

# Space as mediator between SEA and Ports

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## Abstract

Strategic Environmental Assessment (SEA) is increasingly seen as a critical issue in the port sector. The SEA and other European environmental directives are mainly perceived as a burden for port development and port professionals often have little knowledge about the reasons why an SEA is necessary. According to a European directive (2001/42/EC) a Strategic Environmental Assessment has to be made for plans and programmes that can affect the environment. Town and country and spatial planning documents are examples of such plans and form an important step in port development projects which are subject to a strategic planning process. Spatial planning related planning processes not only bring along the obligation to make an SEA, but are also the locus to gear and integrate the requirements of other European environmental directives. Indeed, ports are confronted with legislation on among others nature, ambient air quality, environmental noise and safety. This paper focuses on the situation in the port of Antwerp where an SEA is made within the framework of a strategic planning process, which will result in a renewed land use plan (spatial implementation plan). However, this is not the only SEA that affects the Antwerp harbour. Therefore, some comments are made about the efficiency and existence of planning processes at different spatial scales and about the delimitation of areas in area-based policies.

**Key words:** Strategic Environmental Assessment (SEA); Ports; Antwerp; Strategic Spatial Planning.

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# 1 Introduction

Strategic Environmental Assessment (SEA) is increasingly seen as a critical issue in the port and transport sector (European Commission 2005). According to a European Directive, an SEA shall be carried out for plans and programmes that can affect the environment. Strategic spatial planning is a typical framework where SEAs appear, like in the strategic spatial planning process for the port of Antwerp. Indeed, ports have to deal with different environmental regulations, and an ambitious port development strategy nowadays needs an ambitious environmental policy as well, to minimise the risk of legal problems with environmental legislation. Next to SEA regulations, other European Directives on for instance noise, nature and air quality are relevant for ports. In this context, ports stress the importance of a common level playing field, i.e. the same environmental standards for all European ports. In this way, competition on the basis of environmental regulations is avoided (van Hooydonk 2006; ESPO 2007). However, ports can have a competitive advantage if they better cope with environmental regulations.

## 1.1 Strategic spatial planning, governance and scale

During the 1990s, strategic spatial planning became increasingly popular in Western Europe. Strategic planning is seen as a more dynamic and action-oriented alternative for the traditional static (rational-comprehensive) land-use planning and emphasises the importance of planning as a dynamic process (Albrechts et al. 2003; Van den Broeck 2007). This kind of planning is part of what Brenner (2003) describes as the *Second wave of glocalization strategies and crisis management* in urban–regional governance (early 1990s– present). This governance form is not limited to real institutional, administrative changes and reformations, but covers also initiatives on a regional level where different government institutions and stakeholders co-operate in spatial planning related fields.

As estuaries regularly cross different administrative units like countries and provinces, strategic planning initiatives appeared in different European estuaries. These initiatives share the ambition to solve conflicts between accessibility (i.e. shipping), ecology and amenability. Examples can be found in the Seine, Scheldt and Humber estuaries. Similar processes started for port areas and their surroundings, like the ROM Rijnmond project in Rotterdam and the strategic planning processes for the Flemish ports (Antwerp, Bruges, Ghent and Ostend).

These governance processes replace a sector-based government approach, limited to a given administrative boundary, by a cross-sectoral, horizontal governance approach. But one cannot ignore that these planning processes depend on the existing government structures of which the representatives are the main actors in the processes. The so-called shift from government to governance needs to be understood in this way. Governance also brings along new scale-levels like the EU and metropolitan governance structures. Concepts like “rescaling” and “scale-jumping” indicate that policymaking is not limited to the ‘traditional’ government levels of municipalities, provinces and national states (Brenner 2001; Mamadouh et al. 2004).

## 1.2 The SEA and other EU environmental Directives

EU Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, introduced Strategic Environmental Assessments (SEAs) in European legislation. This directive states that an SEA shall be carried out for plans and programmes that can affect the environment. The focus is on plans while an EIA (Environmental Impact Assessment; EU Directive 85/337/EEC) assesses specific projects. An SEA deals with different environmental subfields like water quality and noise, for which specific legislation exists. We will now discuss some relevant EU Directives.

