



## Legislative Drivers & Sectoral Plan Review of TIDE Estuaries

January 2013

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Project part-financed by the  
European Union (European  
Regional Development Fund)



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Project part-financed by the European Union (European Regional Development Fund)



# 1 Introduction

## 1.1 Overview

This report details the environmental drivers affecting sectoral management plans of the four TIDE estuaries of the Elbe, Humber, Scheldt and Weser. Many current management measures applied to the TIDE estuarine systems will be driven by international obligations and European Directives, with further requirements also enforced by each of the Member State (or federal province) national policies.

Each estuarine system will also have its own specific drivers based on a range of anthropogenic activities as influenced by the physico-chemical attributes of the system. These drivers and legislative/management responses are mostly addressed through differing management groups and systems, based both on the national framework and more local initiatives.

In order to share best practice between the four TIDE estuaries, and to understand their marine planning and governance, it is necessary to understand the individual Member State legislative management frameworks including the high level and local drivers, the management organisations and their responsibilities.

There are a plethora of management plans in existence for sectoral management. The strength of a plan is that it should have the inherent ability to enforce its provisions (be statutory in nature) and should ideally take into account other users of the areas (be multi-sectoral). It should also have sufficient spatial coverage to provide a broad management remit for the system.

As part of the TIDE programme, management plans for each of the estuaries have been assessed for their internal strengths and weaknesses, and the external opportunities and threats. Based on this information, we can identify good practice (and bad practice if relevant) which can be used as an exemplar for addressing both generic and specific management needs. Examples of best practice will be shared between the TIDE partners to facilitate greater awareness and share management initiatives, as well as any key findings being integrated into the best practice management plan deliverables.

To develop holistic management planning frameworks for estuaries building on existing structures and using a multi-manager sectoral framework, we need to have an understanding of:

- the management issues in the TIDE estuaries;
- the methods used to deliver the management;
- the basis that management is delivered;
- the efficacy of the management tools;
- the best tools/plans available to meet these needs;
- gaps in management.

This will allow us to develop a framework for future management plans.

## 1.2 Methodology

The following work was initially carried out by the Institute of Estuarine and Coastal Studies (IECS) for the Humber Estuary, to develop a working methodology. Templates were then generated to be completed by the other TIDE partners for the remaining three estuaries. The work included:

- Identifying the key International and European Directives driving environmental management at the national and local estuary level. Provide a brief description of these legislative drivers and indicate how they have been transposed into national legislation for the TIDE estuary countries.
- Creating schematic frameworks to depict how the EU Directives are implemented at different management levels and the associated key players. The schematics show the implementation at the regional level with the national legislation enacted and which organisations, institutes and expert groups are involved in coordinating the implementation. The second level is the river basin level with the management plans developed and the organisations with advisory input. Finally, the third level is at the estuary management level identifying the specific estuary management plans, management groups and local targets, aims and objectives.
- Identify the statutory agencies, relevant and competent authorities, and management groups for each estuary, and their areas of responsibility. The legal standing of the management often influences the efficacy of management (statutory vs voluntary basis).
- Based on the earlier stages, identifying the different sectoral management plans affecting estuary management, including those responding to EU and national drivers and also more specific local drivers which have been adopted through local initiatives in order to address a specific management related issue of an estuary (or perhaps wider legislative gap). These plans included water quality and management; habitats and species conservation; flood and coastal protection; Integrated Coastal Zone Management (ICZM) initiatives; shipping, ports and pollution prevention; and economics and planning. Information is tabulated for each of the four TIDE estuaries, with the lead body and main driver identified. With regard to each plan, fundamental information on the main focus/aim of the plan is provided. While the report aims to be comprehensive, further concepts, collections of data with certain focus could have been analysed, as they work as management tools within the four estuaries as well.
- SWOT analyses (Strengths, Weaknesses, Opportunities and Threats) on each of the sectoral management plans for each estuary was carried out to define best practice within the estuary's management systems. This provides a basic assessment as to whether the management plans ultimately deliver multi-user management, power to enforce, user buy-in, longevity, revision, funding etc.
- Compared the four estuaries, highlighting where best practice examples exist, and what strengths can be shared between the TIDE partners and integrated into estuary management best practice deliverables.

## 2 Management Drivers

Drivers for the management of estuaries come from International, European and national legislation and policy. Five of the key pieces of EU legislation directly impacting on estuarine management are the Birds Directive, Habitats Directive, the Water Framework Directive, the Marine Strategy Framework Directive and the Flood Risk Management Directive. These directives are reviewed below. As an EU Member States, the TIDE countries are required to transpose EU directives into national legislation.

The geographical boundaries of all of the management plans implemented for the EU directives listed above for the four TIDE estuaries are shown in Figures 1-4.

### 2.1 Birds Directive (2009/147/EC) & Habitats Directive (92/43/EEC)

Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (this is the codified version of Directive 79/409/EEC as amended) is the EU's oldest piece of nature legislation and one of the most important, creating a comprehensive scheme of protection for all wild bird species naturally occurring in the Union. It was adopted unanimously by the Members States in 1979 as a response to increasing concern about the decline in Europe's wild bird populations resulting from pollution, loss of habitats as well as unsustainable use. It was also in recognition that wild birds, many of which are migratory, are a shared heritage of the Member States and that their effective conservation required international co-operation<sup>1</sup>. The Birds Directive also meets the EU obligations for bird species under the Bern Convention and the Bonn Convention.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora is the means by which the EU meets its obligations under the Bern Convention. The Directive was amended in 1997 by a technical adaptation directive with further amendments of the annexes by the Environment Chapter of the Treaty of Accession 2003 and in 2007 when Bulgaria and Romania joined the EU. The Habitats Directive obliges Member States to promote the maintenance of biodiversity by requiring measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status and introducing robust protection for those habitats and species of European importance. In applying these measures, Member States are required to take account of economic, social and cultural requirements, as well as regional and local characteristics. The Directive protects over 1000 animals and plant species and over 200 "habitat types" (e.g. special types of forests, meadows, wetlands, etc.) which are of European importance.

In the words of the European Commission, the Habitats Directive, together with the Birds Directive, constitutes the 'cornerstone of the EU's conservation policy'.

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<sup>1</sup> [http://ec.europa.eu/environment/nature/legislation/birdsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm)

### Humber Estuary Management Plans

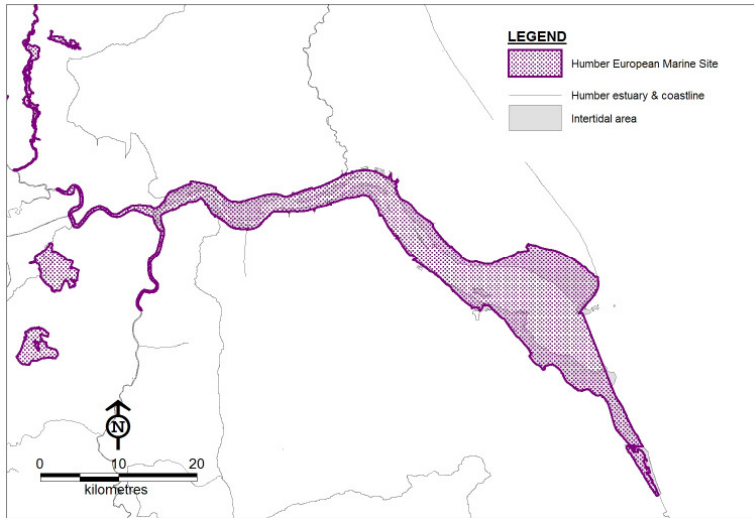


Figure 1a  
Humber  
Estuary  
European  
Marine Site  
(SAC &  
SPA)

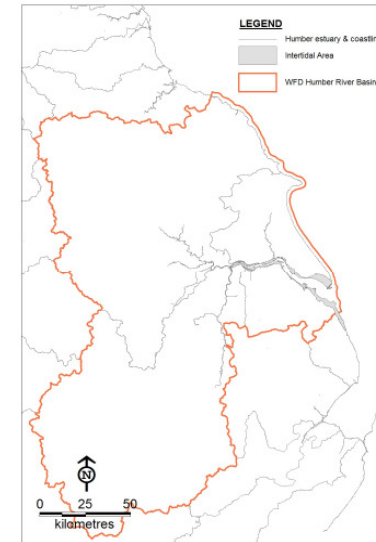


Figure 1b  
Humber  
River Basin  
Management  
Plan  
(RBMP) for  
the Water  
Framework  
Directive  
(source:  
Environment  
Agency,  
2012)

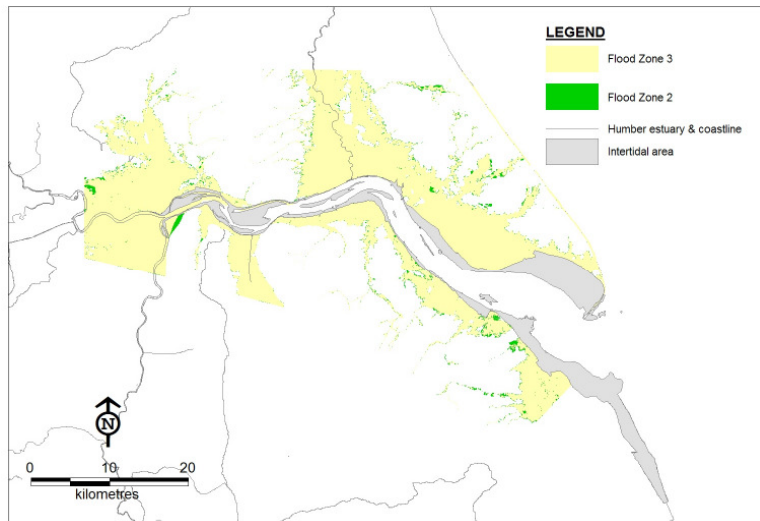


Figure 1c  
Scope of  
the Humber  
Flood Risk  
Management  
Strategy  
(source:  
Environment  
Agency,  
2012)

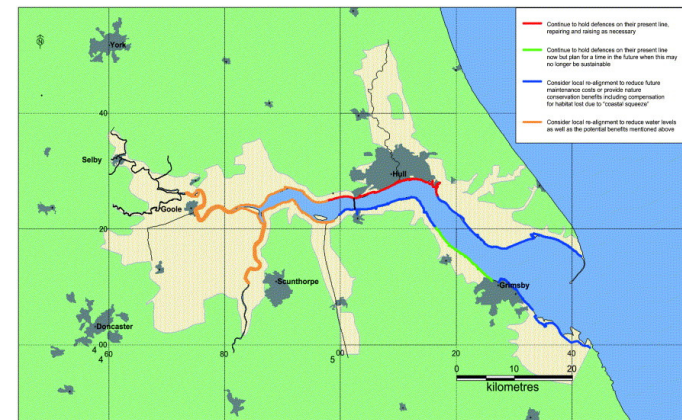


Figure 2d  
Humber  
Shoreline  
Management  
Plan  
boundaries



### Elbe Estuary Management Plans

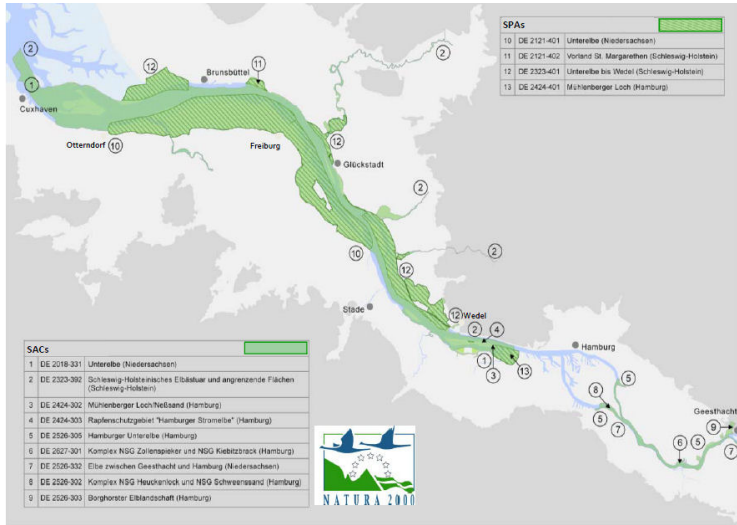


Figure 2a Natura 2000 areas within the Elbe Estuary



Figure 2b Scope of the Water Framework Directive for the International River Basin District Elbe

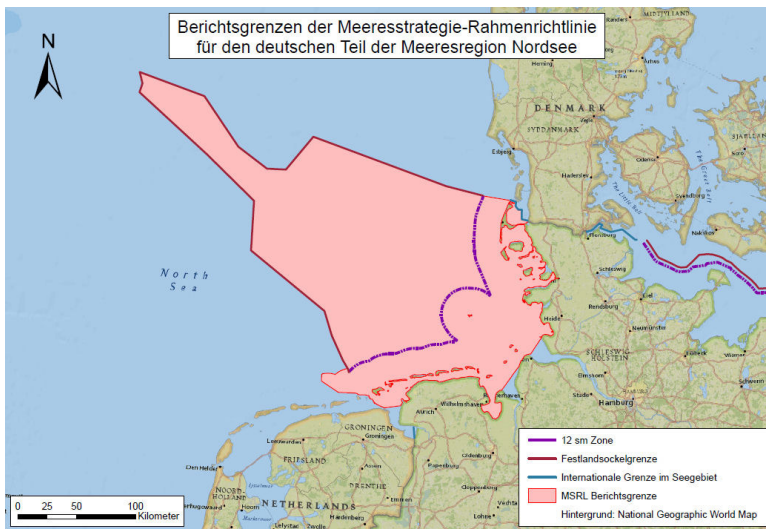


Figure 2c Reporting scope of the Marine Strategy Directive for the German North Sea

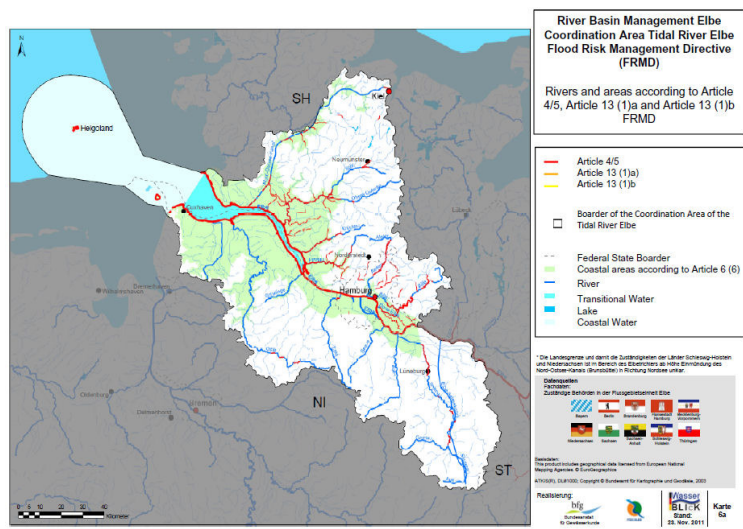


Figure 2d Scope of the Flood Risk Management Directive for the Coordination Area "Tideelbe", being a part of the International River Basin District Elbe

Weser Estuary Management Plans

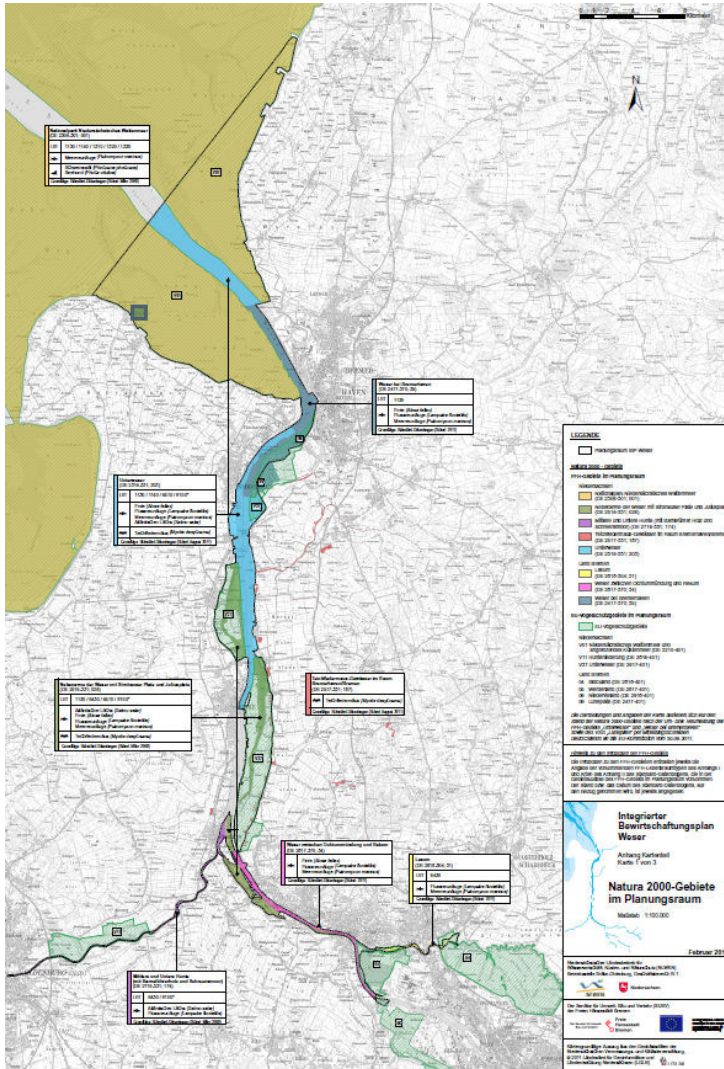


Figure 3a Natura 2000 sites within the borders of the investigation area of the Integrated Management Plan Weser (NLWKN, SUBV (2012): IBP, INTEGRIERTER BEWIRTSCHAFTUNGSPLAN WESER FÜR NIEDERSACHSEN UND BREMEN 2012

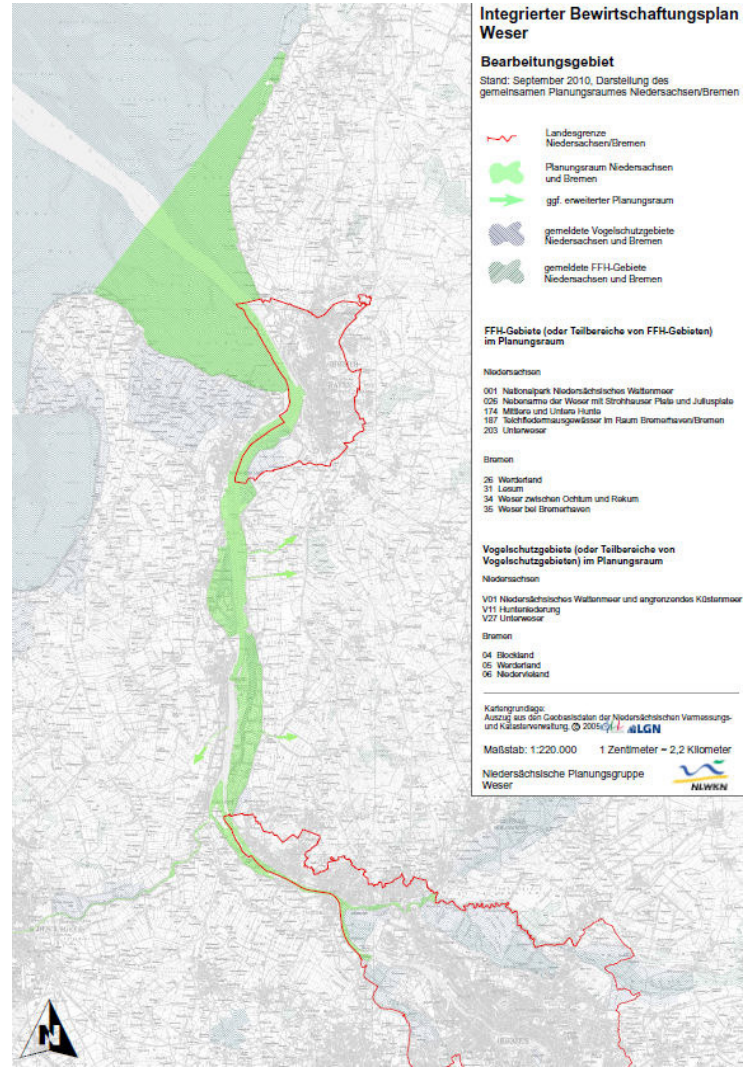


Figure 3b Investigation area of Integrated Management Plan Weser (indicated in green) (NLWKN, SUBV (2012): IBP, INTEGRIERTER BEWIRTSCHAFTUNGSPLAN WESER FÜR NIEDERSACHSEN UND BREMEN 2012



Figure 3c  
WFD: Scope of the Water Framework Directive for the River Basin District Weser (source: FGG Weser 2007, [http://www.fgg-weser.de/Download-Dateien/bewirtschaftungsfragen\\_weser\\_2007.pdf](http://www.fgg-weser.de/Download-Dateien/bewirtschaftungsfragen_weser_2007.pdf))

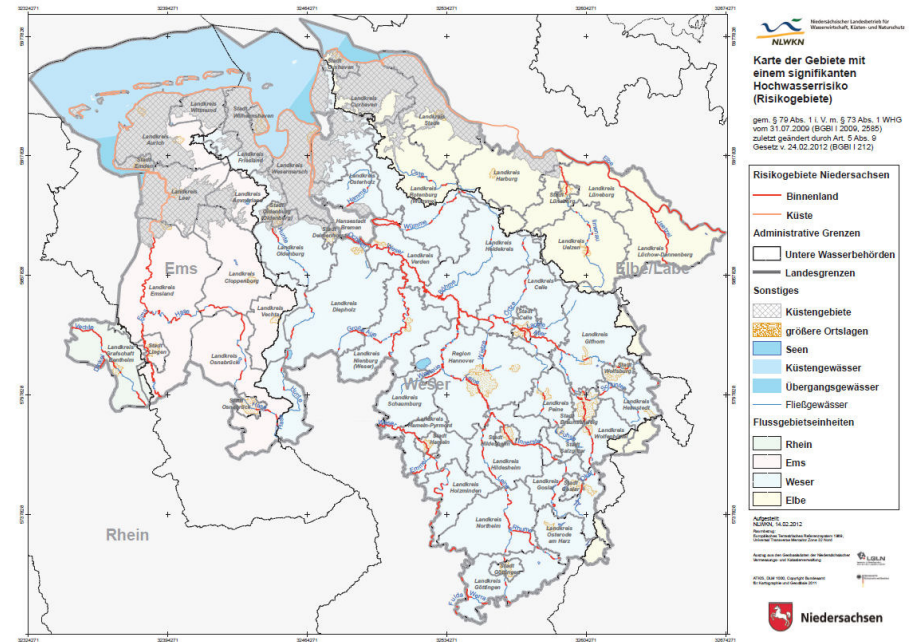


Figure 3d Flood Risk Management Directive (FRMD): Preliminary designation of flood risk areas in Lower Saxony according to the FRMD. (red: inland ('Binnenland'); orange: coast ('Küste')) with indication of Lower Saxon parts of River Basin Districts ('Flussgebietseinheiten') Weser, Elbe, Ems and Rhein according to WFD (source: NLWKN 2012, [http://www.nlwkn.niedersachsen.de/wasserwirtschaft/eghochwasserrisikomanagementrichtlinie/vorlaufuge\\_bewertung/vorlaufuge-bewertung-104910.html](http://www.nlwkn.niedersachsen.de/wasserwirtschaft/eghochwasserrisikomanagementrichtlinie/vorlaufuge_bewertung/vorlaufuge-bewertung-104910.html))

### Scheldt Estuary Management Plans

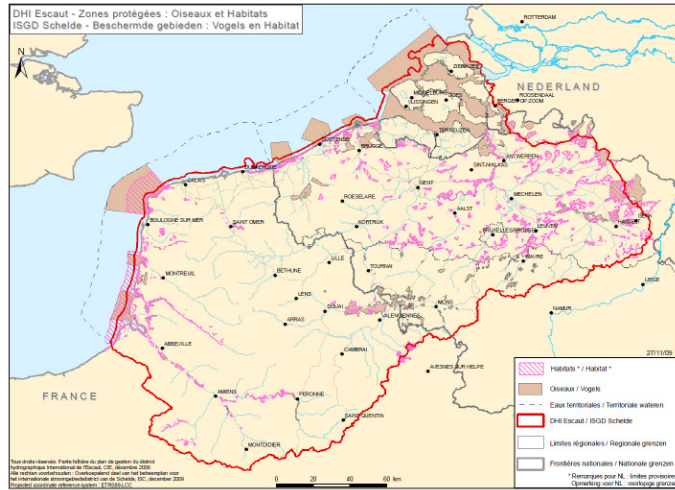


Figure 4a European Marine Sites (SAC & SPA) in the International River Basin District Scheldt

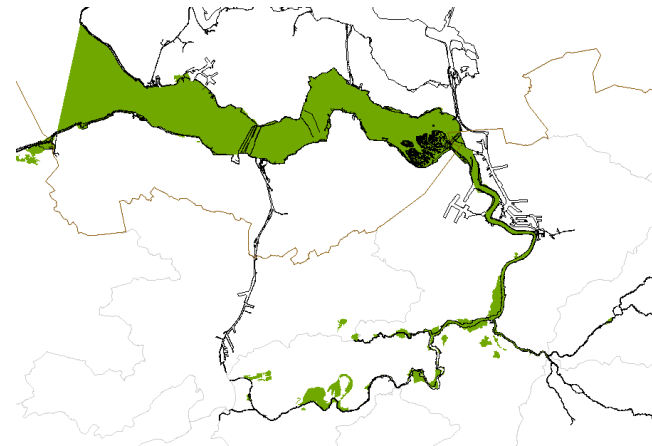


Figure 4b Scheldt Estuary European Marine Site



Figure 4c Implementation of the Water Framework Directive and the Floods Directive in Flanders

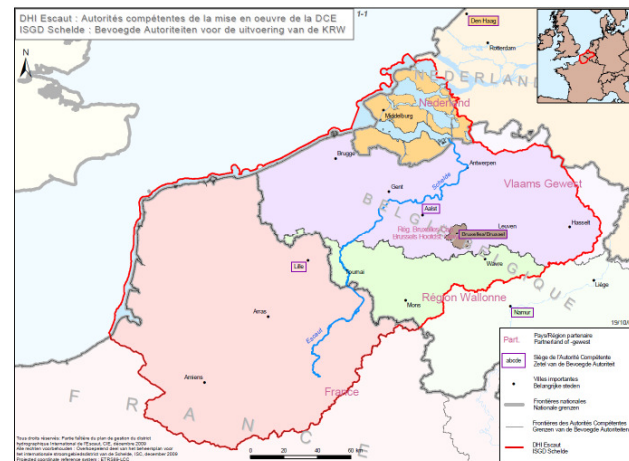


Figure 4d International river basin district of the Scheldt

These directives have been transposed into national and federal law within the four TIDE countries through:

TIDE Estuary	National/Federal Implementation
Humber (England)	Conservation of Habitats and Species Regulations 2010 (as amended)  Wildlife and Countryside Act 1981 (as amended).
Elbe & Weser (Germany)	National level: Federal Nature Conservation Act (BNatSchG 2010);  Federal state level: The conservation acts of the Federal states Bremen (BremNatG 2010), Lower Saxony (NAGBNatSchG 2010) and Schleswig-Holstein (LNatSchG 2010), Hamburg (HmbNatSchG 2010)
Scheldt (The Netherlands)	Nature Conservation Act and the Flora and Fauna Act.
Scheldt (Belgium) <sup>2</sup>	Law on Nature Conservation 1973. It has been adapted to the regional context by the Nature Protection Order of 1995 in the Brussels Capital Region, the Nature Decree of 1997 (modified in 2002) in Flanders and the Natura 2000 Decree of 2001 in Wallonia.

The operational implementation of the Wild Birds and Habitats Directives within each of the four TIDE estuaries is shown (see Appendix 1a-e) on four schematic frameworks detailing how the directives have been implemented from a top-down basis.

All EU governments have provided considerable guidance to their national conservation bodies on how to apply the requirements of the Habitats and Birds Directives at the national level. At an estuary level, competent authorities have combined to establish management schemes to ensure that the European Marine Sites (EMS) are protected from potentially damaging activities. Any competent authority can establish a management scheme as this is an optional requirement of the European directive and national legislation and not mandatory. In order to achieve this, steering groups have been adopted within each of the estuaries included in the TIDE project.

### 2.1.1 UK - Humber

In the UK this has been carried out in the form of national guidance provided by Defra and JNCC. National Planning Policy Framework (NPPF) adopted in April 2012 under the Localism Act 2011 and Government circulars<sup>3</sup> also provide guidance for local authorities in their planning consents, however they have no statutory status, and are for guidance only. Even with the new UK Conservation Regulations 2010, no substantive changes were required to previous guidance provided in 2005 as there were no significant changes to any policies or procedures.

<sup>2</sup> The Belgian situation is particularly complex since most competences relating to biodiversity and territorial issues are dependent on the three different regions (Brussels Capital Region, Flanders and Wallonia). This means that Belgium generally has three sets of legislation for a given thematic area, or more when some competences still remain at federal level.

<sup>3</sup> ODPM Circular 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact Within the Planning System; Defra Circular 01/2005; planning policy statement 9 (PPS9).

At an estuary level, the management scheme for the Humber Estuary has been produced by a partnership of over 30 Relevant Authorities that have jurisdiction on or around the Humber Estuary. They are all equal members of the Humber Estuary Relevant Authorities Group (HERAG) that has developed the scheme and are now tasked with implementing it with the ongoing advice and support of the Humber Advisory Group. The HERAG collectively funds the Humber Management Scheme and employs a Project Officer to coordinate the implementation of the scheme on a day to day basis. All Humber Management Scheme business is discussed and agreed by involving all the members.

