

# Pilot action final report

## Port of Ploče Authority

### D.4.2.11

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## 1. Ex-ante situation – Background of the pilot action

The main objective of SUSPORT is to enhance the environmental sustainability and energy efficiency of the ports in the Programme Area through increased institutional cooperation to create the basis for coordinated and permanent governance in the context of port environmental sustainability and energy efficiency at cross-border level, jointly developing action plans and a long-term strategy, increasing coordination and cooperation between ports to strengthen sustainability and competitiveness.

Through SUSPORT, ports of the Programme Area, will be able to share best practices and develop common methodologies for environmental sustainability and energy efficiency, to be tested in concrete pilot actions significantly improving the environmental performance of maritime transport in the whole Programme Area.

Primary focus of the Port of Ploče Authority was on creating and securing conditions for efficient management of maritime and public property. Creating preconditions for the transformation of the port from a transshipment port to a regional logistics centre in which, in addition to the application of modern technologies, various distribution and additional services will be provided on goods that run through the port.



*Figure 1 port of Ploče Area*

## Pilot action description

### 1.1 Replacement of the existing port lightning system with energy-efficient technology (A4.2)

The existing lighting was replaced with energy-efficient technology. A design solution for energy-efficient and ecological public lighting of the area inside the port of Ploče on sections:

- Section of the main port road no. 1 and 2,
- Shunting railway tracks of the bulk cargo terminal (TRT)
- Shunting railway tracks no. 1.

The technical solution is based on previous experiences and recommendations and budgets of manufacturers of lighting equipment for this type of building, as well as the typification of equipment, i.e. aesthetic and ecological requirements, related to the reduction of light pollution.

The main purpose of the installation of the road lighting system is the high-quality and safe development of road traffic of all categories of motor vehicles within the port area.

It is important to note that this project includes the replacement of dilapidated lighting based on the old technology of mercury light sources and high-pressure sodium in reflector units over 30 years old, with new lighting based on LED technology.



Figure 2 Replacement of the port Lightning system

## 1.2 Purchase and implementation of environment protection barriers (A4.2)

Protective barriers were acquired with the aim of increasing security in the port area. Barriers for the environmental protection are a modular solution that can be used in different port areas in the maritime part if necessary. They are stored in a special dedicated container located within the port area under the supervision of the Port Authority of Ploče.

It will be used to contain oil spills in the port of Ploče. This investment will allow the Port of Ploče Authority to effectively respond to any marine oil spill incident at the port of Ploče area.



*Figure 3 Environment protection barriers*



Figure 4 Environment protection barriers



Figure 5 Environment protection barriers



*Figure 6 Environment protection barriers*

### 1.3 Replacement of the existing air condition system in Port of Ploče Authority data center with energy-efficient technology (A4.2)

A new air conditioning system was installed for the needs of the data center with the aim of better energy efficiency and for the purpose of more efficient cooling of ICT equipment. For the purpose of more efficient cooling of IT equipment for indoor units, modular, vertical cooling systems will be delivered. As part of this activity, a modular cooling system was delivered that was optimized for the needs of the data center of the Port Authority of Ploče and the ICT equipment located in the center, providing the most optimal principle of cooling active equipment by suctioning warm air generated by the operation of the equipment and delivering precisely cooled air for cooling purposes. Sensors and sensor stations are also installed.

They are placed between the racks and allow cooling of two or three racks depending on the total heat dissipation. According to the existing configuration of the data center, 8 server/communication cabinets/racks placed in two rows. With the installation of the new IT cooling system, the Port of Ploče Authority will achieve significant energy savings.





*Figure 7 Air condition system*



*Figure 8 Air condition system*

#### 1.4 Micro Data Center solution for Data Recovery site with efficient cooling system and intelligent electrical power distribution.

A Micro Data Center solution was established for the needs of ICT infrastructure and data recovery with an efficient cooling system and intelligent distribution of electricity in the area of the port of Ploče in order to ensure physical protection against fire, water, dust, smoke and external unauthorized access.

Solution have been installed in the port of Ploče area where physical protection is also needed against fire, water, dust, smoke and external access.



