MODERN CHANGES IN ZHEZKAZGAN CITY: POSITIVE AND NEGATIVE FACTORS OF TOURISM DEVELOPMENT (KAZAKHSTAN)

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Abstract: The aim of the research is to address the issues of tourism development in Zhezkazgan city. The mono-specialization (mining and processing) of this city, located in the central part of Kazakhstan, the non-diversification of the economy, the underdevelopment of new fields of service, including tourism, emphasizes the relevance of the research. The systematic approach to the study of urban environments has identified the factors of tourism development in Zhezkazgan. That is, mono-specialization of the city's economy and its dependence on city-forming enterprises, the bad condition of the environment are described as the factors that constrain the development of tourism; advanced transport infrastructure, spatial advantage, sufficient tourism potential in the city and suburban areas make up a group of factors that contribute to the development of the tourism. By analyzing the current state of the city, positive and negative factors for development of tourism were identified, analyzed and evaluated.

Keywords: monotown, city-forming enterprise, economy diversification, tourism potential, tourist sites, development models.

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INTRODUCTION

In the modern world, human resources development and issues of effective territorial organization of economy are closely connected with cities. The cities where the successes of human development are concentrated influence not only the settlements near those cities, but also social and economic condition of the whole region and country. For researchers, on the one hand, studying the role of the cities in territorial development, on the other hand, studying the vital safety of complex natural and technogenic system and regularities of economic development are paramount. While the well-known scientist Glaeser in his scientific works calls the cities as the environment making people happier (Glaeser, 2011), the former mayor of Denver (Colorado State) Wellington E. Webb states: "The 19th century was a century of empires. At that time, the empire defined the future development of all planets. The 20th century was a century of nation states. In those days national development of the state was important. The 21st century will be a century of cities" (Wade, 2009). D. Cetindamar and A. Gunsel state: "In a global world in which the waves of globalization have forced the introduction of strategies to enhance innovativeness and competitiveness; the role of cities as a regional innovation centers becomes more and more significant. In recent years, there have been increasing concerns over the formation and outcomes of cities as global innovation centers" (Cetindamar et al., 2015). That is why study of issues of sustainable development of urbanized territories is the main requirement of our time.

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, 2012). The turning point in the market economy in the years of independence and the impact of the financial and economic crisis in the country led to 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 montowns in the medium and long term. Among the 27 cities covered by the Program is city of Zhezkazgan (Nurlanova et al., 2012).

Zhezkazgan is a city in Kazakhstan that has high potential of the industry where important non-ferrous metallurgy centers, educational and cultural centers are concentrated. Territory of Zhezkazgan city can be characterized as *a territorial-production complex* that has certain natural resources and production sites and specialized in non-ferrous metallurgy production.

The city was founded in 1954 during an industrialization era that started in the 2nd half of XX century. The main distinctive feature of this city is that system of production directly depends on specialization factors. Typically, there are one or more businesses in such towns, which influence living standards of the local population. Thus, these cities are called monotowns or single-industry towns that are one-way specialized towns. These cities usually have a close relationship with large city-forming enterprises that influence all important aspects of the city life (Murphy & Boyle, 2006; Wendt, 2011a). Since these cities are directed at development of just one sector, they face big difficulties 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. Therefore, in order to maintain a post-industrial sustainable development of the city, there is a need for efficient use of tourism potential (Bramwell & Rawding, 1994; Ashworth & Page, 2011; Ilieş & Wendt, 2015). It is important to note positive and negative factors of tourism development (Wendt, 2016). If spatial advantages, natural-tourism potential, transport infrastructure of

the city are favorable factors, then environmental pollution and dependence on the city-forming enterprises are unfavorable (limiting) factors of the development of tourism (Herman & Wendt, 2011; Wendt, 2011b; Atasoy et al., 2017).

