TIDE

Tidal River Development

Environmental Impact Assessment (EIA) and Appriopriate Assessment (AA)

Evaluation of assessment tools and methods

Lot 1 Legal and procedural aspects of the EU Directives

by Royal HaskoningDHV, 12 November 2012

Commissioned by the Antwerp Port Authority

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

The Interreg IVB North Sea Region Programme

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Table of Contents

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

The Interreg IVB North Sea Region Programme

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

The Interreg IVB North Sea Region Programme

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

The Interreg IVB North Sea Region Programme

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

The Interreg IVB North Sea Region Programme

1 Executive summary

Background

TIDE (Tidal River Development) is an Interreg project (Interreg IV-B Noth Sea Region Programme) with Hamburg Port Authority as the lead partner of the 10 partners in TIDE. As key stakeholders in the development and maintenance of coastal areas, like the **Scheldt, Elbe, Weser and Humber** estuaries, the TIDE partners are aware of the dynamic and sensitive nature of these areas. This means that uncertainties are inevitable when assessing the potential impacts of port related projects. For this reason, the TIDE partners, and other stakeholders (e.g. competent authorities, Non-Governmental Organisation (NGOs)) wish to develop an effective approach to manage these uncertainties.

Royal HaskoningDHV was commissioned by the TIDE Steering Committee to carry out an investigation to identify and analyse differences between EU Member States with regard to the **legal and procedural aspects** of obtaining consent for a port related project in an estuary. The findings of the analysis have been used to produce recommendations to manage the uncertainties that form an inevitable part of any consenting process. This study provides information for TIDE partners (and other stakeholders) to take a proactive approach towards identifying innovative solutions for the legal and practical issues and bottlenecks that can arise when assessing the potential impacts of port related activities in estuaries (such as dredging operations and the construction/extension of port infrastructure).

EU obligations

Pursuant to the EU Directives and national legislation for the consent of port related development in estuaries, in most cases **an environmental impact assessment and/or an appropriate assessment is required.** In assessing these plans, programmes and activities, the general EU-principles need to be taken into account, including the precautionary principle.

Our analysis shows that there are **no general fixed thresholds** for determining whether an environmental impact assessment for a project or plan is required, or when an effect on conservation objectives for Natura 2000 sites is significant. Moreover, our case law analysis shows that it is considered impossible and undesirable to establish fixed thresholds. This implies that an assessment of all aspects of the plan or project which can, either individually or in combination with other plans or projects, affect Natura 2000 objectives must be identified in the light of **the best scientific knowledge**.

Our analysis of case law shows that on one hand a certain level of uncertainty is tolerated (only the absence of reasonable doubt on the significance of the effects is required); however, the strictness of the Birds and Habitats Directives, in particular, forces competent authorities to be **convinced that a plan or project will not adversely affect** the integrity of Natura 2000 sites before granting authorisation for the plan or project to proceed.

Uncertainties

In order to fulfil the SEA, EIA and/or AA requirements, the proponent (whether or not it is a public body or a developer) is obliged to provide a **range of (detailed) information**. This includes, for example, information on the baseline conditions, expected autonomous development of the estuarine system (including accumulated effects) and on the potential impact of the proposed activity.

The collection and interpretation of these data is not always straight forward. Therefore, the provision of these data can easily lead to difficulties and discussions. Additionally the technical uncertainties inherent within numerical modelling, data gaps and lack of (scientific) knowledge on inter alia cause-effect relations render things more complex. Consequently, it is understandable that developers of port related activities often feel that there are many sources of uncertainty that need to be addressed.

Member States

Each of the Member States included in this study has implemented the EU Directives into national (and sometimes also into federal or regional) law. Considering the discretionary margins of Member States when implementing the EU Directives, the **environmental assessment and appropriate assessment regimes** in Belgium, (Flanders), Germany (Federal state of Bremen), the Netherlands and the UK (England and Wales) **are quite similar**. The existence of uncertainties in EIA/SEA and Appropriate Assessment, and permitting procedures is acknowledged in the legal provisions, guidance documents, permits and in case law. In each Member State competent authorities, consultees, NGOs and port authorities have developed different ways to overcome problems caused by these uncertainties.

In **Belgium** the EIA Unit is involved in every EIA and SEA and therefore has an enormous expertise in environmental assessments, which is obviously an advantage in dealing with uncertainties. In addition, the permit granting authority has the right to demand special permit conditions (for instance emission thresholds, noise control methods and a phasing over time).

In **Germany** the environmental assessment and the appropriate assessment obligations have been integrated into existing project procedures. Therefore, in Germany the competent authority varies according to the law that is applicable to the project or plan concerned and the territory in which the project is located or the plan applied, rather than attributing a substantial role to a specialised central authority, like in Belgium. Instead the competent authorities have drafted an exhaustive set of guidance documents (*Leitfaden*) and a legal instrument on mitigation and compensation (*the Eingriffsregelung*).

With regard to uncertainties, it can be concluded that in **the Netherlands**, although legislation does not give a definition of significance, national guidelines provide information on how manage uncertainties, for instance on the interpretation of baseline conditions and autonomous situation. Also the

Netherlands Commission for Environmental Assessment plays an important role in providing (mandatory) advice to the competent authorities on content and quality of the SEA/EIA. Our analysis of the Dutch case law shows that an adaptive approach can be a useful instrument for avoiding significant adverse effects.

In the **United Kingdom** considerable guidance exists on the application of the EU Directives both from central government and from statutory bodies. This provides a standardised approach to the application of EIA/SEA and Appropriate Assessment in port projects (which are, in general, centrally regulated). One of the ways to manage uncertainty in the UK is through the conclusion of legal agreements between the applicant and (for example) nature conservation bodies to enforce compensation, mitigation and monitoring commitments, which are embedded within the permit.

Results of the legal survey

Our analysis of European and national legislation and policy shows the main differences between the mechanisms entailed in the EIA, SEA, Birds and Habitats Directives. It highlights the differences in the processes between the relevant Member States, both on the legislative level and on the decision-making level, and studies the uncertainties within the permitting practice by analysing the 5 case studies which are the subject of Lot 2 "*Environmental assessment practices in different EU member states*".

The results of both studies reveal that in each Member State, mechanisms to manage uncertainties have been developed. These mechanisms are often crucial in giving the regulators and consultees comfort that a project can be consented in light of these uncertainties.

Conclusions and recommendations

Based on the above findings, we have formulated recommendations on good practice and innovative solutions on how to manage uncertainties. These recommendations take into account the different phases of a project (current situation, project assessment, permits and derogation, and monitoring and evaluation), and include:

- Develop a clear view on and **understanding of the baseline conditions** in the estuary (physical processes and morphological evolution) and share this with other stakeholders;
- Establish a **more systematic approach towards monitoring,** so that new scientific knowledge can be fed into the assessment system;
- **Communicate extensively** and openly with all stakeholders on the scope of the project, the (remaining) uncertainties and the risks involved;
- Arrange, even if not mandatory, an **independent review** of the assessment documentation to control the quality and adequacy of the information;
- Take **precautionary compensation** into account for potential failure of an untested mitigation measure. If necessary, this could be scaled up to an

adaptive strategy resulting in the obligation to do a pilot project first or a temporal phasing and pre-defined validated monitoring scheme to adapt mitigation measures to the actual impact;

- Establish a **long term forum with stakeholders for reporting** and deciding on results of monitoring programmes, which can allow changes to be made to a programme of mitigation or compensation (i.e. an iterative, flexible approach);
- Develop **financial safeguards** to guarantee long-term implementation of the measures taken by the adaptive approach;
- Conclude a **legal agreement** that commits an applicant to take corrective measures in the event that mitigation and/or compensation measures do not meet the objectives set at the outset and, in worst case, to **stop the project** if negative effects occur and which cannot be counteracted.

2 Introduction

2.1 General

TIDE (Tidal River Development) is an EU Interreg project with the Hamburg Port Authority as leading partner. The Hamburg Port Authority and nine other international partners[1] are responsible for management and research of the **Scheldt, Elbe, Weser and Humber estuaries**. These estuaries have their mouth in the North Sea and were selected for their similar characteristics, including shipping channels to large ports, strong tidal influence, large quantities of sediment transport and almost all are designated as Natura 2000 sites. The objective of TIDE is to make integrated management and planning a reality in the Elbe, Weser, Scheldt and Humber estuaries. This objective is pursued through various project actions, namely Governance, Measures, Information, Transnational, Documentation, Experience transfer and Science. In this framework, TIDE studies how to enhance and expand the knowledge base relating to how the implementation of four relevant European Directives (**Birds Directive, Habitats Directive, Environmental Impact Assessment Directive and Strategic Environmental Assessment Directive**) in Belgium, Germany, the Netherlands and the UK affects the necessary interventions to keep these ports operating, now and in the future.

As part of the TIDE project, Royal HaskoningDHV[2] was selected by TIDE Steering Committee[3] to carry out an investigation on how the involved European Member States cope with the uncertainties (*Section 3.3*) that arise when assessing the possible effects of a specific project in the aforementioned estuaries.

Given the dynamic and sensitive characteristics of the estuaries, it is inevitable that there will be uncertainties when assessing the potential impact of projects. Even when using the most appropriate and state-of-the-art research tools for environmental impact assessments and appropriate assessments for investigating the potential impact of projects, there will be inevitably uncertainties. Therefore, port operators and competent authorities will always need to use an effective approach when dealing with uncertainties when requesting or granting an authorisation for a project.

[1] The Tide partners are: Hamburg Port Authority (www.hamburg-port-authority.de), Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency (www.nlwkn.niedersachsen.de), Free Hanseatic City of Bremen (www.wuh.bremen.de), University of Bremen (www.uni-bremen.de), Rijkswaterstaat (www.rijkswaterstaat.nl), Flemish Authorities, Department of Mobility and Public Works, Maritime Access Division (www.maritiemetoegang.be), Antwerp Port Authority (www.portofantwerp.be), University of Antwerp (www.ua.ac.be/ecobe), Environment Agency (www.environment-agency.gov.uk), Institute of Estuarine & Coastal Studies, Hull (www.hull.ac.uk/iecs).

[2] Royal HaskoningDHV team: Richard Cottle, Sian John, Matthew Simpson, Stany Vaes, Lies van Nieuwerburgh, Wendy Versteeg, Violet Wattenberg and Jeanine Zwalve-Erades.

[3] The TIDE steering committee for this project was composed of Stefaan Ides (Antwerp Port Authority), Yves Plancke (Antwerp Port Authority), Guy Janssens (Antwerp Port Authority), Els Van Duyse (Antwerp Port Authority), Kirsten Wolfstein (Hamburg Port Authority), Sonja Wild-Metzko (Hamburg Port Authority), Jochen Kress (City of Bremen), Susan Manson (Environmental Agency), Jean-Paul Ducrotoy (Institute of Estuarine & Coastal Studies)

Within this study, a dual approach was chosen for the consideration of these uncertainties; legislative review and case study comparison. Therefore, the overall study consists of two lots:

- Lot 1 – Legal and procedural aspects of the EU Directives (this report); and,
- Lot 2 – Analysis of case studies of port development projects in European estuaries (reported separately).[4]

2.2 Objective and approach to study

The objective of this study is to identify and analyse differences between EU Member States with regard to the **legal and procedural aspects of dealing with uncertainty when obtaining authorisation for a project or plan** in an estuary. This report also provides information to enable stakeholders to take a proactive approach to identifying innovative solutions to the legal and practical issues and bottlenecks that can arise when assessing the potential impacts of activities in estuaries (such as dredging operations and the construction or extension of port infrastructure).

As estuaries are among the most dynamic and complex ecosystems in the world (with both high ecological and economic values), this study focusses on the national implementation of the relevant EU legislation and guidance in Belgium, Germany, the Netherlands and the UK with regard to the legal and procedural framework to obtain consent for a plan or a project. Special attention is paid to (possible) national specifications on research tools and methods, and the ways to deal with uncertainties in impact assessment.

The **Request for Proposal**[5] describes the desired outcome of this study as follows:

i. A summary of the relevant EU legislative and policy documents. Besides the relevant EU Directives, this summary will also deal with important guidelines, communications and interpretations, especially those with a connection to the uncertainty issues. As examples of relevant policy documents, the following documents (which are a minimum to be included in the study) are mentioned:

[4] The latter study comprises an analysis of environmental assessment practice through five case study examples (in alphabetical order of the name of the estuary):
1) enlargement of the navigation channel in the Eems estuary;
2) sunk dredged channel deepening in the Humber estuary;
3) enlargement of the navigation channel in the Scheldt estuary;
4) Harwich Harbour approach channel deepening, Trinity III Terminal (Phase 2) extension, Bathside Bay container terminal and Felixstowe South reconfiguration in the Stour and Orwell estuaries;
5) construction of container terminal 4 in the Weser estuary.

This analysis also focusses on research tools and methodologies applied in EIA and Appropriate Assessments and particularly on how uncertainty and risks are dealt with and managed in practice.

[5] Reference: Tender B 9916 - Evaluation of assessment tools and methods used in Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) – Special Contractual Conditions – dated 25th October 2011

a. *EC Communication on the precautionary principle (2000);*
b. *EU Biodiversity Action Plan (2006) and the 2010 Assessment Brochure;*
c. *Interpretation Manual of European Union Habitats (2007);*
d. *Guidance document on the implementation of the Birds and Habitats Directives in estuaries and coastal zones (2011).*

ii. *A review of the national implementation methods and characteristics with regard to the EIA and Strategic Environmental Assessment (SEA) Directive, the Birds Directive and the Habitats Directive in the different Member States. This review should be limited to Belgium, Germany, the Netherlands and the UK, and should highlight national differences, both on the legislative and the decision-making level. The review will focus on procedures and legal requirements (starting from the ambition to carry out a project, the assessment studies, the participation process, the permit practice up to the implementation and monitoring in the field). Special attention will be paid again to the (possible) national specifications about research tools and methods and the way to deal with remaining uncertainties.*

iii. *A summary of the most important discussions and bottlenecks, especially regarding the way to deal with uncertainty and/or other research issues within national legislation, assessment procedures and decision-making. The results of the 5 selected case studies (see lot 2 of this tender) and/or other relevant case studies can be used to provide input.*

iv. *Recommendations on good practice and innovative solutions, especially regarding the way to deal with uncertainty and/or other research issues within national legislation, assessment procedures and decision-making.*"

This report comprises 10 chapters. **Chapter 1** (this chapter) introduces the project while **Chapter 2** provides an Executive Summary. **Chapter 3** provides further information of the study objectives, clarifying the specific characteristics of estuaries (*section 3.1*), the scope of port related activities (*section 3.2.*) and the nature of uncertainties when obtaining consent for a plan or project in an estuary (*section 3.3.*).

Chapter 4 summarises the EIA, SEA, Birds and Habitats Directives and guidance documents (*sections 4.3 – 4.8*). This summary is embedded in the wider context of relevant general EU principles (*section 4.2*) and jurisprudence of the European Court of Justice (*section 4.9*).

The review of the national implementation of the aforementioned directives in Belgium (Flemish Region), Germany (Land Bremen), the Netherlands and the UK (England and Wales) is presented in **Chapters 5 to 8**. Each of these "*national*" chapters comprises a summary of the regulations and policies on environmental assessment (*sections 5.2, 6.2, 7.2 and 8.2*) and nature conservation (*sections 5.3, 6.3, 7.3 and 8.3*), and their application on port related activities in estuaries (*sections 5.4, 6.4, 7.4 and 8.4*). This is followed by an overview of the handholds for dealing with the uncertainties detected in

relevant legislation, guidance documents, permitting practice and case law (*sections 5.5, 6.5, 7.5 and 8.5*) and a presentation of the national conclusions.

The results of the analysis of the European, Belgian, German, Dutch and UK legislation and policy are presented in **Chapter 9**. This chapter contains general findings, indicates the main differences between the mechanisms entailed in the EIA, SEA, Birds and Habitats Directives (*section 9.1*), highlights the national differences both on the legislative and the decision-making level (*section 9.2*) and studies the uncertainties which confronted the development of port related activities in the 5 case studies analysed in Lot 2 "*Environmental assessment practices in different EU member states*" (*section 9.3*).

The overall findings are described in **Chapter 10** (*section 10.1*). This chapter finishes with recommendations for good practice and innovative solutions, in particular regarding approaches for managing uncertainty and/or other research issues within the current situation, the project assessment, permitting procedures and monitoring (*section 10.2*).

2.3 List of abbreviations

In this report the following abbreviations are used:

AA	Appropriate Assessment, otherwise called: - *Pb (Passende beoordeling) in Belgium* - *Pb (Passende beoordeling) in the Netherlands* - *FFH-VP (Verträglichkeitsprüfung) in Germany*
Besluit-m.e.r.	See EIA
Birds Directive	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds
BremUVPG	Bremer regional Environmental Impact Assessment Act (*Bremisches Landesgesetz über die Umweltverträglich-keitsprüfung - GE*)
DCO	Development Consent Order (UK)
DEFRA	Department for Environment, Food and Rural Affairs (UK)
EIA	Environmental Impact Assessment, otherwise called: - *Project-MER (Milieueffectrapportage voor projecten) in Belgium* - *Besluit-m.e.r (Milieueffectrapportage voor besluiten) in the Netherlands;* - *UVP (Umweltverträglichkeitsprüfung) in Germany*
EIA Directive	Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects in the environment
EIA/SEA-Act	Flemish regional act of 5 April 1995 regarding the general principles of environmental policy (B)
EIS	Environmental Impact Statement

ES	Environmental Statement
FFH-VP	See AA
Ffw	Flora and Fauna Act *(Flora en Faunawet - NL)*
GPDO	General Permitted Development Order (UK)
Habitats Directive	Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna
HEO	Harbour Empowerment Order (UK)
HRA	Habitats Regulations Assessment (UK)
HRO	Harbour Revision Order (UK)
LPA	Local Planning Authority (UK)
MCAA	Marine and Coastal Access Act 2009 (UK)
MMO	Marine Management Organisation (previously "Marine and Fishery Agency" – MFA - UK)
MPS	Marine Policy Statement (UK)
MWR	Marine Works (Environmental Impact Assessment) Regulations 2007, as amended by the Marine Works (Environmental Impact Assessment) Regulations 2011 (UK)
Nbw	Nature Protection Act *(Natuurbeschermingswet - NL)*
NGO	Non-Governmental Organisation
NSIP	Nationally Significant Infrastructure Project
Plan-MER	See SEA
PPD	Public Participation Directive – Directive 2003/35/EC
Project-MER	See EIA
SCI	Site of Community Interest
SEA	Strategic Environmental Assessment, otherwise called: - *Plan-MER (Milieueffectrapportage voor plannen) in Belgium* - *plan-m.e.r. (milieueffectrapportage voor plannen) in the Netherlands;* - *SUP (Strategische Umweltprüfung) in Germany*
SEA Directive	Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment
SAC	Special Area of Conservation (Habitats Directive)
SNCB	Statutory National Consulting Body (UK)
SoS	competent Secretary of State (UK)
SPA	Special Protection Area (Birds Directive)
SUP	See SEA
T&CPR	Town and Country Planning Regulations (UK)
UVP	See EIA
UVPG	Federal Environmental Impact Assessment Act *(Gesetz über die Umweltverträglichkeitsprüfung - GE)*
WCA81	Wildlife and Countryside Act 1981

3 Overview of the study objectives

3.1 Dynamics of estuaries and coastal zones

Estuaries and coastal zones are among the most productive ecosystems in the world. They are of great importance to wildlife, for example for migrating and breeding birds and as nursery grounds for numerous species of fish. They also provide a wide range of economic benefits to many sectors, including fishery and industry but also to tourism and recreation. Estuaries are the ideal locations for ports, harbours and shipyards because they provide a safe shelter for ships and an access to the inland area along major rivers. However, estuaries and coastal zones are also among **the most dynamic and complex ecosystems in the world**. Due to their location and geomorphic structure they consist of a wide range of habitats, such as sand banks, mudflats, sand flats, salt marshes, sand dunes, coastal lagoons, shallow inlets and bays. Most of these habitat types are protected under the Habitats Directive. Due to their importance for birds, many estuaries and coastal zones are also protected under the Birds Directive.

The Communication on the European Ports Policy stated that more than 1,200 merchant ports cover approximately 100,000 km of European coasts. These ports are key points of modal transfer and are of vital interest for international trade in Europe. This coalition of industry and conservation reinforces the need for further development and use of estuaries and coastal zones to be managed in a way that is compatible with the protection of species and habitats of European importance.

3.2 Port related activities

Coastal and estuarine areas attract **a great variety of human activities**, such as navigation, dredging, aggregate and sand extraction, fisheries, aquaculture, industry (including oil and gas extraction, wind farms), drainage of sewage and waste water, water extraction, flood protection, recreation (including bird watching and hunting), urbanisation, location for cables, pipes and tunnels, and military and research. All of these activities (while important for economic and social reasons), individually or combined, can potentially cause significant effects on the nature conservation objectives of estuaries and coastal zones as protected by the EU Directives.

As the consent granting procedures might be different depending on the kind of project, this study is limited to the following categories:

- dredging operations, including capital and maintenance dredging, sand mining and disposal of dredged material within the estuary; and,
- construction or extension of port infrastructure, including construction of quay walls and poldering/reclaiming land from the estuary.

In this study these activities are referred to as “*port related activities*”.

It should be noted that the scope of this project is limited to the potential impacts of these port related activities on flora and fauna (marine and estuarine), soil (marine sediments) and water. In terms of fauna, the focus is on the potential effects on biological communities through direct impacts (e.g. reclamation), effects on water quality and indirect effects on habitats (e.g. through changes to the hydrodynamic and sedimentary regime).[6] **Disturbance effects (e.g. construction noise) are outside the scope of this project**.

3.3 Uncertainties

The development of port related activities in estuaries and coastal zones in compliance with the aforementioned EU Directives inevitably entails a certain amount of uncertainty. This uncertainty may be manifold. In this '*cloud of uncertainty*' **six categories of uncertainties** have been identified, regarding:

A1. **Baseline conditions**: Which conditions should be used as the reference state: the current physical conditions or the legal/permitted status or another standard?

Does an accurate understanding of the baseline conditions exist? In environmental assessment, baseline environmental conditions should be established for the current situation and projected into the future to represent the "do minimum" scenario. Baseline information gathering is usually a combination of a desk study (to collate available information from existing sources) and sampling or survey to collect new data. Measurements might have limited precision and accuracy due to limitations of the measuring equipment. Human error can also contribute to this kind of uncertainty.

A2. **Autonomous development and cumulated effects**: What are the processes for managing uncertainty associated with the autonomous development and (the accumulation of) other plan/projects which are not (yet) final?

A3. **Proposed activity and its alternatives**: What are the nature, characteristics and scope of the proposed activity and which alternatives need to be examined?

Uncertainty in environmental assessment can arise from a lack of specificity in proposals, such as the spatial locations, size and design of developments and the particular activities that will take place there. A lack of specificity represents a lack of knowledge of the source of any potential impacts, which will translate into a lack of knowledge and consequent uncertainty in predicted effects. Linguistic imprecision may also contribute to a lack of proposal specificity.

[6] For this and other reasons, the protection regime for species is only briefly touched upon in this report.

A4. **Effects of the proposed activity and its alternatives**: Are the (described or calculated) effects significant or not?

Eco-systems may be complex by virtue of their size and quantity of relevant detail, and by the quantity, sensitivity and natural variation of interactions between system components. There may be a lack of knowledge or scientific agreement about cause-effect relationships, contributing to uncertainty in predictions of impacts related to such a system. Uncertainty arises from assessing impacts in systems that are sufficiently complex that existing knowledge does not adequately describe them, such as estuarine ecosystems.

Translation of the baseline data, knowledge of the proposed development and understanding of the relevant systems into predicted impacts is not necessarily straightforward. Practical limitations exist in representing those aspects in a suitable media (such as a simulation model, photomontages or maps) to enable projection, contributing to predicted uncertainty. The inability of models to represent complex systems, for whatever reason, can lead to uncertainty in EIA.

Uncertainty is also involved in assessing the significance of impacts. In some case standards and criteria exist that guide the determination of significance (e.g. environmental quality standards); however, for the majority of assessments, significance relies upon a degree of expert judgement and, therefore, may be considered subjective.

B. **Lack of knowledge (modelling, gaps in knowhow)**: Doubts relating to: research tools and methods, calibration/validation of models, (the accumulation of) uncertainty margins in figures and formulas, especially when the outcome is input for other calculations, gaps in data on certain species and habitats and gaps in scientific knowledge on inter alia doses-effect relations, the effect of emergencies and the ecological effect of mitigation measures.

Existing information may be absent, not up to date, not from appropriate locations or not collected over a suitable timescale, which leads to increased uncertainty when applied in EIA. Data collection may suffer additional uncertainties due to project budget and timescale limitations, causing new data to be subject to similar uncertainties as existing data.

C. **Changing legislation and policy**: Which legislation and regulations are applicable, how long is the transitional period and change in administrative settings and government policy?

Impact uncertainty is increased by unknowable and uncontrollable factors that affect an impact pathway. Typically these factors relate to future decisions, or future impacts of past decisions, such as the effects of future technological innovation, but also changes in legislation and

policy. Assessment of impacts over longer time-scales, such as in SEA, increases the uncertainty from unknowable factors.

Each of these categories plays a predominant role in a different phase in the life cycle of the activity. The following life cycle phases have been distinguished:

- **Current situation**: the phase prior to the project or plan without the proposed activity
- **Project assessment**: the phase in which the possible effects of the proposed activity are analysed by an environmental impact assessment or appropriate assessment
- **Permits and derogation**: the phase of the decision making process on the assessed activity and other required permits
- **Monitoring and evaluation**: the phase after the realization of the activity

The distribution of the different types of uncertainties across each phase can be graphically presented as follows:

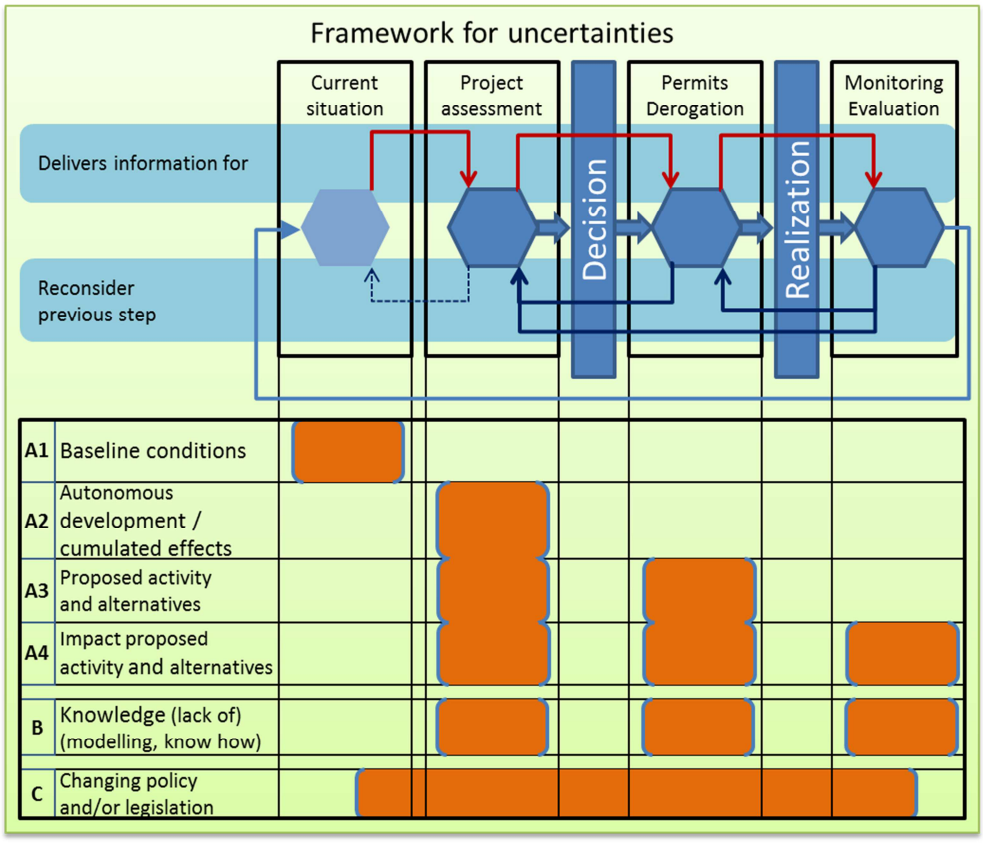


Figure 3-1 Uncertainties in the life cycle of projects

This figure indicates that:

- Uncertainty issues regarding the baseline conditions (A1) arise mainly at the start of the project and the required assessments;
- In the phase prior to the decision making (on EIA/SEA and Appropriate Assessment (AA)) the uncertainty issues are mainly related to the autonomous development and accumulated effects (A2), the effect of the proposed activity and its alternatives (A3/A4) and/or lack of knowledge (B);
- Uncertainty issues in the decision making process mainly focus on the scope of the proposed activity (A3) and its effects (A4) and/or lack of knowledge (B);
- After realisation of the activity, uncertainty issues can arise due to the differences between the predictions in the EIA/SEA and/or AA and the monitoring observations (A4) or to a lack of knowledge (B) and the consequences thereof;
- Changing legislation (C) is a particular source of uncertainty. Due to the long term development of port related activities, the risk of a possible intermediate change of the regulatory framework or governmental policy is always present.

In order to analyse the origin of these uncertainties, the next chapter describes the essential obligations pursuant to the European legislation, policy, guidance documents and case law (*Chapter 4*).

4 European legislation and policy

4.1 Introduction

This chapter on European legislation and policy focuses on four European Directives, namely:

1. Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects in the environment (hereinafter '*Environmental Impact Assessment Directive*' or '***EIA Directive***')[7]
2. Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (hereinafter '*Strategic Environmental Assessment Directive*' or '***SEA Directive***')[8]
3. Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (hereinafter '***Birds Directive***')[9]
4. Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora (hereinafter '***Habitats Directive***')[10]

This chapter introduces some general EU principles, the understanding of which is relevant to the analysis of the EU legislation and its implementation and application in the Member States, such as the precautionary and the public participation principles (*Section 4.2)*. Subsequent sections provide an overview and analysis of the potential impact of the essential obligations entailed in the aforementioned directives on port related activities (*Sections 4.3 – 4.4*). Section 4.5 discusses the case law of the European Court of Justice and highlights key guidance related to managing environmental uncertainties.

Figure 4-1 shows the different sources of EU legislation (including policy) and also the interaction between the different EIA, SEA and AA requirements. It also provides an overview of the structure of this Chapter on EU legislation and policy and the interconnection between different sections. The chapters on Belgium, Germany, the Netherlands and the UK (*Chapters 5 to 8*) follow an almost similar structure.

[7] OJ L 26/1, 28.1.2012.
[8] OJ L197, 21.7.2001.
[9] OJ L 20/7, 26.10.2010.
[10] OJ L 206, 22.7.1992.

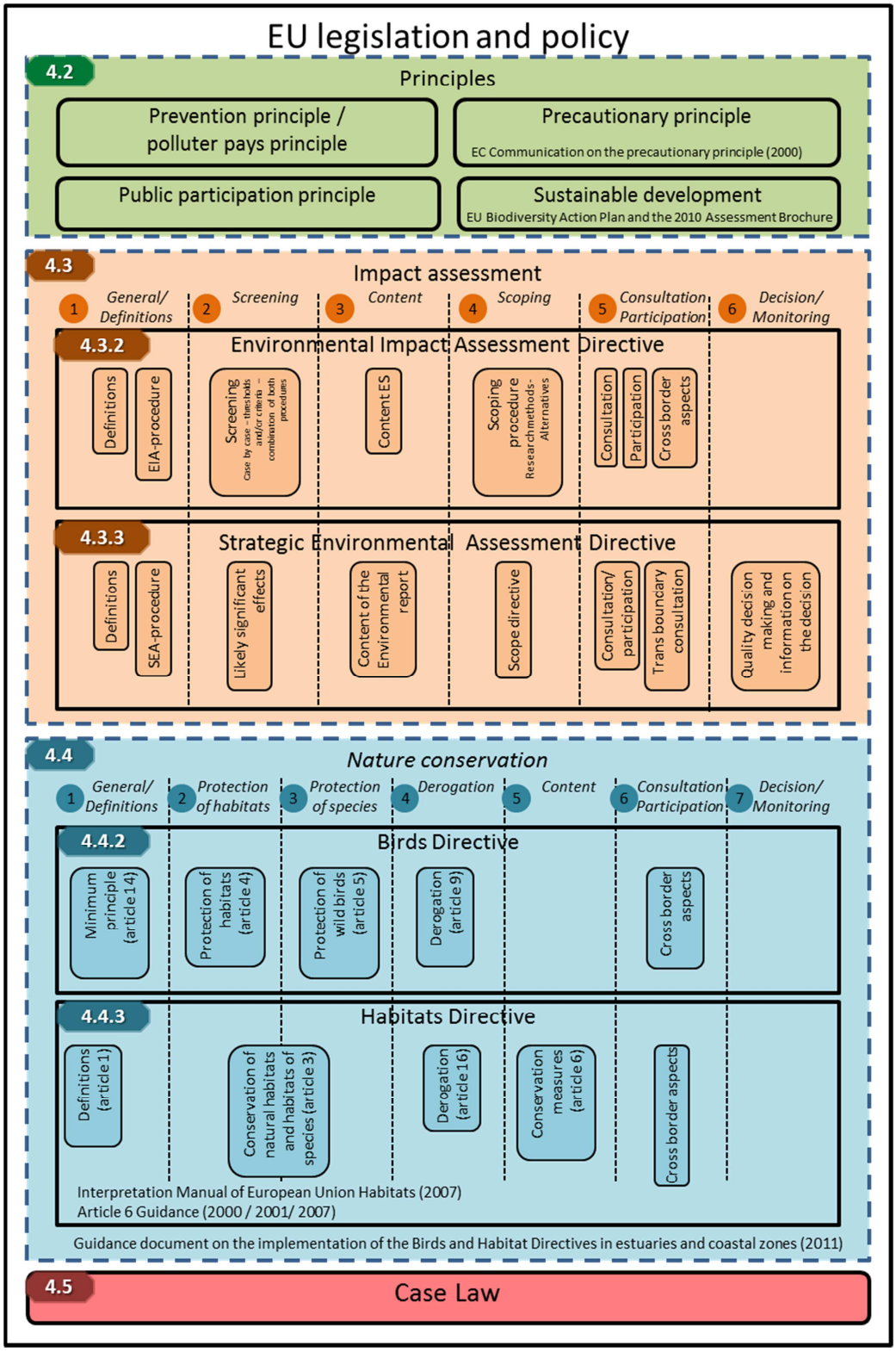


Figure 4-1 Overview of EU legislation and policy

4.2 General EU principles

4.2.1 General

The preambles of the EIA, SEA, Birds and Habitats Directives provide an indication of the general principles that underpin the basis for each directive's implementation. A clear understanding of these principles enhances the insight into the implementation and application of the European directives. Therefore this section briefly describes the following important European community principles in the field of environmental policy, with reference where possible, to port related activities:

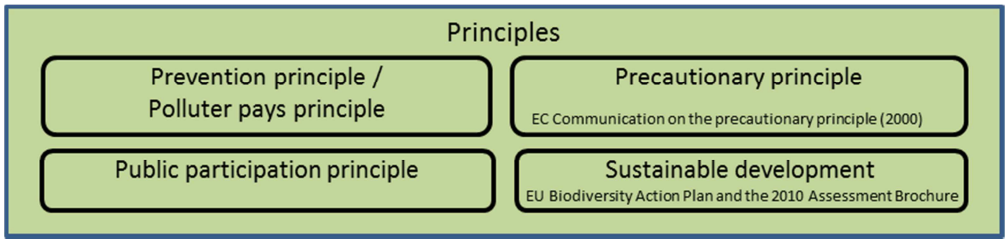


Figure 4-2 Overview of EU principles

4.2.2 Prevention principle / polluter pays principle

The prevention principle is a strategy for decisions on uncertainties that can be expressed in terms of known probabilities. It is based on the notion of a maximum acceptable risk level to be chosen by society. The prevention principle and how it differs from the precautionary principle derive from its historical context. Over time three successive environmental principles have emerged, namely the:

- Polluter pays principle
- Prevention principle
- Precautionary principle.

The polluter pays principle is based on the concept that the party responsible for producing pollution is responsible for paying for the damage done to the natural environment. It is one of the basic principles within the environmental policy of the European Community. Article 174(2) of the EC-Treaty[11] states that Community policy on the environment shall be based inter alia on the principles that preventive action should be taken, that environmental damage should as a priority be remedied at the source and that the polluter should pay. Although this last principle has led to the development of the prevention principle, it is still recognised as an independent principle, which is still in force. The polluter pays and prevention principles were important elements of the Third Environmental Action Programme, which was adopted in 1983. Since then these principles have been broadly applied in EU policies and in the Environmental Liability Directive[12].

[11] Consolidated version of the Treaty establishing the European Community, OJ C 325, 24.12.2002
[12] Directive 2004/35/EC of 21 April 2004, OJ L143, 30.4.2004.

The prevention principle is strongly based on the idea that science can assess and quantify all relevant risks, and that this principle could be used to eliminate or diminish further environmental damage.

4.2.3 Precautionary principle

The emergence of increasingly unpredictable and unquantifiable, but potential catastrophic risks, such as those associated with climate change, has led to the development of a third, anticipatory, model to protect humans and the environment against uncertain risks of human action: the precautionary principle. The emergence of this principle has marked a shift from post-damage control (civil liability as a curative tool) to the level of a pre-damage control (anticipatory measures) of risks.

The precautionary principle deals with risks with insufficiently known outcomes and probabilities. An unquantified – scientifically plausible – possibility provides a justification for the consideration of the precautionary principle.

This principle is being mentioned in the EC-Treaty and in certain directives and guidelines. In February 2000, the EC adopted a Communication concerning the use of the precautionary principle.[13] It states that the precautionary principle is not defined in the aforementioned EC-Treaty. However, the precautionary principle covers cases where scientific evidence is insufficient, inconclusive or uncertain, and preliminary scientific evaluation indicates that there are reasonable grounds for concern that the potentially dangerous effects on the environment, (human, animal or plant health) may be inconsistent with the high level of protection chosen for the Community.

Where action is deemed necessary, measures based on the precautionary principle should be, inter alia:

- proportionate to the chosen level of protection;
- non-discriminatory in their application;
- consistent with similar measures already taken;
- based on an examination of the potential benefits and costs of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis);
- subject to review, in the light of new scientific data; and
- capable of assigning responsibility for producing the scientific evidence necessary for a more comprehensive risk assessment.

The precautionary principle should be considered as part of a structured approach to the analysis of risk, which comprises three elements: risk assessment, risk management and risk communication. Decision makers need to be aware of the degree of uncertainty attached to the results of the evaluation of the available scientific information, so they can take these factors

[13] European Commission (2000), Communication on the Precautionary Principle, IP/00/96, 02-02-2000

into consideration when facing unacceptable risks, scientific uncertainties and public concerns.

On the basis of this principle, the environmental assessment process therefore needs to provide explicit information on the presence and background of relevant uncertainties. The decision making process needs to be transparent and should involve, as early as possible and to the extent reasonably possible, all interested parties. The latter is also a result of the public participation principle.

4.2.4 Public participation principle

The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, usually known as the *´Aarhus Convention´*, was signed on 25 June 1998 in the Danish city of Aarhus. It came into force on 30 October 2001 and has been ratified by the European Community, which since then began applying Aarhus-type principles in its legislation.

This convention makes a distinction between '*the public*', i.e. all the civil society's actors, and the specific '*public concerned*', i.e. those persons or organisations affected or interested in environmental decision-making (e.g. environmental NGOs).

The convention applies to '*public authorities*', i.e. governments, international institutions, and privatized bodies that have public responsibilities or act under the control of public bodies. The private sector, for which information disclosure depends on voluntary, non-mandatory practices, and bodies acting in a judicial or legislative capacity are excluded.

Other significant provisions are the non-discrimination principle (all the information has to be provided without taking account of the nationality or citizenship of the applicant), the international nature of the convention, and the importance attributed to the promotion of environmental education of the public.

The principles of the Aarhus Convention are explicitly applied in the EIA Directive[14], but not in the SEA Birds and Habitats Directive.

4.2.5 Sustainable development

Sustainable development is an approach to economic planning that attempts to foster economic growth while preserving the quality of the environment for future generations. Sustainability was the focus of the 1992 Earth Summit and later became the subject of a multitude of environmental studies. Together with the results of European Environmental and Biodiversity Action Programmes (inter alia the EU Biodiversity Action Plan (2006) and the 2010 Assessment Brochure), **it was, and still is, an important principle in the adoption of**

[14] See Preambule (18) of the EIA Directive.

both the Birds and Habitats Directives. This is because protecting and conserving species and habitats are necessary in order to achieve the Communities objectives regarding the improvement of living conditions and biodiversity.

Understanding the enormous complexity of biodiversity is a huge scientific challenge. In Objective 10 of the abovementioned Assessment Brochure, the EU stated that there is a critical need to fill the numerous gaps in human knowledge about the impact of biodiversity on functioning of ecosystems. In response to this need, the EU launched an Atlas of Biodiversity Risks in 2010, a new Biodiversity Information System for Europe (BISE) and a Science Policy Platform on Biodiversity and Ecosystem Services (IPBES). Better scientific understanding of these matters will support the EU biodiversity policy and hopefully lead to fewer uncertainties affecting planning and permitting procedures for port related activities.

With respect to port development, sustainable development is **enshrined within the Integrated Maritime Policy (IMP) through its reference to the three pillars of sustainability (economic, social and environmental)** and the IMP's recognition that the potentially enormous economic value available from the sea depends on the prevention of deterioration and the on-going management of marine biodiversity and the sea's physical resources.

4.3 Environmental Assessment

4.3.1 General

Within the EU, environmental assessment is an important tool for integrating environmental considerations into the authorisation of projects, and into the preparation and adoption of certain plans and programmes, which are likely to have significant environmental effects in the Member States. Environmental assessment ensures that such effects are taken into account during the preparation of projects and plans before their authorisation or adoption.

The EIA and SEA Directives lay down an environmental assessment framework, which sets out broad principles for an environmental assessment regime. Member States are obliged to implement such an environmental assessment regime in their own jurisdictions. This is a minimum harmonisation measure, taking into account the principle of subsidiarity[15]. Consequently, the

[15] 1. The general aim of the principle of subsidiarity is to guarantee a degree of independence for a lower authority in relation to a higher body or for a local authority in respect of a central authority. It therefore involves the sharing of powers between several levels of authority, a principle which forms the institutional basis for federal States.
2. When applied in an EC context, the principle of subsidiarity serves to regulate the exercise of shared powers between the EC and the Member States. On the one hand, it prohibits EC intervention when an issue can be regulated effectively by Member States at central, regional or local level. On the other, it means that the EC exercises its powers when Member States are unable to achieve the objectives of the Treaties satisfactorily.
3. Under the second paragraph of Article 5 of the EC Treaty there are three preconditions for intervention by EC institutions in accordance with the principle of subsidiarity.

Member States enjoy discretionary powers to determine the environmental assessment mechanism and its details. They could opt to implement a much stricter system. The table below shows the main obligations pursuant to the EIA and SEA Directives with which the environmental assessment mechanisms implemented by the Member States should comply. It equally provides an overview of the structure of this section on environmental assessment.

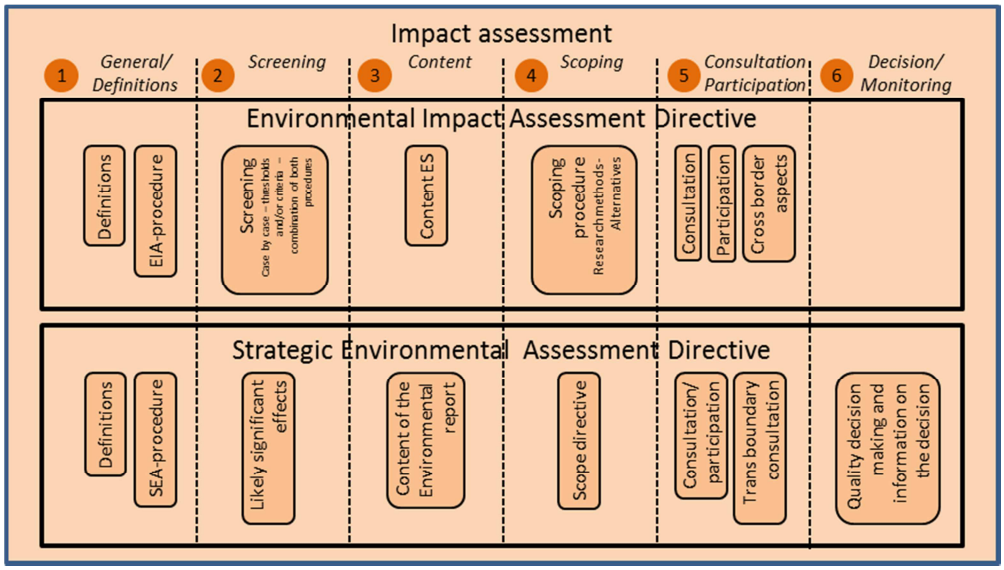


Figure 4-3 Overview requirements of Environmental Impact Assessment

The sections on environmental assessment in Belgium, Germany, the Netherlands and the UK (*Sections 5.3, 6.3, 7.3 and 8.3*) follow a similar structure.

4.3.2 Environmental Impact Assessment Directive

4.3.2.1 General and Definitions

The Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects in the environment is the recent codification of the Council Directive of 27 June 1985 on the assessment of certain public and private projects on the environment. The need for this codification resulted from the 1985 Directive being substantially amended several times (in 1997, 2003 and 2009, see Annex VI, part A of the Directive).

The EIA Directive applies to the assessment of the environmental effects of those public and private projects that are likely to have significant effects on the environment[16]. Article 1 contains several definitions:

a. It must not be an area which comes under the exclusive competence of the EC.
b. The objectives of the proposed action cannot be sufficiently achieved by the Member States.
c. The action can therefore, by reason of its scale or effects, be implemented more successfully by the EC.

[16] Article 1(1) and 2(1) EIA Directive

A ***project*** means "*the execution of construction works or of other installations or schemes or other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources*"[17]

A ***developer*** means "*the applicant for authorisation for a private project or the public authority which initiates a project*".

A ***development consent*** means "*the decision of the competent authority or authorities which entitles the developer to proceed with the project*"

The **competent authority or authorities** is every authority "*which the Member States designate as responsible for performing the duties arising from this Directive*".

However, a definition of the term *significant* has not been given. Annex II of the EIA Directive provides support for understanding this concept by stating criteria that could be useful for determining the likely significance of effects.[18] These criteria are related to the characteristics of the projects, the location of the projects and the likelihood of the potential impact to result in adverse effects.

The EIA may be integrated into existing consent procedures to projects in the Member States, or, failing this, into other procedures, or procedures to be established, in order to comply with the aims of this Directive.

4.3.2.2 Screening

Annex I of the the EIA Directive lists the projects for which EIA is mandatory.[19] For projects listed in Annex II of the Directive, the Member States have to determine if an EIA should be undertaken, based on the characteristics of the project; through a case-by-case examination and/or by setting thresholds or criteria.[20] In both ways the criteria of Annex III have to be taken into account, which are divided into three categories:

1. the characteristics of the project
2. the location of the project
3. the characteristics of the potential impact

This is known as the screening procedure. As a result of screening some projects might be deemed not to require EIA.

For estuaries, it must be noted that in Annex III the sensitivity of geographical areas likely to be affected by projects must be considered. This needs to have regard, in particular, to the absorption capacity of the

[17] Article 2(4) and (5) EIA Directive: Member States are allowed to exempt from EIA obligation all projects serving national defence purposes. Moreover, all projects of which the details are adopted by a special act or national legislation fall outside the scope of the EIA Directive.
[18] Article 4(3) EIA Directive
[19] Article 4(1) EIA Directive
[20] Article 4(2) EIA Directive

surrounding environment, such as inter alia wetlands, coastal zones, areas classified or protected by the Birds and Habitats Directives, and areas that do not already meet the environmental quality standards laid down in Community legislation.

As this study focuses on port related activities, it is clear that, according to Article 4(1) and category 8 of Annex I, **inland waterways and ports for inland-waterway traffic which permit the passage of vessels of over 1350 tonnes and trading ports, piers for loading and unloading connected to land and outside ports (excluding ferry piers) are subject to EIA. For projects that involve reclamation of land from the sea or the construction of harbours, port installations and roads, the Member States legislation and regulations has to determine whether an EIA is needed on the grounds of the characteristics of the project and the location of the proposed development.**[21] There are additional projects listed in Annex I and II which could contain port related activities and which could, because of their characteristics, location or characteristics of the potential impact, be subject to EIA. This means that for every specific project the developer has to determine if their project should be subject to EIA via the screening process .

4.3.2.3 Content of the Environmental Statement

The Environmental Statement (ES) has to identify, describe and assess, in a consistent and objective manner, in the light of each individual case and in accordance with the other requirements of the EIA-Directive, the direct and indirect effects of a project on the following factors[22]:

- human beings, fauna and flora
- soil, water, air, climate and the landscape
- material assets and the cultural heritage
- the interaction between the factors mentioned above

The EIA Directive does not explicitly determine the minimal content of the ES. However, the required minimal content can be deduced from the provisions of the EIA Directive on the information that the developer is required to produce during the EIA process. The developer has to take care that he supplies the information specified in Annex IV of the Directive in an appropriate form. However, these requirements may differ in each country, because each Member State is allowed to consider which information is relevant to a given stage of the consent procedure, the specific characteristics of a particular project or type of project and of the environmental features likely to be affected. The Member States are also allowed to determine if a developer may reasonably be required to compile this information taking into account inter alia **the current knowledge and generally accepted methods of assessment**.

[21] The characteristics mentioned in Annex III of the EIA Directive.
[22] Article 3 EIA Directive

The developer needs to provide the following information in any case[23]:

- description of the project comprising information on the site, design and size of the project;
- description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects;
- the data required to identify and assess the main effects which the project is likely to have on the environment;
- an outline of the main alternatives studied by the developer and an indication of the main reasons of his choice, taking into account the potential environmental effects; and
- non-technical summary of the information described above.

4.3.2.4 Scoping

Pursuant to Article 5(3) of the EIA Directive, the developer needs to provide an outline of the **main alternatives** that have been considered and an indication of the **main reasons for the selection of the preferred option**, taking into account the potential environmental effects. The EIA Directive does not contain specific provisions on how, when and by whom the scope of the actual EIA is to be determined. Each Member State is allowed to decide which alternatives are reasonably to be considered given the specific circumstances.

A developer can solicit a sort of **optional scoping**.[24] Member States must take the necessary measures to ensure that, if the developer so requests before submitting an application for development consent, the competent authority shall provide an opinion on the information to be supplied by the developer. The competent authority shall consult the developer and authorities likely to be concerned by the project because of their specific environmental responsibilities. The fact that an authority has given such an opinion does not preclude it from subsequently requiring the developer to submit further information.

4.3.2.5 Consultation and participation

A. Consultation

The EIA Directive compels Member States to ensure that the **authorities likely to be concerned**[25] by the project because of their specific environmental responsibilities are given an opportunity to express their opinion on the information supplied by the developer as well as on the application for development consent itself. The attribution of such competence to specific authorities may be stated **in general terms or case-by-case**. All information gathered pursuant to Article 5 shall be forwarded to these authorities and Member States should lay down **detailed arrangements** for consultation on the EIA.

[23] Article 5(3) EIA Directive
[24] Article 5(2) EIA Directive
[25] Article 6(1) EIA Directive

B. Participation

Regarding participation, the EIA Directive distinguishes between "*public*" and the "*public concerned*" (see Section 4.2.4). The term **public**[26] means one or more natural or legal persons.[27] The **public concerned**[28] is defined as the public (likely to be) affected by, or having an interest in, the environmental decision making procedures. For the purpose of this definition, NGO's promoting environmental protection and meeting any requirements under national law shall be deemed to have an interest[29]. The main difference is that the *public* must be informed and the *public concerned*[30] must be given early and effective opportunities to participate in the EIA as a part of the environmental decision making procedures and for that purpose be entitled to express comments and opinions while all options are still open before the consent is given by the competent authority[31].

C. Cross border aspects

The EIA Directive specifically focuses on cross border aspects.[32] In these cases the public concerned must be supplied with the same information as the public of the country in which the project is realised.

If a project is likely to have significant effects on the environment in another Member State, or where a Member State likely to be significantly affected so requests, the Member State in whose territory the project is intended to be carried out **has to send** to the affected Member State as soon as possible, and **no later than informing its own public**, at least a description of the project, together with any available information on its possible trans boundary impact and the information on the nature of the decision which may be taken. The other (possible affected) Member State also has to be given a reasonable time during which the public is able to indicate that it wants to participate in the EIA and the environmental decision making procedures.

If the affected Member State wants to participate, then the Member State in whose territory the project is intended to be carried out has to send all the available information on the EIA and environmental decision-making procedures. The affected Member State will then supply the information to their own public concerned and both Member States will permit the public concerned to participate effectively in the environmental decision-making procedures.

[26] Article 6(2) EIA Directive
[27] Depending on the national legislation or practice of the concerned Member State, this could also include associations, organisations or groups.
[28] Article 6(3) EIA Directive
[29] Article 1(2) EIA Directive
[30] Article 6(2) EIA directive
[31] Article 6(4) EIA Directive
[32] Article 7 EIA Directive

4.3.2.6 Decision making and monitoring

The EIA Directive demands[33] that projects likely to have significant effects on the environments are subject to **development consent** and that **before** consent is given an assessment with regard to their potential effects has been undertaken.

The EIA Directive does not explicitly ask for a monitoring campaign after the granting of the development consent and during the execution and operation of the project.

