ESPO-AAPA cooperation towards
ECOPORTS Port Environment Management through ECOSLC

TIME TO HARMONIZE PORT ENVIRONMENTAL MANAGEMENT WORLD-WIDE

HERMAN JOURNÉE
CHAIRMAN ECOSLC FOUNDATION
THE NETHERLANDS
I. Global Cooperation in Port Environmental Management

II. ECOPORTS: Port Environmental Management System and Standards

III. New Port Strategy: from Environment to Sustainability

Concluding remarks
European Sea Ports Organisation (ESPO)

- Founded in 1993
- Represents European Seaport Authorities

www.ecoslc.eu
What is ECOSLC Foundation

1. ECO Sustainable Logistic Chain: a neutral, non profit Foundation for
   1. ECOPORTS Port Environmental Management
   2. Sustainability in Ports and Logistics
   3. Certification

2. Independent Organisation
   1. Independent auditor for validation: Lloyds Register
   2. 6 universities from different countries connected
   3. 10 certified trainers

3. World Wide Collaboration
   MOUs for collaboration are in place between ESPO, AAPA and ECO-SLC
What is ECOSLC Foundation

4. Member of the new European Technology Platform for Sustainable Logistics Innovation set up by the European Commission, aiming at a substantial logistics cost reduction for the industry.


6. Implementation of Smart Port-Hinterland Logistics
   Smart Port-Hinterland Sustainable Logistics Business Model: Circle Lines

www.ecoslc.eu
EcoPorts Port Environmental Management System and Standards:

The only standardized tools specifically developed by ports, for ports.
EcoPorts tools reflect ESPO and AAPA policies:

- Compliance through voluntary, self-regulation
- Cost-effective and practicable EMS
- Shared knowledge and experience
- Serving Businesses, Communities and Chain
- Transparent Monitoring and Reporting of benchmark environmental performance
- ‘Level playing-field’ of standards and enforcement
- The value of education and training in implementing EMS
**Assistance available**

**ECOSLC:**
- **Access to Tools and training for**
  1. ECOPORTS Port Environmental Management
  2. Sustainability in Ports and Logistics
  3. Certification
- **Public, Private, Science R&D partnerships**

**AAPA – ESPO:**
lobbying, policy and legislation

[www.ecoslc.eu](http://www.ecoslc.eu)
I. Global Collaboration in Ports and Environment

II. ECOPORTS: Port Environmental Management System and Standards

III. From Environment to Sustainability

Concluding remarks
ALL PORTS FACE A COMMON CHALLENGE

IMPORTANT GROWTH
LIMITS TO PHYSICAL SPACE
LIMITS TO ENVIRONMENTAL SPACE GET STRICTER
INCREASING INFLUENCE OF STAKEHOLDERS

HOW TO PRESERVE YOUR PORT LICENSE TO OPERATE

Start: introduce a port environmental management system
How to start Ecoports

Create the attitude of awareness, understanding and commitment from top management and operational management to reduce the environmental impact of the port

top down-bottom up approach
Ecoports Tools: SDM, PERS, Network

Sustainable Logistic Chain

www.ecoslc.eu
SELF DIAGNOSIS METHODOLOGY (SDM)

1. What delivers SDM
www.ecoslc.eu

- Initial review of port’s environmental management programme
- Check list of organization and procedures
- GAP and SWOT analysis
- Benchmark performance
- Confidential
- It is NOT ‘pass’ or ‘fail’
- Training available www.ecoslc.eu
SELF DIAGNOSIS METHODOLOGY (SDM)

2. Elements of SDM
(www.ecoslc.eu)

- Port profile
- Environmental policy
- Management organisation & personnel
- Environmental training
- Communication
- Operational management
- Emergency planning
- Monitoring and records
- Review and audit
SWOT ANALYSIS
Of current status and recommendations for improvement