### 1.2.1 *Ambient Air Quality*

The main European directive dealing with air quality is directive 96/62/EC *on ambient air quality assessment and management*. Next to this framework directive, several ‘daughter’ directives exist (1999/30/EC, 2000/69/EC, 2002/3/EC and 2004/107/EC). In 2010 most of this legislation shall be repealed by directive 2008/50/EC *on ambient air quality and cleaner air for Europe*. These directives contain limit values, target values and alert thresholds for several pollutants (PM<sub>10</sub>, NO<sub>x</sub>,...). For zones and agglomerations where the levels of one or more pollutants are higher than the limit values, member states have to implement an integrated plan or programme. *Integrated* means that a plan should focus on all relevant pollutants (art. 8 Directive 96/62/EC). An agglomeration is defined as *a zone with a population concentration in excess of 250 000 inhabitants or, where the population concentration is 250 000 inhabitants or less, a population density per km<sup>2</sup> which for the Member States justifies the need for ambient air quality to be assessed and managed*. A zone is a part of a member state territory, delimited by that member state (2008/50/EC art.2, 96/62/EC art.2 and 1999/30/EC art.2).

### 1.2.2 Noise

According to directive 2002/49/EC *relating to the assessment and management of environmental noise*, member states have to make noise maps and noise action plans for agglomerations, major roads, railways and airports. Following article 3 (k) of this directive, an agglomeration is *a part of a territory, delimited by the Member State, having a population in excess of 100 000 persons and a population density such that the Member State considers it to be an urbanised area*. Annex IV states that strategic noise maps for agglomerations shall put a special emphasis on the noise emitted by *industrial activity sites, including ports*. Also relevant for ports is the mandatory review and revision of the action plan when a *major development* affects the existing noise situation (art.8.5).

### 1.2.3 Nature

The most important base of nature policy and protection in Europe are the Birds and Habitats Directives (79/409/EEC and 92/43/EEC). According to these regulations, the most ecologically appropriate areas have to be designated as Special Protection Area (SPA) and/or Special Area of Conservation (SAC). Together these sites form the European Natura 2000 ecological network. However, large-scale infrastructure projects in protected areas are still allowed after an appropriate assessment (92/43/EEC art. 6.3). If significant negative effects occur, art.6.4 allows to continue with the most ecologically vulnerable project alternative, but only for imperative reasons of overriding public interest (IROPI), and with the development of nature compensation areas. The site's conservation objectives are the touchstone for this procedure (European Commission 2000; European Commission 2007a). Next to the aforementioned area protection, species protection regulations protect rare species on the entire European territory (European Commission 2007b). Port development can also come into conflict with this protection regime.

Examples of conflicts between port development and European nature legislation are the cases of Lappel Bank at the Port of Sheerness, Port 2000 at the Port of Le Havre, the Deurganckdok at the Port of Antwerp, and the 2e Maasvlakte/PMR at the Port of Rotterdam (van Hooydonk 2006; ESPO 2007). Thereby, spatial planning instruments are often the subject of the legal procedures.

### 1.2.4 Seveso

The Seveso legislation (96/82/EC) deals with the control of major-accident hazards involving dangerous substances. Although this directive mainly deals with individual establishments

where dangerous substances are present, article 12 requires that member states take safety into account in their *land-use policies and/or other relevant policies* in order to maintain *appropriate distances* between establishments with dangerous goods and *residential areas, areas of public use and nature areas*.

#### 1.2.5 Water Framework Directive

The EU Water Framework Directive (WFD; 2000/60/EC) aims at establishing a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater (Lagacé et al. 2008). Therefore, the directive established environmental objectives in order to achieve a good ecological potential and good surface water chemical status. Key instruments are the river basin management plans which member states have to make for all river basins, and which should contain a programme of measures. For international river basin districts the aim is the production of a single international river basin management plan.

