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HISTORICAL-GEOGRAPHICAL ASPECTS OF SUSTAINABLE DEVELOPMENT OF SMALL TOWNS (on the example of small towns in Zhambyl region)

The problems of sustainable development of small towns were analyzed from the perspective of historical-geographical factors in this article. During the analysis, we were convinced that monoprofile towns, which are part of the group of small towns, have become the “center” of problems in the world and the country. Theoretical and conceptual analysis of the concepts, names, opinions and conclusions of scientists developed in relation to these cities associated with global industrialization was carried out. The main mechanisms of rehabilitation and support of labor resources in monoprofile towns in a crisis situation were determined on the basis of the experience of the USA, Canada, Australia, Japan, Germany and other countries. And in the conditions of our country, we considered on the example of small towns in Zhambyl region. According to it, the historical aspects of specialization of small towns were given importance, classification of common issues limiting sustainable development was compiled. Demographic problems in towns were analyzed, and the place at the strategic stage of the development of innovative city was determined on the basis of historical data and theoretical conclusions. According to the concept of sustainable development, the main areas of urban environment development were selected, and their social, economic and environmental effects were emphasized. In general, the results of the study in the article will complement research in the field of urban geography.

Key words: the problem of small and monotowns, town-building enterprises, social modernization, economic diversification, sustainable development.

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Шағын қалалардың тұрақты дамуының тарихи-географиялық аспектілері (Жамбыл облысының шағын қалалары мысалында)

Бұл мақалада шағын қалалардың тұрақты даму мәселелері тарихи-географиялық факторлар тұрғысынан талданды. Талдау барысында, шағын қалалар тобына жататын монобейінді қалалар, әлемде және елімізде мәселелер «орталығына» айналғанына көз жеткіздік. Әлемдік индустрияландырумен байланысты бұл қалаларға қатысты қалыптасқан түсініктерге, атауларға, ғалымдардың пікірлері мен тұжырымдарына теориялық-тұжырымдамалық талдау жасалды. АҚШ, Канада, Аустралия, Жапония, Германия және т.б. елдердің тәжірибесі негізінде, дағдарыс жағдайындағы монобейінді қалаларда еңбек ресурстарын оңалтудың және қолдаудың негізгі тетіктері анықталды. Ал, еліміз жағдайында Жамбыл облысының шағын қалалары мысалында қарастырдық. Ол бойынша, шағын қалалардың мамандануының тарихи аспектілеріне мән беріліп, тұрақты дамуын шектейтін ортақ мәселелердің классификациясы жасалды. Тарихи деректер мен теориялық тұжырымдар негізінде, қалалардағы демографиялық мәселелер талданып, инновациялық қала дамуының стратегиялық кезеңіндегі орны анықталды. Тұрақты даму тұжырымдамасы бойынша, қалалық ортаны дамытудың негізгі салалары таңдалып, олардың әлеуметтік, экономикалық және экологиялық әсерлеріне мән берілді. Жалпы, мақаладағы зерттеу нәтижелері қалалар географиясы бағытындағы зерттеулерді толықтыратын болады.

Түйін сөздер: шағын және моноқалалар мәселесі, қала құраушы кәсіпорындар, әлеуметтік жаңғырту, экономиканы әртараптандыру, тұрақты даму.

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Историко-географические аспекты устойчивого развития моногородов (на примере моногородов Жамбылской области)

В данной статье были проанализированы проблемы устойчивого развития малых городов с точки зрения историко-географических факторов. В ходе анализа мы убедились, что монопрофильные города, относящиеся к группе малых городов, стали «центром» проблем в мире и стране. Проведен теоретико-концептуальный анализ сложившихся представлений, названий, мнений и выводов ученых относительно этих городов, связанных с мировой индустриализацией. На основе опыта стран: США, Канады, Австралии, Японии, Германии и др. были определены основные механизмы реабилитации и поддержки трудовых ресурсов в монопрофильных городах в условиях кризиса. А в условиях нашей страны мы рассматривали на примере малых городов Жамбылской области. По нему была разработана классификация общих проблем, ограничивающих устойчивое развитие, с упором на исторические аспекты специализации малых городов. На основе исторических данных и теоретических выводов проанализированы демографические проблемы городов и определено место инновационного городского развития на стратегическом этапе. Согласно концепции устойчивого развития, были выбраны основные области развития городской среды, уделяя особое внимание их социальному, экономическому и экологическому влиянию. В целом результаты исследования в статье будут дополнять исследования по географии городов.

