SEA PORTS: CAN STRATEGIC ENVIRONMENTAL ASSESSMENT IMPROVE ENVIRONMENTAL ASSESSMENT IN THE PORT SECTOR?

By

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Abstract

The use of strategic environmental assessment (SEA) has increased in European Union (EU) countries over the last decade and is seen as a means of realising sustainability and reducing environmental impacts. Seaports in the EU are under pressure to expand due to growth in the transport of goods by sea, mainly in containers. While SEA has been applied to transport in the EU, application to ports and shipping has been limited. This paper evaluates the functioning of environmental assessment in the seaport sector in the EU.

The current practice of environmental impact assessment (EIA) for port developments was examined using case studies of two container terminal projects in different EU countries. EIA was found to be inappropriate for the port sector, due mainly to its handling of alternatives, consultation, transboundary issues and variances in application in different EU countries. These findings, examples of good SEA practice and previous SEA use in transport were used to outline core components of an appropriate SEA framework for the port sector. The paper concludes that SEA can improve upon EIA as a method of reducing the environmental impacts of the port sector and can realise sustainability if EIA and SEA shortcomings are overcome. The need for the application of improved SEA methodologies, such as the framework proposed here, to the port sector is clear.
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Chapter 1: Introduction

1.1 Introduction

Environmental Impact Assessment (EIA) was introduced into all European Union countries through the 85/337/EEC directive in 1985, amended in 1997 (CEC, 1997). EIA is ‘the process of predicting and evaluating an action’s impacts on the environment, the conclusions to be used as a tool in decision-making’ (Therivel et al, 1999: p13). In the EU this tool is applied to specific project level developments (CEC, 1997).

In some member states, such as the Netherlands (Verheem, 1992), EIA techniques have been applied at more strategic levels. The practice of strategic environmental assessment (SEA) has increased over the last decade and will soon be formalised in the EU by the introduction of an SEA directive (CEC 2001a).

SEA has been seen (e.g. by Sheate (1992), Smith (1996)) as an appropriate tool for assessing and reducing the environmental impacts of the transport sector. The transport of goods by sea has increased rapidly over the past 20 years (Beddow, 2002a) and, as a result, sea ports in all EU member states, and elsewhere, have expanded (Cass, 2001). The overall objective of this paper is, therefore, to evaluate whether SEA (a) can improve upon project EIA, and (b) is an appropriate method for assessing and reducing the environmental impacts of port developments in the European Union. This will be addressed by evaluating the strengths and weaknesses of current and planned methods of environmental assessment for the port sector, before constructing an appropriate framework of core SEA elements. The rest of Chapter 1 describes the need to undertake this study, the context of current EIA and SEA practice and the objectives of this study.
1.2 EIA Context

The adequacy of EIA as the main tool for assessing and limiting the environmental impacts of actions has increasingly been questioned as its use has grown (e.g. Therivel et al (1999), Glasson (1995), Von Seht (1999)). Several authors have suggested that the effectiveness of the EIA directive is constrained by its application only to specific sectors and for projects requiring development consent (Glasson et al, 1999). Glasson et al (1999) also comment that EIA can only react to – not anticipate - development proposals. Partidário (2000) and Von Seht (1999) develop this by arguing that project EIA applies too late in the decision making process. This is seen to limit the consideration of strategic issues and impacts. Glasson (1995) notes that EIA ‘fails to address the broader more strategic questions concerning, for example, the suitability or wisdom of a project’ (Glasson, 1995: p715). Von Seht (1999) also comments that SEA is better than EIA at assessing global and regional impacts. EIA has also been criticised for its handling of alternatives and cumulative impacts. Therivel et al (1999) argue that EIA does not deal clearly and coherently with all appropriate alternatives, and Glasson et al (1999) note that some alternatives may have been excluded at an earlier, more strategic decision-making level. Glasson et al (1999) also suggest that EIA is limited in dealing with cumulative impacts, such as other projects in the vicinity or induced developments. SEA has, therefore, been seen by many authors as a way of improving levels of environmental protection by overcoming the deficiencies of EIA (e.g. Therivel et al (1999), Nooteboom (2000)).
1.3 SEA Context

1.3.1 Definition

Early definitions of SEA placed it in the context of extending EIA to more strategic tiers of decision-making than the project level (Therivel et al, 1999). Sheate (1992: p171) reflected early concern with the adequacy of EIA as a means of protecting the environment and, therefore, saw SEA as environmental assessment at the policy, plan or programme (PPP) stage so that ‘informed choices’ can be made ‘at the earliest decision making levels’. Therivel (1993) noted that SEA in most countries initially evolved upwards to PPPs from the EIA of projects.

SEA as the environmental assessment of PPPs is a definition of the concept that persists in most articles on the subject. SEA is:

‘...evaluating the environmental impacts of a policy, plan or programme and its alternatives’ (Glasson, 1995: p175)
‘...to assess systematically environmental impacts of decisions at policy, planning and programme levels’ (Kørnøv, 1997: p175)
‘...the environmental assessment of policy, plan and programme proposals’ (CEAA, 2000)
the application of ‘EIA principles to a policy, plan or programme’ (Nooteboom, 2000:p152)
‘...a form of impact assessment that can assist managers and leaders in policy, planning and programmatic decisions’ (Partidário, 2000: p647)
‘...a higher order type of environmental assessment at the level of policies, plans and programmes’ (Noble & Storey, 2001: p485)

Despite the apparent consensus in these definitions, some authors have questioned whether a clear definition of SEA exists (Horton and Memon (1997), Partidário (2000)). It is, however, evident that all authors agree that at a minimum SEA is the environmental assessment of PPPs. While this may be the academic consensus, SEA has rarely been applied in practice to all PPP levels. In the EU SEA, through the SEA
directive (CEC, 2001a), will not apply to policies. The directive is discussed later in this chapter.

1.3.2 SEA and sustainability

Several authors (e.g. Sheate (1992), Glasson (1995), Fischer (1999)) have viewed SEA as a means of achieving sustainable development. This is because it can be used at an early stage in decision making and can embrace wider options and the precautionary principle better than later tiers (Von Seht, 1999). Sustainable development can be defined as a ‘constant process of transformation of a society and economy towards acting as trustees for future generations of a planet who maintain and nurture life and habitability’ (O’Riordan & Stoll-Kleeman, 2002:p117). Sheate (1992) highlights international priorities on sustainable development and sees an urgent need for SEA. Arce and Gullon (2000: p402) suggest that ‘SEA constitutes a powerful tool for sustainable development, strengthening both the process of decision making and project EIA’. While these authors agree that SEA has a role in realising sustainability, none defines the link between the environmental assessment of PPPs and sustainability. The environmental assessment of a PPP cannot, without defined methodologies for doing so, ensure environmental sustainability, and the omission of policies from the SEA directive further limits its potential to do so in the EU. Methods of overcoming this, in the context of the port sector, are discussed in Chapter 5. Smith (1996: p5) sees a role in ensuring environmental sustainability for an ‘objectives-led SEA framework’. In Smith’s model, PPP objectives are identified first and a range of alternative methods of achieving those objectives are considered before the preferred option is chosen. Partidário (2000) suggests SEA should be an indicative framework to facilitate decision-making. Therivel et al (1999: p126) agree that SEA ‘establishes a framework within which project EIAs can be carried out’. The pressure for growth and the role envisaged for shipping in improving the sustainability of transport is discussed in section 1.4, but as noted in 1.3.4 SEA has not been applied to the sector. Chapter 5 of this study will propose a framework through which the environmental impacts of the port sector can be assessed and environmental sustainability implemented in practice.
1.3.3 SEA Directive

SEA has been formalised in the EU by the introduction of an SEA directive, which must be transposed by member states by July 2004. The European Commission first drew up a draft SEA directive in 1991 (ENDS Report, 2000b) with the aim of provide a framework for integrating environmental considerations into planning decisions at earlier tiers than the project level. According to the directive, the introduction of a ‘set of common procedural requirements’ should ‘contribute to a high level of protection of the environment’ (CEC, 2001a: p3). Early drafts of the SEA directive referred to policies, as well as plans and programmes (PPs). This was later omitted and the current draft directive (CEC, 2001a) applies only to PPs. The previous section highlighted how this omission weakens the link between SEA and sustainability and questions whether SEA can realise sustainability in transport, as desired by EU member states (discussed in section 1.4). Chapter 5 will develop this discussion.

The directive (CEC, 2001a) is structured in the same way as the 85/337/EEC project environmental assessment directive. Annex 1, for example, requires that the impact of the plan or programme on environmental parameters be assessed. The list of parameters given is very similar to that in Article 3 of the 85/337 directive. The addition of biodiversity as a separate heading and the disaggregation of ‘human beings’ into ‘population’ and ‘human health’ are the principal changes. The SEA directive requires the consideration of alternatives to the PP, transboundary consultation (Article 7) where ‘implementation of a plan or programme…is likely to have significant effects on the environment in another Member State’ (CEC, 2001a: p14), and also requires monitoring of the effects of the PP (Article 10). No explanation is given as to how this should be carried out. The directive does state that the results of monitoring should be used to ‘undertake appropriate remedial action’ (CEC, 2001a: p16). The results of the SEA should be published in an environmental report (Article 5), the contents of which are listed in Appendix 2.

The SEA directive (CEC, 2001a) requires public consultation, but only refers to the draft plan or programme and the environmental report being made public. Therivel et al (1999: p18) criticise the public participation requirements of the project EIA.
directive because participation is only required once ‘a formal application is made for a project, not throughout the planning process’. The SEA directive replicates this limitation by only requiring consultation once the environmental report is published. The directive also offers no guidance on how consultation should be carried out, nor how it should be used, apart from a reference in Article 8 to the fact that it should be taken into account.

Article 3 describes the applicability of the directive, which applies to PPs ‘which set a framework for future development consent of projects listed in Annexes I and II to Council Directive 85/337/EEC’ (CEC, 2001a: p4). These annexes include the sectors of transport and town and country planning or land use. The provisions apply to PPs prepared or adopted by an authority at national, regional and local level or prepared by an authority for adoption through a legislative procedure by parliament or government. Although SEA will apply to the port sector, appropriate methodologies have not yet been developed, as the next section discusses.

