

NATIONAL ECONOMICS AND MANAGEMENT

Borys Burkynskyi,

Full Academician, Professor Dr. Sc (Ec),

*Institute of Market Problems and Economic-Ecological Research
of the National Academy of Sciences of Ukraine, Odesa, Ukraine*

Svitlana Ilchenko,

Professor, Dr. Sc (Econ),

*Institute of Market Problems and Economic-Ecological Research
of the National Academy of Sciences of Ukraine, Odesa, Ukraine*

ORGANIZATIONAL AND ECONOMIC CONDITIONS OF BALLAST WATER MANAGEMENT

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Abstract. *The article deal with the problems of protection of the marine environment and coastal areas from the consequences of shipping operations. Institutional precautionary measures are proposed, as well as mechanisms for ballast water management.*

Keywords: *shipping, environmental protection, ballast water management, institutional approach, ecosystem monitoring.*

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Introduction

In recent years, there has been increasing pressure on the marine environment due to progressive volumes and globalization in international trade. This situation has the effect of growth the negative impact on the quality of the marine environment by oil spills rise, emissions of chemicals and other harmful substances, air pollution and the indirect impact of these processes on water bodies, waste disposal, noise and radioactive load. The forecast assessment of the dynamics of the world economy shows a gradual increase in the volume of shipping due to the increase in the world's population and consumption.

At the present stage of economic development, transport plays a leading role, as it is an important part of industry, use, agriculture. As noted, maritime transport accounts for the vast majority of international traffic, resulting in negative consequences of its work. It is known that any of the modes of transport, including maritime, is one of the biggest polluters of the environment, but the vital needs of mankind should not be met by future generations.

In addition, the marine environment is usually an area of interest for different countries and stakeholders, being a cross-border area where not only the interests and needs of different countries should be taken into account, but also a single legal basis for economic, environmental and recreational activities within maritime borders.

Enhanced use of the seas requires new modern management initiatives with the development of tools to ensure the ecological sustainability of marine ecosystems by calculating the threats and risks of their introduction to the marine environment.

The peculiarity of protecting the marine environment from shipping is that ships do not always operate within the flag state, and the farther the ship moves away from it, the less the state relies on traditional sovereignty within its jurisdiction. Involvement of many stakeholders in the process of sea transport, lack of full autonomy of the flag state to regulate the ship outside its jurisdiction requires the development of methodological approaches and practical measures to design ways and methods of developing institutional and organizational impact on ships based on international requirements and standards.

Under the ballast water management mechanisms, the International Maritime Organization has proposed various physical, chemical and biological measures to treat ballast water before dumping, but none of these measures has yet been shown to be cost-effective or viable. For example, heat treatment and filtration, even if they are efficient, consume a lot of energy and contribute to air pollution. Thus, the lack of fully effective alternative measures was recognized and it was found that mid-ocean ballast water exchange is the best available solution, despite the concomitant shortcomings.

The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWMC) [1], has been launched, divided into main articles and an Annex containing technical standards for the control and management of ballast water and sediments. In general, BWMC is based on a two-tier approach. The first level of standards subject all vessels - new and existing - to the basic requirements for ballast water management at any time worldwide. This universally applicable first tier is complemented by tier two rules, which allow States parties to designate special ballast discharge control zones, within which additional measures

may be introduced. At the same time, coastal states reserve the right to take more stringent measures if they comply with international law.

Based on the date of construction of the vessel and the volume of its ballast water, the first level standards [2] provide for a certain end date after which the vessel must comply with the ballast water efficiency standard specified in Regulation D-2. Alternative ballast water management methods may be adopted if they provide at least the same level of protection for the environment, human health, property or resources and are in principle approved by the MEPC.

All vessels must have a ballast water management plan approved by the flag State administration. Similar to the AFS-Convention, enforcement procedures will comply with the requirements of MARPOL 73/78, which means that flag states remain the main executors, while coastal and port states have law enforcement powers only for violations occurring within their jurisdiction. A mechanism for inspection and certification of [3] vessels that meet the requirements should be introduced, and an international ballast water management certificate should be issued. State port control officers may check the ship's certificate, inspect the ballast water register, take ballast water samples and, if necessary, carry out detailed inspections and take measures to prevent discharges [4]. States Parties are required to provide sludge collection equipment at ports or terminals where ballast tanks are cleaned or repaired [5].

The possible effects of marine alien forms are very diverse and can be grouped as follows [6]:

- environmental impacts, including loss of natural biodiversity due to interference or competition with native species;
- reducing the availability of habitats for local species;
- increase in parasites and diseases, as well as hybridization, which causes genetic mutations;
- environmental impacts, including changes in nutrient cycles and declining water quality, which in turn may have a negative impact on, for example, shipping, fishing and drinking water availability;

- impact on human health and well-being, including reduced opportunities for recreation, overgrown aquifers and reduced recreational areas, as well as the growth of parasites and pathogens;
- cultural impact resulting from the extinction of populations of native species used for subsistence;
- reduction or degradation of culturally important habitats.

That is, today the solution to the problems of fouling, transfer of alien species and other environmental problems are not only damage to the environment that has a direct impact on human interests (e.g., oil pollution), but also damage that is associated with less significant biological effects (for example, the movement of organisms or the emergence of mutated species).

To assess the risks of the negative impact of the discharge of non-Black Sea ballast waters into the Black Sea, it is based on the conclusions that the coastal waters of the Black Sea are susceptible to acclimatization of alien species, including pathogenic ones.

Instrumental control of ballast density before the beginning of cargo operations is carried out within the framework of the Manual for sampling of ballast water MEPC 58/23. The program of ecosystem monitoring of pollution factors in the port area at ballast water discharge sites should be implemented on the basis of the MEPC Guideline 162 (56) and include:

- assessment of the risk of environmental compatibility, based on the comparison of the conditions of the ballast water location for the reception (replacement) and their discharge;
- identification of alien species with a high level of acclimatization risk;
- assessment of biogeographical risks based on the comparison of species diversity of the donor area (source of pathogenesis) and the recipient according to shipping data.

Today, there are a number of countries that have defined their national requirements for ballast water management in territorial waters to support their ecosystems depending on the legal, organizational conditions, national geographical and biological aspects of ecosystems.

Measures to eliminate the problems of environmental damage, leveling its consequences are quite expensive, so a reasonable, modern and timely strategy to prevent such problems is certainly useful. Moreover, the need to develop a national strategy is justified by a number of factors:

- the problem of the spread of invasive species due to their transfer and emissions of ballast water from ships is quite serious;
- international conventions and other agreements outline only framework conditions, requirements and standards, which are quite general and often do not take into account national characteristics and needs;
- issues of ballast water management, which should be regulated and unified by law for a certain area with meticulous establishment of procedures for resolving routine and emergency situations, are practically not specified in the national legal field, which defines only the framework conditions for the maritime sector;
- requires the establishment of certain statutory organizational rights and responsibilities related to the management of ballast water and the prevention of the introduction of native species into the territorial waters of the country.

The algorithm for developing the National Strategy for Ballast Water Management, the tasks and responsibilities of its developers are crucial, as they are the basis for the introduction of mechanisms for optimal management of processes to create safe conditions for the technical sphere, environment and population.

References

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