4.3.3 Strategic Environmental Assessment Directive

4.3.3.1 General and Definitions

The objective of Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive) is to provide a high level of protection to the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes. This should be undertaken with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.[34]

The SEA has to be carried out during the preparation of a plan or programme and before its adoption or submission to the legislative procedure[35]. These requirements should either be integrated into existing procedures in Member States or incorporated in specifically established procedures.

According to Article 2(a) of the SEA Directive, **plans and programmes** are defined as plans or programmes (including those co-financed by the EC) as well as any modifications to these:

- which are subject to preparation and/or adoption by an authority at national, regional or local level, or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government; and
- which are required by legislative, regulatory or administrative provisions.

The SEA Directive does **not give a definition of 'the likely significance of effects'**, but Annex II gives criteria for determining these effects. These criteria are related to the characteristics of the plans and programmes and the characteristics of the potential effects and of the area likely to be affected.[36]

[33] Article 2 EIA Directive
[34] Article 1 SEA Directive
[35] Article 4 (1) SEA Directive
[36] Annex II SEA Directive

4.3.3.2 Screening

All plans and programmes that are prepared for a **list of sectors**[37] and which set a framework for future development consent for projects listed in Annexes I and II to the EIA Directive (*Section 4.3.2*); and all plans and programmes which require AA pursuant to the Habitats Directive (*Section 4.4.3*), are likely to have significant effects on the environment. As a rule these plans and programmes should be made subject to SEA.

When those plans or programmes determine the use of small areas at local level or are minor modifications to such existing plans or programmes, they should be assessed only when, and if, Member States determine they are likely to have significant effects on the environment.[38]

Other plans and programmes that set the framework for future development consent of projects should be assessed only when, and if, Member States determine that they are likely to have such effects.

The process of determining whether a plan or programme is likely to have significant effects is called the screening procedure.

4.3.3.3 Content of the Environmental Report

The Environmental Report (ER) should identify, describe and evaluate the likely significant effects on the environment of implementing the plan or programme, while taking into account any reasonable alternatives. The **minimal requested information** to be incorporated in the ER is indicated in Annex I of the SEA Directive, as follows:

- an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;
- the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;
- the environmental characteristics of areas likely to be significantly affected;
- any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Birds and Habitats Directives;
- the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;
- the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;

[37] Article 3 (2) SEA Directive: agriculture, forestry, fisheries, energy, industry, transport, waste management, telecommunications, tourism, town and country planning or land use.
[38] Article 3 (3) SEA Directive

- the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;
- an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken **including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information**;
- a description of the measures envisaged concerning monitoring; and
- a non-technical summary of the information provided under the above headings.

The ER shall include the information that may reasonably be required, taking into account current knowledge and methods of assessment, and the relevant facts of the plan or programme (level of detail, stage and earlier assessments). The authorities should be consulted about the scope and level of detail of the information in the ER.

4.3.3.4 Scoping

Pursuant to Article 5(1) of the SEA Directive, the ER needs to identify, describe and evaluate likely significant effects on the environment of implementing a plan or programme, and **reasonable alternatives**, taking into account the objectives and the geographical scope of the plan or programme.

The SEA Directive **does not determine explicitly** what these reasonable alternatives should be. The requested information in Annex I sub (h) requires only an **outline of the reasons for selecting the chosen alternatives** and a description of how the assessment was undertaken, including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.

On the other hand, according to Article 5(4) of the SEA Directive, each Member State should designate the authorities to be consulted when deciding on the scope and level of detail of the information to be presented in the ER. This includes information on the reasonable alternatives. Based on this provision, each Member State has developed a policy regarding the identification reasonable alternatives. The SEA Directive does not contain a clear cut scoping procedure.

4.3.3.5 Consultation and participation

A. Consultation

The draft plan or programme and ER, should be made available to the concerned authorities.[39] This also applies to the public, which has to be given an early and effective opportunity, within appropriate timeframes, to express their opinion on the draft plan or programme and ER. Pursuant to Articles 6(3) and (4), Member States should designate the authorities to be consulted and

[39] Article 6(3) SEA Directive

identify ‘the public concerned’, and determine detailed arrangements for the information and consultation of the authorities and the public.

B. Cross border aspects

If a Member State considers that the implementation of a plan or programme is likely to have significant effects on the environment in another Member State, the Member State in whose territory the plan or programme is being prepared shall, before its adoption or submission to legislative procedure, forward a copy of the draft plan or programme and ER to the other Member State. The other Member State shall indicate whether it wishes to enter into consultation regarding the likely trans-boundary potential environmental effects and the measures envisaged to reduce or eliminate such effects. In such cases, the Member States shall agree on detailed arrangements to ensure that authorities and public concerned are informed and given an opportunity to forward their opinion within a reasonable timeframe.

4.3.3.6 Decision making and monitoring

During the preparation of the plan or programme the ER in the sense of Article 5, the opinions expressed pursuant to Article 6 and the results of any trans-boundary consultations entered into pursuant to Article 7 shall be taken into account prior to the adoption of the plan or programme or submission to the legislative procedure.

After the decision making process, the Member States are obliged to monitor the significant environmental effects of the implementation of plans and programmes pursuant to Article 10 in order, inter alia, to identify at an early stage unforeseen adverse effects, and be able to undertake appropriate remedial action.

4.4 Nature conservation

4.4.1 General

In response to the rapid decline in biodiversity, the EU established the Birds and Habitats Directives in order to conserve wild birds and to help maintain biodiversity in the European territory by compelling Member States to introduce a general regime for the protection of certain areas and species of flora and fauna into their national legislation. The figure below shows the main obligations pursuant to the Birds and Habitats Directives with which the nature conservation mechanisms implemented by the Member States should comply. It equally provides an overview of the structure of this section on nature conservation.

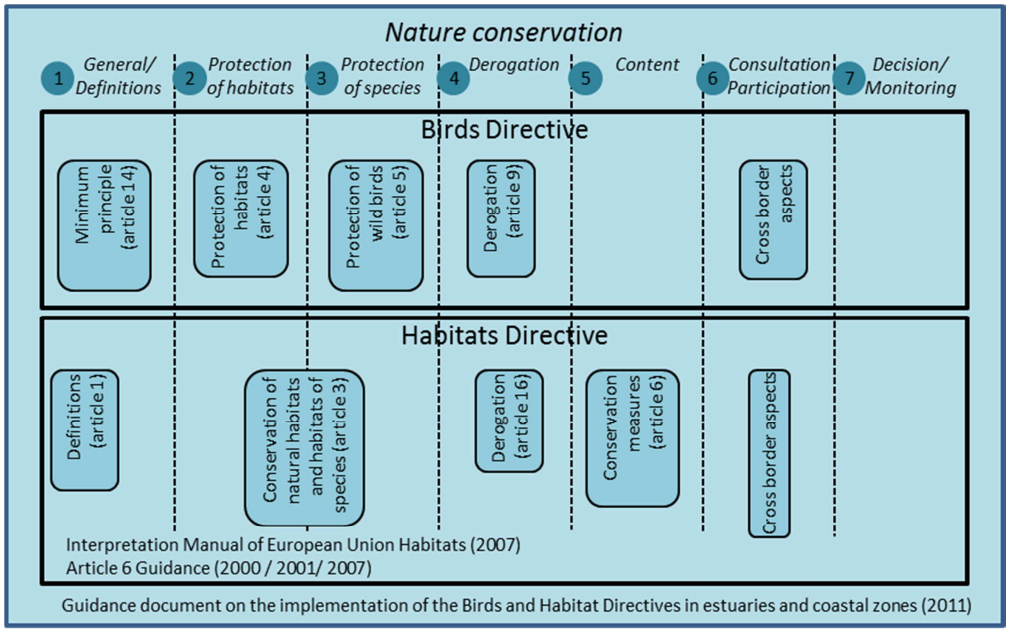


Figure 4-4 Overview requirements for Nature conservation

The sections on nature conservation in Belgium, Germany, the Netherlands and the UK (*Sections 5.4, 6.4, 7.4 and 8.4*) each follow a similar structure.

4.4.2 Birds Directive

4.4.2.1 General and Definitions

The objective of Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (more commonly known as the Birds Directive) is to introduce a general system prohibiting practices (killing and capturing of birds, taking of eggs, etc.) which threaten the conservation of bird species. The protection regime put in place also includes the **designation of Special Protection Areas** (SPAs) for endangered birds and migratory species which are subject to protective and habitat management measures.

This Directive replaces Directive 79/409/EEC of 2 April 1979, which contained the oldest EU legislative text relating to the natural environment. However, the modifications made are purely editorial. The Birds Directive established, for the first time, a general system for the protection of all wild bird species naturally occurring in the territory of the EU. It also recognises that wild birds, which include a large number of migratory species, are a shared heritage of the EU Member States and that their conservation, to be effective, requires cooperation on a global scale. The Directive obliges Member States to take measures to guarantee the conservation as well as the over exploitation of wild birds naturally occurring in the European territory in order to maintain their population at a satisfactory level, or to adapt their population to that level.

4.4.2.2 Protection of habitats

The disappearance or deterioration of habitats represents a threat to the conservation of wild birds. The protection of habitats is therefore essential. To preserve, maintain or re-establish the biotopes and habitats[40] of birds, Member States shall:

- designate protected areas;
- ensure the upkeep and management of habitats in accordance with ecological needs; and
- re-establish destroyed biotopes and create biotopes.

Member States shall create **SPAs**[41] for threatened species of birds and migratory birds (mentioned in Annex I of the Directive). These areas are to be situated in the bird's natural area of distribution and may include wintering and nesting grounds or staging posts along migration routes. Member States shall pay particular attention to **wetlands**, which are in decline across Europe. They should also create conditions favourable to the survival or reproduction of the species occurring in SPAs. To this effect, they shall take all **necessary steps to avoid pollution or deterioration of habitats or any disturbances affecting wild birds**.[42]

SPAs, together with the **Special Areas of Conservation** (SACs) under the Habitats Directive (*Section 4.4.2*), form the **Natura 2000 European network of protected ecological sites**. Pursuant to the Birds Directive (in conjunction with the Habitats Directive) an AA is necessary to investigate the potential impact of projects likely to have a significant effect on the designated areas and take appropriate measures to avoid adverse effects.

4.4.2.3 Protection of species of wild birds

The Directive establishes a **general system of protection** for all species of wild birds occurring in European territory. It prohibits, in particular[43]:

- deliberate destruction or capture of wild birds;
- destruction of, or damage to, nests;
- taking or keeping eggs even if empty;
- practices which deliberately disturb birds and which jeopardise the conservation of the species; and
- trade in, and the keeping of live or dead species, the hunting and capture of which are not permitted (this prohibition also applies to any parts or derivates of a bird).[44]

[40] Within a biotope habitats can be distinguished. A habitat is the specific place within a biotope where a specific organism can be found
[41] Article 4(1) and 4(2) Birds Directive
[42] Article 4(4) Birds Directive
[43] Articles 5 and 6 Birds Directive
[44] Member States may derogate from the provisions laid down in Article 5 to 8 for the protection of wild birds where there is no other satisfactory solution and for the following reasons:

It also prohibits or restricts the sale and hunting of certain bird species and the use of certain hunting practices and methods. However, due to the scope of this study these provisions are of lesser relevance.

Member States must promote research for the purposes of the management; protection and wise exploitation of the species of wild birds occurring in the European territory (see Annex V to the Directive).

4.4.2.4 Derogation

SPAs under the Birds Directive are almost always combined with SACs under the Habitats Directive. Therefore, notwithstanding that neither the derogation possibilities nor the implied administrative conditions are entirely identical to those under the Habitats Directive[45], we refer to the explanation on the derogation mechanism on the protection of SPAs to the explanation on the derogation mechanism on the protection of SACs in *Section 4.4.3*.

4.4.2.5 Consultation and participation

Contrary to the EIA and SEA Directives, the Birds Directive contains no special provisions on consultation of authorities or participation by the public on activities that are likely to affect Natura 2000 significantly. It does not deal with cross border aspects. However, given the Aarhus-Convention and the aim of the Directive to improve the conservation of species of wild birds naturally occurring in the European territory, it is likely that cross border aspects can occur. From that point of view it is considered '*good governance*' that a Member State informs another Member State about the preparation of plans in relation to the Directive (for instance on the creation of a SPA near the border with another Member State) before its adoption, and forward a draft plan and relevant information to the other Member State.

Moreover, **the principle of legal certainty** requires appropriate publicity for the national measures adopted in such a way as to enable the persons concerned by such measures to ascertain the scope of their rights and obligations in the particular area.[46] Although this obligation mainly addresses the relationship between a Member State and its citizens, the principle can also be applied on relations between different Member States if it is sufficiently clear that citizens in another Member State are likely to be concerned as well.

- in the interests of public health and safety;
- for the purpose of research and teaching, of re-population, of re-introduction and for the breeding necessary for these purposes;
- to permit, under strictly supervised conditions and on a selective base, the capture, keeping or other judicious use of certain birds in small numbers.

[45] See the differences between Article 9 Birds Directive and Article 16 Habitat Directive. The main difference is that Article 9(1) Birds Directive, besides public health and safety, does not explicitly mention other imperative reasons of overriding public interest (such as social and economic reasons) as stated in Article 16(1c) of the Habitat Directive.

[46] Judgment of the Court of 27 February 2003 – Commission of the European Communities v. Kingdom of Belgium – Council Directive 79/409/EEC – Failure of a Member State to fulfill its obligations – Conservation of wild birds – Special protection areas – Case C-415/01

4.4.2.6 Decision and monitoring

The Birds Directive does not reqire the setting up of a monitoring campaign. However, monitoring is considered to constitute good practice. Monitoring provides the best opportunity to present information on how the management plan of the Natura 2000 site is meeting its biodiversity targets. Monitoring the timing and the effectiveness of the mitigation measures set out in the authorisation of the project or plan will be important to ensure the AA's conclusion of no adverse effects are realised.

4.4.3 Habitats Directive (92/43/EEC)

4.4.3.1 General and definitions

The objective of Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora (also referred to as the Habitats Directive) is intended to help maintain biodiversity in the Member States by defining a common framework for the **conservation of wild plants and animals and habitats of Community interest.**

4.4.3.2 Conservation of natural habitats and habitats of species

The Habitats Directive established the **Natura 2000 network of protected areas** (the largest ecological network in the world), which in August 2011 covered around 17,5% of the terrestrial territory of the EU[47]. It comprises SACs designated by Member States under the Habitats Directive[48] as well as the SPAs classified pursuant to the Birds Directive (*Section 4.4.1.2*). Annexes I and II to the Habitats Directive contain the types of habitats and species whose conservation requires the designation of SACs. Some of them are defined as priority habitats or species (in function of risk of disappearing). Annex IV lists animal and plant species in need of strict protection.[49]

Member States must take all necessary measures to guarantee the conservation of habitats in SACs, and to avoid deterioration and significant disturbance of species.[50] Article 6(1) and (2) of the Habitats Directive defines these measures as follows:

> *Positive conservation measures:*
> *1. For SACs, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which*

[47] http://ec.europa.eu/environment/nature/info/pubs/docs/nat2000newsl/nat31_en.pdf.
[48] Article 4 Habitats Directive
[49] To assist (also new) Member States in the understanding and correct application of these Annexes, the Commission has produced a manual: *Interpretation manual of European Union Habitats*. The latest version of the manual (July 2007) includes descriptions of new habitats and amendments to some existing habitats resulting from Bulgaria and Romania joining the EU in 2007 as published in Council Directive 2006/105/EC, OJ L 363, 20.12.2006, p. 368.
[50] Articles 4(5) and 6 Habitats Directive

correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.

Preventive conservation measures:
2. Member States shall take appropriate steps to avoid, in the SACs, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive."

4.4.3.3 Protection of species

The Directive establishes a **general system of protection** for all species of animals and plants.[51] Member States shall:

- establish systems of strict protection for those animal and plant species which are particularly threatened (Annex IV) and study the desirability of reintroducing those species in their territory[52];
- prohibit the use of non-selective methods of taking, capturing or killing certain animal and plant species (Annex V)[53];
- encourage the management of the landscape features which are essential for the migration, dispersal and genetic exchange of wild species.

Every six years, Member States must report on the measures they have taken pursuant to the Directive. The Commission must draw up a summary report on the basis thereof.

4.4.3.4 Derogation

Member States must take necessary measures to guarantee the conservation of habitats in SACs, and to avoid deterioration and the significant disturbance of species (*Section 4.4.2.2*). At the same time, Article 6(3) and (4) of the Habitats Directive introduces the possibility to deviate from this general prohibition:

[51] Provided that there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range, Member States may derogate from the provisions laid down in Article 12, 13, 14 and 15 (a) en (b) of the Habitats Directive for the following reasons:
- in the interests of protecting wild fauna and flora and conserving natural habitats
- to prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property
- in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment
- for the purpose of research and education, of repopulation and re-introducing these species and for the breeding operations necessary for these purposes, including the artificial propagation of plants
- to allow, under strictly supervised conditions, on a selective base and to a limited extent, the taking or keeping of certain specimens of the concerned species.

[52] Article 12 and 13 of the Habitats Directive
[53] Article 14 and 15 Habitats Directive

> "*3. Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to AA of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*
>
> *Procedural safeguards:*
> *4. If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest (IROPI), including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*
>
> *Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other IROPI.*"

In other words, before a decision can be taken with respect to the adoption of a plan or authorisation of a project that is not directly connected with, or necessary for, the management of the Natura 2000 site (SACs under the Habitats Directive as well SPAs under Birds Directive)[54], an **AA** is required, unless it is certain that no significant effects will take place as a result of this activity either alone or in combination with other projects or plans. Plans or projects that take place outside a Natura 2000 site could still require an AA, if the plan or project could have (possible) external (indirect) effects on the protected areas.

The Habitats Directive does not contain any definition of **significant effect**. No universal limits or thresholds are being introduced.

The process of determining whether a project or a plan are likely to cause significant effects to a Natura 2000 site is called the screening procedure. If the results of the screening procedure indicate that no significant effects are to be expected, no AA needs to be carried out.

Article 6 is one of the most important articles in the Habitats Directive as it defines how Natura 2000 sites are managed and protected. To assist in the understanding and correct application of the Article 6 provisions (including the derogation procedure), the Commission has produced a number of general

[54] The provisions of Article 6(2), 6(3) and 6(4) also apply to SPAs under the Birds Directive.

interpretative and methodological guidance documents on specific provisions of this Article (together referred to as '*the Article 6 guidance*'):

- *Managing Natura 2000 sites – On the provisions of Article 6 of the Habitats Directive 92/43/EEC* (2000)
- *Assessment of Plans and Projects significantly affecting Natura 2000 sites – A Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (November 2001)
- *Article 6(4) – Clarification of the concepts of: Alternative solutions, Imperative Reasons of Overriding Public Interest, Compensatory measures, Overall coherence, Opinion of the Commission* (January 2007)

These guidance documents provide orientation on inter alia the concept of "*significant effect*". The notion of what is '*significant*' needs to be interpreted objectively. At the same time, **the significance of effects should be determined in relation to the specific features and environmental conditions of the protected site concerned by the plan or project, taking particular account of the site's conservation objectives**.[55]
A common way of determining the significance of effects is through the use of key indicators. Examples of indicators (with suggestions as to how they can be used) are presented in Table 4-1:

Impact type	Significance indicator
Loss of habitat area	Percentage of loss
Fragmentation	Duration or permanence, level in relation to original extent
Disturbance	Duration or permanence, distance from site
Population density	Timescale for replacement
Water resource	Relative change
Water quality	Relative change in key indicative chemicals and other elements

Table 4-1 Key indicators of significance

[55] The guidance document *Managing Natura 2000 sites – On the provisions of Article 6 of the Habitats Directive 92/43/EEC* underpins this as follows: "The notion of what is a 'significant' effect cannot be treated in an arbitrary way. In the first place, the directive uses the term in an objective context (i.e. it does not qualify it with discretionary formulae). In the second place, a consistency of approach to what is 'significant' is necessary to ensure that Natura 2000 functions as a coherent network. While there is a need for objectivity in interpreting the scope of the term 'significant', clearly such objectivity cannot be divorced from the specific features and environmental conditions of the protected site concerned by the plan or project. In this regard, the conservation objectives of a site as well as prior or baseline information about it can be very important in more precisely identifying conservation sensitivities. Some of this information will be present in the data that accompanies the site selection process under Article 4 of Directive 92/43/EEC (see Section 4.5.3). Member States may also have available detailed site conservation management plans which describe variations in sensitivity within a site.
Against this background, it is clear that what may be significant in relation to one site may not be in relation to another (see Annex I, point 8).
For example, a loss of a hundred square meters of habitat may be significant in relation to a small rare orchid site, while a similar loss in a large steppic site may be insignificant."

Some indicators, such as percentage of habitat lost, may be more significant for priority habitat types than for others because of their status.[56]

Besides the aforementioned general guidance documents, the Commission also published a sector-specific guidance document on the implementation of the Birds and Habitats Directives in estuaries and coastal zones in January 2011.[57]

This latter guidance document provides a number of recommendations, and elements of good practice, to enhance port development and management in or near Natura 2000 sites. The key recommendations are:

- The design of plans or projects should always be based on mutually beneficial strategies with a view to achieving dual goals of both Natura 2000 conservation objectives and socio-economic objectives, according to the '*working with nature*' concept;
- Damage prevention or avoidance should always be preferred to compensation measures;
- Pre-assessments to evaluate the potential for impact of a plan or project on Natura 2000 sites should always be foreseen. This is necessary in order to decide whether a plan or project is likely to have significant effects on a Natura 2000 site and whether an AA in the sense of Article 6(3) of the Habitats Directive is required;
- Thorough and timely stakeholder consultation is always recommended in order to prevent the raising of objections during the project permitting process;
- Maintenance of ports and navigational access should be dealt with in the context of integrated management plans for the entire waterway of the affected Natura 2000 site. Capital dredging operations should be designed as a part of sustainable dredging and sediment management schemes;
- **In case of any remaining minor scientific uncertainty with regard to the effects of a plan or project, or the related mitigation or compensatory measures, the measures should include a pre-defined and validated scheme to monitor the actual impacts and a framework to adapt the mitigation and compensation measures to these impacts.**

[56] In the identification of potential impacts, it is important to recognize which particular elements of a plan or project are likely to have impacts on a Natura 2000 site, or which elements might act in combination with other plans or projects to such effect. Relevant project elements may include requirements for the construction process, resource requirements, and physical requirements – width, depth, duration, etc. For plans, such elements may include details of individual project requirements within the plan, or they may relate to sectors of the plan such as agriculture, fisheries and energy.

[57] The implementation of the Birds and Habitats Directives in estuaries and coastal zones - with particular attention to port development and dredging (January 2011). This document has benefitted from discussions held in a specific working group with representatives from Member States, stakeholder organisations and environmental NGOs. It was developed on request of the ports and maritime services sector, as they sought more legal certainty as a prerequisite for new development projects.

Specifically with regards to uncertainty, this guidance document suggests the following recommendations:

- The physical processes and morphological evolution of the specific estuaries and coastal zones should be investigated in detail. A best available and sound scientific knowledge on these elements should be established by the competent authorities as a basis for the establishment of nature conservation objectives for such ecosystems.
- Where uncertainties or lack of knowledge on physical, morphological or biological processes still exist, these should be minimized as far as possible by additional research; where uncertainty, remains adaptive monitoring programmes should be foreseen. New evidence and scientific information should be fed back into the management plan and where necessary lead to an appropriate adaptation of the management measures and monitoring schemes.
- The conservation status at the date of designation of the site should be used as a reference value for evaluating its deterioration (Article 6(2). In this context, gains made as a result of restorative measures taken or other improvements e.g. bird population increases, due to pressure elsewhere or response to climate change, as well as losses caused by natural developments or climate change also need consideration. The site's Standard Data Form (SDF) remains an important reference document with this regard.
- Port and waterway authorities should be consulted in the early stages of the development and implementation of conservation measures for those Natura 2000 sites situated near ports or connected with navigational access. When establishing conservation measures for a particular site, economic, social and cultural requirements and regional and local characteristics, such as the actual situation in ports and the expected future economic developments, should be taken into account while not jeopardizing the contribution of the respective site to achieving the overall objective of the Natura 2000 network and the coherence of the Natura 2000 network.
- Monitoring schemes should be established to investigate short and long term evolution, such as morphological changes and sediment circulation/ re-distribution patterns. On the basis of measured trends, the conservation objectives and management measures can be revisited where and when necessary (applying the principles of adaptive management).
- The significance of the effects of a plan or a project is strongly dependent on the site's characteristics and conservation objectives (which will be outlined in the SDF, SAC/ SPA designation acts, conservation priorities and management plans).
- Recurring maintenance activities necessary to facilitate port operations and navigational access should be integrated into the management plans and designed in a way that they are not detrimental to the conservation objectives of the site.
- If a strategic plan or programme does not contain enough details to undertake a full AA according to Article 6(3) of the Habitats Directive, the ER prepared for the SEA should help pave the way to make, at project

level, an AA and, if needed, to help prepare a derogation procedure following Article 6.4 of the Habitats Directive. In this case the SEA should already identify projects likely to have significant negative effects on Natura 2000 sites and which would need to be subject to an appropriate Art. 6(3) assessment during the project authorisation process.

- When a port or related waterway development project is proposed, a pre-assessment must be carried out in the first instance. If this pre-assessment demonstrates that there will be no likely significant effect on Natura 2000 sites, the competent authority may remove the obligation of going through an AA of its implications for the site in view of the site's conservation objectives, according to Article 6(3) of the Habitats Directive. The assessment of the risk of significant effects must be made on the basis of scientific criteria and in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project. Factors such as the extent, the magnitude, the complexity, the probability, the duration, the frequency and the possible reversibility of the impact should be considered. This exercise should be undertaken by the competent authorities.
- If it cannot be excluded, on the basis of objective information, that a project will have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects, then the project is to be subject to an AA under Article 6(3).
- Following the undertaking of an AA that includes collecting all relevant data, and subject to the reversibility of actions, minor remaining uncertainties should however not block or restrain projects indefinitely. This needs to be judged on a case by case basis. In case of uncertainty on particular mechanisms of complex estuarine or coastal ecosystems, port and waterway developers should assess the nature of the remaining uncertainties and manage them through targeted monitoring and adaptive strategies. Monitoring schemes should be designed in a way that they signal any unexpected developments at a stage where effective corrective measures can still be taken.
- The absence of adverse effects is sometimes related to predicted effects not exceeding specified threshold values; the monitoring of effects relative to the threshold is then important. The threshold values should always be justified on the basis of scientific criteria.
- In the context of an AA, information should be provided on the full characteristics of the project or plan which may affect the site, the total range or area that will be affected, the characteristics of other projects or plans which may cause cumulative impacts with the project, any planned or existing nature conservation initiatives likely to affect the status of the site in the future, the relationship (i.a. distances) between the project or plan and the Natura 2000 site, the requirements (e.g. EIA/SEA) of the authorisation body or agency.
- Information on the protected site should include: the conservation objectives of the Natura 2000 site; the conservation status and other key attributes of Annex I habitats or Annex II species; the physical and chemical characteristics of the site that may be affected by the project; the dynamics of the habitats, species and their ecology; aspects of the site that are

sensitive to change; key structural and functional relationships that create and maintain the site's integrity; other conservation issues relevant to the site, including likely future natural changes taking place and the degree to which those changes need to be managed to deliver the site's conservation objectives.

- Measures to eliminate or reduce significant effects (mitigation) should be foreseen during the project design phase. If necessary, they can be completed during the AA (design revision, complementary mitigation). The project can then possibly reach a level where it will have no adverse effects on the integrity of the site.
- Financing, monitoring and reporting: compensatory measures imply that a sound legal and financial basis for long-term implementation, protection, monitoring and maintenance be secured in advance.
- In case of any remaining scientific uncertainty with regard to the effects of mitigation or compensatory measures, the measures must include a pre-defined and validated scheme to monitor the actual impacts and a framework, such as a Natura 2000 management plan, integral plan or a programme of measures, to adapt mitigation and compensation measures to these impacts.

Port related activities, such as maintenance dredging, are sometimes necessary for the management of Natura 2000 sites, or at least carried out in the context of ecological site management. In such cases, no AA is required for, in this case, these dredging operations, provided they are expressly integrated into the management plan of the concerned site(s).

4.4.3.5 Content of the Appropriate Assessment

The Habitats Directive contains no specific provisions on the content of an AA, however in order to create a coherent and sound system of assessment, the Commission has prepared special guidance documents.

Firstly, the guidance document *Managing Natura 2000 sites – On the provisions of Article 6 of the Habitats Directive 92/43/EEC* stipulates that, as regards to content, an AA is **narrower in scope than an EIA**, being **confined to the implications for the Natural 2000 site's conservation objectives only**. However, even allowing for an exclusively conservation focus, the AA in its methodology can usefully draw on the methodology envisaged by the EIA Directive. In particular, the EIA Directive envisages that an assessment may contain information on several points, including a description of the project, a description of the aspects of the environment likely to be affected by the project and a description of the project's likely significant effects.

Further, the guidance document "*Assessment of Plans and Projects significantly affecting Natura 2000 sites (November 2001), a Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive*

92/43/EEC"[58] provides a stage by stage approach and flow charts to AA as follows:

1. Screening
2. Appropriate assessment
3. Assessment of alternative solutions
4. Assessment in case no alternative solutions exists and where adverse impacts remain

In order to ensure an adequate review of the project, the AA should provide information on the following nine aspects:

1. Features if the project or plan
2. Cumulative effects
3. Description of the Natura 2000 site(s)
4. Screening
5. Appropriate assessment
6. Mitigation
7. Alternative solutions
8. Imperative reasons of overriding public interest (IROPI)
9. Compensatory measures

This review package is based on the comprehensive set of matrices in the aforementioned guidance document that has been developed, based on similar review packages for the review of ESs, within the EIA process. However the assessments according to the Habitats Directive do not require, in all circumstances, a full review. If in stage 1 it is concluded that a plan or project will not have any significant effects on Natura 2000 site(s), no further assessment is needed. If such effects cannot be excluded, the Directive does not require the results of each phase to be presented in a single report. Therefore the review package can be used as a systematic assessment tool.

4.4.3.6 Consultation and participation

Contrary to the EIA and SEA Directives, the Habitats Directive (as for the Birds Directive) contains no special provisions on consultation of authorities or participation by the public on activities that are likely to significantly affect Natura 2000 sites. Nor does it deals with cross border aspects. However, given the Aarhus-Convention and the aim of the Habitats Directive to improve the conservation of natural habitats occurring in the European territory, it is likely that cross border aspects can occur. From that point of view it is considered '*good governance*' for a Member State to inform another Member State about the preparation of plans in relation to the Habitats (for instance on the creation of a SAC near the border with another Member State) before its adoption and to forward a draft plan and relevant information to the other Member State.

[58] This document is the main source on explanatory information on methodology and content of an AA.

Moreover, **the principle of legal certainty** (see Section 4.4.2.5) requires appropriate publicity for the national measures adopted in such a way as to enable the persons concerned by such measures to ascertain the scope of their rights and obligations in the particular area.[59] Although this obligation mainly addresses the relationship between a Member State and its citizens, the principle can also be applied to relations between different Member States if it is sufficiently clear that citizens in another Member State are also likely to be concerned.

4.4.3.7 Decision and monitoring

The Habitats Directive does not require the setting up of a monitoring campaign. However, monitoring is considered to constitute good practice. Monitoring provides the best opportunity to present information on how the Natura 2000 site's management plan is meeting its biodiversity targets. Monitoring the timing and the effectiveness of the mitigation measures set out in the authorisation of the project or plan will be important to ensure an AA's conclusion of no adverse effects are realised.

4.5 Case law on uncertainties in environmental matters

Besides the EIA, SEA, Birds and Habitats Directives, and the related official guidance documents, case law could also provide some guidance on how to tackle uncertainty issues with regard to port related activities.

Case Law

The European Court of Justice produced a vast jurisprudence on environmental matters. This jurisprudence has been reviewed to identify issues regarding the precautionary principle, significance of effects, uncertainties and knowledge gaps.

This has been cross checked with the findings of the following publications of the EC:

- *Environmental Impact Assessment of projects – The rulings of the Court of Justice* (2010)
- *Nature and biodiversity case – ruling of the European Court of Justice* (2006)

[59] Judgment of the Court of 27 February 2003 – Commission of the European Communities v. Kingdom of Belgium – Council Directive 79/409/EEC – Failure of a Member State to fulfill its obligations – Conservation of wild birds – SPAs – Case C-415/01

This section aims to summarise the guidance that can be found in European case law by giving a non-exhausted overview of judgments that are relevant to the current study, as follows:

Case C-355/90, Commission v. Spain [1993] ('Santoña Marshes')

In this judgment, the Court sets out that Spain failed to fulfill its obligations under the EEC Treaty, and second that, contrary to Article 4 of Council Directive 79/409/EEC of April 1979 on the conservation of wild birds, the Marshes of Santoña has not been classified as a SPA and Spain should take appropriate steps to avoid pollution or deterioration of habitats in the area.

The Court did not accept the statement of the Spanish Government and points outs that in spite of the unrecognizable value of the area, the national authorities have a margin of discretion with regard to the choice and delimitation of SPAs and states: "**Although Member States do have a margin of discretion with regard to the choice of SPAs, the classification of those areas is nevertheless subject to certain ornithological criteria determined by the Directive, such as the presence of birds listed in Annex I, on the one hand, and the designation of a habitat as a wetland area, on the other."**

The classification of the Santoña marshes as a nature reserve by Spanish law does not meet the requirements laid down in the Directive, either in respect of the territorial extent of the area or as regard its legal status as a protected area.

On the interpretation of Articles 3 and 4, the judgement sets out that these provisions require Member States to select and restore the areas that cover habitats because of their value to the environment. **Member States are not allowed to deviate from this obligation for reasons that are listed in Article 4(4), as these provisions do not constitute an autonomous derogation from the system of protection established by the Directive.**

Case C-392/96 Commission v. Ireland [1999]

"Even a small-scale project can have significant effects on the environment if it is in a location where the environmental factors set out in Article 3 of the Directive, such as fauna and flora, soil, water, climate or cultural heritage, are **sensitive to the slightest alteration**. Similarly, a project is likely to have significant effects where, by reason of its nature, there is a risk that it will cause **a substantial or irreversible change in those environmental factors, irrespective of its size**."

Case C-209/02 Commission v. Austria [2004] ('Wörschacher Moos')

"It can be seen from Article 6(3) of the Habitats Directive, read in conjunction with Article 7, that any plan or project not directly connected with, or necessary to the management of, a SPA classified under Article 4 of the Birds Directive but likely to have a significant effect thereon, either individually or in combination with other plans or projects, is to be subject to **appropriate assessment of its implications for the SPA in view of the SPA's conservation objectives**. In the light of the conclusions of the assessment of the implications for the SPA, the competent national authorities are to agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the SPA concerned and, if appropriate, after having obtained the opinion of the general public."

Case C-117/02 Commission v. Portugal [2004]

"**It is not sufficient to establish that a project is to be carried out in a national park in order to assume that the project will have significant effects on the environment**. At the very least, the Commission must furnish a minimum of proof of the effects that the project is likely to have on the environment.

[…]

It is not sufficient in that regard to make a general statement that the location of a project in an area defined by national legislation as 'favouring tourism' cannot **ensure that the project will not have a significant effect on the environment in a specific case**. Similarly, the Commission **cannot merely point out that the information provided shows that the project in question is located in a highly sensitive area where the flora has already deteriorated, at the very least, without presenting specific evidence to demonstrate that the Portuguese authorities made a manifest error of assessment when they gave consent to the location of the project in an area specifically envisaged for projects of that type**.

It must be held that the file presented by the Commission is based on the assumption that **a project located in a national park is likely to have significant effects on the environment. Such an assumption is insufficient for the purpose of establishing the existence of an infringement of Article 2(1) of Directive 85/337**. In any event, the Commission has not rebutted to the requisite legal standard the relevant explanations put forward by the Portuguese Republic."

Case C-127/02 Preliminary ruling Raad van State, the Netherlands – Landelijke Vereniging tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels v. Staatssecretaris van Landbouw, Natuurbeheer en Visserij [2004] ('Waddenzee')

"It follows that the first sentence of Article 6(3) of the Habitats Directive subordinates the requirement for an appropriate assessment of the implications of a plan or project to **the condition that there be a probability or a risk that the latter will have significant effects on the site concerned**.

In the light, in particular, of the precautionary principle, which is one of the foundations of the high level of protection pursued by Community policy on the environment, in accordance with the first subparagraph of Article 174(2) EC, and by reference to which the Habitats Directive must be interpreted, **such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will have significant effects on the site concerned** (see, by analogy, inter alia Case C-180/96 United Kingdom v Commission [1998] ECR I-2265, paragraphs 50, 105 and 107). Such an interpretation of the condition to which the assessment of the implications of a plan or project for a specific site is subject, which implies that in case of doubt as to the absence of significant effects such an assessment must be carried out, makes it possible to ensure effectively that plans or projects which adversely affect the integrity of the site concerned are not authorised, and thereby contributes to achieving, in accordance with the third recital in the preamble to the Habitats Directive and Article 2(1) thereof, its main aim, namely, ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora."

"As is clear from the first sentence of Article 6(3) of the Habitats Directive in conjunction with the 10th recital in its preamble, **the significant nature of the effect on a site of a plan or project** not directly connected with or necessary to the management of the site is **linked to the site's conservation objectives**.

So, where such a plan or project has an effect on that site **but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned**.

Conversely, where such a plan or project **is likely to undermine the conservation objectives of the site concerned, it must necessarily be considered likely to have a significant effect on the site**. As the Commission in essence maintains, in assessing the potential effects of a plan or project, their significance must be established in the light, inter alia, of the characteristics and specific environmental conditions of the site concerned by that plan or project."

"As regards the **concept of 'appropriate assessment'** within the meaning of Article 6(3) of the Habitats Directive, it must be pointed out that the provision **does not define any particular method for carrying out such an assessment**.

None the less, according to the wording of that provision, an appropriate assessment of the implications for the site concerned of the plan or project must precede its approval and take into account the cumulative effects which result from the combination of that plan or project with other plans or projects in view of the site's conservation objectives.

Such an assessment therefore implies that all the aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those objectives **must be identified in the light of the best scientific knowledge in the field**. Those objectives may, as is clear from Articles 3 and 4 of the Habitats Directive, in particular Article 4(4), be established on the basis, inter alia, of the importance of the sites for the maintenance or restoration at a favourable conservation status of a natural habitat type in Annex I to that directive or a species in Annex II thereto and for the coherence of Natura 2000, and of the threats of degradation or destruction to which they are exposed."

"It is therefore apparent that the plan or project in question may be granted authorisation **only on the condition that the competent national authorities are convinced that it will not adversely affect the integrity of the site concerned**.

So, **where doubt remains as to the absence of adverse effects on the integrity of the site linked to the plan or project being considered, the competent authority will have to refuse authorisation**."

Case C-304/05 Commission v. Italy [2007]

"With regard to the **concept of 'appropriate assessment'** within the meaning of Article 6(3) of Directive 92/43, it should be noted that the latter does not define any particular method for the carrying out of such an assessment.

The Court has, however, held that that assessment must be organised **in such a manner that the competent national authorities can be certain that a plan or project will not have adverse effects on the integrity of the site concerned, given that, where doubt remains as to the absence of such effects, the competent authority will have to refuse authorisation** (see, to that effect, Waddenzee, paragraphs 56 and 57, and Castro Verde, paragraph 20).

With regard to the factors on the basis of which the competent authorities may gain **the necessary level of certainty**, the Court has stated that **no reasonable scientific doubt may remain, those authorities having to rely on the best scientific knowledge in the field** (see Waddenzee, paragraphs 59 and 61, and Castro Verde, paragraph 24)."

Case C-241/08 Commission v. France

"First, according to settled case-law, the appropriate assessment of the implications for the site which must be carried out pursuant to Article 6(3) implies that **all the aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field** (Waddenvereniging and Vogelbeschermingsvereniging, paragraph 54, and Commission v Ireland, paragraph 243). **Such an assessment does not therefore involve an examination of the alternatives to a plan or project.**

Second, it must be pointed out that the obligation to examine alternative solutions to a plan or project does not come within the scope of Article 6(3) of the Habitats Directive, but within the scope of Article 6(4) (see, to that effect, Case C-441/03 Commission v Netherlands [2005] ECR I-3043, paragraph 27 et seq.).

In accordance with Article 6(4) of the Habitats Directive, the examination referred to in that provision, which concerns, in particular, the absence of alternative solutions, **can only be undertaken where the assessment required under Article 6(3) of that directive is negative and where the plan or project must nevertheless be carried out for imperative reasons of overriding public interest** (see, to that effect, Commission v Netherlands, paragraphs 26 and 27).

Thus, following the assessment of the implications undertaken pursuant to Article 6(3) of the Habitats Directive and in the event of a negative assessment, the competent authorities have **the choice of either refusing authorisation for the plan or project or of granting authorisation under Article 6(4) of that directive**, provided that the conditions laid down in that provision are satisfied (see Case C-239/04 Commission v Portugal [2006] ECR I-10183, paragraph 25, and, to that effect, Waddenvereniging and Vogelbeschermingsvereniging, paragraphs 57 and 60).

In those circumstances, the examination of alternative solutions, which is a requirement set out in Article 6(4) of the Habitats Directive, cannot constitute a factor which the competent national authorities are obliged to take into account when they undertake the appropriate assessment laid down in Article 6(3) of that directive (see, to that effect, Commission v Netherlands, paragraph 28)."

4.6 Conclusions

It is the Member States' responsibility to ensure the implementation of the EIA, SEA, Birds and Habitats Directives within their territory and to assess and approve plans and projects; however, it is evident that each of the described

Directives has its own distinct impact on the process of establishing plans or programmes and the possibilities of obtaining a permit for port related activities.

The main obligation under the EIA and SEA Directives is the requirement of an **environmental (impact) assessment** for a plan and programme or activities that are likely to have significant effects on the environment, prior to the decision of granting a permit by the competent authorities. The measures pursuant to the **protection of habitats** within the Birds and Habitats Directives include three types of measures:

- Positive conservation measures for SACs/SPAs, involving e.g. **management plans** and statutory, administrative or contractual measures;
- Preventive measures for all sites as foreseen under Article 6(2) of the Habitat Directive to avoid the deterioration of natural habitats (as well as significant disturbance of species) and under Article 6(3), to assess (by an **AA**) the effects of new plans and projects;
- Procedural safeguards, including a **derogation** and **compensation** regime, under Article 6(4) for authorising plans or projects that are likely to have adverse effects on Natura 2000 site's conservation objectives.

These obligations apply to port-related activities as presented in Table 4-2:

Table 4-2 EU obligations with regard to port related activities (BD = Birds Directive; HD = Habitats Directive)

Port related activities	EIA Directive	SEA Directive	BD	HD
Dredging:				
- *Capital dredging*	EIA mandatory if part of a project according to cat. 8 of Annex I	SEA needed for plans/programmes according to definition Article 1 and if determined by a Member State taking into account the criteria in Annex II	Cannot be authorised in the Management Plan (MP), AA required in case of likely significant effects on Natura 2000 conservation objectives	
- *Maintenance dredging*			If plan or project is necessary for the management of the site, this must be included in the MP; in that case no AA is needed	
- *Disposal of dredged material*	EIA only mandatory for the construction of waste disposal installations (cat. 9/10 of Annex I)		In most cases must form part of the MP otherwise negative impacts cannot be excluded in advance; AA required in case of likely significant effects to Natura 2000 conservation objectives	
- *Sand mining*	EIA is needed if determined by a Member State determine following consideration of the characteristics of the project (cat. 2 of Annex II)		AA required in case of likely significant effects to Natura 2000 conservation objectives	
Construction/extension port infrastructure:				
- *Construction of quay walls*	EIA mandatory if part of a project according to cat. 8 of Annex I, otherwise EIA is needed if determined by a Member State following consideration of the characteristics of the project (cat. 10 of Annex II)	SEA needed for plans/programmes according to definition Article 1 and if determined by a Member State taking into account the criteria in Annex II	AA required in case of likely significant effects to Natura 2000 conservation objectives	
- *Reclaiming land from the estuary*	EIA is needed if determined by a Member State following consideration of the characteristics of the project (cat. 10 of Annex II)		AA required in case of likely significant effects to Natura 2000 conservation objectives	

It is noteworthy that although there are many similarities between the procedures for EIA/SEA and the AA carried out for plans or projects affecting

Natura 2000 sites, EIA or SEA cannot replace, or be a substitute for, the AA, as these procedures do not override each other.

In assessing all these plans, programmes and activities pursuant to the Directives, the competent authorities of each Member State need to take the general EU-principles into account, including the precautionary principle (see Section 4.2) It should be noted that the analysis on EU case law on uncertainties shows that **it is impossible and undesirable to establish general thresholds for determining whether an effect of a project or plan is significant.**

Whether an effect on a Natura 2000 site is significant or not needs to be argued and proved for each site on a case by case basis. The statutory or regulatory denomination of such a site is never, per se, a sufficient criterion. Nor is the size of the project or the affected area. One cannot exclude that even a small-scale project could have significant effects on the environment. The analysed judgements underline that the only true standards for evaluating whether the effect of a plan or project on a site is significant is using **the site's conservation objectives**.

With regard to the concept of AA within the meaning of Article 6(3) of the Habitats Directive, the judgements point out that the provision does **not define any particular method** for carrying out such an assessment. None the less, according to the wording of that provision, an AA of the potential implications for the site concerned must be undertaken prior to its approval, taking into account cumulative effects with other plans or projects, in view of the site's conservation objectives. Such an assessment should consider all the aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those conservation objectives using **best scientific knowledge**. Those conservation objectives may, as is clear from Articles 3 and 4 of the Habitats Directive, in particular Article 4(4), be established on the basis, inter alia, of the importance of the site's maintenance or restoration at a favourable conservation status.. The Court of Justice introduces the **notion of reasonableness** identifying that a certain level of uncertainty can be tolerated. Only the absence of **reasonable doubt** on the significance of the effects is required on the basis of the **reasonably available and accepted scientific knowledge**.

With regard to the conditions under which an activity may be authorised, it lies with the competent national authorities, in the light of the conclusions of the assessment for the site concerned, to approve the plan or project only after having made sure that it will not adversely affect the integrity of that site. It is therefore apparent that a plan or project may be granted authorisation only on the condition that the competent national authorities **are convinced that it will not adversely affect the integrity of the site concerned**. So, where doubt remains as to adverse effects on the integrity of the site, the competent authority will have to refuse authorisation. The authorisation criterion laid down in the second sentence of Article 6(3) of the Habitats Directive, integrates the precautionary principle and makes it possible to effectively prevent adverse effects on the integrity of protected sites as the result of the plans or projects

being considered. A less stringent authorisation criterion than that in question could not as effectively ensure the fulfilment of the objective of site protection intended under that provision.

5 Belgium

5.1 Introduction

Belgium has a complex state structure. It is a federal state, consisting of three communities (essentially entrusted with “cultural” matters) and three regions (the Flemish, the Walloon and the Brussels Metropolitan Regions).

Article 6, § 1, III of the Special Institutional Reform Statute of 8 August 1980 entrusts the areas of environmental protection almost entirely and exclusively to the regional authorities. Only the transit of waste, the protection against ionising radiations (including radioactive waste), the product regulations and matters of occupational safety and health remain in the scope of the federal authority.

As the western border of the Flemish Region coincides with the border of the province of West Flanders, the competence of the Flemish Regions ends in principle at the coast line. The geographic delineation of the Flemish Region implies that the open sea and the territorial see are not part of the Flemish Region. Consequently, the North Sea does not fall under the jurisdiction of the Flemish Region. The federal state also remains competent for the Belgian territorial sea.

Belgium is further sub-divided into 10 provinces and 596 municipalities. The provinces and municipalities have only limited autonomous environmental powers, i.e. principally administrative and supervisory competences (including a number of enforcement powers), within the framework of the applicable regional or federal regulations.

Consequently, the bodies responsible for conceiving and developing environmental policies are the federal and regional authorities, most often within the more global framework provided by the legal instruments adopted at EU-level. Enforcement of these regulations is taken up by the federal and regional administrations, often assisted by (mainly) the municipal executives and by several specialised public agencies.

The main European Directives on environmental policy and the essential obligations pursuant to them are incorporated into Belgian legislation. All three Belgian regions have EIA, SEA and nature conservation systems. In addition, the regions have no authority over the Belgian maritime areas. The implementation of the EIA, SEA, Birds and Habitats Directives is the responsibility of the federal government. This means that, in total, four different sets of regulations apply in Belgium with respect to EIA and nature conservation.

The geographical scope of the Belgian part of this study is limited to the estuary of the Scheldt.[60] The River Scheldt originates in northern France and flows through Belgium before reaching the North Sea through its estuary in the

[60] See Lot 2 “*Environmental assessment practices in different EU member states*”

Netherlands. In function of the Scheldt case study we will focus on **the regulatory framework of the Flemish Region**. The EIA and nature conservation regulations of the Brussels Metropolitan Region and the Walloon Region will not be discussed as the Scheldt estuary is not situated on their territory. Nor will we deal with the federal legislation applicable to the North Sea, as the Scheldt estuary is situated in the Netherlands.

In the next two sections the legislation concerning environmental assessment (*section 5.2*) and nature conservation (*section 5.3*) is outlined. Taking in consideration the scope of the study, we will focus on the legal and procedural aspects (and uncertainty topics within these aspects). The section thereafter shows how this legislation applies to estuaries and port related activities (*section 5.4*). Before presenting some conclusions (*section 5.6*), all Belgian legal provisions, excerpts of guidance documents and case law relevant to the question how to deal with uncertainties are gathered in an overview (*section 5.5*).

5.2 Environmental assessment

5.2.1 Regulatory framework

The obligations under the EIA and SEA Directives (environmental assessment framework for projects and for plans/programs) are found in horizontal as well as in specific legislation. Most EIA and SEA legislation is to be found at the regional level, except for the projects and plans in the Belgian marine environment, and also for nuclear installations, as the decision-making for both categories was kept under federal competency. In the Flemish Region, the EIA and SEA Directives are implemented by the following applicable Flemish regional regulatory framework:

- **Regional Act of 5 April 1995 regarding the general principles of environmental policy** (*Decreet van 5 april 1995 houdende de algemene bepalingen van het milieubeleid*)[61]

[61] For sake of completeness, it is also referred to:

- the Circular letter of 1 December 2007 regarding EIA of plans and programs (*Omzendbrief van 1 december 2007 betreffende milieueffectbeoordeling van plannen en programma's*): this circular letter has not been adapted to the more recent changes in legislation. Therefore, it is of lesser importance.
- Circular letter LNE 2011/1. EIA and environmental permitting for certain projects after the European Court judgment of 24 March 2011 (C-435/09, European Commission v. Belgium) (Milieueffectbeoordeling en vergunningverlening voor bepaalde projecten ten gevolge van het arrest van het Hof van Justitie van 24 maart 2011 (C-435/09, Europese Commissie t. België): in a judgment dated 24 March 2011, the European Court of Justice ruled that the Flemish Region did not correctly transpose the European Directive articles and annexes, which regulate the screening. The circular letter states that even if an activity does not meet the thresholds mentioned in the regional decree, nevertheless a preliminary screening is mandatory if – based on the selection criteria in Annex III of the Directive significant environmental impacts cannot be excluded. The thresholds focus on the extent of the activity (e.g. a business park of 75 hectares or more) and did not take into account the other criteria in Annex III of the EIA Directive as the location of the project and the characteristics of the potential impact. In anticipation of the required

In the Flemish Region, **EIA and SEA are closely linked**. Both European Directives have been implemented by the same regional act, the Regional Act of 5 April 1995 regarding the general principles of environmental policy (hereinafter "*EIA-SEA Act*").[62] The provisions regarding EIA are incorporated in chapters I, II, III and VI of Title IV. They provide the framework for the procedure and requirements of EIA and SEA, and the content of the ES. The EIA is called a "***project-MER***" and the SEA is called a "***plan-MER***".

- **Regional Decree of 10 December 2004 listing the categories of projects for which an EIA is required** (*Besluit van de Vlaamse Regering van 10 december 2004 houdende vaststelling van de categorieën van projecten onderworpen aan milieueffectrapportage*)

  This decree contains two lists. The first enumerates all categories of projects for which the execution of an EIA is mandatory. The second list details all categories of projects for which in principle an EIA is required unless the developer applies for, and obtains, an exemption to do so.

- **Regional Decree of 12 October 2007 regarding EIA on plans and programs** (*Besluit van de Vlaamse Regering van 12 oktober 2007 betreffende de milieueffectrapportage over plannen en programma's*)

- **Regional Decree of 18 April 2008 regarding integrated EIA of zoning plans** (*Besluit van de Vlaamse Regering van 18 april 2008 betreffende het integratiespoor voor de milieueffectrapportage over een ruimtelijk uitvoeringsplan*)

- **Regional Decree of 19 June 2009 regarding the transfer of the obligation to perform an EIA of zoning plans from the developing authority to a private person** (*Besluit van de Vlaamse Regering van 19 juni 2009 met betrekking tot het overnemen van de verplichtingen inzake plan-milieueffectrapportage over ruimtelijke uitvoeringsplannen van de bevoegde overheid*)

Environmental Assessment (EIA and SEA) is defined in the EIA-SEA Act as follows (article 4.1.1., § 1, 1° EIA-SEA Act): "*the procedure which may or may not lead to the drafting and approval of an environmental impact report on a proposed action and where appropriate to its use as an aid in making decisions*

revision of the concerned regulations, this circular letter indicates how to deal with the authorisation of projects to which the judgment is of relevance.

[62] A regional act of December 2002 introduced the first comprehensive set of provisions on environmental assessment at the Flemish level. Through this regional act, EIA, SEA and safety reporting (as required by the Seveso Directive) became part of the framework EIA-SEA Act. The SEA chapter was amended by the regional act of 27 April 2007. The current EIA and SEA provisions were supplemented by the implementing orders of the Flemish Government of 10 December 2004 (lists of projects for which an EIA is mandatory, directly or after screening), 12 October 2007 (on SEA, mainly consultation requirements) and 18 April 2008 (on the SEA integration in the zoning and spatial planning procedures).

on the action, hereinafter referred to as EIA". An "action" is "*a plan, program and/or project*" (article 4.1.1., § 1, 3° EIA-SEA Act)

The EIA Unit of the Environment, Nature and Energy Department of the Flemish administration[63] is the central administration in the EIA and SEA procedures.

