

The Ecologization of Social Governance: a Required Condition for Mankind Survival

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Abstract—The current ecological situation makes necessary human intervention in the environmental processes that have become spontaneous due to human's fault, in order to optimize above processes. Managing the optimization of social and environmental processes is in need to find out some fundamentally new concepts. The development of the optimization control theory of socio-ecological processes and its implementation in practice are based on combination of current approaches to the management of social and environmental processes: mathematical, economic, medical ecology and social governance. The core of above processes is the target of human survival. Amongst the well-known management methods for solving the considered problems, the most important is the method of decentralization. Effective management also implies its harmonious unity with regulation and control within the organization's processes. New theoretical and practical solutions to a number of fundamental problems, including a rethinking of the concept of sustainable development and social governance, are also found out.

Keywords—social and environmental processes; the survival of mankind; ecologization of public life; sustainable development; eco-development; optimization of management

I. INTRODUCTION

It has been found that among the significant elements in the structure of the physical component of the educational environment of the university there are the features of the organization of the educational space, allowing one to see and to hear what is happening in lectures and seminars, temperature requirements in the rooms, lighting, and availability of places for individual and group work.

Throughout the history of human society, people have faced social and environmental problems that have been resolved by changing the relationship between man and nature, human beings and society on the basis of experience, the level of development of science and industry and ultimately, in one way or another, a particular type of society.

At each new level of development of society, the complexity of elements, structure and functioning of natural and social systems increase, and socio-ecological processes become more complicated.

A new round of man-made development leads to the degradation of the Earth's natural systems, and endangers the survival of mankind.

The current ecological situation causes a need of a human intervention into the environmental processes that have become spontaneous, through human's fault, in order to optimize them. It is the question of choice of the effective solution from many alternatives — to influence these processes. There is a need to find out fundamentally new concepts in the current environmental situation for managing the optimization of social and environmental processes. The above situation could be characterized as an environmental crisis.

The environmental situation is the subject of special attention for all countries of the world, for social movements, for mass media and for the general public. Therefore, it is no coincidence that environmental information in developed countries is publicly available and takes one of the leading places in political and public life [1].

Human life needs an infinite supply of food, air and water. The needs of each person in air and water are relatively constant (10-20 m³ of air and from 1 to 2 litres of water per day). Whereas industrial processes, energy production and processing, industry, clean-up and waste disposal processes require ever-increasing quantities of mentioned natural resources. In addition to the depletion of the Earth's nature, the process of development of productive powers, since the beginning of use of fire, has been accompanied by man-made pollution of the biosphere.

In developed countries, environmental problems differ qualitatively from those which arise in emerging countries. In emerging countries, there is a high mortality rate caused by hunger and malnutrition, i.e. human survival on physically basic, with large natural resource endowments, unlike, for example, in Western Europe, where the history of environmental management lasts for hundreds of years, so European natural resource endowments are severely depleted [2].

In these circumstances, professionals are required to be competent in environmental protection and environmental management. The target is to assess the situation correctly and in time, to define the boundaries of self-regulating capabilities of the biosphere, to optimize economic actions. Also it is the target of choice of the tactics of the interaction between human and nature and further development of environmental strategy which should be raised to the level of management.

II. THE NECESSITY TO OPTIMIZE SOCIAL AND ENVIRONMENTAL PROCESSES

In today's environment, there is actual need to develop a management theory for the optimization of socio-ecological processes with its further implementation. It is evidenced by the environmental situation and together with the insufficient scientific study of concepts of optimal development of society and theories on the natural environment management.

There are a number of background problems in the theory of social and environmental process management: there are no models for solving of socio-environmental problems which would resolve the contradiction between production and consumption; insufficient working out of the concept of sustainable development together with a vague formulation of the strategic goal and tasks of the eco-development of society. There is no mechanism to solve social and environmental problems. The structure and operation of both objects and entities of the management of socio-ecosystems is not developed sufficiently. Forecasting suffers from subjectivism due to the absence of sufficient information and extrapolation of modern socio-ecological processes for the future. There is no single state system of social and environmental monitoring. Without this system the ecology of management cannot be successful in the increasing information flow [3].