### 1.3 Some challenges for ports

The increased concern for the environment is one of the main changes ports have to address and which potentially can lead to extra costs (Estache and Trujillo 2009). Especially local communities associate ports with congestion and pollution. The negative perception at the local level is also based on the combination of an increasing demand for space with a lowering local employment. Negative externalities like congestion, the use of space and the environmental impact, are indeed a weakness of ports, which have to compete on the market of space with other types of land use. A key strategy to mitigate the tension between the local level and the regional port economy is the improvement of governance and land-use in order to reduce environmental externalities. This strategy is in the first place understood as a location (decentralisation) policy which locate some port activities further away from cities (Musso 2009). But, a proper environmental management of port areas can also be part of this strategy.

When discussing port governance and the related question about the appropriate level of government, some authors stress the importance of the port region and propose regional ports with “super” port authorities that manage several ports. The demand for stronger institutions is thereby linked with a shift from port cities to port regions (Estache and Trujillo 2009). A regional (“new regionalism”) governance approach often assumes an increasing competition between European regions for mobile, global capital. This more outward scope differs from the metropolitan governance of the 1970-1980s which stressed administrative efficiency and service provision in agglomerations and industrial districts.

A scale-jump in port governance from city to region can however not be the only answer to coordination failures, since the coordination between different policy domains is not necessarily covered. Next to this, a twofold relation between policy innovation and (de)centralisation exists. Decentralisation can promote policy innovation when different possible policy instruments are available, centralisation of policy on the other hand, may produce greater innovation when there are large numbers of homogeneous jurisdictions. The extent to which jurisdictions are able to learn from each other determines the potential spillover effect and is, as a consequence, a key issue (Vickerman 2008). Whether the regional or the local is the most appropriate level to manage a port remains thus an open question. We will now look at the environmental-spatial policy in the port of Antwerp in order to get a better insight in some aspects of port governance, like scale and policy coordination.

## **2 The case: Port of Antwerp**

The port of Antwerp is the second largest port of Europe with an annual throughput of about 190 million tons and is situated in the north of Belgium 100km inland in the Scheldt estuary. Antwerp is part of the region of Flanders (Belgium) and this region is in charge of spatial planning, port and environmental policy. Therefore, we first consider spatial planning in the Flemish region before discussing the planning process for the Antwerp port area.

### **2.1 Spatial planning in Flanders (Belgium)**

Structure planning as an alternative to the traditional way of land-use planning appeared in the Flemish literature end of the 1970s. But the large-scale implementation came with a new town and country planning decree in 1996 and in 1999, thus during the rise of strategic planning in Western Europe (Albrechts et al. 2003). The decline of open space and the increase of mobility paired with decreasing environmental quality, and the sustainability discourse in general, contributed to the rise of structure and strategic planning. However, strategic spatial planning is not a purely ecological project since this 'value-free' method of conflict resolution enables economic development due to its consensus building nature (Van den Broeck 2007).

Spatial planning is, according to the Flemish decree on spatial planning (1999, art.4), directed to a sustainable spatial development. Therefore, the *spatial requirements of the different social activities are weighted against each other at the same time. The spatial capacity, the consequences for the environment and the cultural, economic, aesthetic and social consequences are taken into account.* Spatial planning clearly has the ambition to

weigh different spatial needs against each other, and environmental legislation significantly determines these spatial needs. To implement this spatial weighing, the spatial planning decree introduces two kinds of plans, the more general Spatial Structure Plans and detailed Spatial Implementation (zoning) Plans. The Spatial Planning of Sea Ports is situated on the highest planning level, i.e. the region of Flanders, for which a Spatial Structure Plan exists since 1997.