Ключевые слова: проблемы малых и моногородов, градообразующие предприятия, социальная модернизация, диверсификация экономики, устойчивое развитие.

Introduction

The problem of small towns development is distinguished by its relevance in the history of the geography of cities. This is especially related to monotowns, which the economy is based on the dominant development of one industry, belonging to the group of small towns. In these cities, people's livelihood, social-economic development depended on the activities of the city-building enterprise (Nurlanova, 2012: 156), (Kaimuldinova, 2015: 456).

Such small towns are called "*monotowns*" (The program for the development of monotowns for 2012-2020. URL: <http://adilet.zan.kz/kaz/docs/P1200000683>) in the country and in the vast majority of CIS countries, they are widely recognized as "*one industry town*" or "*single-industry town*" (Elizabeth, 2021) in the world experience. And accumulated problems in small towns of the countries was the basis for forming the names "*boomtowns*" (Carson, 2013: 31), "*resource towns*" (Stelter, 2006), "*company towns*" (Julie, 2006) in the USA, Canada, Australia, Germany and other countries. That is, although the names are different, the formation of these cities corresponds to the industrial period, and the city's activity (specialization) was closely connected with the development of resources.

The difference between these towns (monotowns) in comparison with other towns with other multifunctional economy depends more on

changes in the external environment, changes in government goals, the state of economic sectors, conjuncture in the foreign market, the volatility of demand for goods, monitoring of payment terms, etc. For example, a long period of economic decline served as the basis for some monospecialized towns to become "abandoned" or "ghost" town. Such small settlements can be found in all countries of the world. In international practice, these towns are known as "ghost towns" (https://en.wikipedia.org/wiki/List_of_ghost_towns_by_country). In history, such a state of cities, in addition to an economic recession, was influenced by natural and man-made disasters, genocide and political factors.

Development issues of small towns take an important place in world practice, research of scientists and scientific-research organizations. The regularities of the geography of the city are explained from a special point of view in the scientific works of the well-known American scientist Edward Glazer. In his monograph, which quickly spread to many countries of the world, he described cities as an environment that makes humanity happy (Glazer, 2015: 394).

Glazer discovered the phenomenon of the "*resource curse*" in relation to small towns with heterogeneous economy. According to the explanation of the scientist, the successful development of only one industry hinders the diversification of industry, which can be called the

“curse of resources”. Such “cursed” cities include Detroit, which was called the “automobile capital of the United States” at the time and Pittsburgh, a coal city (Glazer, 2009). In the USA, the problem of small towns (company towns) has existed for 130 years. The problem of small towns based on the activities of monopolistic companies became acute in the 70s of the previous century. Areas that experienced a sudden decline in industrial production were named the “Rust Belt” in the United States. Measures were taken from economic restructuring to reduction of cities during the reconstruction of small towns in this country (Shlomo, 2010).

The problems of small towns have become known in the Canadian experience as “resource cities” or “new cities”. These settlements differed from other cities in that they were small and isolated. Dependence on the same branch of industry often leads to instability in the development of the city’s economy, and this instability persists. For example, the Great Depression that began in the United States in 1929 affected small Canadian towns for 10 years. This economic “chronic disease”, which lasted until 1939 caused a 40% drop in GDP (Kenneth, 1991: 634). Canadian scientists have been conducting research in this field since the 1970s. The new community, economic diversification, development of the service industry and cluster development policies are considered effective in the development of small cities. Even in this country, program for the development of villages and small towns has been accepted (David, 2005: 88). The structure of the economic development of small communities in Canada and the theoretical views of scientists are systematized in this program.

The experience of Germany in the reconstruction of mono-industrial towns is of considerable interest in history. It should be noted that Germany has organizational efforts in the development and analysis of comprehensive programs for the modernization of monoprofile towns, and also deals with large consulting firms with a reputation in government bodies and financial centers.

One such major entity is Albert Speer & Partner GmbH. One of these projects is an analysis of the development processes of resource-industrial cities in the Ruhr valley of the famous coal region of Germany, aimed at “green” development (Bülow, 2013: 19). The company’s projects were carried out together with German scientists geographers and mainly focused on the works of landscape planning (Bystrova, 2014: 9).

