

**MTMSD 2022****I International Conference «Modern Trends in Governance and Sustainable Development of Socio-economic Systems: from Regional Development to Global Economic Growth»****SUSTAINABLE DEVELOPMENT AT LOCAL AND REGIONAL LEVELS: INTERRELATIONS AND LIMITATIONS**

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**Abstract**

The concept of sustainable development is considered for different spatial levels: regional and local. Sustainable development refers to the stable development of a certain spatial entity: a country, a region, a settlement, balanced in the economic, social and environmental spheres. At the local level, structurally the most complete, complex and integral formation is a separate settlement. The state of its sustainable development should be characterized by a stable increase in the totality of economic, social and environmental indicators. It should be noted that sustainable development at different spatial levels is closely interrelated. For example, development at local levels almost always depends on regional levels, and the development of a certain region includes developing local formations. The impulses of development are transmitted from the local level to the regional through the links of spatial structures. At the same time, the interrelationships and dependencies in the sustainable development of local and regional levels have not been studied fully and constructively enough.

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## **1. Introduction**

The strategies of sustainable development developed recently are generally aimed at different spatial levels. The main theoretical provisions for achieving sustainable development, first of all, were developed for the level of individual countries (Agafonov & Islyayev, 1995; Kondratiev, 1997).

Some developments are aimed at the problems and prospects of sustainable development at local and regional levels (Fedorov & Korneevets, 2009; Gallopín & Raskin, 1998; Semenov et al., 2007; Tulukhonov, 1996). A number of papers have considered approaches to sustainable development in the coastal regions (Moshkov, 2022a).

In general, sustainable development at different spatial levels is interconnected. Development at local levels almost always depends on regional levels, and the development of a certain region includes developing local formations. However, the interrelationships and dependencies in the sustainable development of local and regional levels have not been studied fully and constructively enough. These questions constitute the task of this article.

## **2. Problem Statement**

The concept of sustainable development is considered for different spatial levels: regional and local. Sustainable development refers to the stable development of a certain spatial entity: a country, a region, a settlement, balanced in the economic, social and environmental spheres. At the local level, structurally the most complete, complex and integral formation is a separate settlement. At the same time, the interrelationships and dependencies in the sustainable development of local and regional levels have not been studied fully and constructively enough.

## **3. Research Methods**

Sustainable development refers to the stable development of a certain spatial entity: a country, a region, a settlement, balanced in the economic, social and environmental spheres. Structurally, the most complete, complex and integral formation at the local level is a separate settlement. The state of sustainable development of the settlement should be characterized by a stable increase in its economic, social and environmental indicators. At the same time, the settlement, as a rule, is not a closed system, it is connected both with the near territorial and aquatic – for coastal settlements – environment for the use of natural resources, including land, water, forest, construction. Recreation areas of the population are also located here, as well as zones of the spread of man-made, anthropogenic impacts of the settlement on the environment. In addition, many settlements are connected with other settlements to obtain resources, materials, semi-finished products and components for various activities existing in the settlement, as well as to market their products and services. That is, any settlement is always included in the system of regional markets for various resources and finished products. In addition, the settlement with the surrounding territory also implements migration processes of population movement.

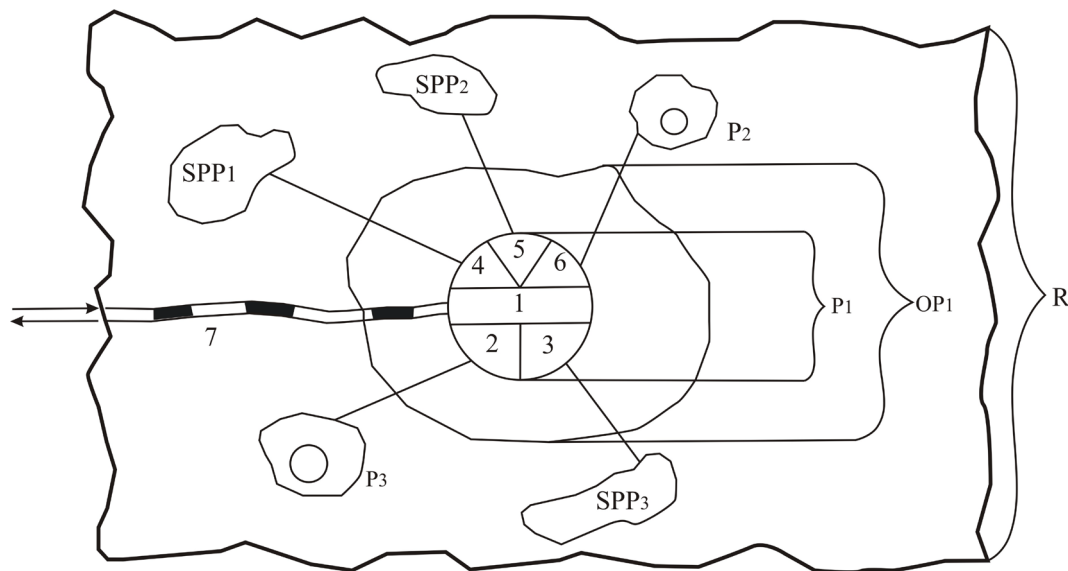
Therefore, if we identify and evaluate the main cycles of economic development – chains of individual activities; social – cycles of human activity; environmental – the use of natural resources and

