Zone Management project started in the context of the European ICZM Demonstration Programme, with 1998-2000 as foreseen implementation date. The Department (Waterways) Coast (of the administration for Waterways and Marine Affairs) acted as project leader, and the province of West Flanders assumed responsibility for execution as regards to content.

1999: Establishment of the Flanders Marine Institute (VLIZ)
VLIZ aims to support and enhance the visibility of scientific research of the coast and the marine environment, inter alia by issuing an information magazine “De Grote Rede”, aimed at a wide public. The founding members are the Flemish government, the province of West Flanders and the Fund for Scientific Research

2005 -2010
During the period 2005-2010 several new initiatives and projects started, showing a concrete implementation of ICZM, or with ICZM relevant topics: e.g. Interreg project 120 km of coastal quality, ZENO, SUSCOD, BLAST,…

Partners include administrations as well as universities and scientific institutes. This shows a continued interest in the ICZM process by these partners. A collaboration between the different project is established where relevant.

Some examples:

- AMORE III - Combined Effect of Changing Hydroclimate and Human Activity on Coastal Ecosystem Health (Belgian Science Policy Office (BELSPO): http://www.ulb.ac.be/assoc/esa/AMORE/amore.htm
- SUMANOS - At present, several projects are – both with respect to contents as well as methodology – interlinked. These are the projects MAREBASSE, TROPHOS, BALANS and GAUFRE. The inter-linkages go however beyond a mere parallel and it became clear that they can gain benefit from each other’s input, knowledge, way of thinking and synergy. The proposal for this cluster therefore tries to formalize these potential synergies on the level of information exchange, methodology and research experiences. Currently, the different projects are mainly focusing on creating an inter-

nal network and trying to build a baseline on which other projects can be developed (Belgian Science Policy Office (BELSPO)) http://www.vliz.be/projects/sumanos/

- GAUFRE - Towards a Spatial Structure Plan for Sustainable Management of the Sea : GAUFRE brings together four partners in an attempt to introduce a first proposal for optimal space use planning for the Belgian part of the North Sea. Three research teams of the University of Gent (the Maritime Institute, the Center for Marine Geology and the Section of Marine Biology) worked together during two years (2003 and 2004) with the private company Ecolas nv. (Belgian Science Policy Office (BELSPO)). http://www.vliz.be/projects/gaufre/
- CLIMAR - Evaluation of climate change impacts and adaptation responses for marine activities (Belgian Science Policy Office (BELSPO)) : http://www.arcadisbelgium.be/climar/
- AS-MADE - Assessment of Marine Debris on the Belgian Continental Shelf: occurrence and effects (Belgian Science Policy Office (BELSPO)): http://www.belspo.be/belspo/fedra/proj.asp?l=en&COD=SD/NS/12A
- COREPOINT: Coastal Research and Policy Integration (Interreg IIIB, North West Europe programme): www.corepoint.ucc.ie
- IMCORE Innovative Management for Europe's Changing Coastal Resource. (Interreg IV B, North West Europe programme): www.imcore.eu.
- C-Scope: Combining Sea and Coastal Planning (Interreg IV B, 2 seas programme): www.cscope.eu
- SUSCOD: Sustainable Coastal Development in Practice (Interreg IV B, North Sea programme) www.blast.eu
- BLAST: Bringing Land and Sea togheter (Interreg IV B, North Sea programme) http://www.suscod.eu/

4.2.1 Visions and planning at coastal level

Although there is no single integrated policy document for the coast, in recent years policy documents for various sectors have been drawn up which refer to the entire coastal zone or a subzone of it. The most important are mentioned below. Naturally, many more documents have been produced about (aspects of) the coast, but a clear vision of the future development of the coast cannot always be found.

1996: Ecosystem vision for the Flemish coast

This Ecosystem vision was the policy basis for protection and restoration of the coastal ecosystem. Inter alia, the dune area purchasing policy was grafted onto this vision.

1999: The law "MMM" (law of 20 January 1999 on the protection of the marine environment in sea areas under Belgian jurisdiction)

This is a very important step for the protection of natural resources on the side seawards of the baseline. This law established the legal basis for the protection of the Belgian part of the North Sea against marine pollution and for the conservation, restoration and development of nature.

