

КОНЦЕПЦИЯ УПРАВЛЕНИЯ СОЦИО-ЭКОЛОГО-ЭКОНОМИЧЕСКОЙ СИСТЕМОЙ АРКТИЧЕСКОЙ ЗОНЫ НА ОСНОВЕ СТЕЙКХОЛДЕРСКОГО ПОДХОДА

С. М. Сахарова¹, Т. А. Головина¹, И. Л. Авдеева¹, Л. В. Парахина¹, А. В. Полянин¹

¹ Среднерусский институт управления — филиал РАНХиГС, Россия

Аннотация: актуальность исследования определяется необходимостью создания научно обоснованных подходов к управлению социо-эколого-экономической системой Арктической зоны на основе учета и оценки интереса всех заинтересованных сторон. Государственное управление развитием данного региона на основе стейкхолдерского подхода будет способствовать устойчивому развитию данной территории. Более того, существенно повышается продолжительность и качество взаимосвязей всех заинтересованных сторон, что способствует усилению кооперационного взаимодействия на территории в решении социальных, экономических и экологических проблем. Целью исследования является изучение концепции стейкхолдерского подхода к государственному управлению развитием территории и обосновании методов градации и управления различными группами заинтересованных сторон. Задачами проводимого исследования выступают: систематизация теоретических подходов к изучению концепции управления заинтересованными сторонами; уточнение содержания стейкхолдерского подхода в системе государственного управления; обоснование методики картирования стейкхолдеров для выбора оптимальной модели стратегического взаимодействия с ними. Для анализа материала по заявленной проблематике авторы использовали такие методические приемы и инструменты как: методы структурного и системного анализа, ретроспективная оценка и текстмайнинг. Основными результатами исследования являются уточнение концепции стейкхолдерского подхода к управлению социо-эколого-экономической системой Арктической зоны; обоснование целесообразности использования метода картирования для дифференциации и управления стейкхолдерами в целях повышения эффективности принятия стратегических управленческих решений, направленных на гармоничное взаимодействие человека и природы. Научная значимость заключается в расширении теоретических представлений о значимости стейкхолдерского подхода в управлении социо-эколого-экономическими системами. Практическая значимость заключается в формировании методических основ понимания градации заинтересованных сторон и их вовлечения в процессы интеграции экологической составляющей в систему социально-экономических отношений на уровне Арктической зоны.

Ключевые слова: социо-эколого-экономическая система, устойчивое развитие, Арктическая зона, государственное управление, стейкхолдерский подход, метод картирования, стратегические управленческие решения.

Благодарности: исследование проведено при финансовой поддержке РФФИ проект № 20-310-90038.

Для цитирования: Сахарова С. М., Головина Т. А., Авдеева И. Л., Парахина Л. В., Полянин А. В. Концепция управления социо-эколого-экономической системой Арктической зоны на основе стейкхолдерского подхода // Горный информационно-аналитический бюллетень. — 2022. — № 10-2. — С. 49–61. DOI: 10.25018/0236_1493_2022_102_0_49.

The concept of the socio-environmental and economic system of the Arctic zone on the basis of stakeholder approach

S. M. Sakharova¹, T. A. Golovina¹, I. L. Avdeeva¹, L. V. Parakhina¹, A. V. Polyinin¹

¹ Central Russian Institute of Management, Branch of RANEPa, Orel, Russia

Abstract: The relevance of the study is determined by the need to create science-based approaches to the state management of the socio-environmental and economic system of the Arctic zone based on the consideration and assessment of the interests of all stakeholders. The state management of the development of the region employing the stakeholder approach will contribute to the sustainable development of the area. Moreover, the duration and quality of communication of all stakeholders increases significantly, which, in its turn, contributes to the cooperative interaction to solve social, economic and environmental problems in the area. The main results of the study are the clarification of the concept of the stakeholder approach in the management of the social, environmental and economic system of the Arctic zone; clarification of the feasibility of applying the method of mapping for differentiation and stakeholder management to improve the efficiency of strategic governmental management decisions aimed at the harmonious interaction between man and nature. The scientific significance lies in the expansion of theoretical knowledge about the importance of the stakeholder approach in the state administration of the solution of social, economic and environmental systems. The practical significance lies in the formation of methodological grounds for understanding the gradation of stakeholders and their involvement in the processes of integration of environmental parameter in the socio-economic relations at the level of the Arctic zone.

Key words: socio-environmental and economic system, sustainable development, Arctic zone, state management, stakeholder approach, method of mapping, strategic management decisions.

Acknowledgments: The reported study was funded by RFBR, project number 20–310–90038.

For citation: Sakharova S. M., Golovina T. A., Avdeeva I. L., Parakhina L. V., Polyinin A. V. The concept of the socio-environmental and economic system of the Arctic zone on the basis of stakeholder approach. *MIAB. Mining Inf. Anal. Bull.* 2022;(10-2):49–61. [In Russ]. DOI: 10.25018/0236_1493_2022_102_0_49.

1. Introduction

The object of the study is the stakeholder approach as an effective instrument of state management of the social, environmental and economic system of the Arctic zone.