5.2.2 Environmental Impact Assessment

5.2.2.1 Scope

An EIA ('*milieueffectrapport over een project*') is a public document in which the expected consequences for man and environment in their interdependence of a proposed project and reasonably considered alternatives are assessed in a systematic and scientifically sound analysis and evaluation, and in which it is indicated how the significant environmental impacts are to be avoided, mitigated, remedied or offset (Article 4.1.1., § 1, 8° EIA-SEA Act).

A "*project*" is defined as follows:

1. *"a proposed activity that is subject to an environmental permit or a permitted activity that needs a new permit at the expiry of the current permit and that includes:*
   - *construction works, the establishment and where appropriate the operation of other installations, operations or other interventions in the environment, including groundwater wells and those involving the exploitation of natural resources, or*
   - *the operation of a classified installation, which is the whole area under the control of an operator where dangerous substances are present in one or more installations, including common or related infrastructures or activities; or*
2. *a proposed activity with negative consequences for the environment, which is co-financed by the Flemish Region and Flemish Community in the framework of international cooperation.*"(Article 4.1.1., § 1, 5° EIA-SEA Act)

However, not all projects within the scope of this definition will be subject to the obligation to undertake an EIA.

5.2.2.2 List of projects subject to EIA

The Flemish Government is the competent authority to designate the projects for which an EIA needs to be carried out.[64] Pursuant to Article 4.3.2., § 1 EIA-SEA Act the Flemish government indicates on the basis of the criteria defined in Annex II to this Act, the categories of projects that are subject to environmental assessment.

[63] http://www.lne.be/themas/milieueffectrapportage
[64] And also the EIA Unit within specified limits of the screening procedure (cf. *infra*).

The first list of projects are in **principle always subject to EIA**, irrespective of the specific characteristics of a specific project on that list because it is assumed irrefutably that such projects are deemed to have significant environmental effects. In the first place, it is focused on the projects listed in Annex I of the EIA Directive. The list of these projects is set out in Annex I of the Decree of the Flemish Government of 10 December 2004. It includes 26 categories of projects. The obligation to carry out an EIA applies to those projects even if by the expiration of the current permit a new permit has to be applied for.

Pursuant to Article 4.3.2., § 2 EIA-SEA Act, the Flemish government indicates on the basis of the criteria described in Annex II, other categories of projects for which an EIA **may or may not have to be prepared on a case by case basis by the EIA Unit**. This mechanism also applies if due to the expiry of the current permit a new permit must be applied for. This second list of projects contains only projects that are **potentially eligible for EIA**, as listed in Annex II of the EIA Directive. The administration, in a procedure known as "***screening***", needs to determine whether such a project has the potential to result in significant environmental effects or not, based on the criteria listed in Annex II. These criteria relate to the characteristics of the project, the location of the project and the characteristics of potential effects. Only if the EIA Unit considers that significant environmental effects are likely, an EIA must be carried out on such a project. The list of these projects is set out in Annex II of the Decree of the Flemish Government of 10 December 2004. This list includes 14 categories of projects. A similar approach is followed for changes to existing projects. Pursuant to Article 4.3.2., § 3 EIA-SEA Act, the Flemish Government stipulate, on the basis of the criteria in Annex II, which changes to existing projects listed on the first or second list, an EIA must be prepared on a case by case basis (cf. category 26 of the first list and category 13 of the second list).

For projects on the second list, the EIA Unit will decide which individual cases require an EIA or not. The EIA-SEA Act stipulates that such decision must be made on the basis of the criteria in Annex II. Since these criteria are generally fairly vague and open to interpretation, the Flemish government has the power to translate them into concrete selection criteria that the administration has to apply. Article 4.3.2., § 4 provides that the Flemish government, on the basis of the criteria defined in Annex II, can determine the selection criteria on which the administration, on a case by case basis, decides whether or not a project on the second list requires an EIA. This screening allows the EIA Unit to determine whether or not a particular project, or a modification thereof, may cause significant environmental effects. The selection criteria have to be reviewed at least every five years but will remain valid until they are replaced by new ones, which are communicated to the EC. In preparing the selection criteria, the Flemish Government also indicates the administrations, government agencies and public authorities to which a copy should be sent of the notification of the developer of the proposed EIA. Envisaged are the administrations, government agencies and public authorities that, pursuant to the applicable permitting regulations, need to advise on the permit application file for the concerned project.

5.2.2.3 Screening and exemption

The Flemish Government can, upon reasoned request of the developer of a specific project, which in principle should be subject to EIA, **exempt** the project from the obligation to undertake an EIA whenever the protection of the public interest requires that, in exceptional circumstances, is reacted with the immediate execution of the project. The Flemish government verifies in this case whether there is any other form of assessment that would be appropriate and whether the collected information can be made available to the general public.

For projects mentioned on the second list and for modifications to existing projects, the EIA Unit takes, upon a reasoned request from the developer, a decision to **waiver** the reporting requirement. This is the **screening decision**.

The EIA Unit, upon reasoned request of the developer, can grant a waiver of the EIA obligation for all other projects than those mentioned on the first list as it notices that:

- the proposed project relates to a plan or program for which a SEA has already been approved and that a new EIA is not expected to give rise to the discovery of new or additional significant environmental effects;
- the proposed project constitutes a repetition, continuation or alternative project for which an EIA has already been approved and that a new EIA is not expected to give rise to the discovery of new or additional significant environmental effects; and
- an assessment under the criteria of Annex II shows that the proposed project has no significant effect on the environment and that an EIA is not expected to come up with new or additional information about significant environmental effects.

There is, in other words, by law a presumption of significant environmental impacts associated with each project category mentioned in the second list and the developer is liable to prove the contrary in his request for the waiver.[65]

The Flemish Government, or the administration, shall promptly, and in any case within sixty days after receipt of the request, take a decision. Where appropriate, the decision also contains conditions under which the exemption or waiver has been granted. The exemption is granted for a limited duration. It expires if the project is not begun within the period specified in the adopted decision. This period may not exceed two years. The waiver is also granted for a limited duration. It expires if the project is not begun within a period in the adopted decision. This period may not exceed four years. Within seventy days of receipt of the request, the decision will be made publically available and issued to the developer. The developer has to annex the decision to exempt or waiver the permit application file. The administration ensures that a copy of the

[65] The by law presumption of significant environmental impacts associated with each project category mentioned on the first list cannot be rebutted. The developer can only, under specific conditions, ask for an exemption.

decision promptly, and in any case prior to the permit decision is, sent to the EC and all other foreign and domestic governments involved.

As part of the administrative practice, the EIA Unit already employs a long time tradition of informal pre-consultation. Questions regarding the application of the EIA obligation are often initially explored through consultation or through the exchange of information and advice to other environmental agencies.

The screening procedure can be graphically summarized as follows:

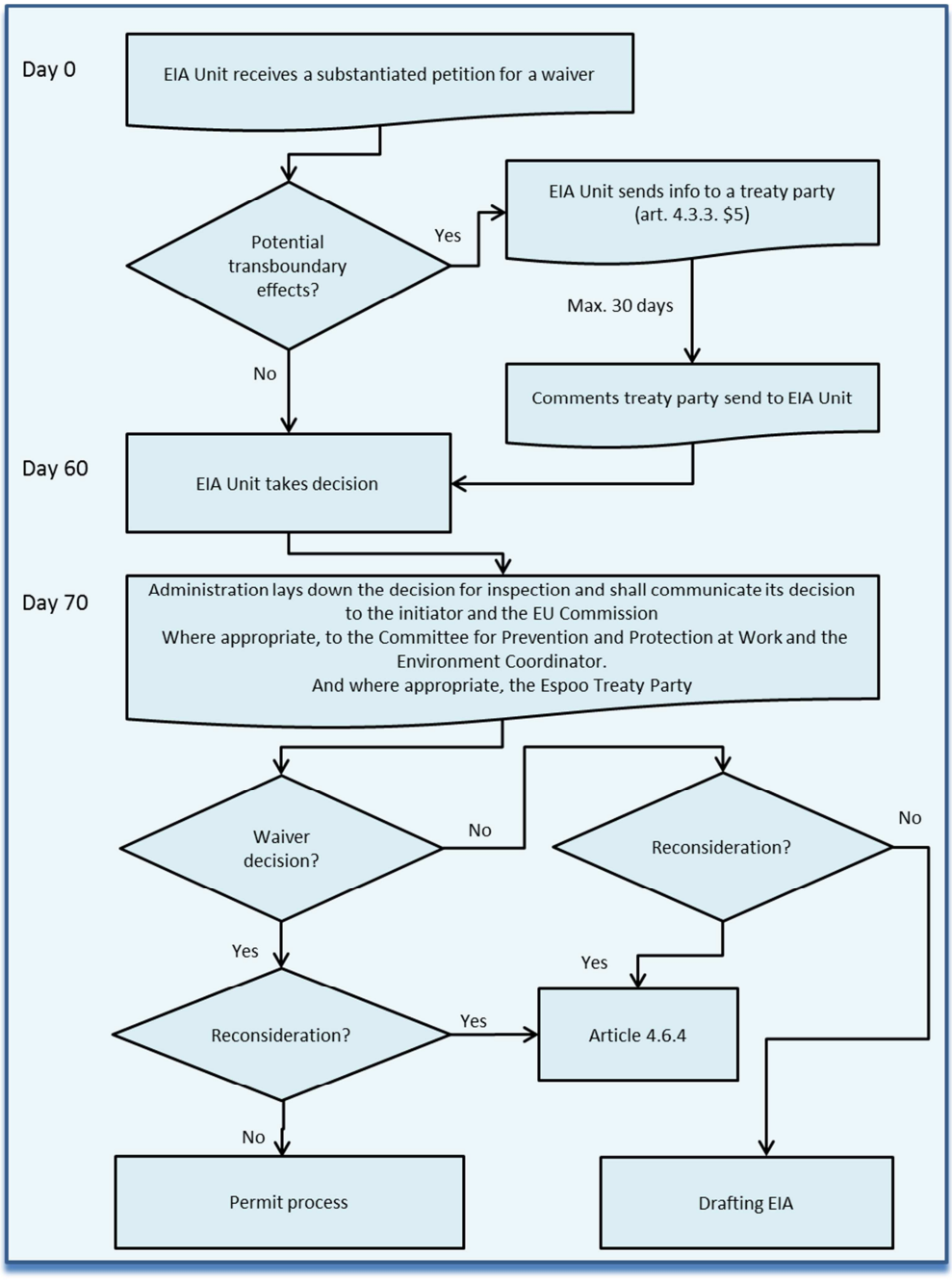


Figure 5-1 Screening procedure for EIA Belgium (Flanders)

5.2.2.4 Notification and scoping of the proposed EIA

Prior to the actual execution of an EIA, a **content scoping procedure** is organised. In this procedure, consultation with the competent authorities and public participation is undertaken. The developer will inform the EIA Unit of the proposed EIA. The EIA Unit then takes a decision on the completeness of the notification, with the decision identifying all gaps in the notification.

The administration ensures that the notification is published and **open to public consultation** within 10 days after the notification. The administration provides the developer with a copy of the publication of the notification and informs the developer about the start and end dates of the public consultation. The municipalities and/or provinces impose the copy for public consultation within 10 days after receipt. The public can formulate remarks on the notification of the proposed EIA. These remarks have to be submitted to the municipality. The territorial competent municipality collects all the remarks and sends them to the EIA Unit.

Within 60 days after acknowledgment that the notification is complete, the EIA Unit takes a decision on the:

1. content and substantive approach of the EIA, including the methodology;
2. special guidelines for the preparation of the EIA; and
3. approval of the proposed authors of the EIA (licensed EIA-experts).

5.2.2.5 Drafting of the EIA-report

The developer is responsible for the execution and cost of the EIA. He has to contract a number of licensed, accredited, experts from different disciplines (man, fauna and flora, soil, water, air, light, heath and radiation, sound, climate, monuments and landscapes and material goods in general). The developer provides to the EIA experts, all available relevant information. He shall provide assistance to the EIA experts, allowing them to be able to fulfil their task properly. The accredited EIA experts should have no personal interest in the plan or program or alternatives, nor be involved in the subsequent implementation of the plan or program. They perform their duties with complete independence. The accredited EIA experts ensure that the composition of the team makes it possible to prepare the EIA-report in accordance with the EIA guidelines book and content scoping and specific guidelines. During the drafting of the EIA, the EIA experts consult, at regular intervals, with the EIA Unit. The EIA experts should, where appropriate, observe the additional specific written guidelines of the administration.

An EIA-report **should at least contain** the following components (Art. 4.3.7. EIA-SEA Act):

- *a general part that contains the following information:*
  - a description of the objectives of the proposed project;
  - an overview of the reasons for the proposed project;

- a description of the objectives of the proposed project and in particular:
  - a description of the physical characteristics of the whole project and the requirements regarding the use of land during the construction and operational phases and the nature and quantities of materials used;
  - where appropriate, a description of the main characteristics of the construction and / or processes relating to the use of energy and raw materials; and
  - a description of the proposed project's development taking into account the likely significant environmental impacts and a prediction of the nature and quantity of expected residues and emissions resulting from the operation and, where appropriate, stopping and dismantling the project;
- an outline of the available alternatives for the project or its components, including the objectives, locations and method of execution or for the protection of the environment;
- a comparison between the proposed project and reasonably available alternatives that can be investigated and the reasons for selecting the alternatives to be examined;
- a reference to the laws, decrees and regulatory requirements from the standpoint of environmental relevance in the implementation of the proposed project or the alternatives, and an examination of the extent to which the proposed project or alternatives are compatible; and
- a description of the existing state of the environment (including the environmental characteristics of areas likely to be significantly affected and any existing environmental problems), of the implementation of the project or any of the tested alternatives that could have a potential impact and a description of the environment where neither the project nor any of the alternatives are executed.

- *a part concerning the environmental impact that contains the following information:*
  - a description of the methods that were used for the determination and assessment of environmental impacts;
  - a description and reasoned assessment of the likely significant environmental effects of the proposed project and the alternatives on, where appropriate, health and human safety, land development, biodiversity, fauna and flora, the energy and commodity stocks, soil, water, air, climatic factors, sound, light, material goods, cultural heritage (including architectural and archaeological heritage), landscape, mobility and the relationship between these factors. This description of the potential environmental impact includes the direct and, where appropriate, indirect, secondary, cumulative and synergistic, permanent and temporary, positive and negative, short, medium and long term effects of the project;
  - a description and evaluation of possible measures for significant adverse environmental impacts of the proposed project in a coherent way to avoid, reduce, remedy or compensate for the adverse effect;

- a description of the facilities that can reasonably be implemented for a proper monitoring and evaluation of the effects of the proposed project; and
- an overall evaluation of the proposed project and alternatives considered.

- *a detailed statement of the direct and indirect, temporary and permanent employment effects of the proposed project and an overview of the total planned investment, including (to) receive subsidies and other aid, as well as an overview of the nature, quantity and origin of the materials and the nature, quantity and destination of the goods to be produced*
- ***an indication of the difficulties, technical deficiencies or lack of knowledge that the developer and/or the team of recognized experts may have encountered in collecting and processing the information required, and the consequences for the scientific nature of the report***
- *a non-technical summary of the above mentioned information*

The project EIA-report shall only include this information to the extent:

- they are relevant to the stage of the permit delivery process in which the environmental reporting is carried out and where they are relevant in the light of the specific characteristics of a particular project, or category of projects, which the intervention examined belongs, and the environmental aspects identified by the proposed project to be affected; and
- **the existing knowledge, impact analysis and assessment methods reasonably allow this information to be collected and the data to be processed.**

5.2.2.6 Evaluation and use of the EIA

The EIA Unit is the central administration in the EIA and SEA procedures in general, and in the screening, scoping and the reviewing of the ES in particular.[66]

Moreover, the EIA Unit is also the competent authority for the approval of an ES. The developer sends the completed EIA-report to the EIA Unit. The latter reviews the EIA report, seeing to it that the ES is carried out according to its guidelines. The objective of an EIA is to describe the potential environmental impacts of a project to inform the final decision making process.

The EIA Unit decides whether or not to approve or reject the EIA-report within a period of 50 days after its receipt. The EIA Unit provides this decision forthwith to the developer and the consulted administrations, agencies, authorities of Member States, contracting parties and/or regions. In case of rejection, it indicates where the EIA is inadequate. From this moment on, the public can

[66] The EIA Unit receives the inception report and evaluates it. Following the analysis of the inception report the administration decides which other governmental bodies need to be consulted.

consult on the EIA-report, the evaluation form, the scoping decision and additional guidelines at the office of the EIA Unit.[67]

The EIA-procedure is not integrated in the actual permit procedure. The EIA-procedure is, as a legally required antecedent of the actual permit procedure, a separate procedure before the EIA Unit.[68] The project consent procedure can only be initiated after approval of the EIA report by the EIA Unit. The actual review of the proposed project is **ultimately the responsibility of the competent authority to deliver a building, environmental or any other permit authorising the proposed project**. That may be the municipal authority, the provincial authority or the Flemish government, depending on the nature or the scale of the project.

The consenting authority in question differs according to the type of activity and permit. Often it will be the board of mayor and aldermen of the municipality concerned (environmental permits for smaller classified installations, building permits, and nature licences). For larger projects, the consenting authority will often be the provincial executive of the province concerned (environmental permits for larger classified installations, decisions on administrative appeals against permit decisions taken by the municipal authority). Sometimes the Flemish Minister for the Environment or the Flemish Minister for Town and Country Planning will decide (administrative appeals against certain decisions of the provincial authority). Sometimes the regional planning officer has to decide (building permit for public projects).

The permit granting authority is compelled to take the approved report, or reports, and the views and comments about it, into account when deciding on the proposed project and its implementation (Art. 4.1.7. EIA-SEA Act). Such a decision on the proposed project needs to contain, in particular, the **justification** of following aspects:

- the choice for the proposed project, or a particular alternative, or for certain parts of an alternative;
- the acceptability of the likely impact on humans or the environment of the alternative chosen to be assessed; and
- the report, or reports, proposed measures.

The permit granting authority always has the potential **to include special permit conditions**. These permit conditions could entail emission thresholds, demands to design, additional constructions, noise control measures, use of specific techniques or materials. The permit granting authority could also integrate in the permit a phasing over time of the project, even with the duty to work with a monitoring campaign, a pilot project, a stop and go mechanism. Specifically for an environmental permit, the authority has the power to change, complement or omit the imposed permit conditions at any given time.

[67] The EIA Unit publishes on its website a database of all executed or pending EIAs and SEAs. The most relevant documents can be consulted in this publicly accessible data base.
[68] Therefore, it is of great importance that the ES already clearly articulates all the mitigating and compensatory measures.

In general, permits cannot be revoked by the permit granting authority, outside of a situation of non-compliance. Therefore, if the possibility of stopping the project is not foreseen in adequate permit conditions, it will be extremely difficult for the authorities to halt the execution of a project.

5.2.2.7 Overview of EIA procedure

The EIA procedure has been summarised in Figure 5.2.

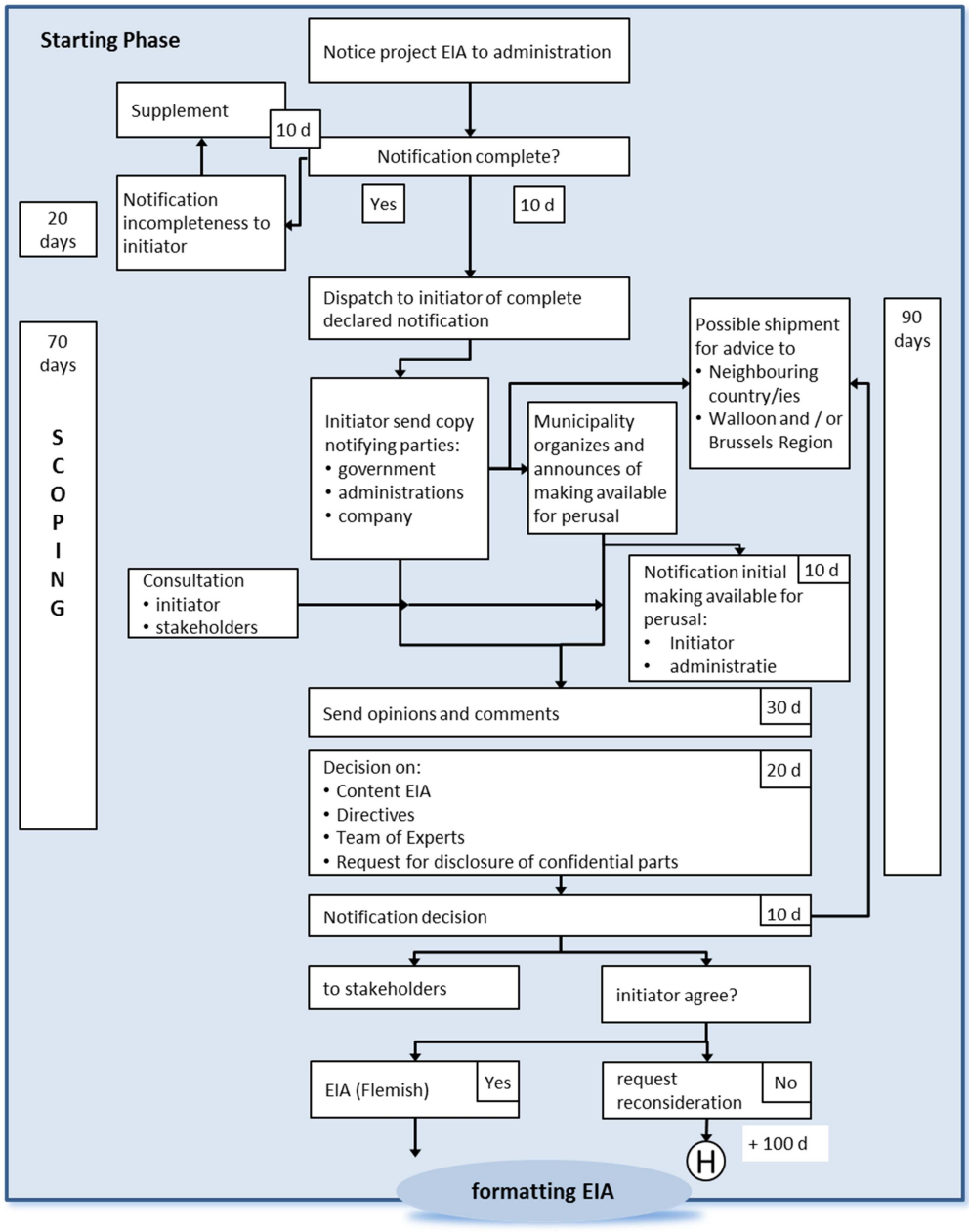


Figure 5-2 Flow chart of EIA procedure in Belgium (Flanders)

5.2.3 Strategic Environmental Assessment

5.2.3.1 Scope

A SEA ('*milieueffectrapport over een plan of programma*') is a public document in which the expected consequences for man and environment in their interdependence of a proposed plan or program and reasonably considered alternatives are assessed in a systematic and scientifically sound analysis and evaluation, and in which it is indicated how the significant environmental impacts are to be avoided, mitigated, remedied or offset (article 4.1.1., § 1, 7° EIA-SEA Act).

A "plan or program" are "*plans or programs, including those by the European Union co-financed, and the amendments thereto, that: a) should be established by an authority at regional, provincial or local level are prepared and/or adopted by a body that is established through a legislative procedure by the Flemish Parliament and Flemish Government and b) is prescribed under a regional act or administrative measure*" (Article 4.1.1., § 1, 4° EIA-SEA Act).

However, not every plan or program falls within the scope of this obligation. Only those plans and programs which serve as a basis for a permit granting decision for a project are relevant. The SEA-obligation applies also to plans and programs for which, due to their potential impact on Natura 2000 sites, an AA needs to be carried out (see *Section 5.3.*). Plans and programs in the field of national defence and exclusively financial or budget plans fall outside of the scope of the SEA-obligation.

5.2.3.2 Duty to perform a SEA - Screening and exemption

A distinction needs to be made between three types of plans:

1. **Plans or programs which always require a SEA** (always mandatory, no preliminary "screening" is required):

   - Plans and programs that (cumulative):
     - provide the framework for the granting of a permit for a project listed in Annexes I and II of the Decree of the Flemish Government of 10 December 2004 (*see Section 5.2.2*);
     - do not regulate the use of a small area at local level;
     - entail a significant change to an existing plan or program; and
     - relate to agriculture, forestry , fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism and planning.
   - Plans for which an AA is required and that do not regulate the use of a small area at local level or entail a small change to existing programs and plans

2. **Plans and programs which do not resort to the first category of plans and programs and for which case by case must be judged if they have significant environmental effects ("screening duty").** If the developer of the following plans and programs succeed in demonstrating that the plan or

program is not likely to generate significant environmental effects, no SEA should be performed:

- Plans and programs that regulate the use of a small area at local level;
- Plans and programs that entail a significant change to an existing plan or program; and
- All other kinds of plans or programs other than those mentioned under 1.

3. Plans and programs that are never subject to SEA:

- Plans and programs needed as a response to emergencies;
- Plans and programs in the field of national defence; and
- Financial or budget plans.

In other words, the competent administration can, upon motivated request of the developer of a proposed plan or program, **exempt** that plan or program from SEA if it judges that:

1. an assessment under the criteria in Annex 1 shows that the plan or program does not have a significant effect for the environment because it is limited to the use of a small area at local level or because it only contains small changes to an existing plan or program; or
2. the proposed plan or program is a revision or continuation of an existing plan or program for which a SEA was approved previously and a new SEA would not reasonably entail new or additional information about significant environmental effects.

5.2.3.3 Notification and scoping of the proposed SEA

Prior to the actual execution of a SEA, a content scoping procedure is prepared. In this procedure, consultation with the competent authorities and public participation is undertaken. The developer will inform the EIA Unit of the proposed SEA. The administration then takes a decision on the completeness of the notification, with the decision identifying all gaps in the notification. The notification will be judged incomplete if information or documents required under Article 4.2.4. § 2 EIA-SEA Act are missing.

The EIA Unit sends its decision to the sponsor immediately and no later than twenty days after receipt of the notification. The administration ensures that the notification is published and open to public consultation within 10 days after the notification. It provides a copy of the notification to the authorities, government agencies and/or organizations that have a representative in the Mina- and SERV-councils. The administration provides the developer with a copy of the publication of the notification and informs the developer about the start and end dates of the public consultation. The municipalities and/or provinces impose the copy for public consultation within 10 days after receipt. The public can formulate remarks on the notification of the proposed SEA. These remarks

have to be submitted to the municipality. The territorial competent municipality collects all the remarks and sends them to the EIA Unit.

Within 60 days after acknowledgment that the notification is complete, the EIA Unit takes a decision on the:

1. scope, level of detail and the substantive approach of the SEA, including the methodology, taking into account the current state of knowledge and evaluation methods, content and the degree of precision of the plan or program, the claim of the decision and the fact that some aspects might be better in other phases of that process should be reviewed to avoid repetition of the assessment;
2. special and additional special guidelines for the preparation of the SEA, which the administration may impose along with the general guidelines contained in the books guidelines referred to in Article 4.6.2; and
3. approval of the proposed authors of the SEA (licensed SEA-experts).

5.2.3.4 Drafting of the SEA-report

The developer is responsible for the execution and cost of the SEA. He has to contract a number of licensed, accredited, experts from different disciplines (man, fauna and flora, soil, water, air, light, heath and radiation, sound, climate, monuments and landscapes and material goods in general). The developer provides to the SEA experts all available relevant information. He shall provide all assistance to the SEA experts, allowing them to be able to fulfil their task properly. The accredited SEA experts should have no personal interest in the plan or program or alternatives, nor be involved in the subsequent implementation of the plan or program. They perform their duties with complete independence. The accredited SEA experts ensure that the composition of the team makes it possible to prepare the SEA-report in accordance with the SEA guidelines book and content scoping and specific guidelines. During the drafting of the SEA, the SEA experts consult, at regular intervals, with the EIA Unit. The SEA experts should, where appropriate, observe the additional specific written guidelines of the administration.

The SEA-report **should at least contain** the following information (Art. 4.2.8 EIA-SEA Act:

- an outline of the contents, a description of the main objectives of the plan or program and relationship with other relevant plans and programs;
- the relevant aspects of the current state of the environment and the potential development thereof if the plan or program should not be executed;
- the environmental characteristics of areas where the consequences may be substantial;
- any existing environmental problems which are relevant to the plan or program including, in particular, in areas from an environmental point of

particular interest, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;
- the relevant environmental protection objectives and how to take into account those objectives and environmental considerations in the preparation of the plan or program;
- a description and reasoned assessment of the likely significant effects of the plan or program and reasonable alternatives examined on, where appropriate, health and human safety, land use, biodiversity, fauna and flora, energy and commodity stocks, soil, water, air, climatic factors, sound, light, material goods, cultural heritage (including architectural and archaeological heritage), landscape, mobility, and consistency between the factors mentioned. This description of the potential environmental impact includes the direct, and, indirect, secondary, cumulative and synergistic, permanent and temporary, positive and negative, short, medium and long term effects of the plan or program;
- measures to prevent, reduce and, as fully as possible, offset significant adverse impacts on the environment as a result of implementing the plan or program;
- an outline indicating the reasons for selecting the alternatives and a description of how the evaluation is carried out, including the difficulties encountered in collecting the required information such as technical deficiencies or lack of knowledge;
- a description of the monitoring measures;
- a non-technical summary of data mentioned above; and
- the useful information about the environmental impact of plans and programs at other levels can be used for the above data mentioned.

5.2.3.5 Evaluation and use of the SEA

Just as in the EIA process (see Section 5.2.2.6), the EIA Unit is the central administration in SEA procedures. The developer (which in SEA is always a public body) sends the completed SEA-report to the EIA Unit. The latter reviews the SEA-report, seeing to it that the ER is carried out according to its guidelines. The objective of an SEA is to describe the potential environmental impacts of a plan or programme to inform the final decision making process.

The EIA Unit decides whether or not to approve or reject the SEA-report within a period of 50 days after its receipt. In case of rejection, it indicates where the SEA is inadequate. From this moment on, the public can consult on the SEA-report, the evaluation form, the scoping decision and additional guidelines at the office of the EIA Unit.[69] The public body provides, so far as necessary, the proposed plan or programme, together with the approved SEA-report and the other documents from the SEA-procedure, to the Board of Mayor and Aldermen of each municipality for which the proposed plan or program is relevant, along with a request to comment that needs to last at least 60 days. The public inquiry will, in any case, take place before the plan or program is adopted or approved.

[69] The EIA Unit publishes on its website a database of all executed or pending EIA and SEA. The most relevant documents can be consulted in this publicly accessible data base.

The SEA-procedure is not integrated in the actual plan adoption procedure. The SEA-procedure is, as a legally required antecedent of the actual plan procedure, a separate procedure before the EIA Unit.[70] The plan consent procedure can only be initiated after approval of the SEA report by the EIA Unit. The review of plans and programmes is ultimately the responsibility of the authority adopting the plan or programme. That may be the municipal authority, the provincial authority or the Flemish government, depending on the nature or the scale of the plan or programme.

The competent authority who adopts the proposed plan or programme **takes** the approved report, or reports, and the views and comments about it, **into account** when deciding on the proposed plan or programme and its implementation (Art. 4.1.7. EIA-SEA Act). Such a decision on the proposed plan or programme needs to contain, in particular, the **justification** of following aspects:

- the choice for the proposed plan, or a particular alternative, or for certain parts of an alternative;
- the acceptability of the likely impact on humans or the environment of the alternative for the proposed plan chosen to be assessed; and,
- the report or reports, proposed measures.

The authority that adopts a zoning plan always needs **to incorporate the conclusions of the SEA-report** in the zoning plan itself (Art. 2.2.2. Flemish Zoning and Urban Planning Code).

The public body that decides upon a plan or programme is obliged to implement a monitoring scheme. He verifies the significant environmental effects of the implementation of the plan and programme in order, among other things, to detect unforeseen adverse effects and to take appropriate remedial action at an early stage (Art. 4.6.3*bis* EIA-SEA Act).

Most plans and programmes create rights for citizens. Due to these vested rights, plans and programmes **cannot be revoked** by the adopting authority. In principle, modifying, replacing or abrogating such plan or programme is seen as new plan or programme and can only be achieved by following the same adoption procedure.

5.2.4 Overview of environmental assessment

The EIA- and SEA-procedures, their similarities, differences and interrelations, as well as their correlations with the EIA and SEA Directives are depicted in Figure 5.3.

[70] Therefore, it is of great importance that the ER already clearly articulates all the mitigating and compensatory measures.

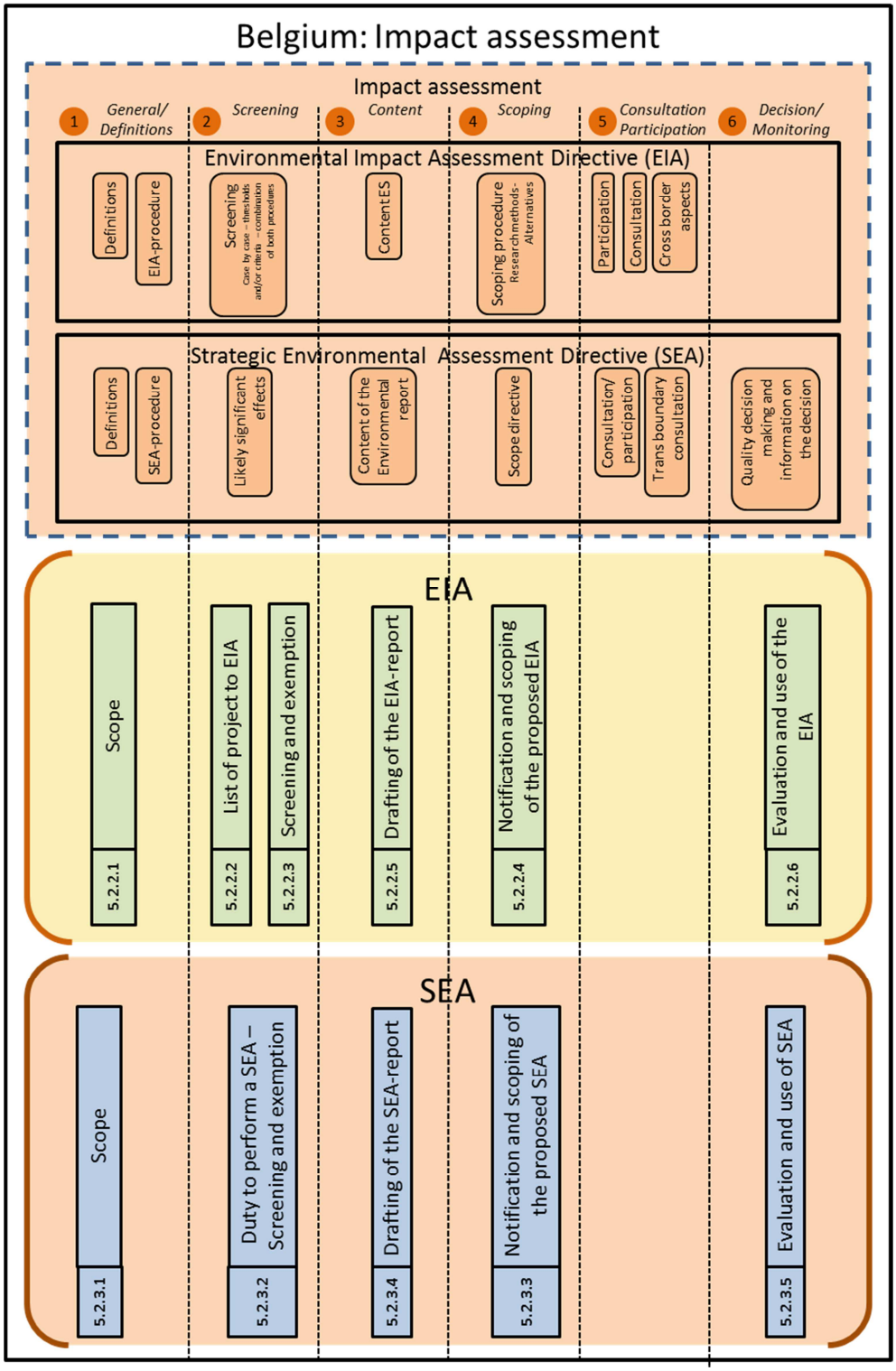


Figure 5-3 Overview of the Environmental Assessment in Belgium (Flanders)

5.3 Nature conservation

5.3.1 Regulatory framework

The obligations under the Birds and Habitats Directives are implemented by the following applicable Flemish regional regulatory framework:

- **Regional Act of 5 April 1995 regarding the general principles of environmental policy** (*Decreet van 5 april 1995 houdende de algemene bepalingen van het milieubeleid*)

  This Act determines the fundamental principles and objectives to which the Flemish environmental policy is supposed to adhere.

- **Regional Act of 21 October 1997 on Nature Conservation and the Natural Environment** (*Decreet van 21 oktober 1997 betreffende het natuurbehoud en het natuurlijk milieu*)

  In the Flemish Region, **the measures required by the Birds Directive and those imposed by the Habitats Directive are closely linked**.Both European Directives have been implemented by the same regional act, the Act of 21 October 1997 on Nature Conservation and the Natural Environment (hereinafter "Nature Conservation Act"). The relevant provisions are mainly incorporated in chapters 5 and 6. They provide the framework for the procedure, the requirements and the content of the AA, called a "***passende beoordeling***".

- **Several implementing decrees** (e.g. Royal Decree of 22 September 1980 on measures to protect animal species in the wild in the Flemish Region; the Royal Decree of 9 September 1981 on the protection of birds in the Flemish Region).

Just like with the environmental assessment, in these regulations were opted for a precise implementation using almost exactly the same wording as the Birds and Habitats Directives.

Instead of introducing a specific permit for projects, or a specific consent for plans or programmes, that may harm protected areas under the Birds and Habitats Directives, the Flemish Nature Conservation Act integrated the obligations that arise from the Directives into existing project permits (such as a building or an environmental permit) and plan adoption (such as zoning plans) procedures. The consequence of such integration is that the competent authority varies according to the law that applies to the permit or plan concerned.[71]

[71] However, some centralisation has been foreseen. When the derogation clause "*IROPI*" is invoked, the Flemish Government, especially the Minister of Public Works, Energy, Environment, and Nature, has to grant permission as well. The Minister is advised by the Nature and Forest Agency. This specialised Agency has large expertise and competencies with regard to Nature Conservation Objectives and AA.

5.3.2 Protection of habitats

5.3.2.1 Designation of SACs (and SPA)

A legal framework has been put in place by the Regional Act of 19 July 2002 amending the Nature Conservation Act. Now it is provided that the Flemish government provisionally designates SPAs on the proposal of the Nature Conservation Agency (Art. 36*bis* Nature Conservation Act). The provisional designation decision is open to public consultation over a period of 60 days. During that time, anyone can formulate comments and objections. Those comments and objections are brought together and coordinated by the government department responsible for conservation issues, which then delivers a reasoned opinion. The Flemish government then adopts a decision and definitively designates the sites that qualify as SPAs, which is published in the *Belgisch Staatsblad* (Official Journal) and sent to the EC. If the Commission declares the site of Community importance, the Flemish government designates the site as a SPA, and the decision is republished. A transitional provision was adopted whereby the Birds and Habitats Directive sites that were previously designated by the Flemish government were definitively confirmed without having to follow the new procedure.

In the Flemish Region, 23 SPAs have been designated with a total surface area of around 100,000ha (which is 7% of the total surface area). Seven zones are protected over their entire area. For 16 zones, only certain specific habitats are protected (e.g. heaths and fens, marshes, polder grasslands, …). In addition, 40 SACs with a total surface area of 102,000ha (just over 7% of the total surface area) have been designated. However, 35% of the designated areas overlap the SPAs. Both types of areas together cover approximately 170,000 ha.

Parts of Natura 2000 sites can also have the status of nature reserves or woodlands (in the context of town and country planning), wildlife sanctuaries, protected landscapes, Flemish Ecological Network sites or protected dunes (in the Flemish Region).

In the Flemish Region, the substance of Article 6 of the Habitats Directive is now incorporated, with certain specifications, in Article 36ter of the Nature Conservation Act. This provision forms part of a special section on **SPAs**. Article 36ter of the Nature Conservation Act provides that the administrative authority, within its powers, in the SPAs and irrespective of the (planned) use of the area in question, takes the necessary conservation measures that must always meet the ecological requirements of the types of habitats and the species for which protection is put in place. The Flemish government establishes the detailed rules in connection with the necessary conservation measures and the ecological requirements. The administrative authority must also take all the necessary measures to avoid any deterioration of the environmental quality and the natural environment of the habitats, and to avoid any significant disturbance of the species in question in a SPA. Such steps can be categorised as active conservation measures and passive conservation measures.

5.3.2.2 Active conservation measures

This means, among other things, that for such areas **nature management plans** (*natuurrichtplannen*) should be drawn up and, where appropriate, nature development projects (*natuurinrichtingsproject*) implemented (Art. 47 and 48 Nature Conservation Act). For wildlife sanctuaries, woodlands, landscapes and land consolidation areas situated within such sites, additional regulations apply with regard to management plans.

For each Natura 2000 site such a nature management plan is being prepared and in each plan the **conservation objectives** (*instandhoudingsdoelstellingen*) are detailed in terms of size, location and time and the measures that need to be taken to achieve these objectives, in relation to the existing use of the area and the use outside the area, in so far as that use is relevant to the conservation objectives.

5.3.2.3 Passive conservation measures

In the Flemish Region, it is provided (Art. 36c (3) Nature Conservation Act) that the developer of the project or of a plan or programme which, individually or in combination with other proposed projects, plans or programmes, is liable to cause a **significant deterioration** of the natural characteristics of a SPA, must subject the project, the plan or the programme to an **AA** of the significant impacts on the SPA. The obligation to carry out an AA also applies if a new authorisation has to be requested due to the expiry of the current permit for the project. The developer is responsible for executing the AA. If the project, the plan or the programme is subject to the obligation of an EIA or SEA, the AA will be incorporated in the context of the ES or ER (with respect to which the competent authority may issue individual guidelines).

Where projects subject to a permit are concerned, the consenting authority ultimately decides, after having sought the advice of the competent environmental authorities, whether or not an AA should take place and whether it has been conducted properly. The consenting authority in question will differ according to the type of activity and permit. Often it will be the Mayor and Aldermen of the municipality concerned (environmental permits for smaller classified installations, building permits, nature licences). For larger projects the permit granting authority will often be the Provincial Executive of the province concerned (environmental permits for larger classified installations, decisions on administrative appeals against permit decisions taken by the municipal authority). Sometimes the Flemish Minister for the Environment or the Flemish Minister for Town and Country Planning will decide (administrative appeals against certain decisions of the provincial authority). Sometimes the regional planning officer has to decide (building permit for public projects). Even if the advice of the conservation authority (Nature and Forest Agency) is not legally required in the normal permit procedure, that advice should nevertheless be sought.

The assessment of plans and programmes is ultimately the responsibility of the authority approving the plan or programme. That may be the municipal authority, the provincial authority or the Flemish government, depending on the nature or the scale of the plan or programme. In that connection, too, the conservation authority will have to give advice. Judging from the applicable law texts, the Habitats Directive has been correctly transposed on that point.

In the Flemish Region it is provided that the public authority that has to decide on a permit application, a plan or a programme can only grant the permit or approve the plan or programme if it is **not likely to cause a significant deterioration of the natural features of a SPA**. The relevant authority must ensure that the project or plan cannot give rise to a significant deterioration of the natural features of a SPA (Art. 36c (4), Nature Conservation Act).

As an exception to this rule, a licensable action, plan or programme which, individually or in combination with other proposed activities, plans or programmes, is liable to cause a significant deterioration of the natural characteristics of a SPA, can only be authorised or approved once it has been established that for the natural features of the SPA there are no less harmful alternative solutions and for IROPI, including those of a social or economic nature.

Where the SPA concerned or a part thereof hosts a priority natural habitat type or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the EC, to other IROPI. Furthermore, the **derogation** can in such cases only be allowed if the following conditions are satisfied:

1. the necessary compensatory and active conservation measures have or will be taken to ensure that the overall coherence of the SPA will be protected; and
2. the compensatory measures are such that an equivalent habitat or the natural environment thereof, of at least a similar surface area, is in principle actively developed. Every decision in that connection must be well-reasoned.

The consenting authority must in its decision on the planned action, and where appropriate also the implementation thereof, take into consideration the approved ES, the AA or the opinion of the conservation authority (Nature and Forest Agency). The consenting authority must justify every decision on the planned action with respect to the following points in particular:

1. the choice of the planned action, a particular alternative or certain partial alternatives;
2. the acceptability of the expected significant deterioration of the natural features of a SPA; and
3. the compensatory and active conservation measures proposed in the EIA, the AA or the opinion of the conservation authority.

If this decision is taken as part of a procedure for granting a licence, permit or authorisation, the consenting authority will communicate its decision to the applicant in the same way that the decision on the application for the licence, permit or authorisation is communicated.

It is the Flemish government that rules on the existence of an IROPI, including reasons of a social or economic nature (Art. 36c (5) Nature Conservation Act). Since the decision is taken by the Flemish government, no administrative appeal is possible. However, the decision can be challenged with a judicial review proceeding before the Council of State, being the Belgian Supreme Administrative Court.

In order to restore the ecological function of the Natura 2000 network, **compensatory measures** are mandatory. Compensation should bring a benefit to the realisation of the conservation objectives. Pursuant to the Habitats Directive, compensatory measures should relate to the species and habitats which are likely to be adversely affected by a project or plan. Therefore only ecologic criteria are given to determine whether or not a certain compensatory measure is sufficient.

5.3.3 Protection of species

The regional Nature Conservation Act also regulates species protection in the Flanders Region. Nevertheless, this regulation does not cover all elements of the EU Directives. Various regulations offer additional rules on species protection (e.g. Royal Decree of 22 September 1980 on measures to protect animal species in the wild in the Flemish Region and the Royal Decree of 9 September 1981 on the protection of birds in the Flemish Region).

5.3.4 Overview of nature conservation

The different nature conservation requirements (including AA), their similarities, differences and interrelations, as well as their correlations with the Birds and Habitats Directives are depicted in Figure 5.4.

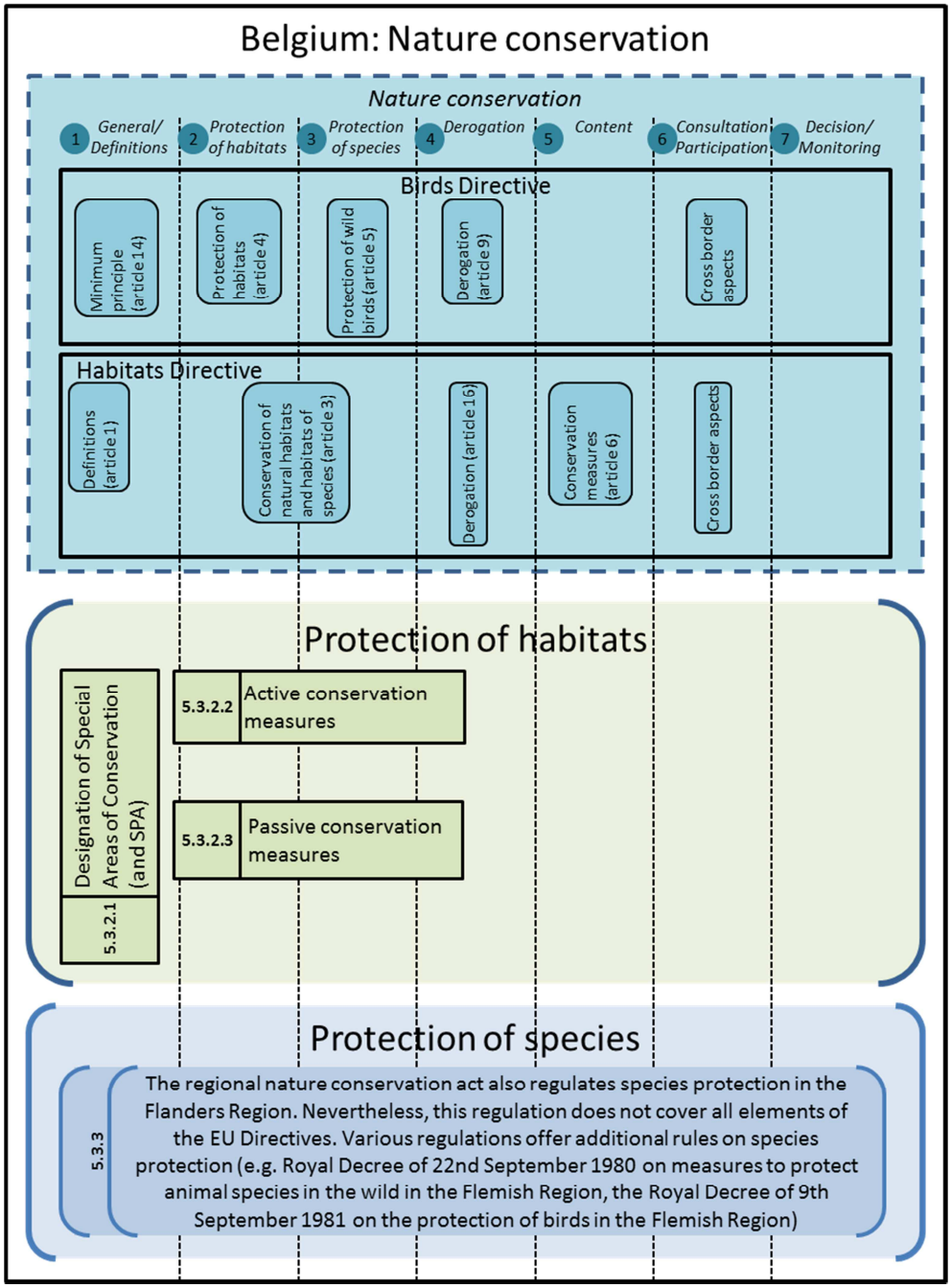


Figure 5-4 Overview of Nature conservation in Belgium (Flanders)

5.4 Estuaries and port related activities

This report focuses on the following port related activities in estuaries:

- dredging operations, including capital dredging, maintenance dredging, sand mining and disposal of dredged material within the estuary; and
- construction or extension of port infrastructure, including construction of quay walls and poldering/reclaiming land from the estuary.

This section describes briefly the implications of the aforementioned Belgian regulations from this perspective.

On the list of projects for which an EIA is mandatory, the following categories of activities might be relevant for this assignment:

- construction of inland waterways and ports for ships of over 1,350 tons;
- sea trading ports, piers for loading and unloading (excluding ferry piers), connected to land and outside ports, which can receive vessels of over 1,350 tons; and
- change or extension of those projects where such a change or extension gives rise to the crossing of the stated thresholds.

On the list of project for which an EIA needs to be performed after a case by case evaluation, the following categories of activities might be relevant for this assignment:

- construction of ports and port installations, including fishing harbours, including the construction of docks and locks;
- construction of waterways;
- working canalization, including the enlargement or deepening of the fairway, and to reduce flooding, including the construction of locks, dams, dikes, flooding areas and basins, which are located near or have a significant influence to a particular protected area;
- coastal works to combat erosion and maritime works that can modify the coast through the construction of dykes, jetties, piers, jetties and other sea defence works, excluding conservation, restoration or maintenance work;
- dredging sludge landfill places with a bulk capacity of 250,000m^3 or more;
- mono-landfills for dredging sludge or clearance, originating from the surface of the public hydro graphic network with a bulk capacity of 250,000m^3 or more; and
- changes or extension of projects listed in on the first or second list, for which a permit has been issued and that are being or have been executed and which may have significant adverse effects on the environment.

5.5 Dealing with uncertainties

The development of port related activities in estuaries and coastal zones in compliance with the aforementioned European Directives encounters inevitably a certain amount of uncertainty. Managing uncertainties is complex. However, legislation and regulations, official guidance documents and case law provide some systems on how to tackle uncertainty issues. This section aims at identifying the information that can be found in the Belgian context.

5.5.1 Legislation and regulations

The EIA-SEA Act compels the developer to incorporate in the EIA-report an **overview of the difficulties, technical deficiencies or lack of knowledge that the developer and/or the team of licensed experts may have encountered in collecting and processing the information required and the consequences for the scientific nature of the report** (Art. 4.3.7., § 1 EIA-SEA Act). Furthermore, the EIA-report can only include information **to the extent that the existing knowledge and impact analysis, and assessment methods reasonably allow this information to be collected and the data to be processed** (Art. 4.3.7., § 2 EIA-SEA Act).

The SEA-report must also contain **an outline indicating the reasons for selecting the alternatives and a description of how the evaluation was carried out, including the difficulties encountered in collecting the required information such as technical deficiencies or lack of knowledge** (Art. 4.2.8., § 1 EIA-SEA Act).

The Nature Conservation Act gives an indication on what should be considered as a significant effect on SPAs and SACs:

- *significant deterioration of the natural characteristics of a special protection zone*: a deterioration that has **measurable and demonstrable** effects on the natural characteristics of a special protection zone, **to the extent there is measurable and demonstrable impact on the conservation status** of the type(s) or habitat(s) for which the SPA has been designated or the conservation status of the type(s) listed in Annex III of this Act to the extent of their presences in the concerned special protection zone (art. 2, 30°);

- *significant deterioration of specie*: a deterioration that has **measurable and demonstrable effects on the conservation status of specie**. Factors that may be considered as such are as follows:
    - any activity that contributes to the **long-term decline** of the population size of the specie in the area or to a **slight decrease causing, in comparison to the initial state of the specie, the specie no longer continues to be a viable component** of the natural habitat;
    - any activity that contributes to or is likely to contribute to the **diminution of the range of the species** in the area; and
    - any activity that contributes to the **diminution of the size of the habitat** of the species in the area.

