Scientific and retrieval economic and geographical research in market conditions: regional experience

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Abstract. The paper summarizes the experience of collective economic contract-based research by economic geographers both in state thematic contracts, other extra-budgetary contracts of a socio-geographical and ecological nature during market transformation period, and in the outfit of documents on strategic development of cities and examinations of regionally significant objects. The paper presents a brief analysis of individual retrieval research projects and specific scientific results as exemplified by the work performed: a) on scientific substantiation of the concept and measures for the development of the East-Siberian petrochemical cluster in the Irkutsk oblast; b) on strategic development and examinations of urban municipalities, implementation of measures to eliminate the negative impact of waste accumulated as a result of the activities of Baikal Pulp and Paper Mill OAO (BPPM OAO); c) on calculation of recreational load norms for regulated and unregulated recreation in the central ecological zone of the Baikal natural territory of the Irkutsk oblast and on scientific and methodological substantiation of shaping rules for organization of tourism and recreation, ensuring compliance with the maximum permissible norms of environmental loads within the central ecological zone of the Baikal natural territory etc.

1. Introduction
Examples of using fundamental approaches of social geography in promoting the ideology of sustainable ecological and socio-economic development and improvement of life quality in applied research for the period 2006-2018 are provided. The investigation covers the Irkutsk oblast, the central ecological zone of the Baikal natural territory (CEZ BNT), and the cities of Irkutsk, Angarsk, and Baikal’sk. Customers were the government of the Irkutsk oblast, authorities of the city municipalities, and private companies that carry out both exploration and construction work on linear and pinpoint facilities, mainly of hydrocarbon raw materials.

2. Objects, data and methods
Participation in scientific research (extra-budgetary funding) provides, above all, access to primary materials, basic documents on the functioning and development prospects of large enterprises, statistical observations in the context of municipal formations of territorial communities. Fundamental geographic foundations are in demand both in institutional works (primarily, program-strategic, regulatory and legislative documents), and in development of large sectoral projects (e.g. “Power of Siberia”), as well as in strictly formal sections of the process-engineering acquisition of specific construction objects of large companies (e.g. “Russia Petroleum”), and other organizations [1-6].
research team of the Laboratory of economic and social geography of the V.B. Sochava Institute of Geography, Siberian Branch of the Russian Academy of Sciences – IG SB RAS (Laboratory of economic geography and territorial planning until 2013) only in the last decade took part in several large scale and significant retrieval research (term suggested by I.V. Koneva) for the territory of the Baikal region (Table 1). Besides, more than 20 detailed case studies of a socioeconomic and environmental nature were carried out for specific planned and constructed facilities (linear and pinpoint) mainly in the Irkutsk oblast during the exploration and production of hydrocarbon raw materials (Verkhnechonsk gas condensate oil field (VGCOF), Kovykta gas condensate field, etc.).

| Title of scientific and retrieval research and other extra-budgetary research (strategies, programs, schemes, etc.) | The role of the involved Principle Investigators and scientific researchers; year |
|---------------------------------------------------------------|-----------------------------------------------------------------------------|
| **Urban**                                                    |                                                                             |
| The concept of ecological well-being of Irkutsk population until 2010. | Scientific guidance, researchers 2006                                      |
| Municipal Target Program the environmental safety of the population of the city of Irkutsk for 2007-2010. | Scientific guidance, researchers 2007                                      |
| Vol.4 "Environmental Impact Assessment and Environmental Protection Measures" of the General Development Plan of Irkutsk until 2020 | Scientific guidance, researchers 2007                                      |
| The program of comprehensive socio-economic development of the city of Irkutsk for 2008-2020 (section "Environmental State and the Main Strategic Directions for the Improvement of the Urban Environment") | Scientific guidance, researchers 2007-2008                                  |
| Introduction of waste segregation in the city of Irkutsk (experience of socio-geographical analysis of the potential of secondary material resources) | Scientific guidance, researchers 2009                                      |
| Implementation of measures to eliminate the negative impact of waste accumulated as a result of the activities of OAO Baikal Pulp and Paper Mill (OAO BPPM), Baikal’sk | As part of the expert group from IG SB RAS, 2014                           |
| The strategy of socio-economic development of the Angarsk urban district for the period 2017-2030. | As part of the expert group from IG SB RAS, 2016                           |
| **Regional**                                                 |                                                                             |
| Method of calculating the environmental damage caused by violation of legislation in the field of environmental protection (Irkutsk oblast) | As part of the expert group from IG SB RAS, 2009                           |
| The strategy of socio-economic development of the Irkutsk oblast until 2015 (section "Resource complex and ecology") | As part of the expert group, 2009                                          |
| Scientific substantiation of the concept and development of measures for the development of the East-Siberian petrochemical cluster on the territory of the Irkutsk oblast (Section 4 "Spatial development of the East-Siberian petrochemical cluster") | Scientific guidance, researchers 2014                                      |
| Central ecological zone of the Baikal natural territory: calculation of norms of recreational load for regulated and unregulated tourism within the central ecological zone of the Baikal natural territory of the Irkutsk oblast; Scientific and methodological substantiation for the formation of Rules for the organization of tourism and recreation, ensuring compliance with the maximum permissible norms of environmental loads within the central ecological zone of the Baikal natural territory of the Republic of Buryatia. | Members of the laboratory: Principal Investigator, scientific guidance, researchers (20016-2017, 2017-2018 respectively) |
3. Results and discussion

The spatial development of the East Siberian petrochemical cluster was considered in two respects: firstly, the territories of direct impact, including the places of investment in gas and gas-chemical industry and transportation of products (Zhigalovskii, Ust’-Kutskii, Kirenskii, Katangskii, Kazachinsko-Lenskii and Ust’-Udinskii districts) and secondly, the territories of indirect influence (conditionally) connected through subcontracts, as well as social projects and education system. That is, those municipalities, where chemical and petrochemical production facilities are located, capable of accepting new gas products and forming the principal units of the petrochemical cluster of the Irkutsk oblast (Angarsk, Sayansk and Usol’e-Sibirskoe). The Sayan-Irkutsk territory of priority development was considered to be the largest promising meso-area for the formation of a gas-chemical cluster and a number of industrial sites, as well as clustering of other industries under the influence of petrochemical production development.