The issue of multilateral development of Russia's Arctic zone has received increased attention in recent years as state authorities look for ways to combat the negative consequences of the outflow and aging of the population and its natural loss prevailing since the collapse of the USSR.

Due to the length of the Russian Arctic, Russia must diplomatically insist on the role of environmental leader and “vanguard,” which will confirm the status

of the Arctic country which, more than anyone else understands the scale of threats in the region and bears effective responsibility for its future.

The relevance of the study is due to the lack of integrity and completeness of the fundamental principles and practical mechanisms to provide the effective interaction of natural and anthropogenic components of the Arctic zone. As a result, the divergence of economic, social and environmental vectors of the development of the Arctic territory, so often observed in practice, is the reason for its spontaneity and fragility. Moreover, the rapid development of the strategic interest of foreign countries and national economy

in the resources of the Arctic requires the improvement of organizational and managerial mechanisms of interaction between territorial and sectoral authorities, the maximum involvement of all stakeholders with a special emphasis on the key groups of the local community for the sustainable development in the region. The purpose of the research is to study the essence of the stakeholder approach, its role in the effective administration of social, environmental and economic development of the territory and to substantiate the tool of differentiation of all parties involved to choose a balanced model of sustainable development of the Arctic zone.

The objectives of this study are systematization of the theoretical approaches to the study of the essence of social, environmental and economic system and its content in relation to the Arctic zone; clarification of the concept of stakeholders management in the system of administration of social, environmental and economic development of the Arctic zone on the basis of the stakeholder approach; clarification of the feasibility of the mapping method for scaling and selection of a model to interact with stakeholders.

Issues of the content of the socio-environmental-economic system and its transformation, in the light of modern challenges and threats, are considered in the works of Russian and foreign scholars. In their works, they pay much attention to the organizational and managerial mechanisms of interaction between man and nature.

American researchers define environmental quality as a set of peculiar properties and characteristics of any general or local plan in terms of their impact on people and other living beings, as well as in terms of compliance with human needs or goals of life [4, 5, 8]. According

to the interpretation of the European Environment Agency, the condition of the environment in urbanized areas can be defined by various characteristics related to the natural and artificial environment, as well as its possible impact on the physical and mental health of individuals and the results of human activity [1].

A significant contribution to the development of a new conceptual ideology of socio-environmental and economic management of territories belongs to the Los Angeles School of Urbanism [17]. Unlike the Chicago School, which embodies the concept of classical urbanism, its representatives emphasized the polycentricity of the territory. At the same time, the emphasis is placed on the processes of de-industrialization and re-industrialization. The study conducted by the authors of the article showed that the concept of sustainable development for several decades has been the dominant modern approach to the management of territorial socio-environmental and economic systems of different levels. The authors of the article agree with the views of F. Berkes, K. Folke and J. Kolding, who consider sustainable development as a process contributing to the satisfaction of human needs and improvement of their quality of life, allowing ecosystems to be preserved and renewed [2, 25]. It is necessary to note the views of D. McLaren and J. Agyeman, who consider sustainable development as a hierarchy of elements of the habitat, including nature, society and economic relations that do not threaten the environment [18]. Among the works of Russian scientists, it is worth noting the works of O. S. Pchelintsev. He interprets sustainable territorial development as the system management of socio-demographic, environmental and economic processes occurring within the boundaries of the territory [16].

In this context, the views of M. Jenks and M. Dempsey deserve attention, who interpret socio-environmental and economic development as the pursuit to improve quality of life, including positive dynamics of environmental, cultural, political, institutional, social and economic components, not accompanied by negative consequences for future generations [6].

In general, summarizing the positions of domestic and foreign scholars in the management of the socio-environmental and economic system of the territory, it should be noted that this approach to territorial development contributes to the formation of opportunities for reaching a qualitatively new level of socio-economic, demographic and technological development. At the same time, in relation to the territory of the Arctic zone, there is a great diversity of participants in the socio-environmental and economic system, as well as the diversity of their versatile and mutually beneficial interests [7]. This circumstance requires a scientific rethinking of the concept of management of the socio-environmental-economic system of the Arctic zone on principles of the stakeholder approach.

The term “stakeholder” emerged in the 1960-s in management, and the stakeholder approach was proposed by the American economist Edward Freeman in 1984 [15] and became widespread already in the 1990s. In the studies of L. Vuorinen M. Martinsuo stakeholders (in English stakeholder is a person having interest in...) are defined as “groups without whose support the organization will cease to exist” [28].

J. Hörisch., S. Schaltegger, R. E. Freeman, Å. Knaggård., D. Slunge, A. Ekbohm, M. Göthberg, U. Sahlin, M. C. Pucheta-Martínez, I. Bel-Oms, L. L. Rodrigues [10, 13, 19, 22] deal with the classification of stakeholder classification and study their role in different spheres.

