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Economical -geographic problems of the development of the Karaganda agglomeration

This article considers the problem of the spatial organization of Central-Kazakhstan region. The results shows in the conditions of our country is brought to the forefront the task of a comprehensive and harmonious development of the Karaganda agglomeration, and elaboration of effective transformation of the socio-economic space of the region.

Key words: territorial organization, spatial development, agglomeration, city-leader, «growth zone», metallurgical complex, cluster, traditional specialization.

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Қарағанды агломерация аумағын орналастырудың экономикалық-географиялық мәселелері

Мақалада Орталық Қазақстан аймағының кеңістік ұйымдастыру мәселелері қарастырылған. Мемлекеттің жағдайында бірінші орынға кешенді және жарасымды дамуы мақсаттары, Қарағандының қалалық агломерациясы кешенді аймақтың әлеуметтік-экономикалық аясының тиімді өзгерісінің орындауы туралы нәтижелер шығарылды.

Түйін сөздер: аумақтық ұйым, кешенді дамуы, агломерация, көшбасшы қала, металлургиялық кешен, өсу аймағы, кластер, дәстүрлі арнайыландыру.

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Экономико-географические проблемы обустройства территории Карагандинской агломерации

В статье рассмотрены проблемы пространственной организации Центрально-Казахстанского региона. Делается вывод о том, что в условиях нашей страны на первый план выдвигается задача комплексного, гармоничного развития Карагандинской городской агломерации, выработка эффективного преобразования социально-экономического пространства региона.

Ключевые слова: территориальная организация, пространственное развитие, агломерация, город-лидер, «зона роста», металлургический комплекс, кластер, традиционная специализация.

Introduction

Historically, Karaganda city around formed the largest urban agglomeration of Kazakhstan, consisting of 10 cities, not counting the numerous townships. The wealth of natural resources, capable of providing intensive development of coal mining, ferrous and non-ferrous metallurgy, chemical and petrochemical industry initially determined the specific features of its development. Specific features of the emergence and development of the cities of this region could not affect the origin of their social development. The existing practice of their planning was based primarily on the production.

Karaganda agglomeration consist of Temirtau (171020 people), Karaganda (451800 people) and satellite cities of Karaganda coal basin, the largest of which are the Abay (39800 people), Saran (46257 people), Shakhtinsk (52123 people), as well as the townships and villages in size from 2,000 to 11,000 thousand people filling the space between these cities within a radius of 30km. If all of them put together, it turns out agglomeration with a population of about 800,000 thousand (60% of the population of Karaganda area). If you add up with the indicators of 1989, where the population of agglomeration was approximately 950,000 shows how have suffered

these former industrial city of population migration. Currently, Karaganda has small prospects to agglomeration growth, as the demographic resources of the surrounding area are reduced, and the majority of the population is already concentrated in the regional center together with Temirtau. Developing the capital may be an obstacle to the concentration of population in the region, as more attractive and prospective migrants. However, the development of the Karaganda agglomeration can be achieved by modernization of the economy, increasing its cities and qualification of human resources.

Work

In the world practice the development of agglomerations, as growth poles, allows a concentration of economic and labour potential of the country, achieve economies of scale and microstructure effect. In this relation, on the basis of selected criteria, we have analyzed the agglomeration potential of the city of Karaganda.

In the President's message to people of Kazakhstan from December 14, 2012 «Strategy «Kazakhstan-2050» – a new policy established state» outlined main directions of the implementation of the above strategy, which is developed with the provisions of the territorial development of the Republic of Kazakhstan until 2050.

In practice, the territorial organization of the region is solved by implementation of tasks such as formation of cities – leaders of the national and regional level by creating in the long term agglomerations with the inclusion of the adjacent rural territories close to the reference cities. However, there are a great number of small towns and rural areas that need solving problems finishing areas, which is especially important for «growth zone» Astana – Osakarovka, Nura districts, and in the long term in the «growth zone» enters city of Karaganda.

A number of researchers believe that the Karaganda agglomeration (Karaganda city and surrounding small towns) (Fig.1) is the reference city national level. This is true only if based on such parameters, as: gross output, population, traditionally formed by the process of industrial enterprises of the city and the role of Karaganda in Kazakhstan's economy.