Analysis of existing and developed plans for the ecological and socio-economic development of the territories and areas of direct impact of a project allowed formulating a number of basic conditions, which will contribute to the goals of sustainable development of the region. Sustainable development, we repeat, is understood to be such a continuously supported development that satisfies the needs of the present, but does not jeopardize the ability of future generations to meet their own needs [7-9]. First, effective social policy is the key to the viability of the clusters in the current tough market conditions of the territorial development. The formation of sustainable production clusters implies a concentration of efforts by the state and business in the locations of the cluster actors to improve social infrastructure. Second, development of social programs and plans, solution of social problems of local population should be carried out in the partnership interaction of business, emerging structures of civil society and state institutions, with maximum consideration for the characteristics of municipalities. At the same time, according to domestic experts, it is important to adhere to a number of principles, the main ones [10] of which are as follows: 1) mandatory social assessment of planned decisions and practical actions for the formation of clusters; 2) social justice - especially in the labor sphere, which implies a higher pay for complex and demanding more training and labor-related work; 3) adaptation to local conditions, when social policy takes into account mentality and has a direct impact on the quality of life of the population.

Thus, a scientifically-based package of proposals for the creation of the East-Siberian petrochemical and chemical cluster in order to obtain the maximum effect for ecological and socio-economic development of the Irkutsk oblast: clarification of the socio-economic, scientific, technical and industrial policy of the region; formation of scientific, educational, entrepreneurial community of the region for coordinated action and others.

Showcasing the real significant contribution of geographers to the institutional environment that determines the modern process of sustainable urban development, we note a high expert level in the development in particular of the program-strategic package of documents both at the city (district) municipal and regional levels (federal outside the framework of the publication). The main factors ensuring the result are as follows: a) the basic level of geographical education, b) systematic implementation of fundamental planned work aimed at identifying features of the functioning and development of Siberian territories during the period of market transformations, as a result, “investment” of the scientific capital to specific applied works. Thus, the “Strategy of Social and Economic Development of the Angarsk Urban District for the Period 2017–2030” (2016) won the first place at the All-Russian competition of Strategies for the development of cities that are not the centers of the country's subjects (2017). Certainly, this work was qualitatively performed by specialists of the city municipal department of strategic planning, but one of the components of success is a comprehensive examination carried out by the IG SB RAS, which included repeated structural-thematic refinement. Regarding the work performed for Irkutsk "with access to the practice": a number of developed program-strategic documents and thematic works (Table 1, the customer is the Government of Irkutsk or relevant committees or departments) became the basis of the scientific manuscript “Environmental Safety of the City of Irkutsk: Geographical Aspects” [8], which turned out
to be in demand by the Irkutsk oblast’ Ministry of Education. In addition, the functional zoning approach systematically “promoted” in the developed program documents for the development of the city of Irkutsk during the implementation of urban land use policy also served as a tool for “evicting” about 20 production facilities from residential areas of the city.

Assessment of the project-at-risk “Implementation of measures to eliminate the negative impact of waste accumulated as a result of the Baikal Pulp and Paper Mill activities (OAO “BPPM”, Baikalsk)” developed by OOO “PELA” (Moscow, in fact) on the basis of the technical task of ZAO “Giprobum-Peuru” demanded to use the accumulated “geographical tools” (while defending the scientific position in the prosecutor’s office). The chosen reasonable format -protection “has worked” against the unscrupulous executor, whose project documentation was not fully developed, there is no confirmation of all the proposed results in the form of experiments, sample studies and ozonation technology, decontamination, degassing and monolithing of BPPM industrial waste. Unfortunately, to date, the choice of implementing organization to eliminate the negative impact of waste accumulated as a result of the BPPM activity is still in the decision stage and there is more policy than solutions of environmental and economic problems in the town of Baikalsk, where the unemployment rate is one of the highest in the area.

Further, temporary creative teams made investigations on the territory of the CEZ BNT which were very popular with public authorities (Table 1, 2016-2018) for the purpose of preserving the diversity of landscapes of the coast of Lake Baikal and its water resources, and for balanced ecological and socio-economic development of the population, as well as to provide modern conditions for recreation for the flow of tourists and vacationers in excess of 2.5 million, the role of which has yet to be assessed [11-14]. It should be noted that a number of scientifically-based proposals for infrastructure (approved report “Calculation of the norms of recreational load for organized and unorganized recreation in the central ecological zone of the Baikal natural territory of the Irkutsk oblast” 2017-2018) is included in the program-strategic documents of territorial development of municipal district formations of the Irkutsk oblast (Irkutskii, Slyudyanskii and Olkhonskii).

4. Conclusion
The participation of social geographers in retrieval research (applied) work contributes to formation of an optimal system of direct and reverse connections between state authorities, municipal selfgovernment, civil society, and business. In fact, when performing such work: a) scientific and methodological support is qualitatively improved, b) the issues of improving the quality of human life are considered from the standpoint of the main strategic priority, i.e. a balanced ecological, social and economic development of the territory.

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