



**EUROPEAN SEA PORTS ORGANISATION** ASBL / VZW  
**ORGANISATION DES PORTS MARITIMES EUROPEENS** ASBL / VZW

# ESPO Port Performance Dashboard

May 2013

## 1. INTRODUCTION

Part of ESPO's mission is to contribute to public policy in the EU to achieve a safe, efficient and environmentally sustainable European port sector, operating as a key element for the competitiveness of European economy. In this context, ESPO increasingly needs to demonstrate the performance of the sector in terms of delivering the expectations of an ever widening range of stakeholders who seek evidence of achievements. ESPO took a first step in establishing a culture of performance measurement in European ports with the two year PPRISM project (Port PeRformance Indicators: Selection and Measurement), co-funded by the European Commission. PPRISM delivered a shortlist of indicators that formed the basis of the first European Port Performance Dashboard that was published in 2012.

In line with its commitment to increase transparency in the port sector, ESPO undertook this year a port performance data collection exercise, the "ESPO Port Performance Review 2013". The outcomes of the exercise contribute to this second edition of the Port Performance Dashboard. With the current edition, ESPO takes the momentum and builds on the PPRISM data collection and reporting in order to identify and demonstrate trends regarding the performance of the European port sector in selected areas. The reporting on those trends gives credibility to the sector and provides evidence of the progress that can be achieved through the European port authorities' commitment to voluntary self-regulation.

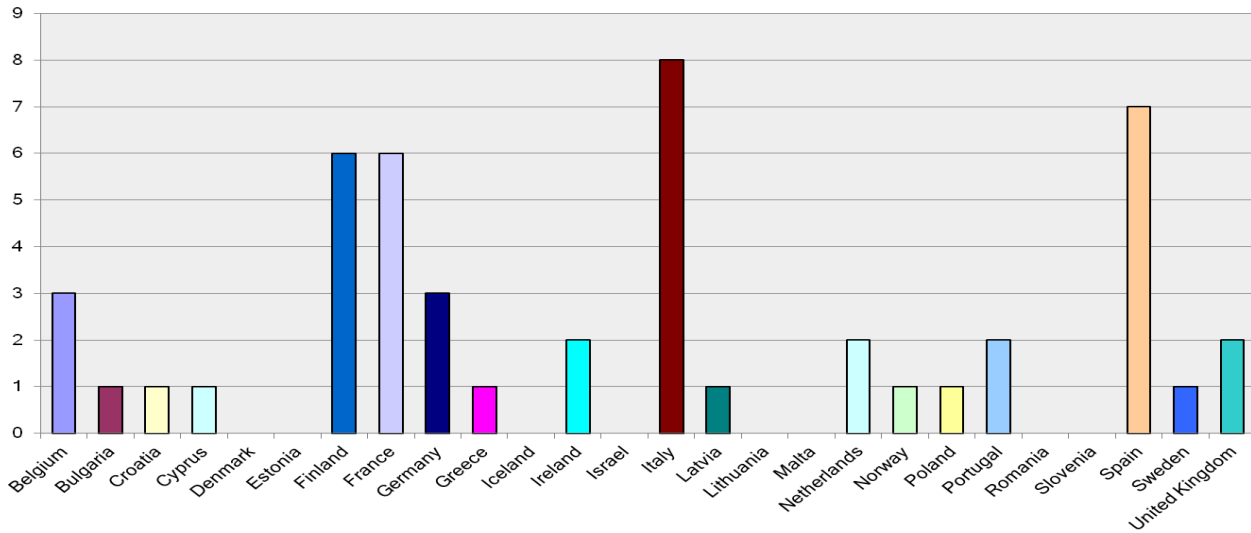
The 2013 edition of the dashboard is more elaborate and comprehensive than the 2012 edition. However, ESPO acknowledges current limitations that have an impact on the reliability of the outcomes, such as the variability of the sample of respondent ports over time. Within these limitations, the current edition achieves to highlight interesting trends regarding port performance on selected areas. ESPO still considers the current period to be transitional, in the sense that further development of indicators and the establishing of a constant reporting mechanism are expected to be the outcomes of the new EC co-funded PORTOPIA project. PORTOPIA is a Collaborative Research Project under FP7 (Seventh Framework Project) which ESPO joined as a partner. Its main objective is to develop a ports observatory with a set of indicators measuring EU ports performance through trends, activities and developments. The project will be launched after the summer. The key challenges are to attract more ports to provide data and to deliver a useful tool for the industry.

The dashboard consists of indicators showing trends on the EU port sector on five different areas: Market trends and structure, Socio-economic performance, Intermodal container connectivity, Governance, and Environment.

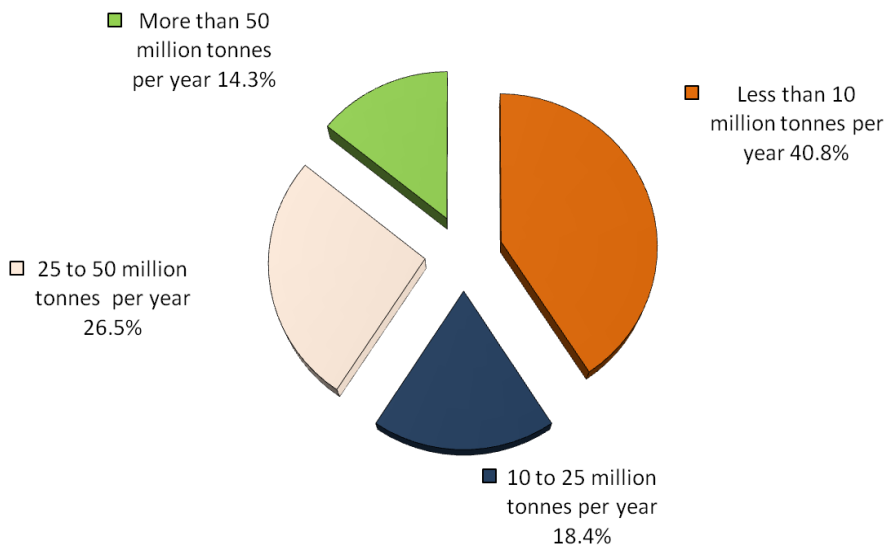
## 2. SAMPLE OF RESPONDENT PORTS

The participation to the ESPO Port Performance Review 2013 was overall quite encouraging. 49 ports from 18 countries completed the general survey<sup>1</sup>. Participation slightly decreased compared to the previous exercise.