*Figure 9 MDC*

#### 1.5 Installation of sensors and stations for monitoring noise quality to measure concentrations in port areas and to display measurements with related development of IT platform to support data exchange within subsystems (A4.2)

Installation of sensors and stations for monitoring noise quality to measure concentrations in port areas have been installed in the port of Ploče area. Sensors have possibility of measuring the concentration of floating particles at the level of PM10, PM2.5 and PM1 using the laser diffraction method

- The possibility of measuring the concentration of nitrogen oxides (NO and NO<sub>2</sub>) by means of electrochemical sensors.
- The possibility of measuring the concentration of ground ozone (O<sub>3</sub>) by means of electrochemical sensors.
- Ability to measure temperature, pressure, and humidity concentration via PHT sensor.
- Ability to measure wind direction and speed.



*Figure 10 Sensors and stations for monitoring*

## 1.6 Digital Green Incident Management (A4.2)

An incident management document was created with the aim of reducing incidents that have an impact on the environment and people in port areas, which includes security procedures and acts in the field of information and cyber security, with the aim of achieving a higher level of information security and protection and security with an emphasis on managing incidents that have an impact on the environment and people in port areas.

Information security and safety and security in ports are closely interconnected and both play a key role in ensuring protection and smooth operation port facilities.

Here are some key points that highlight the link between information security and protection and security in ports:

- Protection of critical infrastructure
- Integration of the physical security
- Cybersecurity operational technology

- Protection of sensitive data
- Emergency response and incident management
- Supply chain security

In short, information security and security in ports intertwined are areas that must be holistically addressed to protect port facilities, prevent interruptions, protect sensitive data and ensure the efficient and safe flow of goods and services through the global chain Supply.

Within the EU project SUSPORT "Incident management with the aim of reducing incidents that have an impact on the environment and people in port areas", the Port of Ploče Authority aimed to achieve a higher level of information security and security and security with an emphasis on managing incidents that have an impact on the environment and people in port areas.



Figure 11 Safety and security seminar



Figure 12 Safety and security seminar

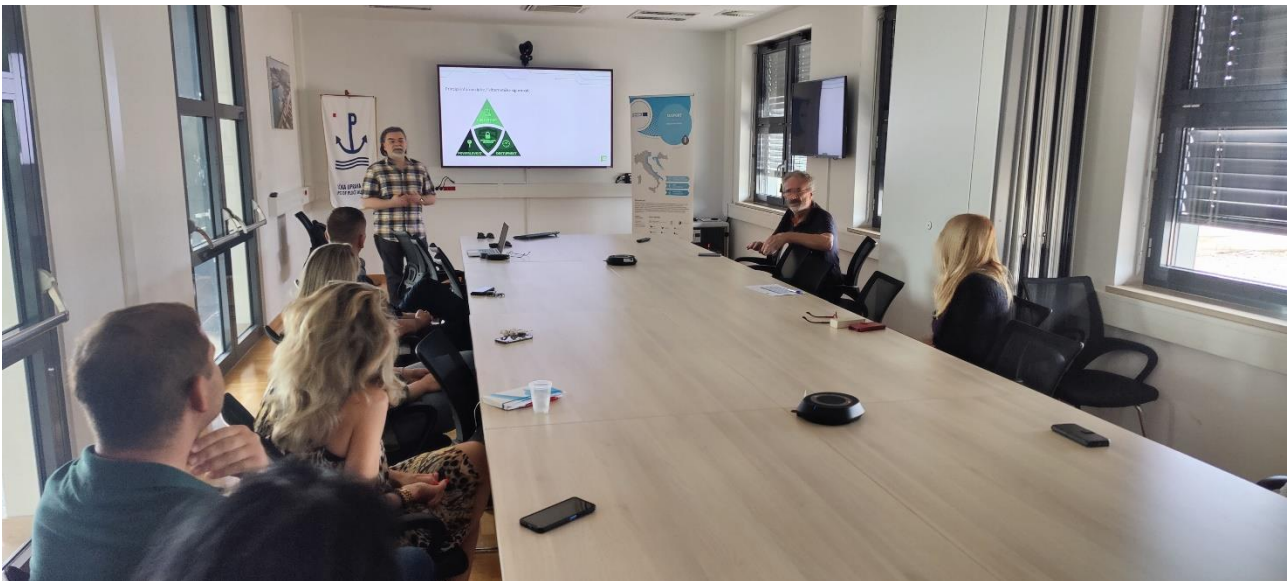


Figure 13 Safety and security seminar

## 2. Stakeholders

Among the stakeholders involved in the project are the public bodies Ministry of Finance (Customs), Ministry of the Sea, transport and Infrastructure, Port of Ploče Authority, Security

Guards, port operators and companies in the logistics sector (freight forwarders, transport companies).