### **2.1.2 Germany – Elbe & Weser**

In Germany, national monitoring and assessment schemes have been provided to relevant authorities for the implementation of the Habitats and Birds Directives. As the management of the Elbe and Weser is mainly set up at a Federal State level, each estuary has an Integrated Management Plan. If national guidance is required, e.g. inter-estuarine priorities for conservation status improvement, the existing National Working Group on Natura 2000 or the steering committee for the North Sea estuaries (see appendix 1b&c) shall fill the gap.

At an estuary level, a single steering committee has been formed to oversee the management and implementation of the Integrated Management Plans (Natura 2000) of the three German estuaries of the Weser and Elbe (FFH-Lenkungsgruppe consisting of the Environmental and Economic State Ministries of the relevant 4 Federal States Bremen, Hamburg, Lower Saxony and Schleswig-Holstein, the Waterways administration and Hamburg Port Authority). Under this umbrella group, each estuary has a working group (comprised of relevant authorities) and planning/advisory groups (comprised of voluntary organisations and stakeholder groups).

### **2.1.3 The Netherlands & Flanders - Scheldt**

In the Netherlands official statutes indicate conservation objectives set for the protection of the WesterScheldt and Saeftinghe. A Natura 2000 management plan has been developed in the Netherlands, as required by the Dutch Nature Protection Act (1998).

In the Flemish part of the Scheldt estuary, conservation of SACs and SPAs is assured by 'het Natuurdecreet Vlaanderen' since 1998. After development of 'het Natuurontwikkelingsplan Scheldt-estuarium' (2003), 'Langetermijnvisie Scheldt-estuarium 2030' and 'Ontwikkelingsschets 2010', the conservation objectives for Natura 2000 were decided by the Flemish Government and translated into several projects in the Revised Sigmaphan (2005), which aims to protect inhabitants within the Scheldt estuary for floods, assure the accessibility for ports and at the same time ensure the conservation objectives for Natura 2000. Three SPAs, four SACs and one Ramsar area fall within the Flemish part of the Scheldt estuary.

## **2.2 Water Framework Directive (2000/60/EC)**

In October 2000 the 'Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy' (Water Framework Directive or WFD) was adopted and came into force in December 2000. The overriding goal of the Directive is

that Member States should aim to achieve “Good Chemical and Good Ecological Status” or in case of Heavily Modified Water bodies (HMWB) “Good Chemical Status” and “Good Ecological Potential” of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater and also to prevent deterioration in the status of those water bodies by 2015.

Water in rivers, estuaries (transitional waters), coasts and aquifers will improve under measures set out in Programs of Measures for the River Basins, drawn up for river basin districts. The WFD considers the ecological health of surface water bodies (defined as a slight variation from undisturbed natural conditions), as well as achieving traditional chemical standards. In particular it will help to deal with diffuse pollution which remains important after improvements to most point source discharges. Successful implementation of the WFD will help to protect all elements of the water cycle and enhance the quality of groundwaters, rivers, lakes, estuaries and seas.

The WFD has been transposed into national law for the four estuaries by:

<b>TIDE Estuary</b>	<b>National/Federal Implementation</b>
Humber (England)	The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003
Elbe & Weser (Germany)	Federal Water Act (Wasserhaushaltsgesetz (BGBl. I S. 2585)) from 31 Juli 2009, last amendment December 2011.  Bund-Länderarbeitsgemeinschaft Wasser (LAWA) has developed national guidelines on the WFD to support and to some extent harmonise the activities of the individual federal states.
Scheldt (The Netherlands)	Implementation Strategy EG Water Framework Directive, thereby altering the Waterwet; Water Act
Scheldt (Belgium)	Decreet Integraal Waterbeleid; Decree Integrated Water Policy

The operational implementation of the Water Framework Directive within each of the four TIDE estuaries is shown on four schematic frameworks detailing how the directive has been implemented from a top-down basis (Appendix 2a-e).

At a national level, all the countries have transposed the WFD into national, federal or regional legislation. Working groups have been formed at a national or regional level to provide coordinated advice for technical aspects of the directive and its implementation within each Member State. This is through the LAWA in Germany and UKTAG in the UK. A Scheldt treaty has been concluded between France, Belgium and the Netherlands regarding the protection of the water quality and the implementation of the WFD. The International Scheldt Commission has taken on the role of implementing the WFD which is based in Antwerp.

International long-standing working groups at the European level serve as an instrument for harmonising the implementation process between the member states. For example the Geographic Intercalibration Group for the North East Atlantic (NEA GIG) aims at a harmonised assessment of coastal and transitional waters within UK, Belgian, Dutch and German North Sea coasts.

For the four TIDE estuaries:

- the Elbe has both an international River Basin Management Plan (RBMP) involving cooperation from Germany (10 Federal States), Poland, Czech Republic and Austria, and a national RBMP including a national (German) programme of measures for the Elbe Estuary. Hydromorphological changes, nutrients and pollution have been identified as having significant impacts within the Elbe RBMP.
- the national RBMP for the Weser has been based on the RBMPs of the seven federal states in the catchment area with salt loading, pollution from nutrient inputs and impairment of water structures identified as the priority significant impacts to the estuary.
- the Humber RBMP has identified diffuse and point source pollution and physical modification of water bodies as the key pressures in the RBP.
- the international River Basin Management Plan has been based on the Dutch national River Basin Plan and a Flemish River Catchment Management Plan. In the Scheldt estuary, 9 out of the 11 water bodies are classified as heavily modified with only the Flemish water body 'Zwin' and the Dutch water body 'Zeewse kust (kustwater)' belong to the natural waters (Anon, 2010<sup>4</sup>). The Scheldt RBMPs have identified diffuse and point source pollution and physical modification of water bodies as the key pressures in the RBP.

### **2.2.1 UK - Humber**

The Humber has been designated a Heavily Modified Water Body (HMWB) under the directive. Although working groups have been established to help guide the implementation of the plans within all the estuaries, there are differences in who has taken the lead role in implementing the directive at the estuary level. Within the Humber, the Environment Agency as the lead Competent Authority has been working closely with two groups. The first is a liaison panel made up of a variety of groups all with key roles to play in implementing the plan. The second is a separate local stakeholder working group with which the Environment Agency is working with to ensure that all the main pressures on the water environment are addressed. All views from these two groups have been considered in writing the Humber River Basin Management Plan (HRBMP) by the Environment Agency.

### **2.2.2 Germany – Elbe & Weser**

In the Elbe Estuary, a KorTel (Coordination Group Tidal River Elbe) comprising the three federal German states Lower Saxony, Hamburg, Schleswig-Holstein with responsibility in the Elbe Estuary together with the Federal waterways administration and Hamburg Port Authority all have joint responsibility for implementing the National RBMP at the tidal river Elbe level. The KorTel has a Tidal River Elbe Working Group (AG TES) consisting of all relevant stakeholders. The AG TES gathered a list of proposals for non-legally binding measures for the Elbe estuary in 2008 and will be involved in the future as well.

The Weser estuary has two bodies with responsibility for implementing the national Weser RBMP; these are the Lower Saxony Water Management,

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<sup>4</sup> Anon. 2010. Surface water quality. Indicators for the Scheldt estuary. Commissioned by the Maritime Access Division, project group EcoWaMorSe, Flemish-Dutch Scheldt Commission. *VLIZ Information Sheets*, 222. Flanders Marine Institute (VLIZ): Oostende. 10 pp.



Coastal Defence and Nature Conservation Agency (NLWKN) and the Senator for Environment and City Development – Free Hanseatic City of Bremen (SUBV). NLWKN and SUBV work closely with Regional Cooperation Groups (stakeholder groups) which should take part in the decision making and implementation process in terms of the WFD and also with the Advisory Committee of Lower Saxony and Bremen. In contrast to the situation at the Elbe, the Regional Cooperation Groups operate on the level of sub-basin survey areas (Bearbeitungsgebiete). Similar to the Elbe, the stakeholder groups at the Weser proposed non-legally binding measures for the respective sub-basin survey area being suitable to reach WFD aims.

### **2.2.3 The Netherlands & Flanders – Scheldt**

In 2002, the Treaty of Ghent between France, the Netherlands, the Flemish Region, the Walloon Region, the Brussels Capital Region and the Kingdom of Belgium reinforced the cooperation between the partners on the implementation of WFD in order to draw up a management plan for the Scheldt district. This treaty fixes the borders of the international district which formed the basis of the WFD management plan. The International Scheldt Commission (ISC), where the international coordination takes place, replaces the International Commission for the Protection of the Scheldt (ICPS) set up in 1994. There is no specific organisation or management plan at the estuary level.

In The Netherlands, at the national level, expert working groups for specific topics (e.g. monitoring, groundwater) have been established with participation from all concerned ministries, provinces and waterboards. They transpose the contents of the WFD and guidance documents for the Netherlands. The work is overseen by a national working group at civil servant level and a political 'steering group'. The whole implementation process is coordinated and facilitated by a project team under the lead of Directorate General for Water in Den Haag (WSM, 2003)<sup>5</sup>.

The Coordination Committee on Integrated Water Policy (CIW) is responsible for the coordination of the integrated water policy at the level of the Flemish Region. Flanders is divided in 11 sub-basins, which all have a common consultative and organisational structure, consisting of the basin management (political consultation between the Flemish Region, the provinces and the municipalities), the basin secretary (technical-official) and the basin council (social consultation with the stakeholders).

## **2.3 Marine Strategy Framework Directive (2008/56/EC)**

In 2008, the Marine Strategy Framework Directive (MSFD) (2008/56/EC) was adopted. The MSFD seeks to establish an integrated framework for the management of marine spaces, and aims at achieving or maintaining a good environmental status for community waters by 2020 at the latest. It is the first legislative instrument in relation to the EU marine biodiversity policy, as it contains the explicit regulatory objective that "biodiversity is maintained by 2020", as the cornerstone for achieving Good Environmental Status (GES). It

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<sup>5</sup> WSM, 2003. Water Framework Directive - Wadden Sea Meeting, Hamburg 8 May 2003 (version 19 May 2003)

enshrines in a legislative framework the ecosystem approach to the management of human activities having an impact on the marine environment, integrating the concepts of environmental protection and sustainable use. In order to achieve the objective the Member States have to develop Marine Strategies which serve as Action Plans and which apply an ecosystem-based approach to the management of human activities. The MSFD requires that, in developing their marine strategies, Member States use existing regional cooperation structures, including those under Regional Sea Conventions, covering that marine region or subregion (e.g. OSPAR).

The MSFD is transposed into national law for the four estuaries by:

TIDE Estuary	National/Federal Implementation
Humber (England)	The Marine Strategy Regulations 2010
Elbe & Weser (Germany)	The Federal Water Act (Wasserhaushaltsgesetz (BGBl. I S. 2585) from 31 July 2009, last amendment 24 February 2012 (BGBl. I S. 212).
Scheldt (The Netherlands)	Water Act (2009) and Water Decree (2010)
Scheldt (Belgium)	Royal Decree on the Marine Strategy of the Belgian sea (2010)

The operational implementation of the MSFD within each of the four TIDE estuaries is shown on four schematic frameworks detailing how the directive has been implemented from a top-down basis (see Appendix 3a-e). As a relatively new directive, the technical details and implementation within each of the TIDE countries is on-going.

### **2.3.1 UK - Humber**

Within England, the Department for Environment, Food and Rural Affairs (Defra) has taken the role of implementing the MSFD. Technical support in its implementation is being provided by the Centre for Ecology and Aquaculture Science (Cefas) and the Joint Nature Conservation Committee (JNCC) to finalise proposals for UK targets and indicators of GES. The MSFD has been transposed into UK law by the Marine Strategy Regulations 2010. Public consultations on the initial assessment of UK seas and the proposals for GES characteristics and associated targets started in 2012.

### **2.3.2 Germany – Elbe & Weser**

At the national level, the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) has the lead government role in implementing this directive and is the reporting institution towards the EU Commission. Through administrative agreements the BLANO (Bund/Länder-Committee North- and Baltic Sea) was installed.

The BLANO functions as a steering group for the implementation of the directive, consists of the five Coastal Federal States (NI, HH, S-H, MV, HB) and the Federal Government represented by the Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) as lead, the Ministry for Transport, Building and Urban Development (BMVBS), the Ministry of Education and Research (BMBF) and the Ministry of Food, Agriculture and

Consumer Protection (BMELV). The BLANO is supported by the BSH (Federal Maritime and Hydrographic Agency).

### **2.3.3 The Netherlands & Flanders - Scheldt**

In The Netherlands, the Ministry of Infrastructure and the Environment is responsible for implementing the MSFD and for the coordination with the other ministries that have responsibilities in the North Sea, such as the Ministry of Economic Affairs, Agriculture and Innovation and the Ministry of Defence. Deltares and IMARES have been commissioned to provide scientific advice for the implementation of the MSFD by the Netherlands. The MSFD has been transposed into Dutch law in 2010 via an adaptation of the Water decree (Waterbesluit) in the Water act (Waterwet). In the first half of 2012 the 'Marine Strategy for the Dutch part of the North Sea 2012-2020, part I' was made available for public inspection, and was formally established by the Dutch Government later in 2012<sup>6</sup>.

In Belgium, the Federal Public Service for Health, Food Chain Security and Environment has been given the role of implementing the MSFD. Technical support in its implementation is being provided by the Management Unit of the North Sea Mathematical Models (MUMM) to finalise proposals for targets and indicators of good environmental status (GES). The MSFD has been transposed into Belgian law by the Royal Decree on the Marine Strategy of the Belgian sea (2010). The Coordination Committee on Internal Environmental Policy (CCIM), a cooperation between the Belgian Federal State and the Regions, provides its advice to the Federal Public Service for Health, Food Chain Security and Environment. Public consultations on the initial assessment of UK seas and the proposals for GES characteristics and associated targets are due to start in 2012.

## **2.4 Flood Risk Management Directive (2007/60/EC)**

Directive 2007/60/EC on the assessment and management of flood risks entered into force on 26 November 2007. Its aim is to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity by ensuring that flood risk from all sources is assessed and managed in a consistent way. This Directive 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. The Directive needs to be implemented in co-ordination with the Water Framework Directive, notably by aligning flood risk management plans with river basin management plans, and by consulting with the public on the content of flood risk management plans. All assessments, maps and plans must be made available to the public and the active involvement of interested parties in the preparation of flood risk management plans must be encouraged. One major aim is to enhance the risk awareness of the public.

The Directive requires Member States to first carry out a preliminary assessment by 2011 to identify the river basins and associated coastal areas at

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<sup>6</sup> source: <http://www.noordzeeloket.nl/krm/Home/>

risk of flooding (Article 4). For such zones they would then need to draw up flood hazard maps and flood risk maps by 2013 (Article 6) and establish flood risk management plans focused on prevention, protection and preparedness by 2015 (Article 7). The Directive applies to inland waters as well as all coastal waters across the whole territory of the EU.

The Flood Risk Management Directive (FRMD) is being transposed into national law for the four estuaries by:

TIDE Estuary	National/Federal Implementation
Humber (England)	Flood Risk Regulations 2009
Elbe & Weser (Germany)	Federal Water Act (Wasserhaushaltsgesetz (BGBl. I S. 2585)) from 31 July 2009, last amendment 24 February 2012 (BGBl. I S. 212).
Scheldt (The Netherlands)	Water Act (2009)
Scheldt (Belgium)	Adaptation of the Decree on Integrated Water policy (July 2010)

The operational implementation of the Flood Risk Management Framework Directive within each of the four TIDE estuaries is shown on four schematic frameworks (see Appendix 4a-e). The requirements of the FRMD have only just begun to be developed within each Member State.

#### 2.4.1 UK - Humber

In the UK the Department for Environment, Food and Rural Affairs (Defra) is responsible for implementing the FRMD, with technical support provided by the Floods Directive Technical Working Group with other guidance prepared by the Environment Agency.

At the river basin management level, the Environment Agency is the lead competent authority in the UK in as far as it will be responsible for providing guidance, contributing to quality assurance and making appraisals, maps and plans available to the European Commission. The Lead Local Flood Authorities (LLFA), which are usually the local authorities/councils, are also competent authorities for the purpose of the Directive.

At the estuary level, stakeholder groups have been established to enable the sharing of information for the development of the flood risk maps and plans. The Environment Agency and the LLFA will liaise with the stakeholder groups around the Humber Estuary in the preparation of Flood Risk Maps, Flood Hazard Maps and in the Humber Flood Risk Management Strategy. The existing Humber Shoreline Management Plan (SMP) which sets out the long term, sustainable strategy for coastal defence within the Humber Estuary and the Humber Coastal Habitats Management Plan (CHaMP), which provides a framework for accounting for and predicting the potential losses and gains to habitats and species from coastal squeeze will both input into the new Humber Flood Risk Management Strategy.

Figure 1c shows the flood map for the Humber with areas which could be affected by flooding from rivers and the sea (Environment Agency, 2012). It also shows flood defences and the areas that benefit from them. Flood Zone 3 is the Environment Agency's best estimate of the areas of land with a 100 to 1 (or greater) chance of flooding each year from rivers or with a 200 to 1 chance

(or greater) of flooding from the sea. Flood Zone 2 is the Agency's best estimate of the areas of land between Zone 3 and the extent of the flood from rivers or the sea with a 1000 to 1 chance of flooding in any year. It includes those areas defined in Flood Zone 3.

#### **2.4.2 Germany – Elbe & Weser**

In Germany, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) has taken the lead in implementing the directive. Technical support has been provided by the German working group LAWA with ad-hoc committee advice from flood water and hydrology. The two German estuaries each have their own implementation groups.

The FGG Elbe is the coordinating group which consists of the national water management administrations of the 10 federal states in the catchment area of the Elbe river basin, and who will develop the National Elbe Flood Risk Management Plan. As the Elbe has an international catchment area, an International Flood Risk Management Plan might also be developed by the International Commission for the Protection of the Elbe (ICPER). This group comprises water management administration representatives of the Czech Republic, Poland, Austria and of the ten federal German states with jurisdiction over the Elbe. At the local level the LAWA federal coastal working group (subcommittee "Coast") consisting of the five coastal federal water management administrations (Lower Saxony, Bremen, Hamburg, Schleswig-Holstein and Mecklenburg-Vorpommern) has taken over the coordination between the coastal interests. The KorTel (Coordination group Tidal River Elbe for the three federal states Lower Saxony, Hamburg, Schleswig-Holstein) has the official responsibility for implementing the FRMD within the Elbe estuary. It is planned that they will liaise with the Tidal River Elbe Working Group (AG TES) to develop non-binding measures for the Elbe estuary to be included in the development of the flood risk maps and plans in a later state. The FGG Elbe will produce the National Elbe River Basin Flood Risk Management Plan.

FGG Weser is the coordinating group made up of the national water management administrations of the seven federal states within the Weser catchment area. This group will produce the National Weser River Basin Flood Risk Management Plan. Three bodies have the responsibility for implementing the FRMD within the Weser estuary. These are the Lower Saxony Ministry of Environment and Climate Change (MU), the Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN) and the Senator for Environment and City Development – Free Hanseatic City of Bremen (SUBV). Together it is assumed they will work closely with regional and local stakeholders with flood protection interests to develop non-binding measures for the Weser Estuary to feed into the development of the flood risk maps and plans.

#### **2.4.3 The Netherlands & Flanders – Scheldt**

In Flanders, The implementation of the Flood Risk Management Directive has been realised by an adaptation of the Decree on Integrated Water Policy. The required flood risk maps will be part of the river basin management plans and the required measure will be part of the measure programs of the river basin and catchment management plans.

In The Netherlands, the FRMD is implemented for four different River Basins (the Rhine, Meuse, Ems and Scheldt). The Ministry of Infrastructure and

Environment has taken the lead in implementing the directive and producing the Flood Risk Management Plan, including the flood hazard and flood risk maps. This plan exists of 4 national parts (one plan per river basin) and a covering international part. Input is provided by Rijkswaterstaat, Provinces, Water boards and the so-called safety regions. The national parts are already delivered. The international part is still being discussed by an intergovernmental body for sustainable management of the Scheldt River: the International Scheldt Commission. This discussion has recently started. The FRMP will be ready for public inspection by November 2014 and will be made final in December 2015.

### 3 Key Players and Management Structures

The key players in the management of each estuary have been collated with their remit for each sectoral activity. They are presented in Tables 1-4 for each estuary and include both the statutory players (government, competent and statutory authorities) and also those with voluntary/advisory management roles. The sectoral activities for each estuary include:

- Water Quality
- Nature Conservation
- Shipping and Ports
- Regional Development
- Flood Protection
- Recreation, Tourism
- Fishery
- Agriculture
- Forestry
- Hunting

#### 3.1 Humber Estuary

Table 1 shows the many organisation(s) with both statutory and non-statutory remits for each of the sectoral activities in the Humber Estuary. The Humber Estuary is subject to many uses and users which are regulated by statute or agreement within a plethora of Acts enforced by local and national statutory bodies (Boyes *et al.*, 2003<sup>7</sup>). In order to assist with the consultation of various interest groups and relevant authorities on both the north and south banks of the Humber, the Humber Advisory Group (HAG) was established in 2001 to provide strategic advice to the Humber Estuary Relevant Authorities Group (HERAG), both during the production of the Humber Management Scheme (HMS) and subsequently with the implementation of various management actions. However, there is still no overall co-ordination of all relevant plans, and no ICZM policy for the estuary. Whilst the HMS has drawn together several management initiatives, planning management remains fragmented between the relevant planning authorities around the Humber. The HMS was revised in 2011/12 and the updated version is now in use for the management of the Humber Estuary.

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<sup>7</sup> Boyes, S., Warren, L. & M. Elliott, 2003. *Summary of current legislation relevant to nature conservation in the marine environment in the United Kingdom*. Institute of Estuarine and Coastal Studies, University of Hull, UK (available online - <http://www.jncc.gov.uk/page-2867>).

**Table 1 Organisational Remit for the Management of the Humber Estuary**

<b>HUMBER</b>		
<b>Area of Responsibility</b>	<b>Group/Organisation</b>	<b>Basis to Management</b>
Water Quality	Defra	Government Body – Statutory
	Environment Agency	Executive Non-departmental Public Body (NDPB) - Statutory
	Water Companies	Duty of Care
Conservation	Defra	Government Body – Statutory
	Natural England	Executive NDPB - Statutory
	Environment Agency	Executive Non-departmental Public Body (NDPB) - Statutory
	Royal Society for the Protection of Birds	Landowner/manager & NGO pressure
	Lincolnshire Wildlife Trust (LWT)	Landowner/manager & NGO pressure
	Yorkshire Wildlife Trust (YWT)	Landowner/manager & NGO pressure
	Yorkshire Naturalists Union	NGO Expertise
Shipping & Ports	Marine Management Organisation (MMO)	Executive NDPB - Statutory
	ABP Humber Estuary Services (Associated British Ports)	Navigation and Harbour Authority for Goole, Hull, Immingham and Grimsby - Statutory
	Humber Sea Terminals, APT and ConocoPhillips	Harbour Authorities – Relevant Authorities
	British Waterways	Public Corporation - Statutory
Development	Local Planning Authorities (with stakeholder input)	Statutory
	Associated British Ports (ABP)	Statutory
	Environment Agency	Executive NDPB - Statutory
	Humber Local Enterprise Partnership (LEP)	Partnership of business, university and the four local authorities
Flood Protection	Defra	Government Body – Statutory
	Humber Estuary Coastal Authority Group (HECAG)	Advisory (comprising various bodies)
	Environment Agency	Executive NDPB - Statutory
	Local Planning Authorities (with stakeholder input)	Statutory
	Internal Drainage Boards	Statutory
Tourism	Local Landowners	Stakeholders
	Visit Hull and East Yorkshire. Also Visit Lincolnshire	Promotion
Fishery	North Eastern Inshore Fisheries & Conservation Authority	Statutory
	Environment Agency	Executive NDPB - Statutory
	Fishing / Sea Angling clubs	Permitting, site management & lobbying
	National Federation of Fishermen's Organisations	Lobby
Wildfowling / Hunting	Local wildfowling clubs, Upper Humber wildfowling committee, Humber wildfowl refuge committee	Permitting, land management and ownership/lease, lobby
Agriculture	National Farmers Union (North East Region), Country Landowners Association (Yorkshire)	Lobby



### 3.2 Elbe Estuary

Table 2 shows the many organisations with responsibility for the management for the Elbe estuary. As the estuary lies at the intersection of three federal states (“*Bundesländer*” Hamburg, Schleswig-Holstein and Lower Saxony), this creates challenges for its management. Several working groups have been formed from the three regions to coordinate the implementation of management measures relating to the Water Framework Directive, the Flood Risk Management Directive and Natura 2000. Each state is in charge of measures for its territory, making it difficult to achieve agreements between them. Despite that, the states together with the Federal Administration for Waterways and the Hamburg Port Authority have now issued one Natura 2000 management plan for the whole estuary which is now to be implemented. In parallel, the Senat of Hamburg established the foundation “Stiftung Lebensraum Elbe” in 2010 with the mandate to improve the ecological situation in the Tidal River Elbe through different measures. The foundation is led by a steering committee of different stakeholders as well as organisations with management responsibilities like Hamburg Ministry for Environmental Affairs, the Hamburg Port Authority (HPA), the Federal Waterways Administration (WSV) and others, provided with an endowment of 10 Million € and an income of 7.5 Million € within the following 10 years. Most of the money stems from the Port of Hamburg and port dues. At the beginning of 2012, the foundation is still listing possible measures, however there has been no final agreement on either of these different lists of measures proposed for the Tidal River Elbe. The finances will also require further clarification.

**Table 2 Organisational Remit for the Management of the Elbe estuary**

ELBE		
Area of Responsibility	Group/Organisation	Basis to Management
Water Quality	State Ministries - Lower Saxony Ministry of Environment and Climate Change (MU) - Free and Hanseatic City of Hamburg (FHH) – Ministry of Urban Development and Environment (BSU) - Schleswig Holstein: Ministry of Agriculture, the Environment and Rural Areas	Statutory
	State Agencies - Federal Institute of Hydrology (BfG) - Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN) - Lower Saxony State Agency for Mining, Energy and Geology (LBEG) - SH: LLUR: Schleswig-Holstein Agency for Agriculture, Environment and Rural Areas	Statutory
	Water Companies	Duty of Care
Nature Conservation	State Ministries - Lower Saxony Ministry of Environment and Climate Change (MU) - FHH, Ministry of Urban Development and Environment - SH: Ministry of Agriculture, the Environment and Rural Areas	Statutory
	State Agencies and Companies - Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN)	Statutory

ELBE		
Area of Responsibility	Group/Organisation	Basis to Management
	- SH: LLUR: Schleswig-Holstein Agency for Agriculture, Environment and Rural Areas	
	Wadden Sea National Parks of Schleswig-Holstein, Lower Saxony and Hamburg - Administration	Statutory
	Nature conservation NGOs, e.g. - BUND, NABU, Verein Jordsand, WWF etc	Stakeholder, protected sites management, contracts, landowner, lobby
Shipping and ports	Federal Waterways Administration (WSV), consisting of Federal Ministry of Transport, Building and Urban Development (BMVBS) and local offices of Hamburg and Cuxhaven.	Statutory
	State Ministries - FHH: Ministry of Economy, Transport and Innovation - Lower Saxony Ministry of Economic affairs, employment and transport (MW) - SH: Ministry of Science, Economic Affairs and Transport	Statutory
	Hamburg Port Authority	Statutory
	Niedersachsen Ports (N-Ports) Brunsbüttel Ports	Statutory
	Ship-owner associations and terminal operators	Lobby
Regional Development	State Ministries - Lower Saxony Ministry of Food, Agriculture, Consumer Protection and Development (ML) - FHH: Ministry of Urban Development and Environment - SH: Ministry of Agriculture, the Environment and Rural Areas	Statutory
	Local and regional Planning Authorities (with stakeholder input), - Hamburg Port Authority (for the port area)	Statutory
	Associations (entrepreneurs, trade, industry)	Lobby
Flood Protection	State Ministries - Lower Saxony Ministry of Environment and Climate Change (MU) - SH: Ministry of Agriculture, the Environment and Rural Areas - FHH: Ministry of Urban Development and Environment	Statutory
	State Agencies - Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN) - FHH: Hamburg Agency of Streets, Bridges and Water Management - SH: Agency for Coastal protection, National Park and Ocean Protection - HPA (poldersystem in the harbour area)	Statutory
	Water and Land Communities, Drainage Boards	Statutory
	Niedersachsen Ports (N-Ports)	Statutory
	Local Landowners	Stakeholders
Recreation, Tourism	- Metropolitan Region of Hamburg	Promotion
	Cities and communities along the Elbe - Departments for recreation and green spaces (FHH, SH, Lower Saxony)	Statutory
	Water sports association - Deutscher Motoryachtverband e.V.	Lobby

ELBE		
Area of Responsibility	Group/Organisation	Basis to Management
	- Seglerverband Niedersachsen e.V.	
Fishery	Private fishing clubs - Landesfischereiverband Hamburg (LFV Hamburg) - Landesfischereiverband Elbe (LFV)	Lobby, site management
	Fishery Administration - Lower Saxony State Office for Consumer Protection and Food Safety (LAVES) – Department Freshwater Fishery and Fishery Service - FHH: Ministry of Economy, Transport and Innovation - SH:: Ministry of Agriculture, the Environment and Rural Areas	Statutory
	Lower Saxony Chamber of Agriculture, Department Fishery	Statutory
	Private fishing clubs (DAV)	Lobby
Agriculture	State Ministries - Lower Saxony Ministry of Food, Agriculture, Consumer Protection and Development (ML) - FHH: Ministry of Economy, Transport and Innovation - SH:: Ministry of Agriculture, the Environment and Rural Areas -	Statutory
	Chamber of Agriculture <sup>8</sup> - Landwirtschaftskammer Hamburg - Landwirtschaftskammer SH - Landwirtschaftskammer Niedersachsen	Statutory
	Agricultural Associations - Deutscher Bauernverband e.V. (BDV) - Landvolk Niedersachsen – Landesbauernverband e.V. - Landesbauernverband Hamburg e.V. - Landesbauernverband Schleswig-Holstein e.V.	Lobby
Forestry	Niedersächsische Landesforsten (NLF) - FHH: Ministry of Economy, Transport and Innovation - SH: Ministry of Agriculture, the Environment and Rural Areas	Landowner, statutory
Hunting	Hunters Associations - Deutscher Jagdschutzverband (DJV) - Landesjägerschaft Niedersachsen e.V. - Landesjägerschaft Hamburg e.V. - Landesjägerschft Schleswig-Holstein e.V..	Land management, game keeping, lobby

<sup>8</sup> The Chambers of Agriculture are both: stakeholders and agricultural authorities with official duties.