Having preserved its specialization in production of export oriented production (engineering products, rubber products) and products sold on the domestic market (electricity, food industry, construction materials), the Karaganda agglomeration is not that other, as a catalyst for the formation and development of the metallurgical, pharmaceutical and building clusters, research and innovation infrastructure.

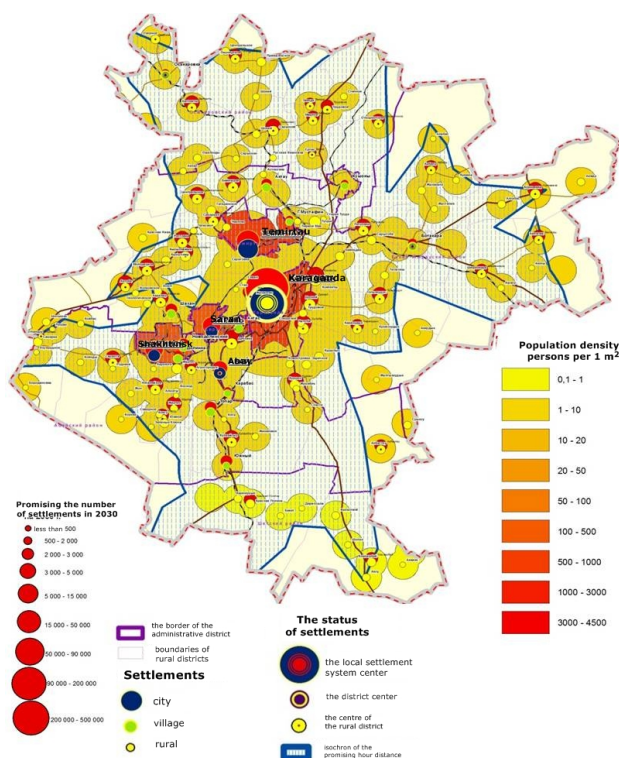


Figure 1 – Karaganda agglomeration (after KAZNIISA,2013) [1]

According to the state program on forced industrial – innovative development of Kazakhstan for 2010-2014, approved by the decree of the President of the Republic of Kazakhstan dated 19 March 2010 № 958 (amended 01.08.2013 № 607), there was an analysis of the current situation development in the mining and metallurgical industry and promising opportunities of its further development [2].

The share of the metallurgical industry accounts for over 35 % of the total volume of manufacturing industry in the Republic [3]. Almost all produced in the country, metals and metal products are exported, and the production of higher repartitions is abroad, which is one of the main reasons limiting the growth of the Karaganda agglomeration.

The main problems in the mining and metallurgical complex still remains the depletion of the resource base, low complexity of the raw materials used, high degree of wear of the basic production assets, a high degree of environmental pollution and technological backwardness, lack of integrated complexes with a full cycle of production (from extraction to the production of products with a high degree of commercial availability), the small size and distribution of the domestic market, high energy, labor and material intensity of production, the severe lack of inventory of rolling stock. All this acts as a barrier on the way of improvement and transition to a new technological structure.

Promising opportunities of technological development in ferrous metallurgy, production of high quality raw materials for production of steel (iron nuggets and hot briquetted iron, ferroalloys production of colored and rare metals), production of high quality steel pipe and heat-resistant, heat-resistant and heat-resistant, tool, bearing, track and spring) and expansion of assortment of high-alloy steel. However, the current situation in the technological development is not sufficient for solving innovative problems, are outlined in the message of our President. Therefore, the main task for the industry's development is the creation of metallurgical production, ensuring the development of engineering, construction industry and other industries and export. This is one of the most difficult problems, without which it is impossible to achieve qualitative changes in the core forming industries Karaganda agglomeration.

On this basis, the main directions of the industry development were determined:

- Organization of production of the main (basic) metals large enterprises;

- Organization of production of end products of high processing on the basis of basic metals enterprises of small and average business.

Intended for production development, aimed at new added value, export-oriented:

1. On the domestic market with gradual entering foreign markets: in ferrous metallurgy of the Karaganda region in the industrial zone will be created at least three high-tech low-tonnage production, producing goods with high added value.