the removal of man-made waste into the environment, then we can see that they are all more fully closed at the regional level. At the same time, the main impulses of sustainable development are laid and implemented at local levels – in the structures of individual settlements. This is the formation of various parts of the industrial and social infrastructure that ensure the livelihoods of the population, types of economic activities that provide employment and living standards, as well as the whole range of relationships with the natural resource environment.

For the formation of a certain permanent population and all these structural elements of the settlement, as well as for their stable balanced development, the settlement is included in the structures of regional development. Thus, the links and elements of local structures through spatial development are connected with regional development, move to the regional level.

The interrelationships of development at local and regional levels are carried out through the following links of spatial structures:

1. Transport links – entry and exit to and from the settlement;
2. Links of market structures – for obtaining resources, materials, etc. to ensure the functioning of infrastructure and various types of activities, for the sale of finished products and services;
3. Links of external environmental management structures – for the receipt and use of natural resources, as well as for the removal of man-made and anthropogenic waste into the environment;
4. Links of migration processes – from pendulum labor migration to inter-district population movements (Figure 1).



**Figure 1.** Connections of local and regional levels in spatial development

P<sub>1</sub> – central settlement, including 1 – population, 2 – industrial infrastructure, 3 – social infrastructure, 4, 5, 6 – enterprises of the main types of activity, 7 – external transport link. OP<sub>1</sub> – territorial (aqua-territorial) environment of settlement P<sub>1</sub>; P<sub>2</sub> and P<sub>3</sub> – other settlements directly connected by transport links with P<sub>1</sub>; SPP<sub>1</sub>; SPP<sub>2</sub>; SPP<sub>3</sub> – territorial environmental management structures directly connected with P<sub>1</sub>; R – regional level

Thus, sustainable development – both stable growth and qualitative increments of all structural elements of the settlement P<sub>1</sub> depend on their interactions reaching the regional level. For a more

rigorous assessment of the links and dependence of the sustainable development of the settlement – at the local level from the regional one, it is proposed to use the method of sequential exclusion of individual structural links linking the local level with the regional one, including links with other settlements – P 2 and P 3, as well as territorial links of nature management – SPP 1, SPP 2, SPP 3 and others.

On the basis of the corresponding calculations, the ability of the settlement P 1 to function without these links is determined, including – with the preservation or reduction of socio-economic and resource-ecological characteristics. On the basis of such calculations, certain restrictions in sustainable development can also be established, such as certain limits in the use of natural resources or in the removal of man-made waste into the environment, in which socio-economic and environmental indicators of development sharply deteriorate. At the same time, more complete estimates of restrictions can be established at the regional level (Ushakov, 2022, 2023).

Sustainable development of territorial and sectoral structures of the economy as a whole - as combinations of homogeneous activities within a certain territory – should cover the entire spatial system of production – from a separate economic point (settlement) to their regional combinations and the entire national economic complex of the country. Starting to manifest itself from the moment and levels of formation of individual settlements (towns and cities), territorial-sectoral structures move to regional levels (municipal formation; fractional economic region; mesoregion: oblast, region, territory; large megaregion; etc.). Individual links of the territorial and sectoral structures of mesoregions and megaregions can enter international regional markets for goods and services. At the same time, at any hierarchical level of changes, a stable combination of structural elements remains, consisting of functional blocks: specialization, production and population services. In the territorial aspect, sustainability is manifested in the ability of territorial-sectoral structures to form various linear-nodal combinations (Baklanov, 2024).

In the Far Eastern megaregion of Russia, regional and local territorial-sectoral structures are distinguished, consisting of industrial enterprises and organizations, combinations of which form multi-rank spatial systems: regional (territorial-sectoral structures of the economic megaregion – correspond to the federal district of the Russian Federation, mesoregion – a subject of the Russian Federation, microdistrict – a municipal district and their combinations) and local - territorial-branch structures of an economic node (city municipal district), an economic point (settlement).