Moreover, A. Vallet, B. Locatelli, H. Levrel, C. Barnaud, Y. Q. Conde developed models to identify the significance of interested organizations [27], the concept of balancing the requirements of various stakeholders with the interests of the organization are considered in the works of R. Volk , R. Müller, J. Reinhardt, F. Schultmann [28]. M. Shahzad, Y. Qu, A. U. Zafar, X. Ding , S. U. Rehman . study the coordination of interests and interactions between the key participants of the decision-making process in environmental policy [23, 26]. J. Jiao, C. Liu, Y. Xu consider the stakeholder theories as applied to a company or firm [11]. In the study [25], in order to create favorable conditions for improving the socio-ecological and economic situation, the authors propose the mandatory introduction of cyclic closed production and resource-saving technologies. At the same time, the relevant terminology also penetrates into public administration, for example, in the form of the concept of “Open government” [30]. And also in higher education, in the system of training specialist managers [26].

Currently, according to the stakeholder approach, there are six groups of stakeholders: company owners, shareholders, investors, board of directors; government agencies; employees; customers, consumers; non-profit organizations, activist groups, social movements, social media, and local communities.

Thus, there are several definitions and approaches to the concept of stakeholders. Summarizing them, the following definition can be considered the most sound: stakeholders are persons, institutions, organizations, formal and informal groups whose interests may be affected and (or) can influence the decisions and actions of the company. Theoretical, methodological and applied aspects of the problem of managing the

socio-environmental-economic system of the Arctic zone, studied by the above authors, do not cover all the stages of this process, in particular, the features of socio-environmental-economic interaction on the basis of the stakeholder approach. This determines the need to develop a concept for the management of the socio-environmental-economic system of the Arctic zone, taking into account the diversity of stakeholders and their participation in the management of sustainable development of the territory.

2. Materials and Methods

The work uses the methods of structural and system analysis to study the essence of the stakeholder approach in the management of socio-environmental-economic systems. The retrospective assessment and textual analysis of domestic and foreign experience in studying the essence of socio-environmental-economic system made it possible to define its content in relation to the Arctic zone and propose the concept of the stakeholder approach which allows to differentiate the interests of the parties and choose the most effective strategy of interaction for sustainable development of the region.

3. Results

For a long time, the priority of state management in the territory of the Arctic zone has been an economically oriented approach to addressing key issues, which does not often take into consideration the specifics of the interaction between man and nature in the territory. These circumstances reinforce, and practically directly create the negative impact of a set of factors determining unsustainable trends in the development of the socio-environmental-economic system of the Arctic zone.

The study presents the Arctic zone as a set of interdependent relationships, which find their manifestation in the

socio-environmental-economic geosystem and are formed under the influence of its constituent elements, which are directly dependant on each other.

Any territorial socio-environmental-economic system should be studied immanently in the framework of its interaction with various elements forming the environment of the system [14, 21]. In this context, the Arctic zone is formed as socio-environmental-economic system, which is an interdependent set of territory and a set of economic, environmental and social factors that directly determine the direction of its development processes.

It is necessary to point out the following main contradictions that determine the current environmental problems of the Arctic zone:

1) between the development goals of an area and the growing g scarcity of natural resources

2) between the increasing impact on the environment and limited technologies for studying natural processes

3) between the inadequate reflection in the public consciousness of the problems of human relations with the environment and the possibilities of innovative approaches to reforming the above relations.

The set of environmental problems is reflected in the strategic documents on the planning of socio-economic development, which highlight the negative factors slowing down the advancement of the Arctic zone towards achieving sustainable development goals. At that the same time, these problems, on the one hand, are mainly conditioned by the peculiarities of the modern spatial development of the Arctic zone, and on the other hand, they themselves form a set of obstacles that limit this development. In our opinion, this is due to the lack of management culture and the low priority of environmental objectives in the work if public authorities, which prevents timely identification and

prompt response to from the needs of the residents of the Arctic zone to ensure their environmental well-being. The Arctic zone is an open system, and its forming elements are characterized by the presence of internal and external interrelations reflected in the movement of energy, substance and information flows [20, 24]. To ensure the normal functioning and development of the Arctic zone, external resources of various origin are needed. At the same time, the result of the sustainable systemic functioning of the territory is the material and spiritual benefits, as well as the accompanying production waste polluting the environment, which in its turn allow to define the systemic elements that create the socio-environmental and economic system of the Arctic zone. The concept of managing the development of the socio-environmental-economic system of the Arctic zone is shown in Fig. 1.

According to the authors of this study, it is advisable to include the concept of stakeholder management in the most promising approaches, aimed at achieving the goals of sustainable development of the Arctic zone.

An important socio-environmental-economic goal of the stakeholder approach is taking into account mutual interests and implementing joint management actions that allow solving social and environmental problems of the Arctic zone and meeting the needs of the economic sphere. The mechanism of the stakeholder approach is in good agreement with the provisions of the concept of sustainable development .

The stakeholder management methodology provides for the use of various forms of citizen involvement in the management of the territory development, including their participation in the selection of priority investment projects, regional competitions and grants, public hearings, and in the work of public councils in order to use the potential of actors to achieve results [3, 9, 12, 29].