As a comprehensive solution to the problem

of mono towns in the UK in order to ensure new homes, increase labor mobility of the population, attention is paid to the formation and activation of transport infrastructure connecting jobs in cities and surrounding areas, the gradual long-term modernization of city-forming enterprises, the stimulation of the creators of new types of economic services, etc.

As a comprehensive solution to the problem of mono towns in Great Britain in order to ensure new houses, increase labor mobility of the population, attention is paid to the formation and activation of transport infrastructure connecting with workplaces in cities and surrounding areas, the gradual long-term modernization of city-building enterprises, encouraging creators of new types of economic services, etc. (Lyubovny, 2009: 100).

Japan is characterized by a high level of social responsibility and cooperation between city-building enterprises and municipal authorities. The solution to the problem of mono towns in the crisis situation in Australia is based on the diversification of the city’s economy and the deployment of labor in other territories.

In the Czech Republic, in solving the problem of diversification, priority is given to the effective use of the tourist potential and the competitive renewal of the city-building enterprise. In Poland, the policy of developing small towns is aimed at increasing public literacy and developing human capital. In this regard, projects on development of transport infrastructure, alternative sources of energy, development of information society, improvement of environment and education were implemented. In general, most countries of the European Union solved the problem of monoprofile small towns in crisis situations by restructuring “old” enterprises and forming a new development model (Beysenova, 2016: 10).

The objectives of sustainable development of cities are defined within the framework of the Sustainable Development Goal 11 called “Make cities and human settlements inclusive, safe, resilient and sustainable”.

Researches on sustainable development of cities have been conducted in various directions in recent years. Issues of socio-spatial inequality in cities, social inequality in ensuring urban stability (Cody, 2018: 26), (Sara, 2019: 793), management of sustainable development of cities, analysis of the main development problems (Serge, 2017: 107), (Stina, 2019: 217), (Ramin, 2009: 5), adaptation of sustainable development goals to individual city

conditions (Sandra, 2019: 4), issues of urbanization in environmentally vulnerable areas (Stephen, 2022: 460), study of the practice of deindustrialization of cities (Seth, 2020: 283) are important within the framework of our research topic. In this regard, analyzing the foreign experiences of sustainable development of small cities, in the condition of the regions of the country, starting from the history of the formation of cities, consideration of the current situation is the basis for assessing the possibilities of their post-industrial sustainable development. Because the development of the city is the basis for the development of the country. We will consider this on the example of small towns of the Zhambyl region.

Materials and methods

The initial research materials are based on theoretical and conceptual works of foreign and domestic scientists and research organisations dealing with the problem of sustainable development of small towns. The analysis of established ideas and concepts, strategic documents and programmes concerning small towns with a unified economy was carried out. When analysing the data related to the history, population of small towns in the Zhambyl region, historical data, statistical data since 1970 were used. The official information provided by the A.G. Vishnevsky Institute of Demography (IDEM), National Statistical Office of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan and the Department of Statistics of the Zhambyl Oblast were summarised and systematised. When analysing the prospects for sustainable innovative development of cities, we were guided by the conclusions of experts, the classification of famous urban scientists. In addition, on the basis of the common methods of geography, a review of theoretical works, a comparative analysis of foreign and domestic experience, processing of spatial data of the studied settlements, classification of information on settlements, assessment of dynamic changes, system analysis of results were carried out.

Results and discussion

Cities are an important part of the entire territorial system of the society, the basis of the country and national economy. At present, cities around the world are being characterized as drivers of sustainable economic growth. Science

and education, financial exchanges, innovative achievements, competitive human resources are concentrated in cities (Aliaskarov, 2017: 243). However, it is known that there are periods when the “playground” for cities changes radically. This is especially typical for cities with a single-industry (mono-profile) economy, which are part of the group of small towns.

The country’s inclination to the market economy at the end of the 20th century, the influence of the global financial and economic crisis that began in the 2008’s, served as the basis for widespread recognition of the concept of “monotown” which belongs to the category of small towns in Kazakhstan. Fluctuations in the cost of oil on the world market, decrease in demand for non-ferrous metals – put on the agenda a “new” issue for Kazakhstan, which the economy depends on the export of mineral resources. This is the problem of the development of small and monotowns. The economy of these cities, built on the basis of production and processing of natural resources in our country, went into sharp decline due to various factors (decrease in demand for natural resources, financial and economic, etc.). As a result, the vast majority of about 60 small towns in the country have become depressed regions. Among them there are towns of Zhambyl region (Zhanatas and Karatau – mono cities; Shu – a small city). Due to political and economic factors, common problems characteristic of cities have accumulated. This hindered the sustainable development of towns (Table 1).