**Figure 1: Number of respondent ports per country**



**Figure 2: Volume categories**



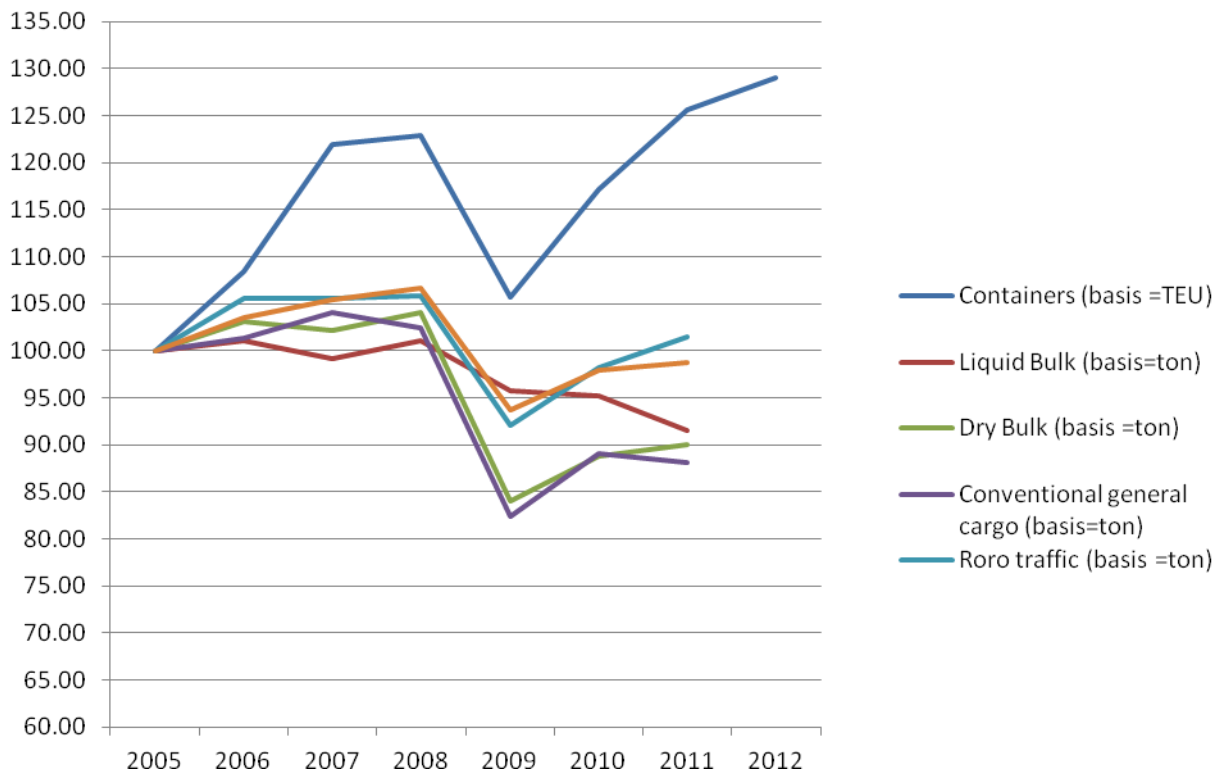
<sup>1</sup> The environmental data collection took place separately through [www.ecoport.com](http://www.ecoport.com), see section 6

### 3. MARKET TRENDS AND STRUCTURE

The “market trends and structure” indicators are relevant given the changing nature of the competitive environment and market structures in seaports. Indicators in this field have a high practical relevance as a large percentage of them is already used by the industry, in particular by port authorities. However, in practice there are differences in collection methods and the definition of data.

The total throughput in 2011 approached the 2005 level. Conventional general cargo and dry bulk cargo were strongly affected by crisis year 2009 and continue to remain 10% lower than the 2005 level. The container volumes were also hit hard by the crisis, but in 2012 container volumes in European ports were 30% higher than in 2005. Liquid bulk was initially not hit hard by the crisis, but since 2009 the volumes continue to shrink.

**Figure 3: Index on maritime traffic**



**Index evolution ( 2005=100)**

**Source: Maritime traffic figures were collected from port authorities’ websites. Data from 2012 was only available for container traffic**

The indicator call size forms a combination of two basic indicators: maritime traffic and vessel traffic, which are both widely used by port professionals. The call size is the ratio of maritime traffic indicator and vessel traffic indicator. The average call size for the sample of European ports continues to stay at a low level after a dramatic fall in 2009.

