

### Structural and Functional Characteristics of the Spatial Development of Rural and Urban Areas in the Northwestern Economic District

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**STRUCTURAL  
AND FUNCTIONAL  
CHARACTERISTICS  
OF THE SPATIAL  
DEVELOPMENT  
OF RURAL  
AND URBAN AREAS  
IN THE NORTHWESTERN  
ECONOMIC DISTRICT**

**A. Sobolev\***



*This article is dedicated to the problem of increasing spatial polarisation in the population distribution systems of the Leningrad, Novgorod, and Pskov regions. The author examines the impact of development and distribution of factors of production on demographic processes and trends in the transformation of the population distribution system. Based on an analysis of the sectoral structure of economy and demographic development trends, the author proposes a functional typology of urban and rural settlements. He stresses the discrepancy between the established population distribution systems and the demographic trends in regional development. It is suggested in the paper that the overcoming of spatial heterogeneity should be considered at the regional level from the perspective of improving the stability of district population distribution systems and strengthening organisational and economic ties between urban and rural areas. The author issues a number of recommendations for overcoming the spatial differentiation and ensuring a balanced development of district population distribution systems.*

**Key words:** Northwestern economic district, spatial development, regional population distribution systems, forces of production, functional relations

The current economic and economic geographical studies increasingly pay attention to the features of spatial development in analysing the socioeconomic development of territories of different taxonomies. During the formation of market economy in Russia, the problems of functioning and development of territories were of great importance for the future socioeconomic well being of the country. The “Concept for Long-term Socioeconomic Development of Russia until 2020” calls for the creation of ‘advanced development ar-

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eas' and 'growth points' as a priority in solving the problems of spatial development. This will increase the level of socioeconomic development and create balanced settlement systems at the regional level [6].

Therefore, in the course of transition from equalisation policy to the principle of 'focused' socioeconomic development, the transformation of settlement systems as an integrated territorial structure became increasingly dependent on the development and deployment of productive forces. In Russia, the areas of advanced development are associated with regional centres, where major resources — working age population, finance and investment, and infrastructure — are concentrated. This leaves the rest of the country's territory, especially monotowns and rural areas in quite a difficult, not to say catastrophic, position [14]. Therefore, there is a need to consider the development and transformations of not only regional settlement systems but also municipal spatial processes and phenomena.

Eminent Soviet economic geographers developed a major theoretical and methodological framework of district planning, which serve as the basis for modern studies into spatial development [7; 8; 10; 13]. According to E. B. Alayev's classical definition, a settlement system is a territorial combination of settlements characterised by a relatively clear distribution of functions (or mutual exchange thereof) and production and social ties [1]. At the regional level, the basis for territorial organisation of population is the settlement 'backbone', which includes the largest urban settlements. The settlement 'backbone' forms as a result of population and production concentration and the development of social, transport, and engineering infrastructure [15].

The largest cities (as a rule, regional capitals) serve as regional economic centres due to the sufficient investment and industrial potential and a developed transport and engineering infrastructure. The effect of such cities on the socioeconomic development is gradually decreasing along the 'centre — periphery' line, which results in the formation of large spatial gaps both between and within regions. In this situation, spatial development of internal administrative centres — the elements of regional settlement system — are affected by the negative transformation processes reducing the stability of the system's elements and aggravating their demographic situation. Along with industrial production, optimisation of social, transport, and engineering infrastructure forge close socioeconomic connections that help to identify the urban and rural areas' borders of influence and obtain information on the degree of their development.

The southern regions of the Northwestern Federal District (the Leningrad, Novgorod, and Pskov regions), which enjoy a beneficial economic and geographical position, favourable environmental conditions, sufficient human resources, and a high level of infrastructure development, have opportunities to increase the economic efficiency and improve their socioeconomic standing [9]. In 2002—2012, the regions of the Northwestern economic district under consideration underwent significant changes of their territorial organisation of population. Moreover, the urbanisation processes — against the background of a decreasing proportion of rural population and an increase in the population of the largest cities — took place in the regions

with different degrees of territorial heterogeneity. Therefore, when considering a region's spatial development one should pay special attention to the established industry structure of the economy and the stability of the settlement systems of districts, which serves as sub-centres of the regional territorial organisation of population.

