

# Natural resources as a factor of socio-economic development of the Arctic territories: theoretical components of the research problem

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**Abstract.** A number of modern scientific ideas concerning natural resources as factors of socio-economic territorial development have been considered in the paper. The relevance of considering arctic direction of such research and their specificity, i.e. interdisciplinary of the problem statement, theory and methodology has been stated. It has been emphasized that the issues of the relationship between the development of natural resources and the level of socio-economic development of the Arctic territories make the environmental aspect of research particularly relevant. It has been shown that the analysis of the state of the problem should also include the objectives of modern policy and management of Russia's Arctic zone. It allowed not only to systematize and critically comprehend the existing knowledge, but to highlight some problem areas of theoretical ideas from the standpoint of practical problems of the Arctic territories management as well. The significant activity of world research of this problem; extreme variety of views; the availability of fundamental contradictions that cannot be settled on modern level of scientific thought have been established. It has been concluded that a number of contradictions are due to the fragmentation of the consideration of natural resources problem as factors for increasing the level of socio-economic development of territories. It has been noted that up-to-date requirements for the Arctic development determine scientific relevance and practical need for interdisciplinary methodology development. This methodology is based on an understanding of the rationality of scientific knowledge that can ensure the quality of management of noospheric evolution in the context of natural resources involving in social relations.

## 1. Introduction

The consideration of the relationship of natural resources involving in economic circulation with various aspects of the socio-economic territorial development is characterized by scientific significance and practical relevance. The specific character of problems consideration within the framework of this problem lies in the interdisciplinary nature of the research subject. This determines natural multiple-aspect character and ambiguity of theoretical grounds of such research.

The consideration of the relationship between natural resources development and the level of socio-economic development of the Arctic is especially relevant to the environmental component. The analysis of the state of the problem will also include some contemporary tasks of the policy and management of Russia's Arctic Zone. This will allow not only to systematize and critically



comprehend the existing knowledge, but also to emphasize problem spots in theoretical and methodological ideas from the standpoint of the Arctic territories management problems.

Thus, the aim of the paper is considering modern ideas concerning natural resources as factors of increasing the level of socio-economic territorial development, placing the emphasis on Arctic specifics. The denoted viewpoint of the research problem addressing corresponds with the global dominant paradigms for the Arctic development, but at the same time it allows us to develop some new research guidelines. In particular, the fundamentally new approach adopted in Russian practice concerning Russia's Arctic managing as a single macro-object through support zones system predetermines basically new and management tasks and conditions, requiring a substantial renewal of scientific support. The lack of foreign analogues to control such a complex and large territorial object through the system of support zones, the lack of Russian management system development predetermine the possibility of significant renovation of theoretical and methodological ideas about Russian Arctic development within the framework of the new research guideline - Arctic studies.

In order to substantiate and demonstrate the methodological key for a new scientific basis building, we propose to consider the views existing in the world from the standpoint of theoretical ideas of economic and social geography in the context of socio-economic development of Arctic resources. At the same time, the necessary interdisciplinary approach will require attracting multi-disciplinary achievement in such fields as geoecology, ecology, nature management, regional economics, theory of state regulation of the economy and management of socio-economic processes.

## 2. Scientific discussion

The interdisciplinary approach to the problem and its multidimensional nature require a certain system in reviewing the current research status. We propose to consider the current problem status as a consistent process of existing ideas generalization and involve in the research process resources as factors for increasing the level of socio-economic development of the Russian Arctic territory.

### *2.1. The first step is to consider the problems and possibilities of interdisciplinary theory.*

The consideration of existing ideas determines the priority of the postulate formulated by V.N. Vernadsky concerning the transformation of a man into main geomorphological force of the planet [1]. It was at the beginning of the last century. At present, the idea of the necessity to ensure the survival of mankind has been conceptually adopted at the expense of selection and development of the formation of the sphere of the mind i.e. the noosphere as a main direction for further human development. At the same time, a clear trend is determined by foreign [2, 3] and national research based on the foreign concept of sustainable development [4, 5, 6]. The full-scale realization of the noosphere ideas as a way of life of the population of the planet Earth and certain territories, such as the Arctic in particular, is limited by a number of contradictions, in accordance with various reasons and principles, which are repeatedly revealed in a series of research and even indicated in academic books [7, 8, 9]. These contradictions determine the necessity of identifying the achievements of scientific support for noospheric evolution in Russian Arctic territories.

In contrast to developed foreign countries, which demonstrated injurious development of the Arctic natural resources until recently, Soviet and Russian Arctic natural systems were developed on the basis of planned and balanced progressing. In some papers in the domain of natural sciences, this thesis, for example, is repeatedly reasoned on the basis of perennial sediments studies in the framework of the research in the Kola Scientific Center of the Russian Academy of Sciences. They indicate a clear correlation between specifics of bottom sediments pollution and the stages of socio-economic arrangement of Russia's Arctic in the period up to the 80s in the 20th century [10, 11].