  If it is a species in Annex II or IV of the Act, then the deterioration is also to be evaluated in light of the contribution of the special protection to the overall coherence of the special protection zones (art. 2, 31°).

5.5.2 Guidance documents

Pursuant to Art 4.6.2. of the EIA-SEA Act, the EIA Unit has the power to issue guidelines manuals on EIA. These EIA guidelines books serve as reference work on which the EIA Unit, the developer and the licensed EIA experts rely on for the correct approach to conduct the EIA or SEA and the content of the EIA- or SEA-report, including the methodological aspects. The EIA Unit drafted guidelines can be viewed on its website.[72]

Besides this general guidance, the EIA Unit also issues special and additional specific guidelines. These supplement the general EIA guideline manual, but they can also impose stricter obligations, include less stringent terms or differ from the general guideline manual. The EIA Unit is responsible for regularly updating of the guidelines books based on scientific and social developments and the evaluation of the experience with environmental and safety reports.

The general guideline manual published by the EIA Unit specifically discusses the occurrence of **gaps in knowledge**. The relevant section is summarized below:

The licensed EIA expert, based on the uncertainties for each discipline, will include in the EIA-report a chapter titled '*knowledge gaps*'.

The quality of an EIA-report and the reliability of the predictions can only be assessed if an accurate representation of the gaps in knowledge is provided. Proper understanding of the consequences of gaps in knowledge is very important for the permitting authority when deciding whether or not to grant a permit or the imposition of a post-monitoring program. Gaps in knowledge can become a part of the '*environmental issues*'.

The description of the gaps in knowledge for each discipline should be clarified for the following aspects at a minimum:

- which category of uncertainty is in question (uncertainty in future predictions, prediction model, basic information and data, etc.);
- which environmental component or in-combination effect is affected by the uncertainty;
- how is the uncertainty expressed, what are the implications of uncertainty; and
- how is the permitting authority supposed to deal with the uncertainty.

[72] The EIA Unit published two general methodological guidelines manuals (‘general methodological aspects (1997)’ and ‘procedural aspects (1997)’), 9 scientific discipline specific guidelines books (“soil (2008)’, ‘fauna & flora (2006)’, ‘sound and vibrations (2011)’, ‘landscape, architectural patrimony and archaeology (2006)’, ‘light, heat and radiation (1997)’, ‘human – health (2002)’, ‘human – spatial aspects (1997)’, ‘water (2011)’, ‘air (2012)’, and 8 sector specific guidelines books (‘chemical sector (2009)’, ‘infrastructure – aboveground high voltage lines (2007)’, ‘infrastructure – underground tube lines (2007)’, ‘infrastructure – train lines (2007)’, ‘infrastructure – roads (2007)’, ‘farm animals (2011)’, ‘Urban development and recreation (2011)’ and ‘thermal centrals and energy (2009)’).

Gaps in knowledge may be of a different nature and can be **categorised** as follows:

- The first category concerns the **uncertainty inherent in future projections** (scenarios). This uncertainty is therefore inherent to the methodology of the environmental assessment. The further into the future environmental impacts are predicted, the greater the uncertainty about their nature, occurrence, intensity, duration and range is, and the greater the gaps in knowledge arising from it are. The standard methodology implies that the reference situation provides a limited account of future predictions (the changed situation). In the future predictions applied to the changed situation, or development scenarios, will create errors due to uncertainties. Also the "principle unpredictability 'of the reaction of living organisms to changing environmental conditions should be considered. It is impossible to predict changes in behaviour, which - especially in higher evolved animals - may be culturally transmitted to fellow specie members. Furthermore, uncertainties arise due to the effects of selection processes that shift gene frequencies and genetic composition of populations change. This result has the potential to effect genetically determined behaviour patterns and the (in-) sensitivity to changing environmental conditions.

- A second category identifies that **knowledge gaps are inherent in the forecasting methods used**. Forecasting methods are often largely based on abstract models of reality, which include assumptions about certain parameters. This can leave other parameters disregarded, which may contain more working hypotheses. The more a prediction method is tested on the accuracy of the resulting predicted effects, the more reliable it is and the lower the contribution to the gaps in knowledge. Many prediction methods are developed fairly recently and have undergone little or no testing of their accuracy.

- A third category concerns **knowledge gaps due to the current state of scientific research**. Often basic studies are missing that can provide a frame of reference for the predicted environmental impact or assessment of environmental impacts. These studies often require lengthy and specialized research and cannot be performed as part of an EIA. Such studies are lacking, especially in terms of quantitative predictions of dose-effect relationships. In many cases these gaps are captured by qualitative statements, but these will be general in nature and exhibit a greater degree of uncertainty. The accuracy of these statements is, for lack of models, largely dependent on the insights and experience of the person who makes the pronouncements.

- A fourth category of knowledge gaps are **the technically difficult to predict phenomena**. In this case, the theoretical knowledge is available, but there are too many variables to be involved in the impact prediction. Existing models are unusable because too many assumptions and simplifications must be used to make the models operational. In other cases there are several variables that present a very large uncertainty

factor, which impedes the absolute impact predictions that can be made. At most, there could be some suggested possibilities, each with a certain statistical probability.

- A fifth category of knowledge gaps concerns the **inability to deliver data by one discipline to another (or project data)** because of the lack of effective prediction models. This is due to the prolonged and specialized research needed to provide the data and because of the inability to deliver the data in the form requested. If the predicted effect of environmental impacts in a discipline (usually an integrative discipline) is dependent on the input data of another discipline (usually a technical discipline), and the information requested cannot be delivered, or cannot be delivered in the form requested, the consequences will have to predict the environmental and reliability, which should be stated in the gaps in knowledge.

The following reasons are never eligible as a knowledge gap:

- lack of time;
- lack of manpower;
- lack of funding in the budget of the project; and
- wrong time, the period of the year is not suitable for certain investigations to be carried out.

When dealing with uncertainties, two steps can be distinguished:

1. initially, the permitting authority must determine whether the gap in knowledge is **essential**, in other words whether the impact will be negative for the environment; and
2. if a gap in knowledge is essential, there are various **methods for managing the negative effects of uncertainty**:

    - the knowledge gap **cannot be resolved**. The permitting authority chooses the 'precautionary principle' and tries to adapt the project (using alternatives), and shall only grant a permit for portions of the project or refuse a permit;
    - the gap in knowledge can be **solved by performing additional tests** prior to granting a permit;
    - the gap in knowledge can be **solved by the imposition of mitigating measures; and / or**
    - the knowledge gap should be **included in a post-monitoring program** and the permit granted.

The scientific discipline specific guidelines book “Air” complements that in the ES, which needs to explicitly mention the implications of the detected uncertainty for further decision making.[73] The EIA-expert is **obliged to render a**

[73] See also scientific discipline specific guidelines book “sound and vibrations” (identical wording),

judgment on this aspect from an environmental perspective. Possible consequences could include:

- There should be no further interest attached to the uncertainty.
- There is additional research required, but this is not necessary in the context of the EIA procedure. This additional research may be special condition imposed in the permit.
- The uncertainty is too substantial to come to elaborate conclusions in the ES.

5.5.3 Permits

This section analyses the permits granted for the enlargement of the navigation channel in the Scheldt estuary. For this project the regional and provincial governments delivered the following permits:

- Environmental permits for landfill activities dated 6 December 2007 and 13 December 2007, delivered by the provincial government of East Flanders respectively Antwerp for a period of 10 years; and

- Building permit for the widening of the navigation channel was granted by the regional town planning official on 18 December 2007.

In these permits the consenting authorities made use of the possibility to include special permit conditions and a phasing in time of the project.

The *environmental permits* include at the one hand the diposal of dredged sediments coming from the deepening and broadening of the navigation channel (2007-2010) and at the other hand the disposal of the annual maintenance dredging works. These environmental permits also define specific conditions for quality of the dredged material and for monitoring of the works and their effects.

The *building permit* requires the applicant to implement the mitigation measures mentioned in the EIA-report. The EIA-report assesses the potential environmental impact of the works in Belgian and Dutch territory. The mitigation measures entail a specific, flexible strategy for disposing dredged material in the Westerscheldt. This means that the disposal strategy was adjusted based on the monitoring and understanding of the functioning of the natural system of the Scheldt estuary. The AA included in the EIA-report indicated that the disappearance of mudflats and salt marshes needs to be compensated for by bringing forward the realisation of the conservation project at Fort Filip. The compensatory measures are such that an integral habitat of at least a similar habitat quality and size is developed. The aim is to proceed with the realisation of this compensation concurringly with the widening of the channel of the Lower Sea Scheldt, including the turning circle, because the occurrence of negative effects is specifically related to the widening of the channel. This would also guarantee the required simultaneity of nature restoration.

Moreover, the timing and phases appear explicitly as special permit conditions. Only after the building permit for the refurbishing of the compensation area is obtained and the compensation works are started, can the construction of the turning zone be started. After that, the rest of the fairway will be widened to 370m.

In contrast to the Netherlands, in Belgium no claim for suspension and/or annulment of the obtained permits has been brought before the Council of State.

5.5.4 Case law

The decisions on the acceptance of EIA- and SEA-reports by the EIA-Unit, the decisions on permit delivery for projects by the competent authority and the decisions on adopting plans and programs can be challenged before court. The judicial review of such government decisions relates to the powers of the *Raad van State – Conseil d'Etat* (the Belgian Supreme Administrative Court). The jurisprudence on cases regarding EIA, SEA and AA has been reviewed and a non-exhaustive overview of some recent cases relevant to this study is provided below:

RvS Judgment n° 147.047, 30th June 2005

- Context: the competent federal authority delivered a building permit for the construction of an offshore windmill farm (50 wind mills, 2 MegaWatt) in the Belgian part of the North Sea and an environmental permit for its operation. The proposed windmill farm is not situated in a SPA or SAC. These permits are being challenged on allegations that the required EIA has not been correctly executed. The EIA-report contains uncertainties and indicates lack of knowledge. Pursuant to the precautionary principle such an EIA-report could not serve as sufficient basis for the permit decision.
- Plaintiff: Knokke-Heist (municipality adjacent to the offshore zone in which the windmill farm is projected) and an inhabitant of Knokke-Heist
- Decision: the request to annul the permits was denied
- Reasoning:
    - The description and the assessment of the alternatives need not be as detailed as the description and the assessment of the proposed project. **The developer is not obliged to carry out a full blown EIA for each alternative**.
    - **The presence of uncertainties and knowledge gaps does not per se constitute a breach of the precautionary principle**. This was because stringent conditions have been imposed. The project will be developed in two stages with a smaller pilot stage, and a follow up mechanism has been put in place. This follow up mechanism will implement a constant monitoring of the project and is empowered to take additional compensatory measures if required on the basis of the monitoring results. For this, a financial warranty

has been reserved. The monitoring results will fill the knowledge gaps over time.

- The Court considered that the developer gather all available information and data. Therefore, it finds sufficient arguments in the EIA-report to judge that the uncertainties and information gaps are not exceeding reasonable thresholds and that they **not substantial enough to conclude that the government did not dispose of sufficient information to decide upon the environmental aspect**, beside the social, economic, etc. aspects.

RvS Judgement, n° 200.738, 10th February 2010

- Context: the adoption of a zoning plan (enabling the construction of a ring road around the city of Antwerp) was challenged
- Plaintiff: a company affected by the zoning plan
- Decision: the request for annulment of the zoning plan was rejected
- Reasoning:
  - The Council of State, responsible for reviewing the legality of a zoning plan, cannot substitute his judgement of the intrinsic soundness of an SEA-report for that of the EIA-Unit. He can only assess whether the EIA-Unit, in the exercise of its power, has based its decision on the correct factual information, whether it correctly assessed this information and whether it reached its decision legally. **The Court has only a marginal power to review**.
  - An alternative for which the **costs of a detailed examination would be unreasonably high compared to the limited environmental benefit** that can be reasonably expected from this alternative.
  - By merely citing the differing conclusions of another report, the inaccuracy of the arguments of the SEA-report, endorsed by the EIA Unit, is not demonstrated.

RvS Judgement, n° 206.333 & 206.334, 1st July 2010

- Context: the competent federal authority delivered a building permit for the construction of a gas transportation network and an environmental permit for the operation of this network. The projected network crosses Natura 2000 sites. These permits are being challenged on allegations that the required EIA has not been correctly executed. The EIA-report contains uncertainties and indicates lack of knowledge. Pursuant to the precautionary principle, such an EIA-report could not serve as sufficient basis for the permit decision.
- Plaintiff: the municipality of Brakel and inhabitants
- Decision: the request for annulment of the permits was rejected
- Reasoning:
  - The legal review by the Council of State was limited in the first place to check the **accuracy of the factual assumptions** of the

EIA-report and the **completeness of the data taken into account** in respect with the objectives of the EIA. Furthermore, the Council of State has also to determine whether the competent authority, **within the bounds of reasonableness**, could reach the conclusions the involved AA.

- The criticism that the EIA was too superficial and lacks sufficient scientific basis was refuted, as the Birds and Habitats Directives **only oblige to take into account the best available scientific knowledge. Therefore, the developer is never compelled to fill gaps in scientific knowledge and data by performing himself additional research that meets the high quality standards of the concerned study domain and scientific discipline.** The fact that the plaintiff's own experts and the nature conservation organisations could not clearly describe and explain the alleged gaps and uncertainties in the EIA led the Court to conclude that the alleged gaps cannot be substantial.

RvS Judgement, n° 209.866, 20th December 2010

- Context: the adoption of a zoning plan (enabling the construction of a ring road and the further development of a train station as a multimodal mobility hub for the city of Ghent) was challenged because of alleged lack of arguments for the choice of alternatives
- Plaintiff: inhabitants
- Decision: the request for annulment of the zoning plan was rejected
- Reasoning:
  - The Council of State, responsible for reviewing the legality of a zoning plan, cannot substitute his judgement of the intrinsic soundness of an SEA-report for that of the EIA-Unit. He can only assess whether the EIA-Unit, in the exercise of its power, has based its decision on the correct factual information, whether it has correctly assessed this information and whether it reached its decision legally. **The Court has only a marginal power to review.**

RvS Judgement, n° 209.930, 21st December 2010

- Context: the adoption of a zoning plan (also applicable to a SAC for bats) was challenged in a preliminary proceeding because of lack of AA
- Plaintiff: Inhabitants
- Decision: request for suspension of the zoning plan was granted, the zoning plan has been annulled
- Reasoning:
  - An effect of a zoning plan was significant whenever the developer, based on objective data, cannot exclude that the plan will have significant implications for the area (reference to European case law)

- The Court concluded that the developer of the plan did not prove that any significant implications would not occur. The Court deducted from unofficial 'advice' from a governmental environmental agency (e.g. reserve regarding the presence of bats) and of specific, mitigating provisions in the plan (e.g. regarding public lighting) itself, could not reasonably exclude the presence of significant effects.

RvS Judgement, n° 210.478, 18th January 2011

- Context: the adoption of a zoning plan (enabling shipping canals and suppression of a polder; Natura 2000 sites are concerned) was challenged because of insufficient AA
- Plaintiff: inhabitant
- Decision: the request for annulment of the zoning plan was rejected
- Reasoning: if the plan did not have an **impact on the conservation objectives** for the concerned Natura 2000 site and, moreover, aimed at facilitating these objectives. It **ought to be considered as not generating any significant effect** (even when it had negative effects for small isolated parts of the site).

RvS Judgement, n° 211.533, 24th February 2011

- Context: the adoption of a zoning plan (enabling the construction of gas transportation network, crossing Natura 2000 sites) was challenged because of insufficient AA
- Plaintiff: inhabitant and Milieufront Omer Wattez (nature conservation organisation)
- Decision: the zoning plan was annulled
- Reasoning:
  - **The Habitats Directive does not determine the scope, the content, etc. of an AA**. The Court refers to art. 2, 30° Regional Act on Nature Conservation and the Natural Environment ("*significant deterioration of the natural characteristics of a special protection zone: a deterioration that has measurable and demonstrable effects on the natural characteristics of a special protection zone, to the extent there is measurable and demonstrable impact on the conservation status of the type(s) or habitat(s) for which the SPA has been designated or the conservation status of the type(s) listed in Annex III of this Act to the extent of their presences in the concerned special protection zone*")
  - The AA must be organised in such a manner that the competent authorities can be certain that the plan will not have adverse effects on the integrity of the site concerned, given that, where doubt remains as to the absence of such effects, the competent authority will have to refuse authorisation (reference to European case law). The Court concluded that the AA was conducted manifestly

negligent and incomplete, as reports from a nature conservation organisation showed the presence of species that were not mentioned in the AA. Specialised environmental government agencies needed to complete and nuance the AA after its adoption (with incorrect information) and as the mitigating measures needed to be altered and complemented after the adoption of the zoning plan. The Zoning plan has been adopted without the **assurance that based on scientific knowledge there is not any reasonably doubt about the zoning plan causing significant effects on the nature characteristics of the concerned Natura 2000 zone**, even after imposing mitigating measures.

RvS Judgement, n° 215.385, 28th September 2011

- Context: the adoption of a zoning plan (including a burial site) was challenged because of insufficient SEA
- Plaintiff: inhabitant
- Decision: the zoning plans has been annulled
- Reasoning:
    - The SEA lacks relevant information. The hydrologic situation has not been assessed; more specifically the SEA does not look into the problem of leachate water coming from the burial site.

RvS Judgement, n° 217.112, 5th January 2012

- Context: the adoption of a zoning plan (enabling the construction of a ring road around the city of Eeklo) was challenged in preliminary proceeding because of insufficient SEA
- Plaintiff: inhabitants and a nature conservation organisation
- Decision: the request for suspension of the zoning plan has been rejected
- Reasoning:
    - An AA, within the meaning of Article 36ter, § 3 Regional Act on Nature Conservation, means that, **on the basis of the best scientific knowledge concerning all aspects of the plan or project,** which alone or in combination with other plans or projects, could jeopardise the conservation objectives of the area at risk should be inventoried. Taking into account the conclusions of the assessment of the effects of the plan or project for the area concerned, the government may only approve the plan or project if it has determined that it does not adversely affect the natural characteristics of the area. The certainty that the plan or project will not adversely affect the natural characteristics of the area was available when there was **no reasonable scientific doubt that there are no harmful consequences** (reference to European case law).
    - The Court refuted the allegations that the SEA (and AA) was incomplete and full of uncertainties and knowledge gaps on the

basis of arguments and other elements that could be found in the SEA report itself.

5.6 Conclusions

In the Flemish Region, EIA and SEA are closely linked. Both European Directives have been implemented by the same regional act, the Regional Act of 5 April 1995 regarding the general principles of environmental policy. The Belgian environmental assessment regime is a precise implementation of the EIA and SEA Directives. The same applies to the nature conservation regime, implemented by the Regional Act of 21 October 1997 on Nature Conservation and the Natural Environment which uses almost exactly the same wording as the Birds and Habitats Directives. The Belgian case law is strongly inspired and influenced by the case law of the European Court of Justice.

The existing of uncertainties in relation to EIA, SEA and AA are acknowledged in the legal provisions, guidance documents and case law. The following methods to overcome problems caused by these uncertainties have been identified:

- A substantial role is attributed to a **specialised central authority**. Regarding EIAs and SEAs, the EIA Unit of the Environment, Nature and Energy Department of the Flemish administration takes up this role instead of the consenting authority. This specialised unit is involved in every EIA and SEA in the Flemish Region. Consequently, it has built up an enormous expertise on environmental assessment over the years which is beneficial when dealing with uncertainties. Regarding AAs, this role is taken up by the Minister of Public Works, Energy and Environment, supported by the specialised Nature and Forest Agency.
- As part of the administrative practice, the EIA Unit employs a long time tradition of informal pre-consultation. Questions regarding the application of the EIA obligations are often initially explored through consultation or through the exchange of information and advice to other environmental agencies.
- A strong **emphasis on scoping**. Each EIA- and SEA-procedure starts with a notification to the EIA Unit. This notification constitutes an elaborate file stating a description of the proposed project or plan and the likely environmental effects, the projected content of the EIA or SEA and the envisaged methodologies. The actual EIA- or SEA-procedure can only start after the EIA Unit approves the proposed scope. Prior to taking a decision and commenting on the notification file, the EIA Unit will consult all relevant authorities and a public enquiry will be held. The input of the EIA Unit, the concerned authorities and the public will diminish the risks of unexamined effects, knowledge gaps, etc.
- The developer and the consenting authorities are compelled **to communicate extensively on uncertainties**. Communicating concisely, consistently and using relevant policy on the uncertainties with which a project or plan is confronted is beneficial to its implementation.

- The permit granting authority always has always the potential **to include special permit conditions**. These permit conditions could entail emission thresholds, demands to design, additional constructions, noise control measures, use of specific techniques or materials, etc. The permit granting authority could also a condition phasing the project over time, even with the duty to work with a monitoring campaign, a pilot project, a stop and go mechanism, etc. Specifically to an environmental permit, the authority has the power to change, complement or omit the imposed permit conditions at any given time.
- The courts limit themselves to only a **marginal review** of environmental assessments and AAs. This introduces a **notion of reasonableness**. The courts judge that uncertainties and knowledge gaps do not per se constitute a breach of the precautionary principle. Uncertainties and knowledge gaps that are not sufficiently substantial or that can only be eliminated after a detailed examination against unreasonably high costs are acceptable. The developer is not held to create new scientific knowledge. He only has to inventory and work with reasonably accessible scientific knowledge and generally accepted research methods.

6 Germany

6.1 Introduction

Germany is a federal state which has a complex state structure. The German Federal Constitution divides legislative competences concerning environmental protection between the federal level (the Federal Republic) and the regional level (*Länder*). Since 2006, when an important reform of German federalism was enforced, all important areas of environmental law are attributed to the legislative power of the Federal Republic: air quality management, waste management, noise abatement, spatial planning, nature conservation, water pollution prevention, soil protection, hunting and coast protection.

In respect to spatial planning, nature conservation, water pollution prevention and hunting the *Länder* may deviate from federal legislation (*Abweichungs-gesetzgebung*). Traditionally, federal law has priority over regional law. The recently introduced “deviating legislation” changes that customary rule. From now on the *lex-posterior-rule* prevails in the branches of environmental law mentioned above and legislation of the *Länder* is not bound to the federal statutes any more. Nevertheless they have to obey federal constitutional law and EU-law.

Legal transparency however is disturbed by some derogations of the lex-posterior rule. The *Länder* have no right to alter the fundamental principles of nature conservation, protection of species law, sea protection law, parts of the water pollution prevention law related to substances and installations as well as hunting licensing law. Severe problems of definition between federal and regional competences may arise in the future. Time will show how the German Constitutional Court will deal with these problems.

The significance of the environmental law of the *Länder* has perceptibly increased since the federalism reform has taken effect in 2006. This is for two reasons: firstly, the *Länder* have a substantial deviating legislative competence for environmental law. Secondly, Federal legislation often uses opening clauses in favour of the *Länder* even though the Federal Republic has exclusive competences in some spheres. Several *Länder* already enacted specific provisions on nature conservation, water pollution prevention and hunting, deviating from the federal model. It is therefore necessary to examine case by case whether the federal or the regional statute is applicable.

All important subjects of environmental law are put down in federal laws. Most of these statutes were reviewed in the past few years, notably the Federal Emission Control Act (2002), the Federal Act on Nature Conservation and Landscape Management (2010), the Water Resources Act (2010), the Closed Substance Cycle and Waste Management Act (2011), the Town and Country Planning Act (2008), the Federal Soil Conservation Act (1998), the Federal Hunting Act (1976), the Animal Protection Act (2006) and the Gene Technology Act (1993). However, the attempt to create a complete Environmental Code including all specific statutes failed again in 2008 due to political reasons. The

separation of German environmental law into many specialized statutes will thus be maintained in near future.

German environmental law is strongly influenced by European environmental law, e.g. implementation of Air Quality Maintenance Plans, creation of nature reserves in order to complete the Natura 2000 network, definitions of waste, waste for disposal and waste for recovery, conditions for releasing into environment and placing on the market genetically modified organisms as well as requirements concerning protection of species trace back to EU Directives or Regulations. Moreover, the entire environmental procedure law originates from EU Directives. The same applies to environmental liability.

The main European Directives on environmental policy and the essential obligations pursuant to them are incorporated into German legislation. **The implementation of the EIA, SEA, Birds and Habitats Directives is the responsibility of the federal government. However, the federal EIA, SEA and nature conservation regime have been complemented by all *Länder* with specific provisions**.

Although environmental legislation mainly occurs on the federal level, the *Länder* have the competence of the administration according to the Federal Constitution (art. 83). They determine the responsible authority and the details of administrative procedure autonomously. Regional authorities are subject to little legal supervision by the Federal Republic while exercising environmental law. Control is consequently limited to questions of lawfulness not covering discretionary decisions. The administrative procedure is, in the various states, standardised to a certain extent. Traditionally, Bundesländer covering larger geographic areas feature a three-tiered administration: the ministries as the highest environmental authorities; followed by government districts (*Regierungsbezirke*) with monitoring powers at the intermediate tier; followed by the counties (*Kreise*) or independent cities (*kreisfreie Städte*) at the lowest administrative tier. However, the Federal state of Bremen disposes of a two-tier system, deleting the intermediate tier of government districts.

The Weser case study looks into the construction of container terminal 4 in Bremerhaven in the Weser estuary.[74] The harbour in Bremerhaven is situated in the Federal state of Bremen (Free Hanseatic City of Bremen / *Freie Hansestadt Bremen*) and does not fall under the powers of the Bremerhaven municipality. The Federal state of Bremen is a very small *Bundesland* and consists of the municipalities Bremen and Bremerhaven (Figure 6-1). Notwithstanding, the Federal state of Bremen is fully enclosed by territory of the Federal state of Lower Saxony; the Federal state of Bremen is not incorporated into this state. Bremen is an entirely separate and autonomous *Bundesland* and disposes therefore of its own environmental legislation and regulations (Figure 6-2).[75]

[74] See Lot 2 "*Environmental assessment practices in different EU member states*"
[75] The differences in legislation between the surrounding *Bundesländer* are not part of this study and thus not described here.

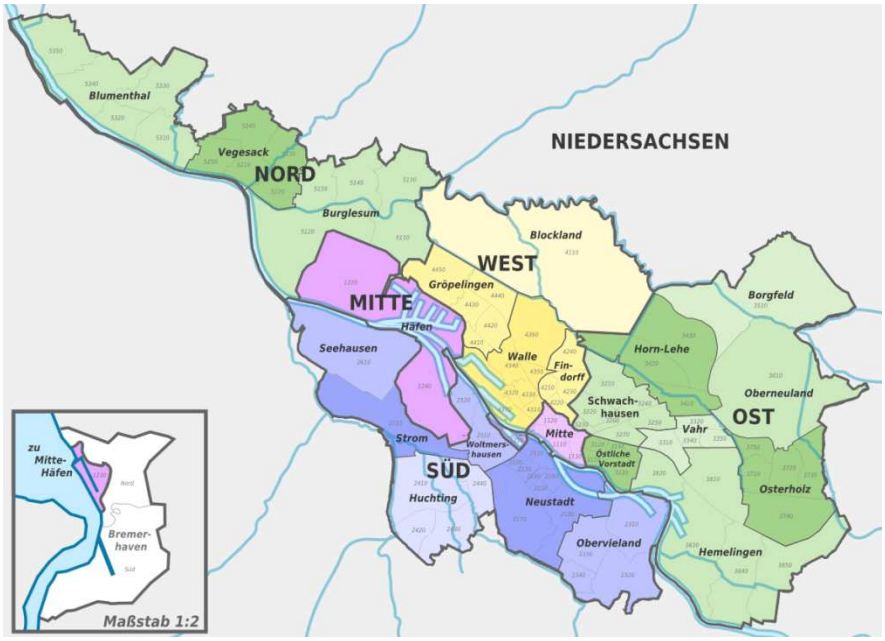


Figure 6-1 Overview of the Federal State of Bremen consisting the cities of Bremen and Bremerhaven

Figure 6-2 Overview of the Federal state of Lower Saxony in which the cities of Bremen and Bremerhaven are not incorporated

In the next two sections the legislation concerning environmental assessment (*Section 6.2*) and nature conservation (*Section 6.3*) is outlined. Taking in consideration the scope of the study, we will focus on the legal and procedural aspects of (and uncertainty topics within these aspects). The section thereafter shows how this legislation applies to estuaries and port related activities (*Section 6.4*). Before presenting some conclusions (*Section 6.6*), all German legal provisions, excerpts of guidance documents and case law relevant to the question how to deal with uncertainties while is gathered in an overview (*Section 6.5*).

6.2 Environmental assessment

The idea of procedural justice gained much ground in German administrative law over recent years. The evolving procedural approach can be recognized first of all in environmental law. The most important step in this context was the promulgation of the EIA Act (1990). According to this act, an EIA must take place before projects evoking significant effects on environment can be authorized. Public authorities dealing with an application for a project have to consider the results of the assessment as soon as possible. SEA is also to be mentioned regarding specific planning decisions. Other procedural regulations are the Environmental Audit Act (2002), the Environmental Information Act (2004) and the Environment Legal Remedies Act (2006).

6.2.1 Regulatory framework

The obligations under the EIA and SEA Directives are implemented by the following applicable German federal and regional regulatory framework:

- the federal EIA Act (*Gesetz über die Umweltverträglichkeitsprüfung*" – hereinafter "UVPG[76])
- the regional EIA Act (*Bremisches Landesgesetz über die Umweltverträglichkeitsprüfung* – hereinafter BremUVPG[77])
- the federal regulations implementing the EIA Act of 18 September 1995 ("*Allgemeine Verwaltungsvorschrift zur Ausführung des Gesetzes über die Umweltverträglichkeitsprüfung*" – hereinafter "*UVPVwV*")

The German provisions are mainly based on European law (in particular EIA Directive 337/85/EEC, SEA Directive 42/2001/EG) and on international law (in particular the Espoo Convention and SEA Protocol).

The EIA and SEA Directives are closely linked. Both European Directives have been implemented by the same federal (UVPG) and regional

[76] Gesetz über die Umweltverträglichkeitsprüfung in der Fassung der Bekanntmachung vom 24. Februar 2010 (BGBI.I S. 94), das zuletzt durch Artikel 2 des Gesetzes vom 17. August 2012 (BGBI I S 1726) geändert worden ist

[77] Bremisches Landesgesetz über die Umweltverträglichkeitsprüfung in der Fassung der Bekanntmachung vom 5. Februar 2008 (Brem.GBl. S. 47) Sa BremR 790-a-3 zuletzt geändert durch Art. 1 ÄndG vom 22. 6. 2010 (Brem.GBl. S. 404)

(BremUVPG) act. Moreover, the term "environmental assessment" includes EIA and SEA.

EIA is a procedure which is **integrated into the procedures for the authorisation of specific projects**, especially industrial installations and infrastructure projects. Whereas SEA is an assessment procedure to be carried out **as part of the implementation of specific public plans and programs**. The EIA is called an "*Umweltverträglichkeitsprüfung*" (UVP) and the SEA is called a "*Strategische Umweltprüfung*" (SUP).

The UVPG and the BremUVPG provide the framework for the procedure and requirements of EIA and SEA and the content of the ES and ER, respectively. The UVPG and the BremUVPG introduce almost identical definitions. The aim of impact assessment is to ensure effective environmental protection at the occasion of certain public and private projects, as well as certain plans and programs in accordance with the following uniform principles by:

1. early and comprehensively identifying, describing and evaluating the potential impact on the environment in the context of environmental assessments (EIA and SEA); and
2. whereby the results of the environmental assessment be considered as early as possible:
    a. in all official decisions on the admissibility of projects; and
    b. in the establishment or modification of plans and programs (§ 1 BremUVPG and §1 UVPG).

In other words, the objective of an EIA and SEA is to describe the potential environmental impact[78] of a project or plan to inform the final decision making process. Therefore, the procedure of EIA/SEA is **integrated into the procedure for the relevant plan or permit**.

6.2.2 Environmental Impact Assessment

6.2.2.1 Scope

Licences and permits are the central instruments used to ensure compliance with environmental regulations. Licensing and permit requirements are contained in several environmental statutes, including the Federal Emission Control Act, the Closed Substance Cycle and Waste Management Act, the Federal Water Act, the Federal Mining Act, the Nuclear Energy Act, the Genetic Engineering Act, etc. Certain projects may require several authorisations from different authorities. Each authority will review only those provisions for which it is responsible. Some permits have a so-called "concentrating" effect, i.e. they replace all or most of the other permits that would otherwise be necessary (most importantly: permits under the Federal Emission Control Act and in

[78] The environmental impacts are changes in human health or changes in physical, chemical and biological properties caused by a single substance or activity, but also by the sum of different environmental changes or causes (cumulative effects).

similar planning procedures). In such cases, the authorities whose permits are replaced are consulted internally by the permit-issuing authority.
The exploitation or diversion of water and the introduction and discharge of substances into the water require an official permit (*Erlaubnis*) or licence (*Bewilligung*).

The construction and operation of installations that are particularly likely to harm the environment (i.e. industrial and infrastructure projects such as power plants, refineries, chemical plants, paper mills, incineration plants, storage areas for hazardous substances, etc.) are subject to particular permit requirements. The installations concerned are defined in Annex 1 to the 4th Ordinance to the Federal Emission Control Act (4. *Bundes-immissionsschutz-verordnung*). This list includes different types of installations. Depending on the size and type of installation, a formal permit procedure may be necessary.

Certain industrial and infrastructure projects, such as power stations, chemical plants, waste management facilities, railway tracks and airports, cannot be permitted without an EIA.

EIA is defined as follows:

"*The EIA is a dependent part of administrative procedures which serve the decision on the admissibility of projects. The environmental assessment includes the identification, description and evaluation of direct and indirect impacts of a project on:*

1. *People, including human health, animals, plants and biological diversity*
2. *Soil, water, air, climate and landscape*
3. *Cultural goods and other tangible goods and*
4. *the interaction between the aforementioned protected assets*

It is carried out with the participation of the public. If a decision on the admissibility of a project in the context of several methods, these methods carried out in partial tests are combined into an overall assessment of all environmental impacts." (§ 2,(1) UVPG)[79]

A ***project*** is:

1. with regard to the installations mentioned in Annex 1 of the UVPG[80]

[79] § 2, (1) BremUVPG contains a similar definition: "*The EIA procedure is a dependent part of administrative procedures which serve the decision on the admissibility of projects. The assessment includes the identification and evaluation of direct and indirect impacts of a project on:*
1. *People, including human health, animals, plants and biological diversity,*
2. *Soil, water, air, climate and landscape,*
3. *Cultural goods and other material goods and*
4. *the interaction between the aforementioned protected assets.*

It will be undertaken in consultation with the public. If on the admissibility of a project under more than one method is decided, the partial assessment results be carried out in these different proceedings will be combined into an overall assessment of all environmental impacts, including the interactions."

[80] The BremUVPG uses an identical definition of a "project", but introduces a different list in its Annex 1.

a. the establishment and operation of an industrial plant,
b. the construction of any other installation,
c. the implementation of other measures invasive in nature and landscape

2. the modification, including the extension, of
   a. the location, nature or operation of an industrial plant,
   b. the location or the nature of other installation,
   c. other measures invasive in nature and landscape.

However, not all projects within the scope of this definition will be subject to the obligation to perform a EIA.

6.2.2.2 List of projects subject to EIA

Annex 1 to the UVPG contains a list of all projects (potentially) subject to EIA. This list distinguishes three types of projects:

1. **projects that are always subject to EIA obligation** (these projects are marked with a "X" in the list enclosed in Annex 1 of the UVPG) (§ 3b UVPG)
2. **projects for which an environmental assessment may or may not have to be prepared in function of a decision, case by case, by the competent administration** (§ 3c UVPG):
   a. projects potentially eligible for EIA on the ground of a general screening;
   b. projects potentially eligible for EIA on the ground of a site-related screening.

   Envisaged are the projects listed in Annex 1 of the UVPG marked with "A" (general screening) respective "S" (site-related screening).[81]

   On a case by case basis, the administration, in a so-called screening procedure, needs to determine whether such a project has significant environmental effects or not, based on the criteria listed in Annex 2 of the UVPG. These criteria relate to the characteristics of the project, the location of the project and the characteristics of potential effects. Only if the competent administration considers that significant environmental effects are likely, must an EIA be carried for such a project.[82] The EIA screening procedure is presented in table 6-3.

[81] In 2001, pursuant to an EU Directive, Germany had to expand the scope of the UVPG. Numerous projects, such as paper mills, wind farms, industrial zones or shopping malls now require a preliminary 'screening' of their environmental effects in order to decide whether a full UVP is necessary.

[82] More information can be found in the guidance document "*Leitfaden zur Vorprüfung des Einzelfalls im Rahmen er Feststellung der UVP-Plflicht von Projekten*".

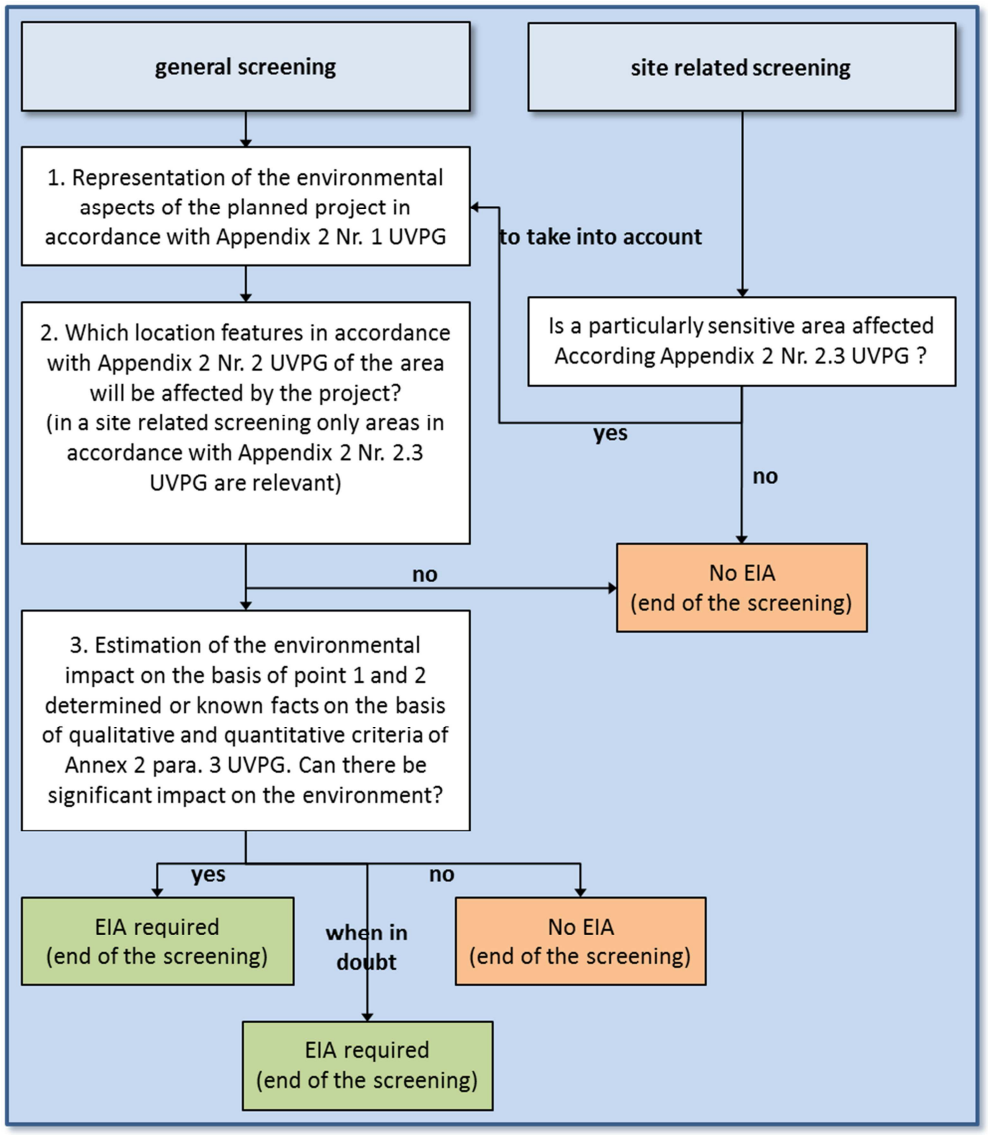


Figure 6-3 Flow chart of the EIA screening procedure UVPG in Germany (Bremen)

This mechanism also applies if, due to the expiry of the current permit of the project, a new permit must be applied for or for changes to existing projects.

This federal list is complemented by the list of projects entailed in Annex 1 of the BremUVPG. The BremUVPG contains a similar mechanism (§ 3, (1) BremUVPG):

1. **projects that are always subject to EIA obligation** (these projects are marked with a “X”)
2. **projects for which an environmental assessment may or may not have to be prepared in function of a decision, case by case,** by the competent administration:
    a. projects potentially eligible for EIA on the ground of a general screening

b. projects potentially eligible for EIA on the ground of a site-related screening.

Envisaged are the projects listed in Annex 1 of the UVPG marked with "A" (general screening) respective "S" (site-related screening).

On a case by case basis, the administration, in a so-called screening procedure, needs to determine whether such a project has the potential to result in significant environmental effects or not, based on the criteria listed in Annex 2 of the BremUVPG. These criteria relate to the characteristics of the project, the location of the project and the characteristics of potential effects. Only if the competent administration considers that significant environmental effects are likely, an EIA must be carried on such a project.

When an activity is being changed or expanded, or different activities of the same type will be performed, the authorities can require the developer to undertake an EIA.

6.2.2.3 The EIA procedure

When performing an EIA the following procedural steps need to be taken:

- **Screening**: Is an EIA needed (§ 3a-f UVPG)
- **Scoping**: Discussing and defining the scope of environmental assessment by the Authority (§ 5 UVPG)
- **Information of the developer**: Description of the projected environmental impacts, analysis and presentation of the activity by the initiator (§ 6 UVPG)
- **Public enquiry** (§ 7 - 9 UVPG)
- **Overview and presentation of the environmental impacts** by the competent authority (§ 11 UVPG)
- **Assessment of the environmental impacts** by the competent authority (§ 12, 14g Abs. 3 and 14k (1) UVPG) as an exegesis and following the environmental law
- **Decision** by the competent authority after taking into account the environmental impact caused by the initiative (§ 12 and 14k (2) UVPG)

An EIA is not an additional permit requirement but **part of the permit granting procedure**. However, the obligation for an EIA procedure does in most cases have an important effect on the time frame of the permit decision. The authority determines, describes and evaluates the likely environmental effects of the project based on comprehensive information that has to be provided by the applicant. The information must be passed onto every authority concerned with the project and to the general public.[83] Furthermore, a public hearing must be held and the authority must produce a comprehensive report on the project's potential effects ('*Umweltbericht*'). Authorities must consider such effects,

[83] The role of the public was broadened in 2006 by the Public Participation Act (*Öffentlichkeitsbeteiligungsgesetz*), which sets certain minimal requirements so as to ensure public participation in permit procedures.

although the actual permit decision is made on the basis of the specific environmental laws.

The procedural steps to EIA / SEA are presented schematically in Figure 6-4.

Step	EIA / SEA - steps
1	**Screening**
1.1	Inform the competent authority about the plan [$ 3 sentence 1 UVPG] (only EIA)
1.2	Determination if the project has to be made subject to an EIA or SEA [$$ 3a - 3f or $$ 14a-14d UVPG]
2	**Scoping**
2.1	Documents for scoping - date [$ 5, sentence 1, or $ 14 f 4 sentence 2 UVPG]
2.2	Scoping date [$ 5 sentences 2 to 4 and $ 14 f 4 sentence 2 UVPG]
2.3	Disclosure of documents to be expected and establishing the scope of examination [$ 5 or $ 14f section 1 UVPG]
2.4	Provision of relevant information [$ 5 or $ 14 f 5 sentence paragraph 4, sentence 4 UVPG]
3	**Application or plan documents**
3.1	Elaboration of the EIA data [$ 6 § 2, 3 and 4 UVPG] or of the environmental report including on a preliminary assessment of environmental impacts [$ 14g UVPG]
3.2	Submission of the EIA data with the application [$ 6 § 1 UVPG] (only EIA)
3.3	Examination of the suitability of the EIA data (only EIA)
4	**Participation of authorities and the public**
4.1	Involvement of other authorities [$7 or $14h UVPG]
4.2	If necessary transboundary authorities involvement [$8 or $14j Section 1 UVPG]*
4.3	Inclusion of the (German) public [$ 9 or $ 14i UVPG]
4.4	If necessary. transboundary public participation [$9 or $14j Section 2 UVPG]*
5.	**Decision**
5.1	Summary of [$11 UVPG] or review of the representations of the environmental report [$ 14k Section 1 UVPG]
5.2	Assessment of environmental impacts [$12 UVPG] or check the reviews of the environmental report [$ 14k UVPG Section 1]
5.3	Considering the EIA results in the approval decision [$12 UVPG] or the SEA results in the adoption of the plan or program [$14k Section 2 UVPG]
5.4	Information on the decision [$9, Section 2, or $14l UVPG]
6	**Monitoring**
6.1	Monitoring of significant environmental effects [$14m UVPG] (SEA only)

Figure 6-4 Simplified procedure for EIA and SEA and legal requirements

According to the EIA Directive (and SEA Directive) the process should be transparent, traceable and public. The parties that are involved, and for whom the activity can have an impact, should be informed and consulted.

6.2.2.4 Evaluation and use of the EIA

The EIA procedure is **integrated into the procedure for the relevant plan or permit**.

The competence to determine whether an EIA needs to be carried out and the competence to supervise the execution of the EIA **lays with the authority that is competent to rule on the admissibility of the project** and not with a separate specialised government agency. If a project subject to EIA pursuant to federal or regional law is to be approved by several authorities, then the authority that has the most decisive voice on the admissibility of the project will act as lead agency for the EIA procedure. In case of doubt, the county's highest authority will decide. The lead agency is responsible for the tasks referred to in § 3, 5 to 9 and 11 UVPG.

Pursuant to the UVPG, monitoring is not obliged in EIA-procedures.[84]

6.2.3 Strategic Environmental Assessment

6.2.3.1 Scope

The SEA (*Strategische Umweltprüfung - SUP*) is a **dependent part of procedures for the establishment or modification of plans and programs** of an agency, state government or through a legislative procedure to be adopted (§ 2 (4) BremUVPG and § 2 (4) UVPG).

Plans and programs under the UVPG are those preparation, adoption, or change by an authority is prescribed by (federal) law or regulation. Plans and programs that serve solely to the purposes of defence or civil emergency, as well as financial and budgetary plans and programs, are excluded from this definition (§ 2 (5) BremUVPG and § 2 (5) UVPG).

6.2.3.2 Duty to perform a SEA – Screening and exemption

A SEA is required for plans and programs (§ 14b UVPG):

- listed in Annex 3, No. 1,
- listed in Annex 3, No. 2, in so far these plans or programs serve as a basis for permit granting decisions for a project listed in Annex 1 or for a project that pursuant to regional regulations (*Länder*) is subject to EIA-obligation

For all other plans and programs a SEA is only to be carried out if they set the framework for the decision on the admissibility of projects listed in Annex 1, and if a preliminary examination shows that they are likely to have significant environmental impacts. This screening of each individual case aims to assess, taking into account the criteria listed in Annex 4, whether the plan or program is likely to have significant environmental impacts.

[84] However, monitoring forms a substantial part of the SEA-procedure.

Plans and programs set a framework for deciding on the admissibility of projects when they contain specifications with significance for future regulatory/permit decisions, particularly on the need for, the size, the location, the nature and the conditions of the operation, and on the use of resources. A SEA needs to be carried out for plans and programs for which the *BNatSchG* (*Section 6.3)* requires an AA (§ 14c UVPG). Also for zoning plans indicating the trajectory of federal waterways an environmental assessment is required (§ 13 *Bundeswasserstraßengesetz* and § 15 UVPG).

When the modification of the aforementioned plans and programs does not entail a significant change to the existing plan or program, or when the aforementioned plans and programs only regulate the use of small area at local level, a SEA should be carried out only if a preliminary case by case screening indicates that the plan or program has significant environmental impacts.

The BremUVPG introduces similar rules. However, the specific lists in the Annexes of the BremUVPG differ.

6.2.3.3 The SEA procedure

When performing a SEA the following procedural steps need to be taken[85]:

- **Screening**: Determining whether a SEA is required (§14a-d UVPG)
- **Scoping**: authority competent authority for SEA lays the framework for analysis including the scope and level of detail that needs to be observed in the ER ('*Umweltbericht*'). (§14f UVPG)
- **Environmental report**: description of the projected environmental impacts, analysis and presentation of the activity by the developer (§ 14g UVPG)
- **Public enquiry** (§ 14h - 14j UVPG)
- **Overview and presentation of the environmental impacts** by the competent authority (§ 14g UVPG)
- **Assessment of the environmental impacts** by the competent authority (§ 14g and 14k UVPG) as an exegesis and following the environmental law.
- **Decision** by the competent authority after taking into account the environmental impact caused by the initiative (§ 14k UVPG)

The competent authority determines, describes and evaluates the likely environmental effects of the plan or programme based on comprehensive information that has to be provided by the applicant. The information must be passed on to every authority concerned with the plan or programme and to the general public.[86]

[85] Instructions how to follow the UVPG-provisions regarding SEA and how to design a SEA are described in the guidance document called "*Leitfaden SUP"*.
[86] The role of the public was broadened in 2006 by the Public Participation Act (*Öffentlichkeitsbeteiligungsgesetz*), which sets certain minimal requirements so as to ensure public participation in permit procedures.

Furthermore, a public hearing must be held and the competent authority must produce a comprehensive report on the project's potential effects ('*Umweltbericht*'). Authorities must acknowledge such effects.

According to the EIA Directive (and SEA Directive) process should be transparent, traceable and public. The parties that are involved and for whom the activity can have an impact should be informed and consulted.

6.2.3.4 Drafting of the SEA-report

The competent authority drafts the ER ('*Umweltbericht*'). This *Umweltbericht* needs at least to touch upon the following elements (§ 14g UVPG):

- outline of the contents, main objectives of the plan or program and relationship with other relevant plans and programs;
- representation of the law governing the plan or program objectives of environmental protection and the type, those objectives and other environmental considerations into the preparation of the plan or program were taken into account;
- representation of the characteristics of the environment of the current environmental status and the likely evolution without implementation of the plan or program;
- indication of the current plan or program for the significant environmental problems, especially the problems relating to ecologically sensitive areas;
- description of the likely significant environmental effects;
- account of the measures which are envisaged to reduce, to prevent or to compensate as fully as possible the significant adverse effects on the environment the implementation of the plan or program may cause;
- **references to difficulties encountered in compiling the information, for example, technical deficiencies or lack of knowledge;**
- outline of the reasons for selecting the alternatives and a description of how the environmental assessment was conducted; and
- presentation of the proposed control measures.

This information should, according to the type of plan or program, enable whether and to what extent third parties can be affected by the environmental effects of the plan or program. An understandable, non-technical summary of the information shall accompany the ER.

6.2.3.5 Evaluation and use of the SEA

The procedure of SEA is **integrated into the adoption procedure for the relevant plan or programme**. The competence to determine whether a SEA needs to be carried out and the competence to supervise the execution of the SEA **lays with the authority that is competent to rule on the admissibility of the plan programme** and not with a separate specialised government agency. If a project subject to SEA pursuant to federal or regional law is to be approved by several authorities, then the authority, that has the most decisive

voice on the admissibility of the project or plan, will act as lead agency for the SEA procedure. In case of doubt, the county's highest authority will decide. The lead agency is responsible for the tasks referred to in § 3, 5 to 9 and 11 UVPG.

Pursuant to the UVPG, **monitoring forms a substantial part of the SEA-procedure** (§ 14m UVPG). The significant environmental impacts resulting from implementation of the plan or program should be monitored, particularly to identify at an early stage unforeseen adverse effects and take appropriate remedial measures. The required monitoring and control measures are to be determined upon acceptance of the plan or program on the basis of the information in the *Umweltbericht*.

If federal or regional legislation does not stipulate differently, the responsibility for monitoring lies with the competent authority for the SEA. All other authorities are compelled to send, upon request, all environmental information required for the monitoring to the competent authority for this monitoring.

The results of monitoring need to be made publicly available and need to be taken into account when re-adopting or altering the concerned plan or program. To meet the monitoring requirements, existing monitoring mechanisms, data and information can be used.

6.2.3.6 Summary SEA procedure

The SEA-procedure is quite similar to the EIA-procedure (*Section 6.2.2* and figure 6.3). It can be summarized and graphically presented as follows:

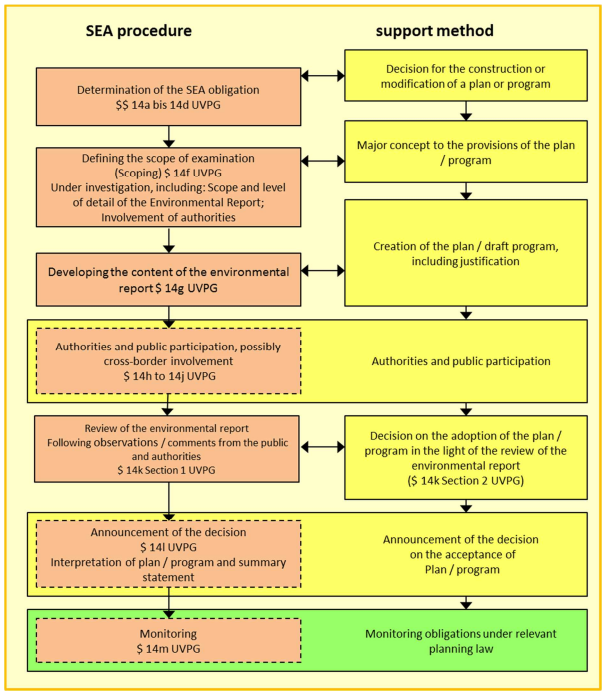


Figure 6-5 Flow chart of the SEA procedure (Germany / Bremen)

6.2.4 Overview environmental assessment

The EIA- and SEA-procedures, their similarities, differences and interrelations, as well as their correlations with the EIA and SEA Directives is presented in Figure 6.6.

