THE POSITIVE RESPONSE OF EUROPEAN SEAPORTS TO THE ENVIRONMENTAL CHALLENGE

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Abstract: The paper describes the positive results produced by collaboration between European Seaports in addressing their environmental liabilities and responsibilities. The Environment is a key issue in port development and is closely associated with the management of risk linked with safety, healthy and security. The port-inspired EcoPorts network of cooperation has produced practicable tools and methodologies specifically designed to deliver continual improvement through voluntary, self-regulation.

The Track Record

The European Sea Ports Organization (ESPO) has been remarkably consistent in its policy and attitude towards its environmental liabilities and responsibilities over the last decade. In the face of increasing legislation and stakeholder pressure, it has placed a strong emphasis on the achievement of high standards of environmental quality through voluntary, self- regulation.

Ten years of port-inspired initiatives aimed specifically at protection of the environment through appropriate policy and implementation of best practices can be demonstrated by reference to such benchmark events and activities as:

- 1993 Collaborative research into selected environmental issues between ports from different EU member states in the ECEPA Project (Environmental Challenges for European Port authorities)
- 1994 Publication of the ESPO Environmental Code of Practice
- 1997 The Eco-information Project. An EC programme co-sponsored by ports to develop tools and methodologies for environmental management
- 2001 The ESPO Review (with further recommendations on environmental management)
- 2002 The EcoPorts Project – due for completion 2005 (see http://www.ecoports.com and following text) and formation of EcoPorts Foundation (EPF)
- 2003 The launch of the new ESPO Environmental Code of Practice (containing statements and recommendations on policy and objectives; and an overview of legislation and recommended practices)

Individual port authorities, trade associations and national organizations have instigated programmes to address environmental issues. However, there is no doubt that the over-arching framework provided by ESPO and the EcoPorts Project/ Foundation has made a substantive contribution to the goal of continual environmental improvement by facilitating collaboration and harmonization in the development of cost-effective and practicable management response options.

“Moving the goalposts”

The context in which commercial ports have to address environmental issues is often referred to in terms of this sporting metaphor. There is no doubt that the drivers and pressures to respond have changed dramatically since the awakening of ‘environmental awareness’ and the ‘green’ agenda. The ‘goalposts’ of national and international legislation and regulation have widened considerably in terms of the range of aspects covered and the standards set for both the quality of management and the physical environment.

Often, the term ‘environment’ is used in a business sense as a broad substitute for the word ‘market’ or ‘location’ (i.e. external or internal environment of the organization). However, with the amount of current and pending environmental legislation aimed specifically at environmental protection and sustainable development, it commonly refers to the natural environment. *More port authorities are recognizing environmental issues as significant components of the business activity profile that need to be monitored for their strategic risk.*

Stakeholder pressure has also increased in the number of interested parties, both statutory and non-statutory, that are required or are prepared to make often extremely vociferous representations as to the performance and credentials of the port sector on the way in which it carries out its environmental responsibilities. During the initial ‘evangelical’ phase of raising environmental awareness within the port sector, advocates for environmental initiatives focussed on specific issues such as noise or soil quality, or appealed to port authorities to join the ‘green’ movement. It may reasonably be suggested that in a relatively short space of time, the sector accepted its liabilities and responsibilities and began to acquire the tools and methodologies necessary to fulfil these obligations. In 1996, the factors quoted by respondents in a survey as being effective in motivating a small/medium-sized enterprise to adopt an environmental policy were:

Factor or driver	% of respondents identifying factor
Cost savings	73%
Legislation & regulatory pressure	64%
Director's liability	62%
Market opportunity	61%
Positive company image	60%
Customer pressure	59%
Employee's concerns	42%
Local community concerns	33%
Feel-good factor	30%
Investors/shareholders	28%
Banks & insurance companies	28%

These same factors struck a chord with the port sector. Compliance with legislation and the quest for cost-effective operations were strong incentives to develop environmental programmes appropriate to port authorities. With the rise in the public's perception of the status of the environmental imperative and the need to integrate environmental factors into the management of risk, there have been increased pressures from customers, investors, insurance companies and local communities for port authorities to demonstrate their competence through some form of quality assurance. It would be incorrect, however, to suggest that the sector was always reactive. Ports can justifiably claim a proactive role in several of the most effective environmental inititiatives aimed at protection and sustainability.