The most actual common problem of small towns of Zhambyl region is related to the demographic situation. Well-known urban scientist G.P. Lappo mentions 3 factors that improve the demographic situation of the city’s population: a) natural population growth; b) mechanical growth (due to migration); c) joining suburban rural settlements to the territory of the city (Lappo, 1997: 479). But judging by the dynamics of the population, starting from the period of the historical formation of cities until now, we do not observe natural growth. For Zhanatas and Karatau, we see a positive indicator of natural growth before 1989, and the period of the “great decline” from 1989 to 2009, when the population decreased by almost 2 times. In recent decades, we have seen the stabilization of the situation according to the strategic decisions accepted by the state (The program for the development of monotowns for 2012-2020. URL: <http://adilet.zan.kz/kaz/docs/P1200000683>) (Figure 1).

Table 1 – Classification of common problems limiting sustainable development of small towns in Zhambyl region

The name of the town	Time of establishment of the town	Field of specialization	Common problems specific to towns
Zhanatas town	25 June, 1969	Mining industry and manufacturing industry	<i>Social issues:</i> - population migration from small towns to large settlements; negative balance of demographic growth; unemployment of the economically active population; low quality of human resources; level of deterioration of social infrastructures, etc. <i>Economic issues:</i> - low level of economic diversification; low infrastructure provision (roads, communication networks, energy supply, heat supply, etc.); technological backwardness of city-building enterprises, etc. <i>Ecological problems:</i> - anthropogenic erosion of terrain of the earth, degradation of landscapes; non-timely cleaning of household waste; the size of waste storage facilities of manufacturing enterprises; the emission of pollutants by many small boilers working on solid fuel; non-compliance of residual dumps with environmental standards, etc.
Karatau town	1963		
Shu town	1960		

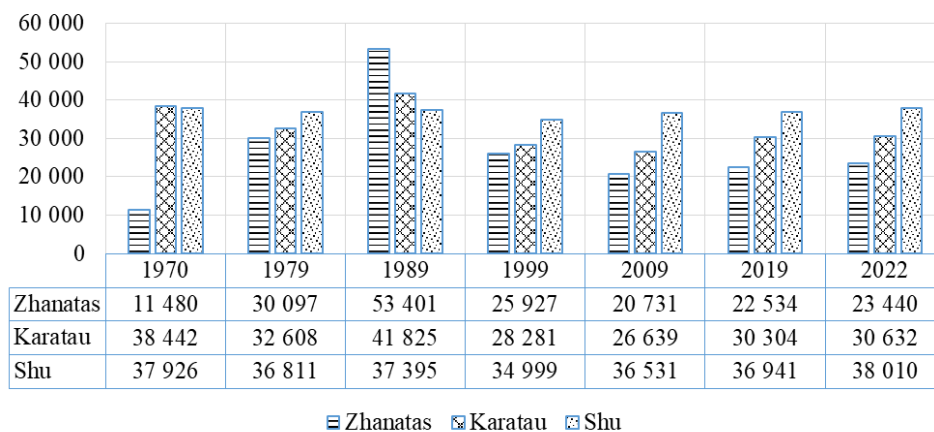


Figure 1 – Change in the population of small towns in Zhambyl region (1970-2022)
 (Demoscope Weekly 1970, 1979, 1989, 1999), (Smailova, 2011: 94),
 (Statistical collection Taraz. URL: <https://www.stat.gov.kz/>)

This reveals that the specialization of the town of Shu was more “resistant” to external factors (reduced demand for raw materials, political-economic) than the previous two and specialized in modern innovative direction. In general, population can influence technological innovations in cities and improve the economic development of cities (Alonso, 2018: 5), (Castells, 2014: 345), (Bettencourt, 2011: 52), (Zheng, 2020: 465). However, excessive population growth can lead to environmental pollution, excessive consumption of resources, traffic congestion (Fan, 2019: 150), (Salomons, 2012: 7), (Wen, Y. 2020), etc. aggravation of social situation.

World-class urban scientists, while discussing the future of the city, attach high importance to innovation. Even the concept of “innovative city” has been formed in the geography of cities. Peter Hall introduced this concept: “this is a city of a new social form, socially and economically changed due to innovations, resulting from the integration of many innovations. The development of these cities depends on the role of science and technology, including the dominance of independent innovations and the priority of innovative culture, that is, a city based on the systematic development of technology, education, people’s intelligence and culture”-summarizes his thought (Peter, 1998: 22).