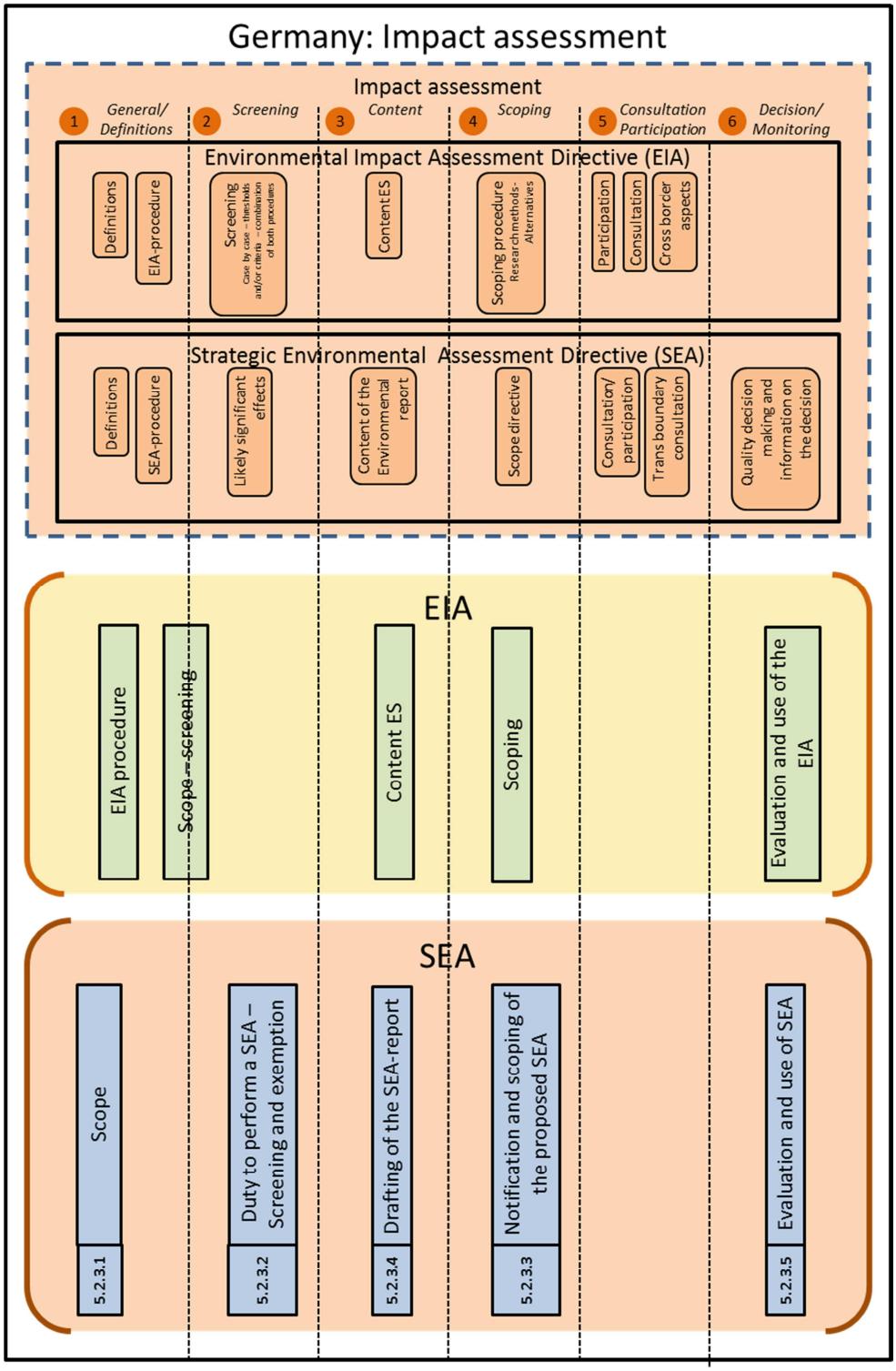


Figure 6-6 Overview requirements of Impact Assessment in Germany (Bremen)

6.3 Nature conservation

6.3.1 Regulatory framework

The Habitats Directive[87] and the Birds Directive[88] are implemented in the federal Nature Conservation Act, *Gesetz über Naturschutz und Landschaftspflege* (hereinafter "*Bundesnaturschutzgesetzes*" or "BNatSchG").[89] This act forms the legal basis for the protection of nature and landscape assets and the measures of nature conservation and landscape management. The BNatSchG defines the input requirements, the objectives and principles for nature conservation and landscape management, and provides the context for the European nature conservation program "*Natura 2000*". Everyone is invited, "*according to his ability to achieve the objectives and principles of nature conservation and landscape care he can bear and to behave in such a way that nature and landscape cannot be encroached upon as to the circumstances*".

In the Federal state of Bremen the national BNatSchG is complemented by the Bremer regional Nature Conservation Act ("*Bremisches Gesetz über Naturschutz und Landschaftspflege*", hereinafter "*BremNatG*") of 2010.

6.3.2 Protection of habitats

6.3.2.1 Designation of SPAs (and SAC) (Natura 2000)

The procedure for designating the SPAs and SACs is laid down in § 32 BNatSchG and requires the collaboration of the national government and the Federal States (*Länder)*. The latter select and propose the area to be incorporated in the Natura 2000 network. § 24, 1 BremNatSchG determines who within the Federal State of Bremen is competent to select the SPAs and SACs. The national government has the power to review the selection, to co-ordinate and to communicate with the EC.

The instrument designating the SPAs or SACs defines the **purpose of protection** ('*Schutzzweck*") in accordance with the relevant conservation objectives and the necessary zoning (§ 32, 3 BNatSchG). It is to be indicated whether priority natural Habitat types or priority Species are protected. The requirements of Article 6 of the Habitats Directive need to be safeguarded by appropriate laws, prohibitions as well as care and developing measures at all times. Broader protection rules remain unaffected.

6.3.2.2 Active conservation measures

The care and developing measures can be incorporated in specific nature management plans ("*Bewirtschaftungspläne*") or in more general planning documents (§ 32, 5 BNatSchG).

[87] In German literature and daily practice this Directive is referred to as "*Fauna-Flora--Habitat-Richtlinie*" or "*FFHRL*".
[88] In German literature and daily practice this Directive is referred to as "*Vogelschutzrichtlinie*" or "*VSchRL*".
[89] Bundesnaturschutzgesetz vom 29. Juli 2009 (BGBl. I S. 2542), das zuletzt durch Artikel 5 des Gesetzes vom 6. Februar 2012 (BGBl. I S. 148) geändert worden ist

6.3.2.3 Passive conservation measures

All changes and disturbances that significantly affect components of a Natura 2000 site with regard to the articulated conservation goals and protection purpose are inadmissible. Prior to the approval or implementation of a project or a plan, that, individually or in combination with other projects or plans, is likely to affect the area significantly, have to be assessed on their compatibility with the conservation objectives of the concerned Natura 2000 site. As far as a Natura 2000 site is a protected part of nature and landscape, the standard for such AA ("*Verträglichkeitsprüfung*" or "*FFH-VP*") results from the conservation objectives, if for the concerned Natura 2000 site upon its designation the respective conservation objectives have already been determined.

Neither the BNatSchG, the BremNatSchG nor the Habitats Directive itself define the term "*significant effect*". In line with the interpretation by the EC and the ECJ effects that impede **the realisation of the nature conservation goals** should be considered to be significant. When a Natura 2000 site goal aims at improvement of the nature quality of the site, any effect needs to be considered significant. When the goal is conservation of the existing nature quality, then the effects have to be carefully described and the influence on realising the goal has to be estimated. The description of the effects and the assessment has to be precise and traceable.

The concept of "*significant deterioration*" in the sense of the BNatSchG is not synonymous with the "*significant adverse effect on the environment*" within the meaning of the UVPG. Not every "*significant deterioration*" qualifies automatically as a "*significant adverse effect on the environment*" and does not always require an EIA.

Further, in guidance documents and literature (see section 6.5.2) some quantitative and qualitative values are available.[90]

The developer has the duty to produce the documents required for the FFH-VP (AA). If the FFH-VP (AA) of the impact, that the project is likely to have, indicates that the project can lead to substantial deterioration of the site with respect to the conservation objectives or protection purposes, the project will be inadmissible.

[90] FuE-Vorhaben „Fachinformationssystem und Fachkonventionen zur Bestimmung der Erheblichkeit im Rahmen der FFH-VP", Lambrecht & Trautner, June 2007 - This study gives a few quantitative and many qualitative values to assess the significance of effects. It describes a differentiated and valid framework and method for the evaluation of significance of effects on habitats or species in the context of the Habitats Directive and mentions the several criteria for habitats, such as the structure, the function, the presence of specific species and the possibility to restore the habitat. For species, these criteria are, for example, the population size, the population dynamics and the function of the habitat. Specific indicators for significance are proposed and probably useful in the assessment: the intensity of the impact, the size of the affected area, the duration of the impact, the regeneration possibility of the affected species, the minimum area needed for the population, the minimum size of the population, the habitat type relevant changes and the minimal oxygen concentrations, etc.

However, the competent authority[91] for nature conservation and landscape management can allow under the provisions of § 34, 3-5 BNatSchG **derogations to this prohibition (the so-called "*FFH Ausnahmeregelung*").**.

A project can be approved of or carried out, as far as:

- the project is needed to meet IROPI interest, including those of social and economic nature; and
- reasonable alternatives to the project with the objective pursued do not exist elsewhere without or with lower impact on the Natura 2000 site.

If it cannot be excluded that the project affects priority natural habitat types or priority species present in the concerned Natura 2000 site, than only reasons related to human health, public security (including defence), protection of the civilian population, or the major favourable impact of the project on the environment can be asserted as IROPI. Other reasons can only be taken into account when the competent authority, through the Ministry for the Environment, Nature Conservation and Nuclear Safety, has obtained a prior opinion from the EC.

If a project receives such derogation, the necessary measures for safeguarding the security of the connection to the network "Natura 2000" are compulsory. The competent authority shall inform the European Commission of the measures taken. These compensation measures with respect to Natura 2000 sites may not be mistaken with measures that are taken because of the provisions of the so called "Eingriffsregelung" (see section 6.3.4).

Summarising, during the FFH-VP (AA) the following procedural steps are important:

1. **Quick-scan of possible significant effects** ("FFH-Vorprüfung"): if there are no possible significant effects, no assessment needs to be performed in the frame of the FFH-VP.
2. If significant effects cannot be excluded in advance a **further assessment** is needed. The effects on the realisation of the Natura 2000 site goals will have to be examined and possible effects estimated. If there are significant negative effects the "FFH Ausnahmeregelung must be followed:
    a. are there any other alternatives *("Alternativenprüfung"*);
    b. is there a reason of overriding public interest *("Zwingende überwiegende Gründe"*); and
    c. is it possible to compensate the impact of the project by taking compensation measures *("Bestimmung der massnahmen zur Kohärenzsicherung")*.

[91] § 24, 2 BremNatSchG determines the competent authority within the Federal State of Bremen for the Verträglichkeitsstudie.

6.3.3 Protection of species

The BNatSchG (*kapitel 5: Schutz der wild lebenden Tier- und Pflanzenarten, ihrer Lebensstätten und Biotope*) and BremNatSchG (*kapitel 6: Artenschutz*) also regulates species protection in the Federal State of Bremen. Various regulations offer additional rules on species protection.

The protected status restricts the removal of nature and the possession and trade of the concerned animals and plants. Failure to comply with these provisions may result in confiscation of the animals and plants as well as fines or criminal proceedings. The protected status covers both living and dead animals and plants, their forms of development on parts of them and the products derived from them (incl. stuffed animals, butterfly collections, eggs, ivory, caviar, seeds, bulbs, tubers, cuttings, wood and extracts of animals or plants).

6.3.4 Eingriffsregelung

The Eingriffsregelung was already implemented in the Nature Conservation Act in 1976. Nowadays it is an important instrument based on § 14 and 15 of the BnatSchG and § 1a and 35 of the Baugezetzbuches (BauGB). It creates the obligation to safeguard the status quo of the functionality of nature and landscape (natural scenery). In the *Eingriffsreglung* (see Fig. 6-7), firstly, it is checked if the activity has an effect on nature and natural scenery. If so, mitigation measures need to be foreseen. If these measures are unlikely to mitigate completely the negative effects, compensation (like for like) or replacement will be needed. Replacement measures reconstitute the adversely affected functions of nature to the same value. This means habitats which are affected by a development can be replaced by other habitats. If compensation or replacement cannot be executed completely the development may not proceed if the reasons for nature conservation prevail the reasons for development (*Abwägung*). Last step could be a payment (*Ersatzzahlung*) if a project is permitted although compensation and replacement of adverse effects is not possible. Finally the permit can be granted by the competent authority.

The *Eingriffsregelung* applies to all habitats and species of the whole countryside (provisions in § 14,15 BNatSchG) and even to developed areas (provisions in § 1a, 35 BauGB), it is not restricted to protected areas. If protected areas are significantly affected these effects have to be assessed, mitigated and/or compensated according the provision of the protected area (e.g. Habitat Directive) and the *Eingriffsregelung* in parallel. Depending on which functions have been adversely affected the measures of both regimes can coincide.

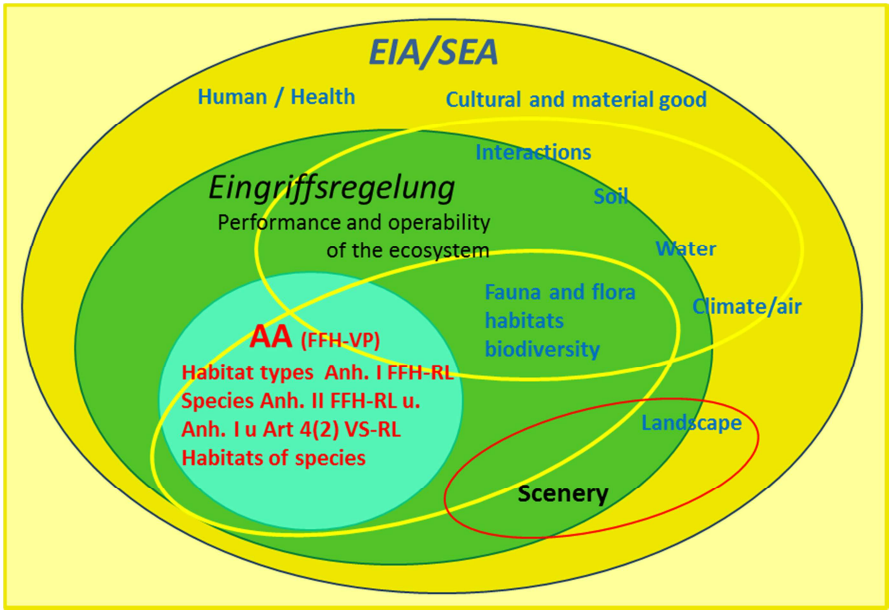


Figure 6-7 Overview position of Eingriffsregelung

Figure 6.7 shows the interconnection between the different regulations in Germany. The outer scale is the EIA and the SEA).

The EIA applies to a specific project. It is a very broad assessment that takes several aspects into account and focuses on the area that could be affected. It deals with environmental effects (flora, fauna and biodiversity) as well as impacts on human safety and health, effects on soil, water, climate, air, culture and landscape. These effects are described in a very detailed way.

Often a SEA is conducted before a corresponding EIA is undertaken. This means that information on the environmental impact of a plan can cascade down through the tiers of decision making and can be used in an EIA at a later stage. This should reduce the amount of work that needs to be undertaken during the EIA.

Around this core the “Eingriffsregelung” is situated. This instrument introduced by the BNatSchG aims at avoiding, mitigating or compensating the negative effects caused by activities (construction measures, even nature compensation measures, etc.) on nature or landscapes. The “Eingriffsregelung” can build on the very detailed results of the EIA regarding certain aspects of protection to be clarified. The core is the FFH-Verträglichkeitsprüfung (AA) in the frame of the Birds and Habitats Directives. The AA has its focus on specific protected species and their habitats.

6.3.5 *Overview nature conservation*

The different nature conservation requirements (including AA), their similarities, differences and interrelations, as well as their correlations with the Birds and Habitats Directives is presented in Figure 6.8

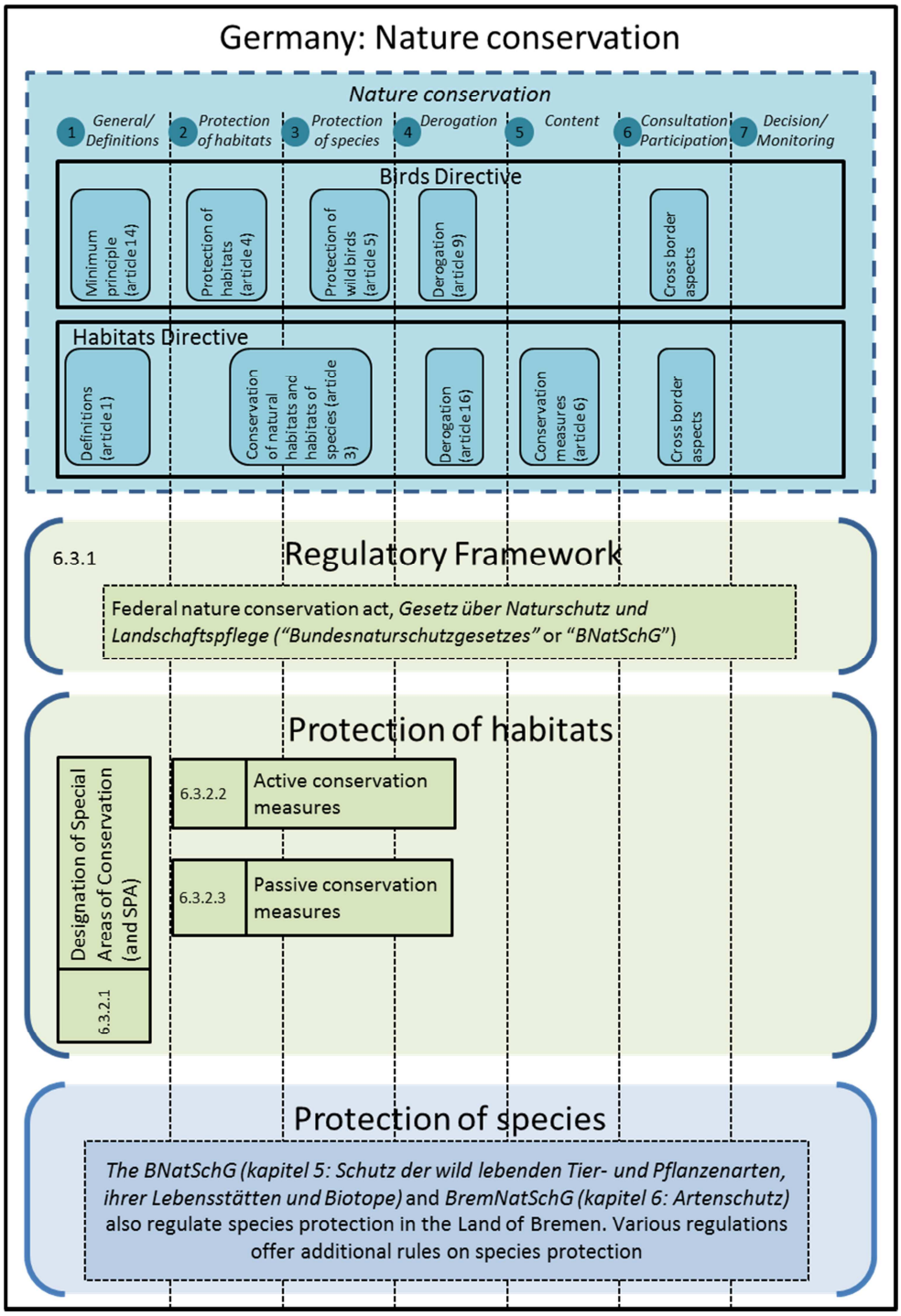


Figure 6-8 **Overview requirements for Nature conservation in Germany (Bremen)**

6.4 Estuaries and port related activities

This report focuses on port related activities in estuaries:

- dredging operations, including capital dredging, maintenance dredging, sand mining and disposal of dredged material within the estuary; and
- construction or extension of port infrastructure, including construction of quay walls and poldering/reclaiming land from the estuary

On the list of projects for which an EIA, may, after case by case screening, has to be carried out the following categories of activities – amongst others – might be relevant for this study:

- Seaports[92]
- Construction of a federal waterway[93]
- Construction of railway accommodation[94]
- Infrastructural port installations[95]
- Other river works[96]
- Coastal protection works[97]

Most likely port related activities in Bremen relate to the powers of the "Senator für Umwelt, Bau und Verkehr". This authority comments on the EIA and takes the decision whether to authorise the project.

6.5 Dealing with uncertainties

The development of port related activities in estuaries and coastal zones in compliance with the aforementioned European Directives encounters inevitably a certain amount of uncertainty. Dealing with uncertainties is complex. However, legislation and regulations, official guidance documents and case law provide some systems on how to tackle uncertainty issues. This section aims at gathering the information that can be found in the German context.

6.5.1 Legislation and regulations

§ 6 UVPG stipulates that the developer, when providing all the information relevant for the EIA, needs to describe the current status of the environment, its composing parts, and the expected significant negative effects on the environment of the proposed project. This description needs to be based on **the current status of the general knowledge and the generally accepted research methods**. The UVPVwV add that the developer and the competent authority, when identifying and describing the environmental impact, have to

[92] Annex 1 of UVPG: Nr. 13.10 – Hafen für die Seeschiffahrt
[93] Annex 1 of UVPG: Nr. 14.1 – Bau einer Bundeswasserstraße
[94] Annex 1 of UVPG: Nr. 14.8 –Bau einer sonstigen Betriebsanlage von Eisenbahnen
[95] Annex 1 of BremUVPG: Nr. 18 – Infrastrukturelle Hafenanlage
[96] Annex 1 of BremUVPG: Nr. 22 – Sonstige Gewässerausbauten
[97] Annex 1 of BremUVPG: Nr. 23 – Bauten des Küstenschutzes

justify the assumptions. These assumptions need to match the general level of knowledge and generally accepted testing methods (0.5.1.1 UVPVwV).
The EIA-report or its annexes needs to draw the attention to the **difficulties encountered in compiling the information, for example, technical deficiencies or lack of knowledge** (§ 6 (5) UVPG).

Pursuant to § 14g UVPG the *Umweltbericht* needs explicitly make reference to **difficulties encountered in compiling the information, for example, technical deficiencies or lack of knowledge**.

6.5.2 Guidance documents

The competent federal authorities have drafted several different guidance documents for the execution of EIAs, SEAs and AAs, amongst others:

- *Leitfaden zur Strategischen Umwelprüfung*
- *Leitfaden zur Vorprüfung des Einzelfalls im Rahmen er Feststellung der UVP-Plflicht von Projekten*
- *Umwelt-Leitfaden zur eisenbahnrechtlichen Planfeststellung und Plangenehmigung sowie für Magnetschwebebahnen – Teil III Umweltverträglichkeitsprüfung Naturschutzrechtliche Eingriffsregelung* (implementation in the context of federal railways, adopted by Eisenbahn Bundesamt)
- *Leitfaden zur FFH-Verträglichkeit prüfung im Bundesfernstraßenbau* (federal motorways)
- *Leitfaden zur Umweltverträglichkeitsprüfung an Bundeswasserstraßen* (implementation in the context of federal waterways, adopted by the ministry of transport)

For this study the latter is of primary relevance. For information on how to perform environmental assessments in the Federal State of Bremen the "*Arbeitshilfe Umweltprüfung in der Bauleitplanung der Freien Hansestadt Bremen (2007)"* is an useful document.

Neither the UVPG nor the BremUVPG define "*significant effect*". However, the *Leitfaden UVP Bundeswasserstraßen* provides some information. In this guidance document different schemes are described on how to evaluate significance for effects on water, vegetation and climate.

More information on the concept of significance can be found in the guidance document "*Leitfaden zur Vorprüfung des Einzelfalls im Rahmen er Feststellung der UVP-Pflicht von Projekten*". This guidance document puts emphasis on the orientating function of the preliminary review process. It also refers to the criteria mentioned in No. 3 of Appendix 2 to the UVPG. These criteria indicate that adverse environmental impacts can be significant on the grounds of their possible extent, their potential cross-border nature, their potential seriousness, their potential complexity, their possible duration, their possible frequency or their possible irreversibility. These criteria always contain a forecast. In that

regard, as part of the preliminary check of the case, the "probability" is not an independent criterion.

In the further application of these criteria the guidance document states that one has to call upon the right specialism in order to render a rough estimate possible. For the assessment of the significance of environmental effects, the effective environmental care defined by the applicable environmental regulations needs to be born in mind as a standard and ultimate goal. Therefore, “significance” should be an exclusively environmental perspective. As far as the specific legislation applicable on the approval of a project also encompasses non-environmentally-related requirements, those requirements do not play any role in the EIA and become only relevant at the occasion of the final decision on the consent.

The mere ascertainment that the project is likely to meet the requirements to obtain a permit is therefore not a sufficient indication that the project, according to the appraisal standards of the preliminary review, may not pose a significant environmental impact. Conversely, a positive preliminary review result (the conclusion that the project may cause significant environmental impact) does not foreclose that the project at the final approval decision could be approved by the competent authority.

As part of the case by case screening exercise the authority has to consider by what extent the environmental effects are prevented by the preventive and mitigating measures proposed by the developer.

The *Leitfaden UVP Bundeswasserstraßen* also provides guidance on how to explain difficulties that may arise during the collection of all relevant information in the ES, as required by § 6 UVPG. The ES should, in particular, mention **(unacceptable) research deficits, lack of scientific knowledge, inadequate forecasting capabilities and to shortcomings in the area of the available data material**. The purpose of this rule is that the ES should make clear which "*general knowledge as well as the generally accepted test methods and reference values*” has served as basis for the assessment. The aspects that could not be solved conclusively should be disclosed.

The *Leitfaden SUP* points out that the ER is only expected to contain information that can be obtained **with reasonable effort and according to the current status of science**. Since any meaningful predictions are afflicted with more or less large uncertainties, the presentation of difficulties in the compilation of the information can be limited to the uncertainties in the forecasting and the knowledge gaps that can change the ultimate decision on the adoption of the plan. A suitable instrument to respond appropriately to such uncertainties, is the monitoring in the sense of § 14m UVPG.

According to EU regulations, the developer is **not obliged to develop new scientific processes or to conduct proper scientific research. Even outsiders methods of which objectors may argue that they need to be applied must not be considered**. Lack of knowledge and gaps can result in

the imposition of conservatory evidence measures in the procedure leading to the adoption of the permit or plan.

6.5.3 Permits

This section analyses the permit granted for the construction of the container Terminal (extension) and the enlargement of the Weser fairway of 15 of June 2004 (CT 4).

As the EIA procedure is integrated in the permit procedure, the approval of the EIA report and the consent for the project relates to the powers of the same authority. In this case, the competent authority is the *Wasser- und Schifffahrtsdirektion Nordwest, Planfeststellungsbehörde*. The *Senator für Bau und Umwelt* is competent for the AA. Therefore, he has to evaluate the compatibility of the project with the conservation goals of the Natura 2000 site. He also rendered advice to the Wasser- und Schifffahrtsdirektion Nordwest on specific issues concerning the Habitats and Birds Directives.

The EIA is integrated in the permit. Hence, the permit is 506 pages long and collates all detailed information. All activities that the developer should perform are described in time (specific periods) and space.

The permit includes important sections on mitigation and compensation measures. The mitigation measures were suggested by the Senator für Bau und Umwelt.[98]

Compensation was a very important aspect in this project, since tidal estuarine habitats were destroyed. The compensation measures included the creation of intertidal and brackish habitats by depoldering. However, the Weser estuary is characterised by space scarcity; there were no suitable locations for the compensation measures. Therefore, the (federal state of Bremen) negotiated with the federal State of Lower Saxony and worked to getter on a solution for compensation. Five sites were identified as suitable. They were checked against the needs of various users (agriculture, coastal protection, spatial planning, etc.) and they had to fulfil the nature development goals. Two locations remained: Grosse Luneplate and Wurster Küste.

During the EIA uncertainties have arisen. Most relevant uncertainty was the insufficiency of knowledge of (the effects on) protected migratory fish, especially twait shad. This uncertainty has been resolved by consulting additional experts and by organising a work shop with several experts on this issue. This second opinion approach eliminated uncertainty to a reasonable extent. Further, the Wasser- und Schifffahrtsdirektion Nordwest imposed as a special permit condition a detailed monitoring scheme to improve the scientific data on these migratory fish species.

[98] The mitigation measures entail e.g. a bubble curtain and only one pile a day (preferably by means of vibration) during the migratory period, as the effects on the protected species, twait shad, were uncertain.

6.5.4 Case law

The decisions on the acceptance of EIA- and SEA-reports, the permit delivery, for projects by the competent authority, and the decisions on adopting plans and programs can be challenged before court. The judicial review of such government decisions relates mainly to the powers of the *Bundesverwaltungsgericht* (the German Federal Supreme Administrative Court). The jurisprudence on cases regarding EIA, SEA and AA has been reviewed and a non-exhaustive overview of some recent cases relevant to this study is provided below:

Judgment BVerwG, 9 A 64.07, 12 August 2001

The possible involvement of other parties in the scoping exercise (§ 5, clause 4 UVPG) was not foreseen in their protection, but had the sole function to assist the competent authority in the proper determination of the likely content and scope of the environmental assessment.

Judgment BVerwG, 4 CN 11.03, 18th November 2004

Deficits in the EIA were likely to affect the overall decision process. The greater weight to environmental concerns was attributed, the more likely it was to be assumed that **methodological weaknesses** in the identification, description and assessment within the meaning of § 2 para 1 sentence 2 UVPG may have had an effect on the planning result.

Judgement BVerwG, 9 B 27.05, 10th October 2006

The EIA Directive required from the project developer that he provide certain substantial information, but the developer was free to choose the form in which he presented this information.

Judgment BVerwG, 4 C 16.04, 7th December 2006

§ 3c para 1 sentence 1 UVPG 2001 gave the competent authority in the context of the screening a discretionary margin with regard to nature conservation. The courts could only exercise limited review power on such decisions.

Judgement BVerwG, 9 A 20.05, 17th January 2007 ('the Halle case")

A**ny effect on the conservation objectives was significant** and had to be considered as "negative impact on the area as such". Whenever the nature conservation issue was to be resolved, whether a road project affected the area

significantly, only the favourable conservation status of the protected habitats and species could represent a suitable criterion, with a view to the conservation objectives of the Natura 2000 site. To consider whether it was certain that favourable conservation status would remain stable despite implementation of the project.

In determining a favourable conservation status of the habitats and species, various nature conservation criteria played an important role. Accordingly, for the protected species, other response and load thresholds were derived as for the protected habitat types. It remains unclear whether, and to what extent, the direct loss of land the construction of a road represented to the habitat, could be justified.

If by protection and compensation measures was to ensure that **a favourable conservation status of protected habitats and species remain stable**, the adverse effects of the project fell below the threshold of significance. The protection concept then allowed the approval of the project.

A necessary part of the protection concept was the arrangement of observation measures (so-called **monitoring**), especially in scientific uncertainty about the effectiveness of protection and compensation measures. To ensure effective risk management, this must be accompanied by **corrective and preventive actions** for the event that the later observations indicate a failure of the positive predictions. Such corrective and preventive measures must be adequate to address the risks to the conservation objectives effectively.

Continuing reasonable doubt on the effectiveness of the protection concept precluded approval of the project. Neither could the AA be completed with a positive result, if the ecological damage caused by the project would merely be mitigated by the protection measures. At best, the conflict-reducing measures should be considered only as compensatory measures, if a deviation decision should be made (Article 6 paragraph 4 Habitats Directive).

Article 6, paragraph three of the Habitats Directive specifies the precautionary principle of Community law (Article 174, paragraph 2, sentence 2 EC) for the territorial protection of Natura 2000. **The precautionary principle does not require to perform the AA on a "zero risk" basis.** Purely theoretical concerns are ruled out as the basis for the assumption of significant adverse effects.

In consideration of the precautionary principle, the concept of “objective probability” or “risk of significant adverse effects” is in principle to be interpreted as the **certainty of harm**. When during the preliminary screening of a project the concern of adverse effects arises seriously, this suspicion may be rebutted only by clear nature conservation argumentation, including a counter-proof.

A rebuttal under the Habitats Directive AA requireed the consideration of the best scientific knowledge and made use of all scientific means and resources required. **This does not mean that the developer would be ordered to perform proper scientific research to address knowledge gaps and**

methodological uncertainties of science. Non rebuttable scientific uncertainties about causal relationships do not have to be per se an insurmountable obstacle to approval if the protection concept has developed an effective risk management. In addition, it is permissible to work with forecast probabilities and estimates. Article 6, paragraph 3 of the Habitats Directive includes not only a substantive standard of review; it imposes also a formal requirement for the regulatory approval process. Core of the permit process is obtaining **technical council of the scientific community in the risk analysis, the forecasting and the valuation**.

To provide the evidence that the best scientific standard has been achieved in the framework of the Habitats Directive, the scientific evidence gathered during the AA must be **clearly documented**. Gaps or other defects in the documentation are to be resolved ultimately in the consent procedure, on the basis of conclusive documentation additions and corrections. This does **not preclude that the consenting authority presents additional documentation and argumentation** to explain the decision taken and its grounds and to rebut objections raised in the context of court proceedings.

If upon consent of a street zoning plan, not all specifically emerging risks that the project triggers for the conservation objectives of the site, have been identified, documented and considered based upon the best scientific knowledge, such defects can render the consent decision void.

Article 6 paragraph 4 of the Habitats Directive is a corollary of the Community law principle of proportionality (Article 5 § 3 of the EC).

Planning alternatives, which can only be realised with an unreasonably large effort, need not to be taken into consideration. A planning variant may no longer be considered reasonable if this alternative amounts to a completely different project, in which the project developer can no longer realise the objectives he is legitimately pursuing. It is only reasonable assess minor deviations of the degree of attainment of the project goals.

Judgement BVerwG, 9 A 64.07, 12th August 2009

Claimed nature conservation law deficiencies or uncertainties of a planning decision, that are identified, mitigated and resolved (nature and extent) by a nature conservation monitoring or a qualified accompanying ecological construction supervision, cannot lead to the annulment of the consent or the linked expropriation decision.

Judgement BVerwG, 9 A 12.10, 14th July 2011

Article 6, paragraph 3 of the Habitats Directive required screening does not need to be performed.

Whenever, resulting from unrecoverable nature conservation, knowledge gaps and uncertainties arise a monitoring could serve as a solution, provided necessary effective response options are available. However, a monitoring does not constitute a legitimate means to compensate for administrative investigation and review deficits.

Judgement BVerwG, 9 A 31.10, 20th December 2011

The planning authority, in the context of a preliminary EIA screening of the case (§ 3c UVPG), disposes of a margin of appreciation for its assessment of potential environmental impacts of the project. The judicial review of the outcome of the screening was therefore limited to a plausibility check.

6.6 Conclusions

In Germany, the EIA and SEA Directives are closely linked. Both European Directives have been implemented by the same federal act, the UVPG. For the Federal State of Bremen the UVPG is complemented by the BremUVPG. This environmental assessment regime is a **precise implementation** of the EIA and SEA Directives. The same applies to the nature conservation regime, implemented by the BNatSchG and, specifically for Bremen, the BremNatSchG. These acts use almost exactly the same wording as the Birds and Habitats Directives.

The existing of uncertainties in relation to EIA, SEA and AA are acknowledged in the legal provisions and guidance documents. The environmental assessment and the AA obligations have been integrated into existing project permits and plan adoption procedures. The consequence of such integration is that **the competent authority varies** according to the law that applies to the permit or plan concerned and the territory on which the project is developed or the plan is applied, rather than attributing a substantial role to a specialised central authority.

The *Eingriffsregelung* was introduced by the BNatSchG in 1976. It aims at avoiding, mitigating or compensating/replacing the negative effects caused by activities (construction measures, even nature compensation measures, etc.) on nature or landscapes. The most relevant provisions are § 14 and 15 of the BNatSchG and § 1a and 35 of the Baugesetzbuch (BauGB). As mentioned before each *Bundesland* disposes of specific sets of provisions implementing and complementing the federal nature conservation legislation.

The developer and the consenting authorities are obliged **to communicate extensively on uncertainties**. Communicating concisely, consistently and using relevant policy on the uncertainties with which a project or plan is confronted is beneficial to its implementation.

7 The Netherlands

7.1 Introduction

In the Netherlands the obligations under the EIA and SEA Directives (environmental assessment framework for projects and plans/programmes) are implemented into the *Wet Milieubeheer* (Environmental Management Act), the main Dutch law regarding environmental protection. Based on this act, projects and plans that exceed certain thresholds, or could lead to significant effects on protected sites, require a preliminary environmental assessment to obtain inter alia an *omgevingsvergunning*, which is an all-in-one permit for physical aspects according to the *Wet Algemene bepalingen omgevingsrecht* (Act General Provisions on the Physical Living Environment). The obligations pursuant to the Birds and Habitats Directives are implemented by the *Flora- en Faunawet* (Flora and Fauna Act) and the *Natuurbeschermingswet 1998* (Nature Conservation Act 1998). While the general system of (strict) protection of species is implemented into the Flora- en Faunawet, the protection of habitats (designation of SPAs/SACs and conservation measures inter alia by an AA) is transposed into the Natuurbeschermingswet 1998. Due to its social-geographical situation, the Netherlands needs to put significant effort in conserving the environment and biodiversity of the country. Therefore, government and private parties deal very frequently with the obligations under the Directives and/or the implemented national legislation.

In the next two sections the legislation concerning environmental assessment (*section 7.2*) and nature conservation (s*ection 7.3*) is outlined. Taking in consideration the scope of the study, we will focus on the legal and procedural aspects of (and uncertainty topics within these aspects). The section thereafter shows how this legislation applies to estuaries and port related activities (*section 7.4*). Before presenting some conclusions (*section 7.6*), all Dutch legal provisions, excerpts of guidance documents and case law relevant to the question how to deal with uncertainties are gathered in an overview (*section 7.5*).

7.2 Environmental assessment

7.2.1 Regulatory framework

The statutory mechanism of environmental assessment is incorporated into Chapter 7 of the *Wet Milieubeheer*. An **environmental assessment** (EIA and SEA) is mandatory for all plans and projects that include activities of a certain type and size that are listed in a governmental decree called the *Besluit Milieueffectrapportage*[99] (abbreviated as *Besluit m.e.r.*). This legislation provides the framework for the procedure, the requirements and the content of EIA and SEA. A distinction is made between a SEA (*plan-m.e.r.*) pursuant to the SEA Directive and an EIA (*besluit-m.e.r.*) according to the EIA Directive.

[99] Besluit van 4 juli 1994, houdende uitvoering van het hoofdstuk Milieu-effectrapportage van de Wet milieubeheer, Stb. 1994, 540

Without interfering with the decision making process by the competent authorities, the Netherlands Commission for Environmental Assessment (NCEA) (an independent committee of experts established by the Dutch government) advises the competent authorities on content and quality of the SEA and EIA reports (obligatory for a SEA) and (on a voluntary basis) also on the scope and level of detail. Every plan or project for which an EIA or SEA has been prepared, must be evaluated by the competent authorities during or after implementation as stated in Article 7.39 of the Environmental Management Act.

In reaction to financial and economic crisis, the government adopted the *Crisis- en herstelwet* (Crisis and Recovery Act) in March 2010. The main objectives of this Act are to stimulate innovation and to minimize the duration of the phase of appeal of development projects by concentrating the legal process into one application – one decision – one appeal. The Act has also changed the provisions on EIA by omitting for specifically appointed projects (listed in Annex II of the Act) the obligation to describe the reasonably considered alternatives, and the mandatory advice of the NCEA (see step 9 in *Section 7.2.2.2*). Originally the Act was meant to be temporarily (until 1 January 2014) but the government wants to postpone this expiration date until the entry of a new Environment Act. The new system will still require an EIA or SEA to inform the decision making on plans and permits for certain activities.

7.2.2 Environmental Impact assessment

7.2.2.1 Screening

Pursuant to the Environmental Management Act, the national government designates activities which are likely to have significant environmental impacts, or when the authorities concerned needs to assess if these activities are likely to have significant environmental impacts. These activities are listed in the Annex by the Besluit m.e.r. which consists of three Parts (A, C and D).

In order to create a clear understanding of the EIA/SEA framework, both law and derogating decree define the most important terms. These definitions are highly connected to the definitions under the SEA and EIA Directives. Part C and D of the Annex determine, to a large extent, the scope of the Dutch environmental assessment framework as follows:

- Part C includes activities which (given their type and size) are likely to have significant environmental impacts and therefore an environmental impact statement is mandatory preliminary to the permitting procedure.
- Part D enumerates activities which in particular circumstances can have negative impacts on the environment. By means of a (preliminary) screening (*m.e.r.-beoordeling*) these activities are case by case investigated to determine whether or not they are likely to have significant environmental impacts in relation to the particular circumstances of the case. If such effects cannot be excluded an EIA is also mandatory.

The listed activities in both Parts connect highly to the Annexes I and II of the EIA Directive. Both Parts enumerate for each activity, which plans and/or decisions an environmental assessment (Part C) or screening (Part D) is required before the plan can be established or the permit can be granted. Due to a recent change of legislation (April 2011), the Decree also states that even if an activity does not meet the thresholds in Part D, a preliminary screening is mandatory if - based on the selection criteria in Annex III of the Directive - significant environmental impacts cannot be excluded.

This change was the direct result of the ruling of the Court of Justice of 15 October 2009 (C-255/08) in which the Netherlands was condemned for incorrect implementation of the EIA Directive. The thresholds of the D-list focused on the extent of the activity (e.g. a business park of 75 hectares or more) and did not take into account the other criteria in Annex III of the EIA Directive as the location of the project and the characteristics of the potential impact.

The most common plans and permits are the local land use plan (*bestemmingsplan*), the all-in-one permit for physical aspects (*omgevingsvergunning*) and the permit according to the Water Act (*waterwetvergunning*). In case a plan contains the framework for activities which are enumerated in Part D of the Annex but does not meet the thresholds, the authorities need to investigate whether or not each of this activities, given the circumstances, nevertheless are likely to have significant adverse environmental impacts (screening). If those impacts could not be excluded preliminary to the establishment of that plan a SEA is mandatory.

7.2.2.2 EIA procedure

The objective of an EIA/SEA is to describe the potential environmental impact of a project or plan to inform the final decision making process. Due to that role in the Netherlands, the procedure of SEA/EIA is coordinated with the procedure for the relevant plan or permit (see fig. 7-1). There are two types of procedures:

1. an extensive procedure: mandatory for all plans/programmes that provide the framework for activities for which an EIA is mandatory and for complex projects In all cases projects that need (also) an AA pursuant to the Nbw 1998 (see paragraph 7.3.2.3.) or for which public bodies are both competent authority and proponent;

2. a limited procedure: for certain projects.

These procedures consist of the following steps (red steps are not mandatory if the proponent is also the competent authority).

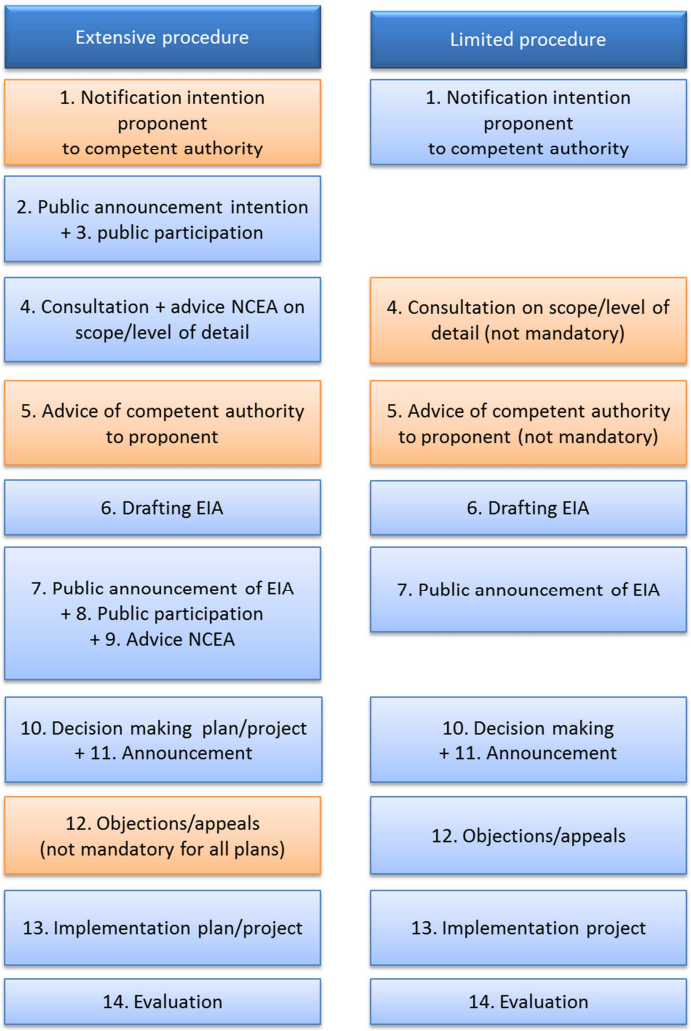


Figure 7-1 Overview EIA (and SEA) procedures in the Netherlands

7.2.2.3 Content EIA

Whether an EIA is mandatory is decided upon using the criteria and thresholds in the Besluit m.e.r., based on the outcome the content of the EIA report has to meet the legal requirements in Article 7.23 of the Environmental Management Act. Pursuant to that provision the following information is required:

- Aim: a description of the objectives of the proposed activity;
- Proposed activity & alternatives: a description of the proposed activity and **reasonably to consider alternatives**, including the reasons for the choice of the considered alternatives.[100]
- Relevant plans and decisions: in case of a plan a resume of earlier adapted plans that are relevant to the intended activity. In case of a decision, an indication of the decision(s) and a resume of the earlier decisions of competent authorities who are relevant to the intended activity;

[100] In case of an EIA the report shall also describe how the proposed activity will be performed.

- Current situation and autonomous development: description of the current situation of the environment where the intended activity or described alternatives are likely to be affected and the likely evolution of that environment, if that activity and the alternatives should not be undertaken;
- Effects: a description of the potential environmental impact that the intended activity and the alternatives described may have, including a justification of how these impacts are identified and described;
- Comparison: a comparison of the expected effects of the proposed development on the environment and each of the considered alternatives;
- Mitigation and compensatory measures: a description of the measures envisaged to prevent, reduce and, where possible, offset any significant adverse effects on the environment;
- **Gaps in information: an overview of the gaps in the descriptions of the existing state of the environment and environmental consequences due to the lack of necessary data;**
- Summary: a non-technical summary on the aforementioned aspects; and
- Including the information appointed in Annex IV of the EIA Directive, if this information is not yet been given in the aforementioned parts of the EIA report.

7.2.2.4 Scoping

The aforementioned provisions require that in the EIA report, the reasonably to consider alternatives must be described. The same applies to the SEA report (pursuant to Article 7.7 of the Environmental Management Act. However, the Act **does not define** when an alternative should be deemed '*reasonably to consider*'. This leaves room for interpretation: what is reasonable? A number of considerations are relevant to this subject. In general, the alternatives must be realistic, technically feasible, affordable, and in principle solve the problem. Some information on the scope of alternatives, include:

- **Contribution to the decision**
  An EIA is always performed to make a decision. For an EIA to be able to contribute to making choices for the formal decision, it is desirable to develop alternatives to take into account the relevant issues. What choices should the decision make possible? Involve this question when determining whether an alternative in the EIA should be included.

- **Achievable**
  In principle, only alternatives that can be realized within the competence of the developer should be included. That is to say that a (private) developer should be able to realize the alternative and thereby does not depend on other parties or authorities. This is less clear for a SEA. In that case, it makes sense to consider the possibility of involvement of other (public) parties to encourage or enforce, and identify what instruments may be available. But in both cases, it is precisely the challenge to search for alternatives that improve planning and reduce potential environmental impacts, such as investigating an innovative technique to reduce emissions.

- **Technically feasible and affordable**
  The alternatives in an EIA must be technically feasible. This means, for example, that a possible route for a road must meet the technical requirements for road design. The technical feasibility may also depend on regional characteristics and limitations (e.g., spatial planning) and conditions resulting therefrom. Obviously, also the affordability of an alternative plays a role: disproportionately costly alternatives are unrealistic and should therefore not be examined. However, handling costs as an argument must be taken carefully as they often give rise to strong reactions. It is therefore wise to explain in detail the boundaries of such decisions.

- **Relevant in view of potential environmental impact**
  From the objectives of the potential environmental impact, it is important that an alternative is relevant because of possible (in relation to other alternatives) different environmental consequences. It makes no sense to develop new alternatives that will not lead to significantly different environmental impacts.

- **Meet the objectives**
  An alternative should in principle meet the objectives of the plan or project, but in cases that a solution towards the goal is largely realized (but not quite) and with significantly less environmental impact, such an alternative may be desirable to study.

7.2.2.5 Evaluation and use of the EIA

A monitoring management plan is required to be part of the plan or project. With the cooperation of the proponent, the competent authority is mandated to conduct a post decision evaluation and the results shall be published (and if mandatory communicated with the EC). If an activity in a plan can only be realised after a preliminary (permitting) decision, the obligation to evaluate the EIA lies on the authority that had decided on the permit.

7.2.3 Strategic Environmental Assessment

In the Netherlands, the regulations on EIA and SEA are closely linked. Both Directives have been implemented by the same Act and regulations. Moreover, the term “environmental assessment” includes EIA and SEA. Therefore, most provisions mentioned in *Section 7.2.2* apply *mutatis mutandis* also to SEA. The following sections focus on some differences between EIA and SEA.

7.2.3.1 Screening

In case a plan or programme contains the framework for activities which are enumerated in Annex C and D of the Besluit m.e.r. (if these activities meet the given criteria and thresholds), the authorities need to assess by means of a SEA if the plan is likely to have significant adverse environmental impacts before the authority decide upon the establishment of the plan. Note that such

a plan can never be subject to a preliminary screening (in contrary to a project listed in Annex D of the Besluit m.e.r.).

7.2.3.2 SEA procedure

The procedure for the establishment of a plan for which a SEA is mandatory, is always dressed up according to the extended procedure (see Fig. 7-2). Due to the fact that the establishment of plans is restricted to authorities the red steps are always included.

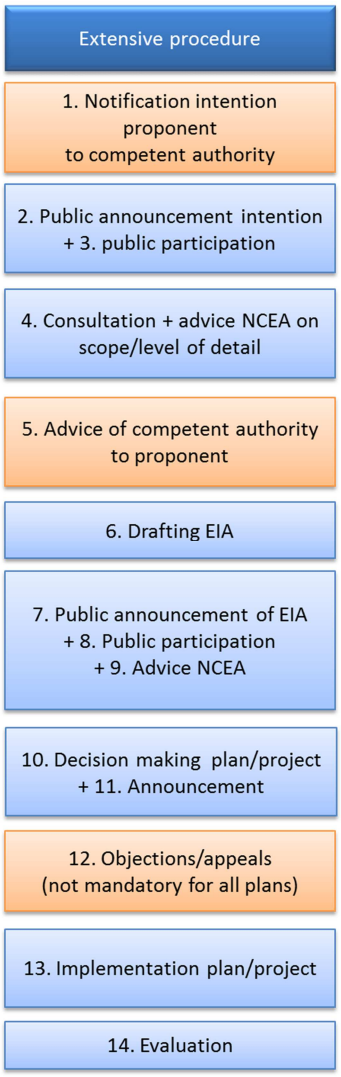


Figure 7-2 Overview of SEA procedure in the Netherlands

7.2.3.3 SEA content

The content requirements of the SEA report are the same for plans and programmes, apart from some obvious differences (see content requirements in section 7.2.2.3). However, as the scope and level of detail of a plan can vary a lot, this also applies to the SEA. Pursuant to Article 7.7 Wet milieubeheer, the

competent authority, is allowed to take into account the level of detail and the stage of decision making in which the plan is in and, if any, the place that the plan occupies in the hierarchy of plans. The competent authorities are also allowed to use other ERs that meet the content requirements.

The SEA obligation applies also to plans and programs for which, due to their potential impact on Natura 2000-sites, an AA needs to be carried out (see below).

7.2.4 Overview environmental assessment

The EIA- and SEA procedures, their similarities, differences and interrelations, as well as their correlations with the EIA and the SEA Directives are depicted in Figure 7.3.