## 2.2 Strategic Spatial Planning in the Port of Antwerp

The port of Antwerp was not the first Flemish port to start with the establishment of a strategic plan. Already in 1993, a voluntary ROM-project started in the Ghent Canal (Port) Area. ROM stands for *Ruimtelijke Ordening and Milieu* (Spatial Planning and Environment), like in the ROM Rijnmond project in Rotterdam (Voets and De Rynck 2004). In 1997, the Spatial Structure Plan of Flanders selected the four Flemish ports (Antwerp, Ghent, Ostend and Zeebrugge) as engines for development. For these “Ports” and their surroundings a spatial vision needed to be developed which lay out the basis for a Spatial Implementation Plan (land-use plan). A strategic plan for the Waasland Port, i.e. the part of the port of Antwerp on the left bank of the Scheldt, was stipulated as a condition for the building of the Deurganckdock. Next to this, both the 1999 and the 2004 Flemish government agreements state that for every port a strategic plan shall be made. The Flemish government delegated the co-ordination of the Strategic Spatial Planning process for the port of Antwerp to the governors of the provinces Antwerp and Eastern Flanders.

In a strategic planning process, different public and non-governmental stakeholders discuss the future designation of a harbour. One of the documents of the Antwerp strategic planning process mentions not less than 36 different actors, the majority of them government-related (Provincie Antwerpen et al. 2005). From an administrative point of view, the port falls into two provinces and three municipalities and two other municipalities are involved. The Flemish government departments of public works and different environmental agencies (air quality, nature,...) and the national (federal) railways company are also part of the process. Different Flemish government agencies are subdivided in provincial units and send as a consequence two representatives to the meetings. The port itself is managed by the Antwerp Port Authority, a municipal company. The industrial estates on the left bank of the Scheldt are however managed by the “Scheldt Left Bank Corporation” of which some municipalities, the port authority and the Flemish government are shareholders. Finally, some NGOs (agricultural and nature movement, business organisation) were regularly involved. Given the amount of actors involved, it is not surprising that confusion exists about *who exactly is the competent executor and/or legislator with regard to infrastructure projects, and who bears*

*responsibility for the failure to adjust the relevant legislation* (Van de Voorde and Winkelmans 2002).

## 2.3 Strategic Environmental Assessment (SEA) for the Antwerp Port Area

In June 2005, the planning process finished a basic document which indicates the purpose and alternatives for the future of the Antwerp Port Area. The Flemish public works administration hired a consultant to assess this document in an SEA. The methodology for the SEA is declared complete by the competent authority on 16th may 2006, after which a public consultation followed (17/05/2006 – 17/06/2006). End 2006 (18/12/2006), the competent authority drew up guidelines for the assessment on the basis of the methodology and the results of the consultation. On 15/09/2008, a draft SEA is submitted to the competent authority, who finally approved the document on 4/03/2009. The slow progress of the SEA procedures is in the first place caused by ongoing discussions in the planning process and not by procedural issues.

Before we further discuss the area-based policy, we first give an overview of the implementation of some relevant environmental Directives in Antwerp.

### 2.3.1 *Ambient Air Quality*

In order to fulfil the requirements of the European Air Quality directives, the Flemish government started to draw up air quality plans for several zones, among others the Antwerp port area and the Antwerp agglomeration. Soon, contacts were established between the air quality department and actors of the strategic planning process. Regular contacts attune both planning processes. The Antwerp Port Authority and the municipality of Beveren already extended the existing particulate matter (PM) monitoring network in cooperation with the Flemish Environment Agency. However, it is still unclear when and how the European air quality standards will be met.

### 2.3.2 *Noise*

As for many deadlines in European directives, the deadline for making a noise map of the Antwerp agglomeration is exceeded. But the Flemish government already bought noise modelling software for themselves and for the core cities of the agglomerations. The goal is that the city governments produce the noise maps for agglomerations. However, the European noise Directive and the appropriate guidance documents assume a broader delimitation of agglomerations than the Flemish approach (WG-AEN 2006). As a



consequence, and despite the naming of ports in Annex IV of the noise Directive, the Antwerp port area will largely stay out of the scope of the noise mapping. As a result, the noise modelling and mapping in the SEA is made separately from the still unfinished noise mapping of the Antwerp agglomeration.

