

# European Environmental Compulsory Framework on Shipping and Ports

**Kotrikla A.M.<sup>1,\*</sup>, Andrea V.<sup>2</sup>, Nikitakos N.<sup>1</sup>, Stylios C.<sup>2</sup>**

<sup>1</sup>University of the Aegean, Department of Shipping, Transport and Trade, Korai 2A, 82100, Chios, Greece

<sup>2</sup>University of Ioannina, Department of Informatics and Telecommunication, 47150 Kostakioi, Arta, Greece

\*corresponding author: e-mail: akotr@aegean.gr

## Abstract

The European Maritime transport policy has embraced important environmental protection schemes that are directly or indirectly connected to shipping and port performance. A comprehensive database on the European Union (EU) environmental policy for the last 30 years has been attempted concerning mainly shipping and ports in terms of mandatory secondary law. The regulatory instruments were classified according to their subject; while, the main patterns were identified and the connections with the International Maritime Organization (IMO) framework were highlighted. The major findings disclose a complementary operation by both IMO and EU.

**Keywords:** shipping, ports, environmental framework, directives, regulations

## 1. Introduction

Maritime transport has been widely recognized as a major pillar for the economic development and welfare in Europe. The main objective of the European Commission stands in protection schemes accompanied by really demanding safety regulations preventing sub-standard shipping, with a focus on risk prevention and minimization (EC, 2019). In particular, several negative effects that arise by marine transportation such as air pollution, greenhouse gas emissions, water and solid waste, noise pollution oil spills and many others have been historically the basic factors for planning new green policies in port management (Walker et al., 2019). EU action in the field of maritime safety and protection of the environment generates significant added value to the international legal framework, such as SOLAS and MARPOL, which is overseen by the International Maritime Organization (IMO), the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of pollution by ships (EC, 2019).

The aim of this study is to set up a comprehensive database on the European Union's environmental policy concerning mainly shipping and ports in terms of mandatory secondary law such as directives and regulations, that were entered into force from 1990 and

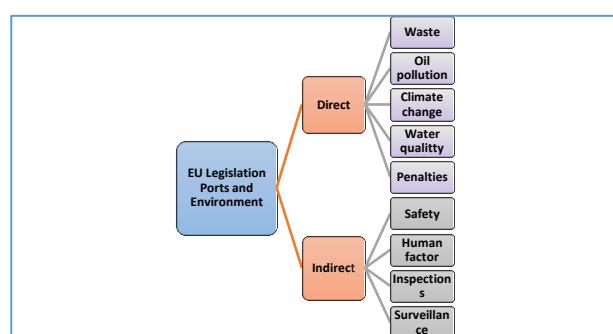
hitherto. The classification criterion is based on the legislative tool subject.

## 2. Methodology

For the formation of the database, the European Union sites and the scientific literature were thoroughly investigated. The classification procedure was based on the existing European compulsory regulatory framework (regulations and directives), closely affiliated with shipping, ports and the natural environment. Although decisions are compulsory instruments, they were not included in the analysis as they address specific bodies - organizations.

## 3. Results and Discussion

The taxonomy enlisted regulatory tools that are either directly (waste, oil pollution, air quality, climate change, water quality and penalties on shipping pollution) or indirectly (safety, human factor, inspections, surveillance) associated with the protection of the environment by shipping (Figure 1).



**Figure 1.** The classification of EU directives and regulations on shipping, ports and the environment

The results indicated that from 1990 and hitherto there are 64 directives and regulations issued by the European Union regarding direct (23) or indirect (41) measures that ensure environmental protection by activities of the maritime sector. As regards the direct legislative tools, the primary framework for air quality focuses on the sulphur content of marine fuels, incorporating the MARPOL Annex VI into European law. Added to that, the climate change framework is mostly oriented on the

Monitoring, Reporting and Verification (MRV) of CO<sub>2</sub> emissions from large ships using EU ports. Regarding the oil pollution, there are certain regulations on the phasing-in of double-hull or equivalent design requirements for single-hull oil tankers, in parallel with the Annex I of MARPOL. Furthermore, the framework on waste includes the Directive 2000/59/EC regarded as of outmost importance on port reception facilities for ship-generated waste and cargo residues and its amendments. In this category, instruments on the shipment of waste and on ship recycling are included as well. The directive on the ban of TBT in antifouling paints is classified in the subject of water quality. All the above-mentioned EU framework is related and enforces IMO strategy on environmental protection from shipping. It is worth noting that, although IMO has recently addressed ballast water management issues, no relevant direct EU Law has been issued until the time being. However, Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species recognizes the IMO's BWM Convention as one of the possible management measures for invasive species of concern.