This study analyses the features of development and transformation of regional settlement system and to identify its connection with the territorial organisation of productive forces. To achieve this aim, the following objectives are to be attained:

- to examine the features of development of industrial facilities in urban and rural settlements;

- to assess the industry structure of the economy and identify the key functional types of settlements;

- to identify the areas of development and trends in demographic processes taking place in 2002—2012;

- to identify the key problems behind the current disproportions in spatial development.

- to produce recommendations to reduce spatial heterogeneity and ensure sustainable development of territories.

The study uses the official statistical sources, including the Rosstat, Petrost, Novgorodstat, and Pskovstat data, as well as the information provided in the investment passports of municipalities.

The methodological framework for identifying the economic development level ( $I_{ec}$ ) of municipal districts (see table 2) was described by the author in an earlier work [12]. In table 2, numbers indicate the level of a municipality's economic development: I — high, II — above average, III — average, IV — below average, V — low. The study shows increasing spatial polarisation of economic development, which is expressed in the concentration of investment, industrial, and labour potential in suburban areas and old manufacturing districts. The promising territories of the Leningrad region characterised by a high level of economic development include districts situated in the first (town of Sosnovy Bor, the Lomonosov, Kirovsk, and Vsevolzhsk districts), and second (the Gatchina and Tosno) belts of the Saint Peter burg agglomeration, districts with developing port facilities in vicinity of international transport corridors (Kingisepp and Vyborg), and old manufacturing districts (Kirishi, Tikhvin, and Volkhov).

In the Novgorod region, the territorial differentiation of economic development is more dispersed. The territories with a sufficient potential for economic growth and sustainable development are the regional centre and its district, as well as the districts specialising in mechanical engineering (Staraya Russa), wood processing (Chudovo, Malaya Vishera), and refractory and building materials production (Borovichi).

In the Pskov region, promising territories include the regional 'growth poles' — the towns of Pskov and Velikiye Luki, and the Ostrov district specialising in mechanical engineering. However, 29 out of 46 municipalities of the Novgorod and Pskov regions show a rather low or low level of economic development, which necessitates an applied study of the territorial organisation of industrial production and the current trends in demographic development [12].

It is worth noting that the Leningrad region has a stronger skeleton of urban and rural settlement than the other regions (table 1).

Table 1

**A comparison of development indicators of settlements  
in the Leningrad, Novgorod, and Pskov regions in 2011**

System development indicator (number and proportion of population)	Region		
	Leningrad	Novgorod	Pskov
Towns with the highest population proportion	More than 50 thousand people: 6—43.7% (↑); 20—50 thousand people: 11—38.8% (↑)	More than 50 thousand people: 2—69.7% (↓); 10—20 thousand people: 6—21.3% (↓)	More than 50 thousand people: 2—74.3% (↓); 10—20 thousand people: 3—9.0% (↓)
Urban settlements with the highest population proportion	5—10 thousand people: 11—42.4% (↑); more than 10 thousand people: 4—25.4% (↑)	5—10 thousand people: 6—74.3% (↓); 3—5 thousand people: 2—14.1% (↓)	5—10 thousand people: 3—38.4% (↓); 3—5 thousand people: 5—36.0% (↓)
Villages with the highest population proportion	500—2000 people: 205—38.0% (↑); 2—5 thousand people: 52—25.5% (↑)	100—1000 people: 300—44.6% (↓); more than 1000 people: 36—34.2% (↓)	201—500 people: 158—13.8% (↓); 1—25 people: 5267—19.6% (↓)

Legend: ↑↓ indicate an increase/decrease in the population proportion in 2002—2011.

Compiled by the author based on [2].

