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ANCHOR Life

Advanced Noise Control strategies in HarbOuR

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Content

1. Executive Summary.....	4
2. Introduction	5
2.1 Ports and Noise reduction goals.....	5
2.2 The Port Authority System- the first steps.....	5
2.3 Objectives of the action- following steps	6
2.4 Methodology of delivering the Figure of merits	7

1. Executive Summary

The report on sharing objectives defines the methodology and goals of determining the Figure of merits (B.1) for the ports of Livorno, Piombino and Portoferraio.

This report is based on the Port Authority experience on ongoing noise related projects, the current issues affecting local citizenship and port operators. The report describes briefly how the Figure of merits can be defined to better cope with the environmental priority of noise impact on port cities.

2. Introduction

2.1 *Ports and Noise reduction goals*

Ports are complex environments, where governance issues are intertwined with environmental concerns, economic drivers and competitiveness goals.

The European Sea Port Organisation (ESPO) defines yearly the most common objectives, set forth by ports when dealing with port development and growth.

In its last 2017 report, it has been pointed out that most European ports have put forward environmental policies and goals. Moreover, Noise pollution ranks third as top priority goal, after Air quality and Energy consumption. Noise has raised to the top three environmental concerns of European ports since 2016.

The Northern Tyrrhenian Sea Port Authority System has envisaged its own Environmental Management System (SGA- Sistema di Gestione Ambientale) which states, inter alia, the goal of noise reduction made by the Port Authority. Even though it does not lay down specific goals for noise reductions it aims at stimulating private companies to curb noise emissions. The Three year operational program, unveiled in December 2017, does not mention any specific action for controlling noise emissions.

In this respect, ANCHOR LIFE project fills in a gap in the port governance, heading to greater awareness of port community on noise issue. This document presents how the Port Authority system wants to share objectives and the scope of activities with the local stakeholder community, in Livorno, Piombino and Portoferraio. It deserves mention that all these three cities are urban centres where the port represents a large share of economic throughput. However, despite the different port handling figures, noise does not impact local communities in the same way. Livorno ranks by far as first port, with over 33 million tons throughput in 2017 but it seems less affected by noise pollution, as the most of port operations are performed far away from the urban areas. It is rather the road traffic, related to port, that has an impact on citizenship. The same can be referred to Piombino too, where port activities are located in sparsely inhabited area and it is rather road congestion the greatest threat to human health. Portoferraio, although it has less traffic, is affected directly by port noise, due to the port-city layout. Further analysis and assessments are on-going, including noise mapping, for better detecting correlation between port activities and noise.

2.2 *The Port Authority System- the first steps*

As stated in the proposal, The Port Authority System of Northern Tyrrhenian Sea encompasses several ports, two large commercial ports, Livorno and Piombino, and some other minor insular ports, notably Portoferraio, Capraia, Cavo and Rio Marina. Among the latter ones, Portoferraio stands out as the most important one, with a traffic volume of over three million passengers and above 1 million tons last year.

Activities have started in November, in order to get local stakeholder involved, both in Livorno as well as in Piombino.

In Piombino a preliminary workshop on a wide variety of issues has been organized in November the 15th. Noise pollution was one of the environmental topics that have been dealt with. Local stakeholders (citizenship associations, entrepreneurial organizations, municipalities) had the chance to see the state of the play of noise mapping around the

port of Portoferraio, the noise classification areas and the roadmap set forth by the Port Authority to curb emissions. In Livorno, local citizen associations met representatives of the Port Authority to explain their needs in relation to port pollution, including air and noise pollution. In particular, members of La Venezia Borough association, the city area most exposed to port pollution, attended this meeting.

These two preliminary activities have been therefore crucial to take the next steps.

2.3 Objectives of the action- following steps

In the following months, the Port Authority System will take the following actions:

- Establishment of “Follower Platform”
- Definition of main critical issues related to noise pollution in the ports of Livorno, Piombino and Portoferraio
- Draft of Figure of merits, that is the correlation between noise and incentives to operators.

These actions can be detailed as follows:

Action	Deadline	How
Establishment of Follower Platform	6/2019	Collection of Follower Expressions of interest (e.g. through on-line survey); Validation by project partners- Definition of Followers contact list
Definition of main critical issues related to noise pollution in the ports of Livorno, Piombino and Portoferraio	7/2019	Stakeholder consultation Survey on data on noise pollution (on-going) Updated Noise mapping (to be delivered in the framework of other UE funded projects)
Draft of Figure of merits, that is the correlation between noise and incentives to operators	7/2019	Correlation between noise emission (analysis) Proposal on concession awarding regulation of the port (document)

The Follower platform is a means of linking potential stakeholders of the project, including ports and municipalities that are involved in other noise-related actions. In this respect, it deserves mention that the Northern Tyrrhenian Port Authority System is Coordinator of one project to monitor noise emission in ports (MON ACUMEN, financed by the Interreg IT-FR programme in 2018). In this project the ports of La Spezia, Bastia and Cagliari partake to detect where and how much noise is generated within port boundaries. The participation of those ports in the follower platform will be