This important act summarises the general principles of environmental law:

- The prevention principle: prevention is better than cure
- The precautionary principle: preventive measures must be taken if there are grounds for concern regarding pollution
- The principle of sustainable management: human activities must be managed in such a way that the marine ecosystem remains in a condition that ensures the continued use of the sea
- The polluter-pays principle: the costs of the measures to prevent and fight pollution are to be borne by the polluter - The principle of restoration: if the environment is damaged or disrupted, the marine environment must be restored to its original condition as far as possible

The principle of objective liability is also established: in the event of any damage to or disruption of the environment in marine areas occurs as the result of an accident or infringement of the law, the party having caused the damage to or disruption of the environment is obliged to remedy the latter, even if they are not at fault.

Furthermore, the basis was established for the creation of marine reserves and the protection of fauna and flora. A general obligation was established to subject activities for which a permit is required to an environmental impact report (on the applicant's initiative) and to an environmental impact assessment, before and during these activities (by the government).

2002: The FlandersSpatialStructure Plan (FSSP) and the ProvincialSpatialStructure Plan West Flanders.
At the Flemish level, the "coast" is designated in the FSSP as an urban network. The coastal space is regarded as the belt of seaside resorts along the 'Koninklijke Baan', situated between the sea and the polder. In the Provincial Spatial Structure Plan, the coast is also designated as a separate subspace, with its own desired environmental structure. These Spatial Structure Plans are crucial for the future environmental development of the coast (on the landward side) and should consequently also impact management of the coastal space.

2003: The North Sea Master Plan
In 2003, the Minister for the North Sea formulated the objective of developing a sustainable management plan for the North Sea. It was then stated that the spatial planning of the North Sea would take place in phases and that there would be ongoing consultation with all actors concerned, taking into account the results of existing scientific studies.

In the first phase, new rules were established for sand extraction and electricity production, by inter alia delineating zones in which these activities are permitted and incorporating a sustainable approach in the approval procedure. In the second phase, protected

marine areas were delineated and the necessary management measures defined. Both phases were successfully concluded.

2008: Policy plan for the Marine Protected Areas in the Belgian part of the North Sea
(DG Environment, federal government): this plan outlines strategic options and concrete actions for the MPA's.

2009: Flemish fishery policy
Department of Agriculture and Fisheries, Flemish government): An operational programme for the implementation of the National Strategic fisheries plan has been published in 2009. In 2009 consultations started for the implementation of the action plan for sustainable development in the fisheries sector.

2009: Strategic plan for tourism and recreation at the coast
(Tourism Flanders, Flemish government, and Westtoer): strategic visioning document and action plan for the period 2009-2014.

2010: Integrated master plan for Flanders future coastal safety
(Coastal Devision-MCS, Flemish government): a master plan was agreed on in 2010 proposing general solutions to improve the coast against flooding. The time horizon is 2050. In a next phase, detailed plans for the coastal towns will be worked out.

2010: Conservation objectives for the coast
(Agency for Nature and Forests, Flemish government): specific conservation objectives for the special protection areas in Flanders –including those at the coast- have been proposed in 2010, in the frame of the implementation of the birds and habitat directive.

4.2.2 Implementation of the European Recommendation: where do we stand now?

With regard to the implementation of the European Recommendation concerning integrated coastal zone management, the Member States were requested in the first place to draw up a national stocktaking of all important actors, laws and institutions that impact coastal zone management. Subsequently, a strategy should be developed on the basis of the results of this stocktaking in order to further shape integrated coastal zone management.

A first thorough and complete analysis of the status of coastal management in Belgium was drawn up under the "TERRA – Coastal Zone Management" project (Recommendations for integrated coastal zone management in Belgium, June 2001). This report was submitted for approval to the administrations concerned but not to the general public (stakeholders). An – admittedly more limited – update of the report was drawn up by the Maritime Institute (University of Ghent) in the context of the "COREPOINT Coastal Research Policy – Integration" project. These reports were therefore created in the context of European projects.

A description of functions of and activities on the coast was published in 2004 in the form of De KustatlasVlaanderen /België (The Coast Atlas Flanders/Belgium, K. Belpaeme and P. Konings, 2004, 100p.). The Coast Atlas was designed as an attractive book of scientifically accurate photographs but which was also accessible to the general public. The book attracted much interest, not only with policymakers but also with coastal residents and interested people, who were able to buy it in bookshops. Since November 2005, the Coast Atlas is also available on-line in four languages (www.kustatlas.be).

A presentation of the condition of the coast was available for the first time in 2003 in the form of coastal sustainability indicators.

