RATIONALIZING THE PROCESSES OF SOCIO-ECONOMIC DEVELOPMENT IN A NORTHERN OIL AND GAS PRODUCING REGION

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ABSTRACT

This paper proposes a set of measures to rationalize socio-economic development in a northern oil producing region. According to ‘The Forecast for Long-Term Socio-Economic Development in the Russian Federation for the Period through to 2030’, the economy’s transition to the innovation-driven stage will be based on the execution of a set of activities aimed at putting in place an efficient system of management of economic development in constituent regions of the Russian Federation.

The authors prove that Russia’s constituent regions differ in their level of specialization and the degree to which their resource, economic, human, and financial potential is unlocked and harnessed, which explains the unevenness of social and economic development across those regions. The purpose of this work is to develop a set of methodological tenets and methods for the rationalization of processes of socio-economic development in a northern oil and gas producing region (through the example of Khanty-Mansi Autonomous Okrug – Yugra). The authors construe socio-economic development as quantitative and qualitative modifications of a region’s existing economic and social potential within the boundaries of a spatial complex integral system that forms a territorially localized complex.

The authors are convinced that most oil producing regions are faced today with a pressing concern of having to develop and implement a set of activities aimed at ensuring sustainable socio-economic development by way of rationalizing its key processes.

Based on a body of relevant research, the authors conclude that sustainable development in a region ought to be founded on processes of diversification.

Keywords: economy of a region, diversification, socio-economic development, sustainable development in a region, northern oil and gas producing region, rationalization, Khanty-Mansi Autonomous Okrug – Yugra.
1. INTRODUCTION

Currently, the Russian Federation is witnessing drastic changes in the socio-economic development of its regions. The nation’s economic reform has led to greater differentiation in socio-economic status among its regions, resulting in an increased social polarization between its rich and poor regions and causing further segmentation of the market space and the development of separate regions.

Existing differences in regions’ economic, social, political, natural/climatic, and environmental conditions substantiate the need to search for optimum ways to resolve those issues with a focus on enhancing socio-economic development in each constituent region of the Russian Federation.

Social priorities for socio-economic development in the Russian Federation and its regions have predetermined the advisability of boosting the role of items of social infrastructure as a material/technical base for the operation of the regional economy. In a climate of lacking resources and recessionary phenomena in most spheres of the economy, there currently appears to be an insufficient focus on coordinating the economic, social, and environmental interests of all participants in regional economic policy, which is translating into a need to harmonize activities and spending, with a focus on making the intended and effective use of funds in the budget in fulfilling social priorities for regional development – which, in turn, is hardly possible without the further development of regional infrastructure as a key catalyst of relevant processes and agent of the implementation of activities aimed at economic and social revitalization of the economy [1]. In this regard, it is the items of social infrastructure, which serve as the material/technical base required for the fulfillment of the state’s social functions in the areas of education, healthcare, and culture, that form the basis of the system of ensuring a suitable living environment for regions’ residents and can help facilitate boosts in the quality and quantity of social services provided to them.

According to ‘The Forecast for Long-Term Socio-Economic Development in the Russian Federation for the Period through to 2030’ [2], the economy’s transition to the innovation-driven stage will be based on the execution of a set of activities aimed at putting in place an efficient system of management of economic development in constituent regions of the Russian Federation. Some of these regions are in the process of adopting an appropriate strategy for the development of the regional economy, which may need to be focused on the restructuring and technical retrofitting of economic sectors and development of efficient forms of and tools for coordination of processes of sustainable development in the region.

Russia’s constituent regions differ in their level of specialization and the degree to which their resource, economic, human, and financial potential is unlocked and harnessed, which explains the unevenness of social and economic development across those regions. By their level of socio-economic development, regions may be classified into leader regions and problem regions. In addition, there are areas that are somewhat in between in this respect. These areas are northern resource-based regions specializing in the extraction of hydrocarbon resources [3].
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In general terms, oil and gas producing regions are distinguished by peculiar characteristics in terms of socio-economic development. The efficiency of administration in them is, in large part, governed by the national and international role of oil and gas, increased participation by the state in control over the development of the oil-and-gas sector, the openness of the economy, and the prevalence of vertically integrated enterprises. In this context, a relevant trend is building a sustainable energy base and developing labor-saving technology. Rational natural resource management should be regarded as the driving force and foundation of long-term sustainable economic development.

The purpose of this work is to develop a set of methodological tenets and methods for the rationalization of processes of socio-economic development in a northern oil and gas producing region (through the example of Khanty-Mansi Autonomous Okrug – Yugra).

