Features of Formation of Cross-Border and Transcontinental Settlement Systems of Russia and China

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Abstract. The border area is a space in which there is a special regime of settlement development. Along the long border between Russia and China, there has historically been a cross-border relationship between settlements. Currently, each of them has its own mode of development, determined by socio-economic and political factors. The formation of a cross-border settlement zone in the North-East of China and the Far East is determined by integration processes, which are constrained by the implementation of different program directions of the two States. The Asian vector can be clearly traced in the economy and demography of the South of the Russian Far East. New Chinese cities are beginning to form functional and planning conglomerates with Russian settlements. Two divergent process (Chinese urbanization and suburbanization Russian) has led to the creation of new settlement systems cross – border and transcontinental. The novelty of the study lies in the fact that for the first time new forms of settlement in the border area – transboundary and transcontinental are considered; functional and planning features of their development are revealed.

1. Introduction

Studies of new trends that are currently observed in regional urban planning are priority areas. In the last decade, there have been major changes in the settlement structure of the South of the Far East and the territories of North-East China. The area along the Russian-Chinese state border became a zone of active cooperation. On the Chinese side, the process of formation of new cities with intensive rates of development was noted. Their territorial expansion is planned along the border. In a short time, a continuous urbanized zone with a developed transport infrastructure is formed. On the Russian side, there is a decrease in the population, the presence of a large number of non-growing settlements, a narrow profile specialization. On the basis of large cities, the formation of large - scale areas is noted, which determined the direction of "One city – two States": (Khabarovsk – Fuyuan, Zabaikalsk – Manchuria; Blagoveshchensk-Heihe). Currently, the international functional connections define a new form of settlement on the basis of paired settlements.

The research was based on the results of the analysis of a number of scientific papers in the field of the history of the development of the Russian Far East and the colonization of China [1, 3, 5]; of
architecture and urban planning in East Asian region [9, 11, 13, 15]; the formation of an international transboundary territories [2, 6, 12, 7, 8, 18, 10, 14, 16] Reviewed papers on the theory and practice of urban design and spatial planning [4]. Great importance for the study was attached to the study of official documents, regulatory framework, regulations and acts [19, 20, 21].

2. Formation of special zones in the transboundary region

Currently, in the border region, special trade zones operate in separate curls. Their contractual and legal basis is the legislation of the PRC, normative acts adopted by the state Council of the PRC [19]. With Russia signed Intergovernmental agreements (1986) on the development of cross-border trade between Heihe and Blagoveschensk, Suifenhe and Border, Manchuria and Transbaikalia, Hunchun and Zarubino. Their further development is associated with the formation of free economic zones (FEZ), which are carried out in three stages:
- 1st stage (up to 10 years). During this time, the primary infrastructure is formed, the attraction of foreign capital begins (especially through the mechanism of joint ventures), the legal basis for cooperation with foreign companies is created;
- 2nd stage (up to 8 years). FEZs, mainly based on foreign investment, are moving to sell their products in the foreign market. The economic structure of the zones is undergoing a transformation: the share of local trade, small-scale agricultural and industrial production is shrinking, while the share of large-scale industry combined with foreign trade is growing. 50-60% of investments are supposed to be at the expense of foreign capital, at least 70% of production products are to be exported;
- 3rd stage. There is a transition from labor-intensive production to production based on advanced technology.

In the far East, for the creation of SEZs, the ideal area is the southern part of Primorsky Krai, which has a raw material and energy base, labor resources. In 2012 Vladivostok became a free port [21]. In General, the port zone covers the entire southern part of Primorsky Krai. According to Russian legal norms, the legal status of the" Free port of Vladivostok "applies to the transport route" Primorye-1", which runs from the Chinese city of Harbin to the ports of the Asia-Pacific region, as well as the highway" Primorye-2", linking Changchun and ports in the Pacific ocean. The vast territorial area with export-oriented development economy as a whole determines the scale of transcontinental settlement systems, oriented not to the border area, but to the Asia-Pacific region.

3. Development of new forms of settlement of the border zone of Russia and China

In recent years to enhance the development of southern territories of the Far East and North-East of China taken by various government programs (far hectare Act, the Law on territories of priority development, etc.). Their implementation will lead to the transformation of traditional forms of settlement, on the basis of which new growth poles will be formed. At a new stage in the development of relations between the two countries, China has declared all major settlements in the border zone open cities, the development of which will be built through economic cooperation with Russia. This is not the official status of the city, but only the direction in its development. In the Northern border regions of China, a belt of "open" territories ("Open cities") has already been created, oriented outward and increasingly growing into the system of international division of labor. The primary measures taken to determine special zones with the release of the border strip zone, crossed the border.