**Figure 4: Index on call size**



#### **4. SOCIO-ECONOMIC PERFORMANCE**

##### **Moving towards the path of recovery in 2010**

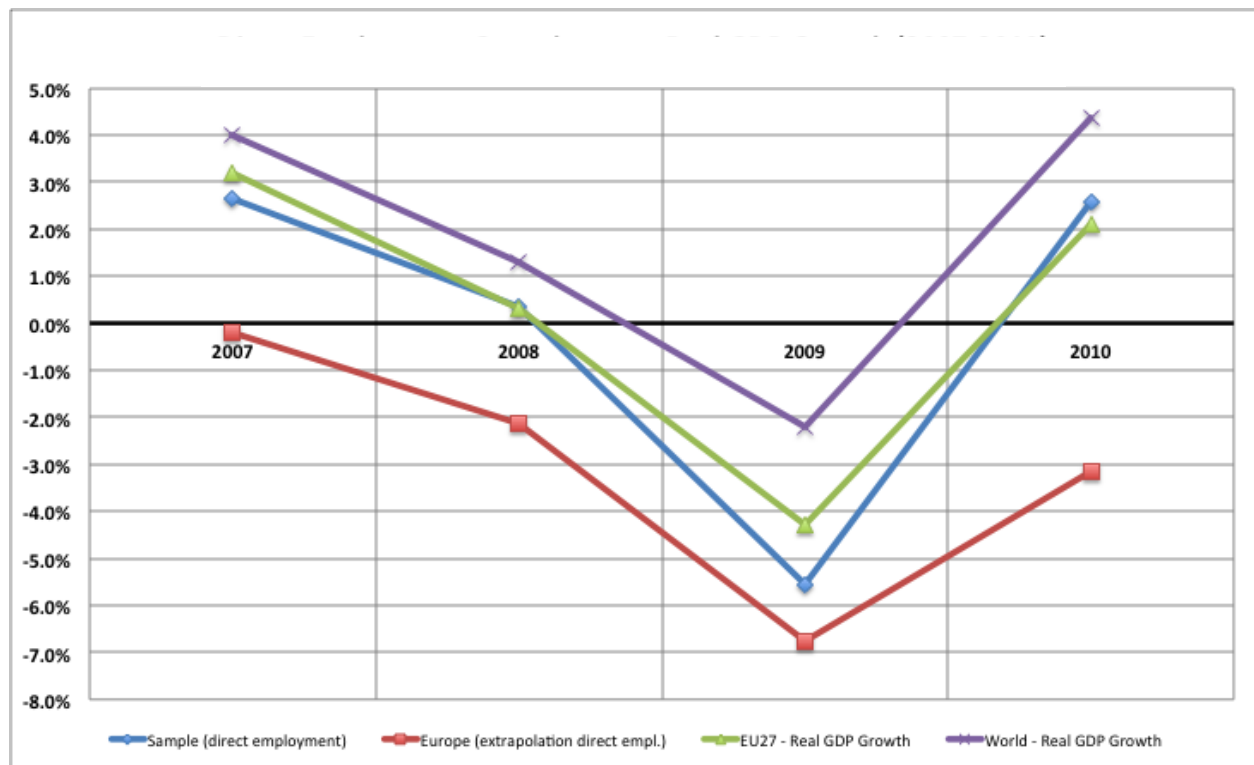
The main indicator used within the dashboard is direct employment, generated through the port industry. Harmonization of calculation methods, as well as data availability, stay a concern to be addressed, as only 23% of respondents calculate and report on direct employment on a yearly basis.

The results show that the sample of ports follows the general evolution of real GDP growth in the EU-27 area, but that on the level of the extrapolation based on total EU port traffic, ports are ahead of the economic curve. As our sample is based on larger ports and with a dominance (in terms of traffic volume) of the Hamburg-Le Havre range, this implies that smaller and medium sized ports have suffered more from the economic downturn relative to larger ports and also experience more difficulties to move towards the path of recovery. This could be linked to the consolidation operations of shipping lines (concentrating calls in larger ports to save costs) as well as sharp declines in industrial activities, which for some smaller to medium sized ports are important activities in the activity portfolio. Another explanation, to be further researched within PORTOPIA project, could be differences in the origin-destination of traffics as one might expect that smaller and medium sized ports are more linked to intra-EU trade and the EU-economy, whereas larger ports tend to follow the world economy, as suggested by the table and figure below.

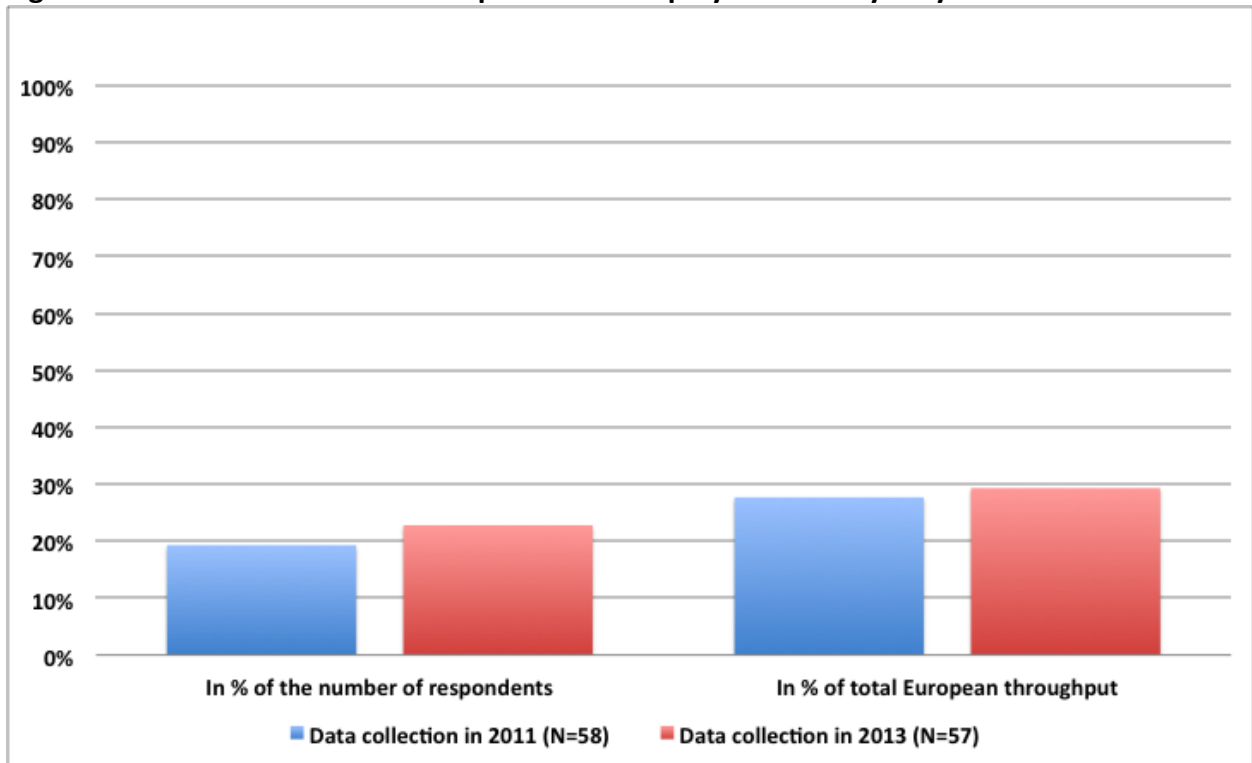
**Table 1: Growth rate of direct employment and GDP**