As part of these spatial systems, elements of the territorial-sectoral structure (enterprises and organizations of different industries and types of economic activity) perform various functions, depending on their role and place in the territorial division of labor (specialized, auxiliary, additional, servicing, etc.) (Baklanov, 2001, 2024). Combinations of homogeneous elements (industries, types of economic activity) form the sectoral structure of the region. Territorial-sectoral combinations of economic points, economic nodes as part of economic districts of different ranks form the territorial structure of the region – economic zones, belts, nodes, their groupings, etc.

The coastal areas are characterized by the development of marine economic activities focused on natural ocean resources - biological, oil and gas resources of the shelf, recreational. The use of sea transport provides rapid access to the world markets of goods and services (Baklanov et al., 2024; Moshkov, 2022b).

We have assessed the levels of socio-economic development of individual settlements and municipal districts (Baklanov, Moshkov & Ushakov, 2022; Moshkov, 2022a, 2022b).

The overall goal of the development of any municipality is to improve the level and quality of life of the population living in it, based on sustainable socio-economic development. To achieve this goal, it is necessary to solve a set of problems related to the rational use of existing economic and geographical factors (natural resources, demographic, social, economic, scientific and technical, environmental, spatial, etc.). The most important problem is overcoming differences in the levels of socio-economic development of individual municipalities, the presence of which negatively affects the quality of life of the population in less developed municipalities (Baklanov et al., 2023, 2024).

In the subjects of the south of the Far East, a set of municipalities has been formed - districts and settlements that differ significantly in terms of the level of socio-economic development (population, production potential, production of industrial and agricultural products, etc.). Each municipality (urban district, municipal district and its settlements) develops on the basis of their combination of favorable and negative factors, which is reflected in the specific demographic structure and dynamics of the population and economy, the peculiarities of nature management, in the territorial and sectoral structure of the economy (Baklanov, Moshkov, Badenkov, et al., 2022; Baklanov, 2024).

Municipal districts vary significantly in their area of territory and population. For example, the urban districts of Primorsky Krai (with the exception of Dalnegorsky, Ussuriysky and Lesozavodsky) differ in a small area of territory (from several tens to several hundred km<sup>2</sup>). They are characterized by a high degree of economic development of the territory; dense buildings in most of the residential area of the urban district; high population density; sufficiently developed infrastructure; the presence of industrial production (including processing enterprises). The main socio-economic potential of the region is concentrated in large urban districts (Baklanov et al., 2023).

Agricultural areas, as well as urban districts, which include several settlements (Dalnegorsky, Lesozavodsky, Ussuriysky) have a large area of territory (from several thousand km<sup>2</sup> or more). Rural municipal areas often have a low population density (compared to municipalities located in the European part of the country) (Baklanov, Moshkov & Ushakov, 2022).

It should be noted that as we move north, the area of the territory of municipal districts increases, areas are more characterized by fragmented (focal) development, and, as a result, low population density. In many ways, such a characteristic of the level of development of the northern municipal districts is due to complex natural and climatic conditions and restrictions (Baklanov, Moshkov, Badenkov, et al., 2022).

An important factor in the development of municipalities is the natural resource potential of the territory (availability of mineral resources, land resources, water resources, wood and bioresources of forests and resources of coastal waters). The structure of the economy, the level of income of the population, as well as the prospects for their sustainable development largely depend on the territorial combinations of these resources available in municipalities (Baklanov, Moshkov, Badenkov, et al., 2022).

Another characteristic of the economic structure of a municipality is its specialization. To a large extent, its socio-economic well-being depends on the existing specialization of the economy of a municipality. Specialization of a municipality can be provided, as a rule, by relatively large enterprises and organizations related to one or more (two, three) types of activity. Currently, the most developed

municipalities in the south of the Far East are those that specialize in the extraction of minerals that are in demand on world markets, as well as activities related to transport (including rail and sea) and manufacturing industries. In many municipal districts, specialized activities are represented by agriculture, which is unevenly developed. The most promising agricultural activities are in municipal areas that tend to large cities (Baklanov, Moshkov & Ushakov, 2022; Baburin, 2022; Moshkov, 2023).

An important factor in the development of municipalities is their economic and geographical position (including transport and geographical). The most advantageous position is noted in municipalities that have access to the sea coast with a developed port infrastructure. In addition, it is important to have rail and road transport networks, approaches and exits (for example, the Trans-Siberian Railway and the Baikal-Amur Mainline). A special place is occupied by municipalities that have direct access to the land border with China. At the same time, the presence of customs crossings on the territory of the district, a large volume of cargo transportation through border posts for the border municipalities themselves often does not play a big role in the development of their economy. Since all income from transit and customs activities is transferred to the federal center – Moscow (Baklanov & Moshkov, 2023; Baklanov, Moshkov & Ushakov, 2022).