The need to take into account the interests is due in accordance with the conflict nature of development, which is characteristic of network structures of different levels, including regions. The number of actors interested in the socio-economic development of the territory,

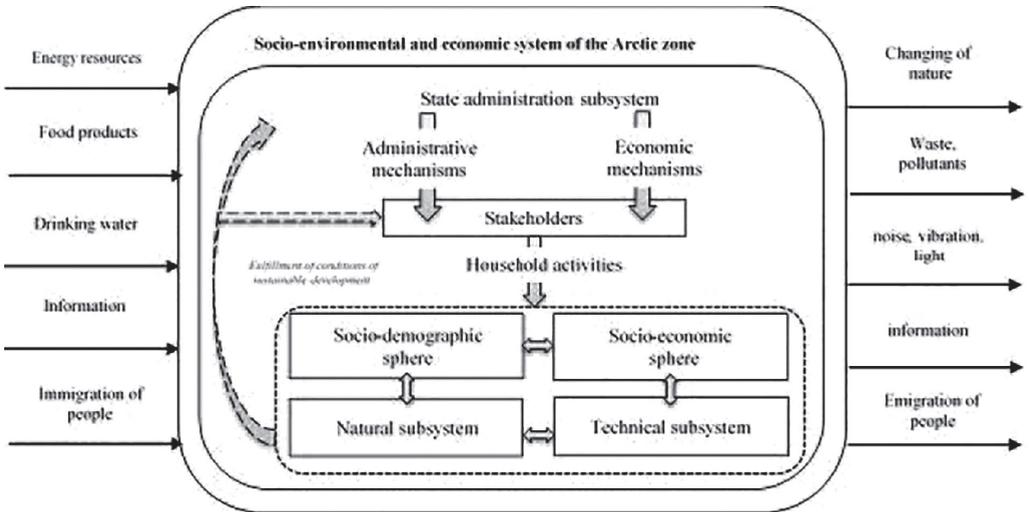


Fig. 1. The concept of managing the development of socio-environmental and economic system of the Arctic zone (supplemented by the authors)

in addition to the authorities of the federal and regional levels, includes the population and business structures that own economic zones in different regions.

The content of the stakeholder approach to managing the socio-environmental and economic system of the Arctic zone is shown in Fig. 2.

Thus, the management of the socio-environmental and economic system of the Arctic zone should be formed and

implemented in the course of interaction and cooperation among the main stakeholders including representatives of regional and federal authorities, experts, scientific researchers, representatives of civil society and business structures.

The mechanism of extended partnership of all stakeholders makes it possible to increase their social and environmental responsibility in the Arctic. Harmonizing the interests stakeholder

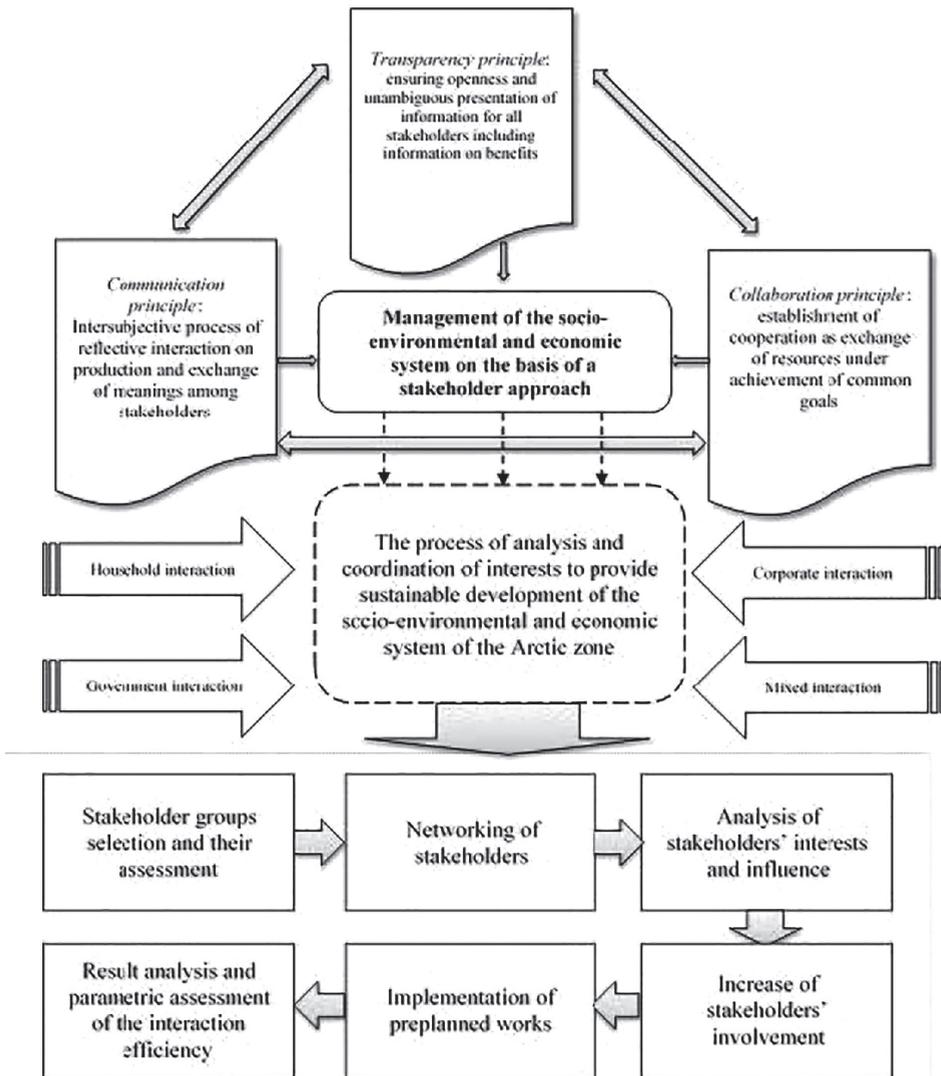


Fig. 2. The concept of the stakeholder approach to managing the the socio-environmental and economic system of the Arctic zone (supplemented by the authors)