A first overview of the legislation with regard to the coast was drawn up in 2000. Since 2002, an overview is updated annually with new and amended laws, and a real Coast Codex appeared in 2004, which contains the texts of all laws concerning the coast. End 2011 an online tool will be presented. The online tool allows interactive searches for relevant articles and offers an integral and integrated state of legislation on both the seaside and the landside of the Belgian coast. An overview of sea-related legislation was also drawn up in the context of the Belgian Coastguard.

There is therefore no complete analysis in which conflicts between operating structures or between actors and gaps in the legislation are identified. However, an analysis is made on an ad hoc basis when specific actions are undertaken.

4.3 ICZM in United Kingdom

The EU policies and legislation have been transposed into UK law by a number of Acts which including:

- The Wildlife and Countryside Act 1981
- Nature Conservation Scotland Act 2004
- Offshore Marine Conservation Act 2007

Together these laws support the EU Birds and Habitats Directives. They can designate Special Areas of Conservation (SAC), Special Protection Areas (SPA), Marine Nature Reserves (MNR) and Sites of Special Scientific Interest (SSSI). Currently there are 158 MPAs in UK waters (UKMPA, 2010). These form part of the Natura 2000 network.
The Water Environment and Water Services (Scotland) Act 2003 is the vehicle for the WFD and will implement the River Basin Management Plan process to achieve good chemical and ecological status for all water bodies.

4.3.1 Coastal legislation

Generally there is a piecemeal approach to coastal legislation in the UK with a number of different bodies responsible for various duties. Coastal protection in Scotland falls to the Scottish Government, Scotland Environmental Protection Agency, Local Authorities and land owners. The Coast Protection Act 1949, Town and Country Planning Regulations 1999, Flood Defence Act 1961 and the Flood Prevention and Land Drainage Act 1997 must all be taken into account. Shoreline Management Plans are non statutory

plans designed to reduce coastal risk in a sustainable manner and form part of Defra's coastal strategy for the UK. These policies are not inclusive as there is a range of different legislation for the following groups:

- Development Control above the Low Water Mark
- Development Control above the High Water Mark
- Nature Conservation
- Fisheries
- Shipping
- Cultural Heritage and Archaeology
- Water Quality
- Ports and Harbours
- Marine Aggregate Extraction
- Offshore Energy
- Defence

Marine acts

The Marine Act (Scotland) 2009 and the Marine Coastal and Access Act 2009 were introduced to simplify this system and *deliver clean, healthy, safe, productive, biologically diverse oceans and seas by putting in pace better systems for delivering sustainable development for the coastal and marine environment* (Defra, 2010). The main provisions of both Acts include:

- Marine Planning - A new statutory marine planning system is proposed to ensure sustainable economic growth and encourage the implementation ICZM. Stakeholders would be able to work together to produce an array of marine plans to maximise and balance the various uses and resources of the UK seas. To aid in this the Royal Town Planning Institute has issued a set of appropriate guidelines applied to the marine area. The process of planning should be fully inclusive with plans and policy being value driven and action orientated. The new planning system would integrate with current statutory planning such as River Basin Management Planning and should cover all activities, constraints and obligations in the marine environment.
- Nature Conservation- UK seas are some of the most diverse in the world and our Government recognises the need to protect these with the formation of Marine Conservation Zones adding to the existing network of MPA's. This will help the UK meet its obligation to OSPAR and the CBD for a network of ecologically coherent MPA's. Programmes will be put in place to achieve and monitor our seas to meet GES under the MSFD.
- Science and Data- Good scientific understanding and data is the key to setting objectives and developing the necessary indicators to measure progress in delivering the sustainable use of UK seas. The UK Government would like to see a more focussed approach to science with the aim of making informed decisions, especially with the challenges of climate change and the increasing pressure on resources. A marine

science strategy would direct scientific effort into areas of importance and focus research effort and allow stakeholders to voice their opinions. It would coordinate science and industry and provide a coherent data capture and storage strategy.

- Marine Management Organisation - The creation of a MMO is required to raise the profile of the coastal and marine area and act as a marine champion with integrated responsibilities for UK seas. The key functions of an MMO would be to increase economic growth in the marine area, have strategic oversight for potential developments, provide a streamlined licensing function integrated with the planning system, oversight of aquaculture and wet renewables and other industries. It would ensure responsible marine planning with a key outcome to secure investment for renewable energy projects. It would ensure the availability and coordination of scientific data for the creation of objectives and decision making among policy makers
- Licensing and Enforcement – The changes to the licensing system will result in a better, more consistent licensing system with decisions delivered more efficiently. The system will be easier to understand and use and will integrate delivery across a range of sectors. The MMO will be responsible for marine consents or providing operators with a single access point to the licensing framework. Finally proper monitoring and enforcement is essential if the licensing system is to operate effectively.