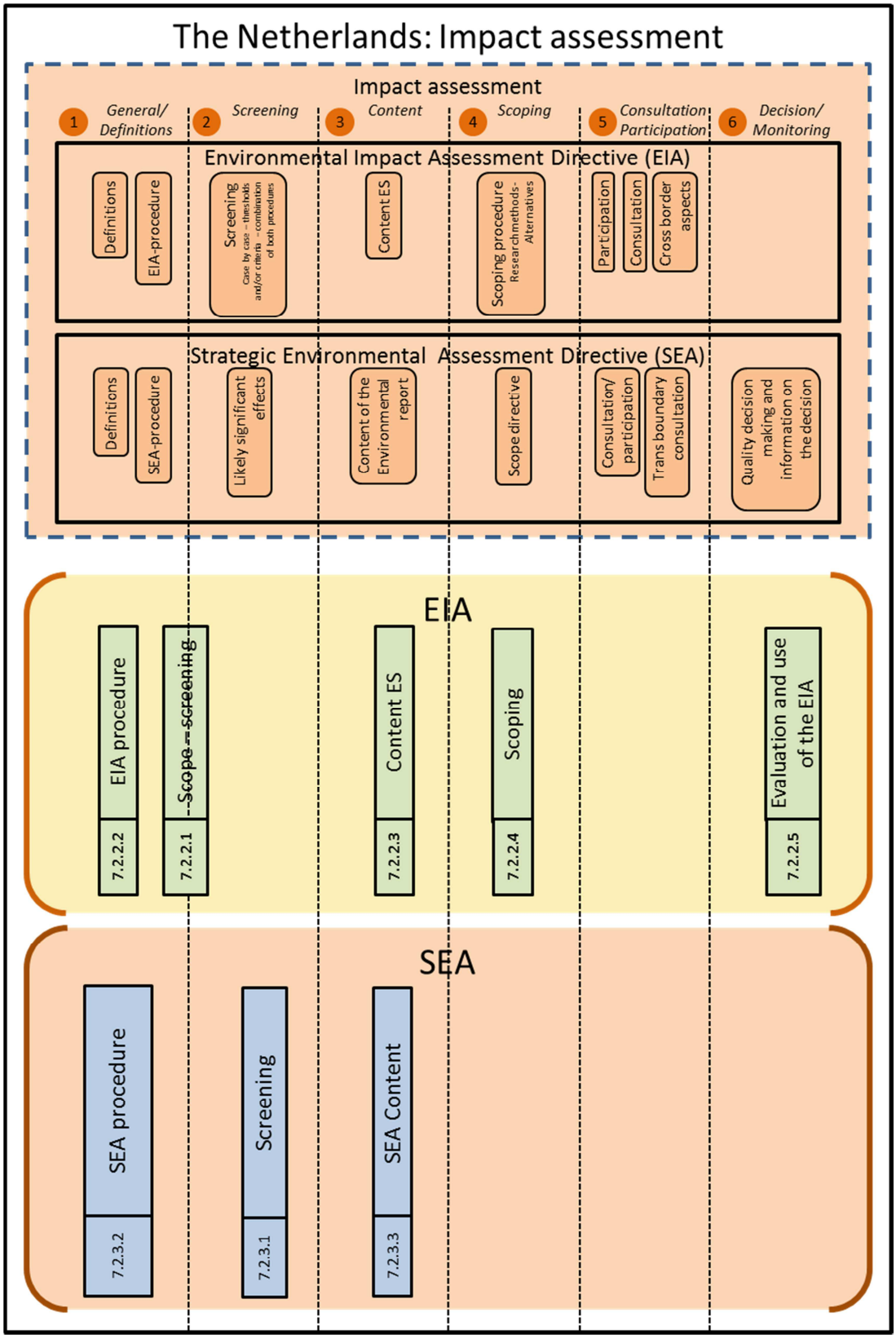


Figure 7-3 **Overview of the requirements for Impact Assessment in the Netherlands**

7.3 Nature conservation

7.3.1 Regulatory framework

The obligations pursuant to the Birds and Habitats Directives are implemented by the Natuurbeschermingswet 1998 (Nature Conservation Act 1998) and the Flora- en Faunawet (Flora and Fauna Act). The protection of habitats (designation of SPAs/SACs and conservation measures inter alia by an AA) is transposed into the Natuurbeschermingswet 1998 and the general system of (strict) protection of species is implemented into the Flora- en Faunawet.

7.3.2 Protection of habitats

7.3.2.1 Designation of SPAs (and SAC)

The provisions in the Birds and Habitats Directives regarding the protection of habitats, are transposed into the Natuurbeschermingswet 1998 (Nbw 1998). The Dutch Government has established a guideline on the application of the Natuurbeschermingswet 1998[101]. The guideline provides a practical set of recommendations on the application of the Act.

Article 10a Nbw 1998 lays down the authority to designate SPAs pursuant to the Birds Directive and SACs in relation to the Habitats Directive. Together these areas form (the Dutch part of) the Natura 2000 network. In the Netherlands on October 20 2011[102], 163 sites were designated (although a great part of these designations are not yet final), to which not only the geographical area of each site is defined, but also their priority natural habitat types and/or priority species, and the necessary conservation measures.

With regard to these designations, the authorities have the obligation to take appropriate steps to avoid the deterioration of natural habitats and the habitats of species and disturbance of the relevant species, in so far as such disturbance could be significant in relation to the objectives of the Directives. The measures taken to implement these obligations can be divided into:

- Active conservation measures;
- Preventive conservation measures and;
- Procedural safeguards.

7.3.2.2 Active conservation measures

The first consequence of the designation of a Natura 2000 site is the obligation to take conservation measures. For each Natura 2000 site, a **management plan** (beheerplan) is being prepared in which the conservation objectives are detailed in terms of size, location and time. The measures that need to be taken to achieve these objectives are also identified, in relation to the existing

101

http://www.minlnv.nl/portal/page?_pageid=116%2C1640321&_dad=portal&_schema=PORTAL&p_file_id=14853

102 Beheerplanprocessen Natura 2000 Voortgangsrapportage nr. 13, 26 oktober 2011, Regiebureau Natura 2000.

use in and outside of the area in so far as that use is relevant to the conservation objectives. Pursuant to Article 19a (2) Nbw 1998, the management plan can also describe which operations and developments in and outside the site will not endanger the conservation objectives (and under which conditions and restrictions), taken into account the conservation measures that will be taken. Under those conditions and restrictions the activities require no permit. In this context there are two possibilities:

- Use without permit is allowed when, based on independent data, it can be excluded in advance that this use, taken into account the conservation objectives of the area, will have significant effects;
- In the case that such effects cannot be excluded, these activities can be incorporated in the management plan when an AA points out that these activities (in some cases under conditions and restrictions) will not affect the natural characteristics of the site.

The assessment of future developments in the context of a management plan can be difficult because of the fact that it's hard to determine in advance the significance of future ecologic effects and circumstances, including the cumulative consequences of projects that need to be taken into account. Apart from the financial aspects and the monitoring in the management plan, the economic, social, cultural, regional and local requirements are also taken into consideration. The management plan, that must be submitted three years after the final designation of the area, is considered to be an important instrument for the regulation of existing use. Based on the thought that during the establishment of the management plan, the effects of the existing use can be assessed, including the question under which conditions the use can be continued without permit. The planning horizon of a management plan is six years, with the possibility to extend the validity to another six years. Although the Nbw 1998 contains no provisions on midterm review, this should be possible, especially if this review is needed in the context of the conservation and protection of the site.

7.3.2.3 Preventive conservation measures

Member States are obliged to avoid deterioration of habitats and the significant disturbance of species in the designated areas and to assess the effects of new projects and plans.

Avoidance of deterioration/disturbance

The provision laid down in Article 6(2) of the Habitats Directive is transposed into Article 19d Nbw 1998. It states that preliminary consent is needed for any plan or project that could lead to the deterioration of natural habitats and the habitats of species, and disturb the relevant species, in so far as such disturbances could be significant in relation to the objectives of the Directives.

The Habitats Directive does not define the terms plan and project, but according to case law[103] for these definitions, the second indent of Article 1(2) EIA Directive is of importance:

- the execution of construction works or of other installations or schemes; and
- other interventions in the natural surroundings and landscape include those involving the extraction of mineral resources.

As a result of this definition, activities which have been carried on periodically for many years, but for which a licence is granted annually for a limited period. Each licence entails a new assessment both on the possibility of carrying on that activity and of the site where it may be carried on, fall within the concept of plan of project within the meaning of Article 6 (3) of the Habitats Directive.

Not only in case of new projects or operations a permit pursuant to Article 19d Nbw 1998 is needed, also the existing use can be of need of preliminary permitting. As set out in the paragraph on the management plan, the existing use does not require a permit when such use is in line with the management plan of the site. The exception to this is when regarding this use according to the Directive's preliminary assessment is mandatory. In that case the actions need to be assessed on a case-by-case basis to obtain a permit or in an AA of the management plan. Article 19da of the Nbw 1998 gives an opportunity to exclude, under strict conditions, certain operations from the prohibitions stated in Article 19d Nbw 1998. Therefore the definition of existing use in Article 1(n) is important and the reference date for the determination of existing use which is stated on 1 October 2005.

Assessment of new projects

Pursuant to the Articles 6 (3) and (4) of the Habitats Directive, the Articles 19f to 19h Nbw 1998 establish a procedure intended to ensure, by means of a preliminary examination, that a project which is not directly connected with or necessary to the management of the site concerned but likely to have a significant effect on it is authorised only to the extent that it will not adversely affect the integrity of that site. In order to assess these effects Article 19f Nbw 1998 states that an AA needs to be carried out. The AA can be part of an EIA or SEA (if these assessments are required by the Besluit m.e.r.) (*Section 7.2.2*). Although the text of Article 19f in connection with Article 19d suggests that the AA is not necessary for existing use (only for new projects). From the case law mentioned earlier (C 127/2) it is clear that a 'new' project in this case has to be defined in terms of new in relation to the moment of the public consent.

If an AA is required, then public consent can only be given when by means of the AA the national authorities have ascertained that the project either alone or in combination with other projects will not adversely affect the integrity of the

[103] C 127/2 – "Waddenvereniging and Vogelbeschermingsvereniging

site (Article 19g Nbw 1998). In order to do so, an assessment of alternative solutions should be made.

If no alternative solutions exist and adverse impacts remain there are two options:

- for sites that host priority habitats and species, it is necessary to consider whether or not there are human health and safety considerations of environmental benefits from the project or plan; and
- for other sites there must be ensured whether there are other IROPI.

Article 19h Nbw 1998 states that if a permit is granted for a project that must be carried out for IROPI, the national authorities shall connect at least the requirement that compensatory measures should be taken. If an insofar as these measures are applied to ensure the conservation objectives, this result should be achieved at the time the significant impacts occur, unless it can be shown that this is not necessary. The Minister informs the EC on the compensatory measures.

Assessment of new plans

The aforementioned provisions in Article 19f to 19h Nbw 1998 see exclusively on the assessment of projects. The obligations in the framework of plans are transposed into Article 19j Nbw 1998. The competent authority shall take this Article into account when establishing a plan which, according to the conservation objectives for a SAC or a proposed site, can lead to deterioration or disturbance and adversely affect the integrity of the site. Just as with projects an AA needs to be carried out for plans which are not directly connected with, or necessary to,the management of the site concerned but which are likely to have a significant effect on it and when the plan meets the requirements in the Articles 19g and 19h Nbw 1998.

As the Nbw contains no definition of the term ‘plan’, it is sometime questionable whether a plan should be considered as pursuant to Article 19j Nbw 1998. Article 19j Nbw 1998 refers to a decision on the establishment of a plan and in paragraph 2.3 of the general guideline on the provisions in the Nbw 1998 several types of plans are mentioned, but each of them is required by legislative provisions, whether Article 6 contains no such limitation and case law by the Court of Justice[104] shows that the obligation under the Habitats Directive extend (also) to plans that may have considerable influence on development decisions and therefore is not limited to plans with a legal basis.

7.3.2.4 Derogation and compensation

In order to restore the ecological function of the Natura 2000 network, compensatory measures are mandatory. Compensation should bring a benefit to the realisation of the conservation objectives. Pursuant to the Habitats Directive, compensatory measures should relate to the species and habitats

[104] C-6/04, Commission v. United Kingdom

which are likely to be adversely affected by a project or plan. Therefore only ecologic criteria are given to determine whether or not a certain compensatory measure is sufficient.

7.3.2.5 Evaluation mechanism and procedure

The permitting system of the Nbw 1998 consists of the following key elements which more or less derived from Article 6 of the Habitats Directive. The following elements should be taken into account in every assessment:

- Reference situation;
- Scale of the assessment;
- Definition of a plan or project;
- Significance;
- Temporarily of effects;
- Accumulation;
- Mitigation and netting;
- External force;
- Alternatives;
- IROPI;
- Transboundary effects (if applicable); and
- Compensation.

In order to assess a plan or project one needs to follow three phases, as illustrated in Figures 7-5 to 7-7.

1. Orientation (pre-assessment)

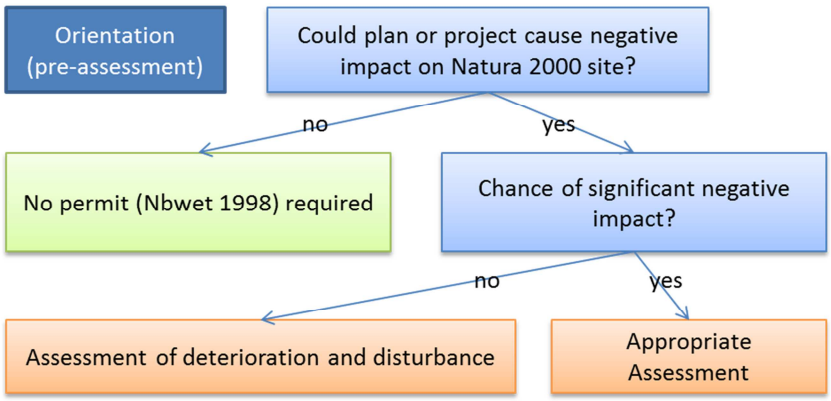


Figure 7-4 Flow chart for pre-assessment of a plan or project

2. Assessment of deterioration or disturbance

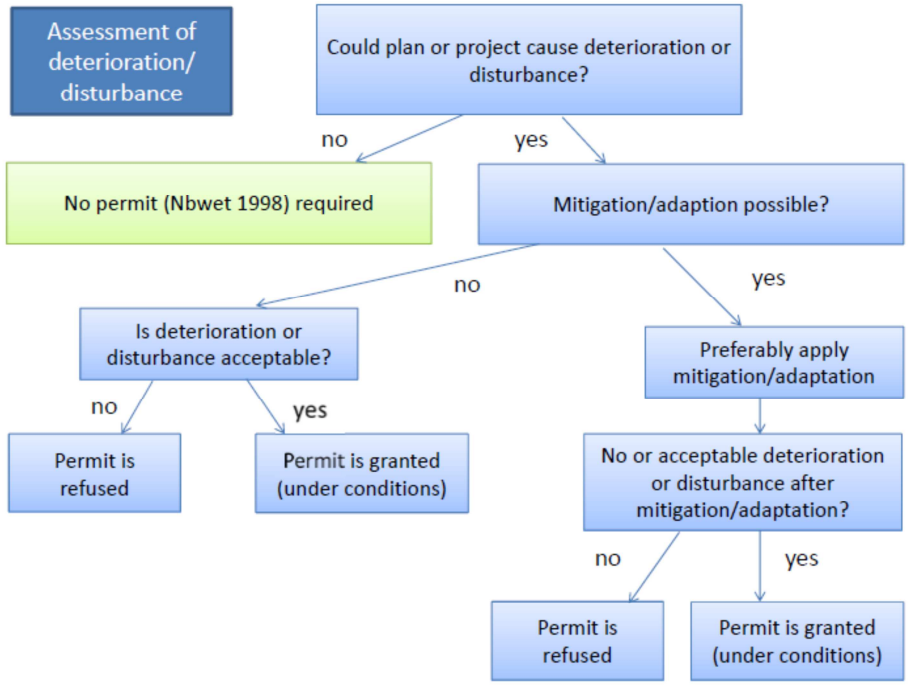


Figure 7-5 Flow chart for assessment of deterioration or disturbance of a plan or project

3. Appropriate assessment

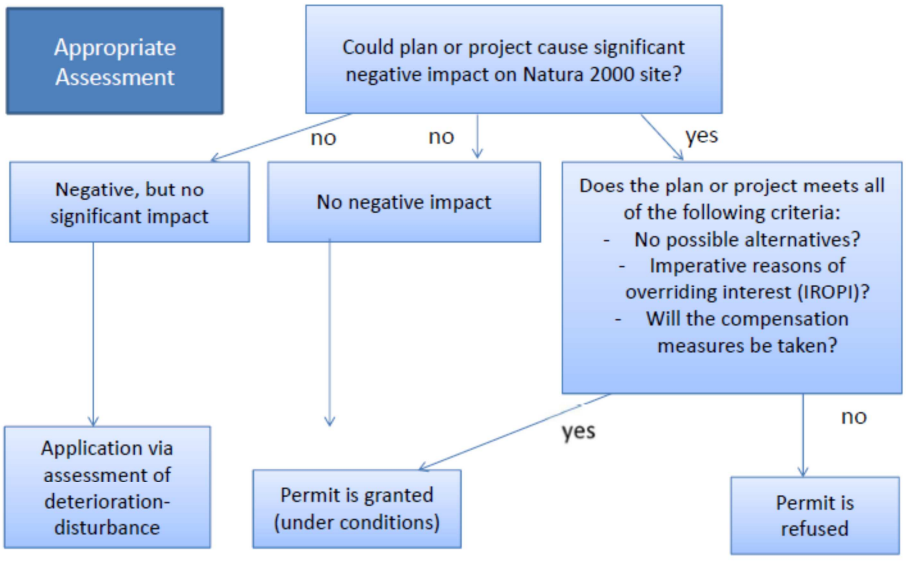


Figure 7-6 Flow chart for Appropriate Assessment of a plan or project

7.3.3 Protection of species

The protection of species is transposed into the Flora- en faunawet (Ffw) and derogating decrees. This protection concerns all species of wild birds occurring in European territory (pursuant to the Birds Directive) and certain species of animals and plants. This category consists of all species listed in Annex IV of the Habitats Directive, but also some other species (not protected by the Directive) because of implementing international agreements such as de CITES-convention (Convention on International Trade in Endangered Species of wild flora and fauna).

All prohibitory provisions of the Directives (inter alia deliberate killing or picking) are transposed into Articles 8 to 18 of the Ffw. Regarding the implementation of Article 9 of the Birds Directive and Article 16 of the Habitats Directive, the derogation possibilities are implemented by Articles 65, 67, 68 and 75 of the Ffw. With respect to the subject of this study, Article 75 Ffw is of particular importance as it lays down the basis for all exemptions and dispensations to the prohibitions. An exemption is a generic exception to the prohibition. If the requirements of the exemption regulations are met, the specific case requires no further consideration. Otherwise the specific case needs to be assessed whether it meets the requirements for dispensation. The article explicitly states that exemptions and dispensations can only be granted if there is no other satisfactory solution and, in case of species listed in Annex IV of the Habitats Directive or species of wild birds occurring in European territory, if they don't endanger the favourable conservation status of a species.

The provisions for exemptions and the procedure to obtain dispensation is described in a governmental decree, the *Besluit vrijstelling dier- en plantensoorten* (Decree dispensation animal and plant species).

Exemption

Pursuant to this Decree, the protected plants and animals are divided into three categories: common species, other species and strictly protected species. Each category has its own assessment test for granting an exemption as presented in Table 7-1.

Table 7-1 Categories of Decree dispensation for animal and plant species

Protected flora and fauna	With code of conduct	Without code of conduct
Common species	General exemption	General exemption
Other species	Exemption	Light assessment
Strictly protected species	Comprehensive assessment*	Comprehensive assessment

* For works in forestry, agriculture or nature an exemption.

Common species

These species are listed in the Flora and Fauna and therefore protected. However, they are common species in the Netherlands. Disturbance of these species in the execution of work within the framework of continuous

maintenance, management or use, or spatial development or establishment, is therefore a general exemption. Requesting an exemption is not necessary.

Other species
When species from the second category will be negatively affected, there are two possible situations, the work is being done with or without a "code of conduct". The introduction of this code was a major change in the Flora and Fauna Act in 2008. The code of conduct describes how work is performed in a way that prevents damage to protected species or reduced to a minimum. When the executor of the work acts according to the code of conduct an exemption is mandatory. However, this must be proved and the code should be approved by the Minister of Environment and Infrastructure before it receives legal status.[105]

It should be noted that there are serious concerns whether or not this framework with a code of conduct fully meets the requirements under the Birds and Habitats Directives, in which it is stated that derogation is only allowed where there is no other satisfactory solution because of the fact that the Dutch framework for some works provides a (general) exemption. This means that there is no preliminary screening on other possible solutions.

When not acting according to a code of conduct, a light assessment is applicable on the exemption request. It must be demonstrated that the work should not lead to endangering the protected species. It is important that it can be shown that at an early stage of planning the animals and plants in the area are taken into account.

Strictly protected species
An exemption application for strictly protected species is only accorded after a comprehensive assessment. Not only must it be shown that the work does not put the survival of the species at risk, it must also be shown that there is no satisfactory alternative to the activity and that there are IROPI (including those of a social or economic nature) or environmental purposes. Activities which are not related to the management of nature must also be performed carefully. This means that no "material impact" on protected species is acceptable and that damage to the species is prevented as much as possible, for example by taking mitigating and/or compensatory measures.

Birds
All birds in the Netherlands have a strictly protected status. Work involving the killing or disturbing birds, or disturbing their nests or solid rest accommodations is prohibited. The nests of birds who build a new nest every year are protected during the breeding season. Some birds, like owls or woodpeckers, use the same nest every year. These nests are protected the whole year.

[105] The Port of Rotterdam has an approved code of conduct that is used in the works on Maasvlakte 2.

Duty of care
Besides the above requirements for protected species, all species(plants and animals) benefit from the so-called duty of care. The duty of care requirement implies a decent human action in which sufficient care is observed for wild plants and animals as effectively as possible.

Dispensation
The Ffw Act has the option of exemption. The granting of exemptions is conducted, in part, by the province and partly by the Ministry of Environment & Infrastructure. There are a limited number of grounds for exemption. The provinces shall evaluate the exemption request as follows:

- public health and safety
- traffic safety
- damage to agriculture and fisheries
- damage to flora and fauna

The Ministry of Environment & Infrastructure reviews the exemption request as follows:

- research and education
- repopulating and reintroduction
- IROPI

When for a certain activity or operation an all-in-one permit for physical aspects is mandatory, the provisions in Section 2a of the Ffw are of importance. Pursuant to the provisions for these activities, the permitting procedure in the *Wet algemene bepalingen omgevingsrecht* needs to be followed; whereby the input of the national government on the permit is ensured (see Figure 7-8).

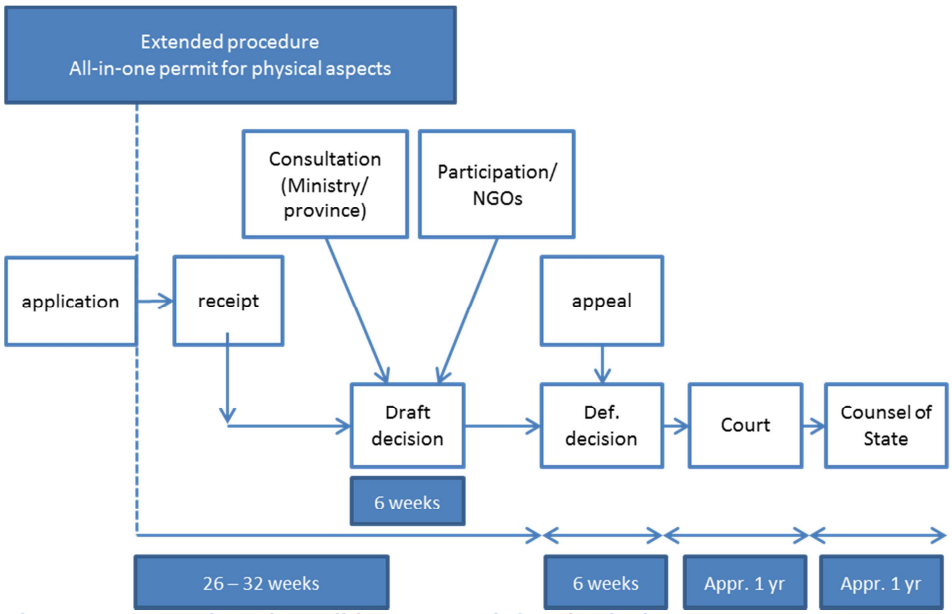


Figure 7-7 Flow chart all-in-one permit for physical aspects

7.3.4 Overview nature conservation

The different nature conservation requirements (including AA), their similarities, differences and interrelations, as well as their correlations with the Birds and Habitats Directives are depicted in Figure 7-9;

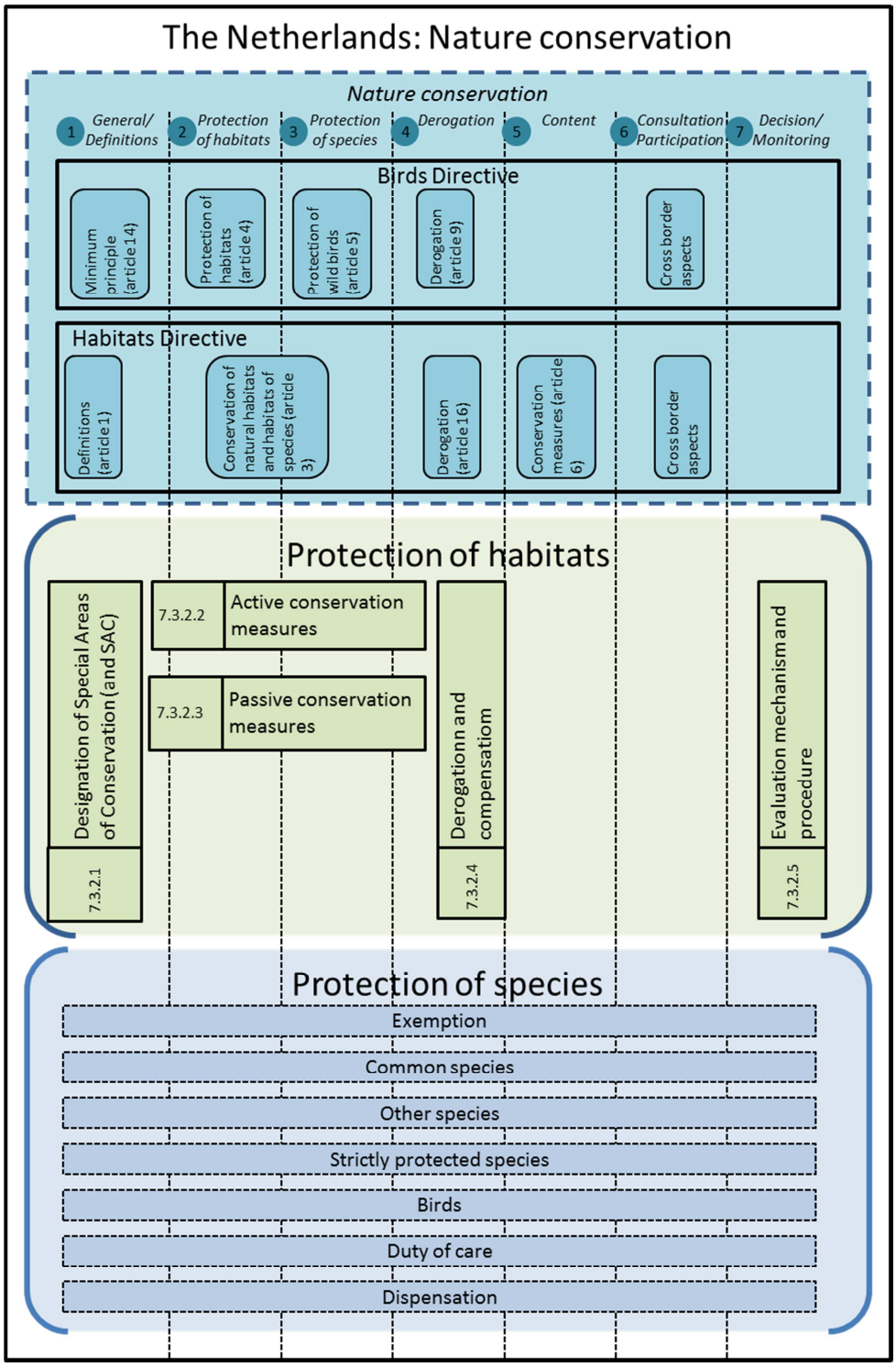


Figure 7-9 Overview requirements Nature conservation in the Netherlands

7.4 Estuaries and port related activities

This report focuses on uncertainties in the context of the realisation of port related activities in estuaries:

- dredging operations, including capital dredging, maintenance dredging, sand mining and disposal of dredged material within the estuary; and
- construction or extension of port infrastructure, including construction of quay walls and poldering/reclaiming land from the estuary.

Depending on the physical characteristics of the activities, the following categories of the Annex (Part C) of the Besluit m.e.r. might be of importance:

- The construction of motorways and express roads (1.2);
- The construction, alteration or extension of a railroad for long distance railway traffic (2);
- The construction, alteration or extension of an inland waterway for vessels carrying more than 1,350 tons (3); and
- The construction, alteration or extension of ports for vessels carrying more than 1,350 tons, piers for loading and unloading (excluding ferry piers), connected to land and outside ports, which can receive vessels of over 1,350 tons (4).

On the list of projects for which by means of a screening is to be considered if an EIA needs to be performed the following activities of the Annex (Part D) might be relevant:

- The modification or extension of a motorway or express road (1.1);
- The construction, alteration or extension of transfer stations or facilities for the transhipment between modes (2.1);
- The construction, alteration or extension of inland waterways (3.1);
- The construction, alteration or extension of works of canalization or to minimize flooding, including primary levees and dikes (3.2);
- The construction, alteration or extension of inland ports, sea trade ports, fishing ports or the modification or extension of piers for loading and unloading (excluding ferry piers), connected to land and outside ports, which can receive vessels of over 900 tons (4);
- Reclamation of land in the sea or the change or extension thereof (5);
- The construction, alteration or extension of an industrial complex of more than 75 hectare (11.3);
- The construction, alteration or extension of coastal works to combat erosion of the coastal marine works that can be changed by the construction of dykes, moles, jetties and other sea defence works, excluding the maintenance or reconstruction of such works (12);
- The creation, modification or extension of a facility provided for the disposal of sludge and dredged or deep underground market of non-hazardous waste with a bulk capacity of 250,000m^3 or more (18.3); and
- The extraction of minerals by dredging the sea, lake or river bottom or the modification or extension thereof (29.2).

7.5 Dealing with uncertainties

Dealing with uncertainties is complex. However, legislation and regulations, official guidance documents and case law provide some systems on how to deal with uncertainty issues. The following section aims to present the information in the Dutch situation.

7.5.1 Legislation and regulations

Pursuant to Chapter 7 of the Environmental Management Act an EIA and SEA report needs to include an **overview of the gaps in the descriptions of the current situation of the environment and the environmental impact of the intended activity due to the lack of necessary data**.

Furthermore, Dutch legislation and regulations contain **no definition of significance**. The imperativeness of an EIA/SEA or AA is therefore determined by reviewing each activity to the definitions and thresholds and estimating the potential effects on the species/habitats. If (negative) significant effects cannot be excluded, the activity may not be executed without assessing possible alternatives, IROPI and compensation. Because of the fact that the boundaries on significance can vary for each site, each qualifying species and each habitat type, this give rise to many discussions. However a case law analysis from Alterra in 2007 shows that there are some fixed elements in assessing significance (see paragraph 7.5.3).

7.5.2 Guidance documents

7.5.2.1 Government

In conjunction with the modernization of the Dutch EIA legislation (which came into force on 1 July 2010) the Government issued a manual on EIA/SEA. This manual provides proponents, EIA experts and competent authorities an overview and explanation of the current legal requirements on EIA/SEA and can be consulted on the website of Infomil[106].

Besides this manual, the Government has also issued a Guidance on EIA/SEA. In this document (to be consulted on the website of Infomil[107]) a number of themes are described which play a prominent role in drafting or determining an EIA or SEA report, including:

- Screening
- Process management
- Participation
- Scope and level of detail
- Alternatives

[106] http://www.infomil.nl/onderwerpen/ruimte/mer/handleiding/
[107] http://www.infomil.nl/onderwerpen/ruimte/mer/handreiking-0/

- Quality

While the Manual is intended to explain the legal aspects on EIA/SEA, the Guidance is mainly intended for sharing tips and tricks, information and examples on preparing an EIA or SEA report, or supervising an EIA/SEA procedure. However, both Manual and Guidance do not pay specific attention to manage uncertainties in EIA and SEA procedures.

7.5.2.2 The Netherlands Commission for Environmental Assessment

Due to its important role in EIA/SEA procedures, the Netherlands Commission for Environmental Assessment (NCEA) has built up a comprehensive digital library with all kinds of information on EIA/SEA that can be accessed by the (local) government and proponents. The NCEA also provides fact sheets on its website on important issues in the EIA/SEA practice[108] for instance on screening, participation, reference situation, modelling and dealing with uncertainties[109]. In this last fact sheet the NCEA provide some information on dealing with uncertainties. One of the ways is the use of an adaptive strategy. This means:

- Recognize explicitly the uncertainty margins in impact provisions;
- Determine in advance mitigation measures to reduce the risks;
- Keep them on hand for those in adversity;
- Closely monitor the occurring effects;
- Use the earlier determined mitigation measures in order to reduce effects, if the monitoring shows that it is needed.

The information that is gathered during the SEA/EIA can be very helpful in recognising the different types of uncertainties and developing an adaptive strategy towards them. An adaptive strategy can also be applied in dealing with gaps in knowledge. Instead of extensive research on for instance dose-effect relations, the situation can also be monitored and when the situation shows deterioration a set of (predetermined) measures is applied.

7.5.3 Permits

This section analyses the permitting process for the deepening and widening of the navigation channel of the (Dutch part of the) River Scheldt (Case 5 in lot 2).

In this case stakeholder management was a very important issue. The result of this approach was a large ‘package deal’ concerning the future development of the Scheldt estuary (also on the territory of Belgium/Flanders). Besides the proposed dredging to improve accessibility, safety and naturalness were equally important aspects in this package. The fact that the widening of the navigation channel was thus counterbalanced by the improvement of the ecological quality of the estuary ensured initially a broad support for the project and scarce adverse reactions. The postponing of the naturalness part of the

[108] http://www.commissiemer.nl/publicaties/factsheets
[109] Commissie m.e.r. factsheet nr. 19 Omgaan met onzekerheden in m.e.r. januari 2011

package deal by the Dutch government caused an imbalance and has led to several appeals i.e. of NGOs (see also section 7.5.4 Case Law).

Due to these appeals, the applicant had to alter the mitigation measures to ensure that the project became independent from the implementation of the measures that were planned in view of the naturalness part of the package. Therefore they added a new strategy for disposing the sediments on the edges of the shoals to the project in order to mitigate all possible negative effects of the project, even in worst-case scenarios. But this new disposal strategy and its effects on the intertidal shoals were very difficult to assess in the morphological models. A lot of uncertainty remained that could not be reduced using the current existing models. Therefore an intensive monitoring of the flow velocity (which has an important impact on erosion) was included into the protocol and the outcome of this additional analysis took away some of the remaining uncertainties.

Facing the particular uncertainties in this project, the port authorities choose to include a so-called **'three stage rocket' approach**. This approach consists of the following steps:

1. Use of the most environmental friendly alternative that was assessed in the SEA/EIA;
2. Application of the flexible disposal strategy as a mitigation measure and regular monitoring of the impact of the project in order to avoid adverse morphological and ecological effects in the estuary;
3. Agreement on the possibility to stop the project if negative effects are observed that could not be counteracted.

By using this approach, the competent authorities believed that the project could not have negative effects, regardless of the uncertainty levels within the EIA. However, some NGOs did not agree to that view and appealed the Dutch zoning plan for the trajectory (primarily to put pressure on the Dutch government to re-engage the nature development plan) based on their opinion that the remaining uncertainty level in the project was too high In particular on the alleged positive ecological effects of the flexible depositing strategy. This was discussed in a provisional judgement. See Section 7.5.4 for more information on the legal process of these appeals.

7.5.4 Case law

In most cases the adoption of a plan for which a EIA/SEA or AA is mandatory can be challenged before court. The legal review of such a government decision belongs to the powers of the Afdeling Bestuursrecht van de Raad van State (the Dutch Supreme Administrative Court). In some cases the decisions on permitting can also be challenged before the regional administrative court. In these cases the Supreme Court acts as a Court of Appeal. The jurisprudence on cases regarding EIA, SEA and AA has been reviewed and a non-exhaustive overview of some recent cases relevant to this study is provided below:

RvS Judgment 200806565/3/R1, 28 July 2009 (provisional judgment on the deepening and widening of the navigation channel of the Western Scheldt)

- Context: The Dutch national government established a zoning plan for the trajectory ('*tracébesluit*') enabling the deepening and widening of (the Dutch part of) the navigation channel in the Western Scheldt with a length of 66 kilometres. In order to execute this works 4 permits were granted and challenged before court by plaintiffs, inter alia 3 NGOs who asked a provisional judgement on the Nbw permit, stating that granting this permit was wrong because:
    - There was insufficient assurance on the consequences of the channel widening;
    - A reduction of 0,7% of low dynamic area (habitat type 1130) could not be seen as not significant, because of the restoration task for that type of habitat;
    - There were doubts on the proposed measures to prevent the reduction of this habitat type.
- Decision: by provisional judgment the Nbw permit was suspended.
- Reasoning:
    - Significance: In the preamble to the permit, the Minister indicated that an effect of less than 1% is considered as not significant, but that this criterion is not used as a recovery or improvement objective was formulated. According to the President, the Minister **has deviated from its own assessment criteria** stating that an effect of less than 1% cannot be considered as significant, because of the fact that for the Western Scheldt estuary an improvement objective applies and estuaries on a national scale are located in a very unfavorable conservation status. Given the improvement target the President finds the fact that the effects occur only at the edges of the sandbars not relevant.
    - Uncertainties: Both the review of the NCEA (on the tracébesluit), the statement of an expert who was consulted by one of the appealing NGOs, and the expert report of the Court itself, indicated that there are many uncertainties due to the dynamics of the natural system of the Western Scheldt. Therefore, the effects of the flexible deposit are also uncertain. **From these uncertainties, the President stated that the possibility must be taken into account that the disposal on the sandbar edges will not lead to its intended effects.** Given these uncertainties, the President conclude by means of a provisional judgment that the Minister **has not sufficient certainty** to conclude that the natural characteristics of the area will not be affected and suspended the Nbw permit in order to avoid irreversible consequences.
- This provisional judgment has led to many (political) controversy and disagreement with Flanders. On 13th January 2010 the Court gave its final judgment.

RvS Judgment 200806565/1/R1, 13 January 2010 (final judgment on the deepening and widening of the navigation channel of the Western Scheldt)

- Context: The earlier NGOs had withdrawn their appeals in this stage, since the Dutch government reconfirmed its engagement to implement the nature development measures that were decided upon within the Dutch/Flemish political agreement regarding the development of the River Scheldt. Nevertheless, in the remaining appeals there were still some environmental concerns. The other appeals stated inter alia that there is no certainty that the integrity of Natura 2000 area “Westerschelde & Saeftinghe” will not be affected and that the widening of the channel leads to an extra supply of silt, affecting the nature of the Drowned Land of Saeftinghe.
- Decision: the appeals were rejected.
- Reasoning: The tracebesluit is not a plan within the meaning of Article 19j of the Nature Conservation Act 1998. **Therefore this Act does not need to be involved in the decision on the tracébesluit**. However it should be considered if the required Nbw permit constrained the enforceability of the tracebesluit. According to the Court, **appealing parties have not proved that the effects are so uncertain that it should be concluded in advance that a Nbw permit could not be granted in connection with this uncertainty** and (according to the EIA report) the extra supply of silt will not affect the area of the Drowned Land of Saeftinghe. The Court therefore finally concluded (within extend of the remaining appeals) that the Dutch minister had reasonable arguments to state that the ecological features of the Natura 2000-site will not be significantly affected.

RvS Judgment 200600614/1, 25 April 2007 (Zoning plan Polder Zestienhoven)

- Context: The city of Rotterdam has established the local zoning plan "Polder Zestienhoven" for the area south of Rotterdam Airport. This plan provides, inter alia, destinations for businesses, roads and recreational facilities. The EIA on this zoning plan states that the creation of the A4 Midden Delfland, HSL and RandstadRail and the zoning plan Polder Schieveen belong to the relevant autonomous developments in and around Polder Zestienhoven until 2015. The EIA consists of reports for the various environmental aspects. Appellants bring forward that the **traffic studies** do not take all (local) traffic impacts into account and that **air quality** values are exceeded leading to a deterioration of air quality in the planning area.
- Decision: The appeal was accepted and the decision on the plan was annulled because of the exceeding of air quality limits. However, the effects of the decision were maintained because it appeared that the concentration of PM_{10} was equal to the concentration in the autonomous situation and appellants did not make plausible that this conclusion was incorrect.
- Reasoning:
    - Traffic studies: The EIA and sub study Transport mentioned several spatial developments with impact on traffic flows in and around the project area. These are taken into account in the calculations of the traffic volume. **If the decision is not in such a concrete phase,**

that a representative image can be given of the consequences, these developments should not be included in (traffic) calculations (under EIA).

- Air quality:
  - In determining background levels of air quality in local situations, **both measurements and mathematical models are allowed**. However, in both cases, the concentrations must be sufficiently reliable and representative.
  - If the concentration of PM_{10} is increased by the construction of an activity, it is relevant **whether or not the limit for the twenty-four-hour average concentration is exceeded**. An increase of up to 1 microgram per m^3 is not so small that it meets the criterion that the concentration of particulate matter "at least remains the same."

RvS Judgment 201105318/1/A2 and more, 23 May 2012 (Off shore wind farms North Sea)

- Context: On 23 of May 2012 the Court decided on the appeals on twelve permits of the Secretary of State regarding several offshore wind farms in the North Sea. These judgements are highly similar and an **example of using the precautionary principle** in EIA practice. Inter alia the Fish Product Board raised objections against the permit before the Court of Rotterdam, but as these were denied, the Fish Product Board appealed this judgment on the following grounds:
  - Nature, AA and EIA: Appellant finds that in the EIA report and AA two positive assumptions were made, as there is not enough information about the effects of the establishment and the use of wind farms at sea on the flora and fauna under water. The permits were not based on a worst case scenario and thus in violation of the precautionary principle.
  - Monitoring/assessment and the precautionary principle: Appellant argues an insufficient application of the precautionary principle. According to appellant the granting of the permits should be delayed until the data from the current wind farm were available as the proposed monitoring and evaluation system cannot prevent the impact on fish stocks.
- Decision: The appeal was denied (in all twelve cases).
- Reasoning:
  - Nature, AA and EIA: The EIA noted that there is lack of knowledge about the effects of wind farms on marine life. In particular about the effects of underwater noise. Although the monitoring and evaluation program contributes to the knowledge about this aspect, it cannot prevent these effects. For this reason, a suitable location-specific assessment was carried out on the basis of a known model. This assessment has concluded that the park will not have significant effects on fish. Although the NCEA stated initially that

there was not enough information for wise decision making, based on the AAs and the opinions of the NCEA, the Commission considered later that sufficient information exists. The Court found that although not all effects are known, this does not mean that the permits were issued improperly. Both EIA and AA are based on 100% mortality of fish larvae to a kilometre from the wind farms. Experience with the construction of the park Q7 has shown that effects will not occur at a distance greater than one kilometre. Therefore, the assumption of 100% mortality up to a kilometre away is a worst-case scenario. Also the AA is based on the latest knowledge in this field. The report of appellant does not lead to a different opinion. **Based on this, the Court concluded that both the EIA and AA did not contain too much positive assumptions. The effects on fish and fish larvae were sufficiently considered.**

- Monitoring and evaluation and precautionary principle: **The Court stated that the precautionary principle is sufficiently guaranteed.** In the period of larval transport from January to July, no piling will take place and during the construction season only one wind farm is allowed. In the Wadden Sea protected birds and marine mammals occur and who feed on fish. The area acts as a nursery and spawning area for fish. A reduced supply of larvae can partially compromise this function. **The measure to limit the construction season until 1 July to 1 January was a sufficient application of the precautionary principle.**
- The monitoring and evaluation program is not intended to avoid killing of fish during the construction and operation of the wind farm, but to gather knowledge for future development of offshore wind farms. **Therefore there is no conflict with the precautionary principle.** The Court considered that there should not have waited until the information from the monitoring and evaluation program of the existing offshore wind farms was known, because already emerged data on wind farms are taken into account. **This does not lead to the conclusion that no application has been given to the precautionary principle**.
- The construction and operation of wind farms will lead to a loss of fishing grounds for the fisheries sector (around 500 meters from each park) but these interests were weighed against the importance of the construction of wind farms. The EIA stated that this was a small reduction on the total catch. **According to the Court the Secretary of State could argue that an effective use of the North Sea is still possible.**

RvS Judgment 200902744/2/R2, 24 July 2009 (Coal-fired power plant Eemshaven)

- Context: The authorities granted a Nbw permit to RWE for the construction and use of a coal-fired power plant in the eastern part of the Eemshaven.

Building the complex will take about 5 to 6 years. In February 2009, RWE started piling, that causes noise pollution for more than 1,5 years.

- Plaintiffs: Greenpeace and others asked for suspension of the Nbw Permit, inter alia based on the following grounds:
    - Noise impact on common seals: The exceedance of the noise contour of 45 dB (A) could not be excluded; because the widening and deepening of the navigation channel were not included in the cumulative noise contour. Moreover, there were gaps in knowledge in the AA regarding the common seal.
    - **A knowledge gap with regards to certain species, because it was unclear whether this species occurs in the area and whether it is disturbed by piling.**
    - Incompleteness of bird research: The AA was based on research into the presence of birds on the Eemshaven field was incomplete; therefore, the conclusions about the nature and extent of the reasonably foreseeable significant effects were questionable. Further degradation of the natural features of the Wadden Sea was not excluded.
    - Alternatives, IROPI and compensation for alternative research was not done properly, there was no IROPI and the compensation was insufficiently insured.
- Decision: by provisional judgment the Nbw permit was not suspended. The request for a provisional suspension of the Nbw permit was denied. On 24 August 2011 the Court gave a final judgment on these permits (200900425/1/R2 en 200902744/1/R2).
- Reasoning:
    - Noise impact on common seals: The AA stated that a number of uncertainties about the potential effects on marine mammals required further research and monitoring. During the determination of the AA, a research was carried out which consists of measurements of piling noise in combination with observations of marine mammals. Groningen Seaports drew up a monitoring plan to give effect to the joint monitoring of compensation, mitigation and the expected effects. If it appears that the effects are greater than expected, measures can be taken. The President believes that the cumulative noise contour plots prevents unacceptable noise impacts to occur. The President argues that the deepening of the channel and the broadening of the Eemshaven are not included in this noise contour are not unjustified, because of the fact that at the time of permitting there was no understanding of the consequences of those developments. Appellants failed to prove that the piling has harmful with irreversible consequences for the common seal. Hereby the **continuous monitoring of cumulative impacts** and the possible interference if adverse effects seemed likely to occur, were taken into account.
    - Knowledge Gaps: The **knowledge gap was in the provisional opinion of the President filled** by further research. The assumed species were not found.

- Incompleteness of bird research: The President argued that there was insufficient basis to assume that the research data were insufficient. The study was based on the **best available dataset** at the time of the preparation of the AA.
- Alternatives, IROPI and compensation: Given the deterioration of natural features the initiative may only proceed if the ADC test (absence of alternatives, IROPI and the application of compensatory measures) was successfully completed. Regarding the alternatives, the licensing authority refered to the Second and Third Electricity Supply Plan. In these plans four locations were identified as suitable for large scale power plants. The location Eemshaven was the only location with sufficient space. Moreover, the three other locations were also located in the vicinity of Natura 2000 areas. Regarding the IROPI, the authority stated that the plant was a sustainable large-scale energy source that contributes to the government policy objectives on the diversification of fuels and was deemed necessary in the context of a reliable and affordable fuel and energy supply. It was noted that the most modern techniques were used and that arrangements were made for CO_2 capture, which was precisely the location chosen for the storage of captured CO_2 in old gas fields in northern Netherlands. **By means of a provisional statement the President concluded that alternative investigation occurred and that there was an IROPI and that the adoption of compensatory measures was adequately insured**.

The Dutch legislation contains no definition of significance. The imperativeness of an EIA/SEA or AA is determined by reviewing the activity to the definitions and thresholds, and estimating the potential effects on the species/habitats. A case law analysis from Alterra in 2007[110] shows that there are three elements when assessing significance:

1. Decrease of population in a certain area;
2. Distance between activity and the Natura 2000 site;
3. Declining of surface of the Natura 2000 site.

All of these elements are widely used in assessments, but none of these elements can be used solidly to conclude significance. They should always be reflected to the conservation objectives of the site(s). The Court of Justice indicated that significance does not only depend on the presence of the qualifying species in the area. A decline in the habitat of this type, regardless whether the quantity of the species would decline, could, under certain circumstances, be considered significant.

The determination of significance is no easy task and the methods should provide sufficient space for assessment of relevant situations, such as the conservation objectives and the reference situation (favourable or

[110] Kristenkas en Kuindersma 2004, p. 20 and further, also Kistenkas, Bugteren and Steingrover 2006, p. 207 and further,

unfavourable). Also the nature and extent of the activity and the duration of the project etc., plays a role. To further clarify the concept of significance, in 2010 the concerned authorities drafted a national guideline on significance[111]. The guideline appoints various aspects to determine whether the expected effects on Natura 2000 sites should be regarded as significant, such as area and population size, quality of habitat and effects on typical species and how to deal with accumulation, mitigation and compensation.

For a long period there were no legal provisions on the validity of research, findings and assessments. The Crisis and recovery Act is the first Act in which it is explicitly stated[112] that for certain types of projects a new decision (after annulment or a provisional judgment) can be based on the facts on which the old decision was based, except when those facts were reason for the annulment. This provision is (a modest) part of the solution on reducing uncertainties resulting from long lasting appeal procedures and the intermediate expiration of research data.

7.6 Conclusions

The legal framework on environmental assessment in the Netherlands is strongly inspired on the EIA and SEA Directives. Nevertheless, the Dutch system of preliminary screening has met criticism from the EC and Court of Justice initially, because of the 'fixed' thresholds in Annex D of the Besluit m.e.r. This has been changed recently. Because of this, the Dutch environmental assessment regime can be seen as a precise implementation of the EIA and SEA Directives. The same applies to the nature conservation regime, implemented by the Nature Conservation Act and the Flora and Fauna Act, although there are concerns about the scope of the *Besluit vrijstelling dier- en plantensoorten*, in particular on the use of a code of conduct.

With regard to uncertainties it can be concluded that, although legislation does not give a definition of significance, the national guidelines provide sufficient handholds in how to deal with (the legal implications of) uncertainties, for instance on the interpretation of the current and autonomous situation, the use of mathematical models and the lack of data and knowledge. In addition, the case law analysis shows that courts are in most cases reluctant to assess the intrinsic quality of research and use a marginal approach by analysing the information in the EIA, SEA and AA, and stating that the research methods and tools used are not contrary to the application of the Directives or for instance the precautionary principle. In general, there is also much weight attached to the opinion of the NCEA.

The provisional judgment on the permit for the coal-fired power plant in the Eemshaven shows that an adaptive approach can be a useful instrument for avoiding significant adverse effects.

[111] Leidraad bepaling significantie, Nadere uitleg van het begrip ´significante gevolgen´ uit de Natuurbeschermingswet, Steunpunt Natura 2000, versie 27 mei 2010
[112] In Article 1.10 Crisis- en herstel wet (Crisis and recovery Act)

8 United Kingdom

8.1 Introduction

The UK is devolved into four administrations (England, Scotland, Wales and Northern Ireland) for certain aspects of law including environmental law. Consenting and permitting of development is also devolved to these administrations as well as to Local Planning Authorities. The following sections outline **the application of the EIA, SEA, Habitats and Birds Directives under English Law**. The implementation of these Directives within the devolved administrations is not discussed, as the specific case studies chosen for this project (Humber and projects within the Stour and Orwell estuaries) are located within English jurisdiction. However, the underlying principles of the different Regulations within each country are broadly similar.

The consenting regime for projects that cross the land/sea boundary in England is **complex, involving consents, licences and permits from a range of bodies**. England has a terrestrial planning system implemented by Local Authorities and underpinned by a regional planning system (planning permission) and central government policy guidance.

Recent administrative changes have introduced **a separate marine planning and licensing regime** through the Marine and Coastal Access Act 2009 (hereinafter "*MCAA*") which, along with the Planning Act 2008, have streamlined the requirements to some extent; however, there remains the need for multiple consents.

The Planning Act 2008, which received Royal Assent on 26 November 2008, created a new system of **development consent for Nationally Significant Infrastructure Projects** (hereinafter "*NSIPs*") in the UK, covering certain types of energy, transport, water, waste water and waste projects, and streamlining the consenting process. The Act is the primary legislation which established the legal framework for applying for, examining and determining applications for NSIPs, taking into account guidance in National Policy Statements (hereinafter "*NPSs*",). Major developments that are considered as NSIPs are regulated by the Secretary of State.

The consent for an NSIP is a Development Consent Order and there is the provision to include deemed consent for planning permission, as well as a marine licence, under the Marine and Coastal Access Act 2009. Such developments, therefore, require a single main consent from central government.

Port developments that do not trigger NSIP could be **consented through a variety of approaches including through a Harbour Empowerment Order (HEO) (or Harbour Revision Order (HRO) for existing port authorities)** which provides the port authority with both specific and general powers enshrined in a new Act of Parliament.

Port terminal expansions, where the terminal operator is not a port authority, could be **consented by a marine licence and planning permission**.

There are various combinations of the above consents (HEO/HRO, marine licence and planning permission) as well as other local consents that apply in certain locations. However, in many cases a port development may require at least two consents from two separate regulators.

A **NPS for Ports** was published in January 2012 and provides a framework for decision making on new port development in England and Wales. The NPS must be consulted by all appropriate/competent authorities in relation to decision making for consenting of new port development.

Each regulatory consenting regime must comply with the requirements of the relevant environmental European Directives.