### 3.3 Weser Estuary

Table 3 shows the organisations with management responsibility for the Weser estuary. As the tidal Weser is administrated by only two federal states, principally Lower Saxony and the Free Hanseatic City of Bremen, a coordinated management approach is easier compared to the Elbe, but still needs governmental treaties between the states, again with the involvement of the Federal Waterways Administration (WSV). As with the Elbe, a cross-border Natura 2000 management plan was set up for the Weser estuary (Integrated Management Plan Weser (IBP Weser) by the associated state ministries and state agencies in order to meet the requirements of the Natura 2000 directives, the WFD objectives, and also to consider the needs of existing uses in the estuary. In order to ensure future successful implementation, the development of the IBP Weser was sustained by detailed stakeholder involvement. In February 2012 both state governments decided on the implementation of the IBP Weser as a guideline for authorities. The existing working group by NLWKN, SUBV and WSV should be continued in order to observe the implementation process and biennially report progresses to stakeholders.

Nature conservation agencies are in charge of the implementation of most of the measures, stated in the IMP, but also the WSV, dike organisations, ports and others committed themselves to contributions. Further planning to specify and synchronise measures is likely to be financed.

**Table 3 Organisational Remit for the Management of the Weser estuary**

WESER		
Area of Responsibility	Group/Organisation	Basis to Management
Water Quality	State Ministries - Lower Saxony Ministry of Environment and Climate Change (MU) - Free Hanseatic City of Bremen – The Senator for Environment, Construction and Transport (SUBV)	Statutory
	State Agencies - Federal Institute of Hydrology (BfG) - Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN) - Lower Saxony State Agency for Mining, Energy and Geology (LBEG)	Statutory
	Water Companies	Duty of Care
Nature Conservation	State Ministries - Lower Saxony Ministry of Environment and Climate Change (MU) - Free Hanseatic City of Bremen – The Senator for Environment, Construction and Transport (SUBV)	Statutory
	State Agencies and Companies - Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN) - Hanseatic Nature Development Company (haneg) for Bremen - Bremenports GmbH & Co KG	Statutory
	Wadden Sea National Park of Lower Saxony - Administration	Statutory
	Nature conservation NGOs, e.g. - Friends of the Earth Germany (BUND), - Nature and Biodiversity Conservation Union (NABU) - Association Nature Conservation Unterweser (GNUU)	Stakeholder, protected sites management, contracts, landowner, lobby
Shipping and ports	Federal Waterways Administration (WSV), consisting of Federal Ministry of Transport, Building and Urban Development (BMVBS), the regional offices e.g. in Aurich (WSD Nord-West) and local offices Bremerhaven and Bremen (Waterways and Shipping Authorities)	Statutory
	State Ministries - Lower Saxony Ministry of Economic affairs, employment and	Statutory

WESER		
Area of Responsibility	Group/Organisation	Basis to Management
	transport (MW) - Free Hanseatic City of Bremen – The Senator for Economic Affairs, Labour and Ports (SWAH)	
	- Harbour Master Office/port authority of the ports of Bremen/- Bremerhaven (navigation) - Bremenports (infrastructure related company, owned by Bremen))	Statutory
	Niedersachsen Ports (N-Ports)	Statutory
	Ship-owner associations and terminal operators	Lobby
Regional Development	State Ministries - Lower Saxony Ministry of Food, Agriculture, Consumer Protection and Development (ML) - Free Hanseatic City of Bremen – The Senator for Environment, Construction and Transport (SUBV)	Statutory
	Local and regional Planning Authorities (with stakeholder input)	Statutory
	- Bremen Economic Development Company (Bremer Wirtschaftsförderung GmbH, WFB) - Bremerhaven Economic Development Company (Bremerhavener Gesellschaft für Investitionsförderung und Stadtentwicklung – BIS)	Statutory
	Associations (entrepreneurs, trade, industry)	Lobby
Flood Protection	State Ministries - Lower Saxony Ministry of Environment and Climate Change (MU) - Free Hanseatic City of Bremen – The Senator for Environment, Construction and Transport (SUBV)	Statutory
Flood Protection (cont.)	Municipal authorities - Harbour Master Office/port authority of the ports of Bremen/Bremerhaven (Hansestadt Bremisches Hafenamts HBH) - Bremerhaven Urban Administration (Magistrat)	
	State Agencies - Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN)	Statutory
	Water and Land Communities - Free Hanseatic City of Bremen – The Senator for Economic affairs and ports (SWH) - bremenports - Kreisverband der Wasser- und Bodenverbände im Altkreis Wesermünde - Kreisverband Wesermarsch der Wasser- und Bodenverbände und Unterhaltungsverbände AG 26 - Bremischer Deichverband am linken Weserufer - Bremischer Deichverband am rechten Weserufer	Statutory
	Niedersachsen Ports (N-Ports)	Statutory
	Local Landowners	Stakeholders
Recreation, Tourism	Tourism Associations - Bremer Touristik-Zentrale (BTZ) - Bremerhaven Touristik (BIS) - Touristikgemeinschaft Wesermarsch - Cuxland – Tourismus (Agentur für Wirtschaftsförderung Cuxhaven) - Region Unterweser Maritime Landschaft e.V.	Promotion
	Cities and communities along the Weser - Departments for recreation and green spaces - Free Hanseatic City of Bremen – The Senator for Economic Affairs, Labour and Ports (SWAH)	Statutory
	Water sports association - Wassersportkommission im Landessportbund Bremen - Deutscher Motoryachtverband e.V. - Seglerverband Niedersachsen e.V.	Lobby
Fishery	Private fishing clubs - Landesfischereiverband Bremen (LFV Bremen) - Landesfischereiverband Weser-Ems (LFV Weser-Ems)	Lobby, site management
	Fishery Administration - Free Hanseatic City of Bremen – The Senator for Economic Affairs, Labour and Ports (SWAH) - Fischeramt Bremen - staatliches Fischereiamt Bremerhaven	Statutory

WESER		
Area of Responsibility	Group/Organisation	Basis to Management
	<ul style="list-style-type: none"> <li>- Lower Saxony State Office for Consumer Protection and Food Safety (LAVES) – Department Freshwater Fishery and Fishery Service</li> </ul>	
	Lower Saxony Chamber of Agriculture, Department Fishery	Statutory
	Professional fishing association	Lobby
Agriculture	State Ministries <ul style="list-style-type: none"> <li>- Lower Saxony Ministry of Food, Agriculture, Consumer Protection and Development (ML)</li> <li>- Free Hanseatic City of Bremen –The Senator for Economic Affairs, Labour and Ports (SWAH)</li> <li>- Free Hanseatic City of Bremen –The Senator for Environment, Construction and Transport (SUBV)</li> </ul>	Statutory
	Chamber of Agriculture <sup>9</sup> <ul style="list-style-type: none"> <li>- Landwirtschaftskammer Bremen</li> <li>- Landwirtschaftskammer Niedersachsen</li> </ul>	Statutory
	Agricultural Associations <ul style="list-style-type: none"> <li>- Deutscher Bauernverband e.V. (BDV)</li> <li>- Bremischer Landwirtschaftsverband e.V.</li> <li>- Landvolk Niedersachsen – Landesbauernverband e.V.</li> <li>- Kreislandvolkverband Wesermünde e.V.</li> <li>- Kreislandvolkverband Wesermarsch e.V.</li> <li>- Kreislandvolkverband Osterholz e.V.</li> </ul>	Lobby
Forestry	Niedersächsische Landesforsten (NLF) State ministries: <ul style="list-style-type: none"> <li>- Free Hanseatic City of Bremen – The Senator for Environment, Construction and Transport (SUBV)</li> <li>- Lower Saxony Ministry of Food, Agriculture, Consumer Protection and Development (ML)</li> </ul>	Landowner, statutory
Hunting	State ministries: Free Hanseatic City of Bremen – The Senator for Environment, Construction and Transport (SUBV) Lower Saxony Ministry for Food, Agriculture, Consumer Protection and Development (ML) Hunters Associations <ul style="list-style-type: none"> <li>- Deutscher Jagdschutzverband (DJV)</li> <li>- Landesjägerschaft Niedersachsen e.V.</li> <li>- Landesjägerschaft Bremen e.V.</li> <li>- Kreisjägerschaft Wesermarsch e.V.</li> <li>- Kreisjägerschaft Land Hadeln/Cuxhaven e.V.</li> <li>- Jägerschaft Wesermünde-Bremerhaben e.V.</li> </ul>	Land management, game keeping, lobby

<sup>9</sup> The Chambers of Agriculture are both: stakeholders and agricultural authorities with official duties.

### 3.4 Scheldt Estuary

Table 4 details the bodies with both statutory and non-statutory responsibilities for the Scheldt river estuary which borders both the Netherlands and Belgium (Flanders). Consequently, management challenges in the Scheldt have largely arisen from the cross-border nature of the management activities. The Netherlands and Flanders previously agreed on a common Long Term Vision of the Scheldt estuary concerning the priority functions (Safety against flooding, Naturalness and Accessibility) and on a set of short term developments/measures to implement the Long Term Vision (Development Scheme 2010). The Development Scheme 2010 includes, amongst others, the execution of the revised Sigmaphan against flooding, the deepening of the navigation channel towards the Port of Antwerp and several nature restoration projects. In 2012, most of the agreed projects are either started or have not yet been realised.

**Table 4 Organisational Remit for the Management of the Scheldt estuary**

SCHELDT		
Area of Responsibility	Group/Organisation	Basis to Management
Water Quality	International Scheldt Commission	Statutory
	Flemish Ministry of Environment, Nature and Energy and Flemish Environment Agency (Flanders)	Statutory
	Ministry of Infrastructure and the Environment, Rijkswaterstaat (the Netherlands)	Statutory
	Province of Zeeland (the Netherlands)	Statutory
	The Scheldtstromen Water Board	Statutory
	Water Companies (Flanders and the Netherlands)	Duty of Care
Conservation	Flemish Ministry of Environment, Nature and Energy and Agency for Nature and Forests (Flanders)	Statutory
	Ministry of Economic Affairs, Agriculture and Innovation (the Netherlands)	Statutory
	Staatsbosbeheer (the Netherlands)	Statutory
	Province of Zeeland (the Netherlands)	Statutory
	The Flemish-Dutch Scheldt Commission (VNSC) (Flanders and the Netherlands)	Statutory
	Natuurpunt (Flanders)	NGO pressure
	Bond Beter Leefmilieu (Flanders)	NGO pressure
	Zeeuwse Milieufederatie (the Netherlands)	NGO pressure / terrain manager
	Stichting het Zeeuwse Landschap (the Netherlands)	NGO pressure / terrain manager
	Vereniging Natuurmonumenten (the Netherlands)	NGO pressure / terrain manager
	Vogelbescherming Nederland (the Netherlands)	NGO pressure
	Natuurbeschermingsvereniging de Steltkluut (the Netherlands)	NGO pressure
	Stichting De Levende Delta (the Netherlands)	NGO pressure
	Zuidelijke land- en tuinbouworganisatie (the Netherlands)	NGO pressure
Shipping and Ports	Permanent Committee of Supervision on Scheldt Navigation (Flanders and the Netherlands)	Statutory
	Common Nautical Authority (the Netherlands and Flanders)	Statutory
	Agency Maritime Services and Coast (Flanders)	Statutory
	Waterways and Seachannel – SeaScheldt department (Flanders)	Statutory
	Ministry of Infrastructure and the Environment, Rijkswaterstaat (the Netherlands)	Statutory
Development	The Flemish-Dutch Scheldt Commission (VNSC) (Flanders and the Netherlands)	Statutory
	Flemish Ministry of Mobility and Public Works – Maritime Access (Flanders)	Statutory
	Waterways and Seachannel – SeaScheldt division (Flanders)	Statutory

SCHELDT		
Area of Responsibility	Group/Organisation	Basis to Management
	Ministry of Infrastructure and the Environment, Rijkswaterstaat (the Netherlands)	Statutory
	Ministry of Economic Affairs, Agriculture and Innovation (the Netherlands)	Statutory
	Province of Zeeland (the Netherlands)	Statutory
	Province Oost-Vlaanderen and Province Antwerpen (Flanders)	Statutory
	Several Municipalities along Scheldt estuary (the Netherlands and Flanders)	Statutory
	Port of Antwerp (Flanders)	Statutory
	Port of Ghent (Flanders)	Statutory
	Zeeland Seaports (the Netherlands)	Statutory
Flood Protection	Waterways and Seachannel – SeaScheldt division (Flanders)	Statutory
	Ministry of Infrastructure and the Environment, Rijkswaterstaat (the Netherlands)	Statutory
	Province of Zeeland (the Netherlands)	Statutory
	The Scheldtstromen Water Board (the Netherlands)	Statutory
Tourism	Tourist Information Office (VVV) (the Netherlands and Flanders)	Statutory
	Province of Zeeland (the Netherlands)	Statutory
	Ministry of Economic Affairs, Agriculture and Innovation (the Netherlands)	Statutory
	Toerisme Vlaanderen (Flanders)	Statutory
	Provincie Oost-Vlaanderen en Provincie Antwerpen (Flanders)	Statutory
Fishery	Agency for Nature and Forests (Flanders)	Statutory
	Ministry of Economic Affairs, Agriculture and Innovation (the Netherlands)	Statutory
Wildfowling /Hunting	Agency for Nature and Forests (Flanders)	Statutory
	Ministry of Economic Affairs, Agriculture and Innovation (the Netherlands)	Statutory
	Staatsbosbeheer (the Netherlands)	Statutory
Agriculture	Ministry of Economic Affairs, Agriculture and Innovation (the Netherlands)	Statutory
	The Scheldtstromen Water Board (the Netherlands)	Statutory
	Flemish Ministry of Fisheries and Agriculture (Flanders)	Statutory
	Water boards (Flanders)	Statutory
	Boerenbond (Flanders)	NGO pressure
	Bond Beter Leefmilieu (Flanders)	NGO pressure



## 4 Management Plans & SWOT Analysis

The TIDE estuaries have to comply with various European, national and regional policies, and development and management plans and sectoral strategies. The following list of management drivers have been identified across the four TIDE estuarine systems, under which all sectoral management plans have been collated and assessed.

- water quality (Water Framework Directive & Urban Waste Water Treatment Directive)
- nature conservation (Habitats & Species Directive & Wild Birds Directive)
- flood protection and coastal protection (Flood Risk Management Directive)
- integrated coastal zone management
- shipping, ports and pollution prevention
- economic development (including agriculture, forestry, tourism)
- Marine Strategy Framework Directive

Tables 5 to 8 in Section 4.3 detail the management plans applicable to each estuary and show the main organisation(s) responsible for the implementation of the plan and their remit. The spatial remit of the plan is provided, together with the main focus of the plan e.g. conservation, recreation, flood protection, ICZM or economy/ports.

Tables 5 to 8 also detail the results of the SWOT analysis (Strengths, Weaknesses, Threats and Opportunities) carried out by each partner for their estuary's management plans. The Elbe and the Weser groups attempted to have those people responsible for the plans to carry out the SWOT analysis, whereas the Humber and Scheldt groups carried out the SWOT of each plan from an independent viewpoint, but with the results circulated to relevant organisations for comment.

In undertaking the SWOT analyses of the management plans as part of this study, the following points were taken into consideration:

### Strengths:

- What are the highlights of the management plan?
- Are unique (or unusual) resources being drawn upon (and, if so, what are they)?
- What factors would be central in the management plan's approach being adopted or transferred to plans in the future?

### Weaknesses:

- What aspects of the management plan could be improved?
- What apparent pitfalls within the management plans have led to limited implementation?

### Opportunities:

- Does the management plan provide opportunities to incorporate future changes? Opportunities can come changes in relation to 'new' technology, environmental changes or changes in government policy or societal desire.

## Threats:

- Is the management plan threatened by funding, long term vision or political will?

The outputs from the SWOT analyses were used to provide an indication of the ‘success’ of each management plan and to assist in identifying those approaches and techniques that should be considered further. The SWOT analysis is aimed to indicate what the estuary does better than another estuary, what other estuaries do better than them, whether the estuary is making the most of the opportunities available and how an estuary should respond to changes in the external environment. Any notable findings on best practice are included in the final TIDE best management practice deliverables.

## 4.1 Management Plans

### 4.1.1 Humber Estuary

Table 5 (see section 4.3) lists the many management plans related to the Humber Estuary. There have been several management attempts in the Humber Estuary, and various management plans and strategies have been produced. However they are largely sectoral and occasionally spatially constrained. The main gap lies in the coordination and integration of the different management approaches. Although many plans have been produced, stakeholders are sometimes unaware of their existence and many have never entered an implementation phase. There may also be tension between different plans which have different aims and objectives. The Humber Management Scheme has in some ways overcome these issues, bringing together and consulting with various interest groups and relevant authorities around the Humber in advisory groups primarily to ensure that the habitats and species of the Humber maintain their favourable condition. The newly revised plan launched in 2012 aims to enhance this user group and plan integration.

### 4.1.2 Elbe & Weser Estuaries

Tables 6 and 7 (see section 4.3) list the variety of existing management plans relating to the estuaries of the Weser and Elbe respectively. Most of these plans are sectoral – and as such do not encompass all of use requirements and statutory regulations the estuaries are affected by, and are also linked strictly to administrative borders. The development of a more holistic perspective in terms of estuarine management is surely related to the ongoing implementation process regarding the WFD and the Birds and Habitats Directive. Since these directives formulate objectives which do not relate to administrative boundaries but to river basins and protected areas, their implementation requires changes in perspective.

Related to the WFD, an example of cross-border initiatives are the national RBMPs for the Weser and Elbe, which were jointly developed by the federal states (“*Bundesländer*”) adjacent to the river catchment areas. An example for cross-sectoral cooperation is the foundation of Regional Cooperation Groups in Lower Saxony and Bremen. These groups which involve all relevant regional stakeholder groups, operate at the level of sub-basin survey areas and should contribute to the successful implementation of the WFD in both states.

As listed in Tables 6 and 7 for the Tidal Rivers Weser and Elbe, there are several different management plans with different focus. The most holistic of these are possibly the Natura 2000 management plans. Here the two federal states in charge, the Federal Administration for Waterways and, for the Elbe, the Hamburg Port Authority have finalised joint Natura 2000 management plans, which will guide all future activities at the estuaries and include a large list of measures which now successively are to be implemented<sup>10</sup>. The implementation at the Elbe will be controlled by a steering group, the practical work will be coordinated by a joint working group. In the Weser, the plan was finalised in February 2012 and, where the state cooperation is only bilateral, working groups are foreseen only on the project level. Nevertheless an observing group of the two states and the federal administration should deliver progress reports to the stakeholders. Both plans have been produced on the basis of a broad and active stakeholder involvement so that they are founded on principal mutual agreement.

#### **4.1.3 Scheldt Estuary**

In the past decade, management of the Scheldt estuary has been realised not only on a transnational basis by the Netherlands (NE) and Belgium (Flanders) (FE) governments but also in a multi-sectoral way. In an attempt to reconcile the often competing interests of the Netherlands and Flanders governments, the Scheldt Development Plan 2010 was created and published in 2005. It integrates goals for nature conservation, accessibility of the Antwerp port, and flood safety issues. It is also the starting-point for joint policy-making by the Flemish and Dutch governments, aiming at a more sustainable development in the Scheldt estuary. Table 8 (in section 4.3) shows the different management plans for the Scheldt.

## **4.2 SWOT Analysis**

Results of the SWOT analysis for all the management plans in each of the four estuaries can be found in Tables 5-8. The SWOT results are discussed below with examples of best practice highlighted within tables.

### **4.2.1 Water Quality**

Each estuary has on-going implementation of the WFD by adopting river basin management plans (RBMPs) and measure programmes for their estuaries. The plans address the pressures facing the water environment in the river basin district, and the actions that will address them. The plans have been prepared in consultation with a wide range of organisations and individuals and are the first of a series of six-year planning cycles. Some of the larger estuaries which include multi-national borders e.g. the Elbe, have RBMPs being delivered at both the international level and the national level. Estuaries such as the Elbe and Weser have several Federal States with governance over the estuary, which has led to these estuaries having a number of regional (federal) RBMPs. As the Scheldt estuary is shared between the Netherlands and Belgium (Flanders), consequently management challenges have in large part stemmed from the cross-border nature of the management activities. The RBMP for the Humber Estuary has been delivered as a single plan.

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<sup>10</sup> [www.natura2000-unterelbe.de](http://www.natura2000-unterelbe.de)

The RBMPs provide a mechanism to improve the ecological and chemical status of the whole river basin, and provide the means in multinational estuaries to overcome administrative boundaries. However the two Dutch RBMPs covering the Scheldt estuary have given a greater awareness to the issues of recreation, shipping and ports, and ICZM issues within the estuaries than the RBMPs covering the Humber, Weser and Elbe. The plans have been implemented since 2009 (with the exception of the Scheldt RBMP) with further reviews every six years (2015).

The International and the national RBMP of the Elbe and its connected activities fulfilling the targets in different working groups provide a good basis for international activities to improve the quality of the water and especially of the sediments. A basin-scale international sediment management is under development which intends to understand the movement of sediments and sediment-bound contaminants in terms of source, pathway, receptor, relationships and how these respond to natural and anthropogenic changes. Different remediation projects in the upper catchment area of the Elbe in Germany and the Czech Republic are planned to prevent the still on-going pollution from contaminated sites. This is of special interest for those having to deal with these polluted sediments within the Elbe estuary as the Hamburg Port Authority and the Federal Waterways Administration.

While the WFD as the main statute is legally binding, and the European Commission will control the accomplishment of the WFD targets, the RBMPs and measure programmes of the Weser and Elbe outline the intended management framework and the planned actions within the river basin districts. However these may not be realised for these two estuaries.

Given the scope of the national/international RBMPs for the Elbe and Weser, a limited focus has been given to the tidal sections of the rivers. However, this has been addressed in both estuaries by stakeholder working groups (Elbe: AG TES; Weser: Regional Cooperation Groups) who have been contributing to a successful implementation of the WFD and have written non-legally binding lists of measures for the estuaries of Weser and Elbe. This practice has allowed the further integration of other issues such as ports, shipping and agriculture into the implementation of the WFD. For the Elbe estuary, the non-binding list of measures is planned to be updated every six years.

Water quality is also addressed by water companies around the estuaries in relation to the Urban Waste Water Treatment Directive. In the case of the Humber Estuary, Asset Management Plans (AMPs) are prepared every five years which set out the proposed spending plans for infrastructure improvements and treatment requirements. Although not a multi-sectoral plan, the AMPs provide an opportunity for future management needs to be incorporated and for the consultation process to highlight where the plans can deliver other objectives to protect the estuary. Water companies have a duty to ensure that they can deliver their statutory obligations for Natura 2000 sites, SSSIs under their control and Biodiversity Action Plans (BAPs).

The Weser and Elbe have water heat load management plans (Wärmelastplan) which set water quality standards for estuarine waters. In the case of the Weser estuary, these standards were set over thirty years ago and need to be updated. For the Hamburg section of the Tidal River Elbe a Cooling Water Management Plan is in process. The SWOT analysis for the Elbe Estuary has

identified that although these plans try to balance economic needs with conservation objectives for the estuary, implementation is difficult because of the overriding economic interests of industry and power stations.

No additional water quality plans were provided and therefore assessed for the Scheldt.

Best practice examples include:

Estuary	Good/Best Practice
Weser	Stakeholder groups (Regional Cooperation Groups) were founded in Lower Saxony and Bremen on a regional level. Their aim is to contribute to a successful WFD implementation and establish a list of non-binding measures referring to the tidal section of the river Weser and plans to be updated every six years.
Elbe	Stakeholder working groups have written non-legally binding lists of measures for the tidal section of the Elbe. This practice has allowed the further integration of other issues like ports, shipping and agriculture into the implementation of the WFD. This plan lists the non-binding list of measures for the Elbe and is planned to be updated every six years. A basin scale international sediment management is under development to improve the contamination of the sediments within the estuary.
Scheldt	The RBMPs give greater awareness to nature conservation, recreation, ICZM, shipping and ports than plans for the other three estuaries.
Humber	A good network of advisory and stakeholder groups for the Humber feeding into the RBMP for the estuary.

#### 4.2.2 Nature Conservation

The TIDE estuaries have management plans prepared to protect habitats and species of importance as suggested by the Habitats and Species Directive and the Wild Birds Directive. These integrated management plans, although being the result of Natura 2000 objectives, are multi-sectoral and detail the proposed management actions required to ensure the conservation of features from potentially threatening activities. The common weakness in all of the plans is their non-statutory nature and their success is based on stakeholder implementation. This seems to pose greater difficulties when more than one country is involved or when there are cross-border administrative issues e.g. Elbe (Federal states) and Scheldt (Belgium and Netherlands). It should also be noted that while a Natura 2000 management plan has been developed in the Netherlands, as required by the Dutch Nature Protection Act, a *Natura 2000* management plan is not required in Flanders for the Scheldt.

The Humber Estuary Management Scheme (HEMS) has undergone an extensive review of both the management of the Humber Estuary European Marine Site and its governance. This has updated the aim, objectives and action plans for the management of the Humber Estuary European Marine Site launched in 2011. Actions and management to meet the conservation objectives and sustainable management of the Humber have been agreed and will be delivered by both statutory and non-statutory organisations individually or as a partnership through the Humber Estuary Relevant Authorities Group (HERAG) and the Humber Advisory Group (HAG). As a non-statutory plan, HEMS cannot force any changes to be made, but only encourage stakeholders to make these changes. However, even on the Humber Estuary, there can be a lack of coordination at a strategic level. For example it is not clear how much

liaison and coordination there has been historically between the four local planning authorities (municipalities) surrounding the estuary.

Many other non-statutory plans exist for the protection of conservation features of importance on the Humber Estuary. These include biodiversity action plans (BAPs) as required by the Natural Environment and Rural Communities Act 2006. When BAPs were first set up they were generally local authority led but also placed a duty on other authorities, for example the Internal Drainage Boards (IDBs) to conserve biodiversity. BAP partnership groups were established whose membership included a wide range of interested parties. The BAP initiative in general has met with mixed results and has recently been somewhat overshadowed by newer initiatives stemming from the Lawton review (“Making Space for Nature”) and the government’s response to the Lawton review (the Natural Environment White Paper). Local Nature Partnerships and Nature Improvement Areas are now the mechanisms being considered. Enthusiasm for a specific Humber BAP was always mixed since the area already had a high degree of statutory protection with the existence of the HEMS.

Good practice currently demonstrated in the estuaries of the Weser and Elbe is the development of integrated management plans, which aim to harmonise the different uses, including the needs of shipping and ports, in conjunction with the requirements of Natura 2000 and the Water Framework Directive. The Integrated Managementplan Weser (IBP Weser) and the Integrated Managementplan Elbe (IBP Elbe) cover the whole estuary, which has led to close cross-border cooperation between the Federal States of Lower Saxony and the Free Hanseatic City of Bremen for the Weser and the Federal States of Hamburg, Lower Saxony and Schleswig-Holstein for the Elbe. Both plans (Elbe and Weser) were set up by the Nature Conservation Authorities of the Federal States with active involvement of the Federal Administration of Waterways (Elbe and Weser), and the Hamburg Port Authority (Elbe). Also the Ministries for Economic Affairs of the Federal States were involved among other stakeholders (Elbe and Weser).

*Natura 2000* management plans are joint, trans-state plans which although they have no legal standing provide guidelines for state actions and are aimed at the voluntary commitment of all stakeholders.

The Weser and Elbe estuaries have a series of Landscape or Framework Development Plans (e.g. LAPRO – Landschaftsprogramm Bremen). These form a statutory central planning instrument for conservation issues and sustainable land use at a state and local level. They give a definition of ecosystem services and provide a binding framework for local conservation plans. These plans are limited in extent to the area of the estuary covered by the federal state and some of the conservation objectives within these plans are older and may be in conflict with the concepts of the Weser *Natura 2000* management plan. However, the “Landschaftsprogramm Bremen” is currently being updated, so that the aims and measures of the IBP Weser may become part of its legal standing (the plan is to be considered in any administrative decision), as far as Bremen territory is concerned.

It should also be noted that while a *Natura 2000* management plan has been developed in The Netherlands as required by the Dutch Nature Protection Act, a *Natura 2000* management plan is not required in Flanders for the Scheldt.

Best practice examples include:

Estuary	Good/Best Practice
Humber	The Humber Estuary Management Scheme (HEMS) and other non-statutory plans also exist for the protection of specific habitats and species in the estuary. This has ensured the cooperation between all users of the estuary to meet the conservation objectives.
Weser	Integrated management plan (IBP), which tries to harmonise the different uses of the estuary, including the needs of shipping and ports, in conjunction with the requirements of Natura 2000 and the Water Framework Directive. This ensures the cross-border cooperation between the federal states and ensures broad stakeholder agreement on integrated aims and measures on the conceptual level.
Elbe	Integrated management plan (IBP), which tries to harmonise the different uses of the estuary, including the needs of shipping and ports, in conjunction with the requirements of Natura 2000. This ensures the cross-border cooperation between the federal states and ensures broad stakeholder agreement on integrated aims and measures on the conceptual level.
Scheldt	Nature restoration is part of the Revised Sigmaphan in Flanders: habitat creation and flood protection are combined by Flood Control Areas (FCA) and Controlled Reduced Tide (CRT) areas. Area competition for safety purpose and nature restoration.