Peter Hall's opinion is confirmed by Chinese urban scientist Ch. Fang. It summarizes the innovative formation and development of cities into 4 stages: 1) *the initial stage*, during which the driving force of city development depends on natural resources; 2) *middle period*, where the development of the city depends on capital activity; 3) *the later period*, innovations will have leading importance in the development of the city. 4) *the last stage*, human intelligence and mental ability create dominance (Fang, 2014: 1098) (Figure 2).

The mentioned 4 stages of urbanization in Fang's works can be evaluated as gradual or

strategic development achievements. That is, with the onset of the next stage, the driving force for the development of society also changes. At the same time, if we look at the system presented by Fang, from the Kazakhstani point of view, it can be understood that the current situation of monotowns in Kazakhstan, including Zhanatas and Karatau, passes between the resource and capital management. The inclusion of these towns in the program "Development of Monotowns 2020" and the allocation of large amounts of money from the state seem to indicate that the period of resource leadership is "weakening" and "stepping" into the period of capital leadership.

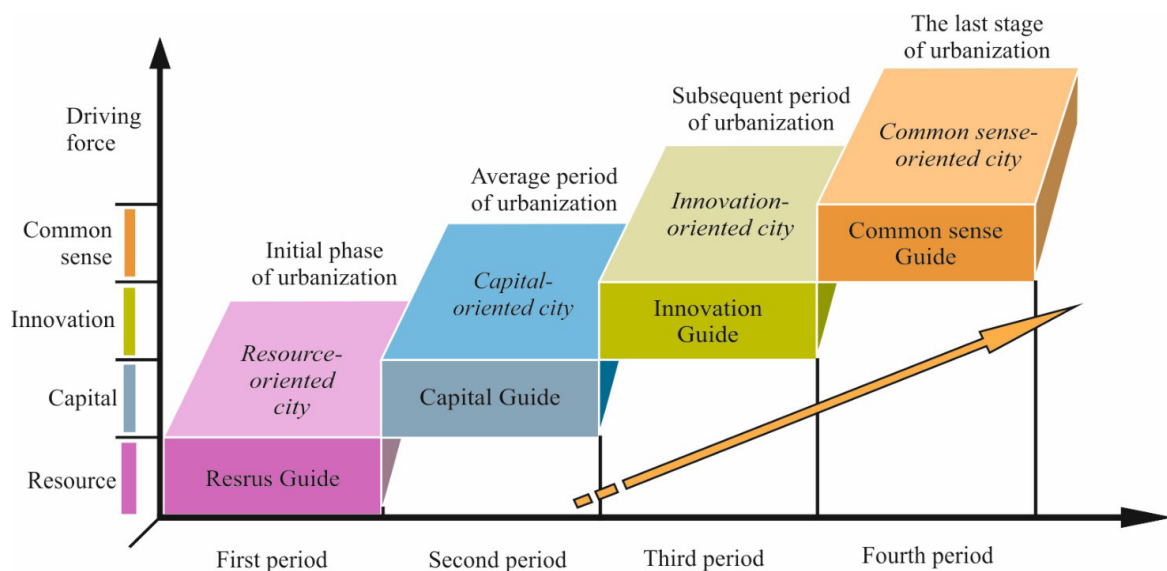


Figure 2 – Strategic stages of innovative city development

Therefore, speaking about the future development of towns and regions, it is necessary to pay special attention to the concept of Sustainable Development (http://sirse.info/wp-content/uploads/2016/02/indicators_for_sustainable_cities_IR12_en.pdf). Sustainable development of regions, including towns, depends on social, economic and environmental factors (Figure 3). If the harmonious development of the 3 spheres (society, economy, environment) forming the basis of the city ensures the stability of the city, the achievements of mental potential will become the basis of innovative development.

The following can be mentioned as the effects of the interdependence of above mentioned main principles in the urban environment:

- *social influence*, the development of human capital – serves as the main driving force of social

innovation. That is an improvement in the quality of education, health care, the formation of highly qualified labour force, a developed political and institutional environment will be the basis for the development of social society.

- *economic impact*, cities move to science-intensive effective economic specialization and geo-economic competition for the international division of labor increases. This circumstance will serve as the basis for the growth of competition in the global creativity index of cities.