### 1.3.4 Application of SEA

Glasson et al (1999) state that the PPPs to which SEA may be applied can be sectoral, spatial or indirect. Therivel (1998) identified that SEAs carried out in the UK were of four types; development plans, sector specific PPPs, structural funds and government department papers. The SEAs examined by Fischer (1999) in regions in the UK, the Netherlands and Germany were predominantly for local government structure plans, roads, railways, landscape and housing.

Glasson (1995) suggests that a lack of developed models for applying SEA and a lack of case studies mean that SEA may be most easily applied where a timetable and planning outputs are established, e.g. for structure plans. Kleinschmidt and Wagner (2002: p5) agree that SEA may be most easily applied to ‘formalised plans with spatial reference’.

SEA techniques have been applied in the transport sector in the EU. The tool has been used primarily to assess local and, sometimes, regional transport schemes and to assess transport as part of land use SEA (Environmental Resources Management,
SEA is seen as an appropriate tool to assess the environmental impacts of different transport modes (Sheate, 1992), but few cases exist of the application of SEA to the port or shipping sectors. WSP Group, a consultancy, incorporated consideration of strategic environmental issues in a 2002 South East UK port study (WSP, 2002a).

1.3.5 SEA Content

Many authors (e.g. Verheem (1992), Von Seht (1999)) have evaluated existing SEA methods used and gone on to propose their own best practice methodologies. Partidário (2000: p656) questions whether SEA can be conceptualised as a tool that can be applied to a wide range of decision-making levels and concludes that it can provided it is seen as a ‘framework of core elements’. From the contents of an SEA considered necessary by authors in the field (Appendix 3) it is clear that there is no consensus on what these core elements are.

For the majority of authors the first stage of SEA is defining the PPP objectives, followed by screening. Similarly for many, some consideration should be given to an assessment of the environmental baseline, though only Smith (1996) suggests that the SEA should consider the future environmental baseline. Most authors propose the evaluation of alternatives as part of the SEA. All authors agree on the need to assess the environmental effects of the policy. The majority of authors concur that the results and consequences of the SEA should be monitored, but not all suggest that the results be published. Most suggest some form of public participation or consultation during the SEA. For most authors the outcome of the SEA process is ‘incorporation of the environment in strategic decision-making’ (ICON et al, 2001: p6) and the choice of the ‘preferred, practicable option…the least negative alternative’ (Noble & Storey, 2001: p487). SEA as a process is still very dynamic; it has not yet evolved into a standard, accepted form and, in particular, it has not been applied to ports. The port sector is an infrastructure sector serving an international industry, which is predominantly privately owned and which is experiencing pressure to expand as section 1.4 explains.
1.4 Port Context

65% of world trade is transported by sea (DRI-WEFA, 2002). Container traffic is ‘the fastest growing segment’ of seaborne trade and ‘one of the most important for economic growth throughout the world’ (Beddow, 2002b: p19). Seaborne transport is promoted as a less polluting mode than other freight transport methods, such as air or road, and increased use of seaborne transport is seen as a key method of reducing the use of road transport between EU countries (Lloyd’s List, 2002a). While this emphasis on modal shift may improve the overall environmental performance of the transport sector (CEC, 2001b) it will inevitably result in more cargo throughput at ports, potentially leading to pressure for port expansion, particularly where the port is at, or nearing, capacity. Coastal zone habitats are sensitive and impacts from ports can result from, for example, land take, dredging, water and air pollution, noise, disturbance and pressure for development (English Nature, 2002).

The need for expansion to meet increasing demand has particularly affected mainline container ports, many of which have responded in the last decade to accommodate growth in vessel sizes and container volumes (Cass, 2001). Many vessels are now limited by draught and terminal facilities in the ports they can access (Cullinane & Khanna, 2000). The continuing increase in vessel sizes and volumes places corresponding pressure on ports to expand in order to be able to continue to serve the deep sea and transhipment trades (Avery, 2000).

North European ports are the main gateway for containerised cargo to North and Central Europe (O’Mahony, 1998). Ports in the region can be competitors for direct transit cargo (e.g. Rotterdam, Antwerp and Le Havre) and for transhipment cargo (e.g. Le Havre and Southampton). Ports operate in an international market. Customers and cargo can come from a variety of countries. The market served by a port is, therefore, wider than the country in which it is situated. Unlike other infrastructure sectors (such as roads), the majority of the ports in North Europe and, particularly, the UK are privately owned (Beddow, 2002a): this is discussed further in Chapter 4. In the UK market forces, primarily ship operators, determine the need for port developments as port operators respond to demand by raising finance to expand or redevelop facilities.
The project EIA directive requires the environmental assessment of port developments in all EU countries (CEC, 1997). The SEA directive will apply to the sector where a plan or programme is drawn up. The EU first took action in the environmental policy domain in order ‘to avoid barriers to trade between member states created by the existence of national environmental policies’ (Barnes & Barnes, 1999: p10). Growth in containerised trades and increasing intra- and international competition between EU ports underline the need to ensure that the application of SEA to the sector is consistent for all ports.
1.5 Study objectives

The overall objective of this research is to evaluate whether and how SEA can improve upon EIA as a method of assessing the environmental impacts of port developments in the European Union. This has been broken down into the following aims:

1) Identification of the strengths and weaknesses of current port sector EIA

EIA is applied to port developments in the EU. Section 1.2 highlighted that there are generic problems with the use of EIA. The first aim of this study is, therefore, to assess the strengths and weaknesses of the current practice of environmental assessment and planning for container port terminal expansions.

2) Evaluation of existing and planned SEA methodologies in the port sector

SEA will soon apply to the port sector in the EU through the SEA directive (CEC, 2001a), but while SEA methodologies have been applied to the transport sector, they have mainly been used for publicly-funded transport and for the assessment of local transport within land use plans. Section 1.4 showed that differences exist between ports and other transport sectors. Current and planned SEA methods for ports are evaluated to determine whether they are suitable for ports, in the sense of incorporating the differences between ports and other transport sectors and in ensuring the choice of the least negative option (Noble & Storey, 2001).

3) Design of a framework of core SEA elements for the port sector

Appropriate SEA methodologies have not been developed for ports. Yet, English Nature (English Nature, 2002: p61) believe that there is a need for a strategic framework to guide port developments as ‘the pressures for development in England’s ports are immense’ and ‘most of these ports are in environmentally important locations’. The discussion in section 1.3 showed though SEA is seen by many authors, and increasingly governments, as an appropriate tool for assessing the environmental impacts of infrastructure, no clear framework or criteria for judging
effectiveness are yet being applied. The final aim of this study is, therefore, to use the conclusions of the first two aims to identify key components of SEA for the port sector and to construct a framework through which SEA can be applied to ports and the problems identified in objectives 1 and 2 overcome.
Chapter 2: Methodology

Three main sources of data were used in this study. These sources can be broadly categorised as academic literature, official documentation and case studies.

1) SEA literature review

Firstly, academic literature on the subject of SEA was examined to assess the development of SEA and the application of SEA techniques to transport. This was used to define SEA, how it has been applied and to gain an understanding of recommended best practice SEA methods and content. This was used in section 1.3 and in the SEA framework building undertaken in Chapter 5.

2) EIA in the port sector

The objective of this second task was to identify how EIA is carried out in the port sector and how it differs between EU member states. The EU was chosen because the requirement for EIA in the different countries is the product of the same EU directive. This task evaluated whether the EIA techniques employed in the case studies were sufficient to assess specific aspects of the developments. This assessment concentrated on aspects of EIA where deficiencies have already been noted and on areas treated differently in the two case studies. An understanding of the shortcomings of existing EIA for ports was necessary to inform the later assessment of best practice environmental assessment for the sector.

The discussion on the port context in Chapter 1 explained that containerised transport is the main growth area in cargo handling. It is in this sector that port expansions are most likely to occur, making it the most appropriate shipping sector to examine in this study. The ports of Southampton and Le Havre both embarked upon container terminal expansions in the 1990s. The EIA processes for these two developments were chosen as case studies. The developments at Le Havre and Southampton were chosen for the case studies because they are of a similar size, are located in estuarine areas in proximity to designated conservation sites and came under the criteria of the
85/337/EEC EIA directive (CEC, 1997). While these aspects of the developments were similar, their locations in different EU member states means that the port regulatory regimes and governmental institutional structures were very different. France has traditionally had an interventionist approach to industry (Szarka, 2002) while the UK has adopted a market led approach, particularly since 1979 (Hutton, 1995). Ports can be privately or state owned and can also differ in management style. Some are owned and operated by the same entity, others act as a landlord and let out areas and terminals within the port to public and/or private operators (Beddow, 2002a). Shipping is an international industry so the analysis and conclusions in this paper can be applied to other container ports world wide.

The main data sources for this part of the study were the project environmental statements, public inquiry reports and shipping industry journals (such as Lloyd’s List and Containerisation International). The Le Havre environmental statement (ES) was not available so public inquiry reports were used. For Southampton, the ES and public inquiry transcripts were available.

3) Current and planned SEA practice for ports

The third task was to establish current and planned SEA in the port sector in the UK and France. This task was carried out with the aim of assessing whether current and planned SEA could improve upon EIA and also achieve the SEA objectives discussed in section 1.3. This was established by reviewing the SEA directive (CEC, 2001a) and the WSP (WSP, 2002a) regional port report.

4) SEA Framework for ports

The literature review, case studies and practice of SEA were drawn upon in the final task; the construction of a best practice framework for application to the port sector. As Chapter 1 discusses, much has been written on general best practice SEA so this framework focuses specifically on the requirements of the ports sector. The framework, therefore, concentrates on when SEA should be carried out, where it should fit in the decision making structure and what core SEA elements are needed for the port sector.
Chapter 3: Case Studies

3.1 Introduction

An assessment was carried out of environmental assessment methods used in two container port development projects in two European Union countries. The ports of Southampton in the United Kingdom and Le Havre in France both instituted proposals in the 1990s to build new terminals to increase capacity and enable the handling of the latest generation of large container vessels over 6,000 TEU (Fairplay, 2001). The timings of both projects are shown in Appendix 4.