Urban population concentrates in towns of more than 50,000 people. In the case of positive growth dynamics, 20 to 50 thousand people towns in the Leningrad and 10 to 20 thousand people towns in the Pskov and Novgorod regions become second-tier centres. However, the population of these towns is reducing.

The territorial organisation of population in the urban settlements of the Leningrad region is represented by 11 settlements, which are home to 5 to 10 thousand people. There are 6 such settlements in the Novgorod region and only 3 in the Pskov region. The highest proportion of large rural settlements is observed in the Leningrad region, whereas the most sparsely populated ones are found in the Pskov region. A reduction in the stability of rural settlements with largest populations is being observed in the Novgorod and Pskov regions.

At the moment, the major economic centres of the Northwestern economic district are the regional capitals — Novgorod and Pskov — where the key industrial potential is concentrated; these cities also perform administrative, economic, industrial, and transport functions (table 2). Moreover, the positive trends in the natural population change and a positive net migration rate accounted for a slight population increase in these cities. In the Pskov region's bicentral system of settlement, the town of Velikiye Luki serves as the southern multifunctional economic centre, which has developed organisational and economic ties and created prerequisites for the development of an industrial complex in its zone of influence. However, negative demographic trends persist.

Table 2

**Structural and functional typology of settlements involved  
in economic activities in the Leningrad, Novgorod, and Pskov regions**

Municipality	Region*	Key economic activities	Population, thousand people			I <sub>ec</sub>
			2002	2012	2012/2002	
<i>I. Regional centres and multifunctional industrial hubs with a developed industrial specialisation</i>						
Novgorod	NR	CH, F, PP, ME, EE	216.9	220.0	1.4↑	I
Pskov	PR	EE, F, T, BM, PP	202.8	206.7	1.9↑	I
Velikiye Luki	PR	ME, EE, F, PGW	105.0	96.5	8.1↓	I
<i>II. District centres</i>						
<i>1. Multi-industry hubs (towns) with developed industrial functions</i>						
Gatchina	LR	F, ME, EE, BM, MP	88.7	93.8	5.7↑	II
Vyborg	LR	TR, BM, S, ME, F, A	79.2	80.6	1.8↑	II
Vsevolzhsk	LR	BM, ME, CH, F, PP	45.3	60.3	33.1↑	I
Borovichi	NR	BM, WP, F, MP	57.8	53.4	7.6↓	II
Kirishi	LR	OP, PGW, G, CH	55.6	52.5	5.6↓	I
Tosno	LR	CH, ME, EE, F, BM, A	38.7	39.2	1.3↑	II
Staraya Russa	NR	ME, EE, F, A	35.5	30.9	13.0↓	II
<i>2. Towns with a diversified economic structure and developed industrial and economic functions</i>						
Sosnovy Bor	LR	PGW, BM, MP	66.1	67.0	1.4↑	I
Tikhvin	LR	ME, WP, T	63.3	58.5	7.6↓	II
Kingisepp	LR	CH, ME, G, WP, BM, TR	50.3	48.6	3.4↓	I
Volkhov	LR	OP, CH, MP, F, WP, T	46.6	46.9	0.6↑	II
Luga	LR	F, ME, CH, BM, A	40.4	37.3	7.7↓	II
Kirovsk	LR	BM, PP, MP, EE, A	24.4	25.7	5.3↑	I
Chudovo	NR	F, WP, ME, BM	17.4	15.1	13.2↓	II