MATERIAL AND METHODS

In his work "The Third Wave", the American sociologist Alvin Toffler says: "Information and knowledge are becoming the main strategic resources. It, first, leads to capital changes in arrangement of territorial production forces. If during the period prior to industrialization the cities emerge in joint points of trade ways, during the industrial period they are located near raw materials and energy sources, and during the postindustrial period the cities are located near the large scientific and research centers" (Toffler, 1980). Based on the analysis of world and domestic experience, it can be noticed that the formation of monotowns corresponds to the industrial period. For example, the cities in developed countries such as Tennant Creek, Woodcutters (Australia), Flint, Birmingham, Youngstown (USA), Kamaishi (Japan), Ostrava (Czech Republic) and etc. are located near the sources of raw materials and energy (Kaimuldinova et al., 2015). Under the influence of various factors (raw materials exhaustion, world financial and economic crisis etc.) the economy of these cities was depressed over time. As a result of effective implementation of strategic plans, effective use of a geographical location and economic diversification, the cities started to develop in the direction of innovation (the tourism and service center, the innovative business center, the technological center, the transport and logistics center, etc.). Formation period of monotowns (Zhezkazgan, Tekeli, Saran, Zhanaozen, etc.) in Kazakhstan starts in the industrialization era. The difference from development model of monotowns in the developed countries is that monotowns in Kazakhstan still depend on the city-forming enterprises, non-diversification of the economy, and uncertainty of a post-industrial development model.

The issues of a sustainable development of the monotowns located near raw materials and energy sources are reflected in essential scientific works and concepts (Bone, 1998; Wilson, 2004; Carson et al., 2014; Gordon, 2015; Green, 2010; Pyankova, 2011; Lappo, 2013; Turgel, 2014). 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; Amanbekov, 2015; Taizhanov et al., 2016; Mukhambetov, 2014). The results obtained during system analysis of foreign and domestic scientific works were the basis for analysis of the current state of Zhezkazgan monotown and determination of a post-industrial development model (tourism aspects).

The methods such as comparative and geographical methods, systematization of statistical information, system analysis of geoinformation, geographical forecasting and mapping were used for the research based on the fundamental research "Development of conceptual basis of effective models of sustainable development of monotowns in Kazakhstan" (a case study of Tekeli and Zhezkazgan). In addition, the results of shooting during scientific expedition to the city of Zhezkazgan were used.

TOURISM POTENTIAL OF ZHEZKAZGAN CITY AND ADJACENT TERRITORIES

More than 1500 monuments of history and culture have been found on the territory of the Zhezkazgan region. A lot of them are along the Sarysu and Sary-Kengir Rivers. A historical and cultural complex includes Zhezkazgan historical and archaeological

museum, a museum of history of mining and smelting business, a memorial house-museum of Kanysh Satpayev, the first Academician of Sciences of Kazakhstan (Visit Kazakhstan, 2017). Young Zhezkazgan University named after O.A. Baykonurov and Zhezkazgan musical and medical colleges are preparing highly qualified specialists. There are more than 20 cultural sites including Zhezkhazgan Kazakh musical and dramatic theater named after S. Kozhamkulov and Young Spectator's Theatre (Programma razvitiya goroda Zhezkazgan, 2011).

A distinctive feature of Zhezkazgan is Ulytau Mountains, which are not far from the city. Ulytau Mountains (Great Mountains) is the historical center of the Kazakh people, the epicenter of the nomadic culture of steppe civilization. Magnificent mounds, cemeteries, mausoleums of Begazy-Dandybay culture, rock paintings, petroglyphs, mining, metallurgical furnaces in which copper, tin, silver, gold were melted and other ancient monuments found and studied by scientists indicate that Ulytau was the center of the Kazakh Uplands and whole steppe since ancient times. Ulytau is a national shrine of the Kazakh people, which has absorbed a thousand-year spirit of our ancestors, covered with legends, sung by poets, which have been fascinating people for many centuries. The greatness of these ancient mountains lies in the significance of the events of the national history of Kazakhstan. Ulytau was a favorite place for khans of nomadic tribes.