To achieve the study’s goals, the authors undertook to resolve the following interrelated objectives:
- To complement the substantive characterization of a region as a socio-economic system;
- To determine the interrelationship between the concepts of diversification and sustainable development in an oil and gas producing region;
- To develop a set of methodological recommendations on the rationalization of processes of socio-economic development in a northern oil and gas producing region that could achieve sustainable socio-economic development.

The region’s economy is meant to be considered as a sector-specific economy with a dependence on development level of oil and gas industry which results in typical absence of other equivalent industries [4].

2. METHODS
This research work, aimed to explore issues of rationalization of processes of socio-economic development in an oil and gas producing region, is oriented toward resolving the primary objectives for national socio-economic development and harmonizes with the following:
- Basic tenets of systems analysis;
- Theoretical and methodological foundations of the shift to sustainable development;
- Strategic objectives for Russia’s regional policy;

3. Results
A relevant objective for the Russian economy, in present-day economic conditions, is the shift to sustainable development both nationally as a whole and across its constituent regions in particular. Today, a key objective is to strengthen the theoretical and methodological foundations of sustainable development in regions and search for cutting-edge mechanisms that will help drive their socio-economic development. In this regard, this study’s primary focus is on exploring and structuring the theoretical and methodological tenets of socio-economic development in a northern oil and gas producing region. At the same time, gaining an insight into issues of rationalization of processes of socio-economic development in a northern oil and gas producing region implies, above all, fine-tuning the subject matter and key characteristics of economic categories such as ‘region’, ‘socio-economic development’, and ‘sustainable development’.

Exploring the region as a socio-economic system is a quite popular subject for research. However, to date, there is no single unified way to treat the concept among both researchers
and managers [5, 6]. The lack of a single perspective on the subject is explanatory of the diversity of focus areas and theoretical/methodological concepts in today’s domestic and foreign regional research.

The first Soviet scholar to explore the category ‘region’ was N.N. Nekrasov, who researched it in the mid-20th century. The scholar views a region as a large area of the country with homogeneous natural conditions and a distinct focus on enhancing its production forces in conjunction with its natural resources, an appropriate material/technical base, and a proper social infrastructure [7].

One of the founders of regional economics, A.G. Granberg, construes a region as an area that differs from other areas by a number of attributes and is characterized by integrity and interrelatedness of its constituents [8]. Researcher V.N. Bogachev, who has inquired into the region as a special economic entity, has brought up the issue of its functions. The scholar is of the view that a key objective for a region is to regulate the volume and dynamics of its spending during the process of creating and developing regional infrastructure [9].

O.S. Pchelintsev construes the region as an element of the spatial structure of the economy and a specific type of economic systems that is formed through the formation and interaction of financial, production, and labor resources [10]. Scholars T. V. Uskova and W. Isard define the region as an open economic unit within the national economic complex that emerges as a consequence of territorial division of labor [11, 12].

Having analyzed the existing approaches to construing the category ‘region’, the authors are proposing the following definition of their own: a region is a complex integral system that forms a territorially isolated complex comprised of interrelated economic and social subsystems with a distinct structure of production, a distinct social infrastructure, and distinct characteristics of development. The authors’ construal of the term is distinct in that it incorporates into a region a set of interrelated economic and social subsystems and provides it with a production structure that is distinguished by peculiar characteristics of development.

The purpose of this study requires that the authors characterize a region based on its territorial location. In this regard, the study subject is Khanty-Mansi Autonomous Okrug – Yugra, which, pursuant to a government decree, has been equated to regions within the Extreme North [13].

Considering the distinct characteristics of the development of various resource-based territorial units, it is also necessary to explain what a ‘northern oil and gas producing region’ is. For the purposes of this paper, the authors construe it as a constituent region of the Russian Federation in which over 50% of Gross Regional Product comes from activity associated with oil and gas extraction and which within its economic and geographic boundaries, in its extreme climatic and natural conditions, and with exclusively resource and mineral potential available to it may exert, as a participant in the oil-and-gas sector, a high degree of influence on all components of the nation’s social and economic development.

Based on an analysis of the literature [8, 10, 14-19], the authors are inclined to construe socio-economic development in a region as quantitative and qualitative modifications of a region’s existing economic and social potential within the boundaries of a spatial complex integral system that forms a territorially localized complex (region).