Municipalities differ significantly among themselves in terms of the level of transport development. To the greatest extent, transport networks are developed in the southern and western regions of the Primorsky Territory, in the southern regions of the Khabarovsk Territory, in the Jewish Autonomous Region, in the southern regions of the Amur Region. Less developed – in the northern regions of the Khabarovsk and Primorsky Territories, where, often, air transport remains the main means of communication with the administrative center of the region (Ushakov, 2020a, 2020b).

To characterize the socio-economic situation of municipalities, we selected a set of the following available statistical indicators: 1) population dynamics; 2) wages and employment; 3) budget characteristics (own incomes and their structure, the share of social expenditures); 4) the volume of agricultural products; 5) investments; 6) the volume of housing construction; 7) the volume of shipped goods of own production (industry).

The analysis of the totality of indicators for urban districts allowed them to combine the following groups according to the level of socio-economic development.

1. Urban leading districts. These are the administrative centers of the subjects of the south of the Far East – Vladivostok, Khabarovsk, Blagoveshchensk. They concentrate the main socio-economic potential of the subjects and have high development indicators.

2. Urban districts with a high level of development compared to most urban districts of the subjects of the south of the Far East. As a rule, these are urban districts with a large population and a prosperous socio-economic situation: Birobidzhan, in the Khabarovsk Territory — Komsomolsk-on-Amur; in the Primorsky Territory — Artem, Nakhodka, Ussuriysk; in the Amur Region — Belogorsk, Svobodny, Zea.

3. Urban districts with little socio-economic potential. These are small urban districts (in terms of population), in a significant part of which there is a depressive nature of the socio-economic sphere.

The analysis of urban and rural settlements by the level of their socio-economic development allowed us to identify the following groups:

- i. Socio-economic centers of the 1st order are the most developed settlements. They are leaders in socio-economic indicators among all settlements of their subject. There are large own revenues in the revenue part of the budget, high rates of investment receipts and housing construction volumes. An important factor is the availability of markets for products in a neighboring large city and its interest in using the territory and labor resources of the settlement: Mirny settlement, focused on Khabarovsk; Izvestkovy settlement – here is a large cement production enterprise, whose products are aimed at consumers in Khabarovsk and other large settlements of the Khabarovsk Territory and the south of the Far East).
- ii. Socio-economic centers of the 2nd order are economically developed settlements. They have high socio-economic indicators for their own income in the budget, the availability of jobs for the population, as well as good indicators for investment and housing construction. A number of settlements are assigned to this group due to the presence of favorable factors that contributed to their development: favorable economic and geographical location (proximity to the administrative centers of the subjects, coastal settlements, location of the Trans-Siberian or Baikal-Amur highways); high production potential (presence of large industrial enterprises); natural resource factor (location near the developed mineral deposits).
- iii. Socio-economic centers of the 3rd order. This group includes the administrative centers of the districts, primarily due to the availability of investment and housing construction. From others – settlements where the population is mainly engaged in commercial agriculture and forestry, due to which these settlements receive an additional impetus for development (for example, settlements in the Amur and Jewish Autonomous Regions).
- iv. Settlements with some signs of depression. They note the low availability of jobs. The main place of work is the administration of the settlement and the budgetary spheres – education and healthcare. There is a large outflow of population from these settlements, problems with the formation of the local budget (low collection of own budget revenues) and almost complete lack of investment and housing construction.
- v. Settlements with pronounced signs of depression. There are almost no jobs here except for the administration of the settlement. Large outflow of population (more than 3% of the total population per year). Complete lack of investment and housing construction, high dependence on gratuitous external revenues to the budgets of settlements.
- vi. Our assessment of municipalities by the level of their socio-economic development, in general, allows us to note that the levels of settlement development mainly correspond to the level of development of municipalities – urban districts and municipal districts – in the regions of the south of the Far East differ in a greater variety of indicators of the standard of living of the population, social sphere and economy than in the northern regions.

#### **4. Conclusion**

Achieving sustainable development at the local level – the level of individual settlements, is possible only if there are interrelations with the regional level, including in the economic, social and resource-ecological spheres. Such relationships are established in the process of spatial development,

through the formation of structural links linking this settlement with other settlements and environmental management structures within significant territories and water areas of the districts.

To assess the links and dependence of sustainable development at the local level with the regional level, calculations of options for the possible exclusion of individual links between local and regional structural links are necessary. At the same time, limitations in sustainable development are also determined. In a more complete form, sustainable development is possible only at the regional level.

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