The greatness of these ancient mountains lies in the significance of historical events of Kazakhstan. Ulytau was a favorite place of the Khans (kings) of nomadic tribes. General headquarters of Zhoshi Khan, the eldest son of Genghis Khan, was located here and here Batu Khan started his aggressive campaign to Eastern Europe. In Ulytau, the mausoleums of Zhoshy Khan and Alasha Khan were erected, the founders of the Turkic-speaking tribes. Here, Tokhtamysh, Khan of Golden Horde, and great Horde commander Emir Edigu, were buried. The names of these people were immortalized in oral folk art (folklore) of Altai (Zhensikbayeva et al., 2017), the Urals, the Crimea, Northern Caucasus and Uzbekistan. On the stone slab of Ulytau mountain, Altynshoky, the Great Tamerlan left a memory of his stay in the spring of 1391 (Mazbayev, 2016; Kazakhstan. Natsional'nava enciklopediya, 2007). Ulytau district of the Karaganda region has become a Mecca for foreign tourists who are interested in the history of culture and the geography of the settlements of the peoples of the East and Eurasia. The monuments, which Ulytau keeps in itself, date back to the Paleolithic and Neolithic epochs (Tursinbayeva et al., 2013). On the territory of the district, there are about 636 monuments, 282 of which are included in the historical and cultural map of the "Ulytau" museum fund. Archaeologists have found numerous sites of primitive people and their tools. On the bank of the river Kara-Kengir, the largest workshop of the Paleolithic era in Kazakhstan was found.

In the river valleys were found monuments of the Bronze Age - settlements, necropolises, burials of ancient culture. To this day, the mystery of "burial mounds with a mustache" has not been solved. Some archaeologists assume that these are tombstones; others believe that they are an ancient observatory (Kazakhstan. Natsional'naya enciklopediya, 2007). Archaeological excavations show that even three thousand years ago local tribes were engaged in mining and metallurgy and exported copper, tin, silver and gold to Iran, India and Greece. The botanical and geographical studies revealed 617 species of plant (including 90 medicinal species) on the territory of Ulytau. The Ulytau is called "country of lakes and springs". The healing properties of the mountain spring water of Ulytau were known far beyond this region (Kazakhstan. Natsional'naya enciklopediya, 2001). The main directions of tourism development in the city of Zhezkazgan are beach tourism (Kengir reservoir), ecological tourism (Ulytau zoological reserve), sports tourism (pedestrian, orienteering, climbing), cultural and educational tourism, business tourism, and weekend hikes.

RESULTS AND DISCUSSIONS

The city of Zhezkazgan, the large center of nonferrous metallurgy, is located in the central part of Kazakhstan, in the small hilly, low mountainous region in the south-west of Saryarka, in the lower reach of Kara-Kengir River, a large branch of the Sarysu River. A natural landscape is a desert zone. The relief of the territory (300-400 m above sea level) includes plains, steppes, and hilly areas.

The origin of the city's name is directly connected with mining. Ancient mines of alloys of copper, tin, iron, gold, silver and the remains of their processing were found in this territory. The development of the world's largest copper mine was a reason for formation of city name. The city name comes from the words "zhez" (copper) and "kazgan" "digging, excavation" (Kaimuldinova et al., 2014).

There are copper deposits at distance of 12-50 km from each other in the northwest and east regions of Zhezkazgan. Depending on the industrial importance and geological structure, these deposits are divided into two types: *Zhylandy* (Taldybulak, Kopkudik, Karashoshak, Kipshakbay, Ayranbay, Saryoba, Kulmen, Donyzauyz, Itauyz) and *Zhartas* (Bektas, Sorkudik). All of them are concentrated on the gray sandstones of the lower layers. Recently, it has been called Zhylandy horizon. The main metals are copper and lead, silver, cobalt, molybdenum etc. City-forming enterprises work on this specified branch of metal ores production and processing. The main enterprises are "Kazakhmys Corporation" LLP enterprises and "Zhezkazgansirekmet" Republican State Enterprise.

Zhezkazgan copper-smelting factory of "Kazakhmys Corporation" LLP, one of the large enterprises in copper industry, produces in average 250 000.0 tons of pure copper per year. The main product is 99.99% pure cathode copper which is in great demand in the world market. It is exported to Holland, Sweden, Turkey, Japan, China and CIS countries. Also, the factory produces lead dust, gold, and silver (Karagandy oblysy, 2006).

