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**Current state of the Tekeli town:
analysis of the positive and
negative impacts**

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**Текелі қаласының заманауи
жағдайы: жағымды және
жағымсыз әсерлерді талдау**

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**Современное состояние
г. Текели: анализ
положительных и
отрицательных воздействий**

Study of territories with existing structure of industry and the determination of the direction of post-industrial development of territories is a topical issue for increasing the competitiveness of the Republic of Kazakhstan. They, in turn, will become a basis for the overall development of industry in the country. Compared to other cities with a multifunctional economy, the development of monotowns depends more on changes in the external environment, the state of the economy, the external market conjuncture, etc. This dependence is characterized as a blocking factor of sustainable development in our study. This article describes the current state of Tekelitown. As a result of analysis of key factors influencing the sustainable development of the town, a number of factors limiting the development of the town were revealed. The concentration of natural resources, physical and geographical features of the area are highlighted as a priority for sustainable development; low level of diversification of the economy, accumulation of industrial waste, environmental threats are considered as a limiting factor in the development of the town. Models of the restoration and support of labor resources in monotowns in the conditions of the crisis are analyzed on the basis of the experience of foreign countries (Canada, USA, Germany, Russian Federation). The results and recommendations will serve as the basis for the economic development of town.

Key words: natural resources, city-forming enterprises, restructuring, diversification of the economy, development model.

Қазақстан Республикасының бәсекеге қабілеттілігін арттыру үшін, бұрыннан қалыптасқан индустриялық құрылымы бар аумақтарды зерттеп, постиндустриялық даму бағытын айқындау аса маңызды. Өйткені, олар өз кезегінде жалпы елдің индустриялық дамуына негіз болады. Монокалалардың көпфункционалды экономикасы бар басқа да қалалармен салыстырғанда ерекшелігі – сыртқы ортаның өзгеруіне, мемлекеттік мақсаттардың өзгеруіне, экономика салаларының жағдайына, сыртқы нарықтағы конъюктураның, тауарға деген сұраныстың құбылмалы болуына, т.б. өзгерістерге көбірек тәуелділігі. Бұл тәуелділік біздің тақырыптық зерттеуімізде тұрақты дамудың шектеуші факторы ретінде сипатталды. Сонымен қатар, Текелі қаласының заманауи жағдайымен бірге, мәселелері мен мүмкіндіктері де зерделенді. Талдау нәтижесінде қаланың тұрақты дамуына әсер ететін негізгі факторлармен қатар, қала дамуын шектеуші факторлар тобы да анықталды. Табиғи ресурстардың шоғырлануы, аумақтың физикалық-географиялық ерекшеліктері – тұрақты дамудың басым бағыты ретінде ерекшеленсе, Текелі экономикасының әртараптандырылмауы, өндірістік қалдықтардың жинақталуы, табиғи қауіп-қатерлердің басым болуы – қала дамуының шектеуші факторлары ретінде қарастырылды.

Түйін сөздер: табиғи ресурстар, қала құраушы кәсіпорындар, қайта құрылымдау, экономиканы әртараптандыру, даму үлгісі.

Исследование территорий с существующей структурой промышленности и определение направления постиндустриального развития территорий Республики Казахстан является актуальным вопросом, так как они станут основой для общего развития промышленности в стране. В данной статье рассматривается современное состояние города Текели, в результате анализа определены факторы, влияющие на устойчивое развитие г. Текели, также выявлены блокирующие факторы. Обилие разнообразных природных ресурсов, физико-географические особенности территории – это приоритетные возможности для устойчивого развития города, низкий уровень диверсификации экономики города, скопление производственных отходов, множество опасных природных явлений – все это блокирующие факторы развития региона. На основе анализа полученных результатов обоснованы предложения по устойчивому развитию региона.

Ключевые слова: природные ресурсы, градообразующие предприятия, реструктуризация, экономическая диверсификация, модель развития.

