

Lecture Notes in Civil Engineering

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Akif Gasimov *Editors*

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Editors

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Formation of United Territorial Communities Based on the Principle of Urban Agglomerations



Halyna Tatarchenko , Nataliia Biloshytska , Mykola Biloshytskyi , Maryna Shparber , and Serhii Bida

Abstract The paper analyses factors, properties, and criteria contributing to the formation and development of the territorial community based on the principles of urban agglomerations in modern conditions on the example of cities in Luhansk oblast. In the modern world, it is no longer a question of competition between countries but actually between cities—agglomerations or metropolitan cities. In fact, they have been in Ukraine, e.g., large cities of Kyiv, Kharkiv, Lviv. Currently, Ukraine has introduced three levels of the administrative-territorial system, which distinguish the following units: community, district, region. As a part of the decentralization reform in Ukraine, 490 old districts have already been liquidated and 136 new ones have been formed. There have been created 1470 united territorial communities, which should become the basis of local self-government. A criterion analysis of the territory with adjacent settlements has been conducted from the point of view of unification into a territorial community. Priority measures for the development and improvement of the united territorial community as an urban agglomeration have been proposed. Based on the criterion analysis of ‘Severodonetsk-Lysychansk-Rubizhne’ territory with adjacent settlements, we can consider the united territorial community as an urban agglomeration, and develop it as a complex system that includes not only cities and settlements around them, but also all production facilities, resettlement of inhabitants, interaction of nature and urban population as a single entity. For such agglomerations, emphasis should be placed on spatial development, in particular on traditional distribution factors, such as transport, material, labour costs.

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Keywords Agglomeration • United territorial community • Criterion analysis of the territory • Boundaries of spatial influence areas

1 Introduction

At the present stage of development of society, the most common form of settlement is an urban agglomeration. It is a compact cluster of rapidly developing localities consisting of dozens and sometimes more urban and rural settlements, closely related to each other. Settlements in the agglomeration are grouped around one or more core cities and are united by various and intensive connections.

Territorial communities are a basic administrative unit in Ukraine that are formed based on the criteria of population and compactness. The territory of a territorial community is an inseparable unity within which the territorial community exercises its powers to resolve issues of local character according to the Constitution and laws of Ukraine, both directly and through local governments.

Urban agglomerations aim to restrain the excessive concentration of population and industry in the core city, to form a common labour market, to transfer some functions from the core city to the periphery of the agglomeration, to form a service economy in the suburbs. That is, a single spatial and economic territory is formed connecting the core city of the agglomeration (there may be two or three) and their satellites.

The priority of united territorial communities (UTC) is the consolidation of districts. For that purpose, they used several criteria including the population of at least 150 thousand people and the distance to the district centre not exceeding 60 kms.

2 Analysis of Recent Research and Publications

The emergence of agglomerations is a qualitatively new stage in the city evolution with the transformation of settlements into a system with 'blurred' borders. Agglomeration is a component of higher-ranking regional resettlement systems [1]. The territory of the agglomeration must be organized and structured as elements of regional urban planning systems. According to [2–6], 'the agglomeration does not have an appropriate management mechanism or a developed single regulatory document, so it accumulates individual decisions, sometimes effective only from the point of view of a ministry or agency'.

In the modern world, it is no longer a question of competition between countries, but actually between cities–agglomerations or metropolitan cities. In fact, they have been in Ukraine, e.g., large cities of Kyiv, Kharkiv, Lviv. Currently, three levels of the administrative and territorial system have been introduced within the framework, according to which the following units have been distinguished: community, district,

region. As a part of the decentralization reform in Ukraine, 490 old districts have already been liquidated and 136 new ones have been formed. There have been created 1470 united territorial communities, which should become the basis of local self-government [7].