When it comes to investigating sustainable socio-economic development, it may be worth exploring territorial units that are characterized by the integrity of economic, social, and other processes, a specific legal status, and relevant authority and government agencies being in place. Based on legislation, a possible object of social and economic development is a constituent region of the Russian Federation [20].
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For the purposes of this study, sustainable development in a northern oil and gas producing region will be construed as the continual development of a socio-economic system that territorially is classified as a region of the Extreme North and specializes in oil and gas extraction, with the focus on activities related to searching for, extracting, and utilizing the area’s resources being oriented toward improving social well-being and maintaining environmental balance, as well as boosting the value of the area’s present and future potential.

When it comes to oil and gas producing regions, the idea of a shift to sustainable development may be formulated in the following way: the dynamics of harnessing the reserves of raw hydrocarbons must be aligned with the interests of several key parties – enterprises and companies within the oil-and-gas sector, the state, and the actual producing region.

In other words, it is all about designing and implementing strategies for harnessing the reserves of raw hydrocarbons that would help achieve a compromise between the interests of the above entities.

Most oil producing regions are faced today with a pressing concern of having to develop and implement a set of activities aimed at ensuring sustainable socio-economic development by way of rationalizing its key processes.

For the purposes of this study, rationalization of processes of socio-economic development in a region is construed as enhancing the operation of its economic and social spheres with a view to ensuring overall sustainable development in the area as a constituent region of the Federation. Enhancing here implies pursuing an evolutionary path of development with a focus on implementing a series of consistent stages in transforming the region and improving the level of development via effective quantitative and qualitative transformations to the core.

The resource-based orientation of the domestic economy implies the existence of a large number of resource-based single-industry regions which are the nation’s primary strategic drivers of sustainable economic development [21, 22]. This provides an additional explanation for the interest in investigating the activity of Russia’s oil and gas producing regions. With natural reserves being limited economic resources, the primary focus shifts to the need to explore the possibility of regional diversification.

For the purposes of this study, diversification in the economy is construed as a process of comprehensive, all-round development of economic activity with a view to boosting its efficiency.

To sum up what has been said above, sustainable development in a region should be based on the implementation of processes of diversification. This statement can be backed by the following arguments:

- based on presidential decrees related to the subject, sustainable development implies cultivating a positive environment and sound natural/resource potential, i.e. fostering economic growth ought to be grounded in the use of a methodological approach that will provide an optimum combination of the various factors of production;
- most scholars focused on research into sustainable development view it as a transformation process characterized by the use of resources facilitating growth in value and boosts in the area’s present and future potential;
- based on principles of sustainable development, there is a need to maximize the “social value” of the region’s natural resources;
- many scholars view diversifying a region’s economy as a way to expand the types of economic activity;
- diversification is a condition for achieving sustainable economic development;
- the key motives for diversifying include uneven development among sectors of the economy and a focus on achieving greater economic sustainability;

- a key objective for diversification in oil and gas producing regions is to ensure sustainable economic development in them.

Thus, a key objective for the process of diversification of the regional economy is to ensure sustainable economic development in regions.

A potential foundation for the process of rationalization of processes of social and economic development in a northern oil and gas producing constituent region of the Russian Federation is the concept of sustainable development in the area. This concept is aimed at achieving a balance between the extent of impact on the environment as a result of activity associated with extraction of natural resources and industrial production and the natural absorptive capacity of the biosphere. This balance can be attained and maintained through mastering new types of activity and technology in sectors dealing with extraction, production, and administration, which can be facilitated by the diversification of the regional economy.

4. DISCUSSION

A strategy for diversification of the regional economy, as a component part of the overall strategy for sustainable socio-economic development in a region ought to be predicated on the tenets of the nation’s overall system of strategic planning.

Figure 1 illustrates an algorithm developed by the authors that provides a methodology for rationalization of processes of socio-economic development in a northern oil and gas producing region by way of diversification.

The first stage comprises establishing a methodological instrumentarium for rationalization of processes of socio-economic development in a northern oil and gas producing region. The methodological basis for putting together a diversification strategy is an aggregate of sets \( P = (X,R,C,F) \), where \( X = \{x^1_i, \ldots, x^n_i \} \) is a set of \( j \)-th objectives of different \( i \)-th hierarchical levels \( (j = 1,2, \ldots, n; i = 0,1,2, \ldots,m) \); \( R = \{r^i_{ij} \} \) is a set of graph arcs that give an idea of the interlevel interrelationship between the objectives and conditions for the achievement of upper level goals; \( C = \{c^i_j \} \) is a set of special-purpose regional authorities that are responsible for the achievement of particular goals. A special-purpose administrative body \( (C) \) is set up for the period of implementation of the strategy to ensure efficiency in achieving the goals, coordinate the interests of federal and regional administrative institutions through resolving an extensive array of priority objectives which impact in maximum measure on parameters for the area’s socio-economic sphere \( (F) \), as well as make sure there are no issues that are “hanging in the air” because of the absence of responsible officers in place to handle them.
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### Figure 1. Algorithm that provides a methodology for the rationalization of processes of socio-economic development in a northern oil and gas producing region (designed by the authors).