There are numerous approaches to the theory of social and environmental management. From a mathematical model approach, "management of socially environmental optimization should fulfill the next main goal — to ensure

the safety of public health" [4]. However, in practice, there is not yet a reliable safety methodology that would enable local regulators and managers to identify the real or potential risks of hazardous wastes from motor vehicles and industrial plants [5]. This approach can be defined as a concept of a risk. This very concept, being a system approach, will quantify the real and potential risks of environmental hazards to public health in real-world communities [6]. This will enable risk assessment together with risk management as a reliable tool to determine the feasibility, priority and effectiveness of wellness, environmental and other affairs. Risk concepts are based on the analysis of information about the sources of industrial pollutions, on the development of methodical approaches to air pollution modeling and on the ranking of the areas by the level of danger and the assessment of carcinogenic risk. The economic approach of management of social processes is based on the necessity of a comprehensive analysis of environmental risk factors, with taking into account regional characteristics [7]. This approach is associated with studies of various effects of natural and man-made factors on the level of environmental risk and it has great social importance. Next, we consider options of facilities creation for the financing of environmental affairs aimed at optimizing environmental risk management. After that, the main functions and features of environmental risk insurance are analyzed. Thus, there is the mechanism of an economic risk management. Proponents of the medical ecology propose to develop a methodology for a systematic approach to assessing and managing the quality of the air basin based on available software tools and sources of primary information at the city level. In their opinion, it is necessary to determine and describe the relationship between respiratory diseases and the quality of the atmosphere for further forecasting the incidence of accidental and volley emissions of harmful substances. It is also necessary to show the ways of transfer and give quantitative characteristics of the content of chemicals in the biosphere to assess the impact of motor vehicles on the quality of habitat and health of the population of the city. Thus, the medical ecology is based on the author's analysis of these draft regulations of the maximum allowable emissions of harmful substances into the atmosphere by the city's enterprises.

Sociology of management is a trend based on monitoring, the task of which is to optimize social and environmental processes [8]. The sociology of management examines in details the types of social and environmental monitoring, its place in the system of social and environmental management, the role in the management decisions taking [9].

The methodological basis for the study of the patterns of socio-economic management is created by a social philosophy, which is targeted to study the above patterns with the deployed analysis of its goals and tools: forecasting, modeling, design, etc.

The best theoretical and practical solution to the attitude to these approaches is not the single choice of any, but to make a comprehensive use of them through the identification of the central, knot problem together with the basic environmental target of the society.

In order to define the management of social and environmental processes and to define its objectives and characteristics, it is necessary to consider the general trends in interactions between nature and society.

At the heart of all global socio-ecological problems the main is the problem of human survival and human's future. The problem of nature conservation gradually, imperceptibly turned into the problem of the survival of civilization being created by millennia. The main ecological goal of society is to solve the problem of human survival in the planetary system of the Earth, in human's home. There is no single opinion about the way how to do it. Some authors argue that humanity as a whole is not an organized system at the moment and does not have mechanisms to regulate critical aspects of its activities in general and actions towards the environment in particular. This is the main cause for alarm, the main cause of the possible crisis.

III. ENVIRONMENTALIZATION OF ECONOMY, POLITICS AND PUBLIC LIFE AND THE CONCEPT OF SUSTAINABLE DEVELOPMENT

The most specific feature of today is the broad awareness of the importance of environmental problems and the increasing environmentalization of the economy, politics and public life [10]. It is no coincidence that the main task of today is to recognize that the process of economic development must not be accompanied by the threat of deterioration in the living and health conditions of present and future generations of people. This position is reflected in the concept of sustainable development, which is a model of socio-economic development that meets the needs of the present generation without affecting the capacity of future generations to meet their needs. This is nothing more than a model of sustainable development, which can be expressed in the three main theses:

- recognition of the actual fact that the focus is on people who should have the right for a healthy and fruitful life in harmony with nature;
- environmental protection must be an integral part of development and cannot be browsed in isolation;
- the development and preservation needs of both present and future generations must be met equally.

