Noise Management in European Ports - Eur

1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space
- SUSTAINABLE ECONOMIC GROWTH: Improving competitiveness

2. Key Approaches

- Knowledge-based
- Socio-economic

3. Experiences that can be exchanged

The definition of a common harmonised approach in the field of port area noise mapping and management.

4. Overview of the case

A Good Practice Guide on Port Area Noise Mapping and Management and its associated technical annex has been compiled as a synthesis and user-friendly interpretation of the Environmental Noise Directive. It includes a summary of the management response options available for the effective implementation of the Directive's provisions with a focus on port areas. However, the guide may also be applied to other industrial areas. It is written for port (environmental) managers, policy makers, environmental authorities, spatial planners and strategic decision-makers.

5. Context and Objectives

a) Context

The EU Directive 2002/49/EC on the Assessment and Management of Environmental Noise (Environmental Noise Directive) requires that industrial port areas near large agglomerations are included in noise maps. The noise maps have to be drawn up by competent authorities designated by the Member States. The Directive however does not specify how to define these noise maps. Responding to the challenge, this case took the initiative to develop a good practice guide on efficient noise mapping and management for port industrial areas. It should be noticed that port areas are of particular noise interest due to the combination of industrial and traffic-related noise sources.

b) Objectives

The broader project's objective is the reduction of noise, noise related annoyance and health problems of people living around port industrial areas through demonstration of a noise mapping and management system. The main objective of the initiative is the definition of a harmonised common approach on port area noise mapping and management through the development of a Good Practice Guide.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The Amsterdam Port Authority belongs to the municipality of Amsterdam. It manages, operates and develops the Amsterdam seaports. The Port of Amsterdam took the initiative to bring together a consortium of six like-minded ports viz. the Ports of Livorno and Civitavecchia, Italy; the Port of Hamburg, Germany; the Port of Copenhagen/Malmö (Denmark and Sweden) and the Port of Valencia, Spain. These port authorities reflect wide geographical and cultural differences within the Europe.

b) ICZM tools

Local working groups were established within the partner ports consisting of representatives from the port authorities, local competent authorities on environmental affairs and spatial planning, local noise calculation experts and local industries. The noise mapping and management system was demonstrated in all local working groups. Each local working group was responsible for collecting noise data, drawing up noise maps on five detail levels and defining action plan proposals for noise mitigation. The goal of the central working group was to define a good practice guide on the most efficient way to create noise maps, action plans to reduce the noise annoyance and on-going noise management. Representatives from the local working groups and representatives from the other participating ports formed the central working group. This group was responsible for discussing the results of the local working groups, drafting the good practice guide and examining the applicability of the management system. The central working group defined recommendations for specification of the EU Noise Directive and future EU Noise policy.

The Guide established a six-step methodology that guides the assessment of the noise situation in, and around, port areas. It led to the implementation of appropriate noise action plans aimed towards the reduction of noise annoyance and exposure of the population to noise levels and related impacts to human health and quality of life. The Six-Steps-Methodology for noise management in port areas outlines principles and offers practical guidance to port professionals and managers. At the same time, this methodology contributes to the creation of a level playing field in ports in implementing the Noise Directive. The first step is the study of the geographical situation of the area under examination and the definition of its geographical boundaries. The second step is the inventory of the main noise sources within and around the previously defined study area. Through appropriate noise data collection (step 3) the identified noise sources can be modelled within specialised noise prediction software and noise maps can be produced (step 4). The analysis of the produced maps identifies the priorities of noise management and leads to noise action planning and the implementation of appropriate mitigation measures (step 5). All the previously discussed components are embedded within an integrated noise management system (step 6) that continuously assesses new threats and accordingly responds enabling continuous environmental improvement.

7. Cost and resources

The total budget was €1,503,489 of which there was a Life contribution of €707,645.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

The main benefit from the application of the results of this work is the implementation of a noise mapping and management system in port industrial areas towards managing and consequently reducing noise in port areas. Environmental benefits resulting from the project included the raising of awareness on the necessity of using a noise management tool in ports as a way to control and reduce noise-related issues to people living in the port surroundings. It also allowed the identification of noise traffic as the main contributor to port noise. The approach facilitated the definition of mitigation measures to reduce noise impact in the surrounding city areas. In the specific case of the Port of Amsterdam a reduction of noise of more than 30% is achievable through the implementation of the action plans developed. These results went beyond the initial expectations foreseen i.e. a noise reduction of 25%. Other ports are currently implementing the measures.

A major economic benefit for the ports adopting the methodology developed is the reduction of costs, for local environmental authorities, associated to definition of noise maps and action plan proposals for noise mitigation. The good practice guide and the optimised management system facilitate the identification of potential noise sources and the effective determination of hot spots, thus increasing the efficiency of the noise mapping and reducing associated costs. Noise management enables the assessment of future development scenarios and the prediction of associated noise annoyance. In such a way, development plans can be re-considered and actions can be taken at an early stage to mitigate the predicted noise impact.

9. Success and Fail factors

The system built on previous EU supported research outcomes by making use of a new EU noise calculation method and a noise emission database developed within the EU co-funded projects HARMONOISE and IMAGINE.

10. Unforeseen outcomes

The EcoPorts Foundation, bringing together a wide network of stakeholders in port areas and the logistic chain, welcomed the Guide and committed to promote this practical tool for port area noise management on its regular national and international workshops and seminars throughout Europe. Noise management of seaport areas can be seen as part of the integrated noise management efforts in urban (cities, municipalities) and industrial areas. The approach that has been established within this initiative is transferable, with the necessary adaptations, to other industrial areas such as inland ports, dry ports and large logistic centres. A similar phased approach can be followed for the management of other significant port environmental issues such as air quality. Noise and air pollution are two phenomena often strictly interconnected and a large variety of noise sources are also sources of airborne pollutants (e.g. mobile vehicles, ships, stationary combustion engines used in industry).

11. Prepared by

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12. Verified by

It has not been possible to verify this case.

13. Sources

- NoMEPorts project The port sector's initiative in port area noise mapping and management (2008) Layman's ReportLIFE05 ENV/NL/000018

Noise management in Ports - Laymans text (925.25 KB)