Growth rate of direct employment (2007-2010)				
	2007	2008	2009	2010
<i>Based on the sample (larger ports, H-LH range)</i>	2,6%	0,4%	-5,6%	2,6%
<i>EU-27 (extrapolation)</i>	-0,2%	-2,1%	-6,8%	-3,1%
Real GDP Growth rate (2007-2010)				
	2007	2008	2009	2010
<i>World - Real GDP Growth</i>	4,0%	1,3%	-2,2%	4,4%
<i>EU27 - Real GDP Growth</i>	3,2%	0,3%	-4,3%	2,1%

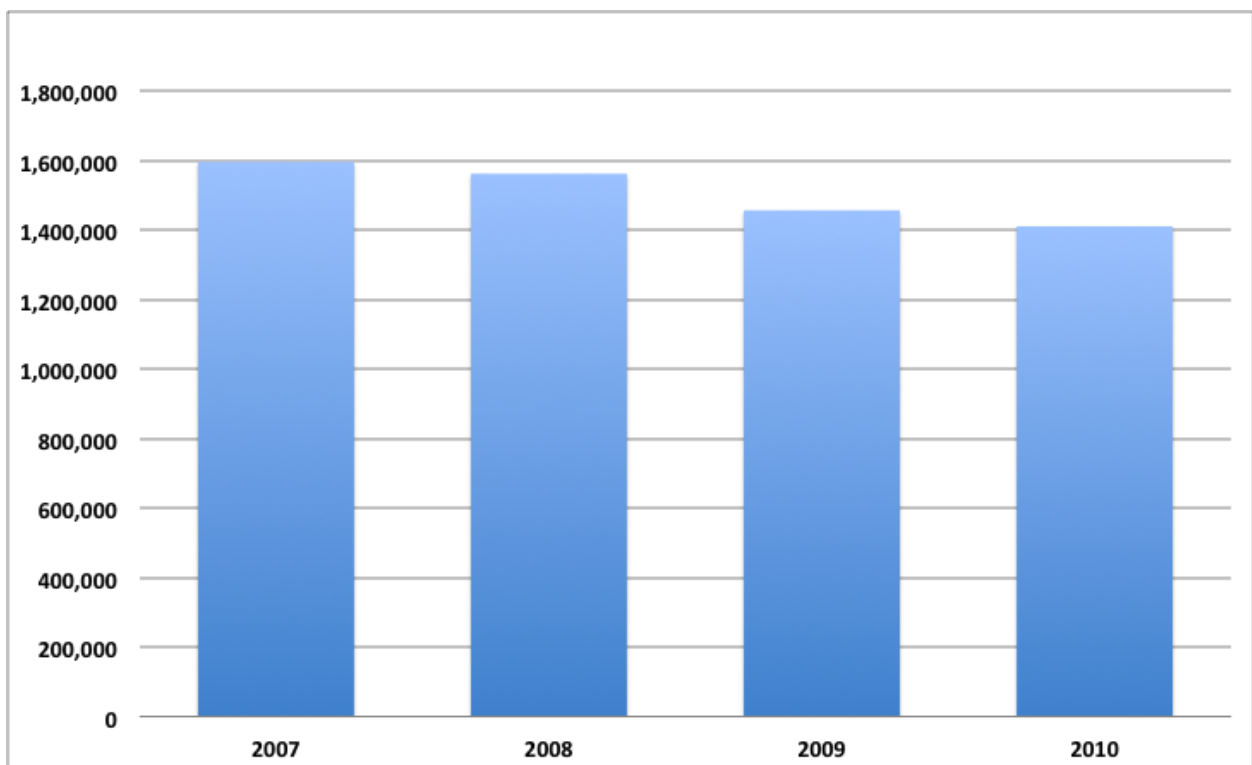
**Figure 5: Direct employment growth versus real GP growth (2007-2010)**