2. In the sphere of production of metal products of high repartitions-will be created in small and medium-sized enterprises, including Karaganda region.

3. In 2018 in the Karaganda region it is planned to launch a major project with the increase of steel production up to 6 million tons per year.

The Program defines the sectoral and project measures of state support of the industry development:

- Provision of transport infrastructure of the region;

- Provision of qualified human resources;

- Implementation of technical regulations;

- promoting innovation and technological modernization;

- Creation of attractive conditions for direct investment;

- Provision of resources;

- Improvement of the legislation [2].

In our expectation, this requires greater research work on the analysis of the market of sales of manufactured products by the enterprises of the Karaganda agglomeration, in particular the metallurgical complex. Insufficiently studied ratio of supply and demand in Kazakhstan for the products and competitiveness of the latter compared with similar products, manufactured products in Russia and other neighboring countries. In our work, creation of the consulting companies, exploring the market for steel products both in Kazakhstan and the neighboring regions.

For example, the program of development of metallurgical industry, it is obvious that in the forthcoming period, the policy of industrialization will be aimed at accelerating the development of priority non-primary sectors through the development of branches of traditional specialization, which will become catalysts for industrial-innovative processes [2].

For example, the creation of socio-entrepreneurial corporations (hereinafter SEC), such as SEC «Sary-Arka» can be of immense assistance to economic development of not only the city of Karaganda, but only Sary-Arka macro-region, through consolidation of the public and private sectors, creation of a single economic market based on cluster approach. However, this provision requires appropriate calculations and marketing research.

Today formation of the Karaganda agglomeration, with the inclusion of it in the future in a network «growth zone» of the city of Astana, is being successfully carried out through the implementation of the following strategic areas:

1. Development of the social infrastructure supporting towns and elaboration of mechanisms of raising the level of life of the population;
2. Development of ferrous and nonferrous metallurgy and mechanical engineering;
3. Manufacture of building materials, as a stimulus for investments in the technology and service sphere of the city;
4. Creation of new manufactures on the basis of the Industrial Park;
5. Solution of energy issues, by expanding the capacity of Karaganda state district electric station-1;
6. Use the tool of outsourcing, i.e. the development of local content in major projects of city-forming enterprise, with the formation of the subsidiary, maintenance and processing of an array of small and medium-sized enterprises;
7. Ensuring the implementation of mechanisms for sustainable economic and geographical development.

The main factor in supporting the development of a zone of growth is the creation of conditions for business, which will be based on:

- Effective interaction of regional authorities;
- Expansion of financial support instruments;
- Infrastructure, resource and staffing;
- Improving the business environment;
- Technology modernization, innovation and science;
- Creation of favorable conditions for attraction of direct investments;
- Effective trade and tariff policy.

Motivation for the integration of the Karaganda agglomeration, in a network «growth zone» Astana today is obvious: this and the proximity of the ter-

ritorial location, and economic linkages, and, of course, labour migration.

Further formation of a network zone growth will contribute to the construction of a six-lane high-speed motorway Astana-Karaganda. Territory units pendulum labour migration and close economic relationship. Throughout the route Astana-Karaganda, in the nearest plans – development of the road, hotel service, food and trade enterprises, repair shops and other [4].

It is important to note that the Karaganda agglomeration, contributes to the development of the city of Astana by the growing needs of the capital in the labour force, building materials, food industry products and agricultural processing.

On the territory of the created free economic zone, the Karaganda agglomeration, presented plots of land and infrastructure for the creation of new productions with high added value.

A wide range of services to the enterprises of the city of Astana, Karaganda region and other regions provides transport and logistics complex, established in the territory of the city of Karaganda, however, required conformity assessment of services provided to the transport-logistic complex needs of the region.

Logically implementation of the territorial development of the Karaganda region should lead to improved competitiveness both in domestic and foreign markets by the growth of production, increasing productivity, increasing employment and reducing unemployment, activation of investment and innovation activity, to increase educational level of human potential.