"Level playing fields"

Both ports and sports benefit from "level playing fields" in terms of the equitable interpretation and enforcement of legislation, regulations and rules. The port sector has a well-established policy that environmental issues should not be factored-in as competitive components between ports. In so far as environmental issues are often trans-boundary and common to all ports, this approach is pragmatic and has certainly encouraged cooperation and collaboration. Indeed, the development of shared-cost, practicable solutions to environmental challenges and the free exchange of knowledge and experience has become the key concept of the sector's environmental research and development strategy.

The spirit and practice of positive collaboration between European seaports has made it possible to produce benchmark performance indicators for the sector as a whole and for individual port authorities. Joint programmes of international research projects, conferences, workshops and training sessions organised throughout the European Union (EU) have produced tangible results and deliverables in the form of evidence-based improvement of management performance and environmental quality. The 'network' approach means that it is possible to produce benchmark performance and strategic overviews for the whole sector with the attendant benefits for the formulation of policy and demonstration of achievement. The sector can identify priority issues and challenges to implementation of an effective management response, for example:

Top 10 Environmental Issues *(ESPO surveys)*

Environmental Issue (Ranking)	1996	2003
1	Dust	Garbage and waste
2	Dredging disposal	Dredging disposal
3	Port development (land)	Dredging operations
4	Dredging operations	Dust
5	Garbage and waste	Noise
6	Port development (water)	Bunkering
7	Noise	Air quality
8	Water quality	Port development (land)
9	Traffic volume	Ship discharge (bilge)
10	Hazardous cargo	Hazardous cargo

The table demonstrates the influence of European Directives such as 2000/59/EC on Port Reception Facilities for Ship–Generated Waste and Cargo Residues, the sustained significance of dredging activities, and the issues of common interest between ports and shipping. The latter point is particularly significant. The port sector and shipping industry have so much in common in terms of environmental management. A wealth of knowledge and best practice has been developed in both areas yet it may be suggested that there is still scope for greater integration of respective environmental management programmes to mutual advantage.

The goal of a “level playing field” is a worthy ambition in terms of collaboration on research and development, exchange of experience, development of sector policy, standards of EMS and considerations of resource allocation. The success of major projects such as EcoPorts (see following) is testament to the positive close cooperation of many European Seaports.

Managing risk

The environmental challenge is becoming more complex with issues of burgeoning legislation, climate change, security, safety, health and considerations of the some environmental aspects of the port’s operators and tenants all requiring attention.

Risk, the chance or possibility of suffering loss, injury or damage is identified by an increasing number of port authorities as a priority issue amongst the plethora of challenges, liabilities and responsibilities faced by port environmental managers. Risks to the environment, property, business and society arising from the port’s activities and operations are recognized as being of increasing significance in terms of financial costs, social responsibility and overall operational efficiency. A wide range of stakeholders recognizes the relevance of risk and liability in terms of the port’s approach to its environmental responsibilities. The general public is increasingly well informed and aware of issues such as habitat protection, biodiversity, health of ecosystems and quality of life. Incidents associated with risk are seized upon by the Media and public opinion.

As ports have diversified their interests and activities so port areas have taken on the potential risks and environmental challenges of any other major industrial area. It may be suggested that the probability of occurrence and magnitude of consequence is exacerbated and indeed compounded in the port area because of the intensity of use, diversity of activities, inherently dangerous nature of certain cargoes and operations, and the natural dynamics of processes at the land-sea-atmosphere interface that constitutes the port system.

The issue of risk management, the functional organization of activities aimed particularly at controlling, reducing or mitigating the chance or possibility of loss, injury or damage from the port's activities is multidisciplinary in nature. Port Authorities have traditionally dealt with the risks associated with navigation and shipping operations and so the management protocols of safety and health management are well established within the sector. Against this background, European Seaports have collaborated to develop appropriate tools and methodologies to give a range of management options.

EcoPorts – Evidence of achievement

The major concept driving EcoPorts is that of 'Ports working together to share knowledge and experience with the aim of continual improvement of the port environment through effective management'. It involves a harmonized approach to environmental management and the identification and application of best practices. Ports and port organizations recognize that all European ports face a common challenge, that of developing their businesses and managing their activities in a way that is sustainable, both economically and environmentally. Finding good solutions to environmental issues can lead to cost savings and new business opportunities.

EcoPorts is a research and development project co-funded by the European Commission, DG Transport and Energy (TREN) and 12 ports and port organizations with a budget of 4.1 million Euro including 2.7 million Euro support from DG TREN. As well as the major partner ports the programme involves a consortium of 5 universities and 7 specialist organizations. It is a port-inspired initiative developed by ports, for ports, specifically to address environmental issues with cost-effective response options. EcoPorts has a well-established track record of producing practicable options for the effective management of the port environment as it is built upon the success of the original ECO-information Project (1997- 1999) in which over 80 ports from throughout Europe took part.