The second stage in the authors’ methodology establishes the fact that the region belongs to the category of oil and gas producing regions. To this end, the authors suggest using the following correlations:

\[ p_i > k \times p_a \] (1)
\[ d_i > c \times d_o \] (2)

where \( p_i \) is the number of workers at one or several \( i \)-th enterprises operating in the oil and gas producing sector;

\( p_a \) is the size of the region’s economically active population;

\( d_i \) is the volume of industrial production in one or several \( i \)-th enterprises operating in the oil and gas producing sector;

\( d_o \) is the region’s overall volume of industrial production;

\( k \) and \( s \) are standard coefficients employed to determine the region’s specialization (recommended by the federal center).

Today, outcomes of the economic activity of an oil and gas producing region is what, in large part, is shaping the economic situation in the Russian Federation. For this reason, the authors have incorporated into their methodology for rationalization of processes of socio-economic development a set of key criteria which must be there during the process of rationalization, regardless of the kind of activities undertaken. In the third stage in the methodology, these criteria are introduced for the purpose of having the region retain its status of a strategic region. Among the key criteria in the practice of managing a region’s activity are the following:

1. Establishing a methodological instrumentarium for rationalization of processes of socio-economic development in a northern oil and gas producing region
2. Establishing the fact that the region belongs to the category of oil and gas producing regions
3. Formulating a set of criteria substantiating that the region will retain its status of a strategic region at all stages of the rationalization process
4. Designing an objectives’ tree for the process of rationalization of socio-economic development processes
5. Developing a program for rationalization of processes of socio-economic development
6. Developing a set of methodological tools to assess progress across the various areas of the process of rationalization of socio-economic development processes
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- fulfilling the condition of growth in Gross Regional Product during the process of implementation of diversification;
- meeting the condition of maintaining at the existing level or increasing the rate of growth in Gross Regional Product as a result of the diversification process;
- fulfilling the condition of growth in export receipts provided by the region;
- meeting the condition of maintaining at the existing level or increasing the rate of growth in export receipts provided by the region.

The fourth stage involves the construction of an objectives’ tree for the process of rationalization of processes of socio-economic development based on specific problems that currently exist in and a set of criteria put together for a northern oil and gas producing region and additional criteria that characterize the distinctive nature of a particular constituent region within the Federation.

After identifying a set of key areas for the rationalization of processes of socio-economic development in an oil and gas producing region by way of diversification of the economy and constructing a system of objectives, in the fifth stage we proceed to develop a program for rationalization of processes of socio-economic development.

The sixth stage involves further practical development of methodological tools with a view to working out a strategy for rationalization of processes of socio-economic development in an oil and gas producing region.

Thus, a priority area for the rationalization of processes of socio-economic development in a northern oil and gas producing region is integrated diversification of the economy.

It may be possible to resolve this crucial objective through enhancing the operation of the organizational/legal mechanism that underpins provision for processes of diversification, its central elements being the following:
- normative establishment of criteria for the stability of federal regulation with regard to fiscal policy to help minimize uncertainty in terms of investment expenditure and budget revenue;
- enshrining at the statutory level the obligations associated with the modernization of production by vertically-integrated oil enterprises;
- redistribution of revenue generated by the oil-and-gas sector into other sectors within the region’s economy based on a focus on innovativeness.

5. CONCLUSION

The implementation of methodology for rationalization of processes of socio-economic development in a northern oil and gas producing region ought to be based on specific mechanisms for ensuring diversification that will help drive economic development in the region. A key factor that is affecting the start of the process of rationalization of the above mechanisms is the fact that the Okrug’s economy is defined today mainly as one that is based on raw materials, as it is directly dependent on the region’s oil and gas producing activity. Mechanisms for ensuring the successful rationalization of processes of socio-economic development in an oil and gas producing region by way of diversification of the economy should incorporate the following:
- strategic forecasting and planning of the sustainable development of the regional economy, including the region’s leading sectors and spheres of activity;
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- economic methods of regulation that will help foster favorable conditions for entrepreneurial activity, free movement of goods, equitable competition in the markets, and immutable conditions for investing;
- an organizational set up for managing the diversification plans, with a focus on establishing the functions, line-up, and mechanisms for coordinating the actions of clients and contractors;
- financial/lending controls, with a focus on the following: making rational use of funds in the budget, directing these funds primarily toward pressing social and economic issues and structural transformations in the economy, fostering maximum attraction of extrabudgetary funding, fostering leasing activity, fostering the attraction of private capital into the Okrug, subsidizing the interest rate on loans from commercial banks, and taking active part in projects by international companies;
- placing orders for the supply of products and performance of services for state needs on a competitive basis in accordance with federal and regional laws;
- environmental examinations of documentation on construction of new and modernization of existing production facilities as part of the implementation of the program.