The Port of Ploče Authority provides and allows the implementation of numerous services, and it represent a body which implement and improve port infrastructure for the public and private stakeholders which can facilitate and speeding up the operations to be carried out within the port.

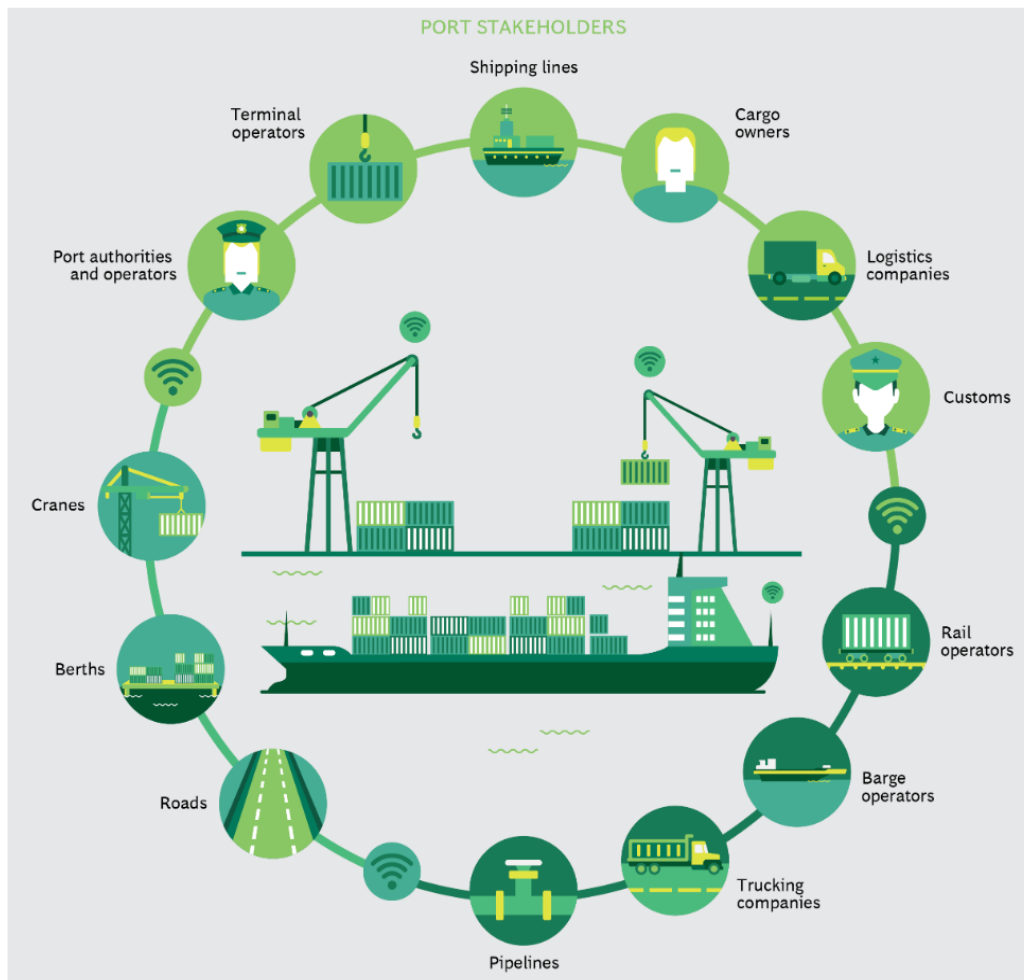


Figure 14 Port stakeholders

### 3. Impacts and reliability.

The SUSPORT project has made it possible to develop intelligent solutions and a general management model that make it possible to exploit innovative technologies in favour of ports and related services.

Port of Ploče Authority had a primary focus on creating and securing conditions for efficient management of maritime and public property as prerequisite for creating preconditions for the transformation of the port from a transshipment port to a regional logistics center.

Creating preconditions for the transformation of the port from a transshipment port to a regional logistics center in which, in addition to the application of modern technologies, various distribution and additional services will be provided on goods that run through the port.

The Port of Ploče Authority provides and allows the implementation of numerous services, and it represent a body which implement and improve port infrastructure for the public and private stakeholders which can facilitate and speeding up the operations to be carried out within the port.