GAP ANALYSIS
With the requirements of PERS

Benchmark based on WORLD-WIDE DATABASE
Strength of the ECOSLC model:
confidential data compiled through SDM analysis may be reported anonymously to the port sector organisation such as AAPA to provide benchmark performance of the sector in discussions with regulators and policy-makers and identify evidence of trends.
# Self Diagnosis Method (SDM) Example GAP Analysis

<table>
<thead>
<tr>
<th>Gap Analysis:</th>
<th>PERS 60.71%</th>
<th>ISO 48.68%</th>
<th>Answers</th>
<th>SWOT</th>
<th>ANS(%)</th>
<th>YES(%)</th>
<th>NO(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1 Does the Port have an Environmental Policy?</td>
<td></td>
<td></td>
<td>S1</td>
<td>100,0%</td>
<td>87,8%</td>
<td>12,2%</td>
<td></td>
</tr>
<tr>
<td>A.2 IF YES, Is the Policy signed by Chief Executive / Senior Management?</td>
<td></td>
<td></td>
<td>S2</td>
<td>89,8%</td>
<td>90,9%</td>
<td>9,1%</td>
<td></td>
</tr>
<tr>
<td>A.3 IF YES, Is the Policy communicated to all relevant stakeholders?</td>
<td></td>
<td></td>
<td>S3</td>
<td>89,8%</td>
<td>88,6%</td>
<td>11,4%</td>
<td></td>
</tr>
<tr>
<td>A.4 IF YES, Is the policy communicated to all employees?</td>
<td></td>
<td></td>
<td>O1</td>
<td>89,8%</td>
<td>84,1%</td>
<td>15,9%</td>
<td></td>
</tr>
<tr>
<td>A.5 IF YES, Is the policy publicly available on the Port’s Website?</td>
<td></td>
<td></td>
<td>O2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.6 Does the Policy include reference to: Major objectives?</td>
<td></td>
<td></td>
<td>S4</td>
<td>89,8%</td>
<td>90,9%</td>
<td>9,1%</td>
<td></td>
</tr>
<tr>
<td>A.7 Does the Policy include reference to: Publication of an Environmental Report?</td>
<td></td>
<td></td>
<td>O3</td>
<td>87,8%</td>
<td>65,1%</td>
<td>34,9%</td>
<td></td>
</tr>
<tr>
<td>A.8 Does the Policy include reference to: The identification and control of the port’s Significant Environmental Aspects?</td>
<td></td>
<td></td>
<td>S5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.9 Does the Policy include reference to: Continual improvement?</td>
<td></td>
<td></td>
<td>S6</td>
<td>89,8%</td>
<td>93,2%</td>
<td>6,8%</td>
<td></td>
</tr>
<tr>
<td>A.10 Does the Policy include reference to: Prevention of pollution?</td>
<td></td>
<td></td>
<td>S7</td>
<td>73,5%</td>
<td>86,1%</td>
<td>13,9%</td>
<td></td>
</tr>
<tr>
<td>A.11 Does the Policy include reference to: Training employees in environmental issues?</td>
<td></td>
<td></td>
<td>O4</td>
<td>89,8%</td>
<td>75,0%</td>
<td>25,0%</td>
<td></td>
</tr>
</tbody>
</table>
Ecoports Tools and Methodologies Workshop
Organised by ECOSLC Foundation in Piombino Italy

Port Authority and Coast Guard together to train Ecoports environmental Self Diagnosis Method SDM, assisted by ISPRA, Agency of the Ministry of Environment Italy.
Welcome to the EcoPorts network

This page provides visibility and credit to ports that are currently part of the Network through the interactive map and the list below. The “EcoPort” status is obtained upon completion of a Self Diagnosis Method (SDM) checklist. The port is awarded in that way for providing data on the performance of its environmental management programme and for contributing in such way to the up-to-date maintenance of the ECOSLC International Benchmark of performance. Additional credit is provided to ports that are certified with PERS, the only port-sector specific environmental management standard, and ISO 14001.
PERS: Port Environmental Review System