In the understanding of 'urban agglomerations', the following main approaches have been formed [8]:

- economic, i.e., agglomeration as an organization of economic space through the production ties of various industrial enterprises and resource-financial interdependence of territories;
- geographical, i.e., agglomeration as a set of settlements with various connections;
- social, i.e., agglomeration as an organization of people's activities, the connection of different communities by economic and household ties;
- management, i.e., agglomeration as a form of management of settlements based on a voluntary solution of common problems;
- environmental, i.e., a way to optimize the system of settlements based on the natural and environmental framework;
- urban, i.e., a group form of resettlement of inhabitants, which requires a combination of economic, geographical, social, managerial, and environmental approaches in equal measure.

The main factors that determine the formation and development of urban agglomerations are [4, 9]:

1. Territorial factor, i.e., expansion of the territory of settlements due to the development of the core city into the adjacent suburban areas;
2. Legal factor, i.e., the availability of a legal framework for the creation and functioning of the urban agglomeration;
3. Infrastructure factor, i.e. the presence of a sufficient number of objects of social, cultural, public services and housing utilities; availability of transport infrastructure for communication between settlements and development of territories;
4. Human factor, i.e., the concentration of a larger population in the core city of the agglomeration, pendulum migration within a given urban agglomeration.

Based on the main factors that contribute to the formation and development of urban agglomerations, we can identify their properties and criteria.

The main properties of the urban agglomeration include:

- compactness of the territorially close settlements;
- presence of transport corridors ensuring the interaction of transport;
- accessibility, which allows expanding the boundaries of the agglomeration due to the developed system of transport corridors;
- concentration of population, production activities, and services;
- heterogeneity of the territory by functions and their density (complex functional and spatial structure);

- close administrative and political, organizational and business, labour, economic, cultural, and recreational ties;
- complementarity of activities and territorial units in the urban agglomeration;
- integrity of markets of labour, real estate, and land;
- dynamism of development (rates of development of urban agglomerations are higher than rates of development of cities as a whole).

Considering various aspects of the genesis of urban agglomerations, we can single out the main criteria that identify the area as an agglomeration.

The research objective is to analyse factors, properties, and criteria that contribute to the formation and development of the united territorial community based on the principles of urban agglomerations in modern conditions on the example of cities in Luhansk oblast.

3 The Main Research Results

One of the points of growth or formation of the agglomeration in Ukraine is 'Severodonetsk-Lysychansk-Rubizhne' triangle. The idea of uniting those cities into a single system was put forward in the late 50's. Those cities were united not only by the territorial proximity of 10–15 km, but also by a powerful industrial chemical complex, so the name was supposed to be Mendeleevsk or Lysychansk-Rubizhne agglomeration. Severodonetsk received the status of a city only in 1958. It developed rapidly, primarily due to the development of 'Azot' chemical plant, and since 1962 has become a city of regional importance. Interestingly, at that time, Severodonetsk had 24 construction departments and trusts, 11 research institutes and design bureaus. The city was ahead of the neighbouring Lysychansk and Rubizhne in terms of population, and essentially became the core city of 'Severodonetsk-Lysychansk-Rubizhne' agglomeration with adjacent settlements.

Unfortunately, the deep economic downturn in the country has significantly reduced the industrial potential of the region, having affected its demographic, social, environmental, and spatial development. Since 2014, the city of Severodonetsk has served as an oblast centre, and it is important to determine its role in the development of this area.

Based on the main criteria for establishing the external boundaries of the spatial influence areas of the centres of agglomerations [10–15], let us analyse the state of the territory now.

1. Functional criteria are the most important from the point of view of establishing the external boundaries of areas. In fact, strong economic and social ties were formed during the emergence and growth of that system of settlements. Many problems are still similar for the whole territory, e.g., electricity and water supply, disposal of household and industrial waste, etc. The level is average.
2. Demographic criterion is one of the most positive for this area.

Intensive construction has attracted an influx of huge amounts of human resources, and the proximity, accessibility, and organization of transportation still allows intensive migration throughout the territory. The level is good.