#### 4.2.3 Flood Protection

Flooding is an issue of concern in all the four TIDE estuaries with the risk only expected to increase in the future due to relative sea level rise caused by climate change and/or isostatic readjustment. All the four estuaries have comprehensive flood risk management plans in place derived through their environment protection agencies and local authorities/federal states.

Several management plans exist to address the risk of flooding within the Humber Estuary. The Humber Flood Risk Management Strategy (FRMS) considers different ways of managing flood risk, raising defences where appropriate, but also introducing sites for managed realignment and flood storage which will help maintain valuable habitats. This plan covers the coastline from the mouth into the Humber beyond the Shoreline Management Plan (SMP) area. In introducing the FRMS for the whole estuary, the Environment Agency has adopted a strategic approach demonstrating best practice. The FRMS could have been developed on a local authority or Environment Agency regional basis but, by developing the FRMS for the whole Humber Estuary, this avoids the duplication of effort and possible overlap and omissions. Two additional plans, which between them also provide coverage of coastal erosion and flood defences for the coastline and estuary, are the Humber Estuary Shoreline Management Plan (HESMP) and the Humber Estuary Coastal Authorities Group (HECAG) SMP. These non-statutory plans set out a long-term sustainable strategy for the estuary addressing a broad range of issues. Having a range of plans which deal with the management of flooding on the Humber could however have scope for confusion and contradiction where the FRMS and SMPs overlap. These two types of plans are also implemented by different bodies – FRMPs are Environment Agency led with SMPs led by the local authorities.

The Humber Estuary also has Coastal Habitat Management Plans (CHaMPs). These are mechanisms for delivering flood and coastal defence schemes which comply with the requirements of the Habitats Directive. They quantify habitat change (loss and gain) and recommend measures to prevent future losses. These measures include modifying flood and coastal defence options to avoid damage, or identifying the necessary habitat restoration or recreation works to compensate for unavoidable losses. The actions will be delivered through SMPs, flood and coastal defence strategies and schemes.

In 1999, Flanders and the Netherlands agreed to set up a common strategy for managing the Scheldt estuary. In 2002, both parties signed a memorandum of understanding which defined a long term vision strategy. The Scheldt Estuary has two long term plans addressing flood defence for the coverage of Flanders (Revised Sigmoplan) and Netherlands (Deltaprogram). The Sigmoplan has been fully integrated into the 2010 Development Plan.

In 2006, a strategy framework for the provision of flood damage was developed called the Flood Protection Plan Weser. Integrated flood risk management plans according to the European Assessment and Management of Flood Risk Directive (FD) are also currently in production for the Weser and Elbe estuaries. These two plans involve all the water management administrations of the federal states and stakeholder interests of the respective estuaries as well as public participation.

A scheme to integrate the aims of nature conservation and flood/coastal protection has also been piloted in the Lower Saxony district of the Weser estuary called the Master Plan Coastal Defence (Generalplan Küstenschutz Niedersachsen/Bremen). This has involved the full participation of stakeholders.

Best practice examples include:

Estuary	Good/Best Practice
All estuaries	Flood risk management plans addressing flood protection of each estuary. Highlights cooperation across administrative boundaries.
Humber	Coastal Habitat Management Plans (CHaMPs). These are mechanisms for delivering flood and coastal defence schemes which comply with the requirements of the Habitats Directive.
Weser (Lower Saxony district)	Pilot scheme (Generalplan Küstenschutz Niedersachsen/Bremen) to integrate the aims of nature conservation and flood/coastal protection involving the full participation of stakeholders.

#### 4.2.4 Coastal Protection

All four TIDE estuaries have coastal management plans which impact on their management.

Two separate management plans cover the Dutch (Deltaprogram (Kust)) and Flanders (Coastal Safety Plan) areas of the Scheldt coastline. They both have a long term vision which within the SWOT analysis has been identified as both a strength and a weakness, but a lack of cross border coordination between the two countries managing the issues of coastal flooding and erosion has been highlighted.



The Elbe estuary also has two main plans covering coastal protection measures, one for the Federal state of Schleswig-Holstein (Generalplan Küstenschutz) and the second covering the Federal states of Lower Saxony and the Free Hanseatic City of Hamburg (also called the Generalplan Küstenschutz). Each plan covers slightly different issues but both featuring coastal/flood protection.

The Free and Hanseatic City of Hamburg has a programme for surge protection of private land in the Port of Hamburg (Anpassungsprogramm privater Hochwasserschutz), in which measures are partially financed by the owners.

The HECAG SMP (2010)<sup>11</sup>, covers the coastline from Flamborough Head in the East Riding of Yorkshire to Gibraltar Point in Lincolnshire, including the outer Humber Estuary. The main aims of the plan are coastal erosion, flood protection and conservation and has been developed by a working group comprised of many relevant authorities with consultation from stakeholder groups. It is a comprehensive plan detailing the intent of shoreline management (a vision for the future of shoreline management for the Flamborough Head to Gibraltar Point frontage) for the short term (up to 2025), the medium term (2026 – 2055) and the long term (up to 2105). However, some overlap exists between the areas covered by the SMP and the Humber Flood Risk Management Strategy.

The authorities responsible for the Weser estuary have devised one plan to manage coastal protection. The Master Plan Coastal Defence details an extension scheme and builds in future climate scenarios. With the different federal states and authorities with responsibility for the Weser, this plan provides a united management framework for coastal protection. However, because this plan is primarily a flood protection plan, it is not multi-sectoral. Other government obligations still have to be integrated.

Best practice examples include:

Estuary	Good/Best Practice
Weser	United management framework for coastal protection (Master Plan Coastal Defence).
Humber	A comprehensive management plan considering management of the coastline in the short, medium and long terms.

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

An international integrated plan exists for the management of the Wadden Sea (Trilateral Wadden Sea Plan) which includes both the Elbe and Weser estuaries up to the brackish water line of each estuary. In this case the brackish water borders differ from that of the transitional water bodies due to the WFD in both estuaries as they lay approximately 20 km seawards.

This plan has been devised by the governments of Germany, Denmark and the Netherlands and although not legally binding, provides an integrated approach

<sup>11</sup> Scott Wilson, 2010. Flamborough Head to Gibraltar Point Shoreline Management Plan Prepared for the Humber Estuary Coastal Authorities Group (HECAG)

to the protection and sustainable development of the Wadden Sea area. The plan harmonises some of the major EU initiatives (e.g. WFD, MSFD and Natura 2000) and provides the opportunity through a Common Secretariat to integrate the interests of all three countries.

A German national ICZM strategy (2006) was developed by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) in cooperation with the five federal coastal states and discussed with a broad set of stakeholders. It is a non-binding strategy providing a flexible framework and a holistic approach to an integrated sustainable development of coastal areas on the German North Sea and the German Baltic Sea. The scope of the German ICZM-strategy includes the interactions between coastal waters, the transitional waters (according to the WFD) and the adjacent land areas. Based on an analysis of the ecological, economic, social and legal situation in coastal and marine areas, the strategy formulates basic principles and areas of action for the implementation of ICZM. As a result of the strategy, ICZM principles were realised by many stakeholders in administration and policymaking at different levels as well as the business sector and society.

The national ICZM strategy is taken into consideration by the Federal States of Lower Saxony, Bremen and Hamburg when setting up their subsequent ICZM-strategies and concrete projects on their territories.

A non-statutory ICZM plan exists for the East Riding of Yorkshire which includes a section of the north bank of the outer Humber Estuary. Although subject to overlapping plans, it is important to recognise that the SMP remains the coastal defence plan providing the plan for the management of the shoreline, whereas the ICZM plan lays out policies for managing all aspects of the coastal zone.

No integrated coastal zone management initiatives have been detailed in the SWOT analysis for the Scheldt Estuary.

Best practice examples include:

Estuary	Good/Best Practice
Humber and Elbe	Development of integrated coastal zone management plans both on a national (e.g. Elbe & Weser) or regional (e.g. Humber) scale.

#### **4.2.6 Shipping, Ports and Pollution Prevention**

According to §12 chapter V SOLAS (International convention for the safety of life at sea) the members of the United Nations are obliged to establish “Vessel Traffic Service Centers” (VTS-Cs) in areas with high maritime traffic density or high danger risks.

For the German Coast including the German Bight as well as the waterways Elbe, Weser and Jade up to the Ports of Hamburg, Bremen/Bremerhaven and Wilhelmshaven a “Traffic Safety Concept German Coast” was developed by the Waterways and Shipping Directorates. This concept consists of several cross-linked special components, the VTS-Cs being one of the most important. Other components are pilotage, accident management, buoyage, networking with neighbouring states, etc. Every component fulfils its own important contribution to maritime traffic safety. The safety concept differentiates preventive, accident

combating and repressive measures. The primary aim is focused on the avoidance of dangerous situations to prevent accidents pre-emptively.

The Netherlands and Flanders governments have a Common Nautical Management plan and authority which organises, coordinates and monitors the traffic in the Scheldt estuary. It coordinates emergency events and provides advice, information and data exchange to and between the different players in the chain approach. It includes the cooperation of Flemish and Dutch Pilotage, agencies, traffic centres and VTS authorities, shipping inspection and ports. One weakness identified in this multinational plan is that there is an imbalance between the partners.

With only one port authority in the Humber Estuary, Associated British Ports (ABP) operate the four Humber ports of Grimsby, Immingham, Hull and Goole. As the statutory and harbour authority for the Humber, ABP have a number of plans and strategies to deal with pollution, port development and emergencies. These include the Humber Serious Marine Emergency Plan (HSMEP) and the Humber Marine Pollution Plan "Humber Clean". Each plan has legal backing with ABP having statutory powers to enforce laws. The main weakness levelled at each plan is that they are not multi-sectoral. ABP also employ a sustainability officer who has a remit for all four ports in the Humber.

Following a considerable increase of dredging necessities in the upper part of the Tidal River Elbe and the Port of Hamburg, during the past decade and the challenges implicated by the designation of the fairway as EU-protected Natura 2000 sites, the Hamburg Port Authority (HPA) together with the Federal Waterways Administration (WSV) developed a long term strategy with the potential to benefit both nature and economy. This so called Tidal Elbe Concept is continuously being revised, adjusted and gradually implemented to sustain the tidal river seaport of Hamburg for the 21<sup>st</sup> century and beyond.

The management of dredged material in Germany is based upon the international regulations of the London Convention (LC), Oslo-Paris Convention (OSPAR) and Helsinki Convention (HELCOM). They were transposed into a German directive for dredged material management in coastal areas under federal administration (WSV-HABAK, 1999). A new so called 'Transitional Regulation for the Handling of Dredged Material in Coastal Areas' (GÜBAK) was agreed between the federal government and the five German federal coastal states in 2009. The management plan detailing the Handling of Dredged Material in Inland Waters (HABAB-WSV) is also applied. This guideline comes with an assessment scheme that takes sedimentological, river-morphological and chemical criteria into account. A common guideline for coastal and inland waterways is now under development (HABAG) which after its implementation will replace the GÜBAK and HABAB guidelines.

The given guidelines are both in charge of management of dredged material in the Elbe and the Weser, however a specific assessment for dredged material of the Elbe has been agreed upon by the environmental ministers of the Elbe Federal states called 'Recommendations for the handling of contaminated dredged material of the Elbe, ARGE Elbe'. These recommendations also comply with international regulations, are Elbe case specific and today form the basis for dredged material handling in Hamburg.

The Elbe estuary has a management plan for the reduction of dredging works in the tidal Elbe called the “River Engineering and Sediment Management Concept” (RESMC). The implementation of this concept is founded in the Tidal Elbe Concept which adopts a holistic approach to reduce tidal range and thus the necessity for dredging. The concept contains a number of innovative approaches in form of possible measures to minimise the dredging needs. It also opens up certain synergies e.g. with nature conservation interests, but with many stakeholders involved and many administrative boundaries, the complete implementation of the RESMC is seen as difficult. However, the concept is very relevant, since it represents a common basis for maintaining the tidal Elbe between the Hamburg Port Authority and the Waterways and Shipping Administration.

The Elbe and the Weser estuaries as well as pollution incidents in the German Wadden and Baltic Sea are addressed in the Contingency Planning for Marine Pollution Control in German Coastal Zones (VPS). The VPS is administered by the five German coastal federal states and the Federal Ministry of Transport, Building and Urban Development. This plan considers nature conservation, recreation, the economy and ports and ICZM initiatives and sets high standards for tackling pollution events.

A cross-border Pollution Warning Plan for the Weser Estuary is in operation administered jointly by all the Water Management Administrators of the five federal states. The plan covers the whole of the estuary and uses cross-border information in cases of water pollution events. However the plan is not multi-sectoral and gives little consideration to informing conservation agencies of pollution threats.

The prevention of pollution events in the Elbe is managed by the International Commission for the Protection of the Elbe River (ICPRE), which is an integrated partnership group which administers the International Warning Plan and ALMO, a numerical transport model of pollutant dispersal for the Elbe.

The three above mentioned plans (VPS, International Warning Plan for the Elbe and the Pollution Warning Plan for the Weser) are able to optimise a fast response time to minimise pollution events. They also demonstrate a coordinated approach to this potential problem.

Best practice examples include:

Estuary	Good/Best Practice
Elbe	Two integrated partnership groups managing pollution warning (the International Commission for the Protection of the Elbe River) and contingency planning for pollution events (The Federal Ministry of Transport, Building and Urban Development and all five federal states of Northern Germany). This overcame the issue of cross administrative boundaries.
Weser	Two integrated partnership groups managing pollution warning (the Water Management Administrators) and contingency planning for pollution events (The Federal Ministry of Transport, Building and Urban Development and all five federal states of Northern Germany). This overcame the issue of cross administrative boundaries.
Humber	As the statutory and harbour authority for the Humber, ABP have a number of statutory plans and strategies to deal with pollution, port development and emergencies and has the statutory powers to enforce laws.

#### **4.2.7 Economic Development and Spatial Planning**

The three administrative districts (Cuxhaven, Osterholz and Wesermarsch) surrounding the Weser estuary each have a Regional Spatial Plan providing legally binding guidelines. In addition, the Lower Saxony area of the Weser has a plan covering economic development and spatial planning developed by the Lower Saxony Ministry for Food, Agriculture, Consumer Protection and Regional Development. There is a legally binding national development plan which coordinates the spatial extension of different uses such as shipping, wind energy fields, nature conservation, mining and others. This plan covers the exclusive economic zone (AWZ) which spreads seawards to the 12nm line, so there is no direct focus on the tidal river of the Weser. There is also a non-legally binding regional planning concept on coastal waters (Raumordnungskonzept für das niedersächsische Küstenmeer (ROKK)) which is an integrated approach. The ROKK considers different use and protection interests in the coastal zone of Lower Saxony and formulates informal guidelines.

Economic development on the Humber is guided by the Humber Local Enterprise Partnership (LEP) which focuses on petrochemicals, renewable energy and logistics. The Humber LEP (created in 2011) is led by local authorities and businesses across the Humber economic area and provides the vision, knowledge and strategic leadership needed to drive the sustainable private sector growth and job creation in the Humber area. The Humber Enterprise Zones are at the heart of the LEP's plans to create a Humber Renewable Energy Super Cluster. They will offer tax breaks and a vastly simplified planning process to manufacturers related to renewable energy. However for this initiative to represent sustainable development, it will be important that economic aspirations are planned and eventually met alongside and pay appropriate consideration of the natural environment.

The Scheldt Estuary has a Strategic Plan for the Port of Antwerp which has a long term vision focusing on the five key areas highlighted in the SWOT table. Although there has been a high level of participation within the plan, political and societal opposition still threaten its success. A second plan addresses the Scheldt deepening plan (Scheldt Deepening Programm) which is enshrined within a strong legal framework (Scheldt Treaty 2005) and provides an excellent cost-benefit balance. This plan has been developed with extensive cooperation and consultation between the Netherlands and Flanders governments. It is also integrated within the Scheldt Development Plan 2010 demonstrating good practice between the countries to address this issue.

The lower estuarine environment of the Elbe is addressed within two legally binding plans (Landesentwicklungsplan & the Regionalplan für den Planungsraum IV) setting the estuary within a greater planning context. In contrast, the Lower Saxony coastal waters of the estuary feature in a non-legally binding integrated region planning document (Raumordnungsbericht Küste und Meer 2005). This has been developed using stakeholder participation and uses conflict assessment in terms of use and conservation targets.

The Free and Hanseatic City of Hamburg with the Hamburg Port Authority has a Port Development Plan (Hafenentwicklungsplan HEP) which sets out the development perspectives for the port. It gives a comprehensive and detailed

overview of the land as well as the water situation in the port, and sets out guidelines for the Hamburg port policy. At regular intervals this plan is being revised (last 2005 and 2012). There is a broad involvement of stakeholders to reach a consensual political guideline.

Best practice examples include:

Estuary	Good/Best Practice
Scheldt	The Scheldt Deepening Programm is enshrined within a strong legal framework. Developed using extensive cooperation and consultation, it is also integrated within the Scheldt Development Plan 2010. This has negated separate and potentially opposing plans being developed for the Netherlands and Flanders governments.
Humber	The Humber Local Enterprise Partnership (LEP) is led by local authorities and businesses across the Humber economic area and provides the vision, knowledge and strategic leadership needed to drive the sustainable private sector growth and job creation in the Humber area.

### 4.3 SWOT Tables

Abbreviations and acronyms in **bold** in Tables 5 to 8 are described below:

<p><b>*1 Categories for spatial scope of participants</b></p> <p><b>EU</b> - European level</p> <p><b>INT</b> - International level</p> <p><b>NAT</b> - National level (Government Bodies, Federal Ministries and their agencies, institutes and administration units)</p> <p><b>RA</b> - Relevant Authority</p> <p><b>RBM</b> - River Basin Management level (national, including the 5 Federal states and the Federal Ministries)</p> <p><b>FDS</b> - Federal State level (Federal State Ministries and their agencies and administration units) <b>(1)-(5)</b> number of states involved</p> <p><b>REG</b> - Regional level (Kreise und Gemeinden)</p> <p><b>NGOs</b> - Non-Governmental Organisation (e.g. nature conservation organisations or other stakeholder groups e.g. according to agricultural use, tourism, hunting)</p>	<p><b>*2 Scope of Planning Area</b></p> <p><b>RB</b> - River Basin (National/International)</p> <p><b>EST</b> - Estuary /Tidal River (may include land)</p> <p><b>EST-SECT</b> - Estuary /Tidal River sections /subdivisions (may include land)</p> <p><b>COA</b> - Coastal water (&lt; 12 nm)</p> <p><b>COAZ</b> - Coastal Zone (including EEZ and land)</p> <p><b>COAPO-</b> EEZ and Tidal River up to the Ports</p> <p><b>MSD</b> - Marine Strategy Directive (from Baseline to EEZ)</p> <p><b>WAD</b> - International Wadden Sea (Denmark, Germany, Netherlands)</p>
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Plans and Schemes in the table are colour coded and relate to:

- River Basin Management & Water Quality (Water Framework Directive & Urban Waste Water Treatment Directive)
- Nature Conservation (Habitats & Species Directive & Wild Birds Directive)
- Flood Protection & Species/Habitat Improvement (Flood Risk Management Directive)
- Coastal Protection
- Integrated Coastal Zone Management
- Shipping, Ports and Pollution Prevention
- Economic Development & Spatial Planning
- EU Marine Strategy Framework Directive

Table 5 – Humber Estuary Sectoral Plan Review and SWOT Analysis

HUMBER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / Aims of the Plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic & Plans	ICZM	STRENGTH (Scope of Plan)	WEAKNESS	OPPORTUNITIES	THREATS	
Water Framework Directive  Urban Waste Water Treatment Directive	Department for Environment, Food & Rural Affairs (Defra)  <b>NAT</b>	Humber River Basin District Plan <b>RB</b>	✓			✓		Characterisation, impacts and economics analyses required by Article 5 of the Water Framework Directive. Provides plan for implementation by 2015.	Not multi-sectoral – primarily aimed at meeting WFD requirements	Integration of a number of WQ & Conservation strands. Framework for future management targets	Misses full multi-sectoral approach and so needs to be integrated with other plans.	2009 - 2015
	Yorkshire Water & Anglian Water <b>RA</b> s	Asset Management Plan (AMP) <b>RB / EST</b>	✓			✓		Capital Programme identifying ongoing infrastructure improvements including treatment requirements for the estuary.	Not multi sectoral	Framework for future management needs	Focus on WQ assets only	ongoing
	Yorkshire Water & Anglian Water <b>RA</b> s	Resource Management Plan (RMP) <b>RB / EST / COA</b>	✓		✓			Looks at measures to combat the potential effect of climate change on water supply and demand in the future. Options such as reducing leakage are considered to ensure that future demand can be met with minimum impact on the environment.	Not multi sectoral	Framework for future management needs in relation to climate change	Focus on WQ assets only	2010/11 - 2034/35
Habitats & species Directive & Wild Birds Directive	Humber Estuary Relevant Authorities Group (HERAG) <b>RA Group</b>	Humber Management Scheme (HMS) <b>EST</b>	✓	✓	✓	✓	✓	Details the studies and the proposed management actions required to ensure the conservation features remain in favourable condition - the appropriate management action depends on the effect of the activity on the Humber. European Marine Site (EMS) management schemes are informed under Regulation 33 advice packages. A strength is its ability to fund a project officer to support the work and its wide membership around the Humber.	Non-statutory. Remit focussed on conservation so not fully multi-sectoral.  The effectiveness of the scheme depends on the energy and involvement of members (however this is not the case for the Humber). Nevertheless there is always the chance that the HMS could fade for one reason or another. There is no certainty around these plans.	Has potential for multi-sectoral planning and strategic view	Sectoral interests but currently not fully integrated into plan. Powers devolved back to sectors	2004 - ongoing
Habitats and Species Conservation	Environment Agency, Natural England, East Riding of Yorkshire Council. (all <b>RA</b> s), RSPB, Lincolnshire Wildlife Trust, Yorkshire Wildlife Trust ( <b>NGOs</b> ),	Humber Estuary Local Biodiversity Action Plans (BAPs) <b>EST</b>	✓					Ensure local targets for species and habitats	Non-statutory and derived without full stakeholder involvement. Difficulties in maintenance & update  As non-statutory, the plans could be squeezed by other priorities and taken over by subsequent government initiatives.	Can deliver local protection to habitats & species with hierarchical tie-in to national targets.	Possibly in part superseded by OHSSCABAP and possibly a new Humber BAP.	BAPS originally written in 1997 but new plans could be developed



HUMBER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / Aims of the Plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic & Plans	ICZM	STRENGTH (Scope of Plan)	WEAKNESS	OPPORTUNITIES	THREATS	
Spp/Habitat Protection & Improvement	Defra <b>NAT</b> Internal Drainage Boards <b>RA</b>	Ouse & Humber Strategic Sub-catchment Area Biodiversity Action Plan <b>EST - SECT</b>	✓					Ensure local targets for species and habitats	Non-statutory and derived without full stakeholder involvement. As non-statutory, the plans could be squeezed by other priorities and taken over by subsequent government initiatives.	Can deliver local protection to habitats & species with hierarchical tie-in to national targets.	Not a full estuary document, and covers only the upper estuary & Ouse	2010-2014
	Humber LNP formed by the integration of the Humber Management Scheme (HMS) and Humber Industry Nature Conservation Association (Humber INCA).	Humber Local Nature Partnership <b>EST</b>	✓	✓	✓	✓		Government initiative aiming to bring together a diverse range of stakeholders, at a local level, from the Environmental, Economic and Social sectors. The overall objective is for the three sectors to join forces and effectively contribute to the sustainable development of the local Humber area by creating a "Vision" and "Plan of Action" of how the natural environment can be better taken into account in decision making.	Non-statutory initiative Too early to see how effective they will be. Broad membership can also be considered a weakness	Wide participation from all sectors, proposing common initiatives and integrated visions	Funding could be withdrawn	Funding received July 2012
Flood Protection & Spp/Habitat Improvement	Environment Agency <b>RA</b>	Humber Flood Risk Management Strategy <b>EST, EST-SECT,</b>			✓			The strategy looks at different ways of managing flood risk; raising defences where appropriate, but also introducing sites for managed realignment and flood storage which will help maintain valuable habitats.  Could be considered a strength that it's a sectoral plan focused only on flood protection.  It is an effective plan because it considers the whole estuary and takes a long term strategic view.	Not fully multi-sectoral (focussed on flood protection) (however see strengths)	Strategic scope and long range forecasting	Not multi-sectoral and has a key focus (however see strengths).	2008-2033 ongoing
	East Riding of Yorkshire Council, Environment Agency, Natural England, North East Lincs Council, East Lincolnshire District Council, Associated British Ports <b>RAs</b>	Humber Estuary Coastal Authorities Group (HECAG) Flamborough Head to Gibraltar Point Shoreline Management Plan (SMP) <b>EST, EST-SECT, COA</b>	✓	✓	✓		✓	Covers the coastal cell from Flamborough Head to Gibraltar Point and is a high-level policy document from which the organisations that manage the shoreline set their long term plan.  Partnership approach to shoreline management.	Limited powers. It is recognised that funding is often a major hurdle in delivering the policies put forward within SMPs.	Build on integration	Current Status unclear – possible integration into SMP & CHaMP 2?	First published 1993 Revised in 2010.

HUMBER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / Aims of the Plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic & Plans	ICZM	STRENGTH (Scope of Plan)	WEAKNESS	OPPORTUNITIES	THREATS	
Flood Protection & Spp/Habitat Improvement	Environment Agency <b>RA</b>	Humber Estuary Shoreline Management Plan (HESMP) <b>EST / EST-SECT</b>	✓		✓			A document which sets out the long term, sustainable strategy for coastal defence within the Humber Estuary. Adopted as good practice around the coastline of England and Wales. SMPs take account of current local and structure plans produced by District, Borough and County Councils, and provide essential feedback at the review stages of such plans  Again, the sectoral nature of the plan could be considered a strength.	Not fully multi-sectoral (focussed on flood protection) Non statutory	Strategic scope and long range forecasting	Not multi-sectoral and has a key focus	2000 - 2050 ongoing
	Environment Agency, Natural England <b>RAs</b>	Humber Coastal Habitats Management Plan (CHaMP). CHaMP1 & CHaMP2 <b>EST / EST-SECT</b>	✓		✓		Provides a framework for accounting for and predicting the potential losses and gains to habitats and species from coastal squeeze. Provides information for the Humber Estuary SMP. Currently being revised including the derivation of a better baseline dataset and a review of habitat loss from coastal squeeze since 2000. Will be updated every 5 years in future using the current baseline.	Not multi-sectoral	CHaMP1 provides an overview of habitat needs in response to flood protection. As such may provide a basis for wider determination of habitat needs etc. CHaMP2 supersedes CHaMP1.	Superseded by CHaMP2 which requires context within SMP.	CHaMP1 completed 2003. CHaMP2 – yet to be initiated	
	Environment Agency <b>RA</b>	Humber Estuary Action Plan <b>EST</b>	✓			✓	✓	Holistic coverage	Not multi-sectoral	Potential tie-in with other plans	Stopped after loss of UA	1996
	Public, private and voluntary bodies, inc. LAs <b>NAT, RAs, NGOs, PUB &amp; PV</b>	Humber Estuary Management Strategy (HEMS) <b>EST</b>	✓	✓	✓			All the estuary covered – 13 related issues	Funding difficult as well as stakeholder buy-in. No formal powers	Could be used as a basis for better funded, and more powerful management approach if incorporated into EA/NE plans etc.	Superseded by HMS	1997 superseded by Humber Man. Scheme
	Environment Agency, Local Authorities, English Nature (as was), plus consultees as per HEMS <b>NAT, RAs, NGOs</b>	Humber Local Environment Agency Plan (LEAP) <b>RB, EST</b>	✓	✓	✓	✓		Flood defence, water catchment management	Catchment – but not multi-sectoral	Holistic management of catchment for a series of aims.	Superseded by CMP	1999

HUMBER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / Aims of the Plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic & Ports	ICZM	STRENGTH (Scope of Plan)	WEAKNESS	OPPORTUNITIES	THREATS	
Coastal Protection	Humber Estuary Coastal Authorities Group (HECAG) <b>RA</b>	Humber Estuary Coastal Authorities Group (HECAG) Flamborough Head to Gibraltar Point Shoreline Management Plan (SMP) <b>EST, EST-SECT, COA EST-SECT &amp; COA</b>	✓		✓	✓		Flood defence, land use, nature conservation and port development. Covers the coastal cell from Flamborough Head to Gibraltar Point and is a high-level policy document from which the organisations that manage the shoreline set their long term plan. Partnership approach to shoreline management.	Based around coastal/flood protection needs, so does not address many 'normal' stakeholder activities	Could be used to broaden into wider more integrated approach to management on the coast	It is recognised that funding is often a major hurdle in delivering the policies put forward within SMPs.	First published 1993 Revised and finalised in 2010.
Integrated Coastal Zone Management	East Riding of Yorkshire Council (ERYC) <b>RA</b>	Integrated Coastal Zone Management (ICZM) Plan <b>COAZ, EST-SECT</b>	✓	✓	✓	✓	✓	A framework to address the many issues relating to the coastal zone. Backed by LPA.	Not fully multi-sectoral (focussed on coastal protection). Only cover Spurn to Sunk Island of the Humber, therefore not the full Humber estuary. Non-statutory	Strategic scope and integration between cells	Not fully integrated in terms of all stakeholders and lacks full statutory backing	2002 - currently under review
Shipping, ports and pollution prevention	Associated British Ports (ABP) <b>RA</b>	Humber Ports and Estuary Strategy <b>EST</b>	✓			✓		Port project development and environmental enhancement	Not multi-sectoral	Potential for incorporation elsewhere	Sectoral and superseded	2000
	ABP (as Harbour Authority) <b>RA</b> with other members of the Humber Oil Pollution Preparedness and Response Committee (HOPPRC)	Humber Marine Pollution Plan "Humber Clean" <b>EST</b>		✓		✓		To meet the requirements of The Merchant Shipping (Oil Pollution Preparedness, Response and Co-Operation Convention) Regulations 1998, an oil spill contingency plan, "Humber Clean", has been prepared.	Not multi sectoral – focus on pollution control	Has strength as port authority has legal powers to enforce. The HOPPRC Committee aims to improve continuously the prevention, preparedness and response to oil spills in the Humber Harbour Area.	Focus on single topic	ongoing
	ABP (as Harbour Authority) <b>RA</b>	Humber Serious Marine Emergency Plan (HSEMP) <b>EST</b>				✓		This emergency plan, which has been formulated after discussions with an agreement by the appropriate authorities on the Humber, sets out the action to be taken in the event of a serious marine emergency occurring within the limits of ABP's area of navigational jurisdiction on the Humber	Not multi sectoral – focus on pollution control	Has strength as port authority has legal powers to enforce	Focus on single topic	ongoing

HUMBER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / Aims of the Plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic & Ports	ICZM	STRENGTH (Scope of Plan)	WEAKNESS	OPPORTUNITIES	THREATS	
	ABP (as Harbour Authority) <b>RA</b>	Humber Passage Plan <b>EST</b>				✓		Formulate in conjunction with relevant groups to facilitate the safe passage and berthing of large vessels in the Humber	Not multi sectoral – focus on navigation	Has strength as port authority has legal powers to enforce	Focus on single topic	2005 - ongoing
Economic Development & Spatial Planning	Local Authorities, <b>RA</b> Humberside Local Learning & Skills Council <b>NAT</b>	Humber Forum <b>EST</b>				✓		Strategic Framework for Economic Development in the Humber Sub-region	Not multi-sectoral	Potential for incorporation elsewhere	Sectoral and superseded	1994-2005 superseded by HEP
	Humber Local Enterprise Partnership board comprises 14 members, nine from the private sector and five from the public sector ( <b>REG</b> )	Humber Local Enterprise Partnership. (HLEP) <b>EST</b>				✓		The Humber LEP is led by local authorities and businesses across the Humber economic area. It provides the vision, knowledge and strategic leadership needed to drive sustainable private sector growth and job creation in the Humber area.	Not multi-sectoral – concentrates mainly on renewables, petrochemicals and logistics	Development of enterprise zones to create a Humber Renewable Energy Super Cluster. They will offer tax breaks and a vastly simplified planning process to manufacturers related to renewable energy.	Not multi-sectoral and lacks statutory authority	2011 - ongoing
EU Marine Strategy Framework Directive (MSFD)	Defra, EA, CEFAS, JNCC  <b>NAT,</b> <b>PUB</b> <b>NGOs</b>	Programme of Measures  <b>MSD</b>	✓	✓				Legally binding for all member states of the European Union, includes descriptors in terms of ecosystem and in terms of anthropogenic pressures,  MSFD is applying an ecosystem-based approach to the management of human activities	Weak legal binding force (e.g. many exception rules), Intercalibration could be difficult because the sea crosses administrative borders	Important directive to give the requirements for the objectives and the success of the Water Framework Directive	Little time available to reach objectives.	