"Zhezkazgansirekmet" is the only enterprise in the CIS countries which produces valuable metals such as rhenium and osmium. The production of the abovementioned non-ferrous metals has become the reason for the transformation of Zhezkazgan into the non-ferrous metallurgy center. The location of Zhezkazgan in the central part of Kazakhstan can be characterized as the spatial advantage ("strength"). Connection of the North, the South and the West through highways and railway tracks, implementation of freight and passenger traffic between regions will become the beginning of transformation of Zhezkazgan into the large transport and logistics center. "Zhezkazgan-Sekseul-Beyneu" railway line which was launched in 2015 interconnects regions such as Karaganda, Kyzylorda and Mangistau. If the construction of "Kyzylorda-Zhezkazgan" and "Zhezkazgan-Arkalyk" highways starts, the city will be formed as the large transport and logistics center. Abovementioned conditions will be a basis for economic diversification and development of tourism in the region. Tennant Creek (Australia) can be an example for abovementioned conditions. Tennant Creek is a town located in the central part of the Northern Territory of Australia. It was one of the centers of gold production in Australia in 1930s. The exhaustion of natural wealth was a reason for the investment companies to leave.

Worrying about crisis, the authorities started to implement a set of measures for economic rehabilitation. These measures included effective use of geographical location, environmental conditions and infrastructure. The construction of new automobile and railways in the region led to the development of transport services and the city became the logistics center. Besides, the effective management of an environment brought the development of tourism. Soon, the small city was transformed into the tourism and logistics center. This policy of local authorities was regarded as a successful step in the direction of economic diversification (Kaimuldinova et al., 2015).

Mining and manufacturing industries, search of new deposits, new investments, human resources, a population growth (Figure 1) in recent years can be considered as the main driver in economy.

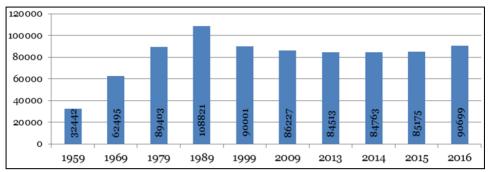


Figure 1. Dynamics of population in the city (SDKR 2016)

Technological support of the city-forming enterprises, development of the sectors of economy, including knowledge-intensive industry and the third sector of world economy (strengthening the role of service), and economic diversification determines the "opportunities" for the development of the city.

STRENGTHS

- geographical location of the territory and efficiency of spatial advantage; - existence of ore deposits and
- manufacturing industry;
- existence of a transport infrastructure;
 existence of sources of raw materials for industrial and innovative development;
- competitive human resources;
- economic activity of the population (51.7%) and positive indicator of a natural increase.

WEAKNESSES

- a remote location from a agglomerative zone of influence;
- dependence of a city economy on the activities of city-forming enterprises;
 low level of economic diversification;
- big wear of intracity roads, engineering, social and housing, and communal services infrastructure
- deterioration of an ecological situation.

OPPORTUNITIES

- technological reconstruction of the city-forming enterprises;
 a full reorganization of economy and
- a full reorganization of economy and search for potential brands of the city;
- development of small and medium business;
- strengthening the role of services (the third sector of world economy);
- effective use of tourism potential in the city and adjacent territories.

THREATS

- high level of dependence of a city economy on the world demand of nonferrous metals;
- mass unemployment due to a stoppage of the city-forming enterprises' activities;
- a lack of special sanitary security zones in the city and industrial places;
 instability in providing population and industry with water, aggravation of drinking water deficiency.

Figure 2. SWOT analysis: current state of the city

Besides, rational management of historical and cultural monuments in the city and adjacent territories (Ulytau district) and natural resources generate opportunities for the development of tourism (Zhakupov et al., 2016; Saparov et al., 2017). One of the weak points of development of tourism in Zhezkazgan is the farness from large sales markets, a remote location (550 km) from the Karaganda agglomerative influence zone. Lack of

transport and bad condition of highways further complicate the development of city. Today, dependence of a city economy on city-forming enterprises activity, low level of economic diversification, wear of the city infrastructure, untimely cleaning of household waste, an aggravation of ecological situation are considered as factors constraining the development of tourism in the city. The unstable situation in the world market forms the basis for emergence of new threats. This circumstance is a hard blow for a city like Zhezkazgan, which depends on activity of the city-forming enterprises. One of the main reasons for negative changes is a decrease in the world prices for products due to reduction of demand for the products of the export-oriented enterprises such as "Kazakhmys Corporation" LLP and "Zhezkazgansirekmet" RSE owing to financial and economic crises. These reasons will lead to stoppage of city-forming enterprises activity and mass increase in number of the unemployed. The rarity of the Green veil in the city and a decrease in level of water in Kengir reservoir from year to year form a set of new threats. The results of the research of the current state of the city can be shown in the Figure 2 below.