It should be noted that all stages of scientific support for Russian Arctic development are related to the Kola Science Center of the Russian Academy of Sciences which is a successor to the key element in the formation of the new living environment in the European Arctic - the Khibiny Mining Station of the USSR Academy of Sciences created in 1930. There academician A. Fersman practically put into practice the ideas of the noosphere theory, which were summarized and presented during this period

by his teacher, academician V. Vernadsky. From the moment of the Kola Scientific Center origin its main task was comprehensive research of the Western Arctic natural systems and the formation of scientific foundations of non-destructive nature management strategy, i.e. the identifying and justifying ways of "noosphere" creating in the Arctic "[12].

Naturally, the specific character of studying and developing the resources of the Russian Arctic at different stages of the Arctic "habitation" and at different stages of alternating social formations has changed. Nowadays, principles of nature management in the Arctic are recognized. They include a globally-fundamental aspect of the Arctic resources development on a development-saving platform, and a regionally applied one, which is based on the necessity to spread economic effects of mining operations on the development territory [12]. These principles in many respects include the foundations of V. Vernadsky's noospheric conception. Full compliance of these principles with modern concepts is confirmed by synchronization with the United Nations' Agenda for the 21st Century ", modern views on priorities and ways of global Arctic regions development [13, 14, 15].

It should be noted that the analysis of scientific competencies and key lines of investigation in the field of territorial development of regional and central levels determines the priority of sustainable development, including both nature protection and detailed monitoring of its condition [13, 16], and a synthesis and practical use of traditional knowledge of indigenous peoples in local development [17]. However, modern requirements are much deeper than the problem of nature protection, especially the vulnerable Arctic nature. Modern social development requires more, namely, a radical restructuring of lifestyle.

Therefore, it is necessary to carry out not just interdisciplinary investigations, but those ones which aim at harmonizing laws of nature and society in the context of intelligence as main driving mechanism for the development of the territories. We believe that particular fundamental topic will be the basis of future research demanding the development of an interdisciplinary methodology based on understanding of the rationality of scientific knowledge and which is capable of ensuring the quality of the noospheric evolution management in the context of the involvement of the Arctic natural resources in social interactions.

### *2.2 The second stage is consideration of the fundamental interrelations of resource development and socio-economic development.*

Theoretical representations of economic and social geography that come out environmental management problems, including natural sciences aspects, inevitably turn out an objective contradiction of human economic activity and of "saving" development priorities [18, 19, 20]. In natural science environmental research, this causes basic guidelines of fundamental and scientific research that determines regularities of industrial pollution, buffer capacity of ecological-economic systems, identification of climate change effects in the Arctic etc. [8, 10, 11, 13, 20, 21]. These researches are in line with the global concepts of the geo-economic aspect of social and economic geography, based on the thesis that a man's transformation into geological force causes the development of both the principles, and the practice of men and nature balanced coexistence [3, 4, 8, 10, 23].

The research of the Arctic's ecological and economic systems state touch on two most serious problems of the biosphere: 1) excessive and increasing anthropogenic absorption and destruction of non-renewable and renewable resources, 2) reducing the role and capabilities of the biosphere in stabilizing of geographical environment state [3, 4, 9, 10, 11, 13]. The second problem is the most important and fundamental because it affects underlying processes of the Russian Arctic geographical environment.

The importance of this problem is also taken into account in management practice. In particular, the realization of an operating plan concerning the preparation of regulatory acts to ensure the implementation of the protocol concerning strategic environmental assessment to the Convention on Environmental Impact Assessment in a transboundary context at the national level (approved by the Ministry of Environment 28.04.2014) is being actively promoted. The ensuring of environmental

safety in the Russian Arctic in a coordinated fashion with large realizable infrastructure projects (carried out within the framework of the support development zones at present) is being considered in the development of the Environmental Safety Strategy.

The relevance and significance of scientific support for this interrelation is confirmed in the Message of the President of Russia to the Federal Assembly 2018.03.01: “A number of large-scale industrial projects in the Arctic have already been started up. They meet the most stringent environmental standards. We are strengthening scientific, transport, navigation, military infrastructures, which will reliably ensure Russia's interests in this strategically important region.” Of particular importance here is the fundamental complex cartographic work concerning the Russian Arctic - the Atlas of the Arctic (official state issue developed in accordance with the Order of the President of the Russian Federation No. Pr-1530 of 06.29.2014).

Let us examine some fundamental developments related directly to the relationship of resource development and socio-economic one. At first glance, there are quite a lot of papers determining such kinds of interrelationships. The subject of the dependence of a country and regions' growth rate on the level of natural resources reserves is widely covered. In the majority of classical works, the inverse relationship between the level of a country's supply (and large territories) of natural resources and its economic growth is proved [24, 25]. Moreover, in a number of papers the fundamental impossibility of territories rich in natural resources to ensure high-quality economic growth is argued [26].