**Figure 6: Ports that calculate and report direct employment on a yearly basis**



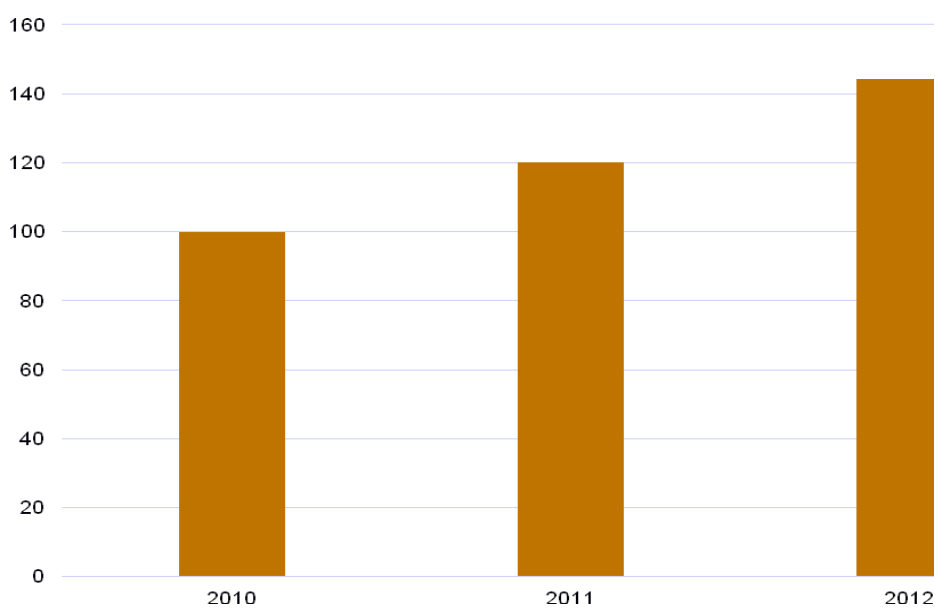
**Figure 7: Direct employment (number of FTE, Europe, extrapolation)**



## 5. INTERMODAL CONTAINER CONNECTIVITY

This indicator expresses the extent to which intermodal container connectivity of the EU port system improves over time. This indicator is based on data from port authorities on the number of at least weekly barge and train services to unique inland destinations. The indicator increases when more ports have intermodal services and when the number of intermodal services increases. The index is based on data provided by 21 ports with intermodal connections that cover at least 70% of the total EU intermodal volumes.

**Figure 8: Index on intermodal container connectivity**



Data for 2012 based on a sample of 21 ports with intermodal connections that handle roughly >70% of all intermodal container volumes

Note: Growth of indicator is partly because the weight given to ports that have developed a first intermodal service.

## 6. PORT GOVERNANCE

Since the 1970s, ESPO and its predecessor the Community Port Working Group have been producing a series of “Fact-Finding” reports which aim to provide insight in the way European ports are governed. Throughout the years these reports have become leading reference tools both for port practitioners and policy-makers at all levels. In 2011, ESPO published a new version of its ‘Fact-Finding Report’ on port governance based on an extensive survey that was held among ESPO members in 2010.

The reported governance indicators touch upon basic functions of port authorities through an evaluation of a number of relative criteria on a binary (True, False) basis.



- **Reporting corporate and social responsibility (RCSR)** can be evaluated based on the criteria below:

- Port Authority (PA) holds an Annual Meeting
- The Annual Report of the PA is publicly available
- The PA holds regular meetings with the port community and stakeholders
- The PA publishes the Performance Metrics used for monitoring its performance
- The PA publishes reports on socially responsible initiatives
- The PA publishes financial reports
- PA's specific mission statement is publicly available
- The PA maintains financial accounts audited by external auditor(s)
- The PA has internal analytical accounting processes
- The PA uses public selection procedures to contract land

In 2012, on average port authorities fulfil 7,68 out of the 10 criteria under question for the RCSR indicator (n=52).

- **Integration of port cluster (IPC)** expresses the extent of port authorities initiatives that aim towards the integration of various stakeholders composing a port cluster. On average, European port authorities fulfil in 2012 7,49 out of 10 criteria of the IPC indicator (n=41).

Criteria used for the evaluation of IPC:

- Solving administrative bottlenecks
- Solving maritime access operational/service bottlenecks
- Solving land access operational/service bottlenecks
- Solving terminal operational/service bottlenecks
- The PA assists or facilitates port community members (e.g. terminal operators, industrial companies, etc.) with the implementation of regulations in the field of safety, security, environment, etc.
- Other stakeholders are involved in the development of the port masterplan
- The PA operates an ICT system for the benefit of the entire port community
- The PA leads the overall promotion and marketing actions of the port on behalf of the port community
- The PA provides training/education for the port community
- The PA is leader in various societal integration initiatives

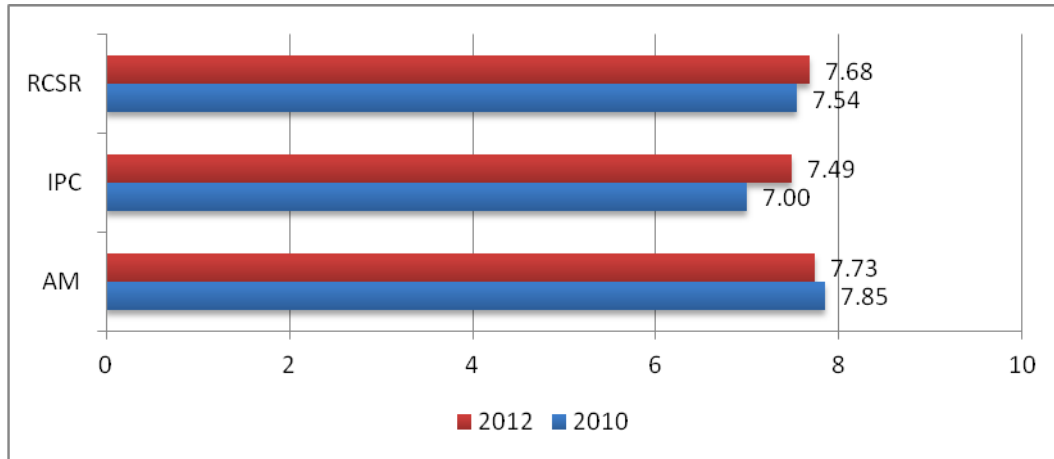
- **Autonomous management (AM)** provides information on the degree of autonomy of port authorities to develop vital tasks. On average, in 2012 European port authorities fulfil 7.83 out of 10 criteria of the AM indicator (n=41).