The Port of Southampton’s Dibden Terminal project proposes a 1.8km quay, with container storage and associated port infrastructure covering a land area of 202 ha. The EIA process for the Port of Le Havre’s Port 2000 project covered the construction of 4 berths with a total quay length of 1.4km. This is part of an overall programme to create 12 berths with a total quay length of 4.2km (Chausseborg et al, 2000). The Port 2000 EIA process also covered the lengthening of the interior quay by 600m to total 1.05km.
3.2 Southampton: Dibden Terminal

The port of Southampton is one of 21 UK ports owned and operated by Associated British Ports Holdings PLC (ABP). Container handling at the port of Southampton is carried out at Southampton Container Terminals (SCT), part owned by ABP. The port handled 1.16m TEU in 2001 (Beddow, 2002a).

Consultants appointed by ABP began initial consultation with statutory bodies, local representatives, interest groups and residents in 1995, with a view to preparing expansion proposals. An initial scoping report, which contained a ‘preliminary consideration of alternatives’ (Adams Hendry, 2000: p20), was published in May 1996. Further consultation resulted in a revised scoping report in May 1997. A formal scoping direction was requested from the Secretary of State for the Environment, Transport and the Regions in September 1999 and received in December 1999. In September 2000 the Dibden Terminal environmental statement (ES) was published. The areas covered by the ES are listed in Appendix 5. After the Dibden Terminal planning application was submitted, 6,700 representations were made (Fairplay, 2001). The public inquiry opened on 27th November 2001 and was expected to last 12 months (Lloyd’s List, 2001).
3.3 Le Havre: Port 2000

The Port Autonome du Havre (PAH) handles about 60% of the container trade through French ports (Biabaut, undated). In 2000 the port handled 1.47m TEU (Beddow, 2002a). The berths in Port 2000 will be run by terminal operators chosen through a competitive tender process (Port of Le Havre Authority, 2002). Planning for port 2000 began in 1991 (Le Monde, 2001). In 1995, President Jacques Chirac lent his support, stating that Port 2000 was an ‘important national project’ (Le Monde, 2001).

A public debate under Decree 96/388 (the ‘Loi Barnier’) was held between November 1997 and March 1998 presided over by a council member of the Cour des Comptes (Revenue Court) (Chaussebourg et al, 2000). In July 1998 the PAH published its proposals, revised in the light of the public debate. The government gave the go-ahead for the construction of Port 2000 on 5 December 1998 (Biabaut, undated), which triggered the start of the EIA, after which the Minister of Public Works, Transport and Housing was expected to authorise the construction works (Biabaut, undated). In the same month the government set up a committee of independent experts chaired by the regional Prefect. The committee’s brief was ‘to establish a synthesis of knowledge on the Seine estuary and above all to define the parameters of a management plan comprising recommendations for the ecological actions and works to be undertaken’ (Chaussebourg et al, 2000). The Committee delivered its opinion in 1999.

Public inquiries were held between March and May 2000 and considered the documents provided by the project proponent, submissions by interested parties, and oral and written observations on particular themes during the inquiry itself. The main areas covered are listed in Appendix 5. The commission published its report in July 2000 which concluded that ‘the rationale for the Port 2000 project must therefore be seen as based unquestionably on the urgent need to be equipped with port infrastructure commensurate with the country’s economy’ (Chausseborg et al, 2000, Part B, Section 2.1). Construction started in 2001.
3.4 Analysis

For many authors (such as Therivel et al, 1999 and Glasson et al 1999) a principal reason for applying SEA is due to failures in the application of EIA requirements or inadequacies in the EIA process itself. The context of the present study is the appropriateness and feasibility of extending SEA practice to port infrastructure developments and planning. It is not, therefore, appropriate to analyse and compare every aspect of the environmental assessment processes and statements for Dibden Terminal and Port 2000. The comparative assessment will concentrate on those areas where EIA has been seen to be deficient in the literature and/or where analysis shows inconsistencies in the application of EIA between the two projects.

These limitations can be grouped under the following headings:

- Need
- Alternatives
- Environmental baseline
- Cumulative impacts
- Mitigation measures
- Monitoring and auditing of impacts
- Public consultation
3.4.1 Need

In both Port 2000 and Dibden Terminal the question of need for the project was considered prior to discussion of alternatives. The need for the Port 2000 development was explained in terms of fulfilling a national need for container capacity. In its conclusions the Port 2000 public inquiry commission stated that ‘for a country like France, with a sizeable maritime frontage, to feed its imports and exports through foreign ports, even if they are in the European Union, would seem to lack vision’ (Chausseborg et al., 2000, Part B, Section 5.3). ABP justified the need for the port of Southampton to expand with reference to the lack of capacity of Southampton’s existing container terminals. In the Dibden Terminal public inquiry (Dibden Terminal Inquiry, 2002: p102), Martin Hendry, environmental consultant to ABP, stated that the need was ‘for the gateway port of Southampton to expand’ in order to remain competitive and that need is ‘considered in relation to individual ports in the context of overall growth in trade’ (Dibden Terminal Inquiry, 2002: p29). In this context the national need is interpreted as the need for individual ports to expand to meet market demand.
3.4.2 Alternatives

The 85/337/EEC, as amended by 97/11/EC, directive requires an outline of the main alternatives studied by the developer (CEC, 1997). The decision as to whether to discuss alternatives and which to discuss is left to the developer (Therivel et al 1999). Consideration of alternatives in EIA is encouraged as best practice. Potential alternatives in EIA are listed in the table below, with an assessment of how they were considered in the two case studies.

Table 3.1: Alternatives considered in Dibden Terminal and Port 2000 EIAs

<table>
<thead>
<tr>
<th>Alternative types</th>
<th>Dibden Terminal</th>
<th>Port 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Do-nothing’; environmental conditions if the project did not go ahead</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Demand reduction as well as meeting demand</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Different locational approaches.</td>
<td>Yes, within Southampton waters</td>
<td>Yes, internal/external expansion options</td>
</tr>
<tr>
<td>Different types of development. Glasson et al (1999: p94) refer to this as ‘processes and equipment’.</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Different forms of management, such as site layout, management routines, construction timings, operating conditions (Glasson et al, 1999, p95)</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: English Nature, 1996
Source: Adams Hendry, 2000
Source: Chausseborg et al, 2000

In the public inquiries for both developments opponents stated that the port should have considered other locational approaches. In the case of Dibden Terminal this was capacity at other ports as an alternative to the Dibden development (Penfold, undated). In Port 2000 opponents wanted the port to consider expansion within the port’s existing boundaries, rather than the chosen estuary option. In their report the Port 2000 public inquiry commission stated that the internal solution could not match
the external plan (Port 2000) in terms of capacity so there were no alternatives to the external plan (Chausseborg et al, 2000).

The EIA legislation does not require the consideration of any particular alternatives. Port 2000 and Dibden Terminal are developments of the same type but national EIA processes treated the alternatives issue differently. ABP considered different locational approaches and the ‘do nothing’ option and gave the environmental and economic reasons for dismissing the alternatives (Adams Hendry, 2000). Without access to the Port 2000 ES it is unclear which alternatives were considered by PAH, but for economic reasons the commission did not consider any alternatives valid. From the commission’s report (Chausseborg et al, 2000) it did not appear that any environmental considerations had been taken into account.

In both cases the only alternatives to the development were internal to or controlled by the ports themselves. This raises an additional difficulty with EIA which needs to be taken into account if using SEA in this sector: that a proponent will not consider an alternative it cannot control. Further, locations for port developments, unlike other developments like supermarkets, are limited by ecological sensitivity (DEFRA, 2002), ownership, infrastructure availability and cost. In the inquiry, Hendry argued that ‘competitive ports are not alternatives’ (Dibden Terminal Inquiry, 2002: p12). ABP’s argument is therefore that, as a commercial enterprise, they could not be expected to examine alternatives where these are competitors. Lack of knowledge has been suggested as a reason for omissions from this section (e.g. Glasson et al, 1999) but, as described above, this is not the reason for the omission of other locational alternatives from the Dibden Terminal ES. This case study suggests that even if a system of SEA was introduced which evaluated the national or regional need for port capacity and signaled ports for which expansion might be appropriate, ports are unlikely to be in favour of such strategic assessment due to the possible implications for their commercial future. The UK Major Ports Group has stated its opposition to ranking port developments in this way (Lloyd’s List, 2002b).
3.4.3 Environmental Baseline

Therivel et al (1999) suggest that lack of time in the EIA process hinders the establishment of an environmental baseline and has a consequent impact on the quality of the analysis. The Dibden Terminal ES states that surveys of the three main areas were carried out for the five years prior to publication of the ES in order to establish the baseline (Adams Hendry, 2000). The Port 2000 EIA was carried out in 1999. Without the ES it is hard to determine the precise scope of ecological surveys. Chausseborg et al (2000) suggest that surveying was carried out during the summer of 1998 and completed in May/June 1999. The commission’s report stated that the estuary was an important wintering ground for waterfowl (Chausseborg et al, 2000). If the surveys of waterfowl were only carried out in summer it is possible that the importance of the estuary to some species may not have been captured.

3.4.4 Cumulative Impacts

Article 3 of the 85/337/EEC directive as amended requires that direct and indirect effects of a project be assessed. Annex III Part 1 of the directive states ‘the characteristics of projects must be considered having regard, in particular, to…the cumulation with other projects’ (CEC 1997). In Schedule 3 of the UK Town and Country Planning regulations ‘effects’ on the environment are stated to include ‘secondary, cumulative, short, medium and long term, permanent, temporary, positive and negative effects’ (DETR, 1998).