CURRENT STATE OF THE TEKELI TOWN: ANALYSIS OF THE POSITIVE AND NEGATIVE IMPACTS

Introduction

The problem of monotowns (single-industry towns) in the country is relevant. Researchers of the problem of monotowns often pay attention to the socio-economic situation of the town. Such towns are characterized by problems such as low living standards, low income, economic decline and crime (Mukhambetov 2014: 182). As a result of the global financial and economic crisis, an industry in monotowns faced problems. In this regard, various international organizations have begun to deal with the problem of monotowns in the country. For example, the United States Agency for International Development (USAID 2013) finances «Diversification of Monotown Economies Program» that is carried out by PYXERA Global company. This company began to conduct trainings for residents of monotowns in Karaganda region. There are sufficient research on conceptual issues of strategic development of monotowns (Taizhanov 2016; Saymagambetova 2014; Amanbekov 2015). However, the object of research of these works is socio-economic issues. That is, the geographical features of monotowns and the effective use of spatial advantages are not taken into account. For this reason, this research on Tekeli deals with the geographical aspects.

According to the data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan (Committee on Statistics 2016), 56.6% of the population (total population of 17.7 million people) live in urban areas. 16.8% of the population in urban areas are living in 27 monotowns approved by the Monotown Development Program for 2012-2020 of the Republic of Kazakhstan [Programma razvitiya monogorodov na 2012-2020., 2012]. The turning point in the market economy in the years of independence, the impact of the financial and economic crisis in the country became basis for the weakening of the economy of monotowns and worsening of social situation. As a result, the Monotown Development Program was developed for sustainable socio-economic development of monotowns in the medium and long term. Among the 27 cities covered by the Program was the town Tekeli of Almaty region (Nurlanova 2012: 33-34).

The town was founded in the industrialization era in the second half of the XX century. The main feature of this town is that it is directly dependant on specialization factors in industrial allocation system. Typically, there are one or more businesses in such towns which influence living standards of the local population. Thus, these towns are called monotowns or single-industry towns which are one-way specialized towns. These towns usually have a close relationship linked with large city-forming enterprises which influence all important aspects of the city life. Since these towns are directed at development of just one sector, they face big problems in development path. In order to improve the competitiveness of the Republic of Kazakhstan it is very important to develop such areas with existing industrial structure. Thus, there is a need for systematic study of issues of diversification of the economy, efficient use of space, and restructuring of development model in order to ensure post-industrial sustainable development of the town.

In this study we used cartographic methods, systematization of statistical information, systematic analysis of geoinformation and geographical forecasting based on fundamental research «Development of conceptual basis for effective models of sustainable development of monotowns in Kazakhstan in 2015-2016» (a case study of the Tekeli and Zhezkazgan cities).

Material and methods

Traditional settings for company towns were where extractive industries (coal, metal mines, lumber) had established a monopoly franchise. Particularly in Ukraine those were Pripjat, Varash; in Canada Alberta, Ontario, British Columbia; in USA Birmingham, Youngstown, Ohio; the French city of Le Creusot, the German cities of Ludwigshafen, Wolfsburg, Leverkusen and the Japanese city of Kitakyushu are said to be company towns (Beisenova 2015: 60).

A program to solve systematically socio-economic issues in small towns was made in Canada for Canada Mortgage and Housing Corporation [Rural and Small Town Programme., 2005]. The Program identified 5 objectives and prepared recommendations.

There have been numerous attempts to understand the phases of development in rural and small town places (Bone 1998; Bradbury 1988; Riffel 1975; Lucas 1971). Most models of community development have focused on single-industry towns. In spite of this, as Wilson (2004:

261-268) acknowledges, most studies on resource communities, such as mining towns, focus on periods of downsizing or periods of rapid growth. Other studies have been more comprehensive and have explored multiple phases of development in resource and tourism towns.

Resource towns grow rapidly after the discovery of a resource or after technology, tariff protection, or demand made resource production profitable (Lawrence 2001: 89; Robinson 1964: 289). Small towns that may be susceptible to these stages may include resource dependent communities where a single sector is dominated by a single large company. Places at risk may also include communities with poor quality resources or where the resources are inaccessible or isolated from markets. Furthermore, communities with absentee land ownership and a low-skilled labour force may also be more vulnerable (Stedman 2004: 214; Peluso 1994: 24-26).