Results

According to this information listed before, the following results were obtained:

- Improvement of mechanisms of public-private partnership in business and, in particular the construction and operation of infrastructure facilities, which, along with the achievement of general economic effect stimulate the creation of new spheres of activity for small and medium enterprises;
- On the basis of the implementation of cluster initiatives, diversification of the economy of the region reduced their dependence on the functioning of the large region forming, vertically integrated companies and formed a competitive sector of small and medium-sized businesses;
- A sharp reduction of social differences was formed between the urban and rural areas and as a

consequence, the fracture of the trends in the demographic situation;

- Ensure an effective integration of the region into the world economy, a complex of modern industries, corresponding to the strategic needs of social development of the region and high quality of life of the population;

- Increasing the basic parameters of quality of life and capacity development of the Karaganda region, that is, to create life-sustaining and social infrastructure, which led to a qualitative development of human capital and the development of favorable conditions for doing business by all the market participants;

- Increased industrial potential, by giving it a more innovative quality, organized innovation centers and techno-park zones on the territory of the region, ensure efficient integration of enterprises of the region into the world economy, created complexes modern production corresponding to the strategic needs of social development of the region and high quality of life of the population;

- Improving implementation of the principles of sustainable development of the region in the medium and long term view of the solution of environmental problems;

- Some changes such as a qualitative breakthrough could happen in the level of life in the population, improvement of demographic situation, a higher level of employment and stimulated the influx of labour on the territory of the region [5].

Development of the Karaganda agglomeration, in connection with the existing in the region, energy-intensive industries, the emergence of new industrial enterprises, including on the territory of the Industrial Park, growth of housing construction and the General welfare of the population causing the growing use of household appliances and, as a consequence, the increase of energy demand and the need for additional power capacity, will require consideration and implementing of the following: expansion of capacity of the CHP-3 plant or construction of a new CHP-4 electric capacity of 500 MW and heat 950 Gcal/h, with the use of water-coal suspension as a fuel.

At the same time, the main source of energy and utilities are privately owned and financial possibilities of the owners is limited to the implementation of large investment projects on modernization and technical upgrading of their facilities. In similar

cases some countries with market economies have spend nationalization or privatization, depending on the economic situation. This allows, primarily solving strategic tasks in the interests of the region. One of these solutions to this problem is to attract financial possibilities of the state institutes of development.

Karaganda agglomeration successfully contributes to the development of Astana by the growing needs of the capital in the labour force, building materials, food industry products, agricultural processing, providing land and infrastructure for creation of new manufactures, consulting, transport services, performing of scientific researches and training of personnel.

Due to the rational development and arrangement of the territorial space of the region with the priority development of promising rural territories defined the main task of development of rural territories, then highlight the following factors of development of these territories:

- The high proportion of self-employed population and its increase. The result in rural areas present private farming is the basis for the recognition of the self-employed person, who do not have the income below the poverty line and ask for the targeted social assistance: most of the recipients of targeted social assistance (65%) live in rural areas;

- High level of employed at small enterprises (from 23% to 50% in rural areas);

- Predominance of employment in agriculture and related services. Agricultural activity has a small-scale nature;

- The low level of wages is observed in agriculture (28360 tenge as of 1 quarter of 2013);

- Insufficient level of providing infrastructure: transport and communications, life-sustaining (water, gas), social (health care, cultural facilities).

Development of rural areas will be carried out with account of the existing areas of specialization in the economy of the region, solution of the problems connected with the development of supporting infrastructure measured within the industrialization of agriculture.

To solve the problem of rural territories of water activities for restoration of water supply.

With the development of rural territories taken into account prospects of rural settlement, development of border territories – «growth zones of Astana», supporting towns and formed around them

agglomerations, which considered to become the centers of the population, especially from villages with low development potential.

Thus, proceeding from the above, an analysis of the development of the region on the economic and geographical positioning of Metropolitan areas at the national and regional markets. Based on the structure of the national economy, to date, the most appropriate one for the development of the Karaganda agglomeration is a strategy of traditional spe-

cialization based on the raw materials sector with subsequent transfer of the commodity production with higher added value. Stable relations between the sectors of traditional specialization and the rest of the economy will allow generating a number of related industries, which will have the opportunity to develop through their service. It also will form favorable conditions for the formation of clusters of small and medium business enterprises around the commodity sector.

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