The UK Government is currently working on a Marine Policy Statement (MSP) that will contribute to the development of sustainable development within the UK marine area by preparing marine plans. The overarching approach is to integrate with terrestrial planning, enable the co-existence of compatible activities when possible and manage the marine area using an ecosystems based approach (UK Government, 2010).

The MSP sets out a number of high-level objectives for managing the marine environment, one of which deals specifically with ICZM. It proposes that all stakeholders in the marine environment should be able to voice their opinion and have input into the decision making process, RBMP and ICZM should see terrestrial and marine management techniques working effectively together, international, administrative and political boundaries are taken into consideration, regulation for marine businesses is clear and user friendly and lastly an ecosystem approach is used for marine spatial planning to account for climate change and the protection of the marine environment.

As the pressure on our coastal and marine resources continues it will become more important that ICZM and MSP are interoperable and fully operational. Both EU policy and UK policy are making headway to ensure that this will happen. Although both UK Marine Acts are in their infancy they have take a huge step forward in meeting the challenges for establishing ICZM. With the MMO taking on the role of champion for the marine environment it is uniquely positioned to direct our resources, whether it is research or funding, to integrate the views of the diverse groups that use our coast for the sustainable development of our oceans

4.4 ICZM in Norway

ICZM have a long tradition in Norwegian land-area planning. The Planning and Building Act (PBA) was in 1989 also extended to include sea areas. However few municipalities and counties used these possibilities very much the first years, but early nineties more and more counties started planning also the sea areas to clarify and give priority to interests also for sea areas in the municipalities.

Specific coastal plans were made for many municipalities, however today most municipalities include the sea and coastal regulations in their overall municipal master plan. At national level there are two different approaches on coastal zone planning. One approach has gravity in North and West Norway, with emphasis on industrial development and management of sea areas and aquaculture and fisheries management as key players. The second approach with the centre of gravity of the Southern and Eastern parts of Norway, with emphasis on recreation and environmental protection and has environmental management as key players. Within both of these approaches maritime safety and transport plays a major role.

The coastal zone includes both sea and land area. How much of the land area that should be included, depends on which subjects that are of major interest. Ecological or social perspective gives different land appraisal of the coastal zone. In Norway there has been a high focus on the shoreline to ensure public access, recreation activity, and coastal ecology. Special regulations are given for the 100-meter belt in PBA, however land area further from the shoreline is also considered as the coastal zone in most cases, depending on the local situation. The possible conflicts of interest have definitely increased in the coastal zone of Norway the last decades, with increased use of the coastal areas, for instance aquaculture industry and increased recreation activity. In the last year's production of renewable energy in the coastal zone have been put on top of the agenda.

In Norway ICZM is based on two laws, namely the Planning and Building Act (PBA) and the
Act of Biological Diversity, together with the national regulations implementing the EU Water Framework Directive. Most plans are based on PBA. Plans implementing the intentions in the EU Water Framework Directive are worked out in a parallel process where the municipalities, County Councils and Ministry of Environment are responsible at the three administration levels. Planning of areas especially focusing on nature conservation are based on the Act of Biological Diversity.

In this project focus will be set on ICZM based on PBA, with a master municipal plan as main example. All municipalities shall have an overall municipal master plan that comprises a social element with an implementation element and a land-use element.

4.4.1 Three levels of public administration

Public administration in Norway has a structure with the three elements, all governed by elected boards: central government, county government and municipal government.

- The Municipalities

Local (municipality) and regional (county) authorities are the leading part in most ICZM processes according to PBA, and is responsible for the integrating process. Governmental agencies participate to the relevant degree, depending on relevance of planning objectives in the actual municipality or county. All municipalities shall have an overall municipal master plan that comprises a social element with an implementation element and a land-use element. The overall municipal master plan should be under revision every fourth year. The plan shall have an implementation element for the following four years, which shall be revised each year. The local municipality is also responsible for regulation of building activities in the coastal zone, regulated in PBA and The Harbour and Fairway Act (HFA). For building activity near shore (the 100 meter belt) the County Governor (central government) has a high influence, to ensure public access to the shore, environmental conservation, and recreational activity.

