

Summary

The dynamic development of seaports, particularly in the 20th and early 21st centuries, has led to an increase in their negative impact on the environment, especially in the context of growing cargo volumes. The main challenge has been to balance the economic development of ports with social development, while reducing pressure on the environment.

The concept of a green port is the port sector's contemporary response to these requirements. It is sometimes equated with a new model of port development, combining the implementation of sustainable technological and business practices with environmental and social responsibility. The aim of this approach is to achieve a balance between ecological effects and economic benefits.

The research topic of the dissertation focuses on the development of the green port concept on the example of ports of fundamental importance for the national economy in Poland – Gdańsk, Gdynia, Szczecin and Świnoujście. The main objective of the work was to identify and verify this concept from both a scientific and practical perspective. Previous research has focused primarily on the environmental aspect, while the dissertation broadens this perspective to include the socio-spatial dimension.

The research identified the main nuisances associated with port operations and investment activities. It was shown that the proximity of ports, through increased exposure to air pollution, noise and congestion, has a negative impact on the living conditions of residents in port districts. A survey conducted among residents of Gdańsk, Gdynia, Szczecin and Świnoujście showed that these nuisances are felt on a daily basis and that the measures taken by ports are considered ineffective. Despite the declared openness to social dialogue, the level of trust of residents in ports remains low.

The study used an in-depth literature review and GIS (Geographic Information Systems) tools. An original green port model was developed, which served as a tool for assessing the degree of implementation of this concept in Polish seaports.

The results of the study indicate high activity of ports in implementing measures consistent with the green port concept, particularly in the environmental and technological areas. At the same time, this concept has not yet been sufficiently taken into account in the strategic documents of ports, and the pro-environmental measures taken are mainly motivated by economic and image considerations and sometimes constitute a response to social pressure.

Two main groups of barriers hindering the implementation of the green port concept have been identified. The first is financial and technological in nature and includes high investment costs, outdated infrastructure and superstructure, and lack of access to modern and environmentally friendly technologies. The second group is organisational and social in nature and concerns, among other things, the focus of ports on other priorities, lack of strategic planning, a shortage of qualified staff, low awareness of the impact of port activities on the environment, a lack of consistent guidelines for implementing the green port concept (which hinders the comparability of measures), resistance among business partners to solutions that generate additional costs, and little public interest in supporting green initiatives.

Factors conducive to the implementation of the green port concept include increased financial and organisational capacity of ports and access to innovative technologies.

Ports of key importance to the national economy in Poland show varying levels of progress in implementing the green port concept. The Tri-City ports are leaders in pro-environmental activities, while the Szczecin-Świnoujście port complex, despite its lower rating, is also taking action in this area.

Research has shown that among the components of the green port concept, the socio-spatial dimension remains the most underrepresented and in need of intensified action, while the environmental and technological component dominates.

Polish ports are currently facing numerous socio-economic, technological, political, legal and environmental challenges.

The green port concept is seen as the direction for their further development.

The results of the research conducted allow us to conclude that Polish ports are on a promising path towards becoming green ports, but achieving full compliance with this concept requires the continuation and intensification of pro-environmental measures.