Table 6 Weser Estuary Sectoral Plan Review and SWOT Analysis

WESER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
EU Water Framework Directive (WFD)	FGG Weser (Water Management administrations of the federal states in the catchment area of the river basin district Weser)  <b>RBM, PUB</b>	National River Basin Management Plan including programme of measures for the Weser River  (Bewirtschaftungsplan bzw. Maßnahmenprogramm für die Flussgebietseinheit Weser nach WRRL) <sup>12</sup>  <b>RB</b>	✓	✓		✓		Characteristics, significant pressures, water status, environmental objectives, economic analysis and programmes of measures required by articles 13 and 11 of the WFD. Aims at improving the ecological and chemical status of the whole river basin. Programmatic basis of management until 2015, then revision every 6 years.  Delivers a rough overview on RB level.	Guideline for state action, but not directly legally binding.  Abstract; largely summarizing because of the very extensive scope. Implementation of objectives depends also on the attention and resoluteness of the Commission.  So far: Measure implementation is voluntary.	Integration of a number of WQ & Conservation strands. Mutual strengthening with other EU directives (Nat. 2000, MSD). Framework for future management targets.  Overcomes administrative boundaries.  Involvement of official public /stakeholders ('Gebietskooperationen – GeKos') and general public ('Öffentlichkeitsbeteiligung'). Multi user management, user buy-in.  Increase of knowledge.  Opportunity to fill the holistic approach of the WFD with regard to the quality of the structure and functioning of aquatic ecosystems. EU Com increases pressure on member states to implement measures to improve status of water bodies.	So far: Consisting mainly of reporting.  Central, but social/economical tricky measures might be left aside.  Possibly not developing a holistic view on the river resp. estuary structure and functioning.	2009 finalised – next reviews in 2015 and 2021

<sup>12</sup> [http://www.fgg-weser.de/Download-Dateien/bwp2009\\_weser\\_091222.pdf](http://www.fgg-weser.de/Download-Dateien/bwp2009_weser_091222.pdf)  
[http://www.fgg-weser.de/Download-Dateien/mnp2009\\_weser\\_091222.pdf](http://www.fgg-weser.de/Download-Dateien/mnp2009_weser_091222.pdf)

WESER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
EU Water Framework Directive (WFD)  (Cont...)	Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN)  <b>FDS (1), PUB</b>	River Basin Management Plan including programme of measures for the Weser River (part: Lower Saxony)  (Niedersächsische r Beitrag zum Bewirtschaftungsplan bzw. zum Maßnahmenprogramm für die Flussgebietseinheit Weser nach WRRL) <sup>13</sup>  <b>EST</b>	✓	✓		✓		Characteristics, significant pressures, water status, environmental objectives, economic analysis and programmes of measures required by articles 13 and 11 of the WFD. Aims at improving the ecological and chemical status of the Lower Saxony part of the river basin.  Programmatic basis of management until 2015, then revision every 6 years.  Delivers a relative rough overview on federal state level (includes Weser estuary). Programme of measures includes Strategic Environmental Assessment.	Guideline for state action, but not directly legally binding.  Relatively abstract; largely summarizing because of the extensive scope.  No concrete measure proposals on water body level, only general measure type lists for surface waters and groundwater.  Implementation of measures difficult because of existing land use and lack of money. So far: Measure implementation is voluntary.	Integration of a number of WQ & Conservation strands. Mutual strengthening with other EU directives (Nat. 2000, MSD). Framework for future management targets.  Overcomes administrative boundaries.  Possibility to be linked with more specific local objectives/measures and increase of knowledge.  Involvement of official public /stakeholders ('Gebietskooperationen – GeKos') and general public ('Öffentlichkeitsbeteiligung'). Multi user management, user buy-in.  Opportunity to fill the holistic approach of the WFD with regard to the quality of the structure and functioning of aquatic ecosystems. EU Com increases pressure on MS to implement measures to improve status of water bodies.	So far: Consisting mainly of reporting.  Central, but social/economical tricky measures might be left aside.  Possibly not developing a holistic view on the river resp. estuary structure and functioning.	2009 finalised – next reviews in 2015 and 2021
	Free Hanseatic City of Bremen – The Senator for Environment, City Development and Transport (SUBV)  <b>FDS (1), RA</b>	Programme of measures for the River Basin Weser (Free Hanseatic City of Bremen)  (Maßnahmenprogramm 2009 des Landes Bremen zur Umsetzung der Europäischen Wasserrahmenrichtlinie (EG-WRRL)) <sup>14</sup> <b>EST</b>	✓	✓		✓		Collection of a big variety of ideas for measures at the Tidal River Weser, involvement of local stakeholders by foundation of local stakeholder groups ('Gebietskooperationen – GeKos'). Planning of concrete measures.	Guideline for state action, but not directly legally binding, no permanently active working group, but plan to be updated every six years	Funding by waste water charges; Further development as an informal process possible, integrating existing uses like ports, shipping and agriculture, good basis for updating e.g. by local stakeholder groups (GeKos). EU Com increases pressure on member states to implement measures to improve status of water bodies.	Problems to realise some of the measures because area/land is not available	2009 finalised – next reviews in 2015 and 2021

<sup>13</sup> <http://www.nlwkn.niedersachsen.de/download/25761>,  
<http://www.nlwkn.niedersachsen.de/download/26117>

<sup>14</sup> [http://www.umwelt.bremen.de/sixcms/media.php/13/Ma%DFnahmenprog\\_Bremen\\_2009\\_mit\\_Anhang.pdf](http://www.umwelt.bremen.de/sixcms/media.php/13/Ma%DFnahmenprog_Bremen_2009_mit_Anhang.pdf)

WESER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Urban Waste Water Treatment Directive	ARGE Weser (Water Management administrations of the federal states in the catchment area of the river basin district Weser) –now FGG Weser FDS (5)	Water heat load management plan for the Weser River  (Wärmelastplan Weser)  <b>RB</b>	✓			✓		Usage of river water for cooling (industries and power plants), old standards, but they are still valid.  Limitation of the heat load.	Sectoral plan; since the plan is rather old, the standards were derived for lower water quality with less oxygen,	Chance to establish higher water quality standards by updating the plan, because heat loads have been significantly reduced since the nuclear power plant “Unterweser” has been shut down in march 2011	-	1974, updated in 1977
Habitats and Species Directive & Wild Birds Directive  Habitat and Spp.conservaion	Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN), Free Hanseatic City of Bremen – The Senator for Environment, Construction and Transport (SUBV)  <b>NAT, FDS (2), REG, NGOs</b>	Integrated Management Plan Weser – Natura 2000  (Integrierter Managementplan Weser (IBP Weser)  <b>EST</b>	✓	✓	✓	✓	✓	Covers the whole ecosystem regardless administrative boundaries, integrates different uses as well as WFD requirements, clarifies the needs to improve conservation status, sets up a consensual programme of measures for the next 10-15 years	Implementation requires binding legal force to enforce;  Non-statutory	Integrated approach with many win-win-options. More legal certainties for users, excellent stakeholder process; revision foreseen “as needed”, implementation observed by a trans border working group of agencies	Needs to be integrated with other plans;  Scientific uncertainties; implementation only partly financed (e.g. Bremen: waste water charges and EFRE); inconsistent policies (e.g. shipping, coastal defence, agriculture)	Ready by 2011
Reinstatement of Natural Processes & Habitat/Species Offset, Improvement, Protection	Free Hanseatic City of Bremen –The Senator for Environment, Construction & Transport (SUBV)  <b>FDS (1), NGOs</b>	Landscape development plan (LAPRO – Landschaftsprogramm Bremen)  <b>EST-Sect, &amp; COA</b>	✓	✓				By law central planning instrument for conservation issues and sustainable land use on state and local level; Definition of ecosystem services.  Extensive participation of stakeholders, in FHB to be considered by every authority	Needs to be updated in order to consider present drivers (in progress); the existing plan has a strong focus on conservation and recreation	Basis of a sustainable land use; current updating will deliver more definitions of ecosystem services; more of the aims and measures may become statutory by transferring them into the simultaneously renewed urban development plan for the City of Bremen	Overriding public interests (industry, transport, housing, coastal protection, ...)	1991; currently being renewed

WESER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Aspects	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Reinstatement of Natural Processes & Habitat/Species Offset, Improvement, Protection (Cont...)	Lower Saxony Ministry for Environment and Climate Protection (MU) <b>FDS (1), NGOs</b>	Landscape development plan (Landschaftsprogramm Niedersachsen) <b>EST-Sect &amp; COA</b>	✓	✓				By law central planning instrument for conservation issues and sustainable land use on state level; Definition of ecosystem services, binding framework for regional conservation plans	Only binding for conservation authorities; recent legislative drivers (e.g. habitats directive) are not considered	Qualified updating would help the regions to set up coherent conservation concepts, however for the estuary the IMP Weser may fill the gap	At present no governmental support for such updating on state level	1989
	Landkreis Cuxhaven <b>REG, NGOs</b>	Landscape framework plan of the Landkreis Cuxhaven (Landschaftsrahmenplan des Landkreises Cuxhaven) <sup>15</sup> <b>EST-Sect, COA</b>	✓	✓				By law central planning instrument for conservation issues and sustainable land use on county level, Definition of ecosystem services, binding framework for local conservation plans	Only binding for conservation authorities; little stakeholder involvement;	Regional coherence of local (municipal) landscape plans	Covers only the county's part of the estuary, older than IMP Weser, therefore not coordinated <sup>16</sup> ; inconsistent policies (e.g. agriculture, tourism, coastal defence)	2000
	Landkreis Wesermarsch <b>REG, NGOs</b>	Landscape framework plan of the Landkreis Wesermarsch (Landschaftsrahmenplan des Landkreises Wesermarsch) <sup>17</sup> <b>EST-Sect, COA</b>	✓	✓				By law central planning instrument for conservation issues and sustainable land use on county level, Definition of ecosystem services, binding framework for local conservation plans	Only binding for conservation authorities, little stakeholder involvement	Regional coherence of local (municipal) landscape plans	Covers only the county's part of the estuary, older than IMP Weser, therefore not coordinated <sup>18</sup> , inconsistent policies (e.g. agriculture, tourism, coastal defence)	1992

<sup>15</sup> [http://www.landkreis-cuxhaven.de/media/custom/578\\_3423\\_1.PDF](http://www.landkreis-cuxhaven.de/media/custom/578_3423_1.PDF)

<sup>16</sup> Some conservation aims for part of the estuary may be in conflict with the dynamic concept of the IMP Weser

<sup>17</sup> <http://www.eurobirdwatching.com/umwelt-wesermarsch/lrp.php>,  
[http://www.eurobirdwatching.com/umwelt-wesermarsch/images/Landschaftsrahmenplan\\_Landkreis\\_Wesermarsch\\_1992\\_text.pdf](http://www.eurobirdwatching.com/umwelt-wesermarsch/images/Landschaftsrahmenplan_Landkreis_Wesermarsch_1992_text.pdf)

<sup>18</sup> Some conservation aims for part of the estuary may be in conflict with the dynamic concept of the IMP Weser



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Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Aspects	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Reinstatement of Natural Processes & Habitat/Species Offset, Improvement, Protection (Cont...)	Landkreis Osterholz  <b>REG, NGOs</b>	Landscape framework plan of the Landkreis Osterholz  (Landschaftsrahmenplan des Landkreises Osterholz)  <b>EST-Sect</b>	✓	✓				By law central planning instrument for conservation issues and sustainable land use on county level, Definition of ecosystem services, binding framework for local conservation plans	Only binding for conservation authorities, little stakeholder involvement	Regional coherence of local (municipal) landscape plans	Covers only the county's part of the estuary, older than IMP Weser, therefore not coordinated <sup>19</sup> ; inconsistent policies (e.g. agriculture, tourism, coastal defence)	2003
Flood Risk Management Directive (FRMD)	Water management administrations of the federal states in the catchment area of the river basin Weser  <b>RBM</b>	Flood risk management Plan Weser  (Hochwasserrisiko managementplan Weser)  <b>RB</b>	✓	✓	✓	✓		Integrated flood risk management with regard to human health, environment, cultural heritage and economic activity associated.  Linking of flood management and general water management (acc. WFD). Consciousness about flood risk. Contains all phases of risk management cycle (prevention, handling, recovery). Indirectly binding for construction planning, legally binding.	-	-	Many stakeholders involved, difficult process	in process up to 2015
Prevent flood catastrophes in Europe, flood protection	FGG Weser (Water Management administrations of the federal states in the catchment area) <b>RBM</b>	Flood Protection Plan Weser  (Hochwasserschutzplan Weser) <sup>20</sup>  <b>RB</b>	(✓)		✓			Compilation of flood protection systems within the RBD Weser.  Framework for provision strategies against flood damage.	Based on out-dated law. Not legally binding. Is not in accordance with FRMD.	Provides a rough overview on status quo and need for action	Not followed by concrete and extensive measures.	2006

<sup>19</sup> Some conservation aims for part of the estuary may be in conflict with the dynamic concept of the IMP Weser

<sup>20</sup> [http://www.fgg-weser.de/Download-Dateien/hochwasserschutzplan\\_weser\\_060704.pdf](http://www.fgg-weser.de/Download-Dateien/hochwasserschutzplan_weser_060704.pdf)

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Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Flood protection & Habitat/Spp. Offset, Improvement, Protection, land use	State Agency for Spatial Information and Rural Development Lower Saxony (LGLN)  Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN)  National Park Administration (NLPV)  <b>FDS (1), NGOs</b>	Foreshore Management Plan "Deichacht Norden" (Vorlandmanagementplan Deichacht Norden)  <b>EST-Sect, COA</b>	✓		✓			Integration of the aims of nature conservation and coastal protection (pilot project) and the land owner;  Participation of stakeholders: NGOs, nature conservation and coastal defence and coastal protection authorities, dike associations,  farmers as guardians of the countryside	Not statutory	Example for an integrative foreshore management. Self-binding function. Binding agreement of all concerned institutions.	Not a full estuary document, covers only the foreshore of "Deichacht Norden"	2003 ongoing
	State Agency for Spatial Information and Rural Development Lower Saxony (LGLN)  Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN)  National Park Administration (NLPV)  <b>FDS (1), NGOs</b>	Foreshore Management Plan "Deichacht Esens Harlingerland" (Vorlandmanagementplan Deichacht Esens Harlingerland)  <b>EST-Sect, COA</b>	✓		✓			Integration of the aims of nature conservation and coastal protection (pilot project) and the land owner;  Participation of stakeholders: NGOs, nature conservation and coastal defence and coastal protection authorities, dike associations,  farmers as guardians of the countryside	Not statutory	Example for an integrative foreshore management. Self-binding function. Binding agreement of all concerned institutions.	Not a full estuary document, covers only the foreshore of "Deichacht Esens Harlingerland"	2009 ongoing

WESER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Lower Saxony Coastal protection Law (Niedersächsisches Deichgesetz, NDG)  Bremisches Wassergesetz (BremWG)	Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN), Free Hanseatic City of Bremen – The Senator for Environment, City Development and Transport (SUBV)  FDS (2)	Master Plan Coastal Defence (Generalplan Küstenschutz Niedersachsen/Bremen) <sup>21</sup>  EST-Sect, COA, WAD			✓			Flood defence with detailed extension scheme;  Revised with regard to future climate scenarios;  Premise for coastal protection measures. Points out concrete deficits and needs for action.	Not multi-sectoral/multi-disciplinary (focussed on flood protection); national guidelines for funding of measures make integration of other societal needs (e.g. recreation, urban planning) difficult	Decent funding by ELER and EFRE and strong national programme; much administrative power to enforce	Sectoral, ecosystem services not integrated in cost-benefit analysis	2007, regular reviews
Integrated Management of the Wadden Sea	Governments of Germany, Denmark, Netherlands  INT	(Trilateral) Wadden Sea Plan (WSP)  (Trilateraler Wattenmeerplan)  WAD	✓	✓	(✓)	(✓)	✓	Integrated approach on protection and sustainable development of the whole Wadden Sea area.  Within the estuaries valid up to the brackish water line  Regular Updates; Harmonized with a.) Natura 2000 b.) WFD c.) MSFD, framework for overall Wadden Sea management;  contains the Trilateral Monitoring and Assessment Program (TMAP).	Only politically binding	Common Wadden Sea Secretariat coordinates the cooperation,  Focus on the future coordinated and integrated management of the Wadden Sea Area, valid instrument to integrate the overall interests of three states for one unique ecosystem (World heritage!!). Drafting of WSP is a formal process, including stakeholder involvement.	-	Trilateral Wadden Sea Cooperation since 1978,  WSP/I:1997 WSP/II:2010,  Adjustment ongoing process

<sup>21</sup> [http://www.umwelt.bremen.de/sixcms/media.php/13/GPK\\_Hauptteil.pdf](http://www.umwelt.bremen.de/sixcms/media.php/13/GPK_Hauptteil.pdf)

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Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Integrated Coastal Zone Management in Europe	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and ministries of the 5 coastal federal states (HB, HH, MV, NI, S-H)  <b>NAT,</b> <b>FDS (5)</b>	National ICZM Strategy  (Nationale IKZM-Strategie)  and subsequent ICZM Strategies of the coastal states  <b>COAZ</b>	✓	✓	✓	✓	✓	Holistic approach to sustainable development of coastal zones; flexible informal instrument, a framework to address many issues relating to the coastal zone;  systematically coordination of land use and development in the coastal zone;  multi-sectoral perspective	Informal process, not fully statutory, no financial support	Strategic scope; bottom up and top down processes;  coordination of different activities along the coastal zone (e.g. IMP Weser), reduction of conflicts between interests; improved sustainable development	Extent of stakeholder participation differs, ICZM lacks full statutory backing	National report 2006; Review report in 2010; Process ongoing
[EU Integrated Maritime Policy (IMP) and "Nationaler Entwicklungsplan Meer" (Germany).]	Free Hanseatic City of Bremen – The Senator for Economic Affairs, Labour and Ports  <b>FDS (1),</b>	Maritime Action Plan of the Free Hanseatic City of Bremen  (Maritimer Aktionsplan der Freien Hansestadt Bremen) <sup>22</sup>  <b>EST</b>	✓	✓	✓	✓	✓	Integrated Maritime Policy that focuses on strategic future issues, regional level, broad scope but at the same time putting emphasis on specific topics	Missing concrete Milestones	Milestones can be implemented in Implementation plans; Adequate grant possibilities can be targeted	[...]	2011

<sup>22</sup> [http://www.wirtschaft.bremen.de/sixcms/media.php/13/Maritimer\\_Aktionsplan\\_FINAL.pdf](http://www.wirtschaft.bremen.de/sixcms/media.php/13/Maritimer_Aktionsplan_FINAL.pdf)

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Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Shipping, ports and pollution prevention	Waterways and Shipping Directorates (WSD Nord, WSD Nord-West) <b>INT, NAT, RA</b>	Traffic Safety Concept German Coast <b>COAPO</b>				✓	✓	Important contribution to the maritime traffic safety	None	The concept gives an effective frame for preventive, accident combating and repressive measures and allows a steady further development to fulfill the rising requirements in the future.	Opening the present verbal radio communication between shipping and the Vessel Traffic Service (VTS) for other institutions.	On-going functioning concept
	Federal Institute of Hydrology (BfG) <b>NAT</b>	Joint Transitional Arrangements for the Handling of Dredged Material in German Federal Coastal Waterways (GÜBAK-WSV)  (Gemeinsame Übergangsbestimmungen zum Umgang mit Baggergut im Küstenbereich) <sup>23</sup> <b>EST &amp; COA</b>				✓		Operational guideline, monitoring programme, reporting every 5 years, continuous specifications, adaptation possible	National regulation, different from neighbouring countries, in the past little communication and cooperation with nature conserve administration	integration with other plans (IMP Weser, WFD)	not multi-sectoral, has a key focus	2009 but transitional only, will be combined with HABAB-WSV to form one guideline: HABAG
	Federal Institute of Hydrology (BfG) <b>NAT</b>	Regulation for the Handling of Dredged Material in inland areas (HABAB-WSV)  (Handlungsanweisungen für den Umgang mit Baggergut im Binnenland) <sup>24</sup> <b>EST</b>				✓		Operational guideline, efficient planning and decision-making instrument;  time and cost savings in administrative procedures	National regulation, different from neighbouring countries, issued already in 2000, in parts obsolete, only internal guidelines for the waterway administration, no legal status and not binding for other stakeholders	Open for development and integration of recent ecological and legal aspects	not multi-sectoral, has a key focus	2000, will be redeemed by HABAG

<sup>23</sup> [http://www.bafg.de/cln\\_031/nn\\_161560/Baggergut/DE/04\\_Richtlinien/guebag,templateId=raw,property=publicationFile.pdf/guebag.pdf](http://www.bafg.de/cln_031/nn_161560/Baggergut/DE/04_Richtlinien/guebag,templateId=raw,property=publicationFile.pdf/guebag.pdf)

<sup>24</sup> [http://www.bafg.de/cln\\_031/nn\\_161560/Baggergut/DE/04\\_Richtlinien/HABAB-08-2000,templateId=raw,property=publicationFile.pdf/HABAB-08-2000.pdf](http://www.bafg.de/cln_031/nn_161560/Baggergut/DE/04_Richtlinien/HABAB-08-2000,templateId=raw,property=publicationFile.pdf/HABAB-08-2000.pdf)

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Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Shipping, ports and pollution prevention (cont....)	FGG Weser (Water Management administrations of the federal states in the catchment area of the river basin district Weser) <b>RBM</b>	Warning Plan Weser (Warnplan Weser) <sup>25</sup>  <b>RB</b>	✓					cross-border information in cases of water pollution, fast reaction is possible; minimizing pollutant dispersal	no warning of nature conservation administration;  not multi-sectoral	cross-border warning system, enhances the networking between partners	covers the whole Weser (no special focus on the tidal river Weser), losses if mission is not successful (e.g. because model is not updated)	2010
	Federal Ministry of Transport, Building and Urban Development (BMVBS) and ministries of the 5 coastal federal states (HB, HH, MV, NI, S-H) <b>FDS (5)</b>	Contingency Planning for Marine Pollution Control in German Coastal Zones  (VPS – Vorsorgeplan Schadstoffbekämpfung für die deutsche Nord- und Ostseeküste) <sup>26</sup> <b>WAD &amp; EST</b>	✓	✓		✓	✓	Fast reaction is possible, minimizing pollutant dispersal,  one central command for different levels of responsibilities	Concepts and strategies for special tasks are still missing	enhances the networking between partners	budget pressure endangers the existing (high) standards	since 1998, yearly updated
Economic Development & Spatial Planning  Lower Saxony  Economic	Lower Saxony Ministry for Food, Agriculture, Consumer Protection and Regional Development <b>FDS (1)</b>	Spatial Planning of Lower Saxony (Landes-Raumordnungsprogramm Niedersachsen) <sup>27</sup> <b>EST-Sect, COA</b>	✓	✓	✓	✓	✓	Holistic plan, concerning every spatial use; legally binding guidelines for regional plans; Plan formulates principles and aims. While the aims are finally agreed and legally binding, the principles are to be discussed and refined	Limited power to enforce holistic aims against strong regional or local interests	Sets the estuary in a wider context. Principle of countervailing influence of state and regional / local governments, stakeholder involvement; Guidelines are open for interpretation/specification on the regional level	Delay of revisions	2008 (modification in process)

<sup>25</sup> [http://www.fgg-weser.de/Download-Dateien/warnplan\\_weser\\_101118.pdf](http://www.fgg-weser.de/Download-Dateien/warnplan_weser_101118.pdf)

<sup>26</sup> <http://www.vps-web.de/>

<sup>27</sup> <http://www.ml.niedersachsen.de/download/3699>

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Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status	
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Development & Spatial Planning									afterwards.				
Lower Saxony (Cont....)	Lower Saxony Ministry for Food, Agriculture, Consumer Protection and Regional Development	Regional planning concept on coastal waters of Lower Saxony (Raumordnungskonzept für das niedersächsische Küstenmeer (ROKK)) <sup>28</sup>  <b>EST-Sect, COA</b>	✓	✓	✓	✓	✓	Integrated approach including use requirements, stakeholder participation process, conflict assessment in terms of uses and nature conservation targets.	Not legally binding, plan divided by administrative boundaries (only referring to the coastal waters of Lower Saxony)	May serve as guideline for future planning and processes and measures, integrated approach with stakeholder involvement	Not legally binding, future implementation/ consideration unsure	2005	
	Lower Saxony Ministry for Economics, Labour and Transport	Coastal Report – Development at the Coast of Lower Saxony (Küstenbericht – “Entwicklung an der niedersächsischen Küste”) <sup>29</sup>  <b>EST-Sect, COA</b>	✓	✓	✓	✓	✓	Gives a good overview of the uses and needed measures	Not legally binding	Guideline for future planning processes and measures		2005	
Economic Development & Spatial Planning	Landkreis Cuxhaven	Regional Spatial Planning of the Landkreis Cuxhaven (Regionales Raumordnungsprogramm des Landkreises Cuxhaven) <sup>30</sup>  <b>EST-Sect,</b>	✓	✓	✓	✓	✓	Holistic plan, concerning every spatial use; legally binding guidelines for plans and projects, e.g. urban development plans; Plan formulates principles and aims. While the aims are finally agreed and legally binding, the principles are to be discussed and refined	Limited power to enforce holistic aims against strong local interests	Sets the estuary in a wider context, principle of countervailing influence of state and local governments, stakeholder involvement, plan to be considered in construction planning	Covers only the county's part of the estuary,	2002 (with modifications and additions 2004 and 2007 – new setting up in process)	

<sup>28</sup> <http://www.mi.niedersachsen.de/download/34269>

<sup>29</sup> <http://www.mw.niedersachsen.de/download/10008>

<sup>30</sup> [http://www.landkreis-cuxhaven.de/media/custom/1779\\_1203\\_1.PDF?1305027839](http://www.landkreis-cuxhaven.de/media/custom/1779_1203_1.PDF?1305027839)