Glasson et al (1999) categorise five types of cumulative impact: time crowded, space crowded, synergisms, indirect effects and nibbling (incremental erosion of a resource). They identify that cumulative impacts are poorly dealt with in EIA. ‘Project EIAs do not adequately consider the cumulative impacts caused by several projects, or even by one project’s subcomponents or ancillary developments’ (Glasson et al, 1999: p403). This inadequacy may be due to lack of knowledge of other projects, lack of control, limited timescale of EIA and/or the commercial sensitivity of other developments on similar habitat types (Therivel et al, 1999; Glasson et al 1999).
Secondary/induced infrastructure

The Port 2000 EIA process only evaluated the impact of the initial development phase of four berths. The programme mentions an eventual twelve berths (Chausseborg et al, 2000: part B section 3.1) but ‘extension beyond the four external berths will be the subject of new procedures’\(^5\). The public inquiry also only concerned the berth construction and did not include terminal equipment, related operations (e.g. logistics) nor long distance transport links (Chausseborg et al, 2000). This suggests that no assessment was carried out of impacts that could be induced by the new container handling capacity.

The Dibden Terminal ES (Adams Hendry 2000: p93) states that no ‘major new [road and rail links will be required’\(^\). The ES considers the impact of the port development on road and rail networks in the Southampton area. Like the Port 2000 process, it does not consider longer distance transport impacts. The ES states that land around the terminal will be turned into a nature reserve and agricultural land (Adams Hendry 2000) to prevent expansion of the terminal. It does not comment on any additional infrastructure or development that the existence of the terminal may induce.

Dredging

Both developments covered the need for and impact of dredging. In both cases the possibilities of pollution released, or degradation due to increased toxic contaminant availability and suspended sediment concentrations were discussed. The Dibden Terminal ES (Adams Hendry, 2000, p161) stated that monitoring would be carried out to ensure that pollutant levels remained below ‘environmental thresholds’. The ES gives the thresholds to be used and further states that a breach of thresholds would trigger a ‘tiered response’ with the aim of re-establishing ‘appropriate environmental conditions’ (Adams Hendry, 2000, p161).

The Port 2000 inquiry discussed the same issue but in their report the inquiry commission did not consider this to be the responsibility of the PAH, stating that it is ‘a problem for which responsibility is collective’\(^6\) (Chausseborg et al, 2000, Part A, Section 5.2). Any additional impact the port may have by disturbing sediment
through dredging is not, therefore, considered to be the port authority’s responsibility nor grounds for not proceeding with the project.

3.4.5 Mitigation

Therivel *et al* (1999) suggest that mitigation measures in EIA are often limited and added onto a project after the major decisions have been taken.

The PAH allocated a sum of money for mitigation measures, but one of the roles of the commission (Chausseborg *et al*, 2000) was to comment on how this should be spent. This suggests that the measures were not formulated in response to the prediction of specific quantifiable impacts though some direct impacts were quantified. 800 ha of a 21,900 ha wetland Special Protection Area (SPA) would be directly used by the development. The site is the second most important French site for the avocet (Chausseborg *et al*, 2000). The commission report does not mention the effect of induced, indirect or cumulative impacts on the SPA. In this case no compensatory measures were requested, despite the requirements of the Habitats Directive for buffer zones (O’Riordan & Stoll-Kleeman, 2002). The commission report also commented on the impact of Port 2000 on fish breeding grounds by ‘suppressing a small part’ (Chausseborg *et al*, 2000: part B section 6.10). Unlike the loss of habitat in the SPA, the commission went on to state that ‘it is, therefore, essential to plan compensatory measures’ (Chausseborg *et al*, 2000: part B section 6.10). Earlier in the same section the commission attributed importance to this issue by stating that ‘this environment shelters a significant population of 1 to 2 year old economically important fish species’ (Chausseborg *et al*, 2000: part B section 6.10). It is clear that here economic considerations are the stimulus for the commission’s mitigation request.

The Dibden Terminal ES contains a chapter outlining mitigation measures incorporated in the site design to minimise, for example, noise and light pollution. The ES also quantified the amount of land lost through land take and detailed the quantity and type of replacement habitat to be created (Adams Hendry, 2000).
3.4.6 Monitoring and auditing

Monitoring of actual environmental impacts from a project is necessary to improve impact prediction techniques (Therivel et al, 1999). In the context of the coastal zone it could also be seen to be important due to the sensitivity of the zone and the importance attributed to coastal zone management (Mercadié, 1999).

The commission report for Port 2000 (Chausseborg et al, 2000) does not mention monitoring. The Dibden Terminal ES states that air, noise and dredging will be monitored. It also states that a monitoring programme will be carried out ‘to provide information about the use of the habitats created or improved by the proposals by waterfowl and other animal species’ (Adams Hendry, 2000: p324). The ES states that the programme will cover construction and operation phases, but does not detail the methodology or frequency. The ES makes no provision for publication, which would be necessary to improve prediction techniques. The ES also does not explain what action would be taken if monitoring raises impact issues.
3.4.7 Public Consultation

Both ABP and PAH carried out public consultations on their expansion projects. The consultation process for Dibden Terminal was outlined in chapter two of the Dibden Terminal ES (Adams Hendry, 2000) and is summarised below.

<table>
<thead>
<tr>
<th>Time</th>
<th>Action</th>
<th>Consultees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 95 –</td>
<td>Formal presentations and site visits. Points raised assisted preparation of scoping report.</td>
<td>Invited groups – planning authorities, statutory consultees, govt. depts, interest groups, parish councils, potential end users (e.g. major shipping lines)</td>
</tr>
<tr>
<td>May 96</td>
<td>Draft Scoping report to consultees for comment. Revised scoping report then produced</td>
<td>Groups listed above</td>
</tr>
<tr>
<td>1997 - 2000</td>
<td>‘Dibden Forum’ – inform on project progress and invite comments.</td>
<td>Invited representatives of the groups listed above</td>
</tr>
<tr>
<td>1997 – 2000</td>
<td>6 information leaflets distributed</td>
<td>100,000 households in Southampton area.</td>
</tr>
<tr>
<td>Oct – Dec 98</td>
<td>Public exhibitions – scale models, leaflets, explanation. Comment sheets provided.</td>
<td>2,500 visitors. 366 comment sheets returned</td>
</tr>
<tr>
<td></td>
<td>Ongoing informal contact with relevant consultees</td>
<td>e.g. English Nature, RSPB and local Wildlife Trusts to ‘consider how impacts on European sites could be minimised’ (Adams Hendry, 2000:p20)</td>
</tr>
</tbody>
</table>

Source: Adams Hendry, 2000

A public inquiry was held from November 2001.

A public debate on expansion of the port of Le Havre was held between November 1997 and March 1998, marking the first use of the public debate requirements of the 1995 ‘Loi Barnier’ (Chausseborg et al, 2000). The objectives of the process were to allow the expression of all concerns regarding the proposals and the incorporation of these concerns in the project plans (Gallois, 1999). Gallois (1999) also notes that the requirements rely on the project proponent explaining its development plans publicly and being open to questions and modifications.

The Port 2000 public debate was presided over by members of the CNDP (National Commission for Public Debate), whose role was to oversee proceedings, but not to
draw conclusions. The most prominent themes discussed during the debate were the economic necessity of port expansion and the environmental consequences (Gallois, 1999). Prior to the debate the port authority produced 10,000 copies of a 70 page brochure describing the project, and established a website, free phone number and public information point (Gallois, 1999).

Following the public debate, the proponent analysed the observations submitted and finalised the project proposals (Chausseborg et al, 2000). A follow-on commission was created in November 1998, which met four times. The aim was to allow the continuation of dialogue during elaboration of the project and, especially, to allow views to be expressed on compensatory measures (Chausseborg et al, 2000). The aim was for the commission to be as large as possible, with participants invited from parliament, regional and departmental councils, regional economic and social councils, chambers of commerce, town councils, the port, fishing associations and environmental groups (Chausseborg et al, 2000). The public inquiry was then held between March and May 2000 with documents placed in the town halls from the start. Around 700 observations were submitted in response (Chausseborg et al, 2000).

The inquiry commission commented on the public debate, stating that it allowed the expression of all views ‘without possible interference in the conclusions of the public inquiry commission’ (Chausseborg et al, 2000, Part A, section 1.5). This suggests that while a public debate was a legislative requirement, there were no mechanisms to ensure that issues raised were incorporated into the planning process. In section 3.4, it was shown that the EIA process was perceived by the port to be an official procedure prior to approval of the project (Biabaut, undated). The inquiry commission’s comments suggest that the public debate was seen in the same way.

In neither UK nor French project planning procedures is there a requirement for the views of consultees and the public to be taken into account in project formulation. While a clear requirement exists for public consultation in France, through the ‘Loi Barnier’, there appears to be no requirement for the results of the debates to be incorporated into the planning process. Though there was no legislative requirement for extensive consultation, ABP pursued several different consultation strategies and incorporated these concerns into project planning, particularly at the scoping stage. In
both cases, the project locations and plans were already decided by the proponents
prior to consultation. The objectives of consultation were to invite questions and
comments and to deal with these within the context of the existing proposals. Both
used consultation with interested groups to plan and refine mitigation or
compensatory measures.
3.5 Conclusion

This analysis demonstrates that although Dibden Terminal and Port 2000 were subject to assessment according to legislation transposed from the same EC directive, clear differences existed in the environmental assessment processes. The general failures identified by Glasson et al (1999) and Therivel et al (1999) did occur in some areas in these two case studies, but there were also differences in application between the two countries. This has implications for the working of an SEA system in the port sector, particularly where a port’s competitors are in another member state.

Both projects only considered alternatives under the direct control of the proponents, while the Dibden Terminal ES also considered the ‘do-nothing’ option, neither considered demand reduction or alternative methods of meeting demand. This demonstrates that, at the project level, a proponent is unlikely to include alternatives out of their control for commercial reasons. Port 2000 and Dibden Terminal were both subject to EIAs and public enquiries. The French government announced support for the Port 2000 project prior to the EIA taking place and the port described EIA as a procedural requirement before automatic approval. This can be contrasted with the Dibden Terminal process where the UK government has been careful not to declare support for any one expansion plan (DETR, 2000a).