These provisions are often accepted as indisputable, almost trivial, but it is this understanding that renders them ineffective. In order to manage the optimization of social and environmental processes, the grounds for criticizing these principles must be taken into account.

The first principle may raise doubts as supposedly mixing anthropocentrism and eco-centrism in human-nature relations. However, principles — are the requirements for people, so our responsibility to ensure harmony with the nature in the dialogue and partnership is the center of the concept of sustainable development.

Environmental protection trends and the notion of sustainability are often seen as contrary to the essence of development. But the essence of life as a sustainable

imbalance indicates that man and society need to live and act in accordance with the mechanisms of nature development.

The definition of sustainable development is heavily criticized, canonized in the decisions of the UN Conference in Rio de Janeiro in 1992: it is a development that meets the needs of the present, but does not jeopardize the ability of future generations to meet their own needs. V.I. Danilov-Danilyan argues that "it cannot be considered as constructive, as since its operational management requires the co-measurement of the urgency of the needs of present and sufficiently remote future generations. This problem is notoriously insoluble..." [11].

Indeed, it is unrealistic to ensure that the needs of present and future generations are equally met. Only the right of all generations to live can be equal. And the distant future generations should be treated from the same moral principles that are developed in relation to their contemporaries, and with the same love with which we treat our neighbors.

However, this is not so obvious and requires a rethink of the basics of our ethics and morality. And when you consider that the representatives of Russian cosmism, who pre-empted our era in many ways, spoke about responsibility to the past generations, which seems to contradict with the responsibility to future generations. But if we bear in mind that people of bygone times have seen the meaning of their lives, consciously or unconsciously, in the immortality of mankind, in the benefit of future generations — so the contradiction is removed.

For the theory and practice of managing the optimization of socio-ecological processes, it is important to explore and develop also philosophical issues of the determination of future development. And not only the present, but even the past, as S.P. Kurdyumov, V.S. Stepin and other scientists and philosophers spoke about [12].

But it is the non-triviality of the attitude towards the future in the concept of sustainable development that can be a prerequisite for non-standard, free and responsible participation in the creation of the future. And perhaps, the prerequisite for rethinking of the concepts of sustainability and optimal development from the perspective of new theory and management practices, which so far focused on the present and the near future.

At the moment, the concept of "eco-development" has been defined as an environmentally oriented socio-economic development in which the growth of human well-being should not be accompanied by deterioration in the state of the habitat and degradation of natural systems. But we have to note that the real results of the management of social and environmental development are mostly far from the criteria of optimality.

Thus, on August 31, 2002, the Environmental Doctrine of the Russian Federation was adopted by the order No. 1225 of the Government of the Russian Federation. Meanwhile, the environmental situation in our country remains extremely alarming and is accompanied by deterioration in basic public health indicators, including the health of young children, an increase in mortality and a decline in average duration life.

Suffice it to say that more than 100 major cities and regions of the country are currently characterized by an environmentally unfavorable environment. Moreover, the total population living in them is about 40%.

The level of environmental programs should reflect the level of its performers, so the priority issue remains the issue of environmentalization of social management, because the solution of environmental problems is possible only if the quality of social governance is improved, on which the effectiveness of the use of scientific and technological potential depends.

IV. TYPES AND MANAGEMENT TOOLS OF THE OPTIMIZATION OF THE SOCIAL AND ENVIRONMENTAL PROCESSES

Management of the optimization of social and environmental processes is a type of social management, the theory of which is still far from such examples of development and practical implementation as management in technical systems. Moreover, the question of the validity of the very concept of managing social processes and socio-natural systems remains relevant. At the end of the 20th century, N.N. Moiseyev formulated the paradox of social management, which called into question its fundamental feasibility, at least in those concepts, which were accepted in the theory of technical systems management. If the latter ones operate for externally set goals, the objectives of the functioning and development of social systems are the result of a process that itself requires control influences. Therefore, Moiseyev preferred to talk about direct, rather than manageable, social development [13].