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Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status	
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats		
		COA							afterwards.				
Economic Development & Spatial Planning  Landkreis Wesermarsch	Landkreis Wesermarsch  REG	Regional Spatial Planning of the Landkreis Wesermarsch  (Regionales Raumordnungsprogramm des Landkreises Wesermarsch) <sup>31</sup>  EST-Sect, COA	✓	✓	✓	✓	✓	Holistic plan, concerning every spatial use; legally binding guidelines for plans and projects, e.g. urban development plans; Plan formulates principles and aims. While the aims are finally agreed and legally binding, the principles are to be discussed and refined afterwards.	limited power to enforce holistic aims against strong local interests	sets the estuary in a wider context, principle of countervailing influence of state and local governments, stakeholder involvement; plan to be considered in construction planning	covers only the county's part of the estuary,	2003	
Economic Development & Spatial Planning  Landkreis Osterholz	Landkreis Osterholz  REG	Regional Spatial Planning of the Landkreis Osterholz  (Regionales Raumordnungsprogramm des Landkreises Osterholz) <sup>32</sup>  EST-Sect	✓	✓	✓	✓	✓	Holistic plan, concerning every spatial use; legally binding guidelines for plans and projects, e.g. urban development plans; Plan formulates principles and aims. While the aims are finally agreed and legally binding, the principles are to be discussed and refined afterwards.	limited power to enforce holistic aims against strong local interests	sets the estuary in a wider context, principle of countervailing influence of state and local governments, stakeholder involvement; plan to be considered in construction planning	covers only the county's part of the estuary,	2011	
EU Marine Strategy Framework Directive (MSFD)	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and ministries of the 5 coastal federal states  NAT, FDS (5)	Programme of Measures  MSD	✓	✓			✓	Protection and preservation of the marine environment. Enhancing the integrated approach of protection and sustainable development from coastal waters seawards. In compliance with the river continuum concept of the WFD (nutrients & pollution) Filling gaps of the WFD in coastal waters. MSFD is applying an ecosystem-based approach to the	Only weak legal binding force (e.g. many exception rules). Intercalibration could be difficult because the sea cross administrative borders.  In Germany Federal States from the inland have to contribute to the success but have no concernment.	Increase of knowledge.  Holistic view on ecosystem structure and function. Integration of wide range of usages.  Promotion of sustainable use of the sea  Improvement of understanding and management of pressures and impacts arising from human activities  Reduction of undesirable impacts	Little time to provide solid scientific and technical basis for measures.	Implementation still ongoing	

<sup>31</sup> <http://www.landkreis-wesermarsch.de/1930.htm>

<sup>32</sup> <http://www.landkreis-osterholz.de/internet/page.php?navilD=901000481&brotID=901000481&site=901000702&typ=2>



WESER ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Support	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
								management of human activities		on the marine environment  Integration of environmental considerations into all relevant policy areas. Contribution to coherence between different policies  Adresses all human activities that have an impact on the marine environment  Application of an ecosystem-based approach to the management of human activities while enabling a sustainable use of marine goods and services,		

Table 7 Elbe Estuary Sectoral Plan Review and SWOT Analysis

ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
EU Water Framework Directive (WFD)	ICPER- International Commission for the protection of the Elbe River (IKSE) (Water Management administrations of the 10 federal states in the catchment area of the river basin Elbe, the Federal Ministry for Environment, Nature, Conservation and Nuclear Safety (BMU) plus the Czech Republic, Poland and Austria  <b>INT, RBM, PUB</b>	International River Basin Management Plan 2009  <b>RB</b>	✓	✓		✓		Characteristics, significant pressures, water status, environmental objectives, economic analysis and programmes of measures required by articles 13 and 11 of the WFD. Aims at improving the ecological and chemical status of the whole river basin. Programmatic basis of management until 2015, then revision every 6 years.  Delivers a rough overview on RB level.	Guideline for state action, but not directly legally binding.  Relatively abstract; largely summarizing because of the extensive scope.	Integration of a number of WQ & Conservation strands. Mutual strengthening with other EU directives (Nat. 2000, MSD). Framework for future management targets.  Overcomes administrative boundaries.  Involvement of stakeholders and public .Multi user management, User buy-in.  Increase of knowledge.  Opportunity to fill the holistic approach of the WFD with regard to the quality of the structure and functioning of aquatic ecosystems.	Consisting mainly of reporting.  Central, but social/economic al tricky measures might be left aside.  Possibly not developing a holistic view on the river resp. estuary structure and functioning.	2009 finalized– next reviews in 2015 and 2021
	FGG Elbe  <b>RBM, PUB</b>	WFD  National River Basin Management Plan 2009 including national programme of measures for the Elbe River  <b>RB</b>	✓	✓		✓		Characteristics, significant pressures, water status, environmental objectives, economic analysis and programmes of measures required by articles 13 and 11 of the WFD. Aims at improving the ecological and chemical status of the German part of the river basin.  Programmatic basis of management until 2015, then revision every 6 years.  Delivers a relative rough overview on federal state level (includes Elbe estuary). Includes Strategic Environmental Assessment.	Guideline for state action, but not directly legally binding.  Relatively abstract; largely summarizing because of the extensive scope.  No concrete measure proposals on water body level, only general measure type lists for surface waters and groundwater.  Implementation of measures difficult because of existing land use and lack of money. So far: Measure	Integration of a number of WQ & Conservation strands. Mutual strengthening with other EU directives (Nat. 2000, MSD). Framework for future management targets.  Overcomes administrative boundaries.  Possibility to be linked with more specific local objectives/measures.  Involvement of stakeholders and public. Multi user management, user buy-in.	Consisting mainly of reporting.  Possibly not developing a holistic view on the river resp. estuary structure and functioning.	2009 finalized– next reviews in 2015 and 2021

ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
EU Water Framework Directive (WFD)  (Cont...)									implementation is voluntary.	Increase of knowledge.  Opportunity to fill the holistic approach of the WFD with regard to the quality of the structure and functioning of aquatic ecosystems.  EU Com increases pressure on member states to implement measures to improve status of water bodies.		
	Water Management administrations of the federal states in the catchment area of the river basin Elbe and stakeholders  <b>FDS (3), NGOs</b>	Non binding list of possible measures at the Tidal River Elbe, collected by the WP Tidal River Elbe (AG TES)  <b>EST</b>	✓	✓		✓		Collection of a big variety of ideas for measures at the Tidal River Elbe.	Guideline for state action, but not directly legally binding.  No living document.  No active working group.	Further development of this process possible without pressure on existing uses like ports, shipping and agriculture but integration of those interests.	No real local driver.	Finalised 2008
	Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN)  <b>FDS (1), PUB</b>	River Basin Management Plan including programme of measures for the Elbe River (part: Lower Saxony)  (Niedersächsischer Beitrag zum Bewirtschaftungsplan bzw. zum Maßnahmenprogramm für die Flussgebietseinheit Elbe nach WRRL)  <b>EST</b>	✓	✓		✓		Characteristics, significant pressures, water status, environmental objectives, economic analysis and programmes of measures required by articles 13 and 11 of the WFD. Aims at improving the ecological and chemical status of the Lower Saxony part of the river basin.  Programmatic basis of management until 2015, then revision every 6 years.  Delivers a relative rough overview on federal state level (includes Elbe estuary). Programme of measures includes Strategic Environmental Assessment.	Guideline for state action, but not directly legally binding.  Relatively abstract; largely summarizing because of the extensive scope.  No concrete measure proposals on water body level, only general measure type lists for surface waters and groundwater.  Implementation of measures difficult because of existing land use and lack of money. So far: Measure implementation is voluntary.	Integration of a number of WQ & Conservation strands. Mutual strengthening with other EU directives (Nat. 2000, MSD). Framework for future management targets.  Overcomes administrative boundaries.  Possibility to be linked with more specific local objectives/measures.  Involvement of official public /stakeholders ('Gebietskooperationen – GeKos') and general public ('Öffentlichkeitsbeteiligung'). Multi user management, user buy-in.	So far: Consisting mainly of reporting.  Central, but social/economic al tricky measures might be left aside.  Possibly not developing a holistic view on the river resp. estuary structure and functioning.	2009 finalized – next reviews in 2015 and 2021

ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
EU Water Framework Directive (WFD) (Cont...)											Increase of knowledge.  Opportunity to fill the holistic approach of the WFD with regard to the quality of the structure and functioning of aquatic ecosystems.  EU Com increases pressure on member states to implement measures to improve status of water bodies.	
Urban Waste Water Treatment Directive	Water Management administrations of the 3 federal states in the catchment area of the Tidal River Elbe <b>FDS (3)</b>	Water heat load management plan for the Tidal River Elbe (Wärmelastplan für die Tidelbe) <b>EST</b>	✓			✓		Binding guideline for the 3 water management administrations	implementation difficult because of divergent interests to industry and power plants	Reduction of conflicts between different interests of ecology and economy	Economic interests have often higher priorities; Many stakeholders involved	2008
	Water Management administration of Hamburg (BSU) <b>FDS (1)</b>	Cooling water quantity management plan for the Tidal River Elbe (in process but contentious) <b>EST-SECT</b>	✓			✓		Binding guideline for the Hamburg water management administration	implementation difficult divergent interests to industry and power plants	Reduction of conflicts between different interests ecology and economy	Economic interests have often higher priorities; Many stakeholders involved	in process
Habitats and Species Directive & Wild Birds Directive  Habitat/Spp. conservation	NLWKN Lower Saxony / MLUR, BSU-HH, HPA, WSV <b>FDS (3), REG, NGOs</b>	Integrated Management Plan Elbe -Natura 2000 (Integrierter Bewirtschaftungsplan Elbe – IBP) <b>EST</b>	✓			✓		Improving conservation status	implementation difficult, financing of measures not clear	Integrated approach with many win-win options. More legal certainties for users, excellent stakeholder process	Administrative boundaries, difficult and expensive implementation with many stakeholders affected, scientific uncertainties	Ready by 2011

ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Flood Risk Management Directive (FRMD) Article 7	Water Management administrations of the federal states in the catchment area of the river basin Elbe <b>INT, NAT; RBM, FDS (10)</b>	Flood Risk Management Plan (Hochwasserrisiko-management plan) <b>INT, NAT, RBM</b>	✓	✓	✓	✓		Integrated flood risk management with regard to human health, environment, cultural heritage and economic activity associated. Linking of flood management and general water management (acc. WFD). Consciousness about flood risk. Contains all phases of risk management cycle (prevention, handling, recovery). Indirectly binding for construction planning. Legally binding.	-	transnational management	Many stakeholders involved, difficult process	In process up to 2015
Coastal protection for private real estate in the Port of Hamburg	Private, Free and Hanseatic City of Hamburg and HPA (LSBG / HPA) <b>FDS (1), PV</b>	Adaption of private surge protection due to higher design water level (Anpassungsprogramm privater Hochwasserschutz) <b>EST-SECT</b>	✓		✓	✓		Partnership approach for the development of private flood protection within the port area	Limited financial possibilities	Significant adaptations will be realized	Economic interests in avoiding costs often have higher priority than the acceptance of adaptations.	2007 - 2016
Coastal protection Schleswig-Holstein along the River Elbe	Federal State of Schleswig-Holstein <b>FDS (1), REG, NGOs</b>	Master Plan Coastal Defence (Generalplan Küstenschutz) <b>EST-SECT, COA</b>	✓	✓	✓	✓						
Lower Saxony Coastal protection Law (Niedersächsisches Deichgesetz, NDG) Bremisches	Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (NLWKN), Free Hanseatic City of Bremen – The Senator for	Master Plan Coastal Defence (Generalplan Küstenschutz Niedersachsen/Bremen) 33 <b>EST-Sect, COA,</b>			✓			Flood defence with detailed extension scheme;  Revised with regard to future climate scenarios;  Premise for coastal protection measures. Points out concrete deficits and needs for action.	Not multi-sectoral/multi-disciplinary (focussed on flood protection); national guidelines for funding of measures make integration of other societal needs (e.g. recreation, urban planning) difficult	Decent funding by ELER and EFRE and strong national programme; much administrative power to enforce	Sectoral, ecosystem services not integrated in cost-benefit analysis	2007, regular reviews

<sup>33</sup> [http://www.umwelt.bremen.de/sixcms/media.php/13/GPK\\_Hauptteil.pdf](http://www.umwelt.bremen.de/sixcms/media.php/13/GPK_Hauptteil.pdf)

ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Wassergesetz (BremWG)	Environment, City Development and Transport (SUBV) <b>FDS (2)</b>	<b>WAD</b>										
Integrated Management of the Wadden Sea	Governments of Germany, Denmark, Netherlands  <b>INT</b>	(Trilateral) Wadden Sea Plan (WSP)  (Trilateraler Wattenmeerplan)  <b>WAD</b>	✓	✓	(✓)	(✓)	✓	Integrated approach on protection and sustainable development of the whole Wadden Sea area.  Within the estuaries valid up to the brackish water line  Regular Updates; Harmonized with a.) Natura 2000 b.) WFD c.) MSFD, framework for overall Wadden Sea management;  contains the Trilateral Monitoring and Assessment Program (TMAP).	Only politically binding	Common Wadden Sea Secretariat coordinates the cooperation,  focus on the future coordinated and integrated management of the Wadden Sea Area, valid instrument to integrate the overall interests of three states for one unique ecosystem (World heritage!!). Drafting of WSP is a formal process, including stakeholder involvement.		Trilateral Wadden Sea Cooperation since 1978,  WSP/I:1997 WSP/II:2010,  Adjustment ongoing process
Integrated Coastal Zone Management in Europe	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and ministries of the 5 coastal federal states (HB, HH, MV, NI, S-H)  <b>NAT,</b> <b>FDS (5)</b>	National ICZM Strategy  (Nationale IKZM-Strategie)  <b>COAZ</b>	✓	✓	✓	✓	✓	Holistic approach to sustainable development of coastal zones; flexible informal instrument, a framework to address many issues relating to the coastal zone;  systematically coordination of land use and development in the coastal zone;  multi-sectoral perspective	Informal process, not fully statutory, no financial support	Strategic scope; bottom up and top down processes;  coordination of different activities along the coastal zone (e.g. IMP Weser), reduction of conflicts between interests; improved sustainable development	Extent of stakeholder participation differs, ICZM lacks full statutory backing	National report 2006;  Review report in 2010;  Process ongoing
Shipping, ports, pollution prevention	Hamburg Port Authority (HPA), Federal Waterways and	Tidal Elbe Concept  (Tideelbekonzept)	✓		✓	✓	✓	Holistic approach to reduce tidal range and thus dredging necessities	implementation very difficult, only in the long term, scientific uncertainties	Win-win with many other sectors possible: nature protection, recreation, fishery, agriculture etc.	Many stakeholders involved, difficult	Concept 2006, first pilots in application and testing

ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Shipping, ports, pollution prevention (Cont...)	shipping administration (WSV) <b>NAT, FDS (1)</b>	<b>EST</b>									process, administrative boundaries	
	Parliament of the City State of Hamburg <b>FDS (1), NGOs</b>	Port Development Plan (Hafenentwicklung splan - HEP) <b>EST-SEC</b>			✓	✓		Binding guidelines for the port development	Consensual political guidelines of divergent interests	Ensuring project financing, regulating extension area	Restricting the options of the Port Authority	Recent version in process until 2011
	HPA, WSV, Federal State of Schleswig-Holstein, Federal State of Lower Saxony, Free and Hanseatic City of Hamburg <b>FDS (3), NAT</b>	River Engineering and Sediment Management Concept (Strombau- und Sedimentmanagementkonzept für die Unterelbe) <b>EST, COA</b>			✓	✓		Holistic approach to reduce tidal range and thus dredging necessities	implementation very difficult, only in the long term, scientific uncertainties	Win-win with many other sectors possible: nature protection, recreation, fishery, agriculture etc.	Many stakeholders involved, difficult process, administrative boundaries	Agreed 2008, first implementation steps (sediment trap, changed relocation)
	Federal Institute of Hydrology (BfG) <b>NAT, FDS (5)</b>	Transitional Regulation for the Handling of Dredged Material in the Coastal Area (GÜBAK - Gemeinsame Übergangsbestimmungen zum Umgang mit Baggergut in den Küstengewässern) <b>EST-SECT, COA</b>				✓		Operational guideline	National regulation, different from neighbouring countries			2009 but transitional only, a new guideline for dredged material handling of coastal and inland waterways is under development (HABAG)
	Federal Institute of Hydrology BfG <b>NAT, FDS (16)</b>	HABAB, Regulation for the handling of dredged material in inland areas (Handlungsanweis)				✓		Operational guideline	National regulation, different from neighbouring countries			2000, will be replaced by HABAG

ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Shipping, ports, pollution prevention (Cont...)		ung für den Umgang mit Baggergut im Binnenland) <b>EST-SECT, RB</b>										
	National River Basin Community (FGG Elbe) (before ARGE Elbe) <b>NAT, FDS (10)</b>	Handling of contaminated dredged Material at the Elbe – Status and Recommendations (Umgang mit belastetem Baggergut an der Elbe – Zustand und Empfehlungen) <b>RB</b>				✓		Operational guideline, case specific for the Elbe	Not multi-sectoral			1996
	International Commission for the Protection of the Elbe River (IKSE) <b>INT, NAT, FDS (10)</b>	International Warning plan Elbe IKSE working with ALAMO - Numeric transport model of pollutant dispersal (Internationaler Warn- und Ablaufplan Elbe) <b>RB</b>	✓			✓		Fast reaction is possible; minimizing pollutant dispersal	Different functional responsibilities	Enhances the networking between partners	Losses if mission is not successful.  If the numerical model is not updated	
Economic Development and Spatial Planning	Lower Saxony Minister for Rural Areas, Food, Agriculture and Consumer Protection <b>FDS (1), ?</b>	Regional planning concept on coastal waters of Lower Saxony (Raumordnungskonzept für das niedersächsische Küstenmeer (ROKK)) <b>EST-SECT, COA</b>	✓	✓		✓	✓	Integrated approach including the use requirements, stakeholder participation process, conflict assessment in terms of uses and nature conservation targets	Not legally binding, plan divided by administrative boundaries (only regarding the coastal waters of Lower Saxony)	May serve as guideline for future planning processes and measures, Integrated approach with stakeholder involvement	Not legally binding, future implementation/consideration unsure	2005



ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Economic Development and Spatial Planning (Cont...)	Federal State of Schleswig-Holstein <b>FDS (1), ?</b>	Spatial Planning State Development Plan Schleswig-Holstein 2010 (Landesentwicklungsplan) <b>EST-SECT, COA</b>	✓	✓		✓	✓	legally binding guidelines	the Elbe estuary is just a small area in the plan	sets the estuary in a greater context		2010
	Federal State of Schleswig-Holstein <b>FDS (1), ?</b>	Spatial Planning Report Coast and Sea 2005 (Raumordnungsbericht Küste und Meer 2005) <b>EST-SECT, COA</b>	✓	✓	✓	✓	✓	gives a good overview of the uses and needed measures	not legally binding	gives good starting points	mainly looking back	2005
	Federal State of Schleswig-Holstein <b>FDS (1), ?</b>	Regional Plan for the Planning Region IV in the Region Dithmarschen / Steinburg (Regionalplan für den Planungsraum IV) <b>EST-SECT, COA</b>	✓	✓		✓		legally binding guidelines	the Elbe estuary is just a small area in the plan	sets the estuary in a greater context		
	Parliament of the City State of Hamburg <b>FDS (1), NGOs</b>	Port Development Plan (Hafenentwicklung splan - HEP) <b>EST-SEC</b>	✓	✓	✓	✓	✓	Binding guidelines for the port development	Consensual political guidelines of divergent interests	Ensuring project financing, regulating extension area	Restricting the options of the Port Authority	Recent version finished in 2012
EU Marine Strategy Directive (MSFD)	Federal Ministry for Water affairs and the Water Management administrations of the 5 coastal federal states	Programme of Measures <b>MSD</b>	✓	✓		✓		Protection and preservation of the marine environment.  Enhancing the integrated approach of protection and sustainable development from coastal waters seawards.  In compliance with the river continuum	Intercalibration will be difficult because the sea doesn't have borders but the member states and the national administrations have.  In Germany Federal States	Increase of knowledge.  Holistic view on ecosystem structure and function. Integration of wide range of usages.  Promotion of sustainable use	Little time to provide solid scientific and technical basis for measures.	Implementation still ongoing

ELBE ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Shipping & Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
	NAT, FED (5), PUB							<p>concept of the WFD (f.e. nutrients and pollution).</p> <p>Filling gaps of the WFD in coastal waters. MSFD is applying an ecosystem-based approach to the management of human activities</p>	<p>from the inland have to contribute to the success but have no concernment.</p>	<p>of the sea</p> <p>Improvement of understanding and management of pressures and impacts arising from human activities</p> <p>Reduction of undesirable impacts on the marine environment</p> <p>Integration of environmental considerations into all relevant policy areas. Contribution to coherence between different policies</p> <p>Addresses all human activities that have an impact on the marine environment</p> <p>Application of an ecosystem-based approach to the management of human activities while enabling a sustainable use of marine goods and services,</p>		

Table 8 – Scheldt Estuary Sectoral Plan Review and SWOT Analysis

In the last decade, management of the Scheldt estuary has been worked out not only on a transnational basis (The Netherlands (NE) – Flanders (FL)) but also in a multi-sectoral way. A global Long Term Vision (LTV – 2001) has been implemented in a 2010 Development Outline (2010DO – 2005) which has been translated in a Scheldt Treaty (2005). Some sectoral plans listed below are part of this multi-sectoral policy plans. Where this is the case, it is mentioned between brackets.

SCHELDT ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Flood Protection	Economy, Fisheries and Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
Water Framework Directive	International Scheldt Commission (ISC) <b>INT</b>	Overarching part of the River Basin Management Plan <b>RB</b>	✓		✓			The management tasks are organised at the level of the water bodies and distributed among the relevant authorities (Flanders, provinces, communities, polders and watering companies). In this way a balanced water management can be reached by taking into account all visions, ambitions and initiatives of the parties concerned. In preparation of these management plans also other governmental agencies involved were advised as much as possible (e.g. spatial planning, fisheries, mobility etc.). Within the management plan legally binding terms can be stated which need to be complied by the other governance agencies. Also the assigned Habitat and Bird Directive and Ramsar areas are included in the management plans. Recreation is taken into account by assuring water quality for fishing and swimming. Another strength is multilateral adjustment of the management between the Netherlands and Belgium within the International Scheldt Commission.	A better adjustment of planning cycle of the stream district, river basin & sub-basin management plans. Therefore, the national 'decreet Integraal Waterbeleid' is being adjusted now. The river basin management plans with local measures will be directly integrated within the stream district management plans. From models and expert judgement it is concluded that for 177 of the 182 water bodies in the stream district area of the Scheldt, a good ecological status as defined according to the WFD, will not be achieved by 2015 as also for 29 of the 32 ground water bodies within the Scheldt stream district area.	Water quality will definitely improve further, however not all criteria for good ecological status will be reached. Challenges: further decrease of phosphorous levels, free fish migration, anticipate climate change, put the conservation objectives into practice within the water policy, finances and further communication between relevant authorities. Management plans for flood protection areas will be included by 22 December 2012, hence more focus on floods will also be included in the river basin management plans.	Organisation of the management at different levels can also be a threat when communication does not work out as it should.	
	Coördinatie commissie Integraal Waterbeleid (CIW) including several partners concerned with management and implementation <b>(NAT-RA-RBM)</b>	River Basin Management Plan ZeeScheldt - EST	✓		✓		2010-2015					
	Flemish Decree on Integrated Water Policy	Coordinate commissie Integraal Waterbeleid (CIW) including several partners concerned with management and implementation <b>(NAT-RA)</b>	River Basin Management Plan of the 'BenedenScheldtbekken' - integrative water policy in practice (EST)	✓		✓						2008-2013
	Waterschappen' province of 'Antwerpen' and Oost-Vlaanderen with coöperation of local districts <b>(REG-RA)</b>	Sub-River Basin Management Plans of 'Ledebeek & Durme', 'Scheldtschorren', 'Land van Waas', 'Beneden Schijn', 'Boven Schijn', 'Beneden Vliet', 'Vliet & Zielbeek', 'Barbierbeek', 'De Drie Molenbeken' and 'Scheldtland' (EST-SECT)	✓		✓		ongoing					

SCHELDT ESTUARY													
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans						SWOT				Status
			Conservation	Recreation	Flood Protection	Economic Shipping and ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats		
Water Framework Directive	Federal Public Service (FOD) - Health, Food Chain Safety and Environment - Department Marine Environment (NAT-RA)	River Basin Management Plan for Belgian Coastal Waters for the implementation of the Water Framework Directive - 2009 (RB-EST-SECT-COAZ)	✓					Management of Belgian coastal waters, mainly developed to implement the Water Framework Directive. The WFD applies to one mile towards the sea starting from the land border. Communication is well coordinated between relevant authorities at international and national level by the International Scheldt Commission (ISC) and the Coordination Committee International Environmental Management (CCIM) resp.	More specific data is needed to evaluate coastal and sea management, well communication and creation of a platform for sustainable management for different coastal stakeholders, lack of long term vision and adaptive management	Well implementation of WFD opens possibility to well adjust this to the obligations to be fulfilled by the Bird and Habitat Directive.	Complexity at land-sea interface of the organisation of different governance authorities, complicating the coordination of different actions and tools. Climate change - adaptive management necessary.	ongoing	
	Dutch Ministry of Infrastructure and Environment - Directorate Water (NAT-RA)	River Basin Management Plan Scheldt	✓									2008	
Dutch Water Act	Dutch Ministry of Infrastructure and Environment - Directorate Water (NAT-RA)	Dutch National Waterplan	✓		✓		✓	Integral Water Management and Watersystem Approach; Structural vision on spatial aspects; includes measure program of Water Framework Directive, Flood Directive and Marine Strategy Directive				2008	
Habitats and Species Directive & Wild Birds Directive  Habitat/Spp. conservation	Rijkswaterstaat – Centre for Watermanagement (NL), Ecosystem Management Research group University of Antwerp (BE), Institute for Nature and Forest Research-INBO (BE) (NAT-REG)	Nature Development Plan for the Scheldt Estuary (NOP) 2003	✓					NOP gives a diagnosis of the state of the estuary and gives qualitative direction of concrete measures that can be applied on the short term as basis for the 'Ontwikkelingsschets 2010' to eventually reach the 'Langetermijnvisie 2030; is an integrative plan of the 'Ontwikkelingsschets 2010' and used for the natural aspect within the 'actualized Sigma plan' based on also the 'Rehabilitation plan for the ZeeScheldt: three possible scenarios'.	Does not quantify, gives qualitative directions.	Good basis for integration of other functions such as recreation by discussion with different stakeholders involved.	Legal procedures / political commitment / budget availabilities/ public acceptance (e.g. Resistance to managed realignment in Hedwige polder, NL).	2003 - 2010	
	Dutch Ministry of Infrastructure and Environment - Directorate Water (NAT-RA)	N2000 Management Plan Westerscheldt	✓										

SCHELDT ESTUARY												
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status
			Conservation	Recreation	Final Project on	economic Shipping and ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats	
	Flemish Ministry of Environment, Nature and Energy and Flemish Agency for Nature and Forests (REG-RA)	Revised Sigmoplan (integrated in 2010DO and the Scheldt Treaty 2005)	✓		✓			Does not only want to increase safety for floods, but combines safety with ecology (nature and water management). The 'Actualized Sigmoplan' followed after the 'ontwikkelingsschets 2010' and integrates a costbenefit analysis, an Environmental Impact Analysis (EIA), an analysis of the effects to agrarian activities (LER) and the plans 'LTV 2030', 'OS2010' and the 'natural development plan' (NOP) into 1 large plan for safety and ecology. The plan includes several projects of which many are put into action, are finished or planned. This 'project-approach' allows close cooperation between all parties involved (agriculture and nature organizations, local districts, ...) to come to a general agreement. Next it allows for an adaptive management in function of monitoring.	Projects are not legally binding,	This plan opens possibilities for recreation and agriculture.	Legal procedures / political commitment / budget availabilities.	2001 - ongoing
Flemish Decree on Nature Conservation	Department of Environment, Nature and Energy-LNE (NAT-RA)	Environmental Management Plan (MiNa-4) 2011-2015 (EST-SECT)	✓				Sustainable management based on precaution, environmental care, 'polluter pays' and 'stand still' principles and source effective measures, using an integrative thematic approach, target group and area oriented management. This plan gives a legal framework in which water- and nature management objectives can be achieved and it creates a public awareness. Other relevant authorities are consulted to make the right decision in which actions should be taken as priority.	The planning phase is not fully adjusted to other planning phases such as those from River Basin Management Plans. Next a general environmental management plan is no longer obligatory at the local level. Measures are only in part legally binding. Effective realisation of the plan at local level is not guaranteed.	More coupling to other plans-projects-initiatives, e.g. to the collection of waste water, spatial planning more specifically to the organization of flood protection areas, better adjustments to other plans in general.	Budget cuts, at this moment the Environmental Management Plan is rather supplementary to existing regulations.	2011 - ongoing	
	Relevant provinces (Environmental department) (REG-RA)	Provincial Environmental Management Plan (EST-SECT)	✓									
	Relevant municipalities (Environmental department) (REG-RA)	Municipal Environmental Management Plan (EST-SECT)	✓									
	Technical Scheldt Commission (TSC) representing all governance agencies concerned under leadership of 'Rijkswaterstaat - dir Zeeland' & Waterwegen en Zeekanaal (W&Z) Afdeling Maritime Access (INT-RA)	Langetermijnvisie 2030 (LTV2030) (EST/EST-SECT)	✓	✓	✓	✓	Bilateral agreement between the Netherlands and Flanders to come to a safer, more accessible and natural Scheldt estuary on the long term. This is an outline of an integrated view with focus on cooperation between the Netherlands and Flanders for the management of the estuary as a whole (healthy, multifunctional and sustainably used). Morphology is agreed upon as a major determinant factor and has received main attention.	Rather abstract theoretical description. No legally binding objectives.	Platform and target vision is decided and agreed upon by both countries to work to the desired state by 2030. Further realisation in 'Ontwikkelingsschets 2010'. The vision is also integrated in the Sigmoplan and used as base in the conservation objective document for the ZeeScheldt.	Political commitment / budget availabilities.	2001 - 2030	
	ProSes ('Project Directie Ontwikkelingsschets Scheldt-estuarium') under leadership of the Technical	Ontwikkelingsschets 2010, immediately follows from 'Langetermijnvisie 2030' (mid-term plan) (EST/EST-SECT)	✓		✓	✓	Plan to realize LTV2030 concretely at short and mid-term. Consists out of 26 measures and projects to make the Scheldt estuary safer, more accessible and natural in a first step by 2010. Several of them are performed. Concrete measures!	Effective realisation is dependent on mutual engagement of parties (of the Netherlands & Flanders). Some measures could still not be fulfilled. At this point 20 of 26 projects are realized. In the	Many measures and projects are realized and are starting point towards the target vision 2030. Allows easy integration in other plans such as for safety, building permits, in EIA's,...	Legal procedures / political commitment / budget availabilities/ public	2001 - 2010	