Criteria used for the evaluation of AM:

- The PA has its own legal status
- The PA is directed by a daily management body (e.g. management board or management committee)
- The PA develops a port masterplan
- The PA is able to contract port land to third parties (e.g. terminal operators) in order to permit these parties to provide port services
- The PA is responsible to set the rules of agreements with third parties
- The PA issues safety regulations in addition to (obligatory) national/international regulations

- The PA issues security regulations in addition to (obligatory) national/international regulations
- The PA issues environmental regulations in addition to (obligatory) national/international regulations
- The PA is financially autonomous
- The supervisory body of PA does not include politicians

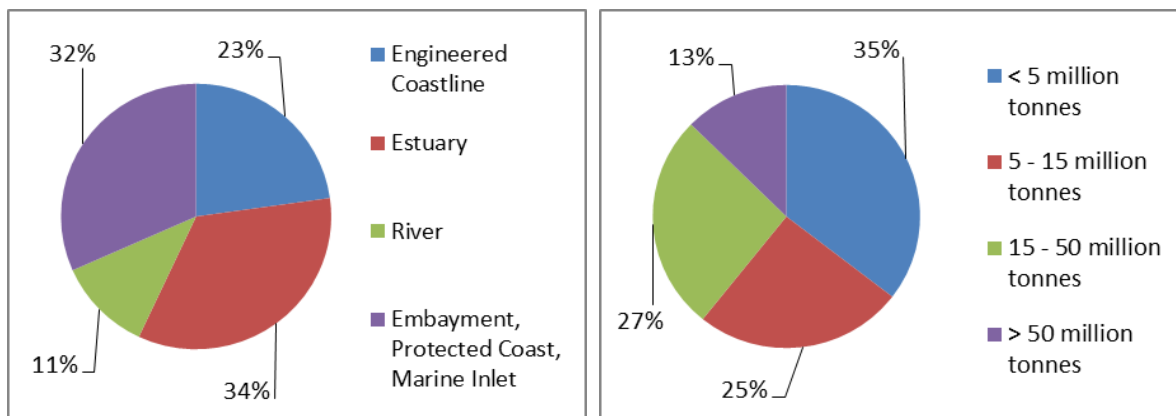
**Figure 9: Governance indicators**



## 7. ENVIRONMENT

The environmental part of the Port Performance Review 2013 took place separately through the environmental website of ESPO at [www.ecoport.com](http://www.ecoport.com). Therefore, the sample of respondent ports was different than that of the overall data collection exercise.

**Figure 10: Geography and size of the sample of respondent ports (environment)**



79 ports of 21 European Maritime States provided environmental data. The Maritime States represented are: Albania<sup>2</sup>, Belgium (2), Bulgaria (1), Croatia (2), Cyprus (1), Denmark (5), Estonia (1), Finland (3), France (11), Germany (4), Greece (8), Ireland (3), Italy (5), Latvia (1), Lithuania (1), Netherlands (6), Norway (1), Portugal (2), Spain (5), Sweden

<sup>2</sup> The number in brackets indicates the number of ports from the specific country that provided data

(4) and United Kingdom (12). The response rate and the diversity in ports' typology allow drawing a representative overview of the EU port sector. The two graphs above demonstrate the characteristics of the sample of respondent ports in terms of geography and size (annual tonnage of commodities handled). It can be seen that the sample is quite balanced regarding those characteristics. Respondent ports demonstrate the range of port characteristics that comprise the ESPO membership and the fact that each port is unique in terms of its environmental setting and aspects.

### The top-10 environmental priorities of European Ports for 2013

As part of the Environmental Performance Review, the environmental priorities of the sector have been redefined. The table below demonstrates changes in port environmental priorities from 1996 to 2013. Many of these reflect prevailing political drivers.

Priority issues change their ranking with time but certain components retain their significance for the sector. Environmental issues that consistently appear over time are mapped with the same colour.

**Table 3: Top-10 environmental priorities of the European port sector over time**

	1996	2004	2009	2013
1	Port Development (water)	Garbage / Port waste	Noise	Air quality
2	Water quality	Dredging: operations	Air quality	Garbage/ Port waste
3	Dredging disposal	Dredging disposal	Garbage / Port waste	Energy Consumption
4	Dredging: operations	Dust	Dredging: operations	Noise
5	Dust	Noise	Dredging: disposal	Ship waste
6	Port Development (land)	Air quality	Relationship with local community	Relationship with local community
7	Contaminated land	Hazardous cargo	Energy consumption	Dredging: operations
8	Habitat loss / degradation	Bunkering	Dust	Dust
9	Traffic volume	Port Development (land)	Port Development (water)	Port development (land)
10	Industrial effluent	Ship discharge (bilge)	Port Development (land)	Water quality