The continuation of table 2

Municipality	Region*	Key economic activities	Population, thousand people			I <sub>ec</sub>
			2002	2012	2012/2002	
<i>3. Towns with a strong economic specialisations and performing industrial and economic functions</i>						
Slantsy	LR	BM, CH	37.3	33.3	10.7↓	II
Ostrov	PR	MP, EE	25.1	20.6	17.9↓	II
Lodeynoye Pole	LR	WP, F, PGW	22.8	20.5	10.1↓	II
Priozersk	LR	WP, F, CH, T	20.5	18.8	8.3↓	II
Podporozhye	LR	WP, BM, T	20.3	18.3	9.9↓	III
Boksitogorsk	LR	MP, EE	18.1	16.3	9.9↓	II
Pestovo	NR	WP, F, A	16.0	15.8	1.3↓	IV
Valday	NR	ME, A, PGW	18.7	15.7	16.0↓	III
Nevel	PR	T, F	18.6	15.4	17.2↓	III
Volosovo	LR	F, BM, A	11.7	12.2	4.3↑	III
Malaya Vishera	NR	F, EE, WP	14.2	12.1	14.8↓	II
Okulovka	NR	EE, ME, F	14.5	12.0	17.2↓	III
Porkhov	PR	F, BM, A	12.3	9.6	22.0↓	IV
Dno	PR	BM, MP, PGW	10.0	8.3	17.0↓	III
<i>4. Urban settlements dominated by the manufacturing industry and performing industrial and economic functions</i>						
OPOCHKA	PR	F, T, A	14.0	10.6	↓24.3	IV
Pechory	PR	BM, F	13.1	10.4	20.6↓	III
Soltsy	NR	EE, F, A	11.3	9.4	16.8↓	IV
Krestsy	NR	WP, F, T, A	10.0	8.3	17.0↓	IV
Dedovichi	PR	WP, PGW	9.9	8.2	17.2↓	IV
Strugi Krasnye	PR	WP, BM	8.8	7.2	18.2↓	IV
Khvoynaya	NR	WP, F	6.8	6.2	8.8↓	IV
<i>5. Single-industry urban settlements performing administrative and economic functions</i>						
<i>Food industry centres</i>						
Novosokolniki	PR	F, PGW	9.8	7.7	21.4↓	III
Sebezh	PR	F, PGW	7.2	5.7	20.8↓	III
Demyansk	NR	F, WP	5.8	5.2	10.3↓	IV
Pushkinskiye Gory	PR	F, PGW	6.1	4.3	29.5↓	IV
Gdov	PR	F	5.2	3.8	26.9↓	III
Loknya	PR	F	4.9	3.7	24.5↓	V
Krasnogorodsk	PR	F	4.7	3.7	21.3↓	V
Plyussa	PR	F, PGW	3.9	3.0	23.1↓	IV
Novorzhev	PR	F, A	4.1	3.5	14.6↓	V
<i>Wood processing centres</i>						
Parfino	NR	WP	8.5	7.2	15.3↓	IV
Shimsk	NR	WP	3.7	3.8	2.7↑	IV
Holm	NR	WP	4.3	3.7	14.0↓	IV
Kunya	PR	WP	3.5	2.8	20.0↓	IV
Usvyaty	PR	WP	3.2	2.8	12.5↓	IV
Lyubytino	NR	WP	3.3	2.6	21.2↓	III