requires the formation of a common vision of the prospects for sustainable development of the Arctic zone and mechanisms of its achievement. The Arctic combines complex structural ties of economic elements, which interact with the environment to solve internal social, environmental and economic problems, satisfying the needs of the subjects of socio-environmental-economic system. However, under the conditions of limited resources within the socio-environmental-economic system, there is inevitably a conflict of interests of its constituent stakeholders, which leads to a violation of sustainability. In this regard, an important task of management in the

socio-environmental-economic system is the analysis of conflict situations and reconciliation of the interests of stakeholders to achieve common goals. In the opinion of the authors of the study, it is reasonable to distinguish two main types of interests in the socio-environmental-economic system: the system of mutual interests of business and government, the system of mutual interests of business and society. The mechanisms of interaction of the key elements of the socio-environmental-economic system of the Arctic zone in the context of their mutual interests are shown in Fig. 3.

Coordination of interests of business structures, population and authorities

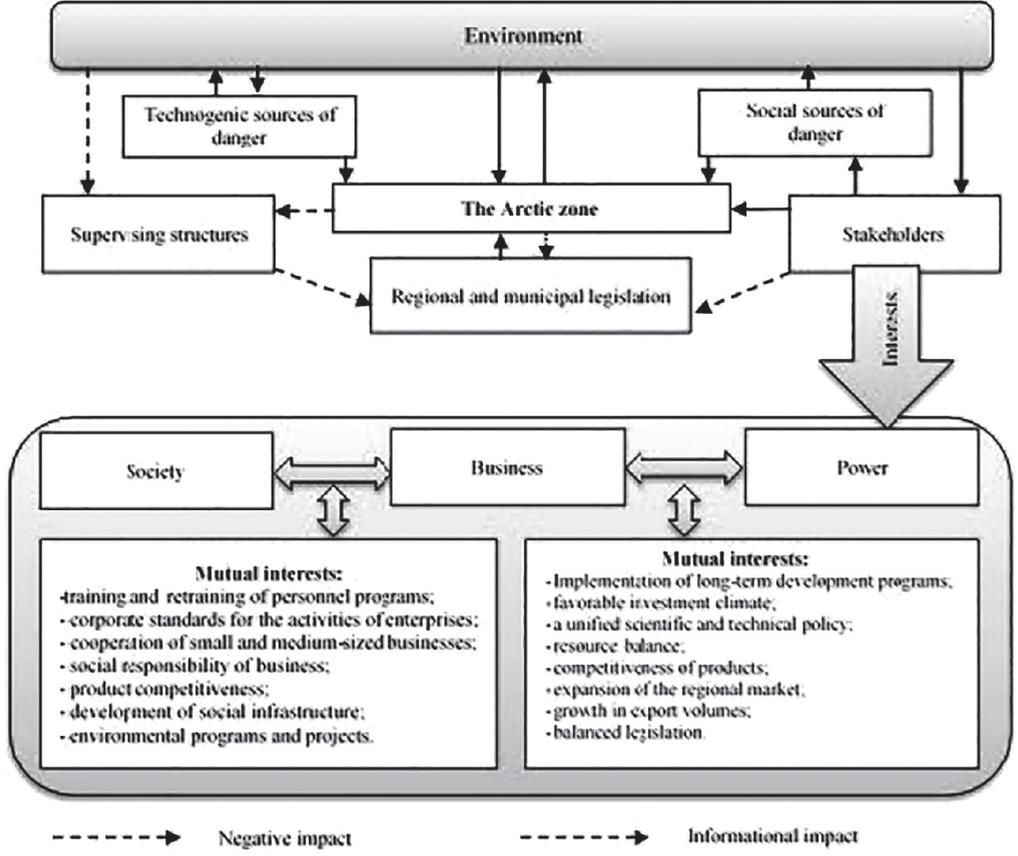


Fig. 3. Mechanisms of the key elements interaction in socio-environmental and economic system of the Arctic zone in the context of their mutual interests (supplemented by the authors)

allows to develop socio-economic space of subjects of the Federation in three directions: as an economic zone, as a living environment and as an object of state management. The interests of the population, which is the most numerous and therefore the most important group of stakeholders, are based on the ability to meet vital needs, including physiological needs, comfort and of habitat, level of employment, attractiveness of the from the position of personal self-development.

The territory of the Arctic zone is the region with diverse and diversified groups of stakeholders.

Given the intensified involvement of various stakeholders in the process of developing directions for the socio-economic development of the territory, they include: control, supervision, regulation bodies; founders, shareholders, investors, lending institutions, business partners, expert community, local communities.

Among the most frequently used methods for positioning stakeholders are the models of O. Mendelow, Mitchell-Egle-Wood, G. Savage, and the RACI table.