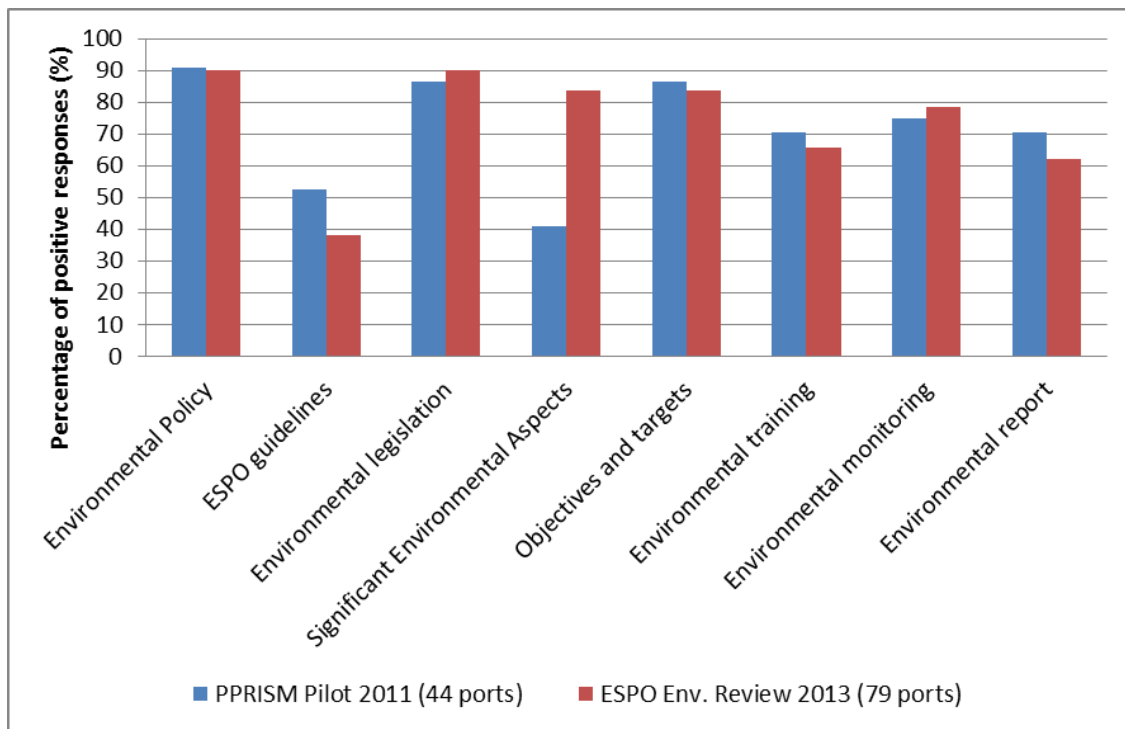
Air quality is pointed out as the current top environmental priority by the European port sector as a whole. This reflects the priority given to issues related to the health of people working or living around ports, and is in line with the international and European policy agenda, through the ongoing review of the EU Air Quality policy but also the several ongoing initiatives that aim to control the exhaust emissions of air pollutants by vessels. The management of garbage/port waste remains high within the environmental priorities of the sector, while that ship waste enters the top-10 of priorities for the first time, probably as a result of the ongoing review of the port reception facilities directive and the whole debate over the adequacy of port reception facilities to accommodate for new types of ship waste and increased volumes (e.g. scrubber generated). Energy consumption, that

was a new entry in 2009, gains significance within the port priorities, while that noise management maintains a high ranking. Some environmental issues, namely dredging operations, dust and port development, appear consistently within the top 10 of priorities in Europe in the last 17-18 years. Finally, water quality appears again within the 2013 top-10.

**Selected benchmark of performance (Environmental Management).**

Key components of any credible Environmental Management System (EMS) are recognised as appropriate and significant indicators of a port authority’s ability and competence to deliver compliance with legislation, environmental protection and sustainable development. Continuing on the 2011 exercise, ports were asked to update the data regarding the performance of their environmental management. Comparisons between the initial ESPO Dashboard and the 2013 data collection confirm the general maintenance of trends and the positive enhancement of considerations related to awareness of significant aspects and implementation of monitoring programmes.

**Figure 11: Percentage of positive responses of selected components of environmental management**



The variations that are observed can be justified by the significantly increased participation in the 2013 exercise. Established weightings for the above components based on Total Index of 10 give an Index for the Sector of 7.25 for 2013 while the relevant figure was 7.30 in 2011.

Additional insight regarding the environmental management of European ports and its evolution over a broader period of time can be provided by studying selected items of the Self Diagnosis Methodology (SDM) checklist. The European port sector has been monitoring selected environmental management indicators since back in 1996 as part of joint ESPO - EcoPorts initiatives. The aim was the monitoring of trends over time that would highlight tendencies and assist both the sector and policy makers. The table below illustrates the progress achieved by European sea ports on selected indicators over time. The data for 1996, 2004 and 2009 originates from consecutive surveys undertaken by ESPO and EcoPorts. The data for 2013 is derived from the updated European benchmark of environmental management performance for 2013 as constantly monitored through the analysis of the results of the Self Diagnosis Method (SDM).