The counterbalance to this position is the experience of Norway and a number of Russia's peripheral territories as well. It determines that effective territorial policy and management, capable of directing diversified investment flows towards mining, adjacent and independent production, can ensure high-quality economic growth and high quality of life for the population [27, 28].

The relationship between business, biodiversity, environmental management, social development is actively discussed in world research [27, 29, 30, 31]. Studies clearly determine that the creation of conditions for the involvement of recreational resources in the economic turnover of the basic support development zones of the Russian Arctic is a significant scientific problem for improving the quality of life of the population and one of the conditions for reducing poverty [13, 16, 31, 34]. There is a generally recognized relationship between territorial business, rational environmental management, poverty level, but this relationship is extremely diverse and it varies both in countries, and in regions [9, 13, 14, 33]. In this regard, the working out of the relationship of the natural resources development, ecology, labor potential of the Arctic, the problem of poverty, etc. is of fundamental nature and great scientific and practical importance.

*2.3. The third stage is the consideration of existing ideas about the management of the resource development processes in the Russian Arctic, which ensure an increase in the level and quality of life and quality of economic growth.*

We should note the historical importance of renewable and non-renewable resources of the Arctic in ensuring Russia's socio-economic development. Thus, the consideration of the basic characteristics of economic geography and the character of the northern and Arctic Russia's territories development from the 17th century shows the most important economic role of these territories (both fur production as a source of precious metals and marine resource play a significant role for the country) [34, 35, 36]. It is necessary to note that the first researches concerning Murman, conducted by M. Lomonosov, applied to the description of environmental management specifics [37]. At the same time, numerous historical illustrations determine a rather high socio-economic standard of living for the population of the Russian Arctic which is economically related to the development of resources and their supply to the “mainland” [38].

The active development of the Arctic since the 17th century has been directly related to the extraction and export of resources that determined Russia's specialization in global commodity markets, characteristic of each respective era [39]. This specific historical experience and economic centuries-old specialization of the northern territories, based on nature management prepared the

successful Soviet and Russian management experience in the development of Russia's northern and Arctic territories, strengthened by a scientific approach to balanced development ensuring.

All existing groundwork in the scope of management of social and economic development of the Arctic comes to a fundamental problem. On the one hand, these are social processes that determine "northern rise in the cost" effect and therefore, limit economic and social activity. On the other hand these are management objectives aimed at ensuring the development of the Arctic economy [29, 40]. Despite the huge number of domestic and foreign papers devoted to management in the Arctic, the management of the Russian Arctic, taking into account the new approach to the development of the Arctic space by means of support zones, is poorly understood from the point of view of basic science. This is due to the fact that the Russian Arctic is a new object of both policy and management, and therefore research.

The search for quantitative patterns of the interaction of the main factors of production in the Russian Arctic regions has not provide any reliable tools for substantiating the interrelation of investment projects in the formed support areas yet [14, 41]. Therefore, one should focus on the general conceptual regulations that have been developed by scientists from the Arctic and subarctic countries (Denmark, USA, Russia, Canada, Norway, Iceland, Sweden, Finland) [2, 4, 9, 27, 29, 31, 40]. Firstly, it is the necessity of preserving the quantitative and qualitative demographic potential of the Arctic Zone. Secondly, the protectionism in the economy. Thirdly, the priorities of "non-destructive" socio-economic development.

We should note that all these priorities are reflected in the policy being formulated in relation to the Russian Arctic. Thus, such basic strategic document as the state program "Socio-economic development of the Arctic Zone of the Russian Federation" has as its object increasing the level of socio-economic development of the Russian Arctic. However, the problem of management is the lack of theoretical and methodological ideas, confirmed by quantitative patterns, concerning mechanisms of ensuring the increase in the level of socio-economic development of the Russian Arctic. The absence of such mechanisms is a factor threatening to Russia's security.

### 3. Conclusion

In conclusion, we should note that the survey of modern ideas concerning natural resources as factors for increasing the level of socio-economic development of the territory, emphasizing Arctic specifics, pointed out their diversity, multidimensionality, ambiguity and inconsistency as well. A number of contradictions are due to the fragmentation of the consideration of natural resources problem as factors for increasing the level of socio-economic development of the territories. At the same time, the development of an interdisciplinary methodology is needed, based on an understanding of the rationality of scientific knowledge, capable of ensuring the quality of management of the noospheric evolution in the context of natural resources involvement in social relations. The formation of such a methodology requires the elimination of the indicated fragmentation, which determines the scientific relevance and practical need for a joint consideration of all three segments of the problem field of research by scientists from different branches of scientific knowledge.

### Acknowledgement

The study the results obtained in the performance of the state task of Federal Research Centre "Kola Science Centre of the Russian Academy of Sciences".

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