One of the main problems of the formed monotowns associated with development of mineral resources is an aggravation of an ecological situation. The main goals of a state policy stated in state development programs of the Republic Kazakhstan is the stabilization of environment quality, formation of the favorable environment for human life, and protection of natural resources for future generations.

One of the major factors hampering a sustainable development of Zhezkazgan monotown including the development of tourism is the bad quality of environment. The main issues of ecological inconvenience are pollution of atmospheric air, untimely cleaning of household waste, accumulation of ash dumps, a large volume of dumps and storage points of remains of the manufacturing enterprises, and the coppers working at solid fuel which produce polluting substances (Figure 3).





Figure 3. Ash dumps on waste banks

Figure 4. Distribution of pollutants in Zhezkazgan

The level of atmospheric pollution is assessed by analyzing and processing samples taken from control points. Pollution level of the atmosphere is determined by an air pollution index (API_5) and threshold limit value (TLV) in accordance with class of danger (Table 1).

Level	Pollution level of the atmosphere	Air pollution index	Assessment
I	low	API	0-4
II	average	API	5-6
III	high	API	7-13
IV	very high	API	≥ 14

Table 1. Assessment of air pollution index (IB 2016)

According to the data given by the Environmental Control Department, "Kazhydromet" RSE, the level of dangerous substances has been high in atmospheric air in Zhezkazgan for the last four years. According to the data of 2016, Zhezkazgan is among 7 highly polluted cities in Kazakhstan (Karaganda, Temirtau, Lisakovsk, Almaty, Uskemen, Shymkent), $(API_5 \ge 7)$.

According to the Statistics Department of Karaganda region, the number of sources polluting the atmospheric air is 247 units. In 2016, the volume of harmful substances from the sources polluting the atmosphere was 27 300 tons (SDKR 2016). We witnessed this fact by seeing the smoke directed to houses in the research area (Figure 4).

There is a high volume of sulphurous anhydride, carbon monoxide, nitrogen oxide in liquid and gaseous substances. The volume of harmful substances in the atmosphere decreased by 33.7% in 2016 compared to the volume in 2012 (IB 2016).

Enterprises of "Kazakhmys Corporation" LLP make an industrial strip of Zhezkazgan city. They are: "Zhezkazgan non-ferrous metallurgy" concentrating factories No.1 and No.2, copper-smelting plant, "Kazkat" plant, Zhezkazgan thermal power center, ferroconcrete plant, Zhezkazgan specialized construction-repair administration, the experimental and manufacturing installations space for production of xanthogenate, automobile enterprise No.1, railway transport enterprise, construction-repair administration, administration on construction and repair of power technological equipment, oxygen station, electric repair shop, the road-building enterprise, heat and water supply enterprise, "Eaglet" children's sanatorium for somatic diseases etc.

The abovementioned manufacturing enterprises of the city of Zhezkazgan are located in the western, southern and east parts of the city. The main substances polluting the atmosphere in the industrial zone territory are inorganic dust (which contains sulfuric copper, sulfuric lead), nitrogen oxide, sulfur dioxide, carbon monoxide, coal dust, parts of zinc, lead, copper and aluminum, wood dust, sulfuric hydrogen, carbon sulfur etc.

During the research, it was revealed that the most manufacturing enterprises of "Kazakhmys Corporation" LLP polluting air are located in east and southeast of the city (Figure 5). The location of the sources polluting atmospheric air along railway in the direction of *East - South - West*, the distribution of harmful substances limits the existence of city residents. The sources polluting the air are chimneys of 14 meters to 46 meters high. Therefore, it was found that the distance between the enterprises and houses did not conform to the ecological requirements at all:

- 1. Concentrating factory No.1 1390 meters;
- 2. Concentrating factory No.2 800 meters;
- 3. Copper-smelting factory 1600 meters;
- 4. Casting and Mechanical Plant 1300 meters;
- 5. "Kazkat" plant 500 meters;
- 6. Construction-repair administration 4900 meters;
- 7. Ceramic materials plant 2200 meters.