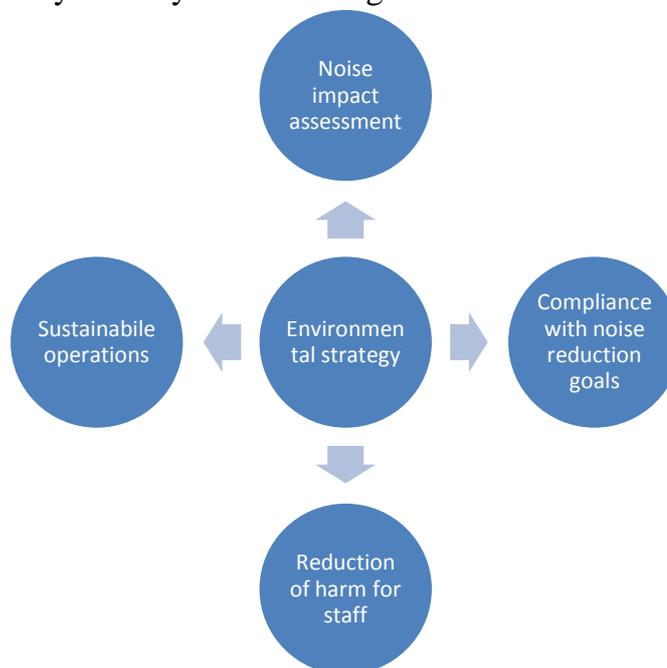
accordingly sought. ANCHOR LIFE will prove to these players how important is to steer and manage port communities to take action and tackle noise emissions.

In addition to this, the analyses and surveys done in other noise-related action will be capitalized. The Port Authority system is surveying data and information on noise, which is currently available at port and local level. The outcomes of these studies will be used to prompt the port community to become aware of risks and mitigation measures in relation to noise. Updated mapping of emissions is also crucial to check which are to-date the most relevant sources of annoyance for citizenship.

As for Figure of Merits, we highlight that the current regulation on port concessions award does not foresee any incentive to curb emissions, and port concessionaires are not therefore encouraged to take any intervention possible to reduce the environmental impact.

2.4 Methodology of delivering the Figure of merits

In relation to the methodology of determining the Figure of merits, we need a flowchart that combines variables and goals. As variables we may define both benchmark/context variables, such as the traffic category (Container, Ro-Ro, liquid bulk, break bulk passengers), size of the terminal, number of quays/berths. In this respect, a scorecard based on the model of Balanced Scorecard by Norton and Kaplan (1996) can be useful to link indicator blocs, goals and overall strategy. As a consequence, we may identify the following scheme:



In this sense, we find four priorities, to which indicators should be referred:

- Noise impact assessment, that is the self-evaluation made by the port operator on noise levels related to its own operations;
- Sustainable operations, that is the link between the overall sustainability goals of the port, also related to air pollution, circular economy;
- Compliance with noise reduction goals, that is the convergence of private operator procedures to the goals set forth for overall reduction of noise within

the port;

- Reduction of harm to staff, that is the mitigation procedures to lower annoyance to personnel employed in port activities.

With reference to the first priority, the port operator should cooperate with the port authority in defining assessment procedures to monitor noise level.

The Figure of merit shall therefore assess if the port operator has contributed to noise detection and mapping with the Port authority.

Sustainable operations indicators should be cross-cutting and assess whether noise reduction can be related to other environmental goals, air emission reduction in the first stance. The Figure of merit shall subsequently be related to the overall achievement of sustainable environmental goals by the operator.

Compliance with noise reduction goals is strictly linked to the port concession policy and incentives mechanisms to cut noise levels. In this respect, Figures of merit should take into account the objectives set forth for the port to curb annoyance to citizenship and propose incentives schemes to foster cooperation for tackling them. Indicators can be then determined as positive/negative deviation from values set at port level.

Reduction of harm to staff should be related to interventions to protect personnel against noise pollution. Indicators can be in this respect both financial (i.e investments) as well as physical (noise complaints). It is also important to point out that measurements should be carried also by external, umpire organizations, such as the Agenzie Regionali Protezione Ambientale (ARPA- Regional Environmental Protection Agency) in Italy, which have to cope with complaints from citizens and are perceived often as neutral. As a possible indicator we should therefore identify the noise level expressed in decibels, both during daytime and night. These measures should be provided on a quarterly basis.

Noise reduction objectives are therefore set to take into account the manifold impact of annoyance to the citizenship, port workforce, global sustainability of port operations.

Figure of merits are, *per se*, numbers which are set to measure the progress towards given achievements. The Anchorlife project should hence contribute to a common definition of Figure of Merits and agreed values, that are shared by the port community. In this respect, the acceptance of the Figure of merits is outmost importance for their relevance for the Port Community and are set on an widely acknowledged set of indicators and measures.

Anchorlife will represent therefore a chance to implement a common based tool of indicators, both for larger commercial ports (notably Livorno and Piombino) as well as smaller islands ports (Portoferraio, Capriaia, Cavo and Rio Marina), which are all committed to solve the noise issues, especially in relation to the car traffic during peak seasons. The picture in the following page shows the noise classification for Elba island, highlight the importance of this issue.

Picture 1, noise classification for Elba island. It is easy to see the impact of transport infrastructures, namely the three ports (Portoferraio, Cavo and Rio Marina- circled in red, along with the local airport- circled in blue)- source, Regione Toscana