Resource towns, or «new towns,» are the small, isolated communities built around resource-based industries and transportation, such as mining towns, mill towns, railway towns and fishing villages. Resource development has long been recognized as a significant factor in shaping patterns of Canadian development. It has been argued that all Canadian urban growth ultimately depends on the production of staple products. Resource towns have been important agencies in this process of staple exploitation. Because of their dependence on single industries, the economies of resource towns are often unstable and precarious.

In the present-day United States, at their peak there were more than 2,500 company towns, housing 3% of the US population. The companies that ran the towns were primarily labor companies such as coal, steel, lumber and various war industries. Most of the people living in these towns were immigrants to the country. This could cause issues among the populace since the manager of the town would be in charge of establishing the town's religion (The Economist 2010; Hardy Green 2010).

One of the first serious attempts of conducting a complex study on the phenomenon of Russian monofunctional towns was made by the scientific and methodological center «Cities of Russia», translated from «Goroda Rossii» (Turgel 2010). Another approach was presented by the scientific non-commercial foundation «Expert Institute» (Lappo 2013). In both studies researchers tried to determine the phenomenon, the criteria which distinguish monotowns, their number, etc. Among more recent studies Turgel's book about monofunctional towns is worth mentioning.

Researcher analyzes the emergence of monotowns, specifying the terminology, investigating the development tendencies of different types of the settlements and policy implications. Geographer-urbanist Lappo (2004, 2013), while considering the historical peculiarities of Russian urbanization process, draws special attention to the phenomenon of monofunctional towns. Notably, there is also a number of other articles, reports and studies dedicated to the same issue (Institute of Regional Policy 2008; World Bank Report 2010; Uskova 2012).

Features of the location of variously specialized settlements can be found in works of Vlasova N.D., Zhikharevich B.S., Ioffe G.V., Kogut J.L. and Khoreva B.S. (Turgel 2014: 10-16).

Particular attention is paid to the determination of the specific characteristics of the formation and development of monotowns in social environment in the works of Turgel I.D. (2014). Attempts were made in the works of Vlasova N., Pushkarev M.N. to determine the criteria and types of monotowns and to make management strategies for similar settlements (Vlasova 2000: 50-54). However, the conclusions in the works of authors mentioned above were made based on the quantitative criteria of determination of monotowns (Ustinov 2015). In general, the issue of monotowns still remains relevant in Russia. Thus, it is important to choose new directions in step-by-step development of monotowns (Maksimova 2015: 4-5).

Kazakhstan scientists are conducting researches to classify monotowns and identify their main advantages and difficulties in the development of monotowns. The vast majority of these studies are of economic nature. Social, environmental, technological and innovative aspects of development of monotowns are not studied yet (Nurlanova 2012).

The results obtained from systematic analysis of foreign and domestic scientific works served as the basis for analysis of current state of the Tekeli and determination of post-industrial development model.

Results and discussions

Tekeli is a town located 40 km south-east from Taldykorgan city, Dzungarian Alatau mountains. Advantages of this town located in «comfort» geo-environmental zone give an opportunity to determine the prospects of development of the town. Tekeli is connected with south-eastern macroregions, namely Almaty city («first-level city») the largest contributor to the country's GDP which accounted for 20.5% of all contributions (Committee on Statistics 2016), small towns in Almaty agglomeration area, and «second-level» developing centers (regional center is Taldykorgan) by railways, and by motorways built in accordance with European standards.

As a result of trip to Tekeli for studying the work of industrial enterprises and town, SWOT analysis for Tekeli were conducted (Figure 1).