In the next two sections the legislation concerning environmental assessment (*section 8.2*) and nature conservation (*section 8.3*) is outlined. Taking in to consideration the scope of the study, we will focus on the legal and procedural aspects (and uncertainty topics within these aspects). The section thereafter shows how this legislation applies to estuaries and port related activities (*section 8.4*). Before presenting some conclusions (*section 8.6*), all UK legal provisions, excerpts of guidance documents and case law relevant to the question how to deal with uncertainties while is gathered in an overview (*section 8.5*).

8.2 Environmental assessment

8.2.1 Regulatory framework

The EIA Directive, in relation to estuaries and port-related activities, is implemented in England through the following Regulations:

- **The Marine Works (EIA) Regulations 2007 (as amended by the Marine Works (EIA) (Amendment) Regulations 2011 (MWR))**: These are the primary EIA-regulations in England in relation to estuaries and port-related activities (for activities undertaken below the level of Mean High Water Spring(MHWS)), and which are not deemed as NSIPs. The MWR transpose the EIA Directive into English and Welsh Law in relation to the following activities:

    - Harbour works which require approval or consent pursuant to a local Act or an order made under Section 14 or 16 of the Harbours Act 1964; and,
    - Activities which are regulated under the MCAA (i.e. those activities which require a so called '*Marine Licence*').

    Part 2 of the MWR 2007 (as amended) specifies the circumstances in which an EIA is required in relation to marine works, for both projects of

a type listed in Annex I to the EIA Directive, where EIA is mandatory for all projects, or for projects of a type listed in Annex II to the EIA Directive, where EIA is required if the project would have significant effects on the environment. **Schedule 1 to the Regulations sets out the criteria that are to be used in determining whether or not an Annex II project would have significant effects on the environment.**

The competent authority (the Marine Management Organisation (MMO)), may not grant a licence for any activity where the proposed project/scheme falls under the requirements of the MWR and the MMO has not first granted 'EIA consent', i.e. consent granted on the basis of assessment of the effects of the proposal activity on the environment, including consideration of any representations made by statutory consultees and members of the public. EIA consent can be considered as a step in the development control process rather than an outcome.

The Marine Policy Statement (MPS) provides a framework for preparing marine plans and taking licensing decisions on all development that may affect the UK marine environment in both territorial and offshore waters. Marine plans must conform with the MPS unless relevant considerations indicate otherwise, thereby ensuring a strong link between national policy and local application. Marine licences will be determined in accordance with the relevant marine plans.

The MMO is currently producing 'Marine Plans' covering the 'English Marine Area' (i.e. those territorial and offshore waters that fall under the MMO's jurisdiction, as determined under the MCAA). Marine plans will interpret and present the policies within the MPS, at a sub-national level. It is currently uncertain how the Marine Plans, once implemented, will influence port development.

- **The Town and Country Planning (EIA) Regulations 2011**: The Town and Country Planning (EIA) Regulations 2011 (hereinafter "*T&CPR*") transpose the EIA Directive into English Law in relation to the granting of permission for development under the Town and Country Planning Act 1990 or the Environment Act 1995. These Regulations require applications for certain public and private developments to be accompanied by an Environmental Statement (ES) to identify the potential impacts of the development on the environment. Port authorities have the ability to construct port-related works on their land without the need for planning permission – this is known as general permitted development (GPDO). However, in the case of an EIA project GPDO rights are disapplied and planning permission must be obtained before the development may proceed.

  As port-related works (by their nature) tend to straddle the land-water interface, it is often recommended that the land-based elements of a proposed project are permitted simultaneously with the marine aspects via the *T&CPR*. It is normal for one ES to be produced by the applicant who fulfils the requirements of both Regulations (MWR and T&CPR),

though separate consent decisions will be made by the appropriate regulatory bodies.

- **The Infrastructure Planning (EIA) Regulations 2009 (as amended)**: The Infrastructure Planning (EIA) Regulations 2009, as amended by the Infrastructure Planning (EIA) (Amendment) Regulations 2012 and the Consequential Amendments Regulations 2012, set out the procedures to be followed to fully implement the requirements of the EIA Directive in relation to NSIPs which are determined under the Planning Act 2008 (see above).

The SEA Directive has been transposed into UK legislation through the '***Environmental Assessment of Plans and Programmes Regulations 2004***' (the 'SEA Regulations'), which came into force on 20 July 2004. Separate SEA Regulations are established for each UK country/devolved administration. The Regulations as applicable to England are provided under Statutory Instrument (SI) 2004/1633.

8.2.2 Environmental Impact assessment

8.2.2.1 Scope – Project subject to EIA

As port-related works tend to also straddle the land-water interface, it is often a recommendation to obtain both a marine licence under the MCAA and a planning permission under the *T&CPR*. It is normal for one ES to be produced by the applicant which fulfils the requirements of both Regulations, though separate consent decisions will be made by the appropriate regulatory bodies. The EIA Regulations for these two Acts have slightly different approaches to the definition of EIA development with the MWR referring back to the Annexes in the Directive whereas the T&CPR refers to schedules included in the Act with thresholds provided as guidance.

As described in Regulation 7 of the MWR, projects listed in Annex I of the EIA Directive (which includes larger port projects) require a mandatory EIA to be undertaken. Projects listed in Annex II of the EIA Directive also require an EIA if they are likely, because of their size, nature or location, to have significant effects on the environment (**Schedule 1 of the MWR outlines those matters relevant to consideration of whether or not an Annex II project is likely to have significant effects on the environment**).

Annex I includes 'trading ports and also inland waterways and ports for inland-waterway traffic which permit the passage of vessels of over 1,350 tonnes' while Annex II includes 'construction of roads, harbours and port installations, including fishing harbours (projects not included in Annex I'). There are also various other definitions that may be relevant to port development.

EIA may also be required for modifications to development projects included in Annex I and projects in Annex I undertaken exclusively or mainly for the development and testing of new methods or products and not used for more than one year.

EIA is also mandatory for projects that are 'EIA Development' within the meaning of the T&CPR (i.e. those projects contained within Schedule 1 of those Regulations). Those projects which fall under Schedule 2 of the Regulations will be screened as EIA Development because of their likely significant effects on the environment. The Town and Country Planning Act, and associated legislation, sets out the meaning of development and identifies the type and scale of development that can be carried out without first applying for **planning permission** to the Local Planning Authority (i.e. 'deemed planning permission' or 'permitted development'). However, where the proposed development falls under the requirement of 'EIA', any rights which the applicant may have held via a GPDO under the Town and Country Planning (General Permitted Development) Order 1995, would not apply and as such the project would be required to obtain planning permission in the normal way.

Depending upon the proposed development, it may therefore be necessary for port and harbour authorities to also obtain planning permission where the proposed activities require an EIA to be undertaken. For example, where a harbour authority requires to develop land-side facilities within their jurisdiction to facilitate their marine operations (e.g. construction of buildings etc. on land adjacent to a quay) and where a historic act empowers that harbour authority to do so, prior to the adoption of the EIA Directive the harbour authority would have had powers to do such works without requiring planning permission from the Local Planning Authority. Since the adoption of the EIA Directive, any project for which it has been determined that EIA is required (subject to certain exclusions), removes the GPDO rights and EIA is required.

The Planning Act 2008 (as amended) introduced a new system of development control for NSIP's, with consent given by way of a **Development Consent Order** (DCO). If the development includes the construction or alteration of harbour facilities then a DCO may also include provision for the creation of a harbour authority or include provision changing the powers or duties of a harbour authority. Equally a DCO may include provision for a 'deemed' marine licence to have been issued. Granting of a DCO for a development may therefore mean there is no separate requirement for either a marine licence or harbour order, the requirements of these being met wholly via the DCO.
The National Infrastructure Directorate (NID), part of the Planning Inspectorate, is responsible for examining applications for DCOs.

8.2.2.2 Screening – exemption – scoping

Under the requirements of the MWR 2007 (as amended), the MMO, as appropriate authority, has a duty to screen any **marine licence application** it receives to check whether or not an EIA is required. Under Regulation 13 and Schedule 4 of the MWR 2007 (as amended), an applicant can request a formal scoping opinion from the MMO. As with a request for a screening opinion, the regulations require that the MMO provides consultees with 28 days to respond from the date from which the consultation documents are provided to them.

Scoping is not an obligatory part of the EIA process but is recommended where a project or proposal has been screened 'in' to requiring an EIA.

The MMO is also the appropriate authority in relation to the Harbour Works EIA Regulations 1999 (as amended). As such, where an applicant wishes to make an application for either a HRO or HEO, which would authorise a 'project', they must give the MMO formal notice in writing of their intention to do so ('*notice of intention*'). A project in this case means either:

- The execution of construction works or other installations or schemes; and
- Other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources.

The MMO will then respond in writing stating whether or not the proposals will be subject to EIA, the reasons for their decision and, if EIA is required, what should be covered (scoping). The MMO may consult with other bodies with environmental responsibilities, and the applicant, during this period. It is not possible to make an application for a HRO or HEO until this process has been completed.

Under the **T&CPR**, a formal screening request can be made by the applicant to the Local Planning Authority. Should sufficient detail be submitted by the applicant, the Local Planning Authority must adopt its screening opinion within three weeks of a request being received (unless extended by agreement). Alternatively, the Local Planning Authority may adopt an EIA screening opinion following receipt of a planning application, or the Secretary of State may make a screening decision on an application that has been 'called-in' (e.g. where it is not in accordance with the Development Plan for an area), or is under appeal (e.g. where planning permission for an EIA-related application has been refused).

A formal scoping opinion may be requested from the Local Planning Authority by the applicant, either separately or concurrently with a screening opinion request, and though not obligatory, is a recommended part of the overall EIA process. The Local Planning Authority must adopt its scoping opinion and send it to the prospective applicant within five weeks of receiving a request. Where the Local Planning Authority fails to adopt a scoping opinion within five weeks (or an agreed extended period) the applicant can request a scoping Direction from the competent Secretary of State.

Under the **Infrastructure Planning (Environmental Impact Assessment) Regulations 2009** (as amended), a developer may request a screening opinion from the competent Secretary of State for whether a **NSIP** is EIA development. This must happen before carrying out consultation (see consultation section below). The Secretary of State must adopt a screening opinion within 21 days of receiving a screening request. The Secretary of State will either give a positive screening opinion (i.e. EIA is required) or a negative screening opinion (i.e. EIA is not required), with written reasons for the decision made. Even if a proposed NSIP is not an EIA development, certain environmental information,

where appropriate, must still be provided with any application for a DCO (e.g. Flood Risk Assessment).

Should the Secretary of State adopt a positive screening opinion, or receive a notification that a developer proposes to provide an ES, he must notify in writing the '*prescribed Consultation Bodies*', as detailed under section 42(a) of the Planning Act 2008 (as amended) and outlined in Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms And Procedures) Regulations 2009 (the 'APFP' Regulations), as amended by the Consequential Amendments Regulations 2012.

If requested by the developer, the Secretary of State will provide a formal written scoping opinion on the information to be included in the ES. He will consult with the prescribed consultation bodies prior to adopting the scoping opinion (consultation bodies have 28 days to respond to the Secretary of State), and the Secretary of State may also consult non-prescribed consultation bodies. The scoping position must be adopted and sent to the person requesting the opinion within 42 days of the request being made (Regulation 8(6)). This includes where an applicant has made a joint screening/scoping request to the Secretary of State, in which case the Secretary of State must adopt the opinion within 42 days beginning on when the screening opinion was adopted (Regulation 8(7)).

8.2.2.3 Drafting, evaluation and use of the EIA-report

Under the MWR 2007 (as amended), notice of the submission of an application for a marine licence accompanied by an ES must be published for two successive weeks in a local publication with wide circulation, as agreed with the MMO. The MMO provides a suitable template for such a purpose. A copy of the application and supporting ES must also be made available at an office which is open during normal office hours so it can be viewed by the public free of charge, within 42 days beginning with the date of publication of the first notice. Likewise, statutory and non-statutory consultees, and the public, who was to make representations in writing should do so within 42 days, beginning with the date of publication of the first notice.

Under the **Harbour Works (EIA) Regulations**, once an application for a harbour order is made, the applicant must arrange for a notice advertising the application to be placed once in the London Gazette and once in each of two consecutive weeks in one or more local newspapers which are widely circulated. A 42 day period during which objections and representations may be made will then commence.

Under the **T&CPR**, publicity for planning applications accompanied by an ES is undertaken by the Local Planning Authority, who will publicise the application and ES in the form of a site notice and a notice in the local newspaper. The site notice allows 21 days for representations to be made to the Local Planning Authority, and the newspaper advertisement allows 14 days. Templates for notices are provided in Schedule 3 of the Town and Country Planning (General

Permitted Development Procedure) Order 1995. The period an Local Planning Authority has in dealing with an EIA related planning application is extended from eight to 16 weeks from receipt (this may be extended again in agreement with the applicant e.g. for complex applications).

The Planning Inspectorate has produced a guidance note on how consultation under the Infrastructure Planning (EIA) Regulations should be conducted to ensure that a developer meets their statutory pre-application consultation obligations. These obligations relate to a number of different consultation bodies, including:

- the 'prescribed Consultation Bodies', under Section 42(a) of the Planning Act 2008;
- Local Authorities, as described under Section 43 of the Planning Act 2008; and
- The Greater London Authority, if the land to which the application or proposed application relates to any land within Greater London.

In addition, consultation must also be undertaken with 'Regulation 9(1) (c) persons', i.e. *'those persons whom the Secretary of State considers likely to be affected by, or may have an interest in, a proposed NSIP and who are unlikely to become aware of the proposed NSIP through the pre-application consultation and publicity process'*, as set out in the Planning Act 2008.

There are also a number of 'non-prescribed consultation bodies', who are not prescribed under Section 42(a) of the Act, and hence do not have to be consulted by the developer, but who may be consulted/notified by the Secretary of State. As such, the Planning Inspectorate encourages developers to consult with *'as wide a range of bodies as they deem appropriate'* during the pre-application stage (e.g. whilst preparing an ES).

An overview of the EIA process in England and Wales is shown in Figure 8.1.

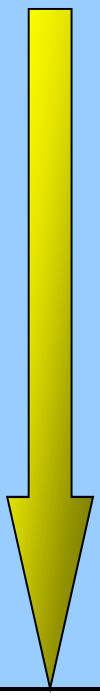
Stage	Task	Aim/Objective	Work / Output (Examples)
EIA 	Consultation	Consult with statutory and non-statutory organisations with an interest in the area and scheme	Local knowledge and information
	Primary data collection	To identify the baseline / existing environmental conditions	Background data including literature and specialist studies
	Specialist studies	To further investigate those environmental parameters which may be subject to potentially significant effects	Specialist reports (e.g. landscape and archaeology)
	Impact assessment	To evaluate the baseline conditions in terms of sensitivity To evaluate and predict the impact (i.e. magnitude) upon the baseline To assess the resultant effects of the above impacts (i.e. assess significance)	Series of significant adverse and beneficial impacts
	Mitigation measures	To identify appropriate and practicable mitigation measures and enhancement measures	The provision of solutions to adverse impacts (e.g. sensitive scheduling to avoid noise and traffic impacts) Feedback into the design process, as applicable
	Environmental Statement	Production of the Environmental Statement	Environmental Statement

Figure 8-1 Overview of the EIA process in England and Wales

8.2.3 Strategic Environmental Assessment

8.2.3.1 Scope – Duty to perform a SEA

Regulations 12(1) and 12(2) of the SEA Regulations state that an ER must be prepared where an environmental assessment is required, and must identify, describe and evaluate the likely significant effects on the environment of:

- implementing the plan or programme; and
- reasonable alternatives taking into account the objectives on the geographical scope of the plan or programme.

Schedule 2 of the Regulations contains a description of 'information for ERs', as referred to in Regulation 12(3).

8.2.3.2 Screening and exemption

Regulation 2(1) of SI 2004/1633 defines '*plans and programmes*' as per Article 2(a) of the SEA Directive. **Schedule 1 of the Regulations contains the 'criteria for determining the likely significance of effects on the environment', as referred to in Regulations 9(2) (a) and 10(4) (a).**

8.2.3.3 Notification and scoping of the proposed SEA

Regulation 12(5) stipulates that the 'responsible authority' must consult statutory 'Consultation Bodies' when deciding upon the scope and appropriate level of detail of the SEA. In England these are: Natural England , the Environment Agency and English Heritage. In turn, provision of a response from the Consultation Bodies is voluntary, but where such a body wishes to respond to a consultation, it shall do so within the period of five weeks of having received the invitation to engage in consultation (Regulation 12(6)).

Regulation 13 states that every draft plan or programme for which an ER has been prepared (in accordance with Regulation 12), should be made available for consultation by both the Consultation Bodies (as outlined above) and also *'any persons who, in the authority's opinion, are affected or likely to be affected by, or have an interest in the decisions involved in the assessment and adoption of the plan or programme concerned, required under the Environmental Assessment of Plans and Programmes Directive ('the public consultees')*'. No specific consultation period is stipulated; however it must be *'of such a length as will ensure that the Consultation bodies and the public consultees are given an effective opportunity to express their opinion on the relevant documents'*.

Regulation 14 addresses the requirements in relation to trans boundary consultations where a plan or programme is likely to have significant effects of the environment of another Member State. Regulation 15 states the procedure to be adopted should the Secretary of state receive from a Member State *'a copy of a draft plan or programme –*

- *that is being prepared in relation to any part of that Member State; and*
- *whose implementation is likely to have significant effects on the environment of any part of the UK.'*

8.2.3.4 Evaluation and use of the SEA

Once a plan or programme has been adopted, the responsible authority must issue a 'SEA Statement' (Regulation 16(3) (c) (iii)) containing the requirements as outlined in Regulation 16(4), namely:

a. how environmental considerations have been integrated into the plan or programme;
b. how the ER has been taken into account;
c. how opinions expressed in response to the consultation have been taken into account;
d. how the results of any trans boundary consultation (Regulation 14.4) have been taken into account;
e. the reasons for choosing the plan or programme as adopted, in the light of other reasonable alternatives dealt with; and
f. the measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme.

8.2.3.5 Overview of national implementation of SEA obligations

The following table outlines how the SEA Directive is implemented in England via the relevant regulations. Also outlined are the key steps of the SEA process to be followed whilst undertaking a plan or programme for which SEA is a requirement.

Subject	Requirements	Remarks
EA-procedure	Implemented by 'The Environmental Assessment of Plans and Programmes Regulations 2004' (the 'SEA Regulations')	Separate SEA Regulations are established for each UK country/devolved administration. The Regulations as applicable to England are provided under Statutory Instrument (SI) 2004/1633
Plans and programmes	Regulation 2(1) of SI 2004/1633 defines 'plans and programmes' as per Article 2(a) of the SEA Directive.	
Environmental assessment	Schedule 1 of the Regulations contains the 'criteria for determining the likely significance of effects on the environment', as referred to in Regulations 9(2) (a) and 10(4) (a).	
Environmental report	Regulations 12(1) and 12(2) state that an 'Environmental Report' must be prepared where an environmental assessment is required, and must identify, describe and evaluate the likely significant effects on the environment of: a) implementing the plan or programme; and b) reasonable alternatives taking into account the objectives on the geographical scope of the plan or programme.	
The public	Regulation 13: *'any persons who, in the authority's opinion, are affected or likely to be affected by, or have an interest in the decisions involved in the assessment and adoption of the plan or programme concerned, required under the Environmental Assessment of Plans and Programmes Directive ('the public consultees')*'.	No specific consultation period but must be *'of such a length as will ensure that the Consultation bodies and the public consultees are given an effective opportunity to express their opinion on the relevant documents'*.
Likely significant effects	Schedule 1 of the Regulations contains the 'criteria for determining the likely significance of effects on the environment', as referred to in Regulations 9(2) (a) and 10(4) (a).	
Scope directive	Regulation 2(1) of SI 2004/1633 defines 'plans and programmes' as per Article 2(a) of the SEA Directive.	
Content of the Environmental report	Schedule 2 of the Regulations contains a description of 'information for environmental reports', as referred to in Regulation 12(3).	

Consultation/participation	Regulation 12(5) stipulates that the 'responsible authority' must consult statutory 'Consultation Bodies' when deciding upon the scope and appropriate level of detail of the SEA. In England these are: Natural England (formerly English Nature and the Countryside Agency), the Environment Agency and English Heritage.	Provision of a response from the Consultation Bodies is voluntary, but where such a body wishes to respond to a consultation, it shall do so within the period of five weeks of having received the invitation to engage in consultation (Regulation 12(6)).
Trans boundary consultation	Regulation 14 addresses the requirements in relation to trans boundary consultations where a plan or programme is likely to have significant effects of the environment of another Member State.	Regulation 15 states the procedure to be adopted should the Secretary of state receive from a Member State *'a copy of a draft plan or programme –* *a. that is being prepared in relation to any part of that Member State; and* *b. whose implementation is likely to have significant effects on the environment of any part of the United Kingdom.'*
Quality decision making and information on the decision	Once a plan or programme has been adopted, the responsible authority must issue a 'SEA Statement' (Regulation 16(3)(c)(iii)) containing the requirements as outlined in Regulation 16(4)	

8.2.4 Overview environmental assessment

The EIA- and SEA procedures, their similarities, differences and interrelations, as well as their correlations with the EIA and SEA Directives are presented in Figure 8-2.

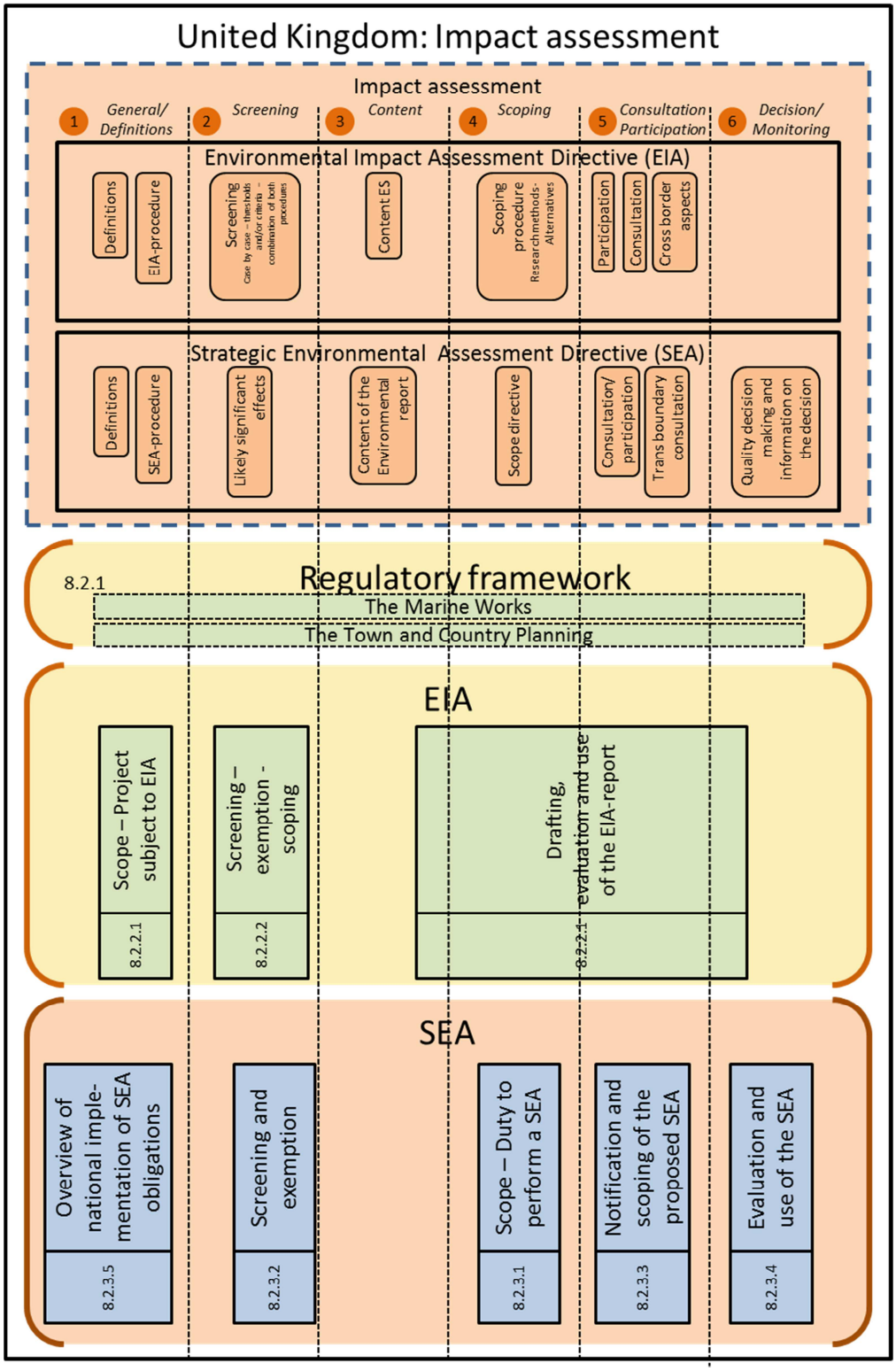


Figure 8-2 Overview requirements for Impact Assessment in England and Wales

8.3 Nature conservation

8.3.1 Regulatory framework

The Birds and Habitats Directives have been transposed into English Law by:

- The **Wildlife and Countryside Act 1981** (as amended): the Wildlife and Countryside Act 1981 (WCA81), as amended by the Countryside and Rights of Way (CROW) Act 2000 (in England), implements (amongst other things) the requirements of the Wild Birds Directive in the UK.
- The **Conservation of Species and Habitats Regulations 2010** (as amended): the Conservation of Habitats and Species Regulations 2010, as amended by the Conservation of Habitats and Species (Amendment) Regulations 2012 (the 'Habitats Regulations') transpose the requirements of the Habitats Directive, and certain provisions of the Wild Birds Directive, in relation to the terrestrial environment in England and Wales, and in territorial waters out to 12 nautical miles from the baseline from which territorial waters are drawn (usually, but not always, the Mean Low Water (MLW) mark).

Under the Habitats Regulations, competent authorities i.e. any Minister, government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the requirements of the Habitats and Birds Directives. In England, competent authorities in relation to the coastal and marine area include, but are not limited to:

- Local Planning Authorities;
- The Environment Agency;
- Harbour Authorities;
- MMO (English inshore and UK Offshore where applicable) - issuing of marine licences and harbour orders in relation to European Sites;
- The relevant Secretary of State, including where a Government Department has proposed a plan or project which may impact upon a European Site.

Natural England is the Statutory Nature Conservation Body (SNCB) or 'Statutory Advisor' in relation to activities within terrestrial and inshore areas (up to 12nm) in England.

8.3.2 Protection of habitats

8.3.2.1 Designation of SPAs (and SAC) (Natura 2000)

The Habitats Regulations provide for the designation and protection of 'European sites' (i.e. either fully designated or proposed/candidate SACs, SPAs and SCIs). The Habitats Regulations also allow for the protection of specified '*European Protected Species*' (EPS) and the adaptation of planning and other controls for the protection of European Sites.

As a matter of UK Government Policy, Ramsar sites (as designated under *'The Convention on Wetlands of International Importance especially as Waterfowl*

Habitat' i.e. the Ramsar Convention) are treated as though they are also European Sites, to assist the Government in fulfilling its obligations under the Wild Birds Directive and Ramsar Convention.

8.3.2.2 Conservation measures

In accordance with Section 61 of the Habitats Regulations, AA is required for any plan or project, not connected with the management of a European Site, which is likely to have a significant effect on the site either alone or in combination with other plans and projects. AA is undertaken by the 'competent authority' and must determine the potential implications of the proposed scheme in view of the conservation objectives from the sites, in accordance with Article 6 of the EC Habitats Directive. AA is also required as a matter of government policy for potential SPAs, candidate SACs and listed Ramsar sites for the purpose of considering development proposals affecting them. Figure 8-3 outlines the steps taken to consider development proposals which may impact on European Sites.

Regulations 81 and 82 of the Habitats Regulations set out the procedures that must be followed so that the consideration of applications for development consent for NSIP's fully reflects the requirements of the Habitats Directive.

Regulation 61(2) requires that anyone applying for such consent must provide the 'competent authority' (i.e. the relevant Secretary of State) with such information as may be reasonably required '*for the purposes of the assessment*' or '*to enable them to determine whether an appropriate assessment is required*'. The APFP Regulations carry forward the requirements of the Habitats Regulations into the application process for NSIP's.

Developers must undertake pre-application work with regards to European Sites and consideration of likely significant effect from the proposals, in consultation with the appropriate nature conservation bodies, to such a level of detail that the competent authority is able to meet its obligations under the Habitats Regulation. The Habitats Regulations Assessment (hereinafter HRA) should cover the issues of likely significant effect, mitigation, reasonable alternatives and potential compensatory measures, and should be provided with the DCO application. Should the applicant provide insufficient information to the competent authority, the application may be refused due to the strict timetables which are enforced for applications related to NSIP's.

If, as a result of HRA screening, the developer concludes that there is no likely significant effect on a European Site, such information can be provided to the competent authority with the DCO application via a '*No significant effects report*'.

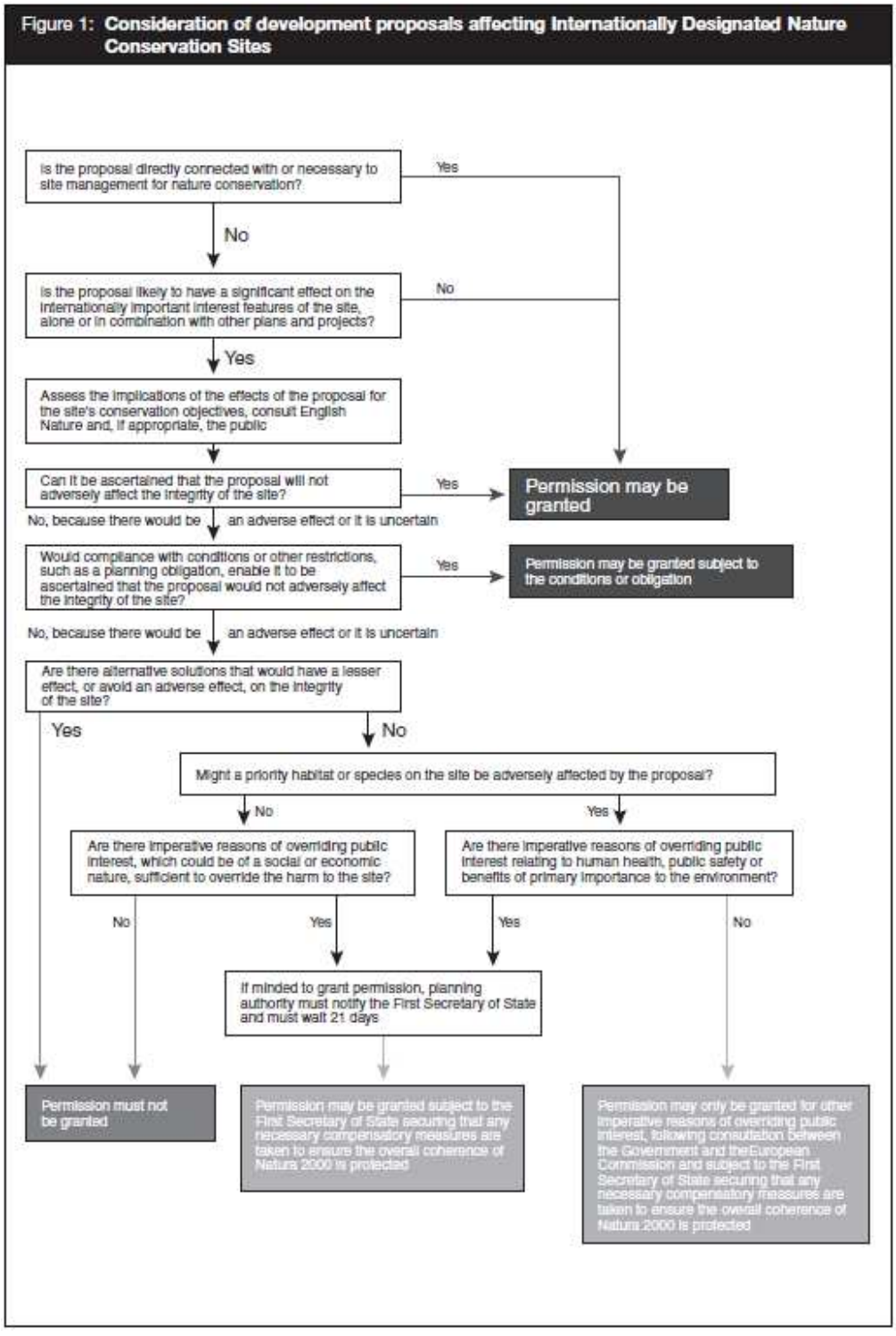


Figure 8-3 Consideration of development proposals affecting internationally designated Nature Conservation Sites

Port/harbour works which are not of a scale or nature where a DCO application is required via the Planning Act 2008 are subject to the requirements of the Habitats Regulations under the Town and Country Planning Act 1990 and the Harbours Act 1964 (as amended). The HRA process generally runs

concurrently with the EIA process (where applicable), with sufficient information being provided to the competent authority at the application stage.

Where maintenance dredging operations have the potential to affect European Sites around the coast of England, the Government considers that maintenance dredging should be considered as a '*plan*' or '*project*', and assessed in accordance with Article 6(3) of the Habitats Directive. Whilst not endorsing this interpretation, the ports industry agreed to co-operate with Government to seek to devise arrangements which allow the effects of maintenance dredging on European sites to be assessed without placing a disproportionate burden on industry, Government, or its agencies. As such, in 2007 Defra published the document *'Maintenance Dredging and the Habitats Regulations 1994, A Conservation Assessment Protocol for England'*. This followed implementation of a draft Protocol issued in 2003 for pilot studies at three trial sites on the Humber, Medina and Fal/Helford.

Where maintenance dredging operations are found to have, or be having, a '*Likely Significant Effect*' upon a European Site, a port authorising or undertaking licensed, contracted or otherwise permitted maintenance dredging operations (including disposal) must exercise their functions in compliance with the requirements of the Habitats Directive. The Protocol provides assistance to operators and regulators seeking, or giving, approval for maintenance dredging activities that could potentially affect coastal and marine European Sites. Following this process enables issues associated with the Directive to be dealt with in a streamlined and proportionate manner, assisting harbour and port authorities in fulfilling their statutory obligations, and minimising the delay and cost to port and marine operators in obtaining consents.

Whilst adoption of the protocol has been voluntary across the ports sector to date, the imminent licencing of all dredging activities (including maintenance dredging) from April 2014, if not undertaken by or on behalf of a Harbour Authorities (which are exempted under Section 75 of the MCAA), will likely lead to the increased implementation of the protocol as a means of supporting licence applications for maintenance dredging activities which may affect European Sites, and which do not qualify under the exemption specified in Section 75 of the MCAA.

8.3.3 Protection of species

The legislation in the UK provides for the protection of certain species of wild plants, birds and animals at all times; some species of bird are protected at certain times of the year only, while certain methods of taking or killing wild animals and birds are prohibited.

The legislative provisions in Great Britain for the protection of wild animals are contained primarily in the WCA81, Sections 9-12, the wild animals which are protected are listed in Schedules 5-7 of the Act and the provisions for the granting of licenses and enforcement are set out in Sections 16-27.

In England and Wales, enforcement provisions were extended and some amendments for protection made by the CRoW act Section 81 and Schedule 12.

The protection of European animal species in Great Britain is covered by the Habitat Regulations and in Northern Ireland provisions for European species are laid down in the Conservation (Natural Habitats, etc.) Regulations (NI) 1995, Part II, Regulations 33-36 and Schedules 2-3. Whaling in UK waters is prohibited by the Whaling Industry (Regulations) Act 1934, as amended by the Fishing Limits Act, 1981.

8.3.4 Review of the Habitats and Birds Directives

The following extracts provide an overview of a recent review of the Habitats and Birds Directive.

The Chancellor of the Exchequer announced in November 2011 a review of the way that the Habitats and Birds Directives were being implemented in England (and relevant offshore waters), with particular reference to the burdens placed on business by the authorisation process for development proposals.

The review took an objective and evidence-based approach. It looked at examples where implementation appeared to be working well, and where significant costs or delays appeared to be occurring. It also looked at the way that key players in the implementation process (including statutory advisers and competent authorities) discharged their duties. Finally, the review sought to learn lessons from the way in which other EU Member States and the Devolved Administrations of the UK have approached implementation of their legal obligations. The review found that that in the large majority of cases the implementation of the Directives is working well, allowing both development of key infrastructure and ensuring that a high level of environmental protection is maintained.

However, the review did identify that delays occurred in some cases and the following reasons were identified:

- Complexity of legislation and guidance;
- Complexity of the authorisation process;
- Availability and comparability of data; and
- Culture and capacity of all organisations involved in the process.

This review also examined how other EU Member States and the UK Devolved Administrations have implemented the Directives. It focussed in particular on Northern European countries likely to be facing similar issues to ourselves, including France, Germany and the Netherlands. In particular, there was a common view that challenges were particularly acute in the marine environment as a result of issues regarding data availability and ability to compensate. Measures are proposed to address the issues including facilitating nationally significant infrastructure projects.

8.3.5 *Overview nature conservation*

The different nature conservation requirements (including AA), their similarities, differences and interrelations, as well as their correlations with the Birds and Habitats Directives are presented in Figure 8-4

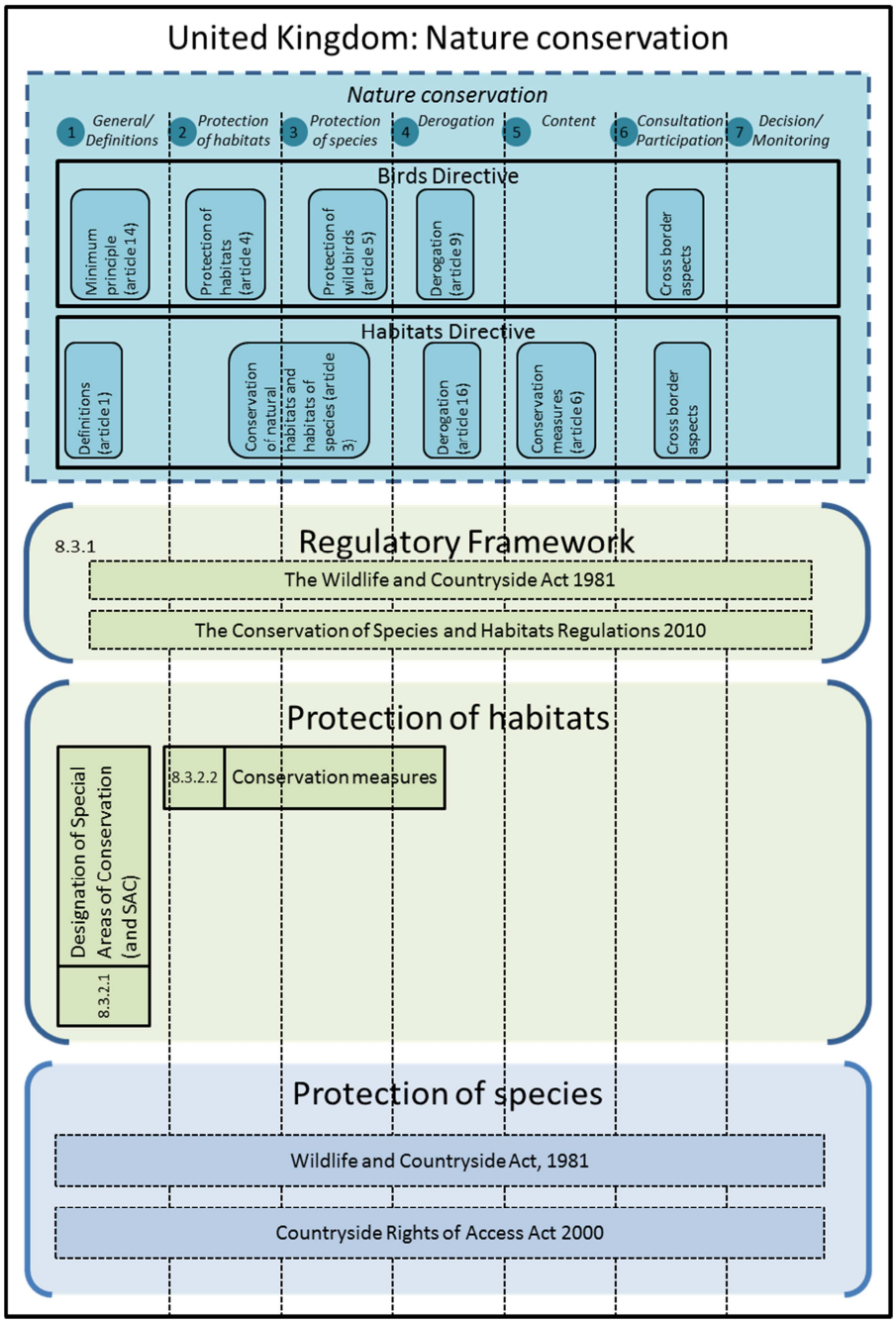


Figure 8-4 Overview requirements for Nature conservation in England and Wales

8.4 Estuaries and port related activities

This report focuses on port related activities in estuaries:

- dredging operations, including capital dredging, maintenance dredging, sand mining and disposal of dredged material within the estuary; and
- construction or extension of port infrastructure, including construction of quay walls and poldering/reclaiming land from the estuary.

As described in Regulation 7 of the MWR, projects listed in Annex I of the EIA Directive (which includes larger port projects) require a mandatory EIA to be undertaken. Projects listed in Annex II of the EIA Directive also require an EIA if they are likely, because of their size, nature or location, to have significant effects on the environment (**Schedule 1 of the MWR outlines those matters relevant to consideration of whether or not an Annex II project is likely to have significant effects on the environment**). Annex II projects would include extraction of minerals, construction of marinas and installation of wind farms, and also any proposed changes to any projects listed in Annex I or Annex II.

With regards to port-related developments, **NSIP**'s include '*the construction of harbour facilities which annually handle:*

- *500 000 TEU for container ships;*
- *250 000 units for ro-ro ships; or,*
- *5 million tonnes for other cargo ships*'.

Furthermore under the **Infrastructure Planning (Environmental Impact Assessment) Regulations 2009** (as amended), In relation to port activities, Schedule 1 (mandatory EIA) Development is considered under sections 8 (a) (*'Inland waterways and ports for inland-waterway traffic which permit the passage of vessels of over 1,350 tonnes'*) and (b) (*'Trading ports, piers for loading and unloading connected to land and outside ports (excluding ferry piers) which can take vessels of over 1,350 tonnes'*).

8.5 Dealing with uncertainties

The development of port related activities in estuaries and coastal zones in compliance with the aforementioned European Directives encounters inevitably a certain amount of uncertainty. Dealing with uncertainties is complex; however, legislation and regulations, official guidance documents and case law provide some systems on how to tackle uncertainty issues. This section aims at presenting the information that can be found in the UK context.

8.5.1 Legislation and regulations

Schedule 3(8) of the MWR 2007 states that an ES needs to include. *"any difficulties, such as technical deficiencies or lack of knowledge, encountered in compiling any information of a kind specified in paragraphs 1 to 6."*
Schedule 4(7) of The T&CPR and Schedule 4(23) of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended) states that an ES needs to include, *"an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant or appellant in compiling the required information."*

The UK Marine Policy Statement (2011) Section 2.3.2.2 outlines a number of principles that should be taken into account, including decisions that should be taken using a risk-based approach that allows for uncertainty and recognising the need to use sound science responsibly as set out in the high level objectives. Specifically, Section 2.3.1.2 sets out that a sound evidence base will inform Marine Plans and, *"that where evidence is inconclusive, decision makers should make reasonable efforts to fill evidence gaps but will also need to apply precaution within an overall risk-based approach, in accordance with the sustainable development policies of the UK Administrations. This will apply equally to the protection of the natural marine environment, impacts on society and impacts on economic prosperity."*

UK legislation and regulations contain **no definition of significance**. Best practice dictates that the precautionary principle should be applied i.e. that mitigation should be based on the possibility of a significant impact even though there may not be conclusive evidence that it will occur. The imperativeness of an EIA/SEA or AA is therefore determined by reviewing each activity to the definitions and thresholds and estimating the potential effects on the species/habitats. If (negative) significant effects cannot be excluded, the activity may not be executed without assessing possible alternatives, IROPI.

8.5.2 Guidance documents

A guide to the EIA procedures, by the Department for Communities and Local Government, discusses the techniques of assessment and sources of advice (see below):

- *"Extensive literature is available on how to assess the effects on the environment of particular processes and activities. The assessment techniques used, and the degree of detail in which any particular subject is treated in an environmental statement, will depend on the character of the proposal, the environment which it is likely to affect, and the information available. While a careful study of the proposed location will generally be needed (including environmental survey information), original scientific research will not normally be necessary. The local planning authority and statutory consultees may be able to advise the developer on sources of specialist information, for example, about particular local conditions."*

- *„Environmental statements will often need to recognise that there is some uncertainty attached to the prediction of environmental effects. Where there is uncertainty, it needs to be explicitly recognised. Uncertainty is not in itself a reason for discounting the importance of particular potential environmental effects, simply because other effects can be more confidently predicted."*

The State of EIA in the UK by the Institute of Environmental Management & Assessment (IEMA) discusses, *"that one solution, regularly adopted where uncertainty exists in EIA, is to develop a worst case scenario; however, this approach will not prove useful in this situation as a 'worst case environmental baseline' is unlikely to provide a realistic scenario, which would be of little value to decision-making. Therefore, where an EIA is required for a change or extension to an existing development those leading the assessment may need to develop and agree an 'appropriate baseline scenario' with consenting authority and relevant consultees.*

To develop these scenarios, existing approaches, used to predict the future state of the baseline without a proposed development, may be able to be adapted to develop a 'previous state of the baseline environment without the existing development'. In the UK, adaptive management can be seen to closely resemble development and implementation of an environmental management plan and activity related to environmental monitoring. The emphasis of the adaptive management approach is on planning the follow-up activities during the EIA process. The approach has many of the same benefits associated with environmental management plans, such as enhanced stakeholder engagement and explicitly acknowledging and handling uncertainty in relation to the EIA's predicted environmental outcomes. However, it should be noted that adaptive management approaches are perhaps more generally associated with the more significant negative environmental effects where there is either uncertainty related to the long-term success of mitigation measures or where their failure would lead to unacceptable environmental harm."

The MMO mentions, within their marine licensing guidance on the EIA, which other useful details for inclusion in the scoping report, includes suggested alternatives to the development and known data gaps. Similarly the Infrastructure Planning Commission states, within their scoping guidance, that the applicant should be confident that it has outlined the main elements of the development likely to have a significant environmental effect. Where there is uncertainty, the applicant should provide as much detail or assume the worst case i.e. maximum height of a building or feature so that the IPC can address this in the scoping opinion.

While the Guidance Documents above are useful they do not explicitly deal with uncertainties or knowledge gaps.

8.5.3 Permits

One approach to deal with uncertainties in predicting the potential impacts of a project is through undertaking **monitoring** and developing a mechanism to

react to the findings of the monitoring should this highlight that an unforeseen impact is occurring. However, it is important that there is a process for reporting the findings and a legally enforceable mechanism to make changes to the project and monitoring if necessary.

A good example of such an approach is the mechanism developed for the deepening of the approach channel to Harwich Haven in the Stour and Orwell estuarine system and which has evolved for subsequent project in the estuarine system. These projects are discussed as case 4 in Lot 2.

For the projects in the Stour and Orwell estuarine system, a series of compensation, mitigation and monitoring commitments were made, depending on the predicted impacts of those projects. In order to mitigate the predicted increase in the rate of intertidal erosion of approximately 2.5ha per annum, a number of different approaches were explored (collectively termed 'sediment replacement'), to assess which techniques were most effective and appropriate in mitigating the predicted effect of the project whilst also taking account of the potential environmental impact of the technique itself (e.g. potential for smothering of the seabed, impact on fisheries resource). The mechanism for the predicted impact on the rate of intertidal erosion and potentially on the habitats of the estuarine system is based on the principle that more sediment depositing in the enlarged operational areas of the ports (encompassing the approaches), and subsequently being placed offshore through maintenance dredging, would further deplete the eroding system by reducing the supply of sediment to the estuaries. The basic principle of the sediment replacement programme, therefore, is to return a proportion of the extra sediment depositing in the Haven berths and Harbour approaches to the wider estuarine system, via targeted and monitored water column recharge and subtidal placement, such that natural processes are then able to redistribute the material; leading to retention of some of the returned sediment.

When the sediment replacement programme was first developed, the techniques being proposed were untested and, therefore, the nature conservation bodies considered that there was sufficient uncertainty in whether or not the techniques would be successful to warrant adopting a precautionary approach. The precautionary assumption that was adopted by Natural England was to assume that the sediment replacement programme would not be fully effective within 5 years of implementation of the programme. In light of this assumption it was necessary for the HHA to create intertidal area as compensatory habitat that allowed for the possible failure of the mitigation measures described above for a period of 5 years (i.e. enhanced erosion of intertidal area at 2.5ha per annum, or a total area of 12.5ha). This area of compensatory habitat was provided at the Trimley managed realignment scheme described above. The area of intertidal created at Trimley through managed realignment was, therefore 16.5ha (i.e. 4ha due to the effect on tidal range, plus 12.5ha).

In short, the commitments included habitat creation and sediment replacement into the estuarine system. Additionally, there are commitments to monitor the

effectiveness of these measures, in addition to an overall commitment to monitor the health of the estuarine system in general.

In order to enforce the various commitments, **legal agreements** were produced between the applicant and nature conservation bodies. These agreements commit the applicant to implementing the agreed measures. They did not specify thresholds as such, but referred to the mitigation and compensation measures that were derived from predicted impact of the project as described through the EIA (modelling predictions).

The permits that were granted for the various projects included a condition that the legal agreements made, must be adhered to, and in this way the compensation, mitigation and monitoring commitments are embodied within the permit.

The approach described above was crucial in giving the regulator and the nature conservation bodies confidence that any uncertainty regarding the predicted effect of the schemes, or the success of the mitigation and monitoring measures, could be managed through the permit and the measures agreed were deliverable.

A **Regulators Group**, which has the authority to make decisions regarding the refinement of the mitigation and monitoring programme, was also established. For example, the mitigation could be adjusted (scaled up or down) if necessary depending on the results of the monitoring. Essentially the Regulators Group monitors compliance with the compensation, mitigation and monitoring commitments on an annual basis.

8.5.4 Case law

Case law has strongly influenced EIA practice with court judgements in the UK as well as the European Court of Justice resulting in greater clarification on many aspects of the EIA Regulations. It is now standard practice for developers to apply the 'Rochdale Envelope' approach to provide a greater degree of flexibility in project design.

Cases Rochdale Envelope

The background to the 'Rochdale envelope' approach is summarised in IPC Advice Note 9 (February 2011) and arises from two cases:

1. R. v Rochdale MBC ex parte Milne (No. 1) and
2. R. v Rochdale MBC ex parte Tew [1999] and R. v Rochdale MBC ex parte Milne (No. 2) [2000].

These cases dealt with outline planning applications for a proposed business park in Rochdale. They address:

1. Applications for outline planning permission under the Town and Country Planning Act 1990; and
2. Consideration of an EIA in the context of an outline planning consent to enable compliance with the EIA Directive (85/337/EEC) as transposed by the Town and drawings giving scheme parameters. The ES was tied to these parameters by planning conditions and consent was granted. This decision was again challenged but that Country Planning (EIA) (England and Wales) Regulations 1988.

In both cases an ES supported the application for planning permission and both cases involved a challenge to a determination by the local authority to grant planning permission when later detailed approvals were anticipated. In the first case, the scheme was authorised based on a bare outline application with an illustrative master plan. This decision was subsequently challenged on the basis that the ES was based on an illustrative plan and that a very different scheme could have been built. The developer subsequently applied again submitting an illustrative master plan but supported by a schedule of development and drawings giving scheme parameters. The ES was tied to these parameters by planning conditions and consent was granted. This decision was again challenged but that challenge was quashed on the basis that the consented scheme was tied to the development parameters.

Para 122 of the judgement which deals with uncertainty states: "*The assessment may conclude that a particular effect may fall within a fairly wide range. In assessing the 'likely' effects, it is entirely consistent with the objectives of the Directive to adopt a cautious 'worst case' approach. Such an approach will then feed through into the mitigation measures envisaged…. It is important that these should be adequate to deal with the worst case, in order to optimise the effects of the development on the environment*".

R v Cornwall County Council ex parte Hardy & Gwennap Parish Council CO/4784/99. September 2000 (Cornwall Case)

Another important EIA ruling is known as the 'Cornwall Case' and relates to the requirements to ascertain the presence of protected species before development consent is granted.

In October 1999 Cornwall County Council granted planning permission to County Environmental Services (CES), a company wholly owned by the Council, to extend the largest landfill site in Cornwall. The site had been the focus of widespread public opposition for a number of years as a result of continued environmental pollution from the site, damage to a proposed World Heritage Site, and adverse impacts on protected species in the area. Following the grant of planning permission, which would have extended the period of tipping by a further 10 years, Judicial review proceedings were instigated against the County Council.

It was argued in the High Court that the Council had acted illegally in that they had failed to adequately survey the site for protected species, which was

required by the EIA Regulations and the EU Directive. The Council argued that detailed surveys of flora and fauna could be dealt with by way of Section 106 Conditions following the grant of permission, a common practice with planning authorities.

Such surveys by way of conditions however would have the effect of excluding the public from participating in the process of environmental assessment, thus defeating the purpose of the Directive and the Regulations.

The Court found in favour of the objectors to the development, Mr Justice Harrison concluding that:

"the grant of planning permission in this case was not lawful because the respondent could not rationally conclude that there were no significant nature conservation effects until they had the data from the surveys. They were not in a position to know whether they had the full environmental information required by Regulation 3 before granting planning permission." Judgement para 73.

R (PPG 11 Ltd) v Dorset County Council

However, another case by R (PPG 11 Ltd) v Dorset County Council demonstrates that it is acceptable, in certain circumstances, to commission survey work after consent has been granted.