- The County Council

The County Council is the county government, responsible for regional planning. The County Council shall make guidelines for the use of land areas and natural resources in the county with regard to issues that may have considerable effect beyond the borders of a municipality or that the individual municipality cannot solve within its own area and that must be seen in conjunction with several municipalities. The County Council is given a special responsibility to safe guard recreational interests. However central government, county government and municipal government, all can involve in ensuring important recreational areas, by planning or investing. The County Council also safe guards cultural monuments, landscape values, recreational interests, and the aquaculture industry in ICZM. Cultural monuments also include sub-sea monuments and ship-wrecks. The County Council ensures that the planning processes according to PBA, have the necessary quality.

- The County Governor (The Central Government)

The Central Government has a County Governor (Fylkesmann) in each county. The County Governor is the chief representative of King and Government in the county, and works for the implementation of Storting (Parliament) and central government decisions. In planning processes according to PBA the County Governor especially represent interests on environment protection, agriculture, emergency planning, climate changes, and to avoid risk of life and health in ICZM. The County Governor explains central policy documents in the local context, being aware of each municipality's ability to provide. The County Governor's office supervise local activities, advise and instruct, with due respect to the political judgement of the local government. The different national ministries have different sector agencies responsible for given subjects and areas, participating in ICZM.

4.4.2 Sectoral agencies participating in ICZM

A number of governmental agencies represent national and regional interests in the planning processes, together with the municipality and County Council.

- The Norwegian Defence Estates Agency (Military interests)
  The Armed Forces have major interests in marine and coastal areas and military interests are taken care of by the Norwegian Defence Estates Agency in ICZM, assuring military interests are safe guarded. Military spatial interests include military installations and training areas.

- Ministry of Environment
  For the interests lying under Ministry of Environment, these are to a large extent safe guarded by the County Council and the County Governor in ICZM in municipalities; however national agencies participate in national and regional processes.

- The Directorate for Nature Management
  The County Governor together with Directorate for Nature Management is representing national interests on nature management in local, regional and national ICZM. At the regional level the County Governor is representing these interests. Nature management plans for areas with special natural values are regulated under the Act of biological diversity, and are parallel to coastal zone plans regulated under PBA. The Directorate for Nature Management is responsible for such planning processes. This also includes marine areas, where a list of 45 suggested marine areas in Norway have been given temporary restrictions. Processes of establishing Nature management plans will not be further discussed here.

- The Climate and Pollution Agency
  The Climate and Pollution Agency participate in national planning processes according to PBA, but to a higher extent in processes with nature management plans at regional and national level.

- Directorate for Cultural Heritage in Norway (four regional offices)
  Together with the County Council, the Directorate for Cultural Heritage participates to some extent in ICZM for preservation of culture, and cultural monuments.

- The Directorate of Fisheries (eight regional offices)
  The Directorate of Fisheries safeguards the fisheries in ICZM. They map, categorize, and rank areas of interest for the fisheries, and regulate the fisheries in Norwegian waters. Important areas for fisheries include for example places for gathering fish, spawning areas, living areas for fish, fishing areas for “active” and “passive” equipment, and coral reefs. The Directorate of Fisheries also distributes licenses for trawling of sea kelp, in consultation with Directorate for Nature Management, and safe guards these interests in ICZM. The aquaculture industry is also regulated under The

Directorate of Fisheries; however on a regional and local level the County Council safe guard important locations for this industry in ICZM. The County Council is also giving the licenses of production at each aquaculture location, following an integrated process including several governmental agencies (i.e. local municipality, Directorate of Fisheries, Norwegian Coastal Administration, The County Governor, and Norwegian Food Safety Authority). Aquaculture is dominated by salmon fish farms but include a large diversity of marine biological production (i.e. locations for production of cod, Atlantic halibut, turbot, and different species of shell fish).

- The Norwegian Coastal Administration (five regional offices)
  The Norwegian Coastal Administration is responsible in matters pertaining ports and seaways, included building of fishing harbours. They are the operator of pilotage and VTS's in Norwegian waters, monitor sea traffic, and operate the national preparedness in the event of acute pollution (at sea and on land). They are responsible for coastal management according to Act of Harbour and Fairways, together with the municipalities. Fairways, harbours, places of anchorage for ships and offshore petroleum installations, and routes for underwater cables and pipelines are important areas taken into consideration. The Norwegian Coastal Administration participates in ICZM-processes according to PBA, assuring safe and efficient sea transport, and appropriate use of sea areas.