The following typological groups of urban planning systems were identified in the border zone of Russia and China:
- city agglomeration (Manzhouli, Hailar, Tongjiang, Heihe, jalai Nur, Khabarovsk, Ussuriyisk, Blagoveschensk, Vladivostok).
- national agglomeration (Russia: Khabarovsk, Blagoveschensk, Ussuriyisk, Chita; China: Manzhouli, Heihe, Fuyuan, Dunin, Hunchun, Mishan, Suifenhe, Tuntszyan, Raohe, Lobei);
- transagglomeration (Zabaikalsk – Manzhouli, Blagoveschensk - Heihe) [17].
On the basis of existing systems, new forms of settlement, such as cross-border and transcontinental settlement systems, are now emerging. Their functional organization is characterized by polyfunctionality based on the international division of labor. Each system has its own mode and rate of development (divided into developed, developing and new). You can select the following cross-border settlement system: "Window to Asia" - a reference centers Blagoveshchensk - Heihe; "Eastern policy" - support centers Khabarovsk - Fuyuan; "New Manchuria" - support centers Zabaikalsk - Manchuria; "Head of the dragon" - support centers in Ussuriysk-Pogranichny - Suifenhe; "Path to Asia" - a reference centers dunnin - Poltavka - Ussuriysk; "Transit DV" - support centers Hunchun - Kraskino - Zarubino.

The most active pace is the formation of systems: "Way to Asia"and" transit DV". Under the influence of the Chinese vector, these systems will develop in a mode of constant transformation. The reasons for this are the territorial proximity of Chinese cities to the state border of North Korea and the formation of new economic ties with the border Korean cities (Gyeongwon, Onson). In the South of the Far East, a new level of the Vladivostok - Harbin international system will be determined. Due to the dominance of high-speed transport corridors, the "Harbin" transcontinental system (Khabarovsk-Vladivostok - Suifenhe-Harbin) will be developed.

4. Indicators of related development of border settlements

It is noted that along with the development of traditional forms of settlement (city, village, urban-type settlement, agglomeration), there are new ones, which are due to the adopted economic trends and international cooperation between Russia and China. Common interactions are noted in the creation of Russian-Chinese free economic zones and in the formation of a zone of border economic cooperation. In the economy and demography of the South of the Russian Far East, the Asian vector is clearly traced, and new Chinese cities begin to form functional and planning conglomerates with Russian settlements. The process of transformation and formation of urban planning systems in the border area is influenced by indicators of related development (table 1).

Table 1. Indicators of related development of border settlements.

| Settlement system | Effectiveness                                                                 |
|-------------------|------------------------------------------------------------------------------|
| Cities-agglomeration: the reduction in the area uncomfortable territories; engineering measures for the improvement of free areas; formation of the system of public centers | Economic effect Optimal structure of functional zoning and rational transport infrastructure  |
| National agglomeration: formation of intra-system connections; expansion of socio-economic area; increase in the number of city- | Social effect The combination of work and places of residence, proximity to community centers |
| | Demographic effect Reduction of migration mobility within the administrative boundaries of the city |
| | Natural-ecological effect Inclusion of green zones in inconvenient areas as planning elements, improvement of ecological situation in the city |
| Rational allocation of functional entities to use domestic resources; building joint ventures | Possibility to choose places of employment, social services within the system; construction of social housing (rental type) | Population stabilization in all elements of the system | Inclusion of green wedges and bands in the structure of the settlement system; creation of a green ring |
| **forming objects; inclusion of elements of the system in the international distribution of labour; construction of transport and road system; reduction of risk factors in the elements of the system.** |
| **Balanced structure of industrial enterprises and industrial complexes based on new technologies** |
| **Ability to choose places of employment, social services and places of residence within the borders of the United cities; development of small and medium-sized businesses** |
| **Free migration mobility within the borders of the United cities** |
| **Inclusion of green areas as planning elements; formation of eco-zones surrounding the United cities** |
| **TRANS agglomeration:** formation of functional and planning structure on the basis of uniform rules and regulations; organization of a single city-forming functional block on the basis of complementarity and interconnectedness; formation of a single transport infrastructure; creation of FEZ; development of measures for environmental protection. |
| **Balanced development of all structural elements of the system** |
| **Possibility to choose places of employment, social services and places of residence within the boundaries of the settlement system; development of medium and large businesses** |
| **The growth of the permanent population** |
| **Formation of specially protected areas to stabilize the ecological situation** |
| **Cross-border systems: formation of new elements of the system (eco-settlements); active development of TOR and its components; inclusion of open areas in the settlement structure; formation of a single transport infrastructure.** |
| **Balanced development of all structural elements of the system** |
| **A wide range of places of employment, places of residence and social services** |
| **Realization of each resident of their potential** |
| **Environmental protection zones of national and international significance** |
| **Transcontinental system: inclusion in the international system of division of** |
| **Balanced development of all structural elements of the system** |
| **Environmental protection zones of national and international significance** |

Around the settlement area
labour; expansion of functional relations (scientific, industrial, cultural, educational, tourist); formation of specialized centers based on new technologies; formation of new elements of the system (eco-settlements); formation of transport corridors.

residence, treatment, recreation and education; development of small, medium and large businesses.

5. Conclusion
Analysis of cross-border settlement systems showed that settlement areas in border areas may have different degrees of urbanization. They may include both rural and urban settlements. They are formed as bicentric and include a vast territory. In modern conditions, the main factor in the formation and development of cross-border systems is not so much the population in the settlements as the ability to agglomerate them (the formation of functional links, the ability to quickly transform, to unite). Of great importance is the availability of resource potential in the area. City-agglomeration and transgeneration, located on the Russian-Chinese border, have a linear structural framework, and the national, transboundary and transcontinental settlement system and spatial. All investigated systems are polycentric. Transboundary and transcontinental settlement systems are characterized by spatial organization, and their formation is under the simultaneous influence of two processes - integration and differentiation.

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