Despite this, social practice produces and uses control influences on social processes, and develops theories that are not limited to the apparatus of exact and technical sciences. When we raise the question of the need to develop a theoretical solution to this paradox in order to improve the management of social and environmental processes, let us turn to the current state of affairs in that area.

There are several kinds or types of management of complex systems. For the theory of socio-ecological management, three of them — "organism", "population" and "consortium" — i.e. centralized, decentralized and mixed — are of considerable interest. The organism type of management is built on the transfer of control information from a specialized center using specific means (structures). Consortium management is carried out in systems that have a non-specialized or not strictly specialized management center, the change of which under the influence of internal or external factors for it leads to the management of population structures clustering around it and functionally dependent on it and each other. A population or decentralized type of management is the result of the interaction of equal structures as subsystems of a single system. Management is achieved in this case as a consequence of the interaction of structures due to the evolutionary and individual mixed qualities of structures without specific control centers [14].

The most important is the decentralized type of management. Decentralization, on the one hand, is a kind of

payment for the complexity of these systems, and, on the other hand, — a good way to overcome the overall effective, but extremely rigid centralized management. The fact is that the complexity of systems that are, for example, objects of social ecology and social and environmental management are so great that centralized management of them is essentially impossible because of the huge flow of information to be reprocessing and transmitting it quickly through communication channels.

In terms of impact on a managed system, management can be indirect and direct. Indirect management is generally based on an underdeveloped information part and the absence of an active control center with a sufficiently substantial functional organization of the system. Direct management is considered to be all that is covered by the activities of the control centers, directly aimed at obtaining a certain result by transferring commands from the main center. The governing system, which is the information system, can include any number of intermediate links and branches, as long as they are internal for the system. This creates a hierarchy of control centers; management is not directly from the main center, but through a series of intermediate links that bring its commands to each element and to each connection of the control object.

The concept of governance is intertwined with the concept of regulation and control. They are often identified. But sometimes they are significantly delineated: the processes of regulation relate to inorganic nature, and management processes — to living social and some technical systems. Closer to the truth is the position from which regulation and control are considered as functions of management, its means or one of the areas of management activity. Governance includes regulation in the same way that development laws cover the laws of the structure and functioning of society.

Management tools should have their own regulators and controls, act as a system correction in relation to external factors and ensure the sustainability and reliability of its operation and development.

The concept of management is most closely related to the concept of organization. The latter is usually used in two senses. According to one of them, the essence of the organization is expressed in the concepts of the system and structure, element and functioning that characterize the organization on the part of its sustainable functioning. The management acts here as a tool to keep the organization within the specified parameters due to the various flows of information (environmental, social), flowing on the contours of direct and feedback links. Through management tools, the system is able to interact appropriately with the external environment, also creating certain integrity. Managing without information is unthinkable [15]. To effectively manage any processes and systems, you need extremely diverse and high-quality information about the external environment, the object of control, the connection between the object and the subject of management. After all, many negative consequences of human activity in the socio- and

biosphere are the result of insufficiency, inaccuracy and poor quality of information.

V. CONCLUSION

Thus, to solve the environmental problem is necessary: the study of environmental patterns and their accounting in active-transformation activities; rational, economical use of natural resources; concern for the restoration and re-operation of disrupted productive ecosystems; development and assimilation of new principles and norms of moral attitude of man, society to natural objects, to nature in general. The last point is one of the most important. This human attitude is determined by the nature of the social and economic relations that dominate in society, the value-for-the-world attitudes [16].

The creation and effective use of social and environmental process optimization systems is an important condition for solving the environmental problem. This requires a theoretical solution to a number of problems, including:

- resolving the paradox of social governance;
- overcoming contradictions and differences in the interpretation of the concept of sustainable development, in particular the rethinking of the ethics of relations between present and future generations of people;
- in-depth development of the conceptual apparatus of the theory of socio-ecological processes, in particular, the category of "eco-development";
- creating a model and mechanisms to address social and environmental problems;
- developing the structure and operation of objects and entities in the management of socio-ecosystems;
- overcoming subjectivity in predicting socio-ecological processes;
- creation of a single state system of social and environmental monitoring.

If these problems are settled, the environmentalization of management could be successful.

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