4.4.3 Norwegian ICZM legislation

The Planning and Building Act of 27.June 2008 (PBA) is the main basis for Norwegian ICZM. The law turned into effect from 1.7.2009, taking over after the former PBA of 1985. The planning part of PBA (part two, section 3 – 14) set the minimum criteria for the process, and has a high focus of participation from inhabitants, NGO's, governmental offices and agencies.

Preconditions

- The Central Government is with few exceptions the owner of all sea areas deeper than 2 meters.
- Planning of sea areas can be done in three dimensions, and different purposes can be given for seabed, the water column and the surface. Planning purposes for sea areas are only to some degree exclusive.
- The Ministry of Environment is responsible for PBA. PBA is a law for societal planning and spatial planning, for making decisions at all levels, and for sustainable development and environment.

National and regional guidelines

A number of governmental documents include guidelines to ICZM: a) White papers form the different Ministries policies on how different sectors shall be safe guarded. On ICZM mainly The Ministry of Environment give guidelines, on their own or together with other ministries.

Two examples are:

- White paper no. 43 to the Storting (1998-99) Protection and use of the coastal zone. The relation between nature protection, fisheries and aquaculture (Ministry of Environment and Ministry of Fisheries and Coastal Affairs).

- White paper no. 34 to the Storting (2006-07) Norwegian climate policy. The Central Government can also give national guidelines for ICZM. This have been made for instance on climate and energy in ICZM (stated 4th September 2009). DSB (Directorate for Civil Protection and Emergency Planning) is the main agency responsible for coordination of information on climate changes, together with chart services, meteorological institutions, research institutions and others. DSB have given out reports on expected climate changes, based on the most relevant climate models (i.e. two reports: Havnivåstigning, Estimater av framtidig havnivåstigning i norske kystkommuner, and Klima I Norge 2100").

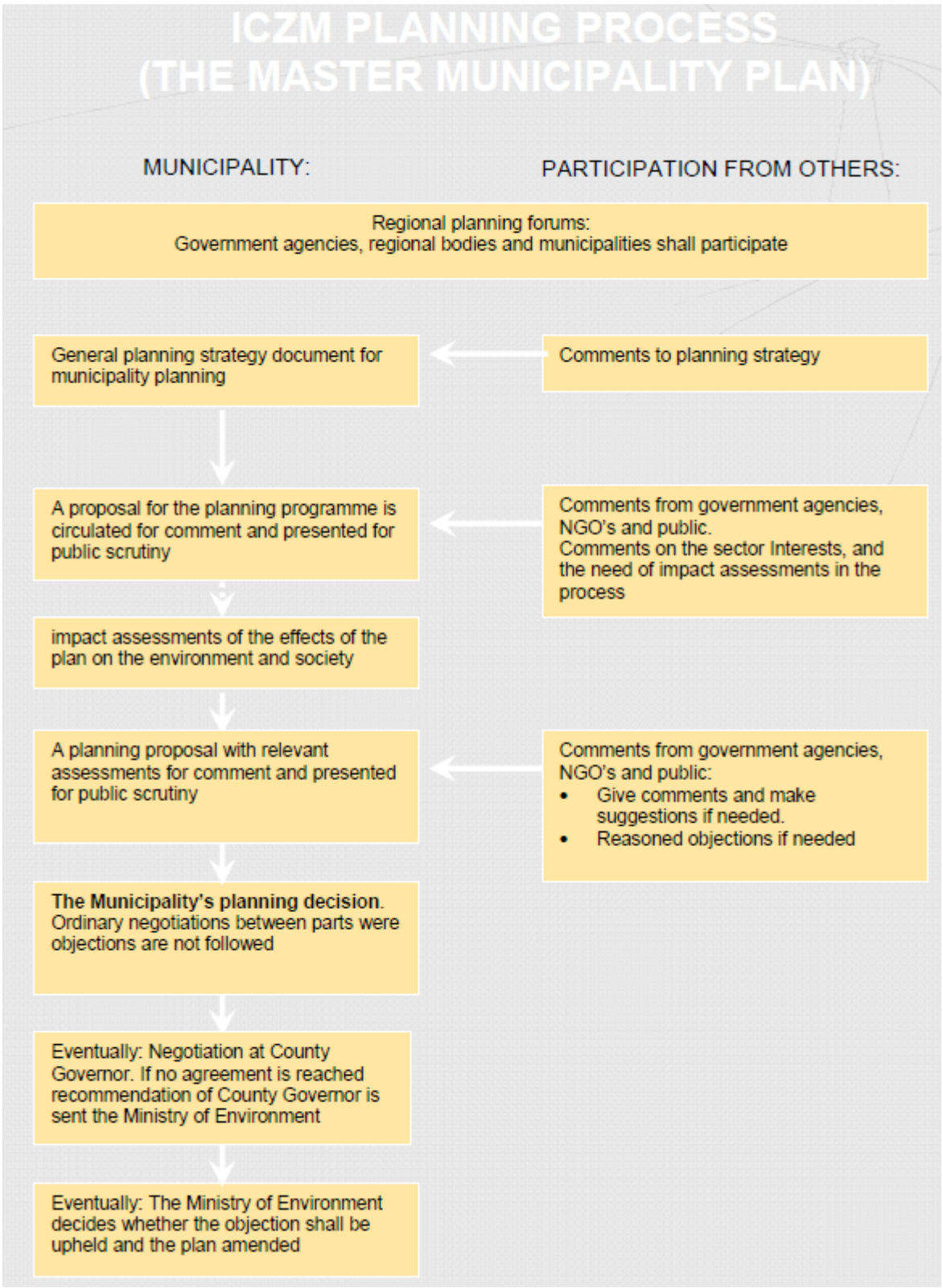
ICZM PLANNING PROCESS
(THE MASTER MUNICIPALITY PLAN)
MUNICIPALITY:
PARTICIPATION FROM OTHERS:
Regional planning forums:
Government agencies, regional bodies and municipalities shall participate
General planning strategy document for municipality planning
Comments to planning strategy
A proposal for the planning programme is circulated for comment and presented for public scrutiny
Comments from government agencies, NGO's and public.
Comments on the sector Interests, and the need of impact assessments in the process
impact assessments of the effects of the plan on the environment and society
A planning proposal with relevant assessments for comment and presented for public scrutiny
Comments from government agencies, NGO's and public:
• Give comments and make suggestions if needed.
• Reasoned objections if needed
The Municipality's planning decision. Ordinary negotiations between parts were objections are not followed
Eventually: Negotiation at County Governor. If no agreement is reached recommendation of County Governor is sent the Ministry of Environment
Eventually: The Ministry of Environment decides whether the objection shall be upheld and the plan amended