1. What is PERS
   www.ecoslc.eu

1. Environmental policy statement

2. Register of environmental aspects and legal requirements

3. Documented responsibilities

4. Conformity review

5. Environment report
PERS:
Port Environmental Review System

2. Elements of PERS
www.ecoslc.eu

- Port profile
- Environmental policy statement
- Register of environmental aspects & legal requirements
- Documented responsibilities
- Conformity review
- Environment report
- Examples of best practice
STATEMENT BY
A EUROPEAN ECOPORTS CERTIFIED PORT ON
BENEFITS OF ECOPORTS:
“Stakeholder relations management was helped: approval received without the need for public enquiry as holding objections withdrawn”
Port Stakeholders control ports: keep them your friend

PORT COMPANIES
1. Sea Shipping Line Carriers
2. Logistic Service Providers
3. Transhipment Terminals for
4. Cruise Terminals
5. Warehousing
6. Tug boat Company
7. ICT Port Community System

PERSONNEL
8. Employees
9. Labor Organisation

SOCIETY ASPECT GROUPS
10. Citizens
11. Tourists
12. NGO’s
13. Environmentalists

GOVERNMENTAL ORGANISATIONS
14. Labour Inspection
15. Police Brigade
16. Fire Brigade
17. Customs
18. Food Inspection
19. Environment Inspection
20. Veterinary Inspection
21. Port Authority
22. Coast Guard

www.ecoslc.eu
Example of first time Stakeholders Workshop
Recent workshop Ecoports in Greece

ECO SLC
Sustainable Logistic Chain

ECOSLC/Ecoports Certified Trainer

www.ecoslc.eu
Welcome to the EcoPorts network

This page provides visibility and credit to ports that are currently part of the Network through the interactive map and the list below. The "EcoPort" status is obtained by any port within the broad ESPO membership upon completion of a Self Diagnosis Method (SDM) checklist. The port is awarded in the way for providing data on the performance of its environmental management programme and for contributing in such way to the up-to-date maintenance of the ESPO European Benchmark of performance. Additional credit is provided to ports that are certified with PERS, the only port-sector specific environmental management standard, and ISO 14001.
EXAMPLE EXPERIENCE WITH INTRODUCING ECOPORTS PORT OF DOVER (UK)

Our Environmental Journey

- 1992: Environmental Monitoring
- 1994: Pollution Prevention
- 1996: Air Quality
- 1998: Waste Management
- 2000: Energy Management
- 2002: PERS Certification
- 2004: PERS Recertification
- 2006: ISO 14001 Certification
- 2008: CTS Bearer
- 2010: Port Development
- 2012: Waste

Understanding our environment

www.ecoslc.eu
Potential Revenues for the port from ECOPORTS port environmental management reported by participants