The continuation of table 2

Municipality	Region*	Key economic activities	Population, thousand people			I <sub>ec</sub>
			2002	2012	2012/2002	
<i>Textile and agriculture centres</i>						
Pytalovo	PR	T, A	6.8	5.5	19.1↓	IV
Pustoshka	PR	A	5.5	4.3	21.8↓	V
Palkino	PR	A	3.2	2.8	12.5↓	IV
<i>6. Large rural settlements (villages) performing administrative and economic functions</i>						
Bezhanitsy	PR	F, A	4.8	3.9	18.8↓	IV
Poddorye	NR	—	3.3	2.8	15.2↓	V
Marevo	NR	A	2.8	2.3	17.9↓	V
Moshenskoye	NR	—	3.1	2.3	25.8↓	V
Betetsky	NR	—	2.3	2.0	13.0↓	IV
Volot	NR	A	2.9	2.0	31.0↓	V
<i>III. Local industrial centres within administrative districts</i>						
<i>1. Urban settlement with rapidly developing industrial and economic functions</i>						
Sertolovo	LR	BM, MP, CH	38.5	49.1	27.5↑	I
Otradnoye	LR	F, ME, EE, S	21.6	25.0	15.7↑	I
Pikalyovo	LR	MP, CH, BM	23.3	21.1	9.4↓	II
Nikolskoye	LR	BM, ME	17.4	20.1	15.5↑	II
Pankovka	NR	ME, F	10.5	9.4	10.5↓	II
<i>2. Single-industry urban settlements performing industrial and economic functions</i>						
<i>Pulp and paper industry centres</i>						
Kommunar	LR	PP, EE	17.1	21.1	23.4↑	II
Svetogorsk	LR	PP	15.7	16.0	1.9↑	II
Syasstroy	LR	PP	14.0	13.6	2.9↓	II
Sovetsky	LR	PP	6.6	7.1	7.6↑	II
<i>Food industry centres</i>						
Sverdlov settlement	LR	F, BM	9.2	9.5	3.3↑	I
Novaya Ladoga	LR	F, T	9.9	8.7	12.1↓	II
<i>Construction materials and metal product centres</i>						
Ulyanovka	LR	MP, WP	9.3	12.2	31.2↑	II
Mga	LR	BM	9.6	10.6	10.4↑	I
Kamennogorsk	LR	BM	6.1	6.7	9.8↑	II
<i>Mechanical engineering and shipbuilding centres</i>						
Shlisselburg	LR	S	12.4	14.3	15.3↑	I
Siversky	LR	ME, WP	12.1	12.3	1.7↑	II
Vyritsa	LR	ME, T	11.2	12.2	8.9↑	II
<i>IV. Local industrial centres — single-industry urban settlements with poorly developed administrative and economic functions</i>						
<i>1. Wood processing and building materials production</i>						
Idritsa	PR	WP, BM	5.8	4.9	15.5↓	III
Lyuban	LR	WP	4.6	4.5	2.2↓	II
Kuznechnoye	LR	BM	5.2	4.4	15.4↓	II
Yefimovsky	LR	WP	4.0	3.7	7.5↓	II
Pavlovo	LR	BM	3.3	3.4	3.0↑	I



Municipality	Region*	Key economic activities	Population, thousand people			I <sub>ec</sub>
			2002	2012	2012/2002	
Uglovka	NR	BM	3.6	2.8	22.2↓	III
Vazhiny	LR	WP	2.9	2.7	6.9↓	III
Nebolchi	NR	BM	2.3	2.0	13.0↓	III
<i>2. Chemical industry and porcelain production</i>						
Fornosovo	LR	CH	4.9	6.5	32.7↑	II
Proletariy	NR	Porcelain	5.4	5.0	7.4↓	II
Lesogorsky	LR	CH	3.0	3.3	10.0↑	II
<i>3. Mechanical engineering and shipbuilding</i>						
Krasny Bor	LR	ME	4.9	5.3	8.2↑	II
Voznesenye	LR	S	2.8	2.5	10.7↓	III
<i>4. Food industry</i>						
Sinyavino	LR	F	3.6	4.0	11.1↑	I
Tolmachevo	LR	F, MP	3.4	3.0	11.8↓	II
<i>5. Port facilities</i>						
Primorsk	LR	TR, F	5.3	5.9	11.3↑	II
Vysotsk	LR	TR	1.6	1.2	25.0↓	II
<i>V. Local industrial centres — large single-industry villages with poorly developed administrative and economic functions</i>						
<i>1. Construction materials production</i>						
Tyosovo-Netylsky	NR	BM	3.0	2.5	16.7↓	II
Kikerino	LR	BM	1.9	2.0	5.3↑	III
Gavrilovo	LR	BM	1.7	1.5	11.8↓	II
Vozrozhdeniye	LR	BM	1.8	1.4	22.2↓	II
Dubrava	PR	BM	0.9	0.9	0	III
<i>2. Other industries</i>						
Sosново	LR	WP	6.3	7.3	15.9↑	II
Voiskovitsy	LR	WP	3.8	3.9	2.6↑	II
Pashs	LR	WP	4.2	3.7	11.9↓	II
Fyodorovskoye	LR	ME	2.8	2.9	3.6↑	II
Ust-Luga	LR	TR	2.2	2.4	9.1↑	I
Voiskorovo	LR	CH	2.0	1.8	10.0↓	II

\* Regions: LR — Leningrad region, NR — Novgorod region, PR — Pskov region.