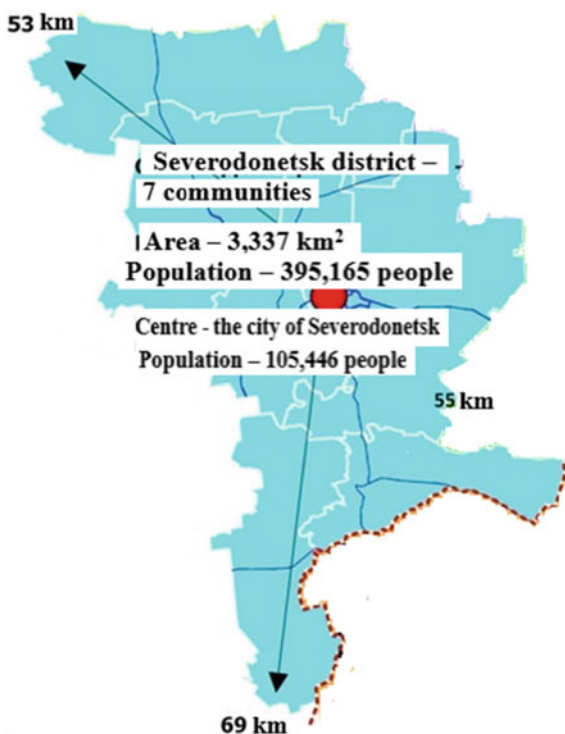
3. Economic criterion. Most likely, we have to talk about it more in terms of the potential for the revival of economic entities. Unfortunately, many ties have been broken, and most of these entities are forced to work not at full capacity or stand still for a long time. For example, in Severodonetsk these are PJSC 'Severodonetsk Azot Association', OJSC 'Skloplastyk', Severodonetsk Chemical and Metallurgical Plant 'SHMZ', 'Ukrhimenergo', 'Severodonetsk ORGCHEM'. In Lysychansk these are PJSC 'Lysychanskvuhillia', Lysychansk Oil Refinery, Lysychansk Glass Factory 'Proletary', Lysychansk Glass Factory 'Mekhsblo', Lysychansk Soda Plant 'Lyssoda', Lysychansk Plant of Rubber and Technical Products, Lysychansk Liquefied Gases Plant. In Rubizhne these are 'Pivdennyi', LLC 'Research and Production Enterprise 'Zarya', PJSC 'Rubezhnoe Cardboard and Packaging Mill', LLC 'Rubizhansky Krasitel', LLC 'Plant of Reinforced Concrete Products'. The level is potentially high.
4. Urban criterion for this area is characterized by the flow of people from rural areas to cities as elsewhere in the world, but construction is virtually suspended due to the lack of funding and a significant increase in the secondary real estate market due to the events of 2014 and the overall decline of population. In particular, one of the predominant factors that do not contribute to construction is the lack of enterprises for the manufacturing of building materials and products in the region. This leads to higher prices of new houses. Now there are large areas in possession of the private sector. In cities, buildings are formed largely by 4–5-storey, and by 9-storey houses in some neighbourhoods. Construction is virtually non-existent. The level is low.
5. Technical criteria are also a weak link in many cities and towns, but in general, we can talk about a satisfactory state of technical infrastructure. In particular, after a long period of mismanagement in the region, many city councils have begun to work with grant programmes taking into account public opinion aimed at the reconstruction and development of utility services. The level is average.
6. Social criteria are associated primarily with the standard of living, education, occupational structure of the population. This level can be characterized as very good and promising. The average salary is currently UAH 11,446 in Ukraine, and UAH 9,399 in Luhansk oblast determining its average place in terms of living standards among other regions. Despite the difficult moments of life, the region maintains its 5 higher education institutions, 9 colleges, 3 higher vocational schools, 16 vocational lyceums, 279 general secondary education institutions, 268 preschool education institutions, 11 boarding schools, and 23 out-of-school education institutions. The region has a high intellectual potential, a developed network of socio-cultural and sports facilities. The level is very good.
7. Criteria of spatial connectivity characterizing the functional connections of the centre with the surrounding settlements were also well-formed in the last century that is a positive factor for rapid transportation. A network of roads of regional

P-66 and territorial significance T-13-02 and T-13-06 passes through the territory of the city agglomeration. The level is good.