Barnes & Barnes (1999: p5) attribute differences in environmental protection methods in EU member states to ‘differences in national values’. The French polity has a tradition of ‘fostering national champions’ (Szarka, 2002: p176). Szarka also identifies a ruling ideology of ‘intérêt général’ (public interest) which has hindered the accordance of legitimacy to, and inclusion in decision-making of, environmental groups (Szarka, 2002: p214). Chirac’s description of Port 2000 as an important national project and the inquiry commission’s statement that Port 2000 was a necessary continuance of France’s maritime heritage (Chausseborg et al, 2000) appear to support this analysis. In the UK, statutory consultees and environmental groups were consulted by ABP early in its planning of Dibden Terminal. Szarka (2002) analysed the membership of UK and French environmental groups and concluded that UK environmental groups are comparatively better resourced, represent a greater number of supporters and are, consequently, accorded more legitimacy in planning
and policy making processes. Despite the improved public consultation procedures introduced through the ‘Loi Barnier’, environmental groups in France have had problems responding due to lack of resources (Szarka, 2002). The Port 2000 case study also suggests that planning authorities see public debates as separate from the planning approval process.

The compliance with EU legislation does not, therefore, seem to be due only to different governmental interpretation or transposition, as Barnes & Barnes (1999) suggest. The analysis here suggests that the strength and role of environmental groups or consultees in the environmental assessment process is a factor in the incomplete or inadequate application of EIA. The next chapter discusses how SEA is applied to the port sector and whether the issues raised here are resolved at the SEA level.
Chapter 4: SEA in Practice

4.1 Introduction

The discussion in Chapter 1 suggested that strategic level assessment of the environmental impacts of private sector infrastructure developments and port developments generally is rare in the EU, with most transport SEA being for the road and rail sectors. The differences between the road/rail sectors and the port sector suggests possible problems if the same form of SEA is applied to ports. The table below outlines the principal differences between the sectors.

Table 4.1: Differences between road/rail and port sectors

<table>
<thead>
<tr>
<th>Subject</th>
<th>Road and Rail</th>
<th>Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding</td>
<td>Road and rail projects are frequently publicly funded (see paragraph below).</td>
<td>Ports in the UK are privately owned and funded (Whitehead, 2002).</td>
</tr>
<tr>
<td>Alternatives</td>
<td>Most SEAs discuss alternative means of meeting or reducing demand (Sheate, 1992). Any alternative routings could be built by the same entity regardless of alternative chosen.</td>
<td>Taking action to reduce demand in one country would result in cargo transiting via other countries (LSE, 2002). Alternative locations would not necessarily be controlled by the project proponent.</td>
</tr>
<tr>
<td>Competition</td>
<td>Road and rail cater primarily for domestic traffic.</td>
<td>Ports are in competition with other ports in the same country and abroad for traffic and revenue (Whitehead, 2002).</td>
</tr>
</tbody>
</table>

Glasson et al (1999) write that the first stages in a new trunk road or motorway scheme are recognition by the Department of Transport of a need in a particular area, followed by a study to identify routes. Once the Secretary of State has passed a scheme, the contracts for construction are then prepared and let (Glasson et al, 1999). Private companies may build roads, but they do not have to bear the risks of planning, paying for and submitting project proposals as ports do (as with Dibden Terminal). In the UK containership operators ‘generally do have a choice of port’ (Bracewell, 2002: p18). Maersk Sealand, for example, moved some mainline services from Southampton to Felixstowe in 1998 (Containerisation International, 1999). Roads in
the UK are not run as commercial operations and do not compete with alternative roads for custom.

The case studies highlighted areas where the process of EIA was not able to assess impacts fully. Prior to consideration of a best practice methodology for applying SEA to the port sector it is necessary to assess current and planned SEA in the sector. Particular consideration is given to the application of SEA in the context of the issues raised in Chapter 3.
4.2 South East England, London and East of England Regional Ports Study (SEAPORTS)

One example was found of the application of strategic assessment to port infrastructure. WSP Group PLC carried out a study on behalf of the South East and Anglian Ports Local Authority Group, published in 2002 (WSP, 2002a). While not specifically a SEA, this study incorporated an environmental assessment process within an overall strategic assessment of ports in the region. The methodology used by the consultants is shown in Appendix 6.

4.2.1 Analysis of WSP approach

Defining strategic assessment

An issue in the background to the study was that project level assessment of ports is not sufficient, as ports have economic, social and environmental implications beyond the boundaries of the port site. WSP (2002a: p5) also stated that trends in the port industry need to be understood by planning authorities so that port development can be placed in ‘the context of a sustainable spatial development strategy’. The study examined ports and related infrastructure within a specific geographical region: East of England, South East and London. The purpose of the study was ‘to develop a regional framework that provides strategic planning and transport guidance for the sustainable development of ports and related infrastructure’ (WSP 2002a: p1). The study is, therefore, placed in the context of what the authors see as a ‘clearly defined plan-led framework that is focused on the delivery of sustainable solutions to land-use problems’ (WSP, 2002a: p16). The level of assessment chosen for ports in this case is, therefore, that of regional land use plan. Ports in the South East of the UK fall into three different regions for planning purposes. The report highlights that Regional Planning Guidance (RPG) 6 applies to East Anglia (Felixstowe port), whereas RPG 9 applies to the Thames Gateway region (London). RPG 6 mentions the need for a study of ports and shipping in the South East and East of England (DETR 2000b).
Need

Justification for the study is given as the fact that ports have impacts outside the port site and that Modern Ports (DETR, 2000a) suggests that regional transport studies should offer guidance on the role of ports in a region. The ‘need’ that ports meet is defined as current and forecast demand for container port services at a national and regional level (WSP, 2002a). The case studies showed that, at project level, ‘need’ is not defined this way.

Alternatives

The consultants define the relationship between the study and project level appraisal by stating that ‘it is for ports to bring forward sites to be considered for new development based on their assessment of market needs, these proposals will then be assessed on their own merits against the plan-led framework that has been defined’ (WSP, 2002a: p16). They state that the report will not make a judgement on the merits or otherwise of particular projects as this is most appropriately done at the public inquiry stage (WSP, 2002a). However, they also state that one role of the report is to ‘guide development towards the locations where a balance between economic, social and environmental considerations can best be achieved’ (WSP, 2002a: p16). This is contradictory as, by identifying locations, the authors effectively make a judgement on the relative merits of individual port developments. The companies owning and operating ports do not have the locational flexibility when planning new developments that other development types have. To return to the road and rail example used in the introduction, a road can have the same owner or operator regardless of where it is or which alternative location is chosen. Competitive ports will not.

This ambiguity on the part of the authors as to whether one of the strategic study’s aims is to identify and assess alternative methods of meeting the demand for container port capacity is likely to be due, at least partly, to the reaction of stakeholders during consultation. The authors found little enthusiasm for a regional port development policy, but did find support for ‘a strategic level study…which sets out the main challenges faced, the role that regional and local planning can play in facing these
challenges, and a regional framework within which planning decisions can be considered’ (WSP, 2002a: p46). The project level was believed by respondents from all sectors to be the most appropriate level for assessing whether port developments should go ahead (WSP, 2002a). The conclusion can be drawn that this was primarily due to:

- The emphasis on the role of the market in bringing forward potential projects for development.
- The belief that the level of detail in a strategic study would not enable firm planning decisions to be made, this should be done at a public inquiry.

However if decisions to rule developments in or out should take place at the project level, the implication is that this is where alternatives should be considered. UK government guidance suggests that alternatives to be considered include feasible alternatives to the project and that comparison with alternatives outside the developer’s control may be appropriate, though lack of information may prevent a full appraisal of such alternatives (DTLR, 2001). Huggett (2002: p29) believes that if such information is available then ‘it is for them [developers] to appraise such alternatives’. For commercial reasons this was resisted by the proponents of the projects analysed in Chapter 3.
4.3 The SEA Directive

The SEA directive (CEC, 2001a), its content and requirements were described in Chapter 1. In this section the SEA directive is discussed in the context of how it will apply to the port sector.

Therivel et al (1999: p72) criticise the list of environmental parameters in the directive as limiting consideration to ‘traditional impacts’ and suggest that a list of possible impacts should include sustainability and policy related impacts. The ‘traditional’ parameters listed are, perhaps, more suited to a geographically defined and specific land use assessment. For a strategic assessment of port requirements, assessing the impact of a port plan on, e.g., architectural heritage or landscape requires a fairly precise identification of the potential locations of project-level port developments.

The application of the directive only to certain sectors has been criticised elsewhere (Von Seht, 1999). The directive’s limitations also have implications for its applicability to the port sector. The UK government has stated that, for ports, strategic considerations are necessary in the context of regional development agency strategies and local transport plans (DTLR, 2001). The directive will, therefore, apply to ports as part of regional land use planning or as part of a sectoral plan or programme. The government’s ‘hands-off’ approach to port planning means that it is unlikely to draw up a sectoral plan or programme, particularly one leading to applications for development consent. Section 4.2.1 established that ports in the UK fall under different regional jurisdictions. WSP stated that their study was limited by its regional focus and consequent inability to consider other UK ports (WSP 2002a). While RPG 6 mentions the need for a wider ports study, this is not a legislative requirement and would be contrary to government policy (DETR 2000a) so the SEA directive is unlikely to be applied.

The directive requires the consideration of alternatives to the PP. The case studies in Chapter 3 have established that competitors to a port and, therefore, alternatives (in the users’ eyes at least) can be in the same region, elsewhere in the same country or in a nearby country. The directive requires transboundary consultation on likely impacts.
of a PP on a neighbouring country’s environment. It does not require consideration of:

- The impact of the existence of ports or planned developments in one country on the need for development or the alternatives being considered in another country. In the Port 2000 inquiry, the existence of port capacity in other countries was given as a reason for the development.
- The cumulative impacts of one country’s plan with plans or developments in other countries.
4.4 SEA Directive and EIA shortcomings

The SEA directive is, therefore, the application of project EIA to an earlier tier in the planning process. The case studies in Chapter 3 highlighted problems with the application of EIA to port developments. The table below examines whether the provisions of the directive can resolve some of the limitations of project EIA.