SCHELDT ESTUARY													
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status	
			Conservation	Recreation	Flood Protection	Economic Shipping and ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats		
	Scheldt Commission (TSC) (INT-RA)									Netherlands more efforts to compensate for nature are needed.		acceptance (e.g. Resistance to managed realignment in Hedwige polder, NL).	
Flood Protection	Flemish Ministry of Environment, Nature and Energy and Flemish Agency for Nature and Forests (REG-RA)	Revised Sigmaphan (integrated in 2010DO and the Scheldt Treaty 2005)	✓		✓	✓	✓	Does not only want to increase safety for floods, but combines safety with ecology (nature and water management). The 'Actualized Sigmaphan' followed after the 'ontwikkelingsschets 2010' and integrates a cost benefit analysis, an Environmental Impact Analysis (EIA), an analysis of the effects to agrarian activities (LER) and the plans 'LTV 2030', 'OS2010' and the 'natural development plan' (NOP) into 1 large plan for safety and ecology. The plan includes several projects of which many are put into action, are finished or planned. This 'project-approach' allows close cooperation between all parties involved (agriculture and nature organizations, local districts, ...) to come to a general agreement. Next it allows for an adaptive management in function of monitoring.	Projects are not legally binding,	This plan opens possibilities for recreation and agriculture.		Legal procedures / political commitment / budget availabilities.	2001 - ongoing
	Dutch Ministry of Infrastructure and Environment - Directorate Water (NAT-RA)	Dutch National Waterplan	✓		✓		✓	Integral Water Management and Watersystem Approach; Structural vision on spatial aspects; includes measure program of Water Framework Directive, Flood Directive and Marine Strategy Directive					2009-2015
Coastal protection	Flemish Ministry of Mobility and Public Works (REG-RA)	Coastal safety Plan			✓		✓	Plan gives preference to soft measures above hard measures. Hard measures are still needed to protect along harbours and certain dikes.	Focus is on coastal defence only				2010-2014
Shipping, Ports and Pollution Prevention	Common Nautical Authority (NE: RWS, Waterdistrict Westerscheldt & FL: MOW afdeling scheepvaartbegeleiding)	Common Nautical Management	✓				✓	Integrated process, Permanent structure, Common Nautical Treaty (2005)	Participation & involvement (i.e. field experts)	Sequential approach – full partnership, nautical guidelines & optimisation of ship movements		Unbalance between partners – tendency to monopolize	Operational, Ongoing re-assessment of risks
	Technical Scheldt Commission (TSC) representing all governance agencies concerned under leadership of 'Rijkswaterstaat - dir Zeeland' & Waterwegen en Zeekanaal	Langetermijnvisie 2030 (LTV2030) (EST/EST-SECT)	✓	✓	✓		✓	Bilateral agreement between the Netherlands and Flanders to come to a safer, more accessible and natural Scheldt estuary on the long term. This is an outline of an integrated view with focus on cooperation between the Netherlands and Flanders for the management of the estuary as a whole (healthy, multifunctional and sustainably used). Morphology is agreed upon as a major determinant factor and has received main attention.	Rather abstract theoretical description. No legally binding objectives.	Platform and target vision is decided and agreed upon by both countries to work to the desired state by 2030. Further realisation in 'Ontwikkelingsschets 2010'. The vision is also integrated in the Sigmaphan and used as base in the conservation objective document for the ZeeScheldt.		Political commitment / budget availabilities.	2001 - 2030

SCHELDT ESTUARY													
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status	
			Conservation	Recreation	Flood Protection	Economic	Shipping and ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities		Threats
	(W&Z) Afdeling Maritime Acces (INT-RA)												
	ProSes ('Project Directie Ontwikkelingsschets Scheldt-estuarium') under leadership of the Technical Scheldt Commission (TSC) (INT-RA)	Ontwikkelingsschets 2010, immediately follows from 'Langetermijnvisie 2030' (mid-term plan) (EST/EST-SECT)	✓		✓	✓		Plan to realize LTV2030 concretely at short and mid-term. Consists out of 26 measures and projects to make the Scheldt estuary safer, more accessible and natural in a first step by 2010. Several of them are performed. Concrete measures!	Effective realisation is dependent on mutual engagement of parties (of the Netherlands & Flanders). Some measures could still not be fulfilled. At this point 20 of 26 projects are realized. In the Netherlands more efforts to compensate for nature are needed.	Many measures and projects are realized and are starting point towards the target vision 2030. Allows easy integration in other plans such as for safety, building permits, in EIA's,...	Legal procedures / political commitment / budget availabilities/ public acceptance (e.g. Resistance to managed re-alignment in Hedwige polder, NL).	2001 - 2010	
	Flemish Ministry of Mobility and Public Works (REG - RA)	Strategic Plan for the port of Antwerp				✓		Long term (2030), integrated process, High level of participation	Long procedure	Balanced area development	Political & societal opposition	Ongoing	
Economic Development & Spatial Planning	Department of Planning, Housing and non-movable heritage-RWO (NAT-RA)	Ruimtelijk Structuurplan Vlaanderen' (RSV) (EST/EST-SECT)						Spatial planning gives rise to selective urbanization, protection for further degradation of outer area and the optimisation of water and road infrastructure. The spatial planning takes the physical network of rivers and valleys as basis for further planning. In AGNAS a natural and agrarian structure is delineated in which VEN, Bird and Habitat Directive SPA's and Ramsar areas are legally established within the natural area. This delineation is yearly repeated in AGNAS or on the occasion of other planning initiatives such as Sigma-plan. The department of spatial planning adapts its planning to approved project plans, and to the presence of Habitat, Bird and Ramsar areas. Multi-functional use is reached by spatial implementation plans and in part controlled by planning regulations. E.g. 'natuurverwevingsgebied' allows use for natural purposes in agrarian and recreational areas. Focus in recent plans were on urban centralisation, hence more natural hinterland is safeguarded. For important nature reserves/areas and harbour areas authority lies with the Flemish government. Local districts cannot interfere with these plans.	In terms of more space for natural areas and forest, spatial planning is still far behind.	In the new 'Beleidsplan Ruimte' more selective choices will be made in spatial planning taking into account a more strategic thematic approach. It is however not clear up to this day whether the estuarine areas will be included as such strategic areas. Climate change however, will be approached in such a way.	Supervision towards local urban regulations is an ever ongoing exercise to ensure multi-functional use of space in agreement with the overall coordinating RSV-plan. It is not clear whether the second delineation of more space for natural areas and forest will be further performed in the new 'Beleidsplan Ruimte'.	ongoing, work in progress, integrating all objectives for conservation, flood protection, ... intrinsically	
EU Marine Strategy Framework Directive	Belgian Federal Public Service for Health, Foodchain safety and environment (NAT - RA)	Programme of Measures	✓				✓						

SCHELDT ESTUARY													
Management Driver	Main Organisation & Their Remit *1	Name of Plan & Spatial planning Area *2	Focus / aims of the plans					SWOT				Status	
			Conservation	Recreation	Flood Protection	Economic Development and Ports	ICZM	Strength (Scope of Plan)	Weakness	Opportunities	Threats		
	Dutch Ministry of Infrastructure and Environment - Directorate Water (NAT - RA)	Dutch National Waterplan	✓		✓		✓		Integral Water Management and Water system Approach; Structural vision on spatial aspects; includes measure program of Water Framework Directive, Flood Directive and Marine Strategy Directive				2008



## 5 Conclusions

### 5.1 Environmental Drivers

Environmental drivers from the European, national and local levels which influence sectoral management in four European estuaries (the Humber (England); Elbe & Weser (Germany); and Scheldt (The Netherlands & Flanders, Belgium)) have been reviewed to determine good management practices which can not only be shared between these countries, but which can also be applied to other estuaries within Europe. These estuaries provide a range of managerial differences from the international catchment areas of the Elbe and Scheldt, to the regionally managed estuaries of the Weser (with its numerous Federal States) and the Humber estuary (with four local authorities).

Five EU directives were considered within this project (Wild Birds Directive, Habitats & Species Directive, Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD) and the Flood Risk Management Directive (FRMD)) and their operational implementation within each of the TIDE countries. Schematic frameworks detailing how the directives have been implemented from a top-down basis were produced for each estuary. The directives dealing with the protection of birds, habitats and species which have been in existence for over ten years, have been successfully implemented in each of the four TIDE estuaries. All the TIDE governments have provided considerable guidance to their national conservation bodies on how to apply the requirements of these directives and at an estuary level, competent authorities have come together to establish management schemes to ensure that the European Marine Sites (EMS) are protected from potentially damaging activities. The proposed EU Directive on Maritime Spatial Planning and Coastal Management may also affect estuary management if adopted, but has not been considered in this report as its implementation details are as yet unknown.

Each of the TIDE countries have also made good progress with the implementation of the newer directives e.g. MSFD and the FRMD into national law, meeting the deadlines set by the commission. New enabling legislation or an adaptation of existing laws have enabled these directives to be enacted and implementation and advisory groups within the respective countries are currently deciding on management actions.

### 5.2 Best Practice

This report has examined many of the management plans active within the four estuaries, highlighting best practice examples and the management options which can be shared between the TIDE partners to be integrated into future estuary management documents. Examples of best practice to take forward include:

- *Both nature and economic interests should be equally and actively involved in developing management plans. This has successfully worked in all four estuaries by identifying potential synergies between nature and economy.*

All four estuaries have non-statutory management plans primarily to ensure that the habitats and species of the estuaries maintain their favourable condition. These plans are by nature multi-sectoral, integrated and cover the full extent of the European Marine Site but as they are non-statutory, their success is based on stakeholder implementation. To ensure best practice in all estuaries, these plans need to harmonise the different users within the respective estuaries with the requirements of Natura 2000 and Water Framework Directive objectives. They should bring together and consult various interest groups and relevant authorities. The plans should also be continually reviewed to ensure updated aims, objectives and action plans for management of the estuaries.

Best practice examples include the Humber Management Scheme in the Humber, the Integrated Managementplan Elbe, Integrated Managementplan Weser and the Nature Development Plan for the Scheldt Estuary. It should also be noted that while a Natura 2000 management plan has been developed in the Netherlands, as required by the Dutch Nature Protection Act, a Natura 2000 management plan is not required in Flanders for the Scheldt.

- *The creation of unified management decisions and the avoidance of overlapping plans.*

The Master Plan Coastal Defence in the Weser has demonstrated that a unified management framework for coastal protection can be developed despite the number of different federal states and authorities involved. In reaction to the Flood Risk Management Directive, all four estuaries have comprehensive flood risk management plans in place derived through their environment protection agencies and local authorities/federal states. These management plans have been developed on a whole estuary scale, instead of an administrative basis, which avoids duplication of effort and possible overlap and omissions.

- *Open communication between statutory authorities, stakeholders and users within an estuary will lead to common goals being met.*

All four estuaries have shown good practice in using stakeholder and advisory networks to facilitate the development of many of the plans. One case in point are the River Basin Management Plans (RBMPs) and other programs of measures as required under the Water Framework Directive. The RBMPs have been successfully developed on both the local scale e.g. the Humber estuary and on the international scale e.g. the Elbe overcoming administrative boundaries.

### 5.3 SWOT

Figure 5 shows examples of the strengths, weaknesses, opportunities and threats identified across the current management plans of the four TIDE estuaries which should be taken on board and used as best practice for future management plans. A plan's strengths should be that where possible, it should be statutory in nature (having the legislative power to enforce its aims), be multi-sectoral, have defined funding and have sufficient spatial coverage to provide a broad management remit for the estuary. However the SWOT analyses have demonstrated in some cases that plans can be successful even if they are not statutory in nature e.g. the Integrated Managementplan Elbe. As long as there is a good management structure keeping the plan on track, then non-statutory plans can be successful. Other strengths include multi-user management, stakeholder/user buy-in to the plans aims and for the plan to be regularly updated to keep up with changing legislation or environmental conditions e.g. climate change.

The main weaknesses highlighted across the plans include their lack of financial support/funding when non-statutory (e.g. it is recognised that funding is often a major hurdle in delivering the policies put forward within shoreline management plans), plans which have non-specific targets, and plans which are very narrow in focus lacking multi-sectoral inclusiveness. A critique did highlight that although it is a weakness for a plan not to be multi-sectoral to be more inclusive of many different estuaries uses and users, a multi-sectoral plan can also sometimes lose focus on the key issue it is trying to manage. Therefore a plan focused only on flood protection could be considered a strength.

The plan should present the opportunities to be forward thinking with the need to integrate new or changing issues e.g. climate change. They could be a framework for future management needs and provide conflict resolution between different sectors to give a win-win situation in estuarine management.

The SWOT analysis highlighted the following threats across the four estuaries including limited funding therefore making a plan short lived, too many stakeholders with different goals can threaten a plan's success, and the limited spatial coverage of a plan.

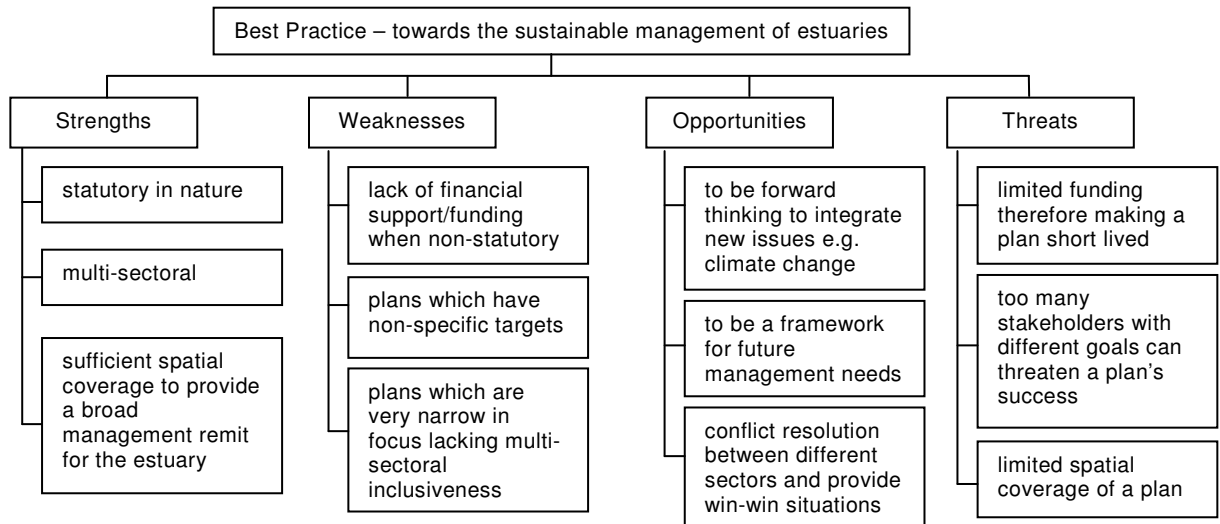


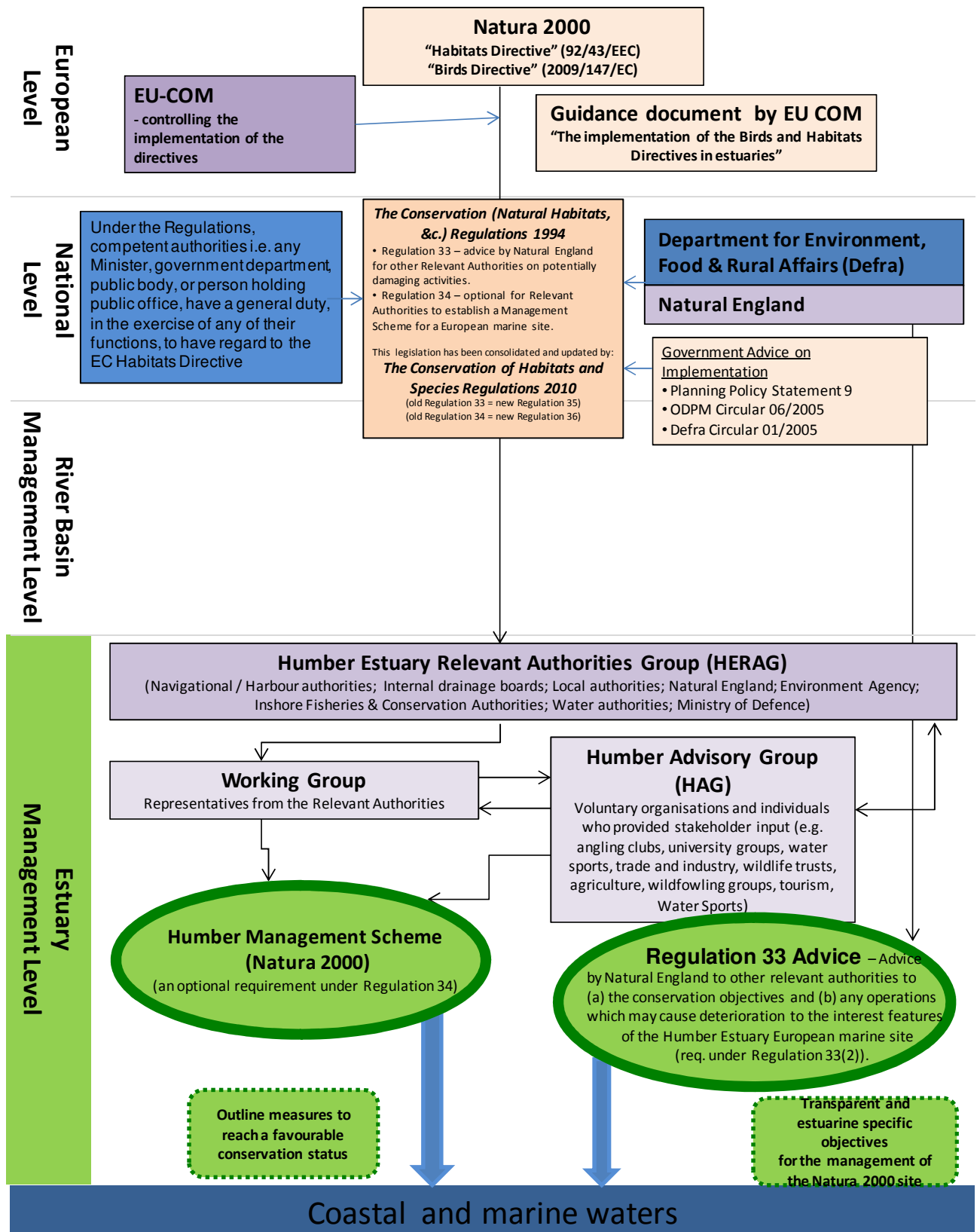
Figure 5 Common strengths, weaknesses, opportunities and threats identified within the management plans of the four TIDE estuaries

## Appendices

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**Appendix 1a – Operational Implementation of the Habitats Directive and Wild Birds Directive in Management Plans for the Humber Estuary**



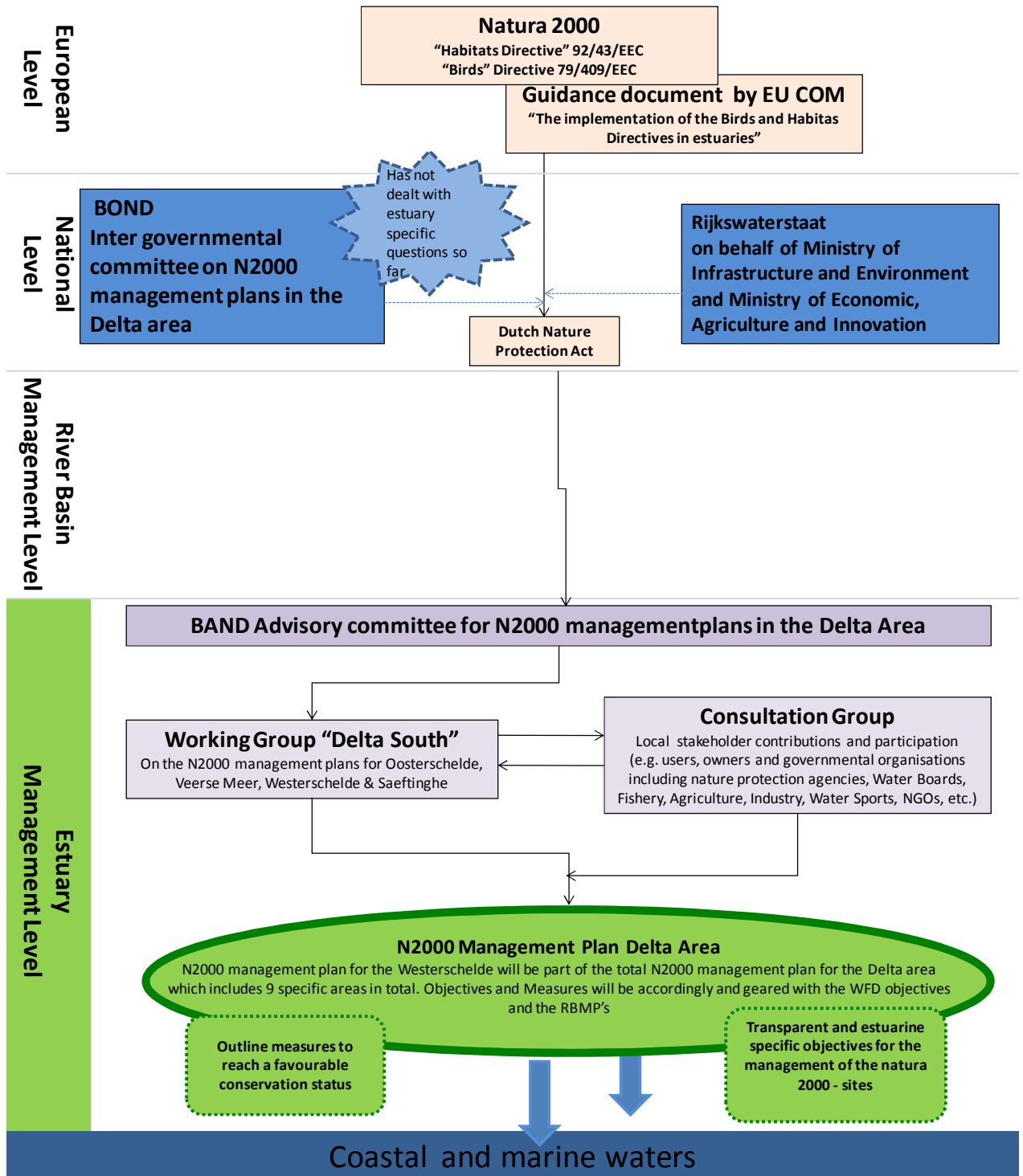


**Appendix 1b – Operational Implementation of the Habitats Directive and Wild Birds Directive in Management Plans for the Elbe Estuary**



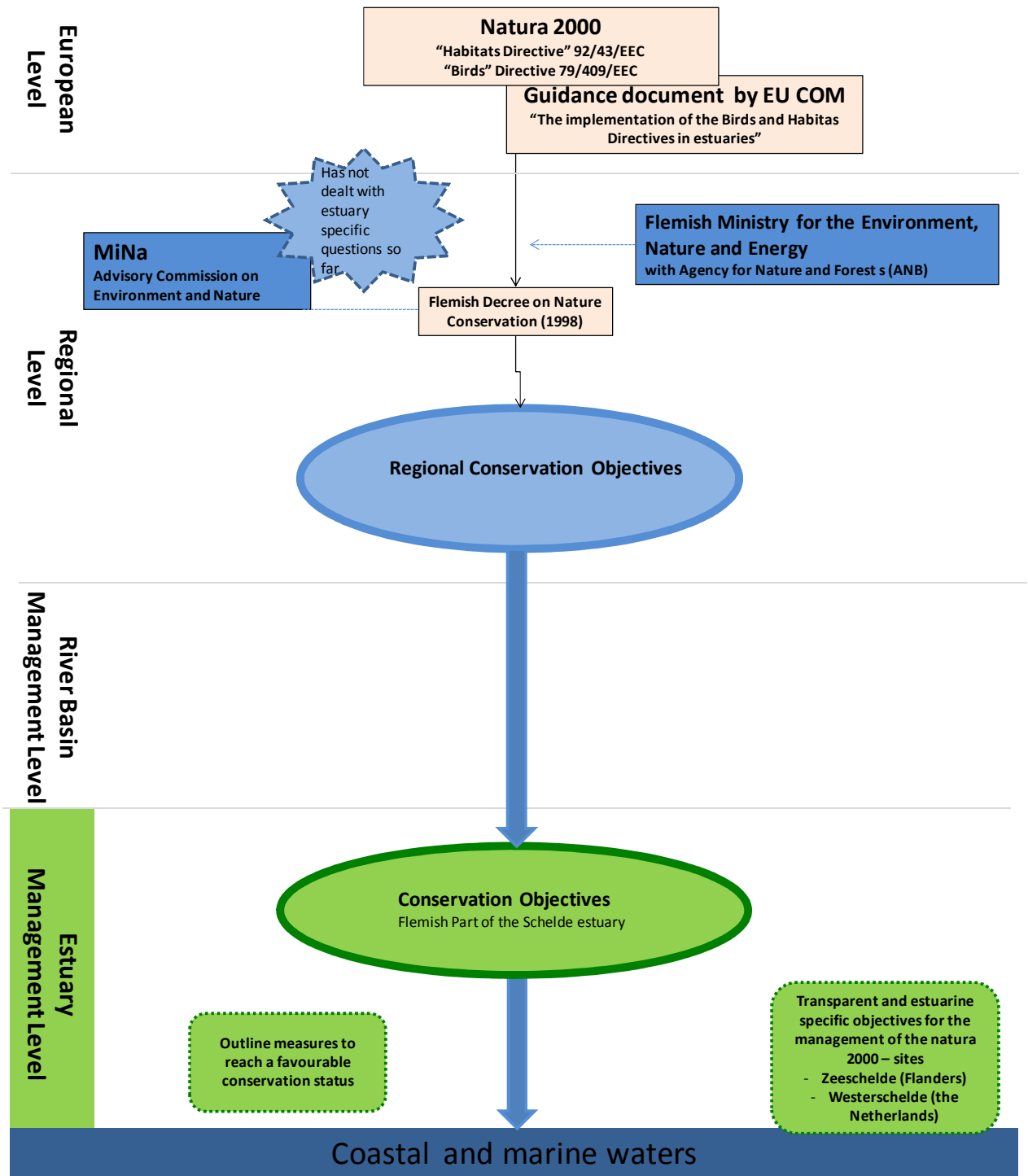
**Appendix 1c – Operational Implementation of the Habitats Directive and Wild Birds Directive in Management Plans for the Weser Estuary**

### Appendix 1d – Operational Implementation of the Habitats Directive and Wild Birds Directive in Management Plans for the WesterScheldt, The Netherlands

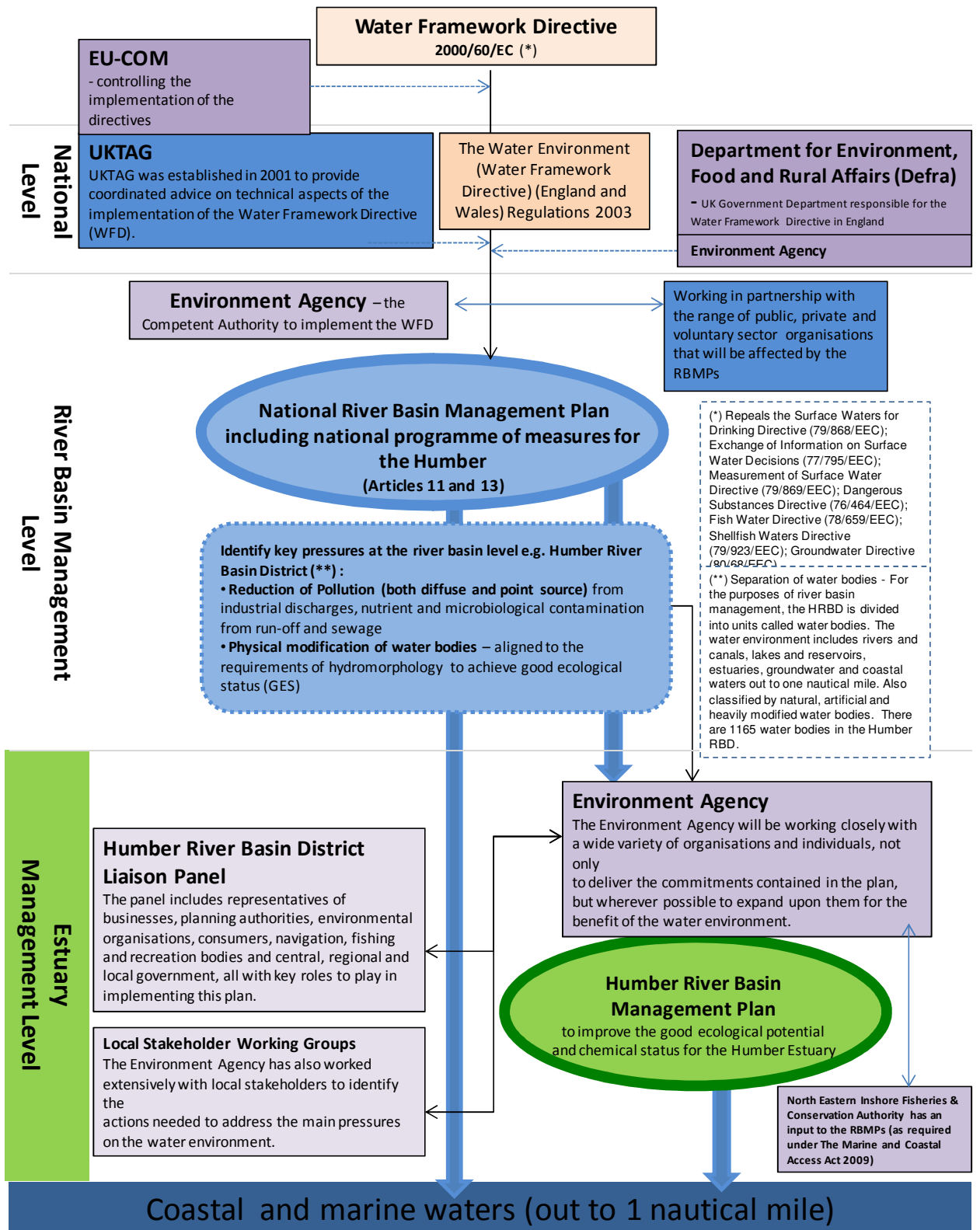




### Appendix 1e – Operational Implementation of the Habitats Directive and Wild Birds Directive in Management Plans for the Scheldt, Flanders