The main objective of the three-year project (June 2002 – June 2005) is to establish a pan-European network of ports with a policy of voluntary, self-regulation on environmental issues. Specific goals are to:

- Create a 'level playing field' in terms of the implementation of environmental legislation, and to remove the environmental component as a competitive factor between ports (see above)

- Develop and implement cost effective and practicable solutions specifically targeted at environmental protection and sustainable development

- Provide a focus for business opportunities and port development

- Demonstrate good performance and best practice of the European port sector in terms of environmental duties and responsibilities

- Contribute to continuous improvement of the port environment

The EcoPorts Foundation (EPF) founded in 1999 plays an important role as a project partner by encouraging membership from as many ports as possible, identifying new topics for collaborative research and acting as a focal point for port environmental managers to exchange ideas. Its Board is comprised of representatives from the ports of Amsterdam, Antwerp, Barcelona, Genoa, Gdansk, Goteborg, Hamburg, Rotterdam, and the British Ports Association.

The benefits of membership are open to all E.U. ports (see following)

The EcoPorts approach is based on voluntary collaboration and exchange of experience between seaports, inland ports and dry ports throughout Europe. Port authorities themselves identify the environmental challenges faced by the port professional, and specify the development required in terms of appropriate tools and methodologies to assist in effective management action.

Existing products available to all port members of the ECOPORTS Foundation include:

- **S**elf **D**iagnosis **M**ethodology (SDM): a validated procedure that assists ports to establish their base-line performance in terms of comparison with best practice guidelines and to assess their environmental management status against the European benchmarks. The feedback provides GAP and SWOT analysis that assists ports to identify priorities for action. Can be used by port authorities and other marine operators as a checklist to identify issues and level of management response in the port area and within the logistic chain.

- **P**ort **E**nvironmental **R**eview **S**ystem (PERS): another validated procedure that assists ports to implement the first stages of a credible Environmental Management System (EMS). It can be used as a preliminary step to a more comprehensive system such as ISO 14000 or EMAS but allows phased development. By following PERS procedures, ports can establish the core elements of an EMS. PERS is identified as a standard for port environmental management by the EcoPorts Foundation (EPF), and as such, it carries the voluntary option of independent review (currently carried out by Lloyd's Register, Rotterdam, on behalf of the Foundation) with a Certificate of

Validation for ports that reach the standard. This is an important new development for ports in Europe as it demonstrates attainment of a benchmark standard. A special package on the monitoring of environmental performance and the identification of appropriate environmental performance indicators provides a useful compendium of upo-to-date information.

ECOPORTS is currently developing the following packages which are available to member ports:

- **S**trategic **O**verview of **S**ignificant **E**nvironmental **A**spects (SOSEA): a methodology for ports to assess the major impacts of their activities and to check that they have sufficient information by which to manage their liabilities and responsibilities.

- **D**ecision **S**upport **S**ystem (DSS): a methodology to examine the range of factors involved in environmental issues, their interactions, and response options in decision-making.

- Database of best-practice solutions to key environmental challenges and exemplar case studies

- **E**nvironmental **M**anagement **I**nformation **S**ystem (EMIS): a networked system that integrates all the components of EcoPorts into an easily accessed system that can be interrogated by port professionals for purposes of practicable and cost-effective management options.

- **Training:** Dedicated packages are available now for specific target groups on a range of environmental issues, legislation, tools and methodologies appropriate to the port area and the logistic chain. Training can be delivered at local or regional levels to participants drawn from port sector professionals, marine industry representatives or Government Agencies and Non-Governmental Organizations involved in environmental protection. Trainers are approved by the Foundation and the training team consists of port professionals and academic specialists, with each course adapted to take into account local and national perspectives of legislation and operational conditions.

- **Workshops:** These are organized by the EcoPorts' national representative for each country in collaboration with the central EPF Office. The Workshops focus on the exchange and implementation of best practice experience in practical environmental management solutions for the port area and logistic chain. The established pattern is for a major Workshop or conference to be held annually in Europe, twice each year at national events, and once per year in selected port areas. Other sessions are organized on request from such bodies as regional assemblies, municipalities and specific ministries.

- **Research:** The EcoPorts Foundation has a network of Universities and consultancies selected to provide multidisciplinary research and development services to deliver practicable solutions to environmental issues. The Foundation's research record is well established and acknowledged as providing high quality, practical surveys and analysis on a wide range of issues within strict deadlines. Clients to date include ESPO, EU, Government Departments, regional organizations, port authorities and operators.