According to the authors of the study from the scientific and practical points of view, the mapping method of determining the stakeholders of the territories'

development is of great interest. This method is of major interest due to the fact that in the socio-environmental economic system of the Arctic zone for sustainable development, a large number of stakeholders function not only with common interests, but also with completely polar ones. The method of mapping makes it possible to identify the most significant groups for the sustainable development of the Arctic zone. The essence of this method is in the gradation of stakeholders into four groups according to the degree of influence and interest, each of which occupies one place on the four-dimensional map (Fig. 4).

According to the position of this method four groups of stakeholders can be distinguished:

- Promoters – the group of stakeholders located in the top segment of the map is the most important for strategic state administration. Promoters have a strong interest in administrative decisions of government bodies and can help make them more effective. Regarding the socio-environmental and economic system of the Arctic zone, it is advisable to include such groups as: the owners, shareholders of the company, investors, the board of directors; government agencies; employees.

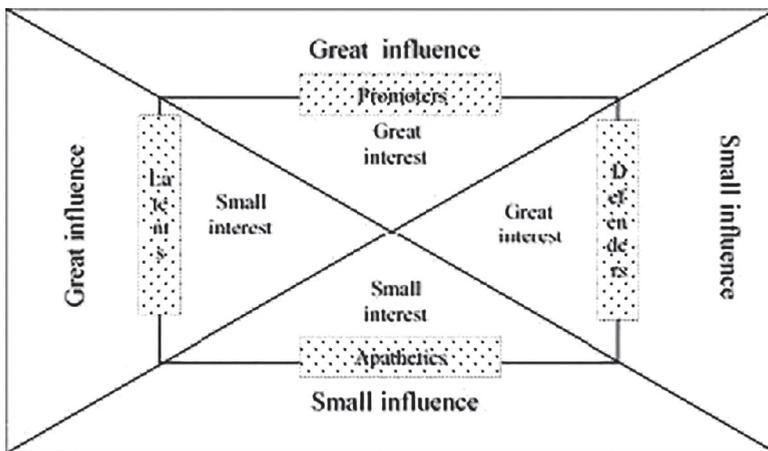


Fig. 4. Map of stakeholders (supplemented by the authors)

– Apathetics – the group of stakeholders placed in the lower segment of the map is the least significant in the system of state administration. The apathetics show little interest and potential, they may not even be aware of the existence of management decision or measure to implement it. Regarding the socio-environmental and economic system of the Arctic zone, it is advisable to include such groups as: non-profit organizations, activist groups, public movements, the media.

– Advocates are a group of stakeholders placed in the right-hand segment of the map. The advocates have a vested interest and can support state authorities, but have no real potential (resources and capabilities) to influence any managerial decision. Regarding the socio-environmental and economic system of the Arctic zone, it is advisable to include such groups as: the owners, shareholders of the company, investors, board of directors; buyers, consumers; local communities.

– Latents are a group of stakeholders placed in the left-hand segment of the map. The latents have no particular interest and do not participate in decision-making, but can strongly influence them if they become interested. When applied to the socio-environmental and economic system of the Arctic zone, it is advisable to include such groups as buyers and consumers.

In practice, to implement this approach, it is advisable to use the method of expert assessment with the involvement of qualified experts – subjects of the Arctic zone. The level of the total score will form the rating of each stakeholder, determine the degree of their interest and influence on the processes of management of the socio-environmental-economic development of the Arctic zone.

From the perspective of managing the socio-environmental-economic system

of the Arctic zone, the role of mapping is that the most important stakeholders are those who have suffered the most, those who have least implemented their interests. From this perspective, it does not matter which group the stakeholders belong to, even if they were in the apathetic group before the start of the interests alignment. They are distinguished by their appreciation of the authorities' managerial decisions that affect the conditions of their activities in the Arctic zone. If their attitude to the authorities is positive and they can really make efforts to solve strategic state tasks and can invest in solving socio-economic problems of the Arctic zone, then they should be involved, creating favorable conditions. In turn, public authorities should involve these groups in the strategic planning process, which will be considered by all parties as a significant contribution to the overall efforts. They should feel responsibility for some of the strategic decisions of state authorities. It is also very important to pay attention to the views of stakeholders and agree with them where it is in the common interest.

Given the current conditions for the development of the Arctic zone, the most significant goal of state authorities should be to bring together the importance and influence of all stakeholder groups that can contribute to the creation of a comprehensive plan for the socio-environmental and economic development of the territory. The most influential groups should ensure the involvement of other groups in the planning process, ensure the collection and analysis of sound opinions, proposals, problems, and initiate the development of a legal and regulatory framework to create a favorable environment for interaction. Passive and less influential parties should see themselves as part of socio-environmental and economic environment, see their opportunities and needs, boost

their position while developing strategic government decisions and their further implementation.

4. Conclusion

The model presented will contribute into the increase of fundamental knowledge in the sphere of improving the efficiency of management of socio-environmental and economic development of the Arctic zone, taking into consideration the characteristics of the territory, the interests of state authority bodies and stakeholders, will ensure the development of existing approaches to modeling organizational and managerial processes in the system of public administration. Scientific results of the study are aimed at achieving the most

important state goals, solving urgent issues of the socio-environmental and economic development of the territory, formation of needed infrastructure of innovation optimizing the balance of interests of state authorities and stakeholders.