The validity of an approach which involves further survey work after the grant of planning permission is demonstrated by R (PPG 11 Ltd) v Dorset County Council, another landfill case [48]. This decision involved a resolution to grant planning permission for the extension of a clay quarry and its restoration by landfill, including the construction of a 1.2 km access road. This road was routed so as to avoid areas of possible ecological sensitivity in the heathland adjoining the site. There had been an ecological desk study and some survey work. The county ecologist advised the waste planning authority that although he considered that a full fauna survey for reptiles and birds would have been helpful, this did not prevent him concluding that the measures proposed would not have significant adverse effects on habitats or species. The resolution included conditions requiring further surveys as to habitats and protected species. In attacking the resolution, the claimant relied heavily on Hardy. Mackay J in PPG 11 regarded as interesting the distinction between Hardy and the case of R (Jones) v Mansfield District Council [49]. In Jones (a case on screening) the fact that the authority thought it would be beneficial for further bird surveys to be carried out to gain a better understanding of any adverse effects was not inconsistent with their reaching a conclusion, on the information available, that the development would not have significant effects. Mackay J put the point of distinction as follows:

'Hardy does not mean that a defendant cannot form the decision that it does not need a survey to reach a conclusion about the absence of significant effect; and where such a defendant in fact goes on to obtain or make provision for a

survey that is no more than a prudent approach, such as was in play in Jones, to establish whether any changes had taken place on the ground between the last survey and the starting of work, events which could well be up to 5 years or more apart in time'.

8.5.4.1 Managing Uncertainty

Two further projects provide useful guidance as to the treatment of uncertainty in the courts. Elias J (Judge) noted the following principles:

- If the authority is left uncertain as to the effects, so that it is not sure whether they may be significant or not, it should either seek further information from the developer before reaching a conclusion, or if an ES has already been provided it should require a supplement to the ES which provides the necessary data and information. It cannot seek to regulate any future potential difficulties merely by the imposition of conditions;
- The authority cannot dispense with the need for further information on the basis that it is not sure whether or not there are significant environmental effects, but that even if there are, other enforcement agencies will ensure that steps are taken to prevent improper pollution. However, it should assume that other agencies will act competently and it should not therefore anticipate problems or difficulties on the basis that those agencies may not do so.

8.5.4.2 Port-Related Case Law

Humber Sea Terminal Limited v. Secretary of State for Transport [2005] EWHC 1289 (Admin); [2006] Env LR 86

This case concerned a challenge to a HRO permitting Associated British Ports (ABP) to construct five roll-on, roll-off births at Immingham and its impact on the Humber Estuary SPA. Amongst the issues for consideration was whether ABP's ES had been inadequate, giving insufficient details of the proposed compensatory measures, in respect which ABP had entered into an agreement with English Nature and other bodies. On this point, Ouseley J held that a rigid distinction should not be drawn between a project and the compensatory measures to be taken in consequent of it. However, he found that there was no evidence that the proposed compensatory measures (involving recharge and flooding schemes to create new mud flat habitat) would be main or likely significant effects of the project, in consequence of which the omission of some of them from the ES did not prevent it from being an ES in law.

Wightlink Ltd (Wightlink)

A recent case relate to Wightlink which operates ferries on three routes between the mainland and the Isle of Wight, took a decision on 25 February 2009 to introduce a new class of ferry (W class ferry) on the route between Lymington and Yarmouth and area within a designated Natura 2000 site

Following this, a judicial review process was initiated by Akester and Anor (on behalf of the Lymington River Association) against the Department for Environment, Food and Rural Affairs (Defra) and Wightlink asserting that Wightlink's decision (to reject the appropriate nature conservation body's, Natural England, advice on the AA process) was unlawful under Article 6(3) of the Conservation of Habitats and Species Regulations 2010.

Wightlink rejected Natural England's advice that an adverse effect could not be ruled out and instead concluded in keeping with its own consultant's advice that no such effect would occur. The court ruled that "commercial considerations overrode, or at the very least influenced, the discharge by Wightlink of its public duties as a competent authority". This decision was ruled in the judicial review decision Wednesbury, in that "no reasonable person acting reasonably could have made it".

Wightlink applied to the MMO on 5 November 2010 for permissions under the Food and Environment Protection Act 1985 (FEPA) and Coast Protection Act 1949 (CPA) now replaced by a marine licence under the MCAA, to license two elements located within the Lymington Estuary:

1. Replacement and upgrade of berthing facilities (shore works)
2. Recharge and habitat creation works at Pylewell Bank.

The project fell under Annex II (13) of the MWR 2007 and due to its size, nature and location an ES was submitted with the application. The works were subject to a comprehensive EIA and the MMO concluded that they endorsed the findings of the ES and, subject to the inclusion of the conditions referred to in the EIA consent decision, they were of the opinion that the applications as proposed would not have a significant adverse effect on the environment.

In addition to the application to the MMO, further applications were submitted to the New Forest District Council and the New Forest National Park Authority for the shore works and the habitat creation works under the Town and Country Planning Act 1990. A Public Inquiry was opened on 11 October 2011 and sat 11-14 and 18-21 October 2011. Site visits were also made on 10 and 20 October 2011.

In relation to the ES it was concluded that it provided adequate information on the likely main impacts of the proposals and the mitigation measures that may be required. As such the view was taken that the ES was adequate and met the requirements of the relevant Regulations. As an overall conclusion it was found that, having regard to the project as a whole, including the ferry operations, it would not adversely affect the integrity of the Natura 2000 sites and there would be no damage to the SSSI. Having considered all other matters, it was satisfied that the appeal developments accord with the provisions of national and local planning policy and are acceptable. Accordingly for the reasons given above it was concluded that the appeals should be allowed and planning permission granted.

During consultation, Natural England advised that the introduction and operation of the W class ferry, its associated shore works and habitat restoration were,

together, likely to have a significant effect on the Solent and Southampton Water SPA/Ramsar site, and the Solent Maritime SAC and an AA should be undertaken. The MMO completed an AA which concluded that there would be no adverse effect on the integrity of the European sites, either alone or in-combination with other plans and projects, due to the habitat recharge and other mitigation aspects set in place.

8.6 Conclusions

The regulatory framework in the UK is considered to be mature and effective with EIA, SEA, Birds and Habitats Directives guidance incorporating the outcomes of national and European case law. SEA, EIA and the Habitats/Birds Directives are operated as separate regimes in England and Wales and, for port projects, SEA has little relevance.

Considerable guidance on the application of each Directive exists both from central government and from statutory bodies. Further extensive resources are available as practitioner's guides. The mature market and the existence of this guidance provide a standardised approach to the application of the EIA, SEA, Birds and Habitats Directives by practitioners and regulators of port projects (which are, in general, centrally regulated). Projects subjects to local regulation may find more variability in approach due to the local regulatory regime operated by planning authorities.

Uncertainty is managed in several ways, for example, through the application of the Rochdale Envelope, the inclusion of mitigation measures and appropriate monitoring to validate the impact predictions in the ES.

The UK has been accused of 'gold-plating' in its implementation of EU Directives. However, a review this year concluded that in the majority of cases, the implementation of the Habitats and Birds Directives was working well. Problems were identified for a number of schemes and it was recognised that projects in the marine environment face particular challenges. The government is addressing these issues through a series of measures.

Despite the findings of the review it is apparent that the approach to dredging, in particular, is treated differently in England where it is considered a plan or project despite ECJ ruling indicating that maintenance dredging may (in certain circumstances) be controlled through a scheme of management.

9 Overview results legal survey

This chapter compiles the results of the analysis of the European, Belgian, German, Dutch and UK legislation and policy. It contains some general findings, indicates the main differences between the mechanisms entailed in the EIA-, SEA-, Birds and Habitats Directives (*section 9.1*), highlights the national differences, both on the legislative and the decision-making level (*section 9.2*) and studies the uncertainties which confronted the development of port related activities in the five case studies who are the subject of the study performed by Royal HaskoningDHV under Lot 2 "*Environmental assessment practices in different EU member states*" (*section 9.3*).

9.1 Differences on EU level

The EIA and SEA Directives introduce an environmental assessment regime for activities that are likely to cause significant effects to the environment. The Habitats Directive (and indirectly the Birds Directive) elaborates an AA regime for activities that are likely to have a significant effect on Natura 2000 sites. These two regimes serve a different purpose and are consequently not identical. Within the environmental assessment regime, the EIA and the SEA also differ slightly. This section aims at highlighting some similarities and differences.

9.1.1 General and definitions

None of the analysed directives define the concept of significant effect. However, Annex II of the SEA Directive provides support for understanding this concept by stating "*criteria for determining the likely significance of effects*". These criteria are related to the characteristics of the plans and programmes and the characteristics of the effects and of the area likely to be affected. Annex III of the EIA Directive contains similar criteria. In absence of a proper definition, the EC attempts to clarify the concept of significance in the guidance documents related to this Directive (see section 4.4.3.4). Also case law of the European Court of Justice provides further interpretation of this concept (section 4.5).

9.1.2 Screening

The EIA, SEA and Habitats Directives each setup a screening procedure. The purpose of these procedures is to verify whether a proposed activity is likely to cause significant effects to the environment or more specifically to a Natura 2000 site.[113] The mechanisms and working methods are quite similar. An

[113] The EIA Directive does not explicitly speak of "likeliness of significant effects". The screening aims at identifying whether a project falls with Annex 1 or Annex 2. Indirectly, this comes down to the same. Annex I is a list of projects which in principle are always subject to EIA, irrespective of the specific characteristics of a specific project on that list, because it is assumed irrefutably that such projects are deemed to have significant environmental effects. There is by law a presumption of significant environmental impacts associated with each project category mentioned on the list in

EIA/SEA screening procedure can be organised concurringly with a Habitats screening procedure. However, the findings of these screening procedures are not necessarily identical. This is linked to the object of the screening procedure, the environment as a whole versus a specific Natura 2000 site. The same effect can be found significant in an AA as it affects the nature conservation goals and can be considered not be significant to the environment as such.

9.1.3 Content assessment

The environmental assessment of the EIA and SEA Directives has a much broader assessment scope than the AA of the Habitats Directive: all significant effects on the environment[114] versus all significant effects on the conservation objectives of the protected site[115].

Only the SEA Directive stipulates the minimal requested information to be incorporated in the ER.[116] The EIA Directive does not determine explicitly the minimal content of the ES. The developer has to take care that he supplies the information specified in Annex IV of the Directive in an appropriate form. However, these requirements may differ in each country, because each Member State is allowed to consider which information is actually required. The Habitats Directive contains no specific provisions on the content of an AA nor does it define any particular method for carrying out such assessment. In order to create a coherent and sound system of assessment the Commission prepared special guidance documents.

The ES has to include, where appropriate, an outline of the main alternatives studied by the developer and an indication of the reasons for choosing an alternative, taking into account their environmental effects. The same applies to the ER which is required to identify, describe and evaluate '*reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme*'.[117] Under the Habitats Directive, considering alternative solutions is only technically necessary if the AA process cannot rule out an adverse effect. However, the search for alternatives is likely to be on-going already during the plan, programme and project preparation process and accompanying AA process in order to avoid an adverse effect.

Annex II. During the screening procedure it is to be determined whether this presumption is correct. If not, the developer the developer can obtain a waiver of the EIA obligation.

[114] Article 3 EIA Directive: the indirect and direct effects of a project on human beings, fauna and flora, soil, air, water, climate, landscape, material assets, cultural heritage and the interaction of the above factors – Annex 1 SEA Directive: biodiversity, population, human health, flora, fauna, soil, water, air, climate, landscape, material assets, cultural heritage and the interaction of the above factors.

[115] The ecological features have been considered protection worthy and has been designated as a Natura 2000 site.

[116] Annex I SEA Directive

[117] Article 5(1) SEA Directive

9.1.4 Scoping

Only the SEA Directive puts in place a scoping procedure on the level of detail of the information in the ER. During this scoping procedure the authorities likely to be concerned by the plan or programme because of their specific environmental responsibilities should be consulted. The EIA Directive does not contain specific provisions on how, when and by whom the scope of the ES is to be established. However, a developer can solicit a sort of **optional scoping**.

Neither the Habitats Directive (nor the Birds Directive) foresees a formal procedure for determining the content and the level of detail of the information to insert in the AA. Notwithstanding that scoping is not mandatory under the EIA Directive and the Habitats Directive, it is considered to be good practice and it aims to precisely identify the potential impacts that should be covered in the assessment, as well as the appropriate information to gather.

9.1.5 Consultation and participation

The EIA Directive requires Member States to ensure that the authorities likely to be concerned by the project or plan because of their specific environmental responsibilities are given an opportunity to express their opinion on the information supplied by the developer as well as the request for development consent. The SEA Directive equally requires that Member States shall make the draft plan available to the authorities who, by reason of their specific environmental responsibilities, are likely to be concerned by the environmental effects of implementing plans and programmes.

Only the SEA Directive puts in place a scoping procedure on the level of detail of the information in the ER. During this scoping procedure the authorities likely to be concerned by the plan or programme because of their specific environmental responsibilities should be consulted. The EIA Directive does not contain specific provisions on how, when and by whom the scope of the ES is to be established.

Both Directives oblige Member State to inform the public on the proposed project or the proposed plan and require that the public (likely to be) affected or having an interest in the project or plan must be given early and effective opportunities to participate in the EIA or SEA as a part of the environmental decision making procedures and for that purpose be entitled to express comments and opinions while all options are still open before the consent is given by the competent authority. Both Directives impose Member States to effectively consult other Member States on the effects that an activity might have on their environment. Contrary to the EIA and SEA Directives, the Birds and Habitats Directive contains **no special provisions on consultation of authorities or participation by the public** on measures that are likely to affect Natura 2000 sits significantly. They neither deal with cross border aspects of and cross border consultation on such measures.

9.1.6 Decision making and monitoring

The EIA and SEA Directives requires that projects and plans likely to generate significant effects on the environment are made subject to environmental assessment prior to the consent or adoption decision. The findings incorporated into the environmental statement/report must be taken into account during the preparation of the plan and upon issuing the development consent or the adoption decision.[118] [119] The environmental assessment requirements can either be integrated into existing procedures in Member States for development consent or plan adoption or incorporated in specific procedures established to comply with these directives. Also the Habitats Directive demands that the conclusions of the AA of the implications for the site are taken into account by the competent authority when agreeing to the plan or project.

The EIA and SEA Directives only require the result of an environmental assessment to be taken into account during the preparation of and upon the authorisation of a project or plan. In other words, the environmental assessment provides information that needs to be taken into account in the decision, but does not determine this decision. Consequently, the environmental assessment requirement entails so to speak an '**obligation of procedure**', whereas the appropriate assessment entails an **'obligation of result'**. A negative assessment under Habitats Directive constrains the decision as it may result in a rejection of a project or plan affecting a Natura 2000 site, if there are no alternative solutions and if there are no IROPI and no compensation measures for damage have been secured.

While the EIA Directive contains **no explicit monitoring requirements**, these are implicit in the identification of '*measures to prevent, to reduce and where possible to offset any significant adverse effects on the environment*'.[120] It is good practice to monitor predicted effects, as well as delivery of commitments in the ES. Competent authorities can also attach monitoring conditions to consents.

The SEA Directive expressly places a duty on Member States to '*monitor the significant environmental effects of the implementation of plans and programmes in order, inter alia, to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate action*'.[121]

Neither the Habitats Directive nor the Birds Directive requires the establishment of a monitoring campaign. However, monitoring is considered to constitute good practice. Monitoring provides the best opportunity to present information on how the management plan of the Natura 2000 site is meeting its biodiversity targets. Monitoring the timing and the effectiveness of mitigation measures set

[118] Articles 2(1), 2(2) and 8 EIA Directive and Articles 4(1), 4(2) and 8 SEA Directive
[119] A post-adoption statement must be produced outlining changes made to the plan or programme as a result of the SEA, responses to consultations, and the reasons for choosing the plan in light of other reasonable alternatives dealt with.
[120] Article 5(3) EIA Directive
[121] Article 10(1) SEA Directive

out in the authorisation of the project or plan will be important to ensure the AA's conclusion of no adverse effects are realised.

9.1.7 Overview

The above mentioned differences and similarities on the EU level are summarised in Table 9-1.

Table 9-1 Differences and similarities of the Directives on EU level

<table>
<tr><th></th><th>EIA</th><th>SEA</th><th>Birds</th><th>Habitats</th></tr>
<tr><td>General / Definitions</td><td>No definition 'significant effect'

Cfr. Criteria Annex III

Case law</td><td>No definition 'significant effect'

Cfr. Criteria Annex II

Case law</td><td>No definition 'significant effect'

Case law</td><td>No definition 'significant effect'

Guidance documents

Case law</td></tr>
<tr><td>Screening</td><td colspan="2">Screening procedure

Object: significant effect on the environment as a whole</td><td colspan="2">Screening procedure

Object: significant effect on a specific Natura 2000 site (conservation goals)</td></tr>
<tr><td rowspan="2">Content Assessment</td><td colspan="2">Scope: significant effect on the environment as a whole</td><td colspan="2" rowspan="2">Scope: significant effect on a specific Natura 2000 site (conservation goals)

No specific provisions on content or method</td></tr>
<tr><td>Annex IV (discretion for Member States)</td><td>Minimal requested info (Annex I)</td></tr>
<tr><td></td><td colspan="2">Always reasonable alternatives</td><td colspan="2">Alternatives only if adverse effects cannot be out ruled</td></tr>
<tr><td>Scoping</td><td>Optional scoping on initiative of developer</td><td>Formal, compulsory scoping procedure</td><td colspan="2">No formal, compulsory scoping procedure, but considered good practice</td></tr>
<tr><td>Consultation / Participation</td><td colspan="2">Compulsory (trans)national consultation of stakeholders (authorities, public, …)</td><td colspan="2">No provisions on (trans)national consultation of stakeholders (authorities, public, …)</td></tr>
<tr><td>Decision / Monitoring</td><td colspan="2">Obligation of procedure (result of EA must only be taken into account)</td><td colspan="2">Obligation of result (negative AA results in rejection if no alternative solution nor IROPI)</td></tr>
</table>

9.2 Comparison national EIA, SEA and AA systems

The EIA, SEAand Habitats Directives lay down certain end results regarding EIA, SEA and AA that must be achieved in every Member State. National authorities have to adapt their laws to meet these goals, but are free to decide how to do so. Each directive specifies the date by which the national laws must be adapted. The Member States, within the time frame set by the directive, have discretionary power over the timing of the transposition into national legislation of the directive. The timing chosen by each Member State will often be in relation to the estimated required time to overcome differing national situations. These Directives are used to bring different national laws regarding environmental protection and nature conservation into line with each other.

Considering the discretionary margins Member States enjoy while implementing the EIA, SEA, Birds and Habitats Directives, the environmental assessment regimes and the AA regimes in Belgium (Flanders), Germany (Federal State of Bremen), the Netherlands and the United Kingdom (England and Wales) are slightly different. This section provides an overview of some of these nuances.

9.2.1 General and Definitions

In Belgium, Germany and the Netherlands, the EIA and SEA Directives are closely linked. Both European Directives have been implemented by the same act and regulations. In the UK, the EIA and SEA regimes are related but also separate in that they apply to different activities' (projects and plans/programmes). However, in all four countries these environmental assessment regimes are a precise implementation of the EIA and SEA Directives. The same applies to the Belgian, German, Dutch and UK's nature conservation regimes which use almost exactly the same wording as the Birds and Habitats Directives. Also the national jurisprudence is strongly inspired and influenced by the case law of the European Court of Justice.

9.2.2 Screening

Belgium, Germany, the Netherlands and the UK all have implemented screening procedures to verify whether a proposed activity is likely to cause significant effects to the environment or more specifically to a Natura 2000 site. The outcome of these screening procedures can trigger environmental assessment or AA. The mechanisms and working methods are quite similar to what is laid down in European legislation, regulations and policy documents. However, the European Court of Justice ruled recently that the Flemish Region and the Netherlands did not correctly transpose the European Directive articles and annexes, which regulate screening. Even if an activity does not meet the thresholds mentioned in the national legislation, nevertheless a preliminary screening is mandatory if – based on the selection criteria in Annex III of the EIA Directive, significant environmental impacts cannot be excluded. The thresholds focus on the extent of the activity and did not take into account the other criteria in Annex III of the EIA Directive as the location of the project and the characteristics of the potential impact. The Flemish Region and the

Netherlands take the necessary measures to render their national regulations compliant with the EIA Directive.

With respect to navigation dredging, Member States may differ in their interpretation of the need for EIA with some Member States (e.g. the UK) maintaining that navigation dredging projects are not covered by EIA unless they are associated with another EIA project (e.g. reclamation). Furthermore, in the UK, the creation of a new dredged material disposal site and the disposal of dredged material at sea are not considered to require EIA. In the UK there is also a different approach to maintenance dredging as it is considered a plan or project and potentially subject to AA. Defra has implemented a voluntary approach called the Maintenance Dredging Protocol where all those involved in dredging in an area can produce a combined Baseline Document that describes the history of dredging and carries out an in-combination assessment. Importantly, there is an assumption that long standing maintenance dredging is likely to form part of the baseline environment and thus not give rise to significant effects on the SAC or SPA. The ECJ ruling a year or so ago infers that the UK government was wrong in its assertion that the previous management plan approach was not acceptable. However, the UK ports industry has not sought to change the current approach.

9.2.3 Content assessment

In all four concerned jurisdictions, the relevant regulations specify the minimal content of an environmental assessment and an AA. The EIA, SEA and AA reporting should always include an overview of the knowledge gaps and other uncertainties in the description of the current situation, the environment and the environmental impact of the intended activity. For EIA purposes the considerations of alternatives in the UKis generally restricted to sites that could reasonably be considered to be within the developer's control, that is, the study focuses on selection of the least damaging of the opinions available to the developer rather than consideration of projects being developed or promoted by competitors (as is the case with the Habitats Directive).

9.2.4 Scoping

The Belgian environmental assessment regime puts a strong emphasis on scoping. Each EIA and SEA procedure starts with a notification to the EIA Unit. This notification constitutes an elaborate file stating a description of the proposed project or plan and the likely effects, the projected content of the EIA or SEA, the envisaged methodologies, etc. The actual EIA or SEA procedure can only start after the EIA Unit approves the proposed scope. Prior to taking a decision and commenting on the notification file, the EIA Unit will consult all relevant authorities and a public enquiry will be held. The input of the EIA Unit, the concerned authorities and the public will diminish the risks of unexamined effects, knowledge gaps.

The German regulations also foresee a scoping procedure. The EIA procedure scoping is not mandatory. The SEA procedure is mandatory and contains a full

blown scoping procedure. However, besides the possibility to solicit input and feedback of concerned third parties, there is no duty to organise a public enquiry at this stage. The applicable regulations leave room for a dialogue between the developer of the project or plan and the authority competent to consent to the project or plan.

In the Netherlands, scoping is an obligation under EIA and SEA, but the obligations leave room to take into account differences in scope and level of detail of the plan or project. In EIA procedures the reasonable to consider alternatives stay mostly within the project area of the developer and in other cases (more relevant to SEA procedures) the selection of a location forms an important part of the EIA and the decision making process.

Scoping forms an essential part of both SEA and EIA in the UK with the scoping opinion confirming the basis of the impact assessment that will be reported in the EIA. In practice, it is common in the UK for the Screening and Scoping stages to be combined into a single stage. This reduces the overall timescale associated with the provision of a screening and scoping opinion from the regulators. There is a wide range of potential competent authorities for EIA in the UK (depending upon the type, scale and location of the project) however policy guidance from central government aims to ensure a consistent approach.

9.2.5 Consultation and participation

Consultation forms an important part of SEA, EIA and AA in Belgium, Germany, the Netherlands and the UK. Each set of implementing regulations includes provision for formal consultation during scoping and also during consideration of the ES.

In the UK, there is a range of approaches taken by the different regulations with some EIA regulations including statutory consultees (i.e. named bodies) and others providing flexibility to the regulator to decide on consultation requirements on a case by case basis. The decision on the need for public inquiry is taken once consultation on the ES is complete and can be related to the number and nature of objections received.

In the Netherlands the extensive procedure requires public participation and consultation and an advice of the NCEA (EIA Commission) on the scope and level of detail of the EIA/SEA preliminary to the draft of the ES itself and thereafter. This creates possibilities for third parties to give their opinion on aspects that need to be addressed in the ES and afterwards on the way the proponent has dealt with these opinions.

9.2.6 Decision making (incl. permitting) and monitoring

In Belgium, the environmental assessment requirements are incorporated in a specific procedure established to comply with the EIA and SEA Directives. In this procedure a substantial role is attributed to a **specialised central**

authority: the EIA Unit of the Environment, Nature and Energy Department of the Flemish administration takes up this role, instead of the consenting authority. This specialised unit is involved in every EIA and SEA in the Flemish Region. Consequently, it could build up an enormous expertise on environmental assessment through the years which is obviously an advantage when dealing with uncertainties. The AA requirements are integrated into existing procedures for development consent or plan adoption in the Flemish Region. However, also regarding AAs an important role is attributed to a central authority. This role is taken up by the Minister of Public Works, Energy and Environment, supported by the specialised Nature and Forest Agency.

In Germany, the EIA and SEA requirements are integrated into the procedure for the relevant plan or permit. The competence to determine whether an EIA or a SEA needs to be carried out and the competence to supervise the execution of the EIA or SEA lays with the authority that is competent to rule on the admissibility of the project or the plan and not with a separate specialised government agency. The consequence of such integration is that the competent authority varies according to the law that applies to the permit or plan concerned and the territory on which the project is developed or the plan is applied, rather than attributing a substantial role to a specialised central authority.

In the Netherlands, the regulations integrate the EIA/SEA and AA procedures into the procedures that need to be followed for the relevant plan or permit. There is no national specialised authority, that whenever an EIA/SEA or AA is mandatory, takes over the role as competent authority. Therefore, the competent authority can vary depending on differences in the relevant regulations and the territory on which the project is developed or the plan is applied. Nevertheless, the NCEA plays a key role as an independent expert body with legal status in issuing non-binding advice to government agencies responsible for environmental assessments. Although this advice is not in all cases mandatory, government and proponents can benefit from this comprehensive source of information.

In the UK the EIA regulations are implemented into the sector-based and over-arching development control regime. SEA is implemented separately and applies across public sector planning activities. Strategic planning and development activities are inter-related through planning policy; with SEA providing the overall context within which project-specific EIA is carried out. Due to the relatively specific nature of port-related activities (which are generally under private sector ownership) in the United Kingdom, the SEA Regulations are not applicable to such development or projects, these being assessed (if appropriate) via the various EIA regulations available. However, at the estuary-wide level, SEA is adopted as a useful assessment tool when authorities other than Harbour Authorities (e.g. the Environment Agency or other Coastal Protection Authorities, such as Local Authorities) are involved in the delivery of certain plans or programmes.

The Belgian, Dutch and English courts limit themselves to a marginal review of environmental assessments and AAs. This introduces a notion of

reasonableness. The courts judge that uncertainties and knowledge gaps do not per se constitute a breach of the precautionary principle. Uncertainties and knowledge gaps that are not sufficiently substantial or that can only be eliminated after a detailed examination against unreasonably high costs are acceptable. The developer is not held to create new scientific knowledge. He only has to inventory and work with reasonably accessible scientific knowledge and generally accepted research methods.

9.2.7 Overview

The above mentioned differences and similarities between the national regimes are summarised in Table 9-2, while Table 9-3 focusses on differences in how in the Member States is dealt with uncertainties in permitting practice:

Table 9-2 Overview differences/similarities national EIA/SEA and AA regimes

	Belgium (Flanders)	Germany (Bremen)	The Netherlands	UK (England and Wales)
General / Definitions	EA and AA regimes are precise implementation of the EU Directives			
	EIA and SEA are implemented by the same act and regulations (very similar procedures)			EIA and SEA are separate regimes but closely linked
Screening	Formal screening procedures have been put in place			
	ECJ: screening procedure with mainly thresholds focusing on extent of activity are incorrect implementation of Annex III of EIA Directive		ECJ: screening procedure with mainly thresholds focusing on extent of activity are incorrect implementation of Annex III of EIA Directive	Navigation dredging not subject to EIA Maintenance Dredging Protocol
Content Assessment	Minimal content of EA and AA (incl. overview knowledge gaps and other uncertainties)			
Consultation / Participation	Provisions of formal consultation during scoping and consideration of ES			
			Independent Expert body (NCEA)	System of statutory consultees
Decision / Monitoring	Specific EIA/SEA procedure, not integrated Specialised central authority approves EIA/SEA, advises on AA	EIA/SEA integrated in existing permit and planning procedures Permitting or planning authority approves EIA/SEA, but a specialised commission acts as independent expert body	EIA/SEA integrated in existing permit and planning procedures Permitting or planning authority approves EIA/SEA, but independent Expert body gives advice	SEA not applicable to port related activities Implemented into sector-based and over-arching development control regime
	Courts exercise marginal control			

Table 9-3 Overview dealing with uncertainties in national permitting practice

	Belgium (Flanders)	Germany (Bremen)	The Netherlands	UK (England and Wales)
Legislation / regulations	**Nature Conservation Act gives indication of significance on a SPA or specie:** a measurable and demonstrable effect on the conservation status	**No definition on significance** is given. However the **Eingriffsregelung** provides an integral approach of safeguarding the status quo of the functionality of nature and landscape	**No definition on significance** is given	**No definition on significance** is given
Guidance documents	The EIA Unit provided i.a. a general guideline **(1997) on how to deal with knowledge gaps**	Competent authorities drafted i.a. guidelines on EIA/SEA for **federal waterways and the city of Bremen** and **on the concept of significance**	Competent authorities provided a **general manual** and a **guideline** on EIA/SEA and a specific guideline on **significance** NCEA provided information and fact sheets, i.a. on **dealing with uncertainties**	Competent authorities provided several guidelines i.a. **EIA procedures, marine licensing and known data gaps**
Permits	**Scheldt case (B)** The consenting authorities forced **special permit conditions** on e.g. dredging and disposal strategy and on the **phasing in time** of the project (consistent with the development of compensatory measures, also in NL)	**Weser case** Development of **supra-federal compensation measures** **Comprehensive monitoring scheme** on (e.g. migratory fish)	**Scheldt case (NL)** Development of **package deal** accompanied by intensive stakeholder-management **Three stages approach:** 1. Use most environmental friendly alternative, 2. Flexible mitigation/intensive monitoring and 3. commitment to stop the project if in spite of 2, negative effects occur.	**Stour/Orwell case** **Legal agreements** in order to enforce the different compensation, mitigation and monitoring commitments **Regulators group** with authority to refine mitigation/ monitoring programme
Case Law	**Marginal review** and introduction of **notion of reasonableness**	**Adaptive approach** can be used if combined with proper risk management (Halle case)	**Adaptive approach** can be used (Case Coal-fired plant Eemshaven)	**Rochdale Envelop Cases** have led to new approach in project design

9.3 Dealing with uncertainties in the case studies

The current study and report is the first lot of an overall study, comprising two lots. The second lot analyses the environmental assessment practice through five case study examples (in alphabetical order of the name of the estuary:

- Enlargement of the navigation channel in the Eems estuary
- Dredging of the approach channel to the Immingham Oil Terminal in the Humber estuary
- Enlargement of the navigation channel in the Scheldt estuary
- A series of major port development and capital dredging project in the Stour and Orwell estuaries
- Construction of container terminal 4 in the Weser estuary.

Figure 9.1 shows the relative location of each estuary:

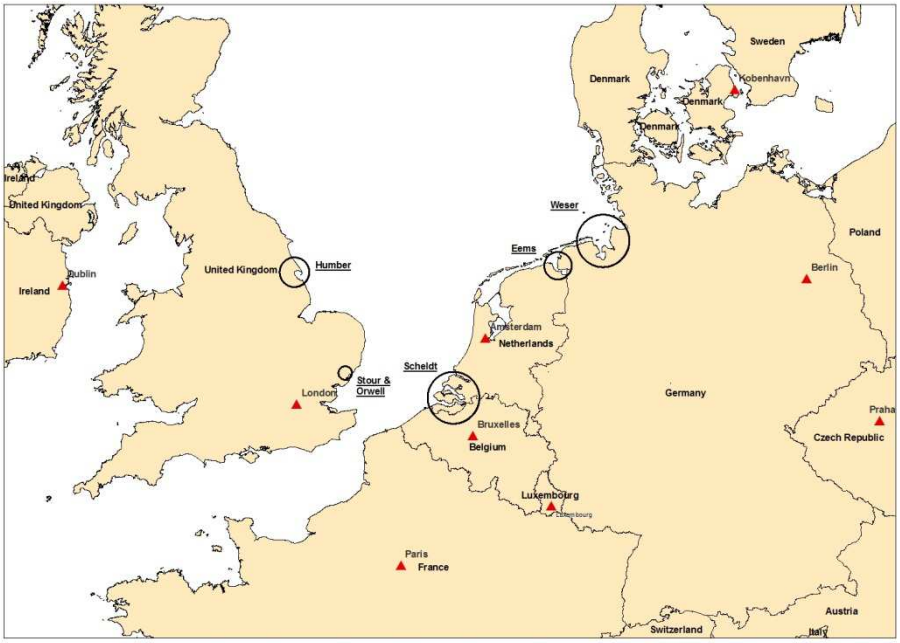


Figure 9-1 Location of the case study estuaries

The analysis of the five case studies showed following findings:

- An important aspect is determining **the level of research or evidence that is required, as a minimum**, to inform the EIA and AA process. It is not possible to provide a definitive answer to this issue because this varies on **a case by case basis** and is related to the level of risk that a project poses to the environment (i.e. the likelihood that a project will impact on designated sites within the estuary). The key point is that sufficient evidence needs to be provided to demonstrate whether or not a designated site is likely to be affected and, if an effect is likely, what the scale of the effect would be to inform development of appropriate mitigation and/or compensatory measures. What constitutes sufficient evidence is

determined through consultation with regulators and their advisors at the local level.

- The question of what constitutes a **significant effect** is clearly linked to the determination of whether or not an effect on the designated status of a site is likely and the evidence needed to support this consideration. There are **no universally accepted limits or thresholds** (e.g. a change greater X% is significant), because of the particular environmental characteristics that prevail in different estuaries and the fact that the concept of significance might evolve over time (e.g. due to environmental changes or regulatory changes).
- Numerical modelling studies are one of the key technical studies that need to be undertaken in support EIA and AA. On the basis of the case studies, **the predictions made through numerical modelling work are often subject to significant uncertainty** due to the fact that the environment that is being modelling is highly variable. Modelling should be seen as a tool to inform assessment, but **the interpretation of the modelling outputs by an expert who understands the estuarine system being studied is more important**. Therefore, regulators need to have more acceptance of this expert opinion.
- **Past experience** is often crucial in gaining acceptance to a project. The proposed use of a mitigation technique (e.g. sediment management as a measure to mitigate predicted adverse impacts on estuarine habitats) is more easily accepted if it has been previously applied for other projects and has been demonstrated to be successful (or if no adverse impact has been noted as a consequence of the implementation of the project). This minimises the risk and uncertainty for the regulator, and acceptance of the continuation the technique (with modification if necessary) for subsequent developments has been critical in gaining approval for projects.

Through undertaking the analysis of the five case studies, a number of aspects have been identified as good practice measures that could be considered for wider application in other projects. A summary of these measures, which are all related to dealing with uncertainty in EIA and AA, is provided below.

1) Early consultation with relevant stakeholders is a very important part of any project. In addition, consultation should be maintained at appropriate points throughout the project. One of the benefits of this approach is that stakeholders can understand how the studies are progressing, what the relevant issues are and the nature of studies that are being undertaken to inform the EIA and AA process. This approach enables stakeholders to have a better understanding of uncertainties involved in the EIA and AA studies and minimises the risk of challenges to the project when an application is made.

2) Agreeing the scope of work for the EIA and AA with stakeholders is an important part of the consultation process because the studies will then address the issues of importance to the stakeholders. In the United Kingdom and in Belgium, this is normally done by producing an environmental scoping report which is submitted to the regulatory body.

This body then consults with various organisations and provides a scoping opinion on the issues that the EIA and AA should address.

3) In terms of EIA and AA studies, the main source of uncertainty appears to be related to the understanding of physical processes and morphological evolution of the estuarine system. These issues should be investigated in detail to lead to a clear scientific view on the current situation and the baseline conditions that are to be used in assessing new plans and projects. If uncertainties or lack of knowledge on physical, morphological or biological processes remains, these should be minimised as much as possible by additional research.

4) As the acceptance of certain mitigation techniques proposed for a particular project can be important for subsequent developments, ports and competent authorities should collaborate in establishing a more systematic approach towards monitoring, so that new evidence about previous mitigation measures (e.g. effectiveness) can be fed back into the scientific knowledge system and – if necessary – also be used for refining numerical models.

5) The appropriate use of conditions in the consent for the project (e.g. permit) can be a means of dealing with scientific uncertainty with regard to the effects of a plan or project or the related mitigation or compensatory measures. Conditions can define, for example, corrective measures that may need to be undertaken if monitoring reveals that a proposed mitigation measure has not been successful.

6) The establishment of a long term forum, including the developer, stakeholders and regulatory authorities, that is authorised to implement changes to a programme of mitigation or compensation measures on the basis of the results of monitoring programmes can be a valuable mechanism for managing mitigation or compensation commitments. This approach can give comfort to stakeholders that areas of uncertainty and risk that remain following EIA and AA studies can be accommodated and managed through a process of reporting of monitoring and feedback.

7) The use of legal agreements that set out mitigation, compensation and monitoring commitments (and the proposed approach to reporting and management of such commitments) can give regulators confidence that such measures are enforceable and such agreements can form part of the permit / consent for the project.

10 Conclusions and recommendations

This chapter concludes this present report with our main findings (*section 10.1*) and recommendations (*section 10.2*).

10.1 Main findings

None of the analysed Directives explicitly define the concept of significant effect. However, the EIA and SEA Directives put forward some criteria that might be useful for determining the significance of effects. Notwithstanding these existing criteria, from the consulted doctrine and case law state, it can be deduced that it is impossible – and even undesirable – to establish general thresholds for assessing whether the effects caused by a project or plan are significant.[122]

In each separate case and for each individual site the 'significant effect on a Natura 2000 site needs to be specifically argued and proven. The statutory or regulatory denomination as such of a specific site is never a sufficient criterion.[123] Nor is the size of the project, or the affected area. One cannot exclude that even a small-scale project could have significant effects on the environment.[124] The question of what constitutes a significant effect is clearly linked to the determination of whether or not an effect on the designated status of a site is likely and the availability (or lack) of evidence to support this consideration.[125] There are no universally accepted limits or thresholds (e.g. a change greater X% is significant), due to the particular environmental characteristics that prevail in different Natura 2000 sites and the fact that the concept of significance might evolve over time; for instance because of environmental and/or regulatory changes. EIA consultants will refer to standards and thresholds if and when these exist, but inevitably expert judgement forms a key part of the final assigning of levels of significance.

The report of Lot 2, the analysis of the environmental assessment practice through five case study examples (*see section 9.3*), insists on more acceptance of expert opinion on the interpretation of estuarine modelling outputs. The EIA, SEA, Birds and Habitats Directives, as well as the Belgian, German, Dutch and UK national legislation and regulations implementing those Directives, are in favour of wider acceptance of expert opinions in order to achieve a better and wider understanding of the concerned estuarine system for the benefit of the competent regulators.

The courts seem to limit themselves to only a marginal review of environmental assessments and AAs.[126] This introduces a notion of reasonableness. The

[122] See EU: guidance documents on the Habitats Directive (Section 4.4.3.4), case law (Section 4.5) and the conclusions (Section 4.6) – Belgium: RvS n° 211.533, 24 February 2011
[123] ECJ, case C-117/02 Commission v. Portugal [2004]
[124] ECJ, case C-392/96, Commission v. Ireland [1999]
[125] ECJ, case C-127/02, Preliminary ruling, Waddenzee [2004]
[126] EU: ECJ case C-304/05, Commission v. Italy [2007], ECJ, case C-127/02, Preliminary ruling, Waddenzee [2004] – Belgium: RvS n° 200.738, 10 February 2010, RvS n° 209.866, 20 December 2010 – Germany: BVerwG, 4 C 16.04, 7 December 2006, BVerwG, 9 4 31.10, 20 December 2011

courts judge that uncertainties and knowledge gaps as such do not constitute a breach of the precautionary principle.[127] Uncertainties and knowledge gaps that are not sufficiently substantial or that can only be eliminated after a detailed examination against unreasonably high costs, are acceptable. The developer has no obligation or responsibility to create new scientific knowledge.[128] Nevertheless, the developer has a duty to inventorise the reasonably accessible scientific knowledge and work with generally accepted research methods.

Apart from non-compliance or other specific situations, the authorities in most cases do not dispose of the possibility to stop a project by revoking the consent. Acting otherwise would clash with the legal certainty principle. Revoking the permit could lead to liability of the revoking authority for the damages caused by this breach of vested rights ('*droit acquis*') of the permit holder, the port operators, and the investors.[129]

10.2 Recommendations on dealing with uncertainties

Based on our findings we formulate below some recommendations on good practice and innovative solutions, especially regarding the way to deal with uncertainty and/or other research issues within national legislation, assessment procedures and decision-making. The recommendations are grouped per phase in the lifecycle of a project as defined in the blue part of the following scheme (Figure 10-1). The availability and quality of the information in each step can influence the following steps:

[127] Belgium: RvS n° 147.047, 30 June 2005
[128] Belgium: RvS n° 206.333 & n° 206.334, 1 July 2010, RvS n° 211.533, 24 February 2011, RvS n° 217.112, 5 January 2012 – UK: R (PPG 11 ltd) v Dorset County Council – The Netherlands: RvS 20090227442/R2, 24 July 2009 – Germany: BVerwG, 4 C 16.04, 7 December 2006
[129] One could try to bypass this by integrating the possibility of ending the project as part of an adaptive strategy (*See section 10.2.3*).

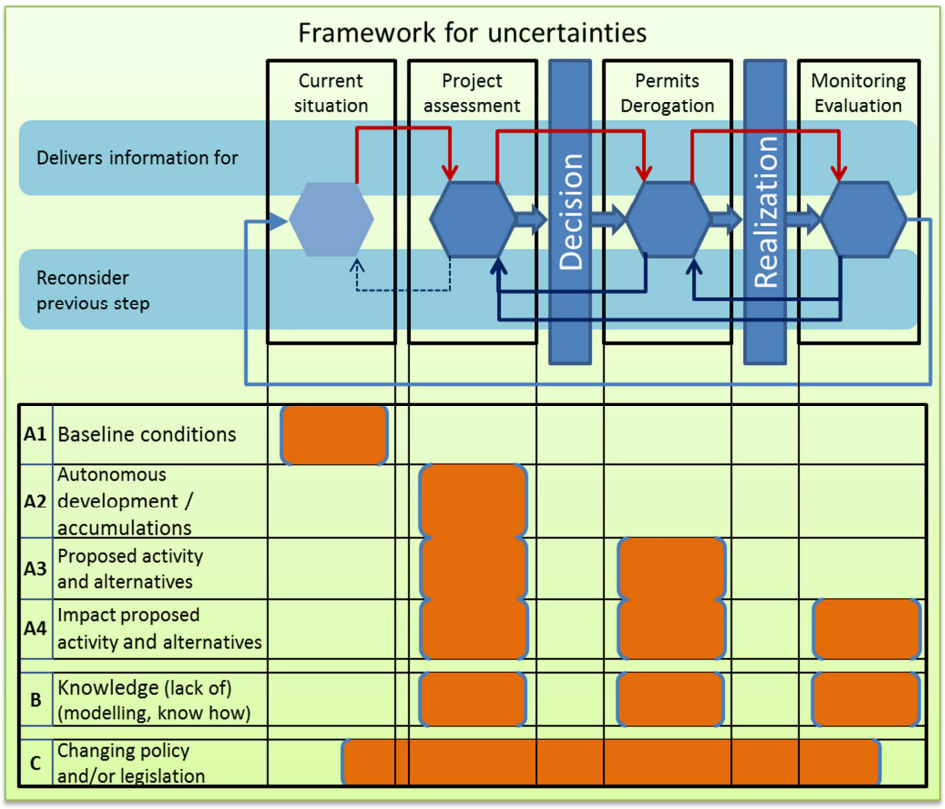


Figure 10-1 Framework for dealing with uncertainties

However, also the preparatory work undertaken prior to the above indicated phases in the lifecycle of a project is of crucial importance to the attempt of avoiding uncertainties during the assessment and permitting phases. The more the conception of a project has been based on research and the more detailed (the scope and concept of) a project or plan is defined, the slimmer the chance of uncertainties arising in a later phase. During this preparatory work more specifically the proponent should try to prevent negative effects likely to be caused by this project. Eliminating negative effects upfront automatically results in the disappearance of the uncertainties inherently associated in predicting these negative effects. Negative effects should be avoided by choosing a project concept and implementation strategy that are based on sound eco-morphological insight in the estuarine system and that do not work against nature and the morphological evolution of the estuarine system. This approach has been followed in the widening and deeping of the Western Scheldt (e.g. the sediment disposal strategy along sandbars in the Western Scheldt).

Nevertheless, assessing the environmental impacts of port developments in estuaries can prove to be very challenging, due to the dynamic nature of the estuary and the uncertainty associated with cause and effect of development on the physical and biological environments. Consequently, the underlying idea for all these recommendations are the observations in the relevant literature that port authorities, regulators, EIA/SEA professionals and all other stakeholders in the process should accept the fact that EIAs and AAs (and, even more, SEAs, given their '*strategic nature*') will always contain aspects that

for several reasons could remain unexamined and unexplained and as a result need to be based on value assumptions instead.

10.2.1 Uncertainties concerning the current situation

The available scientific knowledge and past experiences are often crucial in gaining acceptability of a project.

- **Detailed investigation** of the physical processes and morphological evolution of the specific estuaries, preferably in close collaboration with the national or federal government, in connexion with the research obligations pursuant to the Birds and Habitats Directives.[130, 131] This investigation should lead to a clear scientific view on the current situation and the baseline conditions that are to be used in assessing new plans and projects.

- The best available and most sound scientific knowledge regarding these components should also be established and used by the competent authorities and ports as a **basis for the establishment of nature conservation objectives** for such ecosystems.[132] When and if uncertainties or lack of knowledge on physical, morphological or biological processes still exist, these should be minimized as much as possible by additional research.

- As the acceptance of certain mitigation techniques for subsequent developments is critical in gaining approval for projects, ports and competent authorities should collaborate in establishing a **more systematic approach towards monitoring**, so that new evidence about previous mitigation measures can be fed back into the scientific knowledge system and – if necessary – also be used for refining numerical models.

- The ultimate standard for determining whether an effect on a Natura 2000 site caused by a project or a plan will be significant or not, is its relation to the nature conservation objectives adopted for the site. Therefore, port and waterway authorities should be consulted early on the development and implementation of conservation measures for relevant Natura 2000 sites. In the **management plan** of these sites, economic, social and cultural requirements and regional and local characteristics such as the actual situation in ports and the expected future economic developments, should be taken into account with the simultaneous aim of not jeopardizing the

[130] See section 9.3. Dealing with uncertainties in the case studies
[131] Consulting specialized governmental agencies (e.g. the EIA Unit in the Flemish Region, the Netherlands Commission for Environmental Assessment, ...) allows proponents to inventory all already existing data for the impacted area or data that can easily be transposed to the project situation.
[132] Port related activities, such as maintenance dredging, are sometimes necessary for the management of Natura 2000 sites and the achievement of the nature conservation goals, or at least carried out in the context of ecological site management. In such cases, no AA is required for, in this case, these dredging operations, provided they are expressly integrated into the management plan of the concerned site(s).

contribution of the respective site to achieving the overall objective and coherence of the Natura 2000 network.

10.2.2 Uncertainties concerning the project assessment

- In this phase developer and consenting authorities should **communicate** extensively and consistently with all stakeholders on the scope and the effects of the plan or project, the assessment principles and process and on the (remaining) uncertainties. This should go further than what the EU Directives and national regulations require (e.g. public enquiries, scoping procedures, etc.). Good **stakeholder management** is often crucial to a smooth implementation of the project.[133]

- Authors of EIAs, SEAs and AAs should carefully consider how and where to convey the information concerning uncertainty issues in their reports.[134, 135], [136] Information should be progressively disclosed depending on its relevance to target audiences. **Crucial information** on how the report deals with uncertainties should be openly revealed in the textual parts, preferably not in appendices.

- In reporting on the environmental assessment or AA, the author will have to characterise the environment and put it into context with respect to its 'value' and its vulnerability to the relevant impacts. The EIA/SEA professionals are required to identify, label, weigh and rank uncertainties. For each individual uncertainty the report should indicate whether it is policy relevant or not. This can be done in a separate **risk assessment memo**, containing a synthetic risk matrix.

- The EIA, SEA or AA documentation should undergo an **independent review** in order to control the quality and adequacy of the information prior to the decision being made.[137]

[133] See the Western Scheldt case (presented in the report of Lot 2 and in Section 7.5.3 of this report) and also the Stour and Orwell case (presented in the report of Lot 2 and in Section 8.5.3 of this report) for a good illustration.
[134] See the national sections "Dealing with uncertainties" – All the analysed EIA/SEA regulations require the proponent to communicate in the ES/ER on any difficulties, such as technical deficiencies or lack of knowledge encountered in compiling the required information.
[135] The better the communication on uncertainties the less likely courts are inclined to intervene at the occasion of judicial review of a permit decision. See European and national case law sections on 'marginal control' and the notion of 'reasonableness".
[136] The obligation to communicate effectively on uncertainties can also be deduced from the precautionary principle (see Section 4.2.3).
[137] See the Weser case (presented in the report of Lot 2 and in Section 6.5.3 of this report): insufficiency of knowledge on protected migratory fish has been 'resolved' by consulting additional experts and organizing a work shop with several experts on this issue.

10.2.3 Uncertainties concerning permits and derogations

- In case of any remaining (minor) scientific uncertainty with regard to the effects of a plan or project or the related mitigation or compensatory measures, the consenting authority always has the possibility to grant its consent under **special conditions** (integrated in the consent decision itself).

- These conditions could impose an **adaptive strategy**.[138] Such a strategy may result in a phasing in time of the proposed project or the duty to work with a pilot project. In this phasing process, sequencing could be integrated that only allows the following phase to start after meeting certain goals or conditions.[139]

- Such special conditions should also include a pre-defined and validated scheme to monitor the actual impacts as well as a framework to adapt the mitigation and compensation measures regarding the actual impacts. Monitoring schemes[140] should be established to monitor short and long term evolution, such as morphological dynamics and sediment circulation/re-distribution.

- The EIA/SEA and AA can be helpful in setting up such an adaptive strategy, by following the next steps:[141]

[138] See the national sections “Dealing with uncertainties” – All the national EIA/SEA, AA and permitting practices allow for the implementation of adaptive strategies.
[139] Example: a consent for dredging and land reclamation activities could impose stop/go thresholds to manage levels of suspended sediment acting as a proxy for ensuring that sediment inputs were as indicated in the ES and thus allowing the expectation that the impacts would be as predicted.
[140] After performing a SEA and adopting the plan or program, implementing a monitoring scheme is not only good practice but also required by the SEA Directive (see Section 4.3.3.6).
[141] See the Western Scheldt case presented in the report of Lot 2 and in Section 7.5.3 of this report.

1. Determination of the bandwidth of effects, fixed uncertainty margins or calculation of a favourable and an unfavourable scenario;

2. Questioning: What is the probability of the impact scenarios (especially the worst-case scenario)? What is the probability that the best or worst-case scenario is occurring? This insight into the reality of the scenario can help the authorities in the decision-making process;

3. Determination of the importance of the uncertainties for the comparison of alternatives. This is relatively straightforward by comparing similar alternatives which will have usually similar effects, but a statistical test may be needed to compare dissimilar alternatives to determine whether or not alternatives significantly differ from each other;

4. Determination of the probability of exceeding limits. In statistics the true value often lies somewhere in the interval of the calculated value plus or minus half of the uncertainty margin. On this basis, the probability of exceeding the limits can be estimated.

5. Keep measures on hand. These measures, and when and by whom they are to be conducted, must be determined in advance. It is important to establish which measures are conceivable, what effects they may have, how the actual effects are monitored, based on which criteria, when and in what order the measures will be taken and who is responsible for funding and implementation.

- An adaptive strategy requires also the implementation of a **long term forum with stakeholders for reporting** results or any other vigorous follow-up mechanism (e.g. a combination of competent public bodies) that is authorised to implement changes to a programme of mitigation or compensation and to take additional (predetermined) compensatory measures on the basis of the results of monitoring programmes.[142]

- In order to achieve this, **financial warranties** or any other financial safeguards should be put in place that can guarantee long-term implementation and protection.

- The special conditions imposing an adaptive strategy could be accompanied by one or more separate **legal agreements** committing an applicant to take corrective measures, following certain timescales or in the event that mitigation and/or compensation measures do not meet the objectives set, stop the project.[143]

[142] See the Stour and Orwell case presented in the report of Lot 2 and in Section 8.5.3 of this report.
[143] See the Stour and Orwell case presented in the report of Lot 2 and in Section 8.5.3 of this report.

10.2.4 Uncertainties concerning monitoring and evaluation

- An adaptive strategy is also useful in order to overcome knowledge gaps. Instead of extensive research prior to the consent, the estuarine situation can also be monitored in a later stage. New evidence and current scientific information should then be fed back into the management plan and into assessments for new projects or plans.

- As soon as the monitoring data reveals deterioration of the estuarine environment, a set of (predetermined) measures is applied in order to adapt mitigation and compensation measures regarding to the actual impacts. Moreover, on the basis of trends measured during the monitoring, the conservation objectives and management measures may be revisited where and whenever necessary.[144]

[144] See the Stour and Orwell case presented in the report of Lot 2 and in Section 8.5.3 of this report.

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