Table 4.2: SEA Directive and port EIA problems

<table>
<thead>
<tr>
<th>Case Study Problem</th>
<th>SEA Directive solution</th>
<th>SEA directive as solution?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Different application of EIA directive in different member states.</td>
<td>Transposition likely to vary as regulations implemented as a directive, not a regulation.</td>
<td>X</td>
</tr>
<tr>
<td>Not applied to all sectors or projects.</td>
<td>Only applies to some sectors, where significant effects likely and where projects requiring development consent result.</td>
<td>X</td>
</tr>
<tr>
<td>Objectivity.</td>
<td>Like 85/337 no requirement for implementation and use of SEA to be monitored by an independent body.</td>
<td>-</td>
</tr>
<tr>
<td>Need. No agreement on definition.</td>
<td>Objectives should be listed but the reasons for the PP do not need to be published.</td>
<td>X</td>
</tr>
<tr>
<td>Full range of appropriate alternatives needs to be defined</td>
<td>As with 85/337, SEA directive requires outline of alternatives dealt with, but no definition.</td>
<td>X</td>
</tr>
<tr>
<td>Environmental baseline.</td>
<td>No requirement to establish an environmental baseline.</td>
<td>X</td>
</tr>
<tr>
<td>Full range of cumulative impacts.</td>
<td>Required, but not defined.</td>
<td>-</td>
</tr>
<tr>
<td>Significance of impacts.</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Public consultation.</td>
<td>Required, but not defined</td>
<td>-</td>
</tr>
<tr>
<td>Monitoring.</td>
<td>Required</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 4.3: Key to table 4.2

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>No, directive does not include provisions that could resolve the issue.</td>
</tr>
<tr>
<td>-</td>
<td>Unclear, depends on how the member state implements the provisions.</td>
</tr>
</tbody>
</table>
4.5 Conclusion

The focus of the WSP report (WSP, 2002a) was economic and did not consider environmental issues in the depth required by the SEA directive (CEC, 2001a). The report did consider the questions of ‘need’ and ‘alternatives’, but was unable to reconcile contrasting approaches at strategic and project levels by offering a clear structure. The consultants stated that the absence of a national policy for ports hindered consideration of the impact of developments in the region on other areas of the UK (WSP 2002a), suggesting that SEA of ports cannot adequately be carried out at the regional level.

Application of the SEA directive (CEC, 2001a) is limited to PPs. The provisions of the directive do not appear to resolve the EIA issues raised in Chapter 3. In addition, if a government adopts a market-led approach to a sector and, consequently, does not require the preparation of PPs then no SEA will take place. Aspects of the port sector may be subsumed into land use or local transport studies, but, as discussed, SEA as a step up from EIA in regional land use planning is not suitable for ports. Best practice SEA for the ports sector therefore needs to be developed to facilitate the use of appropriate methodologies.
Chapter 5: SEA Framework for the Port Sector

5.1 Introduction

This paper has established that:

- SEA methodologies have not really been applied to private infrastructure sectors, such as ports.
- The case study EIAs contained shortcomings.
- Ports serve an international industry and have environmental and commercial transboundary implications.
- For the UK government, with its market-led approach, the appropriate level for port environmental assessment is the project level. For the French government, the belief in ‘national champions’ (Szarka, 2002) leads to early support for key projects, such as Port 2000.
- The WSP study (WSP, 2002a) showed uncertainty as to the role of a regional level strategic study in the port sector.

It is, therefore, concluded that some level of SEA is necessary for port infrastructure planning. In this section, consideration will be given to appropriate elements in a port sector SEA framework.
5.2 SEA Framework: Decision-making context

1. **SEA needs to be defined as a framework within which government decision-making takes place.**

SEA is currently seen as a facilitator (Partidário, 2000) of decision-making. It is a method of reducing the impact of existing PPPs or (less commonly) of PPP options at the design stage. The current practice of SEA replicates the limitations of EIA in reacting (Glasson et al., 1999) to proposed actions. Von Seht (1999) suggests SEA can better apply the precautionary principle, but, without being able to anticipate actions, SEA cannot adhere to the meaning of precaution: ‘to avoid…an undesirable event’ (Collins, 1993). ESPO (European Sea Ports Organisation) has argued that some environmental legislation, such as the Habitats Directive, is inconsistent with the promotion of shipping as a sustainable transport mode (Containerisation International, 2002) as it can inhibit port development. As mentioned in section 1.4, increased use of seaborne transport instead of roads is an aim of the EU, requiring sufficient port handling capacity. SEA as commonly conceived is not at present sufficiently strategic to be able to reconcile these conflicts or realise sustainability and the precautionary principle. SEA needs, therefore, not to be seen as a framework to facilitate decision-making, but as a framework within which decision-making takes place.

2. **The primary objective of SEA is the implementation of sustainability; to ensure that the consequences of decision-making have least possible environmental impact.**

The objective of all forms of environmental assessment is to minimise the environmental impact of human actions. SEA should be used to ensure that, in designing a strategy to achieve a particular policy aim or to deal with an identified need, the best option to achieve both the aims/needs and minimal environmental impact is chosen.
3. The application of SEA should be mandatory.

Partidário (2000) suggests that SEA should be indicative rather than prescriptive. This suggests encouragement of good practice rather than a legal requirement to apply SEA in PPP or other governmental decision-making. Partidário (2000) designed a framework to guide SEA based on a list of questions. This starts with the questions, ‘Why do you need an SEA and what are your objectives?’ and ‘Why is it that EIA procedures would not be adequate in your current case?’ (Partidário, 2000: p660). The UK government is not convinced of the need, demonstrated in Chapters 1 and 3, for SEA for the port sector (DETR, 2000a) and would, therefore, answer that SEA is not needed and that EIA is sufficient. Chapter 4 also noted that the SEA directive is unlikely to be transposed in the same way in all member states which means that SEA is unlikely to be applied in the same way to the port sector within different regions in one country, and in neighbouring countries. SEA must, therefore, be mandatory and prescriptive for all policy areas, but is particularly important in transport and related infrastructure.

4. SEA should be applied to all sectors

In most countries where some form of SEA is required, not all sectors or proposals have to be screened for SEA. In Canada only PPP proposals submitted to a minister or to cabinet for approval must be assessed (CEAA, 2000) and in California SEA is required for a limited range of PPP types (Von Seht, 1999). Consequently, many authors (e.g. Wilkinson et al., 1994) suggest that all PPPs should be screened for the need for SEA. Noble and Storey (2001) suggest that SEA should be applied to three distinct decision-making processes: proposed PPPs, options/alternatives and existing PPPs.

Smith (1996) wrote that the ideal is an integrated approach, whereby SEA is integral to, rather than a particular stage in, decision-making, so PPPs are part of the options and alternatives to address a need. The least negative alternative (Noble & Storey, 2001) can, therefore, be chosen, which cannot happen if proposed PPPs are assessed in isolation from other options. Sheate (1992) seems to concur with this in the context of transport as he suggests that SEA affords an opportunity to examine different
methods of dealing with an identified need. This would enable consideration of modal conflict issues such as that raised in 5.2.1.

5. **SEA is a tiered top-down process, with the first level of SEA at the policy design stage.**

The main stage of political decision-making is within the nation state (Milward, 1994). Domestic policy-making is the first level, with international agreements or actions made later or in support (Milward, 1994). As Chapter 3 discussed, ports raise transboundary environmental and competition issues and ports in the Le Havre-Hamburg range, including the UK, are expected to become ‘pinch points within five years’ (Containerisation International, 2002). Present consideration of transboundary issues in environmental assessment is limited to the impact of a PPP in one country on environmental parameters in another country (discussed in 4.3). Ports serve, and are part of, an international industry. There is, in this sector, a need for wider consideration of transboundary issues. These include:

- Ideally SEA at an international (regional) level e.g. for ports in the Le Havre–Hamburg range cited above. This is politically very unlikely, given that international action is driven from the nation state level (Young (2002), O’Riordan (2000)) as evidenced in Chapter 3.
- Consideration of the cumulative impacts of a nation state PPP on the environment in other nation states and on the ‘commons’ (O’Riordan, 2000).
- Consideration of infrastructure, developments and plans in other countries to be included in the SEA of a port infrastructure PPP in a country.

For political reasons decision-making is likely to remain driven from within the nation state, starting at policy level. SEA, thus, needs to be a framework to determine the best policy option. Therivel (1998) writes that introducing formal SEA in the UK is made more difficult by the fluid structure of governmental decision-making, and suggests that there are few formal national policies and plans to which SEA could apply. An SEA framework for ports in an EU context also needs to have the same level of application and effectiveness in different institutional structures, such those
identified in the UK and France in Chapter 3. Consequently, SEA cannot be, as
Therivel (1998) seems to suggest (and as EIA was arguably seen in the Port 2000 case
study), a hurdle in the decision-making process applied to an already defined PPP.
The SEA directive is structured in this way. The first stage of SEA for the port sector
must, therefore, be the identification of policy alternatives that can meet, deal with or
negate the need. SEA is, consequently, applied to these policy options.

The main needs that port policies in the UK and France are required to respond to are,
firstly, insufficient container capacity to manage current and future predicted demand
(Bracewell 2002) and, secondly, the need to manage ports and coasts sustainably
(English Nature, 2002). The UK government’s policy objectives are for a market-
driven, competitive port sector in the context of sustainable development and best
environmental practice (DETR, 2000a). Chapter 3 identified that the main policy
objective for the French government is to increase the proportion of French cargo
through French ports and maintain competitiveness of French ports in relation to other
North European ports. The French government is also subject to the same EU and
international pressure on sustainability issues. The SEA structure discussed above
may require a clearer, more formalised decision-making process, but the discussion
here has demonstrated the need for it.
5.3 SEA Framework: Process

The best practice SEA methodologies designed by many authors (e.g. Von Seht (1999), Partidário (2000), Simpson (2001)) were discussed in Chapter 1. This previous work and the specific needs of the port sector are drawn upon to propose core considerations in the application of SEA to ports. These core elements are listed below and discussed in the subsequent sections.