The result of the study is the possibility of practical application of mechanisms of state management of socio-environmental and economic development of the Arctic zone, models of public-private partnership based on regulation of the distribution of effects between stakeholders that meet geopolitical, strategic and environmental interests in this territory, goals and objectives for the development of the North, preservation of its originality and uniqueness.

REFERENCES

1. Aarts, N., Drenthen, M. (2020). Socio-environmental interactions and sustainable development – introduction to a special. *Sustainability (Switzerland)*, 12(17), 6967. DOI:10.3390/su12176967.
2. Allen, C., Metternicht, G., Verburg, P., Inacio da C. M., Sanchez, S. M. (2020). Delivering an enabling environment and multiple benefits for land degradation neutrality: Stakeholder perceptions and progress. *Environmental Science and Policy*, 114, 09–118. DOI:10.2478/euco-2019-0035.
3. Belokon, A. I. (2018). The analysis of the significance of the stakeholders of the project. *Bulletin of DABA*, 2, 239–240.
4. Buslaev, G., Tsvetkov, P., Lavrik, A., et al. (2021). Ensuring the sustainability of arctic industrial facilities under conditions of global climate change. *Resources*, 21100808642, 10(12), 1–15. DOI: 10.3390/resources10120128.
5. Cherepovitsyn, A. E., Tsvetkov, P. S., Evseeva, O. O. (2021). Critical analysis of methodological approaches to assessing sustainability of arctic oil and gas projects. *Journal of Mining Institute*, 24113336, 249, 463–478. DOI: 10.31897/PMI.2021.3.15.
6. Das, M., Das, A., Seikh, S., Pandey, R. (2021). Nexus between indigenous ecological knowledge and ecosystem services: a socio-environmental analysis for sustainable ecosystem management. *Environmental Science and Pollution Research*. DOI: 10.1007/s11356-021-15605-8.
7. Dmitrieva, D., Cherepovitsyna, A., Stroykov, G., et al. (2022). Strategic sustainability of offshore arctic oil and gas projects: Definition, principles, and conceptual framework. *Journal of Marine Science and Engineering*, 21100830140, 10(23), 1–24. DOI: 10.3390/jmse10010023.
8. Dragicevic, A. Z., Shogren, J. F. (2021). Preservation Value in Socio-Ecological Systems. *Ecological Modelling*, 443, 09451. DOI: 10.1016/j.ecolmodel.2021.109451.
9. Grill, C. (2021). Involving stakeholders in research priority setting a scoping review. *Research Involvement and Engagement*, 7(1), 75. DOI: 10.1186/s40900-021-00318-6.
10. Hörisch, J. (2020). Integrating stakeholder theory and sustainability accounting A conceptual synthesis. *Journal of Cleaner Production*, 275, 124097. DOI:10.1016/j.jclepro.2020.124097.

11. Jiao, J. (2020). Effects of stakeholder pressure, managerial perceptions, and resource availability on sustainable operations adoption. *Business Strategy and the Environment*, 29(8), 3246–3260. DOI:10.1002/bse.2569.
12. Kienko, E. V. (2021). Legal Basis for Cooperation between the People's Republic of China and the Arctic States in the Development of Arctic Subsoil. *MIAB. Mining Inf. Anal. Bull.*, 3(1), 199–213. DOI: 10.25018/0236_1493_2021_31_0_199.
13. Knaggård, Å. (2019). Researchers' approaches to stakeholders: Interaction or transfer of knowledge. *Environmental Science and Policy*, 97, 25–35. DOI: 10.1016/j.envsci.2019.03.008.
14. Kolesnikova L. A., Kovalchuk T. V. Problems and prospects of environmental safety of mining regions. *MIAB. Mining Inf. Anal. Bull.* 2021;(2–1):275–286. [In Russ]. DOI: 10.25018/0236-1493-2021-21-0-275-286.
15. Laur, I., Danilovic, M. (2020). Enabling change within new forms of organisations: an empirical investigation of change patterns and stakeholder influence on core intermediary activities. *Journal of Organizational Change Management*, 33(6), 1041–1070. DOI: 10.1108/JOCM-01-2020-0026.
16. Lyubovny, V. Y., Pchelintsev, O. S. (2017). Other Crisis cities in Russia ways and mechanisms of socio-economic rehabilitation and development. *Regionologiya*, 3, 31.
17. Martínez-Fernández, J. (2021). An integral approach to address socio-ecological systems sustainability and their uncertainties. *Science of the Total Environment*, 762, 144457. DOI:10.1016/j.scitotenv.2020.144457.
18. McLaren, D., Agyeman, J. (2017). Sharing Cities A Case for Truly Smart and Sustainable Cities. *New Political Science*, 39(3), 1–3. DOI:10.1080/07393148.2017.1339416.
19. Pucheta-Martínez, M. C. (2020). Does stakeholder engagement encourage environmental reporting? The mediating role of firm performance. *Business Strategy and the Environment*, 29(4), 3025–3037. DOI:10.1002/bse.2416.
20. Romasheva, N., Dmitrieva, D. (2021). Energy resources exploitation in the russian arctic: Challenges and prospects for the sustainable development of the ecosystem, *Energies*, 14(24), 8300. DOI: 10.3390/en14248300.
21. Rybak, Y., Khayrutdinov, M., Kongar-Syuryun, C., Tyulyayeva, Y. (2021). Resource-saving technologies for development of mineral deposits. *Sustainable Development of Mountain Territories*, 13(3), 405–415. DOI: 10.21177/1998-4502-2021-13-3-406-415.
22. Rybak, J., Ivannikov, A., Egorova, A., Ohotnikova, K., Fernandes, I. (2017). Some remarks on experience based geotechnical education. *International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM*, 17(12), 1003–1012. DOI: 10.5593/sgem2017/12/S02.127.
23. Samylovskaya, E., Kudryavtseva, R. E., Medvedev, D., et al. (2020). Transformation of the personnel training system for oil and gas projects in the Russian Arctic, *Resources*, 21100808642, 9, 1–20. DOI: 10.3390/resources9110137.
24. Samylovskaya, E., Makhovikov, A., Lutonin, A., et al. (2022). Digital Technologies in Arctic Oil and Gas Resources Extraction: Global Trends and Russian Experience, *Resources*, 21100808642, 11. DOI: 10.3390/resources11030029.
25. Shadyzheva, S. B. (2021). Development of theoretical foundations of the concept of sustainable development and its models. *MIAB. Mining Inf. Anal. Bull.*, S15, 3–14. DOI: 10.25018/0236_1493_2021_10_15_3.
26. Shahzad, M. (2020). Translating stakeholders' pressure into environmental practices — The mediating role of knowledge management. *Journal of Cleaner Production*, 275 124163. DOI: 10.1016/j.jclepro.2020.124163.
27. Vallet, A. (2019). Linking equity, power, and stakeholders' roles in relation to ecosystem services. *Ecology and Society*, 24(2), 14. DOI: 10.5751/ES-10904-240214.