The absence of sanitary protection territories between the enterprises and houses leads to free flow of polluting substances to the city center due to winds. The direction of a wind from the area of main polluting sources and the location of the main part of the city on lowlands aggravate the environmental condition in the city.

The ecological consequences of industrial development of Zhezkazgan are pollution of atmospheric air, chemical pollution of the soil, drinking water, fishes in reservoirs, and increase in diseases of the population. The hydrochemical condition of surface water was that the water in Kengir reservoir had a high rate of pollution and a pollution rate in Kara-Kengir River reached the level of emergency (WPI>10.0). The main polluting ingredients are copper, zinc, manganese, and sulfates (IB, 2016). Growth of "ecological" diseases

(diseases of respiratory organs, heart-vascular system, an illness of digestive organs) for the last decade caused social tension in the Zhezkazgan industrial monotown which is rich in natural resources. Therefore, social and economic, environmental issues of monotowns are closely connected with effective policy of the city. Therefore, there is a need for a comprehensive and systematic assessment of development of territorial-industrial sphere of monotowns, updating of social infrastructure, improvement of level and quality of life of local population, and involvement of population in industrial and public life.

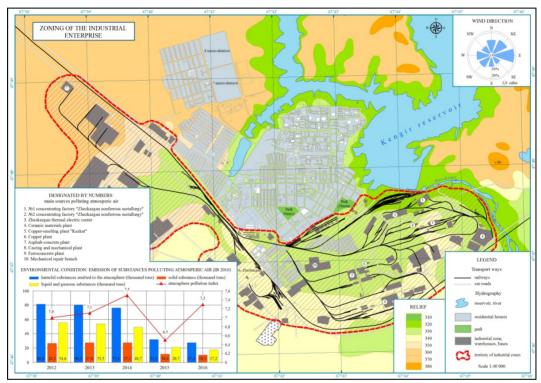


Figure 5. Map of zoning of the industrial enterprises and environmental condition (Source: based on IB 2016, SDKR 2016)

CONCLUSION

The main conclusions and results obtained during the research can be summed up as follows:

Decline in demand in raw materials in the world market today, decrease in price of non-ferrous metals caused social and economic tension in the cities such as Zhezkazgan that specialized in mining and processing. If we take into account the instability in the world markets and repetition of a crisis, then it is necessary for monotowns to diversify their economy and reconstruct a development model. Zhezkazgan, the large center of nonferrous metallurgy in the country, has an opportunity to become the transport-logistics and tourism center during post-industrial development. We were convinced of this fact during our research of spatial advantage, transport infrastructure and tourism potential of the city. Besides, in order to find solutions to the complicated social and economic problems in the city, it is not just sufficient to develop the transport-logistics activity, tourism services but it is also necessary to diversify the economy, produce innovative products by supporting small and medium businesses and forming human capital;

- Generally, the economic success of Zhezkazgan is based mainly on the existence of rich fund of raw material resources in the territory as well as on their production and processing. Effective use of natural resources was done only in the direction of raw materials production. This one-sided specialization is considered as a deterrent to the development of other industries. Therefore, it is necessary to get rid of the dependence on raw materials, and search for the ways of effective use of the environment. For example, environmental condition of the city has a golden opportunity to develop alternative energy sources. If the average annual sunshine is 2753 hours, the average speed of a wind per year is 4-5 m/s (Medeu, 2010). Such strengths of an environment will be favorable for construction of solar and wind power stations. The mentioned case provides the city with energy and gives a chance for effective use of "future" energy;
- If the environmental and spatial advantages of geographical location of the city and tourism potential are considered as opportunities for the development, the bad environmental condition is characterized as the factor that slows down sustainable development. The data obtained for the research of current state of the city gave the chance to make SWOT analysis. Non-compliance with the ecological requirements by the enterprises located on an industrial strip, mistakes at city and industrial planning, lack of sanitary protection territory make Zhezkazgan the most polluted city of Kazakhstan. The analysis of the data provided by the official organizations and the results of systematization of information during research gave the chance to make a map of relation between the manufacturing enterprises and city environment. The results obtained during research are of great importance in the development of a sustainable development strategy of the city of Zhezkazgan.

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