These command-and-control regulations contain emission norms, obligations regarding assessment of environmental effects, requirements for operation of the maritime industry and other, aimed to prevent environmental risks. Unfortunately, pollution incidents cannot be completely prevented. It is therefore suggested to utilize market-based instruments such as penalties,

#### **4. Conclusions**

In conclusion, several direct and indirect compulsory tools that support green shipping and port policy in the EU were collected and examined. The findings of this study revealed that the direct tools address mainly waste, oil pollution, air quality, climate change, water quality and penalties pertain to environmental pollution caused by ships. Respectively, indirect tools are associated with safety, and the human factor, as well as inspections and

#### **Acknowledgement**

This work was conducted within the framework of the project ECOPORTIL with code BMP1/2.3/2622/2017 (Environmental Protection of Areas Surrounding Ports using Innovative Learning Tools for Legislation), which was funded by Transnational European Programme INTERREG Balkan-Mediterranean 2014-2020.

#### **References**

- Christodoulou, A., Gonzalez-Aregall, M., Linde, T., Vierth, I., & Cullinane, K. (2019). Targeting the reduction of shipping emissions to air: A global review and taxonomy of policies, incentives and measures. *Maritime Business Review*, 4(1), 16-30.
- EC (2019). Mobility and Transport. Maritime, [https://ec.europa.eu/transport/modes/maritime\\_en](https://ec.europa.eu/transport/modes/maritime_en)
- Ringbom, H. (2012). 'Maritime Liability and Compensation in EU Law', in B. Soyer & A. Tetterborn (eds.): *Pollution at Sea: Law and Liability*, Informa, London, 2012, pp. 155-171
- Waiker T.R., Adebambo O., Del Aguila Feijoo M.C., Elhaimer, E., Hossain T., Edwards S.J., Morrison, C.E., Romo J., Sharma N., Taylor S., Zomorodi S. (2019), Environmental Effects of Marine Transportation (Chapter 27), in: *World Seas: an Environmental Evaluation* (2nd Ed.), Volume III: Ecological Issues and Environmental Impacts, Charles Sheppard (Ed), Academic Press, Massachusetts, pp. 505-530 <https://doi.org/10.1016/B978-0-12-805052-1.00030-9>

compensation and liability schemes that could serve as risk preventive or restorative policy means and underpin the polluter-pays-principle. In this context, there are two legislative tools on ship-source pollution and on the introduction of penalties, for pollution offences. However, a comprehensive framework on liability and compensation from maritime pollution has not been developed yet in EU and thus, the member states are still dependent on their national regimes or on key international conventions adopted by IMO (such as the CLC and Fund Conventions) (Ringbom, 2012).

Regarding the indirect instruments, an important percentage (17%) of legal tools found addresses the inspections on ships and include Directive 2009/16/EC on port State control and its amendments. Furthermore, the safety of navigation is inseparably connected to environmental protection. Indeed, on an IMO level the safety of the ships and human life is recognized as the ultimate goal that rules the ship operation. There are 21 instruments (33%) in EU law that enhance the safety of the ships and are closely connected to the prevention of accidental pollution. Regarding surveillance, there are two directives on a vessel traffic monitoring and an information system in order to strengthen the safety and efficiency of maritime traffic. The role of human factor (working conditions, education and training) on the safety of the ships and the prevention of pollution is well established on a European level. Eventually, there are 7 directives and regulations regarding seafarer's education, training and working conditions.

surveillance; they also support environmental protection measures in shipping activities. Additionally, IMO and EU policy - strategies were found to be complementary. However, in some fields, such as the ballast water management and the liability and compensation legislation, EU has not yet established its own regulatory framework, thus it is primarily following the regulations issued by IMO.