The central instruments for economic development in a northern oil and gas producing region, including those concerned with ensuring the processes of diversification, are based on and governed by the present state and caliber of the region’s regulatory/legal framework. In the authors’ view, the regulatory/legal framework in a northern oil and gas producing region ought to incorporate a set of functional blocks that will be focused on the following:

- the operation of the institutions of state power;
- the operation of the oil and gas extraction sector of the economy;
- fiscal policy;
- tax legislation;
- sustainable development in the region.

The present state of the regulatory/legal framework may be revealed through the caliber of activity by regional socio-economic institutions. Once again, the process of rationalization of processes of socio-economic development in an oil and gas producing region can be a success if there is a focus on diversification of the economy.

The rationalization of processes of socio-economic development in an oil and gas producing region by way of diversification of the economy implies the use of a hierarchy of objectives. Based on an objectives’ tree constructed by the authors, below are some of the key areas for the activity of a northern oil and gas producing region that there are plans to implement under the direction of the authorities of Khanty-Mansi Autonomous Okrug – Yugra.
Table 1 Areas for the Rationalization of Processes of Socio-Economic Development in Khanty-Mansi Autonomous Okrug – Yugra (designed by the authors)

<table>
<thead>
<tr>
<th>Objective for rationalization</th>
<th>Activities</th>
</tr>
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<tbody>
<tr>
<td><strong>A.1.3</strong> Development of the oilfield services sector</td>
<td>In Nefteyugansk, there is currently in place an enterprise that performs crucial technological work for companies engaged in extraction of raw hydrocarbons.</td>
</tr>
<tr>
<td><strong>A.2.1</strong> Creation of production operations on increasingly advanced refining of initial raw materials</td>
<td>Fostering cooperation among various production operations and putting in place production chains for the creation of new types of products oriented toward the end consumer demand, like production of polymer resins and chemical wood-working agents used to produce wood materials and constructions.</td>
</tr>
</tbody>
</table>
| **A.3.1** Creation and development of new types of activity that are oriented toward demand | 1. Bolstering the role of the residential construction sector. The demand is formed by the Okrug’s residents.  
2. In the area of production: developing the manufacture of specialized machinery tailored to the conditions of the North and the Arctic region (e.g., snow and swamp-going vehicles and seaplanes) and standalone power supply systems.  
3. In the area of trade: implementing projects on creating specialized centers for the sale of machinery tailored to extreme conditions.  
4. In the area of tourism: developing extreme and environmental tourism.  
The new sectors are helping meet the local demand and demand in other regions of the country, create new jobs, improve stability within the market for labor, and boost social development in the Okrug as a whole. |
| **A.4.1** Development of the infrastructural sector | 1. Building the North – South transportation corridor, which involves constructing a bridge over the Ob River in Oktyabrsky District.  
| **C.1.2** Building a system of environmental education | 1. The Okrug’s primary school curricula are currently offering an environmental/regional studies course entitled ‘We are Nature’s Children’ and a separate course entitled ‘Regional Studies’.  
2. High school curricula are offering a course entitled ‘The Ecology and Geography of Khanty-Mansi Autonomous Okrug – Yugra’.  
3. Elementary general education curricula are offering a course entitled ‘Yugra – My Heritage’, focused on environmental and ethnocultural issues.  
4. Implementing a course entitled ‘The Environment and the Safety of Human Activities’ for 10-11 graders as part of an agreement with the RAE Institute for the Content and Methods of Learning. |

Priorities for socio-economic development in a northern oil and gas producing region are determined by the need to maintain high levels of oil and gas production by way of the innovation component, with a focus on a subsequent systematic shift from a single-industry regional economy to a diversified one with a well-developed innovation-driven oil and gas producing complex.

The findings from the research reported in this paper are of relevance and practical interest in terms of their possible use in designing a strategy for socio-economic development in Khanty-Mansi Autonomous Okrug – Yugra. The study is novel in that it offers a set of relevant...
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methodological recommendations on regional administration and the mechanisms underlying the implementation of strategic objectives for the rationalization of processes of socio-economic development in a northern oil and gas producing region, most of which are aimed at achieving sustainable socio-economic development.

REFERENCES


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