*Legend:* WP — wood processing, ME — mechanical engineering, F — food, MP — metal products, OP — oil products, BM — building materials, PGW — power, gas, and water generation and distribution, S — shipbuilding, G — glass, A — agriculture, T — textile, TR — cargo transportation, CH — chemicals, PP — pulp and paper, publishing, and printing, EE — electronics and electrical engineering.

Composed by the author based on [2—5].

The effect of a strong economic nucleus (Saint Petersburg), which serves as a ‘growth pole’, and high rates of transport infrastructure development were the key factors behind the creation of multi-industry hubs with development industrial and economic functions on the territory of the Leningrad

region (in the area of the capital's influence). A significant economic growth and the increasing role of towns in the regional structure of industrial production is accounted for by a strong influence of the rapidly developing Saint Petersburg agglomeration.

The industrial complex of the contiguous districts of the Leningrad region caters for the needs of the agglomeration core and the major market for their produce. A population increase observed in most of these towns creates prerequisites for further development of industrial production. This is accompanied by a stable trend towards the differentiation of economic development between the districts adjacent to Saint Petersburg and periphery territories. The sales markets of the Novgorod regional centres — the towns of Borovichi and Staraya Russia characterised by developed manufacturing industries, strong industrial specialisation, and industrial and economic functions — is the whole Northwestern economic district (including Saint Petersburg) and territories beyond it. However, the population of these towns is decreasing.

The industrial centres with a diversified structure of the economy include towns of the Leningrad region and the town of Chudovo in the Novgorod region. A sufficiently developed and functionally interconnected network of urban settlements with a significant proportion of towns with a population of more than 50,000 people created a stable system of settlements in the Leningrad region. Population changes in the towns alongside deteriorating transport accessibility highly depends on the remoteness of a settlement from Saint Petersburg. The population of towns composing the Saint Petersburg agglomeration increases more rapidly through intensive residential development. As the distance from the agglomeration centre increase, these processes become less intensive being replaced by a slight population decrease.

The towns with a strong economic specialisation and developed industrial and economic functions have unstable district systems of settlement and show a significant decrease in population. The only exception is the town of Volosovo in the Leningrad region. The most considerable population decrease is observed in the towns of the Novgorod and Pskov regions. These demographic trends are a result of the peripheral and semi-peripheral position of such towns, the reduction in the transport accessibility from regional centres and deterioration of organisational and economic functions.

Administrative district centres dominated by manufacturing industry and emerging industrial and economic functions also show a stable decrease in population and the deterioration of organisational and economic functions.

Single-industry urban settlements with insufficiently developed administrative and economic functions include the centres of administrative districts of the Novgorod and Pskov region, which have weak administrative and economic ties and cannot perform the functions of an industrial centre in the economic development without the support of regional authorities. With a population of 2.8 to 5.4 thousand people, they face an accelerated population decrease.

The most critical demographic situation is observed in the rural settlements serving as administrative centres with organisational and economic functions. These are five settlements of the Novgorod and one of the Pskov region (with a population of 2 to 3.9 thousand people). A low level of economic development and the absence of large and medium enterprises on their territory result in a negative net migration rate, which has an adverse

effect on the demographic situation alongside the processes of population aging and a high mortality rate. These settlements can be classified as extremely unstable centres of district settlement systems with increasing trends towards population decrease.

