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*METHODOLOGICAL ASPECTS OF REGIONAL INNOVATIVE SYSTEM DEVELOPMENT**

ABSTRACT. This article describes the actual methodological issues of forming an innovative system at a regional level and developing the most adequate model for the Tyumen region with its raw materials specialization and focus on the oil and gas industries. Theoretical and methodological analysis of terminology and the classification of institutes of innovative development in the terms of the neo-institutional school of economics is made. A new category, called «the innovative ecosystem», is introduced. The unsolved scientific problems in this area are identified. This approach is aimed to combine economic, technological and ecological aspects of innovative development, respond effectively to changes in the external environment, and transform formal and informal links and the strength of the cooperative networks of all innovative agents into stable competitive advantages for our region. Based on the results of the research, main ideas for improving innovative capacity are suggested.

KEY WORDS. Innovative system, region, innovative development, modernization.

In the first decade of the 21st century, Russia secured mainly the raw material specialization in the international system of labor division, and as a result was painfully dependant on the world conjuncture's deformed economic structure with distinct prevalence of the oil and gas sector as the main drive of economic development. We have reason to suppose that the current situation was determined not by lack of financial, material, intellectual or information resources (without belittling their importance), but by lack of systemic and coordinated interaction of innovative and technological development subjects (also at a regional level).

A transition to innovative development of the Russian economy is impossible without forming and developing regional innovative systems. World experience shows that only a national innovative system which takes into account the peculiarities of regional development and is based on resulting competitive advantages can be efficient. In this connection, processes of creating and supporting regional innovative systems assume new significance as well as bringing to light key factors and models of their formation and development, particularly as applied to traditional economies with raw materials specialization and focus on the oil and gas industry in their structure.

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On the one hand, with its «resource curse» and extensive growth, the fuel-power complex manifests itself as a problematic zone of economics; on the other hand, it is only on its basis that systematic economic modernization around innovative principles is possible. This contradiction makes urgent the problem of forming the unique model of innovative development which, on the one hand, would possess essential characteristics of innovative economics and stimulate development of new and advanced technologies, and, on the other hand, would provide efficient integration of the oil and gas sector and its transformation into a highly technological and scientifically capacious sphere; would solve the problem of FPC (fuel-power complex) receptivity to new technologies and their complex systematic use, and, thirdly, would at the most take into account peculiarities of territory location of modern oil and gas extracting companies, regional peculiarities of habitat and living conditions [1].

According to the Ministry of regional development of the RF, in January 2012 the Tyumen region took first place in the ratings of the socio-economic situation of Russian regions [2]. The region has the highest index of commercial production — 122.3%. The rates of growth of commercial production are significantly higher than similar indexes in the Russian Federation and Ural federal district. A recovery trend has been noticed since 2010. The industry of the Tyumen region in the mid-term perspective will develop at a rapid pace, with the creation of full-value clusters involving production of an international level based on the processing of local raw materials with high technology as well as an extensive net of professional centers. Competitive regional export of ready-made manufactured products will increase. Positive tendencies in the real sector of the economy will also provide changes in employment qualification structure, the structure and the composition of productive forces will be modernized.

The regional program «The main tendencies of small and medium-sized businesses in the Tyumen region 2012-2014» has been developed and deployed in the Tyumen region as well as the special purpose program «Development of industry, investing and foreign economic activity of the Tyumen region in 2012-2014». In accordance with these is forming in the region a complex for servicing the oil and gas-extracting industry, including jobs and enterprises being created in oil and gas service, the scientific research sector and innovative developments. New branches (oil-refining industry, metallurgy) are appearing, existing ones are being modernized and attaining international level by the volume and quality of their production [3].

The ambitious project for creating a regional economic zone of industrial production with appropriate infrastructure, transport-logistic component, attraction of new residents — investors, etc., makes this requirement urgent, the base of this project will be the realization of the Western Siberian oil-chemical complex of the company «Sibur».

The specific character of the settlement structure should be especially mentioned, and the urbanization scheme of oil and gas-extracting regions of intensive nature use, in particular innovative development problems of regions with a high concentration of monocities. Expert examination confirms that in modern Russia, urban mono-settlements are one of the key elements of the urban net and comprise about 45% of the whole city population. Thus the problem of mono-cities occurs on a state-wide

scale. Among the regions characterized by prevalence of settlements of single-industry type we should note the Ural Federal district, containing a critical mass of monocities — about 62% of the urban structures of the region, and, in particular, Yamal National Autonomous District (YNAD), 55% of whose population live in monocities.