1. Better informed personnel and therefore better use of existing knowledge capacity
2. More interest from companies to settle: (more certainty about costly environmental requirements, good reputation: clean port, cost element of proven practices)
3. Better understanding from stakeholders (keeping license to operate)
4. Lower cost of finance (some cases)
   sustainability required by some banks and insurers
5. Lower cost of maintenance (some cases)
6. Level Playing field: standards in implementation of the law
Analyses and trends from Ecoports Database
## Trends of selected components of EMS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Policy?</td>
<td>45</td>
<td>58</td>
<td>72</td>
<td>91</td>
<td>86</td>
<td>+28</td>
</tr>
<tr>
<td>Policy available to public?</td>
<td>-</td>
<td>59</td>
<td>62</td>
<td>85</td>
<td>82</td>
<td>+23</td>
</tr>
<tr>
<td>Policy aimed at compliance+?</td>
<td>32</td>
<td>49</td>
<td>58</td>
<td>73</td>
<td>68</td>
<td>+19</td>
</tr>
<tr>
<td>Publishes Environmental Report?</td>
<td>-</td>
<td>31</td>
<td>43</td>
<td>62</td>
<td>64</td>
<td>+33</td>
</tr>
<tr>
<td>Designated Environmental personnel?</td>
<td>55</td>
<td>67</td>
<td>69</td>
<td>95</td>
<td>94</td>
<td>+27</td>
</tr>
<tr>
<td>Recognized EMS?</td>
<td>-</td>
<td>21</td>
<td>48</td>
<td>62</td>
<td>64</td>
<td>+43</td>
</tr>
<tr>
<td>Environmental monitoring programme?</td>
<td>53</td>
<td>65</td>
<td>77</td>
<td>80</td>
<td>79</td>
<td>+14</td>
</tr>
<tr>
<td>Performance indicators identified?</td>
<td>-</td>
<td>48</td>
<td>60</td>
<td>71</td>
<td>64</td>
<td>+16</td>
</tr>
</tbody>
</table>
## TOP 10 ENVIRONMENTAL ISSUES IN EU PORTS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Port Development (water)</td>
<td>Garbage / Port waste</td>
<td>Noise</td>
<td>Air quality</td>
</tr>
<tr>
<td>2</td>
<td>Water quality</td>
<td>Dredging: operations</td>
<td>Air quality</td>
<td>Garbage / Port waste</td>
</tr>
<tr>
<td>3</td>
<td>Dredging disposal</td>
<td>Dredging disposal</td>
<td>Garbage / Port waste</td>
<td>Energy Consumption</td>
</tr>
<tr>
<td>4</td>
<td>Dredging: operations</td>
<td>Dust</td>
<td>Dredging: operations</td>
<td>Noise</td>
</tr>
<tr>
<td>5</td>
<td>Dust</td>
<td>Noise</td>
<td>Dredging: disposal</td>
<td>Ship waste</td>
</tr>
<tr>
<td>6</td>
<td>Port Development (land)</td>
<td>Air quality</td>
<td>Relationship with local community</td>
<td>Relationship with local community</td>
</tr>
<tr>
<td>7</td>
<td>Contaminated land</td>
<td>Hazardous cargo</td>
<td>Energy consumption</td>
<td>Dredging: operations</td>
</tr>
<tr>
<td>8</td>
<td>Habitat loss / degradation</td>
<td>Bunkering</td>
<td>Dust</td>
<td>Dust</td>
</tr>
<tr>
<td>9</td>
<td>Traffic volume</td>
<td>Port Development (land)</td>
<td>Port Development (water)</td>
<td>Port development (land)</td>
</tr>
<tr>
<td>10</td>
<td>Industrial effluent</td>
<td>Ship discharge (bilge)</td>
<td>Port Development (land)</td>
<td>Water quality</td>
</tr>
</tbody>
</table>
# Examples of Monitoring Carbon Footprint

