

**State Organization «Institute of Market and Economic&Ecological Researches  
of the National Academy of Sciences of Ukraine»**

**Summary of scientific novelty for the research**

**3.1.8.73/Б «Information and Analytical Support for the Preservation and  
Protection of the Marine Environment's Natural Resource Potential from Ship  
Pollution»**

*(Registration No.0120U103050, performance period: 15.06.2020 –31.12.2021)*

The following scientific results have been obtained:

***Originally developed:***

- algorithmic support for managing information flows, based on a targeted methodological approach and accompanied by a newly created set of recommendations for applying information-analytical tools of the project approach to the creation of decision support systems.
- scientific and applied justification for regulatory and coordination approaches based on economic feasibility, aimed at the balanced development of marine ecosystems and ensuring the environmental safety of shipping.
- decomposition of the transport fleet's potential by identifying preventive measures according to types and sources of pollution. This systematization allows specifying and detailing the list of measures to enhance the activation of relevant capabilities and to strengthen the focus of management decisions.
- methodological principles for the systematization, differentiation, and generalization of the essence of legal support, as well as conceptual foundations for improving the institutional basis for developing environmental protection measures aimed at preserving the marine natural resource potential.
- conceptual provisions for the formation of state organizational and institutional support for ballast water management using preventive protection methods, based on updated management tools, economic efficiency, and environmental focus.

***Improved:***

- a methodological approach to the structural and functional organization of an information-analytical system for environmental research on the natural resource potential of the marine environment, constructed based on a systematic analysis of hydro-environmental components in conjunction with technogenic impact objects.
- developed conceptual approaches and requirements for the project stage of creating a national interactive decision-making system for managing technogenic pressure on the marine environment. These include its integration, adaptability, reliance on modern information protocols, harmonized access to data managed by distributed information processing centers, and reliable and efficient tools for data analysis and representation

***Have been further developed:***

- the justification of the economic consequences of oil pollution in marine

areas, which confirmed the relationship between the effectiveness of accident response management and the timeliness of receiving operational information by the decision-making entity.

- conceptual provisions for the sequential formation of information and analytical support for protecting the marine environment from technogenic pressure caused by mobile pollution sources. These provisions include an algorithm structured into subsystems for analysis, accumulation, and decision-making, as well as the division into elements of external and internal impact.

- the decomposition of the transport fleet's potential by identifying preventive measures based on types and sources of pollution. It has been proven that this systematization allows for the specification and detailing of the list of measures to enhance the activation of relevant capabilities and strengthen the focus of management decisions.

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