8. The criterion of management is oddly enough the most difficult criterion for any territory according to the present-day reality. The level is the hope for political will for the formation of the agglomeration, and a strategic decision for the development of its spatial, innovative, economic, and social centre.

According to the Resolution of the Verkhovna Rada of Ukraine №3650 dated July 17, 2020 ‘On the formation and liquidation of districts’ in Luhansk oblast eight new districts were formed: Alchevsk, Dovzhansk, Luhansk, Rovenki, Svatovo, Severodonetsk, Starobilsk, and Shchastia [14]. All settlements of the agglomeration will now be located in one district of Severodonetsk (administrative centre is Severodonetsk), except for the village of Novoakhtyrka (which belonged to Novoaidar district, currently it belongs to Shchastia district). As Severodonetsk district includes six city territorial communities (Severodonetsk, Lysychansk, Rubizhne, Hirske, Kreminna, and Popasna) with their united settlements, it will be reasonable to include them in the agglomeration. The population of the district is 491.5 thousand people (including 101.7 IDPs). The area of Severodonetsk district is 2793 km² (Fig. 1).

Fig. 1 Severodonetsk district



The criterion of the population is not fundamental in the creation of united territorial communities. Like urban agglomeration, they provide socio-economic ties of settlements. That is, from the moment of forming a united territorial community (UTC), and before providing its proper functioning, it is necessary to establish links inside the agglomeration, which are formed by.

- establishment of joint partnerships and mechanisms of economic, urban-planning, and other development that contributes to the formation of a single integrated agglomeration space. Discussion of problems and creation of coordination activity;
- development of legal mechanisms for regulating economic and urban-planning activities. Creating a system of the urban-planning documents as a basis for the development of the planning structure and other subsystems;
- prime establishment of territories of common interests tied by the balanced development of social, environmental, transport, information, and other infrastructure;
- creation of mechanisms that allow efficient use of natural, labour, financial, and other resources;
- intensive development of transport and communication infrastructures,
- creation of joint logistics centres,
- availability of fast public transport connecting the cores of the agglomeration, and the cores with satellite cities;
- implementation of projects aimed at expanding the problematic issues in the resource provision of the agglomeration: construction materials (especially relevant for Luhansk oblast, where there are no manufacturers of construction materials and products), electricity, water supply, etc.

Thus, in the organization of territorial communities, it is worth using a significant contribution into the research of the formation and development of urban agglomerations of such national and foreign scientists as G. Lappo, F. Listengurt, Y. Pivovarov, A. Stepanenko, Y. Bilokon, D. Bogorad, M. Diomin, V. Semenov, G. Filvarov, G. Clark, E. Pertsyk, M. Gabrel and others.

In addition, an 'Open Land' portal can also contribute to UTC. Its data from the geoportal will help solve the problem of unregistered lands that are used, but taxes on them are not paid. All state registers will be able to exchange data, track the value of purchase/sale agreements etc. It will be possible to obtain information on the concentration of land in the hands of a single person. The key areas include support for urban UTCs under the municipal energy management implementation project; creation and improvement of organizational structures and processes; introduction of strategic energy planning in the most active cities; promotion of urban investment measures to improve energy efficiency; communication and awareness raising.

4 Conclusions

Thus, based on the criterion analysis of ‘Severodonetsk-Lysychansk-Rubizhne’ territory with adjacent settlements, we can consider the territorial community as an urban agglomeration, and develop it as a complex system that includes not only cities and settlements around them, but all industries, resettlement of inhabitants, the interaction of nature and the urban population as a whole. Priority measures are proposed for the development and improvement of the united territorial community. For such agglomerations, emphasis should be placed on the aspect of spatial development, in particular on traditional distribution factors, such as transport, material, labour costs. Special attention should be paid to infrastructure and environmental components.

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