Local industrial centres include the urban settlements of the Leningrad region with close economic ties with the economically developed administrative centres. They comprise a servicing and supporting industrial complex of the administrative district. Such settlements have sufficient prerequisites for further development of functional connections. Moreover, there is a rather favourable demographic situation for sustaining a population increase. This group also includes urban settlements with a multi-industry structure of economy, which are not fully capable of serving as a district-forming industrial centres due to insufficient economic development and poor transport accessibility. Population growth is observed in most of these urban settlements.

Industrial settlements of local significance include single-industry urban settlements with poorly developed administrative and economic functions, which comprise districts with rather high level of economic development and serve as principal sales markets. These settlements are rather stable in demographic terms, they show prerequisites for further industrial development and the intensification of the economic function.

Most of large single-industry rural settlements with poorly developed administrative and economic functions are concentrated in the Leningrad region. They are dominated by the building materials and wood processing industries. The centres of municipal districts incorporating these rural settlements serve as multifunctional industrial hubs with developed industrial and economic connections. In general, rural settlements are rather stable showing a slight population decrease.

It is possible speak of a close connection between the territorial organisation of population and the emerging regional economic and demographic trends. The major role in increasing the level of economic development and reducing spatial heterogeneity is played by the established industry structure of the economies of urban and rural settlements that creates the municipal industrial complex. The functions of different settlement types can be associated with not only manufacturing industries, but also other economic activities: cargo transportation, power supply, and different administrative and economic functions. Alongside a significant increase in the regional industrial output in 2002—2012, it is worth stressing the emerging spatial polarisation in terms of economic development manifested in the excessive concentration of industrial production in regional centres, deterioration of organisational and economic functions of internal district centres, and their decreasing influence on the adjacent territories.

In general, weak economic influence of administrative centres on the adjacent urban and rural settlements coupled with a low level of development of organisational and economic ties and poor transport accessibility within regions created prerequisites for further polarisation of development of economic space in the Northwestern economic district. Spatial discontinuities in the economic development of regions become evident when comparing outputs of the largest companies and assessing transport and industrial investment potentials. Although the prospects of economic and spatial develop-

ment of the Leningrad region are rather optimistic (the more so when compared with the Novgorod and Pskov regions), the real economic centres capable of fulfilling administrative, industrial, and economic functions are the towns of the Saint Petersburg agglomeration and the settlements occupying a semi-peripheral position in relation to the regional centre (Sosnovy Bor, Kirishi).

A lack of correspondence between the established regional settlement systems and the spatial structure of the regional economy has an adverse effect on the demographic processes and migration, especially in rural settlements. This is manifested in excessive concentration of human resources in the largest and medium-sized towns and an increasing dependency ratio on the periphery.

Spatial changes in the course of demographic development are peculiar to the 'core-periphery' model. Regional centres and multifunctional industrial hubs situated in suburbs are rather stable and show a certain population increase, which is accounted for in most cases by the positive net migration rate. As the distance to economic activity centres (as a rule, regional capitals) increases, a population decrease is observed. Moreover, the population decrease rates reach critical levels in sparsely populated settlements. Favourable trends in the economic and demographic development include a stable population growth in local industrial centres within economically developed municipalities.

Therefore, when developing concepts for strategic and territorial planning at the regional and municipal level and creating conditions for sustainable balanced and spatial development of urban and rural settlements, it is recommended to:

- create competitive industrial clusters with a pronounced industrial specialisation to ensure balanced development and mitigate the negative processes of the settlement system transformations;
- diversify economy and develop industrial specialisation to decrease the number of urban and rural settlements with a multi-industry structure of the economy;
- ensure accelerated development of industrial and transport connections between unstable urban settlements and multifunctional industrial centres and the sophistication of their economic functions;
- ensure transport accessibility and accelerated development of transport infrastructure to support the district-forming function of administrative district centres and create prerequisites for economic growth.