<table>
<thead>
<tr>
<th>Port</th>
<th>Sources included</th>
<th>Percentages</th>
<th>Years</th>
<th>Results</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Corunna (Spain)</td>
<td>PA vehicles, PA boilers, Electricity port area</td>
<td>4 %, 7 %, 89 %</td>
<td>2009, 2008, 2007, 2006</td>
<td>1124 t CO2, 1357 t CO2, 1296.5 t CO2, 1301 t CO2</td>
<td>Results reported since 2006 Reduction of 13.6 % (2006 -09) Published in Sustainability report 2009</td>
</tr>
<tr>
<td>Antwerp (Belgium)</td>
<td>Stationary sources, Mobile sources, PA buildings, Electricity, Business travel, Commuting</td>
<td>19 %, 51 %, 10 %, 13 %, 1 %, 6 %</td>
<td>2008</td>
<td>34700 t CO2e</td>
<td>Calculated from 2000 – 2008 Results presented in the GreenPorts Conference 2011, Venice</td>
</tr>
<tr>
<td>Dover (UK)</td>
<td>Gas Oil, Refrigerant Gases, Owned vehicles, Electricity</td>
<td>23 %, 2 %, 1 %, 74 %</td>
<td>2009, 2008</td>
<td>13279 t CO2, 15340 t CO2</td>
<td>Results reported since 2008 Reduction of 13.4 % (2008 -09) Published in their Environmental Bulletin 2009</td>
</tr>
<tr>
<td>Oslo (Norway)</td>
<td>Direct emissions, Indirect emissions, Other indirect emissions</td>
<td>44 %, 34 %, 22 %</td>
<td>2008, 2007</td>
<td>1346 t CO2e, 704 t CO2e</td>
<td>Increase in 47.7% (2007 - 08) Published in the port of Oslo report: CO2 emissions for the year 2008.</td>
</tr>
<tr>
<td>Rotterdam (The Netherlands)</td>
<td>Direct emissions, Indirect emissions, Other indirect emissions</td>
<td>31 %, 15 %, 54 %</td>
<td>2008, 2007</td>
<td>29094 t CO2, 33043 t CO2</td>
<td>Results reported since 2007 Reduction of 12 % (2007 - 08) Published in their Annual Report 2009</td>
</tr>
</tbody>
</table>
Global ports environmental management analysis
First Global pilot based on Ecoports approach

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>Oceania</th>
<th>Asia</th>
<th>Africa</th>
<th>North America</th>
<th>Latin America</th>
<th>ESPO</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Does the port have a separate environmental section in the website?</td>
<td>56</td>
<td>44</td>
<td>4</td>
<td>96</td>
<td>20</td>
<td>80</td>
<td>16</td>
</tr>
<tr>
<td>2 Does the port have any EMS?</td>
<td>60</td>
<td>40</td>
<td>20</td>
<td>80</td>
<td>32</td>
<td>68</td>
<td>28</td>
</tr>
<tr>
<td>3 Does the port have any Environmental Policy?</td>
<td>72</td>
<td>28</td>
<td>28</td>
<td>72</td>
<td>36</td>
<td>64</td>
<td>44</td>
</tr>
<tr>
<td>4 Is the Environmental Policy made available to the public?</td>
<td>36</td>
<td>64</td>
<td>8</td>
<td>92</td>
<td>12</td>
<td>88</td>
<td>24</td>
</tr>
<tr>
<td>5 Does the port publish an Environmental Report / Review?</td>
<td>56</td>
<td>44</td>
<td>20</td>
<td>80</td>
<td>20</td>
<td>80</td>
<td>36</td>
</tr>
<tr>
<td>6 Is environmental monitoring carried out in your port?</td>
<td>72</td>
<td>28</td>
<td>32</td>
<td>68</td>
<td>40</td>
<td>60</td>
<td>56</td>
</tr>
<tr>
<td>7 Has the port identified environmental indicators to monitor trends in environmental performance?</td>
<td>44</td>
<td>56</td>
<td>16</td>
<td>84</td>
<td>24</td>
<td>76</td>
<td>44</td>
</tr>
<tr>
<td>8 Does the port publish factual data by which the public can assess the trend of its environmental performance?</td>
<td>4</td>
<td>96</td>
<td>0</td>
<td>100</td>
<td>8</td>
<td>92</td>
<td>20</td>
</tr>
</tbody>
</table>

Average | 50 | 50 | 16 | 84 | 24 | 76 | 34 | 66.5 | 16.5 | 83.5 | 58 | 41.6 | 71 | 29 |
NEW: ESPO Environmental Monitoring Dashboard for the Port Sector

Environmental Trends

- Environmental Management Systems
- Carbon Footprint
- Waste recycled
- Water consumption

ECO SLC
Sustainable Logistic Chain

www.ecoslc.eu
I. Global Cooperation in Port Environmental Management

II. ECOPORTS: Port Environmental Management System and Standards

III. New Port Strategy: from Environment to Sustainability

Concluding remarks
Changes in Port Strategy

• From Environment to Sustainability

• From Port orientation to Port and Logistics Orientation

• New Logistic Systems: environmental challenges and solutions
Transport sector: highest environmental impact (as to CO2)