Figure 6. Decision diagram illustrating the path ways in ICZM for a municipal master plan in Norway.

The planning process

All municipalities shall have an overall municipal master plan that comprises a social element with an implementation element and a land-use element. The municipal master plan shall have an implementation element that indicates how the plan shall be followed up in the following four years or more, and shall be revised each year. The local municipality is responsible for the integrated planning process. The process is illustrated in figure 6. Municipalities shall cooperate where an inter-municipal plan is made. The County Council is leader of the planning process for regional plans, and Agencies under the Ministry of Environment will generally be leader of national, and in some extent regional plans (i.e. Ocean planning). All planning processes after PBA shall integrate relevant agencies and NGO's, and anyone who presents a planning proposal shall facilitate public participation. Coastal management based on sector laws, including PBA and HFA, shall follow regulations made in the municipal master plan.

A zoning plan is required for the implementation of major building and construction projects, which have substantial effects on the environment and society. The planning process for zoning plans is parallel to the process leading to a municipal master plan, and where an impact assessment is a major part. However a private part can be responsible for most of the process. Coastal management based on sector laws, including PBA and HFA, shall also follow regulations made in the zoning plans.

The Harbour and Fairway Act

All constructions at sea, also temporary, are subject to application for permit to the harbour and fairway authorities, according to the HFA chapter 4. This also includes use of sea areas and constructions on land which have implications for traffic at sea. The HFA regulates activity to ensure safety at sea. The responsibility is shared between the Norwegian Coastal Administration and the local municipalities. For sea area out to the base line plus one nautical mile the municipalities are responsible authority (the municipality's sea area). The territory outside this border and areas for major fairways within the municipalities are under the Norwegian Coastal Administration's authority. Authorization from The Norwegian Coastal Administration is also necessary for constructions like fish farms and bridges, and when constructions are planned in national built fishing harbours and in areas with military interests. Coastal management according to the HFA can only open for activity in conflict with planned land-use (plans based on PBA) after dispensation given by the municipality. HFA together with The Pilot Law of 1989 regulate many of the governmental measures to safeguard navigation on the long Norwegian coastline, like navigation installations, ship monitoring, Vessel Traffic Services and piloting.

Ocean planning

Ocean planning for open Sea outside jurisdiction of the EU Water Framework Directive (base line + 1 nautical mile) is performed by government agencies on a national level. The Norwegian economic zone and the fishery zone around Svalbard have been divided in three for Ocean Planning purpose, and the Ministry of Environment is responsible for the planning processes.