### 2.3.3 *Nature*

Due to the European infringement procedure about the building of the Deurganckdock in Natura 2000 sites, nature has been an important issue from the start of the strategic planning process onwards. The establishment of conservation objectives and the 'spatial translation' of them are part of studies made within the framework of the strategic planning process. A concrete action plan with new nature development areas is already laid out.

### 2.3.4 *Seveso*

Within the strategic planning process, not only an SEA is made to underpin the Spatial Implementation Plan, but also a 'spatial safety report' to deal with the requirements of the Seveso legislation. Since both assessments are part of the same planning process, a lot of actors advise both documents which enhance the tuning between the two documents.

### 2.3.5 *Water Framework Directive*

In the first half of 2009, the public consultation of the River Basin Management Plan for the Scheldt is held. Next to this, the Flemish government decided in January 2009 upon the sub-basin management plans. As some actors are involved both in the establishment process of the sub-basin management plans and in the Strategic planning process for the port, some actions of the strategic planning process are incorporated in the sub-basin management plan. Despite some common actions and a number of harmonisation meetings, both processes can be considered as separated worlds.

## **3 Discussion: Space as mediator**

Spatial planning is the arena where the spatial claims of different sectors in society (economy, agriculture, housing, nature,...) are weighted off against each other. The spatial claims related to the aforementioned European environmental directives are: large well-connected areas with significant nature values and space for rivers (nature and water policy), and distance from housing and agglomerations (noise, air quality and safety). As a result,

environmental concerns are important issues in the making up of land-use plans. In area-based policy, space acts as the binding element between the different sectors. When delimitations based on different sector policies coincide or overlap, economies of scope can occur. Such delimitations can be Natura 2000 sites, zones and agglomerations mentioned in the noise and ambient air quality legislation, or river sub-basins.

### 3.1 The SEA economies of scope

If the different requirements of the EU environmental directives are carried out for the same area and/or in the same process, some economies of scope can occur. Environmental policy can roughly be divided in a data/monitoring, a modelling, and an action part. GIS and traffic data are for instance a basis for both noise and air quality modelling. In the modelling part, the impact of noise on Natura 2000 sites, necessary for the appropriate assessment, illustrates the link between noise and nature research. And different actions, like e.g. covering bulk storage, reduce both noise and dust emissions.

As the description of areas, zones and agglomerations differs between European directives (see 1.2), the delimitation of a territory for area-based policy is not pre-given. Despite this lack, a port area seems to be a proper spatial unit to implement different environmental and land-use policies. Enough differences between the Antwerp port area and the adjacent agglomeration exist to establish two planning processes.

Since an SEA is necessary for the establishment of a new port area land-use plan, this SEA is an appropriate tool to collect and harmonise the different environmental instruments. Also European documents mention the attuning between different environmental instruments (for instance the SEA Directive refers to the Habitats Directive). However, the number of actors and the overall complexity increases as additional policies are incorporated in a planning process. But in the case of an SEA, this argument is not relevant since the assessment of different environmental sub-fields is mandatory. As the Antwerp case showed, the implementation and harmonisation of different EU based environmental instruments is a learning process. During the strategic planning process, several new instruments appeared and came into force, and, as a consequence, harmonisation will likely be more efficient in the future.

### 3.2 Scale

The environmental and land use legal framework for the four Flemish sea ports is centralised at the Flemish level. Indeed, fragmenting the framework for these policies would be inefficient. Next to this, initiatives like Flanders Port Area want to enhance the cooperation

between the four ports, which are managed by autonomous local port authorities. European port authorities also co-operate to exchange knowledge on environmental issues in projects like Ecoports (divers issues), NoMEPorts (noise mapping), Paralia and NEW! Delta (nature), and through their membership of the European Sea Ports Organisation (ESPO). These cooperation initiatives show that processes are not limited to one spatial scale. With respect to e.g. nature policy, three levels can be distinguished. The macro-level coincides with the Scheldt estuary, where a Long Term Vision of the Scheldt is developed and assessed in an own SEA. The meso-level is the port area and its surroundings and is covered by the aforementioned strategic planning process. On the micro-level, there is an initiative to develop a network of ecological infrastructure inside the port area. Finally, the delimitation of the Antwerp agglomeration in a Spatial Implementation Plan is subject to a separate planning process. Of course, different actors are involved in more than one process on different scales and the processes are geared to one another, but are at the same time separated to keep them manageable (Vanoutrive 2007). The balance between centralisation, decentralisation and policy innovation is permanently at stake.