Smart Sustainable Logistics can improve both logistics and environment but also costs
Deepsea transport/logistics: systematic approach, Daily Maersk: 70 vessels make conveyor belt on the seas

Panama Canal 2014.
Dry-bulk from 80,000 to 180,000 dwt
Container vessels from 4500 to 12,000 TEU

Results
Less costs and environmental impact per container
Next step: P3 Network: 255 vessels

www.ecoslc.eu
Supply Chain: daily hinterland transport “system”

Results
Cost increases, CO2 increases, unreliable
Coming up: new Sustainable Port Strategy: From "Port" to "Port and Chain" Orientation
How to introduce a sustainable system in port-hinterland logistics
CIRCLE LINES: SMART OPERATIONAL PORT-HINTERLAND LOGISTICS

DAILY SHUTTLE SERVICES ON WATERWAYS ON FOUR LEVELS

CONCEPT INNOVATION
- Connecting existing initiatives to create one integrated transport system on water. The scale is unique.
- Higher loading levels reduce costs per container and offer possibilities for innovative logistic solutions. Cost reductions and environmental improvements in the whole chain are larger then by optimizing on an individual level.

1. National cargo transport
   Amsterdam - Schiphol Airport - Rotterdam

2. Regional cargo transport
   Shuttle services industrial estates - ports
   Bundling of cargo, for example by adding containers for waste or building materials

3. Cargo Transport Port Region
   Shuttle Service in the port area/region

4. International Short Sea transport
   Amsterdam/R.dam - UK/North Europe

Shippers Oriented Actual Proven Practice
Smart Port-Hinterland Logistics
Results Impressive

Cost Reductions up till 50%
CO2 reductions up till 80%
per container
From "Port" to "Port and Chain" Orientation

CHAIN MANAGEMENT REQUIRES CHAIN INFORMATION

www.ecoslc.eu
ECO SLC
Sustainable Logistic Chain

MUCH CHAIN INFORMATION AVAILABLE

1. Environment: 200 environmental rules monitored, reported in ports
2. Safety: local, national, international, global rules monitored, reported
3. Security: local, national, international, global rules monitored, reported
4. Finance: payment streams between all partners in the chain
5. Logistics: 200 documents per container: all players have logistics information

From "Port" to "Port and Chain" Orientation

www.ecoslc.eu
From "Port" to "Port and Chain" Orientation
From "Port" to "Port and Chain" Orientation

DASHBOARD
Sustainable (Port and) Chain Data Management 24/7
For public and private chain collaboration partners

www.ecoslc.eu
I. Global Cooperation in Port Environmental Management

II. ECOPORTS: Port Environmental Management System and Standards

III. New Port Strategy: from Environment to Sustainability

Concluding remarks
How to join ECOPORTS: www.ecoslc.eu

1. Access and registration
2. Port profile
3. Complete SDM and get an “EcoPorts” status
4. Submit SDM for review and advice
5. Implement PERS
6. Apply for PERS certification
EcoPorts Environmental Management Tools & Services
- Self Diagnosis Method (SDM)
- Port Environmental Review System (PERS)

ECOSLC Logistics Tools & Services
- Sustainable Port Strategy within the chain
- Sustainable Logistic Chain SDM
- Introduction and training workshops

About ECOSLC
ECO Sustainable Logistic Chain Foundation (ECOSLC) is a Foundation, set up in 2010 by a key team of Ecoports Foundation.

EcoPorts tools
Ecoports offers three validated Tools to assist port authorities to develop, implement and maintain a credible Environmental Management System (EMS).

Training services
ECOSLC offer training in Ecoports Tools and Ecoports certification in ports outside Europe with the support of ESPO, the European Seaports Organisation.

Join the ECOSLC network
Read about how to join the network and get the full benefits of the provided services