Thus, the region is coming to the fore in resolving the topical problem of monospecialization (development misbalance which has existed for a long time and was aggravated by crisis tendencies in 2008-2009) by means of working out urgent measures and implementation tools of stable development of monocities in its composition and their translation into an innovative base.

Russia's joining the WTO makes the problem in question topical, a risk which should first of all be projected on monocity settlements. According to the Regional Ministry of the RF there are 355 monocities in Russia with a population of about 16 mln people which require economic programs of diversification and modernization on innovative bases to prevent wide-scale crisis phenomena [4].

Finally, Tyumen's regional innovative development as a leading oil and gas extracting area of Russia urgently requires a complex triple approach to regional innovative system formation, providing emergent interaction of three components: social (stability of social and cultural regional subsystems), economic (optimization of combined regional resources) and ecological (ability to restore and preserve). Thus, innovative development is thought of as «development without destruction», satisfying the requirements of both anthropocentrism and biosphere centrism. According to this logic, the main focus is on the achievements of scientific and technological coordination, natural resource exploitation, a development balance of all constituents and regional subsystems, life quality growth of the regional population.

Nowadays in all the member-countries of the European Union, more than 150 programs of regional innovative system (RIS) development are being carried out. The RIS conception is taken as the base of innovative politics by some dynamically developing states (China, India, etc.). But neither foreign model can be used by Russian regions without additional socio-cultural correction [5].

In the modern period rather an intensive process of regional innovative system formation is going on in the Russian Federation. It involves: a) working out regional normative-legal provision of innovative activity; b) working out strategies, programs and projects of innovative development; c) creation of innovative infrastructural elements. However, in many regions the programs of innovative development don't have an integral character, the key aspects of interaction of regional innovative system basic elements remain outside the framework of the program; a common organizing base for RIS management and formation as a whole is also absent.

In this connection it is necessary to carry out conceptual and applied scientific research focused on working out models of regional innovative system which, firstly, takes into account conceptual approaches having demonstrated success and recognition in their practical application in different countries of the world and, secondly, corresponds to the peculiarities, strategic guidelines and directions of the socio-economic development of the Tyumen region.

Conceptual and applied research on the formation of such a model will allow us to specify the contents of developing regional innovation policy and prepare practical recommendations for its use.

The aim of such research is seen in establishing conceptual and methodological approaches to the formation of the regional innovative ecosystem in the Tyumen region as a region of oil and gas production and intensive nature use.

To this end, a number of scientific problems must be solved.

The first problem is connected with the special role of the Tyumen region as the basic oil and gas area of our country which it plays nowadays and in the foreseeable future will play in the social-economical development of Russia, meeting global challenges connected, on the one hand, with strengthening global competition for control over raw and energy resources that requires strengthening and further development of the oil and gas sector, and, on the other hand, with the depletion potential of the export-raw model of economic development and increasing human capital's role as the main factor of economic development. This requires development and extensive use of innovative factors of economic growth.

The RF Strategy for 2020: «A new growth model — New social policy» determines the basic principle of this conflict's resolution: to use besides previous factors of competitiveness (availability of natural resources and a large inner market) factors of competitiveness underutilized in the past, such as relatively high quality of human capital and certain scientific capital. In other words, a special model of socio-economic development which would ensure effective balance and complementarity of industrial and innovative development. For Tyumen oil and gas region, devising and implementing such a model is of particular relevance and significance.

The second scientific problem is connected with the solution of principal conceptual issues necessary for planning a regional innovative system providing effective balance and complementarity in Tyumen region's industrial and innovative development [6].

The Tyumen region and leading companies operating on its territory, having long been included in the system of the world economy, are greatly influenced by changes in oil and gas world markets. At the beginning of the 21st century, Tyumen region is one of the world's biggest oil and gas provinces at the stage of maturity included in a system of interregional, Russian and international socio- economic relations characterized by high dynamism of current changes, that is:

- wide use of modern resource-saving and ecologically clean technologies and innovations in oil and gas output, processing, and transportation supporting concomitant branches and perspectives;
- a significant quantity of highly-educated professionals in all branches able not only to use modern technologies but also adapt to current changes on the basis of innovative socially responsible enterprising activity.

Development of the Tyumen region as a special demographic, socio-economic, socio-cultural and socio-political regional entity requires:

• Firstly, a particular educational space training not only highly-qualified professionals but also people raised on the traditions of high cultural, social and ecological responsibility, humanism, respect of the law and human rights, with capacities for creative, innovative, socially responsible entrepreneurial activity.