### 3.3 A continuous process

It was initially foreseen that a strategic planning process would produce a spatial implementation plan (SIP) in a few years time. Some SIPs for parts of the Antwerp harbour are approved by the Flemish government but the SIP that will delimit the port area is still not finished. The strategic planning process became less temporary. Next to the working groups organised within the framework of the strategic plan, also other related committees and institutions exist.

To follow up the compensation scheme for the Deurganckdock project and to look after the nature development on the left bank of the Scheldt, a nature management committee is established with representatives from several organisations involved in the spatial planning process. The noise Directive sees the strategic noise mapping as a dynamic process with an actualisation at least every five years, and together with the extension of the PM monitoring network, the partners decided to release a yearly port air quality report. These examples demonstrate that even after the finishing of the Strategic Environmental Assessment, there still is a need to have a framework where several actors can co-operate about environmental issues. An example of a more permanent government structure which deals with port environmental issues, is the DCMR in the Rotterdam Rijnmond Area.

The origins of the DCMR lie in the discussion about a suitable co-operation structure for the further development of the port of Rotterdam in the 1950s and early 1960s. The result was

the establishment of the *Openbaar Lichaam Rijnmond* (OLR, Public Body Rijnmond) in 1964. The competences of this structure were limited to advisory tasks and the establishment of guidance documents. Hendriks and Toonen (1995) distinguish several inter-governmental questions which explain the rise of the Rijnmond authority, among others the external environmental effects of the port area on the surrounding municipalities. In 1978 and 1982 OLR received new competences in the fields of town and country planning and the environment (noise, air quality,...). A 1986 law decided to demolish the OLR but an environmental agency remained, the DCMR. Up till now, the DCMR plays a role in permitting and monitoring, and advises different government institutions.

As the DCMR case shows, a successful environmental and land-use policy can form a source of legitimacy for port policy. For land-use and environmental management, the port area seems the most appropriate territory for governance. However, the advocates of regional port authorities promote port regions as the prime spatial unit for port governance, and seek their main legitimacy in a stronger position of port authorities in negotiations with stevedores and shipowners (Estache and Trujillo 2009). Apart from the creation of “super” port authorities, ports can also strengthen their position through strategic alliances with the hinterland or with other ports (Notteboom and Rodrigue 2005). This discussion makes clear that delimitations are seldom pre-given and can differ between policy domains. Moreover, morphology and management remarkably vary between European ports. Therefore, local conditions should be taken into account when discussing port management. In general, government structures have to match the geographic reality wherein actors and processes operate and occur. But it seems that there are too many factors to have a single best solution.

#### **4 Concluding remarks**

Ports have to cope with several European environmental Directives, among others on Strategic Environmental Assessment (SEA). For important land-use changes, an SEA needs to be made and the establishment of the necessary land-use plans is often subject of a strategic spatial planning process. This kind of area-based policy has the potential to harmonise and integrate the requirements of different European environmental Directives, like the nature, ambient air quality, environmental noise and safety regulations. The case of the Antwerp Port demonstrates the possibilities, but also some potential drawbacks, like complexity. Moreover, new environmental requirements appeared during the strategic planning process, which requires a learning process. But the conclusion remains that space

in general, and spatial planning in particular, tend to be the mediator between the different environmental directives and between these directives and port development.

Within this discussion a second topic appeared to be relevant, i.e. the scale and territory of governance processes and institutions. There is a need for more permanent environmental governance at the port area level. The question remains which role port authorities have to play in this. Indeed, port authorities are the only institutions of which the territory coincides with the port area. Moreover, the increasing importance of environmental issues makes of a sound land-use and environmental port policy an important source of legitimacy.

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