- *environmental impact*, a modern innovative city, first of all, should become a "green" city. That is, it must meet environmental requirements, become a comfortable environment for living without waste, in accordance with ecological requirements. This will ensure the viability of the city.

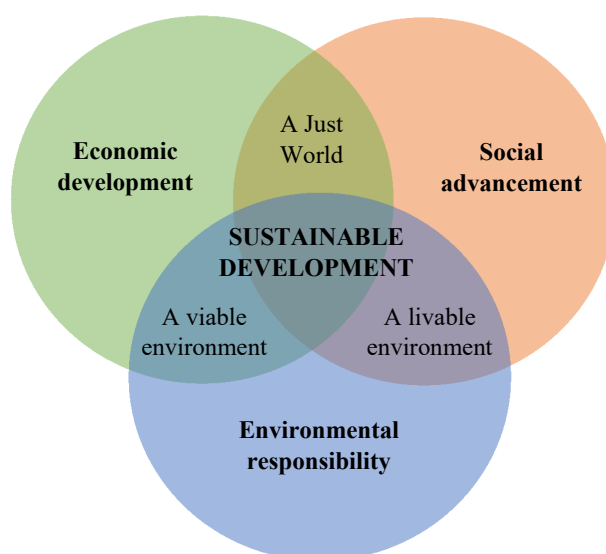


Figure 3 – Basic principles of sustainable development of the urban environment

Conclusion

The following conclusions can be drawn from the results of scientific analysis regarding the sustainable development of small and monotowns:

- The economic success of Zhanatas and Karatau is mainly based on the existence of abundant reserves of raw materials in the territory, its production and processing. Efficient use of natural resource potential is characterized only in the direction of raw material production.

At the moment, this process continues. For instance, the activities of city-forming enterprises in Karatau and Zhanatas (Kazphosphate LLP, EuroChem company, Talas Investment Company, etc.) are still based on a single specialization, that is, the mining industry. As a result, the environmental situation in these territories is aggravated. Over time, there is an increase in the area of terricons, anthropogenic changes in the terrain, the spread of water from open mines into the urban areas without treatment, and gross violations of environmental standards by companies.

This one-sided specialization is described as a limiting factor for the development of other areas. That is why it is necessary to get rid of dependence on raw materials and consider ways of effective use of natural resources. For example, the natural state of the territory where the cities are located allows the development of alternative energy sources. In addition to meeting the city's energy demand, this

situation provides opportunities for efficient use of “future” energy.

In addition, for the ecological improvement of cities, it is necessary to create a natural and ecological frame consisting of basic and indirect elements. These solutions not only create a microclimate for local residents of the city, but also perform the function of sanitary protection. And, the spatial advantages of the town of Shu must be effectively used for export-import exchanges between macro-regions;

- Special attention should be paid to the best experiences of foreign countries, including the experience of Germany. Today, Germany is the only country that develops monoprofile towns as a center for innovative products. It becomes an example for the world by creating a multifunctional economy from a monofunctional economy. Here, diversification of the economy, the development of entrepreneurship, the formation of a favorable investment climate, the creation of a society based on science were considered as a solution to the monotown issue (Gurkov, 2016a). Of course, mutual relations between the authorities of the local municipality and business representatives can also be mentioned here. That is, quick and convenient solutions, local preferential taxes, minimums in the bureaucracy, support by the leadership for scientific developments were described as the “secret” of successful achievements. Chemical-pharmaceutical products (Leverkusen), production of wind generators (Magdeburg), software (Waldorf),

production of ordinary and premium class cars (Wolfsburg, Ingolstadt, Emden, Rüsselsheim), chemical technologies (Ludwigshafen), tailoring of branded clothes (Metzingen), meeting the needs of the global media industry (Gütersloh) – paved the way for the global success of small towns in Germany (Gurkov, 2016b). These achievements reveal that the concept of “monotown” is “obsolete” in Germany. That is, when considering the sustainable development of cities with a single economy, it is necessary to take as a basis the best models in world practice.

- as known from history, instability in the world market, relapse of the crisis situation – this requires the creation of scenarios of post-industrial development for cities. It should be based on the principles of sustainable development. *First*, to

ensure economic growth while maintaining the environmental equilibrium; *second*, the balance of the economic and social spheres taken in the human dimension; *third*, to ensure the harmony of the urban community and future generations, not only in the present situation, but also taking into account the future.

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