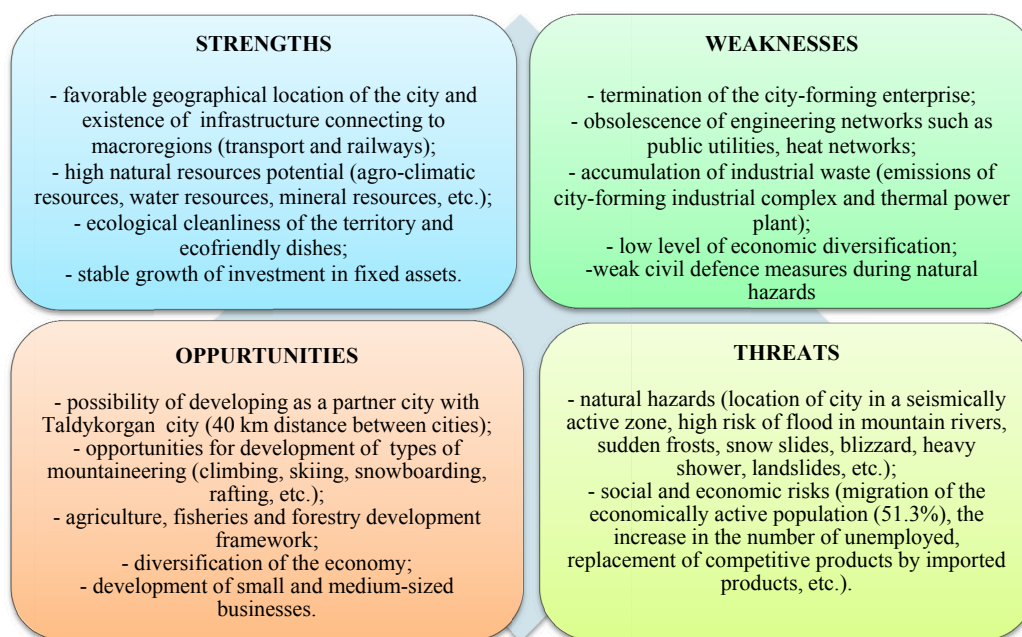


Figure 1 – SWOT analysis for the current state of Tekeli

These contacts will have a positive impact on export and import of goods, transportation of goods and sustainable economic development. In addition, the location of Tekeli close to regional center allows development as a partner city of Taldykorgan. Also, there is an opportunity to provide a market with 166000 people with agricultural products and building materials, and to provide travel services to tourists from city.

One of the most important factors affecting the development of the town is the natural resource potential of the town. Tekeli, Shyzyhand Karatal rivers flow through town territory. Water resources (by constructing small hydro-power plants in Karatal and Shyzy rivers) can be used more efficiently for energy production, agricultural production, industrial water supply, fisheries development, other services (Beisenova 2016).

Tekeli is located in a good natural zone which affects positively the mood of the people. The average temperature is +20 to +22 °C in July and -10 to -12 °C in January. The average duration of sunlight is 2600-2700 hours. When the average daily temperature is above 10°C, the reproductive period lasts 150-160 days. The annual average precipitation is 400-500 mm. The black and brown soils of mountainous areas are common in town territory (Natsional'nyy atlas RK. 2010: 57-70). Favorable climate elements (sunlight, temperature, humidity, wind, etc.) and geographical location of the territory allow the cultivation of mid and late summer crops (maize, sunflower, fruits, potatoes, buckwheat, etc.). In other words, the use of only underground natural resources is not efficient in the development of the town, it is important to use effectively agro-climatic resources as a promising direction.

Efficient use of natural resources potential for tourism development is characterized as one of the priorities of the advantages of the town. There are many opportunities for fans of mountaineering and development of health-related facilities. Planned ski resort in mountainous part of the town (Cordon 2) will be the center of tourism in the region. In addition, mineral water found here can be used in treatment in sanatorium.