### *References*

1. Alaev, E. B. 1983, *Social'no-jekonomicheskaja geografija. Ponjatijno-terminologicheskij slovar'* [Socio-economic geography. Conceptual and terminological dictionary], Moscow.
2. *Baza dannyh pokazatelej municipal'nyh obrazovanij* [Database performance municipalities], available at: <http://www.gks.ru/dbscripts/munst/munst.htm> (accessed 24.01.2014).

3. Gosudarstvennyj komitet Pskovskoj oblasti po jekonomicheskomu razvitiju i investicionnoj politike [State Committee of the Pskov region on economic development and investment policy], available at: <http://economics.pskov.ru/> (accessed 24.01.2014).
4. Investicionnyj portal Leningradskoj oblasti [Investment portal of the Leningrad Region], available at: <http://lenoblinvest.ru/> (accessed 24.01.2014).
5. Investicionnyj portal Novgorodskoj oblasti [Investment portal of the Novgorod region], available at: <http://econominv.novreg.ru/> (accessed 24.01.2014).
6. koncepcija dolgosrochnogo social'no-jekonomicheskogo razvitija Rossijskoj Federacii na period do 2020 goda (utverzhdjena raspozjazheniem Pravitel'stva RF ot 17 nojabrja 2008 g. N 1662-r) [The concept of long-term socio-economic development of the Russian Federation for the period up to 2020 (approved by governmental decree on November 17, 2008 N 1662-r)], 2008, available at: [http://www.consultant.ru/document/cons\\_doc\\_law\\_90601/?frame=1](http://www.consultant.ru/document/cons_doc_law_90601/?frame=1) (accessed 24.01.2014).
7. Lappo, G. ME. 1983, koncepcija opornogo karkasa territorial'noj struktury narodnogo hozjajstva: razvitie, teoreticheskoe i prakticheskoe znachenie [The concept of the reference frame of the territorial structure of the economy: development, theoretical and practical significance], *Izvestija AN SSSR, Ser. Geografija* [Izvestiya AN SSSR, Ser. Geography], no. 5, p. 16—28.
8. Litovka, O. P. 1976, *Problemy prostranstvennogo razvitija urbanizacii* [Problems of spatial development of urbanization], Leningrad, 100 p.
9. Martynov, V. L., Sazonova, I. E. 2012, The territorial structure of productive forces of Russian North-West in the 2000—2010s, *Balt. Reg.*, no. 1 (11), p. 81—88. DOI: 10.5922/2079-8555-2012-1-10.
10. Pertsik, E. N. 2006, *Rajonnaja planirovka (territorial'noe planirovanie)* [Regional planning (land use planning)], Moscow, 398 p.
11. Skaterschikov, S. V., Chistobaev, A. I. 2014, Spatial planning in the European Union and the Russian Federation, *Balt. Reg.*, no. 1 (19), p. 104—112. DOI: 10.5922/2079-8555-2014-1-9.
12. Sobolev, A. V. 2013, Prostranstvennyye osobennosti vlijanija poljarizovanogo razvitija na municipal'nye obrazovanija Severo-Zapadnogo jekonomicheskogo rajona [Spatial features of influence on the development of polarized municipalities of Northwest Economic Region], *Vestnik Sankt-Peterburgskogo universiteta. Ser. 7* [Bulletin of St. Petersburg State University. Ser. 7], no. 3, p. 168—177.
13. Horev, B. S. 1981, *Territorial'naja organizacija obshhestva* [Territorial organization of society], Moscow, 320 p.
14. Chistobaev, A. I., Krasouskaya, O. V., Skaterschikov, S. V. 2010, *Territorial'noe planirovanie na urovne subektov Rossii* [Spatial planning at the level of Russia], St. Petersburg, 296 p.
15. Sharygin, M. D., Nazarov, N. N., Subbotina, T. V. 2005, Opornyj karkas ustojchivogo razvitija regiona (teoreticheskij aspekt) [The reference frame of sustainable development of the region (theoretical aspect)], *Geograficheskij vestnik* [Geographic bulletin], no. 1—2, p. 15—22.

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