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GENERAL APPROACH TO MODELING THE PROBLEM OF DECISION-MAKING IN SUSTAINABLE DEVELOPMENT MANAGEMENT PROCESSES

Summary

Sustainable development is one of today's dominant target directions of development of modern human civilization, which provides for the compatibility of the states of the economic, ecological and social subsystems of society both within the borders of a single country and in the global space as a whole. In this regard, the issue of conceptual and applied foundations of sustainable development is a current subject of scientific research and practical development for specialists and individual institutions of various directions.

Expanding and improving the tools of sustainable development research, including the formalization of a general approach to modelling the decision-making task of ensuring sustainable development, its support and management.

The conceptual basis of the structural components of the management system of sustainable development, which is formed by three subsystems, namely the management subsystem or the governing body, the external environment subsystem, the managed subsystem or the subsystem that is the object of management, is revealed. The general approach to the formalization of the decision-making task in this management system is analyzed. The characteristic features of the influence of elements of the control subsystem and the external environment on the states of the subsystem object are justified, which are related to the structure of the elements of the admissible sets of states and the specificity of the external environment, which can be passive or active in relation to the influence on the object. The concept of the balance of economic, ecological and social components in the decisions of the management subsystem and the states of the subsystem object has been concretized. Such balance is proposed to be modelled with the help of Pareto optimal dominance of the specified decisions and states, which can be established in the case of constructing their criterion evaluations.

The formalized approach to construction of a general model of the decision-making process in the sustainable development management system has obvious practical significance, which consists in the specification of real tasks related to the construction of sets of permissible states of subsystems components of the control system, and most importantly, sets of permissible decisions of the control subsystem, criteria for evaluating these decisions and the definition and selection of so-called balanced solutions in the sense of sustainable development.

Keywords: management system, modeling, approach, sustainable development, management subsystem, subsystem-object.

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