In world experience, consideration of the diversification of the economy and small and medium-sized business support is regarded as important decision in resolution of problems of monotowns in the world. When implementing the abovementioned package of measures, it will be possible to eliminate industrial and regional monopoly, to increase goods and services in the market, to create new jobs, to use achievements of

scientific and technological progress, to create a middle class which is the guarantor of stability in the society. The most economically distressed cities such as Kiruna (Sweden), Detroit (USA), Emscher Park (Germany), Huddersfield (United Kingdom) could successfully implement abovementioned package of measures in the formation of post-industrial development model (Beisenova 2015: 60-61). For this reason, the diversification of the economy and the development of small and medium-sized businesses in Tekeli is the basis for sustainable development.

The inflow of foreign investments into the real sector of the economy is an important factor in economic development. A favorable investment climate is forming in Tekeli which is characterized by investment attractiveness. We can notice this in the increase of investment in fixed assets by 10 times during 2006-2015 (4 630.7 million tenge) (Beisenova, 2016: 307). Total investment into town amounted to 0.9% of total investment into the region. A positive investment climate in the town is considered as an advantage of wellbeing of the town.

There are factors contributing to development of the town, as well as factors that are limiting development. If the necessary measures are not taken, the negative effect of limiting factors may be an obstacle to the development of the town.

In 1996, due to exhaustion of high quality profitable (45%) ore layer, Tekeli mining and processing plant ceased to exist (Beisenova 2016: 306). Cessation of activity of city-forming industrial complex is still having a negative impact on the economic development of the town. The accumulation of industrial waste led to a contamination of agricultural land located near warehouse and Karatal river water by lead mixture. The obsolescence of engineering networks such as public utilities and heat networks is described as the weaknesses of the town. Solution to the problem of the «obsolescent» enterprises is a «modernization» (introduction of modern technologies) of the processing industry and implementation of the «anchor» projects to diversify the economy.

Natural disasters and socio-economic risks can be identified as threats to the sustainable development of the town.

Tekeli is located at seismological hazardous area of Dzungarian Alatau Mountains. The earthquakes up to 8-9 magnitude of Medvedev-Sponheuer-Karnik (MSK) scale are possible here. The earthquakes of 7 magnitude were recorded in Tekeli on December 30, 1993 and June 13, 2009. The amount of damage

caused by the last earthquake was 400 million tenge (Zemletryasenie v Almatinskoy oblasti 2009). In addition to these natural hazards, the risk of flooding in mountain rivers is high (Figure 2).

In addition, winter blizzards, snow slides, sudden frost in spring and autumn seasons, heavy rains, and other natural phenomena are the factors limiting the development of the town.

In addition to the above-mentioned threats, there are socio-economic risks limiting the development of the town. This case happened in the history of Tekeli before and is still relevant. Since 1952

when Tekeli got its town status, it is constantly evolving. This trend continued until the early 1990s. The turning point in the market economy in the years of independence and cessation of activity of city-forming industrial complex aggravated socio-economic situation and resulted in intensive migration process, an acute shortage of staff, reduces production volumes, etc. This problem can be solved by employment of the economically active population (51.3%), diversification of the economy and the development of processing industry.



A) Shyzhy River



B) Karatal River

Figure 2 – Boulders and uprooted trees appeared in riverbeds under the influence of floods
(Photos taken by Aliaskarov D.T. 2016)

Conclusion

In order to manage risks (natural and socio-economic threats) described as limiting factors the following set of measures should be implemented in Tekeli:

- Making a comprehensive plan of measures directed at health and life safety, reduction of material costs, and mitigation of emergencies.
- Prevention of «resource curse» phenomenon which happened in many countries (Nigeria, Iraq, Zambia, etc.) and small towns. In other words, getting rid of dependence on natural resources under the ground and searching for ways of effective use of natural resources. Development of competitive

sectors of the economy which allow all-round development.

- Determination of a post-industrial model of the town. As we can see in SWOT analysis, there is an opportunity for development of tourism, agricultural sector and the service sector in the town.

In general, there is a need for making an effective development model which allows transition into sustainable innovative development of Tekeli: diversification of the economy through more effective use of natural resources in the town and a gradual transition from resource-intensive industries into knowledge-intensive (mental) industries, effective urban planning.

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