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Reducing the environmental impacts of ports

Ports can produce significant environmental impacts that affect ecological systems and natural resources. In order to protect them, it is essential to increase awareness on the importance of reducing ports' impacts on the environment.

Key environmental priorities

From a PERSEUS survey, conducted at four pilot ports in the Mediterranean and Black Seas, several impacts associated with the day-to-day activities were identified:

- Air quality
- Port waste
- Water quality
- Relationship with local community
- Noise
- Dust
- Hazardous waste
- Energy consumption

Environmental practices in daily management

- Producing an updated environmental policy
- Developing an inventory of environmental aspects
- Having an environmental management system in place
- Publishing an annual environmental report

Identifying Environmental Aspects

What is an environmental aspect? How can it be defined?

An environmental aspect is considered to be any part of an activity, product or service that can interact with the environment.

Example: The activity of loading or unloading coal in a port may generate the environmental aspect of dust emissions.

A **Significant Environmental Aspect (SEA)** is an aspect that generates a relevant impact to the environment. Identifying the SEA is critical for implementing an environmental management system and for reducing a port's environmental impacts.

Environmental impacts of ports in the Mediterranean and Black Seas

Tool for the identification and assessment of Environmental Aspects in Ports (TEAP)

TEAP in brief

The EU-funded PERSEUS research project developed the *Tool for the identification and assessment of Environmental Aspects in Ports (TEAP)* to assist port authorities in identifying environmental aspects and assessing their significance.

PERSEUS research findings indicated that there is not a common method in the Mediterranean and Black Seas for identifying environmental aspects to meet environmental management system standards such as ISO 14001, PERS and EMAS. Port authorities need this information to be compliant with the legislation and regulations for which they have liability and responsibility. PERSEUS addressed this need by developing a specialised tool to identify and assess significant environmental aspects using a systematic and scientific-based method.

This new methodology is applicable to all types of ports no matter the size or its commercial profile; it provides targeted and specific results for each one.

TEAP is a user-friendly, practical and time-saving tool for port managers to easily determine significant aspects and put in place an effective environmental management system.

The tool is available online on the PERSEUS website (www.perseus-net.eu) under the policymakers section on ports.

Significant environmental aspects in ports

The environmental aspects of each port vary according to the activities conducted within the port. In order to develop TEAP, PERSEUS first carried out research on the environmental performance of four pilot ports in the Mediterranean and Black Seas, namely, the Port of Barcelona (Spain), the Port of Thessaloniki (Greece), the Port of Constanta (Romania) and the Port of Varna (Bulgaria).

As a result of this in-depth study, a final set of 17 aspects that may have a potential impact on the environment was compiled and grouped into seven categories.

17 most significant environmental aspects of ports

Emissions to air

1. Emissions of combustion gases
2. Emissions of gases (VOCs)
3. Emissions of particulate matter
4. Odour emissions

Releases to water

5. Discharges of wastewaters
6. Discharges of polluted waters
7. Discharges of hydrocarbons
8. Discharges of particulate matter

Emission to soil

9. Emissions to soil and groundwater

Resources consumption

10. Water consumption
11. Electricity consumption
12. Fuel consumption

Water production

13. Generation of solid urban waste
14. Generation of hazardous waste
15. Generation of other wastes

Noise

16. Noise emissions

Effects on biodiversity

17. Ecosystems and habitats

TEAP can assist with easily identifying the significant environmental aspects to facilitate the development of an environmental management system.

TEAP: HOW THE TOOL WORKS

Application of the tool

The online tool can be accessed on the PERSEUS website (www.perseus-net.eu) under the policymakers' section on ports. A direct link is also available at: www.eports.cat.



Port managers are guided along a 5-step process as outlined below, which assists them to identify the Significant Environmental Aspects (SEA) of their port.

Step 1: Enter port contact details

Step 2: Select port activities

Step 3: Generate a list of the port's environmental aspects

Step 4: Apply criteria to determine significance of aspect

Step 5: Generate the list of the port's Significant Environmental Aspects

Step 1: Enter port contact details

Enter the port name, country and contact details. All information is confidential and only the user of the tool will have access to its results.

Step 2: Select port activities

Select the activities (out of a list of 35) that are carried out in the port. When an activity is selected, the tool activates the environmental aspects that are associated with that activity.

Step 3: Generate a list of the port's environmental aspects

The tool generates a list of environmental aspects, associated with the selected port activities (in Step 2), ranking them from high to low occurrence. In order to determine the potential significant aspects of the port, only the environmental aspects with a score equal to or higher than the threshold value of 50% of the maximum score are included.

Step 4: Apply criteria to determine significance of aspect

The TEAP guides the user to determine the most significant aspects, according to the criteria presented in the table below. The response options of these criteria are weighted between 1 and 5. This will help determine the SEA (in Step 5).

Criteria	Definition
Frequency	The number of times that the this aspect is generated.
Aspect duration	The length of time that the aspect lasts.
Extent of the impact	The area of influence of the impact in relation with the port surroundings.
Stakeholders' complaints	It considers the port stakeholders and local community complaints on each environmental aspect.
Legal compliance	It considers if this aspect is affected by legal requirements, if permissible levels are exceeded and if fines have been released in relation to this aspect.
Severity of the impact	It considers the degree of impact that this aspect generates.
Quantity of waste	This criterion measures the quantity or the volume of waste that has been generated.
Consumption of resources	It is determined by comparing the consumption of the current year with the consumption of the previous years.

Step 5: Generate the list of the port's Significant Environmental Aspects

The tool calculates an average value for each aspect and ranks them in descending order. The aspects with the highest scores are the most significant. Aspects with an average score of ≥ 3 will be considered the Significant Environmental Aspects of the port.

This fact sheet is based on PERSEUS deliverable: "Environmental and accidental risk assessment of the big ports around the South European Seas" (D2.4).

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