**Table 4: Trends over time of selected components of environmental management**

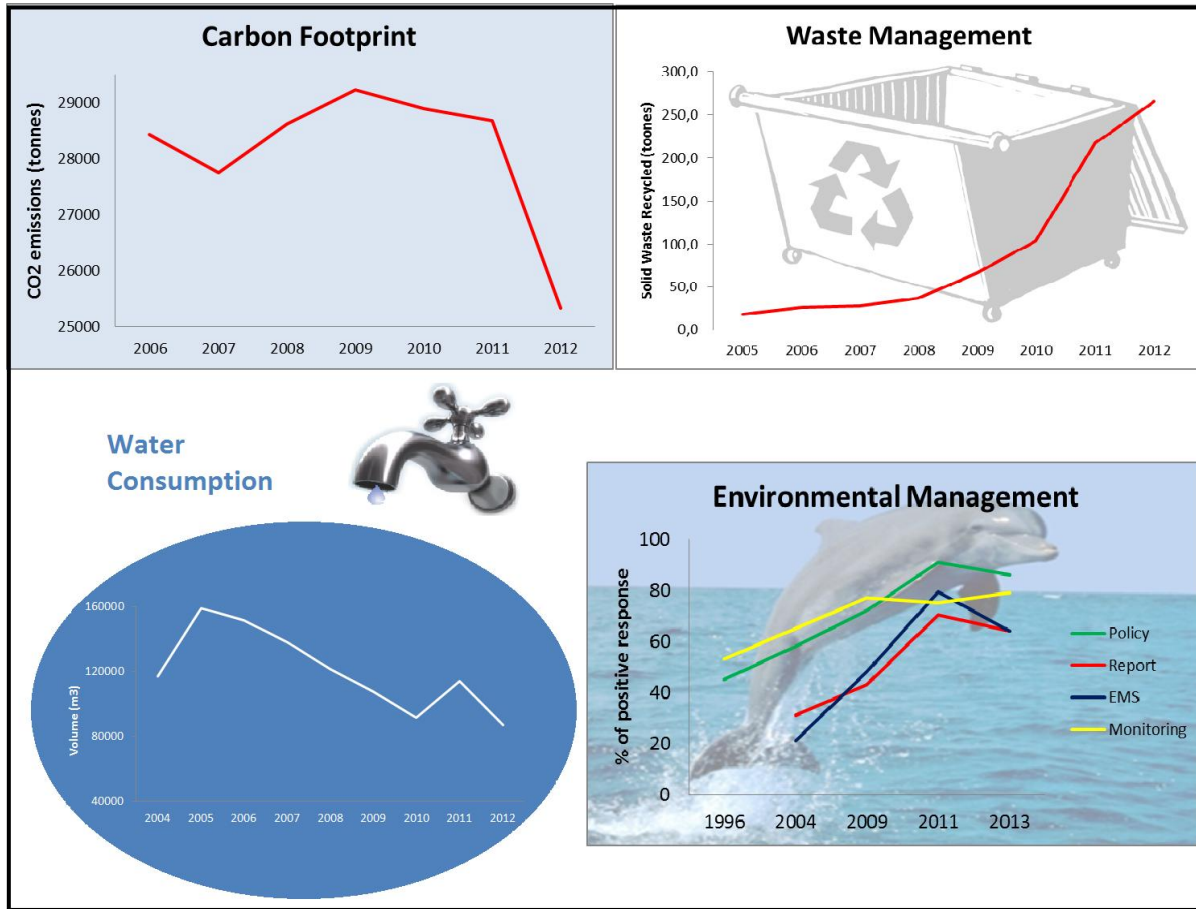
<b>Environmental management component</b>	<b>1996</b>	<b>2004</b>	<b>2009</b>	<b>2013</b>	<b>% change 2004-2013</b>
<b>Environmental Policy</b>	45	58	72	86	+28
<b>Policy available to public</b>	-	59	62	82	+23
<b>Policy aimed at compliance +</b>	32	49	58	68	+19
<b>Publishes Environmental Report</b>	-	31	43	64	+33
<b>Designated Environmental personnel</b>	55	67	69	94	+27
<b>Recognised EMS</b>	-	21	48	64	+43
<b>Environmental monitoring programme</b>	53	65	77	79	+14
<b>Performance indicators identified</b>	-	48	60	64	+16

As successive surveys represent different numbers and identities of respondent ports, the results should be interpreted with caution. The trends are more reliable as indicators of progress than the actual percentages. Those trends clearly demonstrate evidence of the progress achieved by the port sector during the last 17 years. European ports are maintaining or enhancing further their capacity to deliver the functional organisation necessary to deliver compliance with environmental legislation as indicated by the latest (2013) benchmark performance figures. The Table illustrates the value of the EcoPorts database as a source of baseline information, benchmark performance, and as a reporting mechanism on behalf of the sector.

#### **Trends on selected environmental performance indicators**

Further to the environmental management, the PPRISM project developed factual indicators addressing priority issues such as carbon footprint, waste management and water consumption. In 2011 the ports were asked to provide data regarding those indicators through a specifically designed excel tool. Taking the feedback received by the ports into account, within the 2013 data collection, ports were instead asked to provide links to publicly available information on those 3 priority issues.

**Figure 12: Trends on selected performance indicators**



The analysis of the outcomes highlights that publicly available data on carbon footprint, waste management and water consumption is still relatively restricted. Nevertheless, 25% of the respondent ports provided the reference to their annual environmental report or review. Out of the 79 participant ports, 11 provided data on carbon footprint, 10 provided data on waste management and 8 provided data on water consumption. Indicative trends of benchmark performance for the selected Environmental Performance Indicators were compiled from the data provided by European ports. The average results have been calculated and included in the 2013 Dashboard building on the previous PPRISM data. Within the constraints and cautions associated with variations in sample size and composition, the indicative trends of performance are positive in terms of the sector’s awareness of significance, appropriate activity profile, and overall trend of impact.

## COLOPHON

The ESPO Port Performance Dashboard 2013 was compiled by Martina Fontanet and Antonis Michail of the ESPO secretariat. ESPO acknowledges with grateful thanks the expert advice of its members related to data input. Special thanks to our academic partners, Theo Notteboom, Michael Doods, Peter De Langen, Kristina Sharypova, Thanos Pallis, Chris Wooldridge and Marti Puig for their input and contribution to this second edition of the ESPO Port Performance Dashboard.

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