Table 5.1: SEA framework

<table>
<thead>
<tr>
<th>SEA stage</th>
<th>Further considerations</th>
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<tbody>
<tr>
<td>1. Need/Policy objectives</td>
<td>Defined by government in consultation with interested bodies. Discussed in 5.2.</td>
</tr>
<tr>
<td>2. Alternatives</td>
<td>Definition of policy options to achieve objectives or negate need. Description and boundaries of PPP options. Consultation to ensure no omissions</td>
</tr>
<tr>
<td>3. Environmental baseline</td>
<td>Current environmental baseline. Should be common to all policy options so the base for assessment is the same.</td>
</tr>
<tr>
<td>Then for each option/alternative:</td>
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<tr>
<td>4. Assessment of impacts</td>
<td>Consultation</td>
</tr>
<tr>
<td>a) Scoping of impacts</td>
<td>Impact on all environmental parameters, but holistic approach to ensure identification of linkages between parameters.</td>
</tr>
<tr>
<td>b) Assessment of environmental impacts</td>
<td></td>
</tr>
<tr>
<td>c) Economic and social effects</td>
<td></td>
</tr>
<tr>
<td>d) Possible mitigation</td>
<td></td>
</tr>
<tr>
<td>e) Uncertainty</td>
<td>Consultation on mitigation.</td>
</tr>
<tr>
<td>5. Ability to meet needs</td>
<td>How well the option, individually or with one or more other options, meets, reduces or removes the needs.</td>
</tr>
<tr>
<td>6. Published report</td>
<td>Published report of stages 1 to 6. Consultation prior to stage 7.</td>
</tr>
<tr>
<td>7. Decision</td>
<td>Decision on choice of individual or combination of alternatives. Explanation and publication of decision.</td>
</tr>
<tr>
<td>9. Monitoring</td>
<td>Outline of monitoring strategy including quantified objectives, timings, actions to be taken if objectives not met, publication.</td>
</tr>
</tbody>
</table>
1. **Need/ Policy Objectives should be defined.**

This was discussed in 5.2.

2. **Alternative options to negate or meet the need or objectives should be identified and SEA carried out for each option.**

ICON *et al* (2000: p5) state that ‘options, alternatives and questions of need are a prerequisite for a strategic assessment’. The discussion in Chapter 1 showed that the majority of authors on SEA agree that SEA should include the consideration of alternatives. Many authors suggest that alternatives to the proposed PPP should be compared, assessed and reasons for rejection included (e.g. Verheem (1992), Therivel (1993), CEAA (2000)). This places alternatives firmly in the context of a predefined PPP for which the SEA is being carried out. In their study of routes for a motorway PPP for Madrid, Arce & Gullon (2000) placed the consideration of alternatives in the scoping section. They considered alternative routes, but not alternative methods of dealing with the need such as ‘the relative role of different transport modes and development patterns’ (Sheate, 1992: p171). In section 5.2 it was stated that the overall objective of SEA is the choice of the least environmentally harmful option. While assessing alternatives in the context of a predefined PPP may fit more easily within traditional government decision-making (Sheate, 1992), it does not allow the achievement of the overall objective of SEA. The identification, definition and description of alternative PPP options, thus, needs to take place at the beginning of the process, following the identification of need and policy objectives (described in 5.2). As the objective of the SEA process is to enable the choice of the least environmentally harmful option to achieve the objectives, all policy alternatives should be subject to SEA. This facilitates a comparative assessment of the different options. Screening is not required as all options are subject to SEA.

The SEA directive (CEC, 2001a) gives no guidance as to the type of alternatives which should be assessed. While many authors agree alternatives should be included in SEA, none defines what constitutes an alternative nor what core alternatives should be assessed. The discussion in Chapter 3 showed that, at the project EIA level, this is
a key issue in the environmental assessment of port developments. Alternatives that should be considered for transport SEA include:

Table 5.2: SEA Alternatives

<table>
<thead>
<tr>
<th>Alternative type</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Modal alternatives (Sheate (1992) and Wilkinson <em>et al</em> (1994))</td>
<td>Not really an option in the case of ports as shipping is the best environmental choice for long distance transport (DETR, 2000c) and is an international industry; limiting unilateral national influence on use of the mode.</td>
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<tr>
<td>Demand reduction (Smith 1996)</td>
<td>Should be considered, but is likely to be difficult for the same reasons as above.</td>
</tr>
<tr>
<td>Do nothing (Smith 1996)</td>
<td>The ‘no port expansion’ option should be considered.</td>
</tr>
<tr>
<td>Meet demand</td>
<td>By a) improving port efficiencies, b) expanding ports (DETR, 2000a), c) transhipment via ports in other regions or nearby countries.</td>
</tr>
</tbody>
</table>

Kørnøv (1997) considers that consultation can take place to assist identification of alternatives, thus avoiding the selection of alternatives being dictated by those who have greatest influence over the start of the process.

An area that provoked much discussion during the consultations carried out for WSP’s (2002a) regional port study was whether a study at this level should identify and assess project alternatives. Chapter 4 showed that this was not wanted by most consultees. Von Seht (1999) concurs with this as he sees SEA as a tiered process, so while an SEA might identify potential projects likely to arise from a PPP, these will not be assessed at the SEA level. While perhaps appropriate for other sectors, it is questionable whether such an approach is suitable for ports. As Chapter 1 identified, locations suitable for port developments are few and are very locationally specific due to the constraints on coastal land, sufficient water depth, water and landside transport links and proximity to a hinterland and/or transhipment markets. Chapter 3 identified that the UK government has suggested that the assessment of alternative port locations may be appropriate at the EIA level, but that developers are extremely reluctant to do this for commercial reasons. Project-level alternative locations must, therefore, be identified and assessed at a strategic level, although, as Von Seht (1999) notes, the assessment will not be as detailed as an EIA’s consideration of local environmental impacts.
The objectives (Arce & Gullon 2000), content and scale (Joao, 2002) of the PPP alternatives should be described. This information is used to help establish the environmental baseline for the PPP options.

3. **The environmental baseline should be established.**

The existing and likely future environmental baseline without the PPP options should be assessed (Smith, 1996), as should any anticipated changes as a consequence of the PPP option. Thus, as all alternatives should be comparatively assessed to facilitate the choice of the best option, the environmental baseline should be common to all options. For the port sector this could include consideration of:

- Location of protected coastal sites.
- Environmentally sensitive non-protected areas (O’Riordan & Stoll-Kleeman, 2002).
- Marine environment high risk areas (MEHRAs) and other sensitive or protected marine areas.
- Geographic concentrations of air pollution from ships and other sources in coastal locations (Entec, 2002).
- Impacts on other environmental parameters.
- Quantification of the above and links between.

Consultation should take place to identify possible problem areas (Smith, 1996).

4. **Assessment of impacts**

   a) **Scoping of impacts**

Scoping of potential environmental, social and economic impacts needs to be carried out carefully (Verheem, 1992) and should include public participation (Von Seht, 1999) to ensure that all potential problems are identified and the right level of assessment chosen (Von Seht, 1999). This enables the comparison of alternatives
(Arce & Gullon, 2002) and is important in SEA because of the levels of uncertainty associated with strategic impact prediction (Smith, 1996).

b) Assessment of environmental impacts

Impacts to be assessed include:

- Positive and negative impacts
- Impacts at different geographical levels – local, regional and global (Von Seht, 1999)
- Non-project impacts (Von Seht, 1999)
- Interactions between impacts (CEAA, 2000)

c) Economic and social effects

The economic and social effects, positive and negative, of the PPP alternatives should be assessed (Fischer, 1999). This is necessary to ensure that the alternatives are sustainable and do not exceed the carrying capacities of the resources they propose to use (Therivel et al, 1999).

d) Possible mitigation

Following the assessment of impacts, possible mitigation measures should be identified (Glasson, 1995). These measures should centre on avoiding, reducing or compensating for negative impacts identified (Von Seht, 1999), such as the avoidance of sensitive areas (Smith, 1996). Consultation should be carried out to ensure all options are considered.

e) Uncertainty

Anticipatory environmental assessment approaches, such as SEA, require more information than reactive approaches (Therivel et al, 1999). This leads to a greater degree of uncertainty. This is likely to be particularly acute in the port/shipping
sector as understanding of the maritime environment is incomplete (English Nature, 2002). It is, therefore, critical that any uncertainties or gaps in knowledge in any area (Verheem, 1992) should be identified and described in the SEA. Value judgements underlying the assessments should be justified (Von Seht, 1999).

5. **In the light of the SEA how well do each of the alternatives meet or negate the need/objectives?**

Individual PPPs are normally assessed in isolation or compared to discrete alternative options, as section 5.2 discussed. It is possible that the PPP need could be met or negated by one or more options. The options and SEA results should be used to assess how well one or more options meet the objectives described in section 5.2. Identification of the least environmentally harmful option is important (Noble & Storey, 2001).

6. **An SEA report should be published**

A report should be produced and published to present the process and findings of the SEA (Smith, 1996). This should be made available for comment (Lee and Walsh, 1992) and the SEA report amended as a result (Von Seht, 1999).

7. **The decision on the appropriate option(s) should be made in the light of the SEA and consultation and within the context of environmental sustainability.**

The competent authority should take all information, including the SEA and consultation results, into account in taking a decision (Lee and Walsh, 1992). The option that best deals with the need, or the objective with minimal environmental impact, should be chosen. The choice of a different option should be explained and justified. The decision and reasons for it should be made public (Therivel, 1993).
8. **Consequences**

The planned mitigation measures and timings and the links between the SEA decision and future cycles or EIA level projects should be described (Arce & Gullon, 2000). Potential locations for port developments would, therefore, be identified, but planned development projects at these locations would still be subject to EIA.

9. **Monitoring of the consequences of the PPP should take place.**

Therivel (1993) states that monitoring and evaluation procedures should be put in place if necessary. Monitoring should, however, be mandatory owing to gaps in knowledge at the strategic level (Verheem, 1992), particularly in the maritime sphere (English Nature, 2002). The monitoring plan should describe the monitoring actions, methodologies, timings and publication strategy. It should also clearly state what action will be taken if the monitoring raises impact issues.
5.4 Consultation

The SEA directive’s requirement for public consultation only once the environmental report has been published has been criticised for being insufficient and for not incorporating concerns at an early enough stage (Von Seht, 1999). Consultation should take place at multiple stages of the SEA decision-making process to ensure that all important aspects have been identified and all options considered.