• Secondly, a developed system of SRED (scientific research and experimental development) and innovative entrepreneurship providing sustainable competitive advantages for firms and municipal institutions in the advanced segments and competitive branches of the region.

Meeting the specified requirements means strengthening the innovative development vector for the Tyumen region through the formation of a particular institutional environment for an innovative way of life in the region, providing a continuous cycle of ideas, investments and competences between the main participants of the innovative process. This, in its turn, implies, on the one hand, a different system of economic incentives, a necessity for changes in macroeconomic parameters (decline in inflation, focus on attracting «long» money to the economy, growth in business activity and private investments, changes in the budget expenses structure), and on the other hand, renewal of social policy. New social policy should more fully take into account the interests of such society layers as are able to realize the potential of innovative development. This policy is to create comfortable conditions for realizing such potential and thus higher social standards. From an economic point of view, these people are representatives of the middle class, whose income and social aims allow them to choose models of work behavior and consumption. From a cultural point of view, they are people with high education belonging to a creative class (at least, potentially) [7].

However, in all previous experience of developing the West Siberian oil and gas province, northern monocities were created in a logic of industrial development based mostly on the vertical command structure and administrative communications of the Federal center and large oil and gas companies. Science and universities took a subordinate position. In a modified form, this practice is also used nowadays. Meanwhile, over the course of long-term evolution of innovative systems in different countries of the world, necessary conditions of creating effectively-operating innovative systems are definitely ascertained. These include: social awareness of innovative development's necessity, a consensus in priorities, high quality at all educational stages, and a high level of science financing (3-5% of GDP), the absence of administrative barriers to business and the transfer of technologies, providing the economy with finance, «friendliness» to innovation in the legal, financial and taxation systems. From the institutional point of view, to constructing an effective innovative system, an absolutely necessary requisite is establishing and supporting equal partner relationships among the three main members of innovative development: government, business and universities. Moreover, in the Itskovich «triple helix» model, universities play a leading role. It is no coincidence.

Firstly, because there is no example in the world of a national innovative system effectively operating outside of the principles of «triple helix», with universities at the center of events.

Secondly, because a new economy can't be built without the efforts of interested young people, striving for knowledge and new achievements, and these people together with their teachers are only in one place — universities. Consequently, it is the place where we should concentrate the resources necessary for the development of innovative processes.

For Russia the use and evolution of the «triple helix» idea is extremely important due to the relevance of even the first element of the theory — the leading participants of the innovative process. Traditionally, practically in all countries, including Russia, three clusters operate to generate intellectual property:

- State research centers, laboratories, public academies; in Russia it is the Academy of science with its fundamental directionality and research planning horizon extending over decades;
- Corporation research centers, in Russia in industrial applied science with good connections with production;
- Universities filled with young people.

In an open, market-oriented, economic system within a global competitive environment, it is necessary to achieve the fastest possible spread of all kinds of information; closure and weakness in interdisciplinary, interbranch and other interaction are unacceptable. Any waste of time connected with knowledge transfer from one place to others, from one age to another, definitely decreases the competitiveness and investment-attractiveness of the system. In Russia attempts are being made to reform simultaneously the three specified national intellectual clusters, which, naturally, is seen by each cluster individually as its relative absence in the priorities of state policy. The manifestly insufficient coordination of the specified intellectual forces' interaction and their involvement in the innovation system as equal partners both at federal and regional levels is striking.

There is therefore a need to address a number of conceptual issues in forming the regional innovative system as a regional innovative ecosystem, providing constantly operating relationships of cooperation, complementarity, exchange of ideas, solutions in specific areas, and projects among the main subjects of the innovative process.

The third scientific problem is connected with the use of conceptual approaches and the resolution of applied issues in the process of working out a regional innovative system model providing effective balance and complementarity between industrial and innovative development in the Tyumen region. This direction suggests making an initial assessment of the state of the innovative ecosystem's basic elements in the Tyumen region, exposure and analysis of existing connections and mechanisms of the basic subjects' interaction in the region's innovative ecosystem, evaluation of university and its role in an efficiently-operating «triple helix» model in the Tyumen region, as well as the formation of a strategic vision of the future innovative ecosystem in light of external opportunities and threats based on the identified strengths and weaknesses of the innovative ecosystem's basic elements [8].

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