The benefits of membership to individual ports of joining the ECOPORTS Foundation are as follows:

- Access to the results, tools and methodologies of the EcoPorts Project
- Access to the data base of best practice solutions and case studies
- Invitation to regional workshops and training sessions
- Participation in working groups focussed on specific environmental issues
- Password to 'members only' web-based information
- Identification of business opportunities by applying smart solutions to environmental issues
- Shared costs of developing new techniques and saving of costs by applying best practices from other ports, and by avoiding duplication of effort
- Management tools
- Access to network of environmental experience and expertise
- Opportunity to influence policy development

Membership details can be obtained by visiting the website www.ecoports.com or by e-mail to info@ecoports.com

By incorporating evidence-based performance indicators of both management achievement and quality of the environment itself, the combined activities of the EcoPorts Project and Foundation have produced an environment improvement programme that, if widely supported by all the key players in the logistic chain, is poised to deliver a major advance in environmental protection and sustainable development. The strength of the approach is that it is designed by ports, for ports, and is based around practicable, cost-effective management options.

A positive Response – the evidence

The collaborative effort of all members of the projects has produced positive results in several key areas of the development and implementation of some form of EMS. Initiatives such as Eco-information and the EcoPorts Project act as catalysts for continual environmental improvement through wider

application of management programmes and environmental monitoring. The support of ESPO and the EcoPorts Foundation is fundamental to the long-term ability of the sector to maintain credible voluntary, self-regulation.

Environmental Management Component	1996[1] %	1999[2] %	2003[3] %	Percentage change ('96-'03)
• Does the port authority have an environmental plan?	45	52	62	+17
• Does the plan aim for 'compliance-plus'?	+32	+41	+45	+13
• Does the plan aim to raise environmental awareness?	44	62	56	+12
• Is environmental monitoring carried out in the port?	53	60	69	+16
• Does the plan involve community & other stakeholders?	53	60	56	+3
• Is the ESPO Code available in the port?	41	48	54	+13
• Does the port have designated environmental personnel?	55	65	55	No change

[1] ESPO Survey 1996, [2] Eco-information Final Report 1999, [3] ESPO Survey 2004 (interim results). As successive surveys represent different numbers and identities of respondent ports, the results should be interpreted with caution. The trends are more reliable indicators of progress than the actual percentage figures.

Conclusions

- The port sector is steadily developing and implementing a range of appropriate tools and methodologies for effective environmental management

- The phased approach adopted means that current activity is largely focussed on establishing EMS providing a framework, data base and relevant information for more rigorous risk assessment

- There is scope for even closer collaboration between ports and shipping in developing EMS and Environmental Risk Assessment (ERA).

- ERA needs to be tailored to the special needs and circumstances of Port Authorities with further research focussed on such elements as cause-effect relationships, the natural flux of environmental systems, probability and uncertainty

associated with prediction, and the cost-benefit of EMS and ERA

- It is timely and topical to integrate the management of risk associated with safety, health, environment and security.

- Although the environment may be excluded as a factor of competition between ports in terms of the sector's response to policy and strategic issues, it is a fact that for the individual port authority, failure to obtain planning consent for port development on environmental grounds can have profound consequences for commercial performance and competition.

- Compliance with environmental legislation may not be negotiable, but the efficiency of a port's EMS in delivering such compliance may well give competitive advantage.

- Future key factors in deciding the cost-benefit of implementing EMS will include insurance premiums, investment in technologies, port revenues and mutual advantages gained from strategic alliances.

- Certain issues still require debate with input from the range of interested parties and stakeholders e.g:

  - What constitutes acceptable risk?
  - Is it possible to rationalize the precautionary principle with deliberate risk management?
  - To what extent is it possible to quantify risk and offer an optimum management response option?
  - What is the real cost of being a poor environmental manager?
  - What are the total benefits of being a good environmental manager?

The port sector can demonstrate an established track record of sustained activity aimed at improving benchmark performance, building port-based expertise and competence, and setting new standards of effective management which is demonstrably leading to continuous improvement and greater environmental protection. The European seaports recognize that the challenges are international and that practical solutions are most likely to be developed by joint action and shared experience. The European EcoPorts Foundation therefore welcomes enquiries and expressions of interest from around the world with the ambition to collaborate on research, exchange experience, and share best practice. Again, information and contact can be accessed at **www.ecoports.com or by e-mail to info@ecoports.com**

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