In their regional port study WSP (2002a) found that some consultees focused on specific local issues not appropriate to the strategic approach adopted in the study. Some authors (e.g. Von Seht, 1999) have suggested that this tendency to be preoccupied by project level issues is a reason for not including general public consultation in SEA, or for separating it from consultation with interested parties (e.g. statutory bodies, local authorities, NGOs and industry). At a strategic level this may be appropriate for a sector as specialised as ports/shipping. Ensuring a fair consultation process is dependent on consultee groups being able to respond and having equal access to the process. This may be possible in the UK where all groups are accorded legitimacy and environmental groups have wide and consistent bases of support (Szarka, 2002), but may not be the case in all EU countries. Chapter 3, for example, showed how in the Port 2000 EIA process, environmental groups and issues were accorded less legitimacy than economic interest groups. Consultation integral to the SEA with the requirement to show how the results are taken into account in the SEA, rather than as a distinct step or separate exercise (as in Port 2000 EIA), may guard against this, as might the existence of an independent SEA monitoring body.
Chapter 6: Conclusions

6.1 Conclusions

The environmental assessment of PPPs, using the tool of SEA, is the subject of high expectations. SEA is expected to anticipate actions, reduce environmental impacts, resolve EIA shortcomings, facilitate the choice of the least environmentally harmful option and realise sustainability. The port sector will be subject to SEA in the EU as a result of the SEA directive (CEC, 2001a) only where PPs are drawn up. The main objective of this paper was to establish whether SEA could improve upon EIA in minimising the environmental impacts of the port sector. This sector was chosen because SEA has only rarely been applied to it and, as this paper has established, the port sector is different from other transport sectors in its structure, location restrictions, transboundary impacts and transboundary competition.

EIA is seen to have general shortcomings, some of which were evident in the case studies evaluated in Chapter 3. However, the limitations identified in the case studies were mainly due to the fact that a) EIA legislation was applied differently in each case and that b) the port sector has different characteristics from other sectors. The shortcomings were found to be primarily in the treatment of alternatives, impact assessment and mitigation, consultation and transboundary issues. The EIA processes carried out for the two port projects differed because EIA legislation has been transposed and is interpreted differently in the UK and France. This difference manifested itself in the way environmental impacts were assessed, how consultation was carried out and which alternatives were considered valid. The characteristics of the port sector also influenced the process as, for example, neither EIA included consideration of a full range of alternatives due to ownership structure and geographical limitations in the case of the UK and international competition in the case of France.

Some of these limitations could be dealt with by improving the practice of EIA, for example by ensuring that the same definitions and methods used to assess environmental impacts are applied to similar project types in different EU countries. In the main, though, this paper concludes that most of the shortcomings can only be
dealt with by applying environmental assessment at a more strategic level, but that current and planned methods of SEA are not sufficient. For example, despite being seen as an anticipatory tool (Therivel et al., 1999), SEA is, at present, used in response to PPP proposals and the SEA directive may not lead to appropriate port assessment as it is limited to PPs. SEA cannot, therefore, overcome EIA limitations in the port sector, nor ensure the choice of the least environmentally harmful option, without modifications to the way SEA is used.

This paper has, therefore, constructed a SEA framework designed to overcome the problems identified. For SEA to meet expectations in the port sector, it must adhere to the criteria outlined in Chapter 5. It needs to be applied consistently across EU member states, starting at the policy level. It must examine the full range of alternatives, including different ways of meeting or negating the need and the ‘do-nothing’ option. It must be open, with consultation integral to the process. SEA can, therefore, be applied to the port sector effectively, but only if current methodologies are changed.

6.2 Recommendations for future work

1) Practical application of SEA framework. The SEA methodology recommended here needs to be applied to the port sector and evaluated. Such an assessment and its results could also be used in other sectors with similar attributes, such as aviation.

2) SEA in the private sector. This study found that the port sector differed from other infrastructure sectors in ownership structure, with most ports being privately owned. Recognition that transport is not one homogenous sector raises the need to assess the efficacy of, and to improve, SEA techniques for sectors where the majority of infrastructure or enterprises are privately owned.

3) Transboundary issues. Sectors with international competition and environmental implications are currently only assessed at nation state level. Further work would be useful to determine the extent and consequences of this and to develop methodologies for the SEA of such sectors at an international level.
References


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### Appendices

#### Appendix 1: Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ABP</td>
<td>Associated British Ports</td>
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<tr>
<td>EA</td>
<td>Environmental assessment</td>
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<td>EIA</td>
<td>Environmental impact assessment</td>
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<td>ES</td>
<td>Environmental statement</td>
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<td>EU</td>
<td>European Union</td>
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<td>NGO</td>
<td>Non-governmental organisation</td>
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<td>PAH</td>
<td>Port Autonome du Havre</td>
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<tr>
<td>PP</td>
<td>Plan or programme</td>
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<tr>
<td>PPP</td>
<td>Policy, plan or programme</td>
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<tr>
<td>SEA</td>
<td>Strategic environmental assessment</td>
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<tr>
<td>TEU</td>
<td>Twenty foot equivalent unit</td>
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Appendix 2: SEA directive (CEC, 2001a) SEA report content requirements

The directive requires the following to be included in an SEA report:

a) an outline of the contents, main objectives of the plan or programme and relationships with other relevant plans and programmes
b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme
c) the environmental characteristics of areas likely to be significantly affected
d) 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 Directives 79/409/EEC and 92/43/EEC
e) 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
f) the likely significant effects\(^1\) 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
g) 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
h) 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
i) a description of the measures envisaged concerning monitoring in accordance with Article 10
j) a non-technical summary of the information provided under the above headings.

\(^1\) These effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects.
### Appendix 3: SEA content checklist

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Appendix 4: Case Study Timelines

The table below shows the timings of both projects.

**Table 4.1: Le Havre and Southampton project timings**

<table>
<thead>
<tr>
<th>Date</th>
<th>Le Havre: Port 2000</th>
<th>Southampton: Dibden Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>President Chirac comments on plans to expand Le Havre</td>
<td>Feb: Start of consultation and scoping for EIA</td>
</tr>
<tr>
<td>1999</td>
<td>EIA Last quarter: Committee of experts publishes opinion.</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>Construction started</td>
<td>Nov: Public inquiry started</td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td>Dec: Public inquiry scheduled to end</td>
</tr>
<tr>
<td>2004</td>
<td>Commissioning of 4 new berths</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5: Coverage of case study EIAs

The EIA for Dibden Terminal covered the following areas:

- Need for the project
- Alternatives
- Employment impacts
- Traffic and transport
- Ecology and nature conservation
- Marine environment
- Navigation
- Landscape and visual impacts
- Lighting
- Noise and vibration
- Air quality
- Agriculture
- Archaeology and cultural heritage
- Recreation and tourism
- Freshwater and drainage
- Services
- Mitigation and monitoring

(Adams Hendry, 2000)

The main areas covered by the Port 2000 public inquiry were:

- Need and alternatives
- Socio-economic impact
- Dredging
- Ecological impacts
- Mitigation

(Chausseborg et al, 2000)
Appendix 6: WSP Assessment Methodology

The structure adopted by WSP is described below (WSP, 2002a).

Table 6.1: WSP Ports Study Assessment Methodology

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Need for and context of study</td>
</tr>
<tr>
<td>2</td>
<td>Economic rationale for expansion of ports</td>
</tr>
<tr>
<td>3</td>
<td>Outline of expansion options at ports in the region</td>
</tr>
<tr>
<td>4</td>
<td>General environmental impacts of ports</td>
</tr>
<tr>
<td>5</td>
<td>Outline of strategic options considered:</td>
</tr>
<tr>
<td></td>
<td>• Baseline – ‘do-nothing’ except expansion plans already approved.</td>
</tr>
<tr>
<td></td>
<td>• Environment-led strategy – minimise environmental impact.</td>
</tr>
<tr>
<td></td>
<td>• Regeneration-led strategy – maximise economic and social regeneration.</td>
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<tr>
<td></td>
<td>• Market-led strategy – market decides where port developments should go.</td>
</tr>
<tr>
<td></td>
<td>• Regional transport diversion strategy – goods to/from regions to be handled in those regions.</td>
</tr>
<tr>
<td></td>
<td>• New port strategy – single new port to handle forecast traffic growth to 2016.</td>
</tr>
<tr>
<td>6</td>
<td>Stakeholder consultation</td>
</tr>
<tr>
<td>7</td>
<td>Individual projects assessed on 7 criteria using all available information, including EIAs where carried out. Grading from ++ (considerable benefit) to - - (severe adverse impact). No scores or totals.</td>
</tr>
<tr>
<td></td>
<td>The 7 criteria were:</td>
</tr>
<tr>
<td></td>
<td>• Accessibility – relationship to shipping routes.</td>
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<td></td>
<td>• Economy – ability to meet demand forecast.</td>
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<td></td>
<td>• Environment – impact on designated wildlife and landscape sites of the port and associated transport links.</td>
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<tr>
<td></td>
<td>• Feasibility – market support.</td>
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<td></td>
<td>• Integration – fit with existing policy.</td>
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<tr>
<td></td>
<td>• Regeneration.</td>
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<tr>
<td></td>
<td>• Transport links – relationship to land-side transport networks.</td>
</tr>
<tr>
<td>8</td>
<td>Conclusion and recommendation for monitoring</td>
</tr>
</tbody>
</table>
Appendix 7: Translations from Chapter 3


1 ‘Un grand projet national’
2 ‘d’établir une synthèse des connaissances sur l’estuaire de la Seine et surtout de définir les axes d’un plan de gestion comportant des recommandations sur les actions et travaux écologiques à entreprendre.’
4 Il pourrait sembler peu visionnaire qu’un pays comme la France, disposant d’une façade maritime importante, soit tributaire pour ses importations et ses exportations, de ports étrangers, même s’il s’agit de ports de l’Union Européene.
5 ‘L’extension au delà de 4 postes à quai extérieurs fera l’objet de nouvelles procédures’.
6 ‘Il y a un problème de responsabilité collective’.
7 ‘en supprimant une petite partie’.
8 ‘il est donc essentiel de prévoir des mesures compensatoires’.
9 ‘Ce milieu héberge une population importante de poissons de 1 à 2 ans correspondant à des espèces d’intérêt économique’.
10 ‘Sans interference possible avec les conclusions de la Commission d’enquête publique’.