For the Barents Sea and sea area off Lofoten a process was guided by the Norwegian Polar
Institute, ending in the White paper no. 8 to the Storting (2005–2006) *Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands*. For the Norwegian Sea the process was guided by the Directorate for Nature Management,ending in the White paper no. 37 to the Storting(2008–2009) *Integrated Management of the Marine Environment of the Norwegian Sea*. For the North Sea, work on an integrated management document has been started recently, and the Climate and Pollution Agency shall guide the planning process. Integrated Management plans for ocean areas are approved by the central government. Plans are based on a common factual basis on the environment and natural resources; on maritime transport; on petroleum activities; on fisheries activities; and on commercial activities and social conditions in the counties bordering the ocean. The common factual basis is worked out by the relevant governmental agencies, and major contributors are:

- The Climate and Pollution Agency
- The Directorate for Nature Management
- The Directorate of Fisheries
- The Institute of Marine Research
- The Ministry of Petroleum and Energy
- The Norwegian Armed Forces
- The Norwegian Coastal Administration
- The Norwegian Maritime Directorate
- The Norwegian Petroleum Directorate.
- The Norwegian Radiation Protection Authority
- The Norwegian Water Resources and Energy Directorate.
- The Petroleum Safety Authority

The common factual basis is used for impact assessments: For the Norwegian Sea impact assessments were conducted in 2007–2008 on fisheries, petroleum activities and maritime transport, and impacts of external pressures such as long-range transboundary pollution, emissions from onshore activities, climate change, ocean acidification and the introduction of alien species. The new Ocean Energy Law of 2010, put in to force 1.7.2010, will regulate licenses to use open sea, including the continental shelf and eventually the EEZ (Exclusive Economic Zone) for power plants, for instance marine wind mills and wave power plants. The law is governed by the Ministry of Petroleum and Energy.

5. Discussion

The definition for developing an integrated coastal zone management addressed in chapter 2. "**Integrated Coastal Zone Management** is a continuous process with the overall objective of the implementation of sustainable development in the coastal zone by means of optimal management of human activities in this zone, in order to improve the condition of the coastal environment and to maintain its diversity" is well incorporated in the national ICZM practices around the North Sea.

In fact the strategic principles of adopting a broad holistic perspective - advocating for taking a 'systems' approach to ICZM due to the interaction between the physical, biological, cultural and socio-economic processes shaping the coastal zones is done in all the reviewed national practices. The strategic principle addressing the long-term perspective encouraging ICZM strategies that consider the future generations and long-term impact assessments of management decisions is well adopted. The third strategic principle about the natural processes and ecosystems of the coastal zone, in order to mitigate potential negative impacts of coastal engineering – e.g. coastal defences is still under pressure because of urbanisation and climate change.

This also depends on a necessity to address the local specificity and the great diversity of the European coastal areas. The downside of local specificity is not addressed, but in practice, it is often used as an excuse for self-interest of individuals or small groups.

All the national ICZM practices are concerned with involving all the parties in the management process, for example by means of agreements based on shared responsibility. This also aiming that adaptive management that means adjusting the ICZM process as problems and knowledge develop, supports the need for a scientific basis concerning the evolution of the coastal zone is important for the future development of the European costal protection an development.

The experiences from the national ICZM practices ensure the important of support and involvement in the process by all responsible administrations - horizontally (between government departments) and vertically (between local, regional and central government).

The national ICZM practices also underscore that the effective implementation of ICZM involves the utilisation of multiple instruments including the mixture of legislative measures, policy programmes, economic incentives, technology solutions, research, voluntary agreements and education. It is also important to notice that the mix depends on the specific situation.

6. Conclusion

We need a system that can help to manage the coastal zone. Because Integrated Coastal Zone Management in practice covers all aspects in the coastline of Europe, ICZM will inevitably affect and be affected by several EU policies and legal frameworks (Directives) and will also have an important impact on the ICZM practices at national level.

This report provides an overview of how different systems and environments affect three North Sea region countries' management of the coastal zone. Because the general principles of coastal zone management are similar, ICZM will work well, although each country has its own perceptions of how the coastal zone should be managed.

It is important to address the fact that some policies and legislation provide mutual support, whereas others counteract each other. There is a need for a discussion and development of ICZM in a national context and also to improve most important policies and legislation. This issue must be addressed in the discussion about the future role of ICZM in a European context to improve the national ICZM practices.

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