

Chapter 10

Investigation of Green Port Strategy in Sustainable Port Approach

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ABSTRACT

The concept of “green port” reflects ecological practices aimed at protecting the environment during port activities. Green port practices are a long-term strategic approach in terms of ensuring the environmental sustainability of a port. The study focuses on the environmental dimension of sustainability, which is a popular concept today. By conducting a literature search on the green port strategy, important indicators were determined, and it was aimed to analyze these indicators. As a result of the study, important indicators such as air quality, climate change energy efficiency, noise pollution, relations with the local community, water quality and ship waste, dredging operations and port development, and garbage/port wastes have been reached.

INTRODUCTION

Ports are one of the most significant stakeholders of maritime transport, which is one of the modes of transport. Considering that maritime transport is at the center of global trade, ports contribute significantly to the region and country's economies. Ports connect the world through maritime transport and contribute to economic growth by supporting global trade. Ports, which have an important place in maritime transportation, are the gates of global trade that provide services such as loading, unloading and storage (Nagle, 2013; Pettit & Beresford, 2009). Nowadays, it has become a strategic factor for ports to follow sustainable policies due to their important role in the supply chain and economy. Carrying out activities related to sustainability is one of the biggest challenges facing countries today. In particular, people's use of natural resources without thinking and the emergence of environmental problems as a result of this threatens our world deeply. According to Organisation for Economic Co-operation and

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Development (OECD) research, efficiently operated ports can contribute to economic development in their region; however, the negative effects of port activities on the environment should not be ignored (OECD, 2009). Maritime transport activities are recognized as the third largest source of air pollution after motor vehicles and industrial enterprises (Yılmaz, 2019). The increase in the amount of the goods to be transported has led to an increase in the tonnage of ships and an increase in the capacities of the ports serving the ships. As a result, more waste, more water pollution, more emissions and noise pollution have arisen. This situation has left the ports under more pressure due to their negative impact on the ecological environment. Therefore, in terms of maritime transport and ports, it is seen that environmental protection and sustainability issues are gaining importance day by day and becoming a competitive element (Sislian, Jaegler & Cariou, 2016).

Considering the future of the world, global problems such as ecosystem degradation and climate change have caused port activities to be questioned. As a result of port operations, ports have started to create various strategies in order to reduce the negative effects of regional pollution and greenhouse emissions from harbour field on the environment and people. Ports that have turned into logistics bases have focused on the concept of green ports in order to achieve environmental sustainability and to eliminate environmental pollution, especially from ship and port field operations.

The concept of sustainable development and green concept emerged as a solution to combat environmental pollution caused by the construction and operation of a port (Chiu et al., 2014). The green port approach focuses on the energy saving perspective, which is based on the continuity of operational processes without harming the environment. Green ports are also nature-friendly ports that care about human health and protect the ecosystem. The concept of green port can be achieved as a result of long-term strategies for ensuring the continuity of a port and its environmentally friendly development (Pavlic et al., 2014). In this context, the adoption of the green concept by the ports reflects the importance given by the countries to the people and the natural environment (Köseoğlu & Solmaz, 2019).

In the study, after an introduction to the subject was made, the subject was explained in the background and supported by a literature review. In the next section, the ports and the functions of the ports were explained. The concept of green port and environmental sustainability was explained and its importance today was emphasized. In the following sections, a legal framework was created by considering the international legislations related to the concept of green port. As a result of the literature research and especially the report published by European Sea Ports Organization (ESPO), the indicators and strategies regarding the green port practices in the world were revealed and solutions and suggestions were made. Finally, the conclusion was reached by including other future studies related to the study.

BACKGROUND

As in every sector, the concept of sustainability in the maritime sector has become an issue that is gaining importance every day in order to ensure the continuity of businesses. Sustainability has been defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). The concept of sustainability, which covers economic, social and environmental issues in operational and managerial processes, becomes more important in terms of providing a better quality of life by using natural resources more efficiently. In sustainable development, the economic perspective considers not only the economic benefit, but also the environmental and social benefits that the business acquires by acting responsibly (Elkington, 1994). In the literature,

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