28. Volk, R. (2019). An Integrated Material Flows, Stakeholders and Policies Approach to Identify and Exploit Regional Resource Potentials. *Ecological Economics*, 161, 292–320. DOI: 10.1016/j.ecolecon.2019.03.020.

29. Vuorinen, L., Martinsuo, M. (2019). Value-oriented stakeholder influence on infrastructure projects. *International Journal of Project Management*, 37(5), 750–766. DOI: 10.1016/j.ijproman.2018.10.003.

30. Williamson, V., Eisen, N. (2016). The impact of Open Government: Assessing the evidence Center for Effective Public Management at Brookings Washington DC U. S. **ГИАБ**

ИНФОРМАЦИЯ ОБ АВТОРАХ

*Сахарова Светлана Михайловна*¹ — младший научный сотрудник,
e-mail: sakharovasveta2020@yandex.ru,
ORCID ID: 0000-0002-8300-8221;

*Головина Татьяна Александровна*¹ — докт. экон. наук, профессор, зав. кафедрой,
e-mail: golovina_t78@mail.ru,
ORCID ID: 0000-0001-9258-4100;

*Авдеева Ирина Леониовна*¹ — канд. экон. наук, доцент, доцент,
e-mail: i-avdeeva-i@yandex.ru,
ORCID ID: 0000-0002-4357-7809;

*Парахина Лариса Владимировна*¹ — канд. экон. наук, доцент, доцент,
e-mail: novila@mail.ru,
ORCID ID: 0000-0001-6051-9224;

*Полянин Андрей Витальевич*¹ — д-р экон. наук, профессор, профессор,
e-mail: polyanin.andrei@yandex.ru,
ORCID ID: 0000-0003-1158-6898;

¹ Среднерусский институт управления — филиал РАНХиГС.

Для контактов: Головина Т. А., e-mail: golovina_t78@mail.ru.

INFORMATION ABOUT THE AUTHORS

*Sakharova S. M.*¹, junior researcher,
e-mail: sakharovasveta2020@yandex.ru,
ORCID ID: 0000-0002-8300-8221;

*Golovina T. A.*¹, Dr. Sci. (Eng.), Professor, Head of Department,
e-mail: golovina_t78@mail.ru,
ORCID ID: 0000-0001-9258-4100;

*Avdeeva I. L.*¹, Cand. Sci. (Economic), Senior Lecturer,
e-mail: i-avdeeva-i@yandex.ru,
ORCID ID: 0000-0002-4357-7809;

*Parakhina L. V.*¹, Cand. Sci. (Economic), Senior Lecturer,
e-mail: novila@mail.ru,
ORCID ID: 0000-0001-6051-9224;

*Polyanin A. V.*¹, Dr. Sci. (Eng.), Professor,
e-mail: polyanin.andrei@yandex.ru,
ORCID ID: 0000-0003-1158-6898;

¹ Central Russian Institute of Management, Branch of RANEPa, 302020, Orel, Russia.

Corresponding author: *Golovina T. A.*, e-mail: golovina_t78@mail.ru.

Получена редакцией 20.03.2022; получена после рецензии 15.07.2022; принята к печати 10.09.2022.

Received by the editors 20.03.2022; received after the review 15.07.2022; accepted for printing 10.09.2022.