**Appendix 2a – Operational Implementation of the Water Framework Directive in Management Plans for the Humber Estuary**



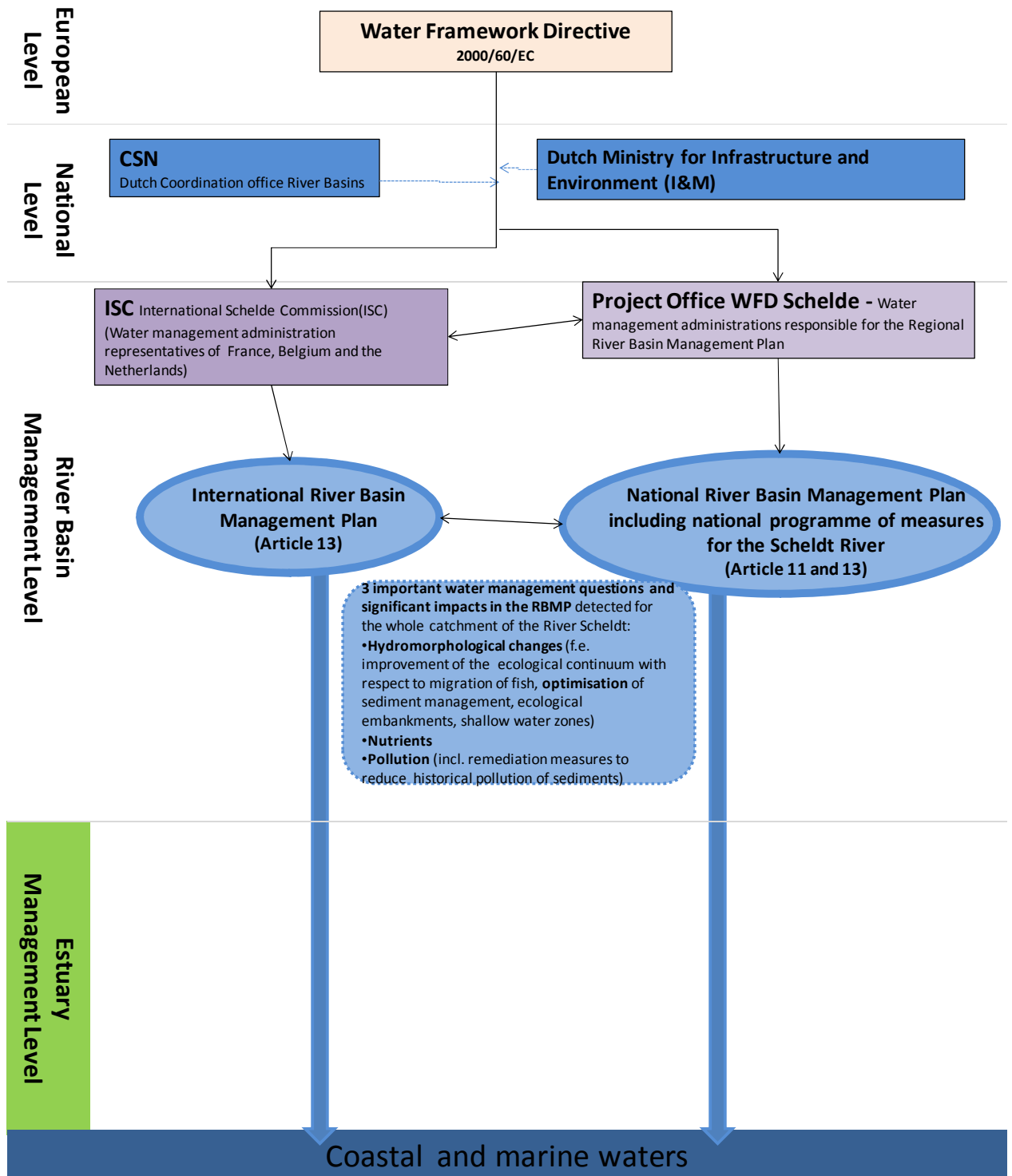


**Appendix 2b – Operational Implementation of the Water Framework Directive in Management Plans for the Elbe Estuary**

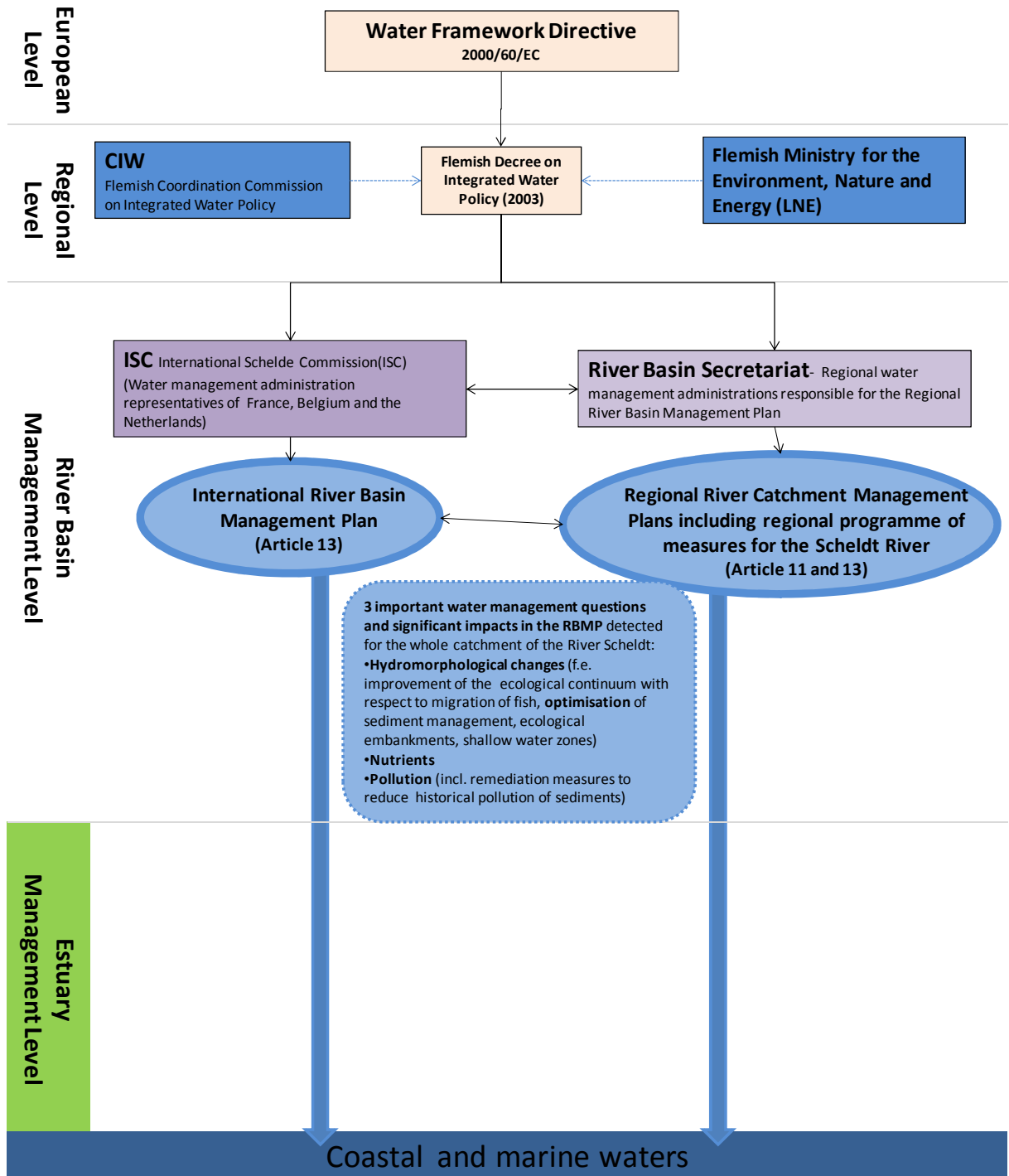


**Appendix 2c – Operational Implementation of the Water Framework Directive in Management Plans for the Weser Estuary**

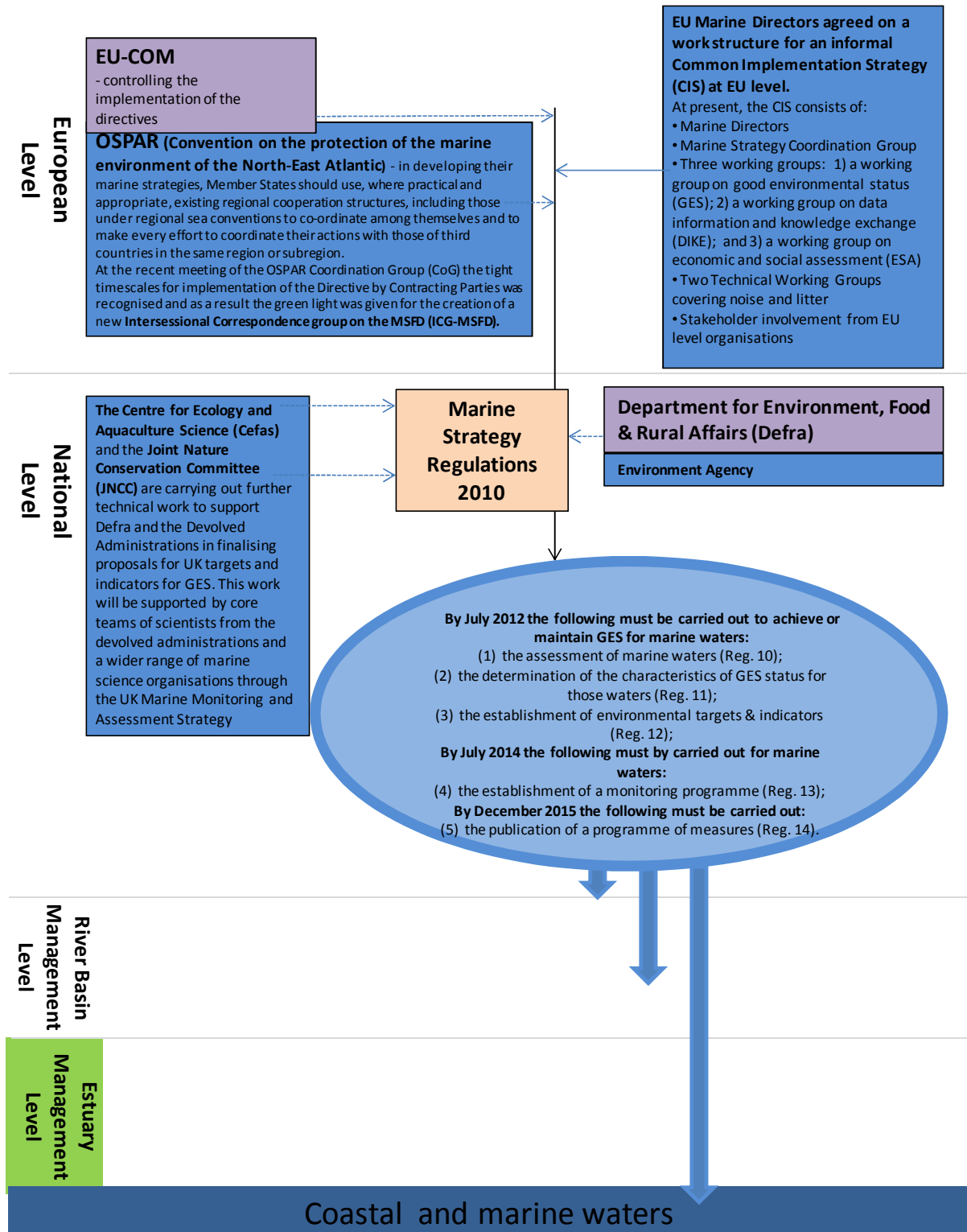
## Appendix 2d – Operational Implementation of the Water Framework Directive in Management Plans for the Scheldt Estuary, The Netherlands



## Appendix 2e – Operational Implementation of the Water Framework Directive in Management Plans for the Scheldt Estuary, Flanders



### Appendix 3a – Operational Implementation of the Marine Strategy Framework Directive in Management Plans for the Humber Estuary





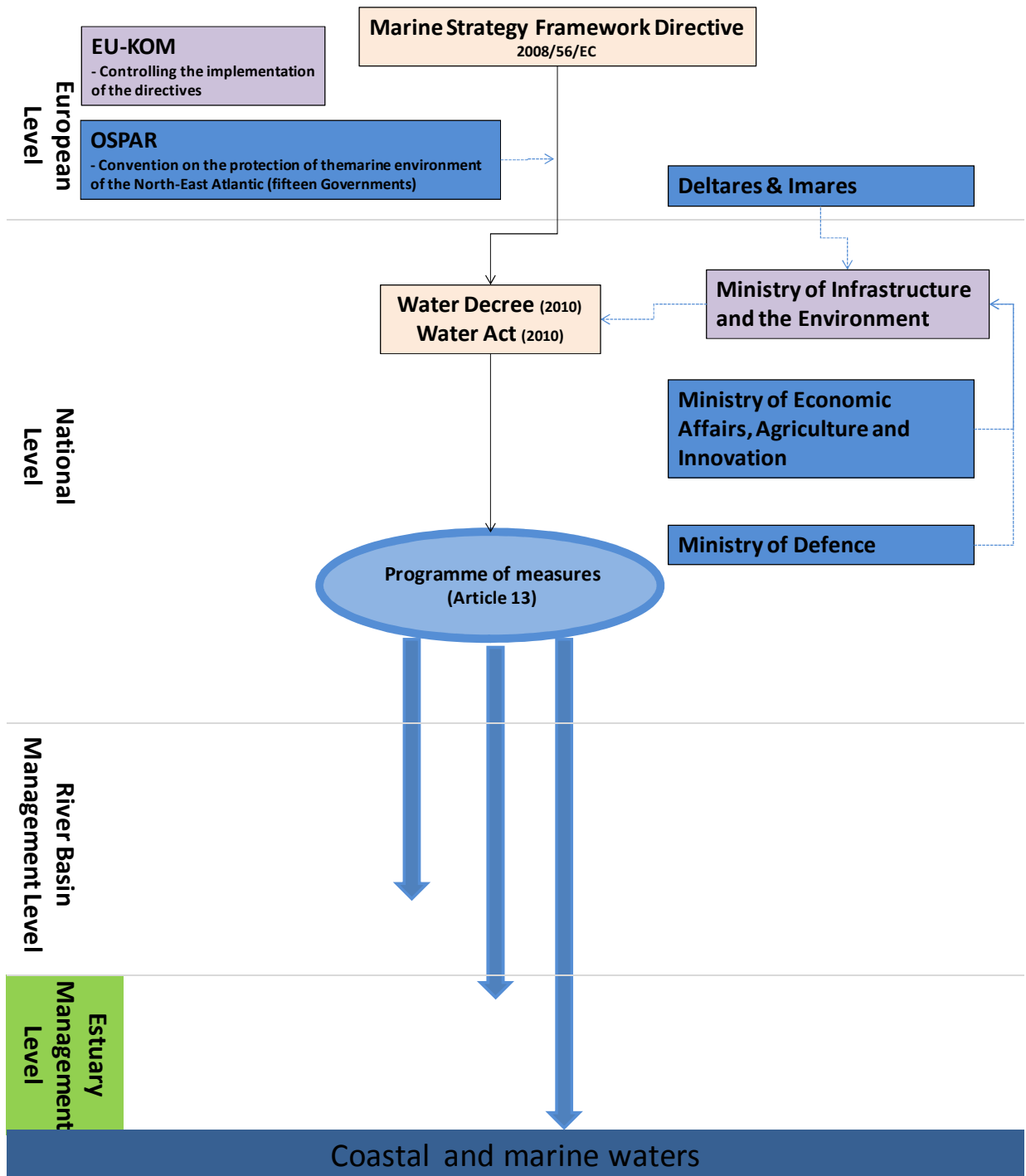
**Appendix 3b – Operational Implementation of the Marine Strategy Framework Directive in Management Plans for the Elbe Estuary**



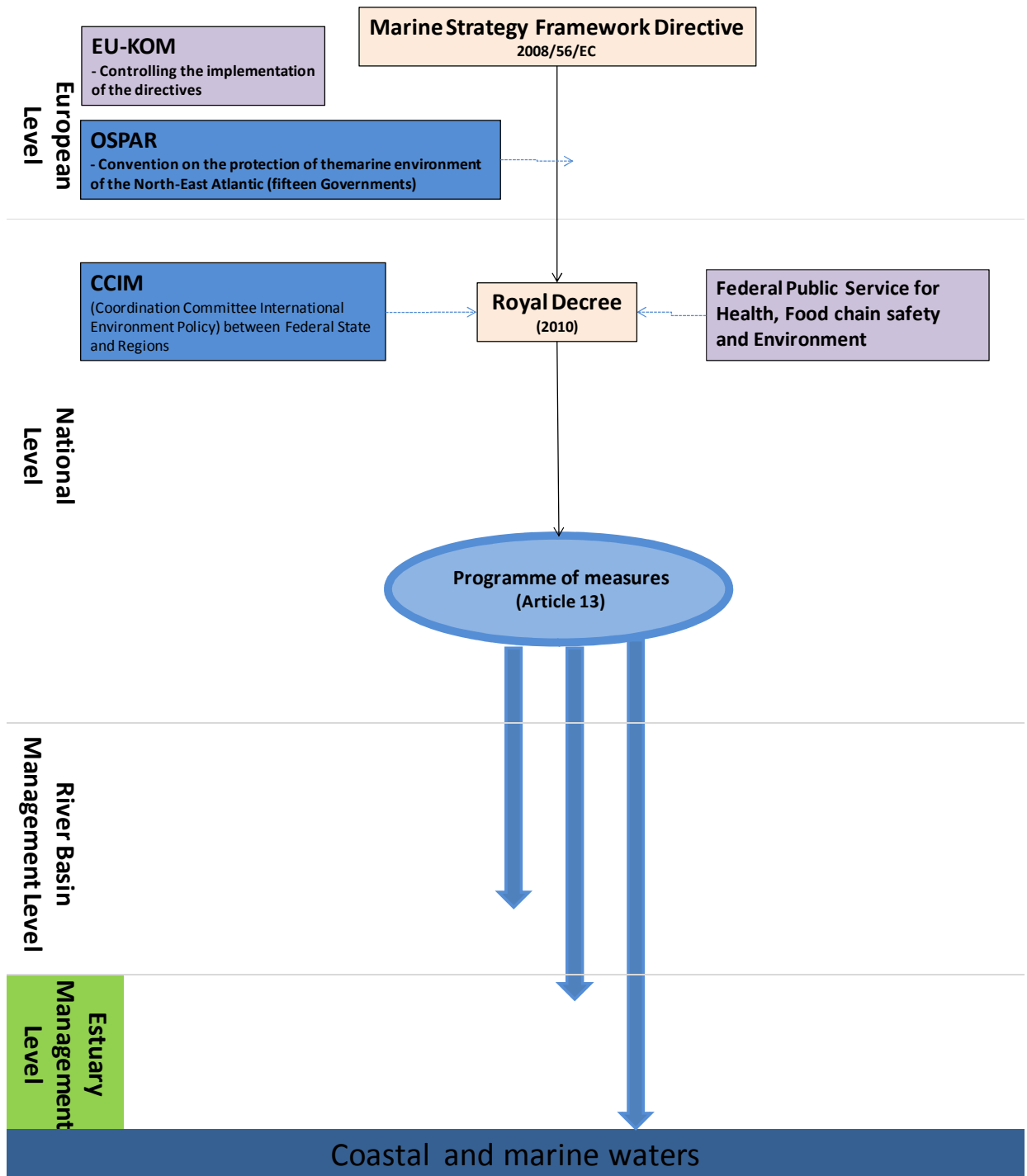


**Appendix 3c – Operational Implementation of the Marine Strategy Framework Directive in Management Plans for the Weser Estuary**

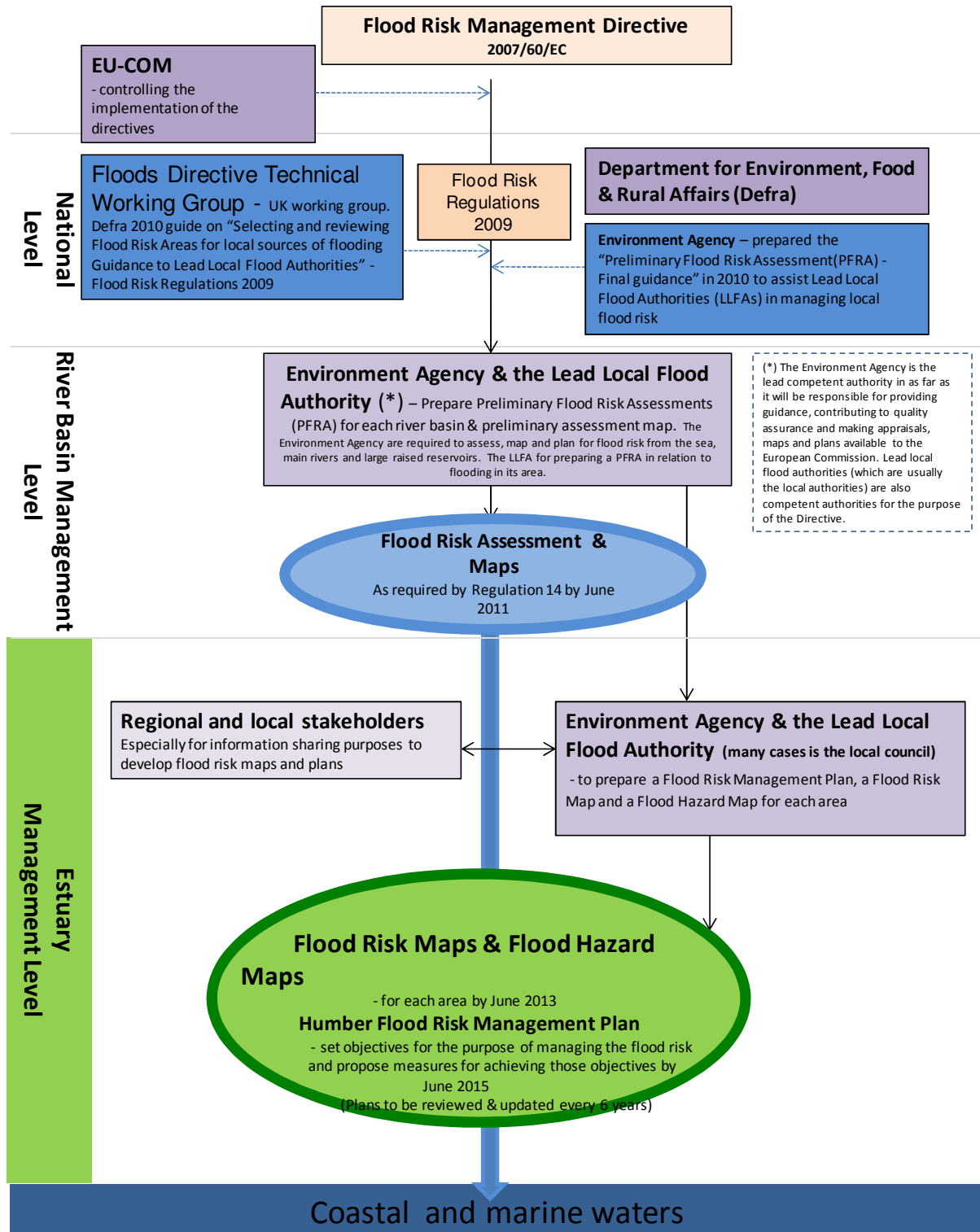
### Appendix 3d – Operational Implementation of the Marine Strategy Framework Directive in Management Plans for the Scheldt Estuary, The Netherlands



### Appendix 3e – Operational Implementation of the Marine Strategy Framework Directive in Management Plans for the Scheldt Estuary, Belgium



### Appendix 4a – Operational Implementation of the Flood Risk Management Directive in Management Plans for the Humber Estuary



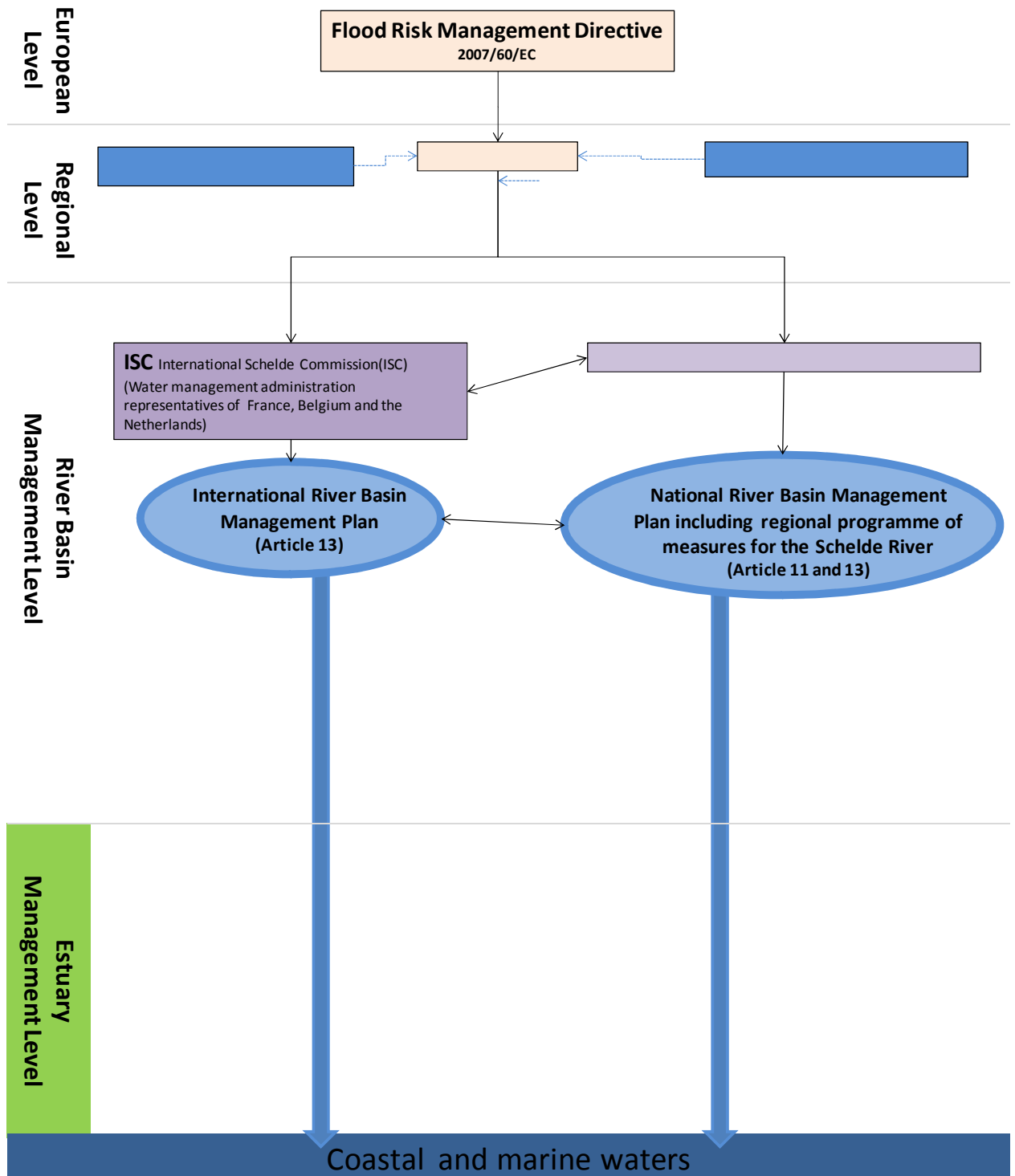


**Appendix 4b – Operational Implementation of the Flood Risk Management Directive  
in Management Plans for the Elbe Estuary**



**Appendix 4c – Operational Implementation of the Flood Risk Management Directive  
in Management Plans for the Weser Estuary**

### Appendix 4d – Operational Implementation of the Flood Risk Management Directive in Management Plans for the Scheldt Estuary, The Netherlands



### Appendix 4e – Operational Implementation of the Flood Risk Management Directive in Management Plans for the Scheldt Estuary, Flanders

