

Abstract: The article describes research on the Transformation of the Rural Settlement Network in the Carpathian Region of Ukraine in recent decades. The study area covers the Carpathian region of Ukraine, which has the highest share of rural population in the country. The 1989–2020 period was chosen. Quantitative and qualitative methods of analysis of statistical indicators, deductive and inductive methods, and cartographic method were used. The demographic crisis and economic problems of Ukraine did not stop the most important demographic and settlement processes that began in rural settlements of the Carpathian region during the Soviet period. These processes acquired the special features associated with political transition. Depopulation was greatest in the most urbanized Lviv Oblast, especially in the plains, in peripheral villages, where a critical level of negative demographic change had previously been achieved. However, the disappeared villages are few. Population growth in villages in suburban areas of large cities has not stopped. In sparsely urbanized areas, mostly in Transcarpathia and Precarpathia, a large group of villages that have also not been depopulated has emerged. Their development was facilitated by the availability of recreational and forest resources, border location, state support for mountain villages, and some local factors. The real situation in rural Ukraine is partly obscured by imperfect official statistics. In particular, it is difficult to establish population losses due to labor migration abroad.

Key words: rural area, Carpathian region, network of settlements, depopulation, suburbanization, mountain village, border location

Анотація: Стаття розвиває дослідження, що стосуються трансформації мережі сільських поселень в Карпатському регіоні України в останні десятиліття. Територією дослідження є Карпатський регіон України, який має найвищу частку сільського населення у державі. Обрано період 1989–2020 рр. Використано кількісні та якісні методи аналізу статистичних показників, дедуктивні та індуктивні методи, картографічний метод. Демографічна криза та економічні проблеми України не припинили найважливіші демографічні й розселенські процеси що розпочалися у сільських поселеннях Карпатського регіону ще у радянський період. Ці процеси лише отримали специфіку, пов'язану з політичним транзитом. Депопуляція найбільшою була у рівнинних місцевостях, у периферійних селах, де раніше уже було досягнуто критичного рівня негативних демографічних змін. Проте зниклих сіл небагато. Не припинилося зростання кількості населення у селах в приміських зонах великих міст. В слабо урбанізованих ареалах, здебільшого на Закарпатті й Передкарпатті з'явилася велика група сіл, які не зазнали депопуляції. Їх розвитку сприяли наявність рекреаційних і лісових ресурсів, прикордонне розташування, державна підтримка гірських сіл, деякі локальні чинники. Реальну ситуацію у сільській місцевості України почасти приховує недосконала офіційна статистика. Зокрема, важко встановити втрати населення внаслідок трудової міграції за кордон.

Ключові слова: сільська місцевість, Карпатський регіон, мережа поселень, депопуляція, субурбанізація, гірське село, прикордонне розташування

Highlights:

- Crisis phenomena do not stop the basic settlement processes, but they can hide them.
 - Political transit adds the specifics of the transformation in the rural area.
 - In mountainous and foothill areas, the influence of local factors is significant.
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1. Introduction

The rural population of Ukraine is one of the largest in Europe – as of early 2021, it was 12.85 million people³, or 30.9% of the total population (Statistics of Ukraine, 2021). There were more than 28 thousand rural settlements. In 5 of the 24 regions (oblasts), the majority of the population is still rural. Since the late 1980s, when Ukraine was still part of the Soviet Union, its rural population and network of rural settlements have undergone significant structural transformations associated with democratic transition, i.e. the transition of society from authoritarianism to democracy and, consequently, from planned to a market economy. Today, this transition has not been completed yet and Ukraine is considered a state with a transitional or hybrid regime according to the democracy index (Democracy Index, 2020).

Given the incomplete political transition and transition economy, the development of rural areas in Ukraine has significant features. The network of rural settlements is in a situation that can be described as a long-term economic and demographic crisis. In the past 30 years, the country has experienced five economic crises, including the last one in 2020, caused by COVID-19. According to some indicators, the state's economy has not yet reached the level of 1991, when independence was declared. The demographic crisis has been going on for about 30 years. Back in 1991, the death rate began to exceed the birth rate, and since 1994, the total population has been declining. Socio-economic reforms in rural areas are very slow. It was not until the summer of 2021 that the market of agricultural lands started to operate – before that, their sale was forbidden. As late as 2020, the administrative-territorial reform, which was launched in 2014, was completed. Its main goals were the decentralization of power and the formation of capable territorial communities at the level of local administrative units (LAU).

Many research questions arise in the process of studying the transformation of the rural settlement network in Ukraine. What are the parameters of the rural depopulation, compared to the Soviet period, when was industrialization taking place, and when did the large-scale rural population migration to the cities take place? Is there a deurbanization of the population? Has the process of village disappearance been accelerated? What is the situation in suburban villages in the areas of influence of large cities? What factors influence the transformation processes the most? The available statistics do not provide a proper answer to these questions. It is imperfect in Ukraine. In addition, no censuses were conducted in the country after 2001. The answer to these and other questions related to the transformation of the network of rural settlements in Ukraine will contribute to the improvement of state policy on rural development, regional policy, effective spatial planning of rural areas.

The purpose of this article is to identify the major trends in the process of rural population change in the Carpathian region of Ukraine. The study area is the Carpathian region of Ukraine, which has the highest share of rural population in the country.

2. Research background

2.1 Study area

The Carpathian region of Ukraine is located in the south-west of the country. It consists of four administrative regions (NUTS 2 Territorial Units): Zakarpattia, Ivano-Frankivsk, Lviv and Chernivtsi Regions (aka Oblasts) (Fig. 1). As a separate study area, it is traditionally allocated by most Ukrainian geographers when carrying out economic zoning. These four Oblasts are also part of the *Carpathian Euroregion* (established in 1993), which comprises the border administrative-territorial units of Ukraine, Poland, Slovakia, Hungary and Romania, in which the Carpathian Mountains are located.

The Carpathian region of Ukraine covers the area of 56.6 thousand sq. km (9.4% of the territory of Ukraine) with the population of 6.32 million in 2020 (15% of the total population), of which 48% is rural population (Population of Ukraine, 2020). The high share of rural population is a typical feature of the region, almost every fourth rural resident of Ukraine lives there (23.8%). That is why it is often chosen by scientists when studying the problems of the rural population of the state.

³ Without taking into account the territory of the temporarily occupied Autonomous Republic of Crimea and the city of Sevastopol.

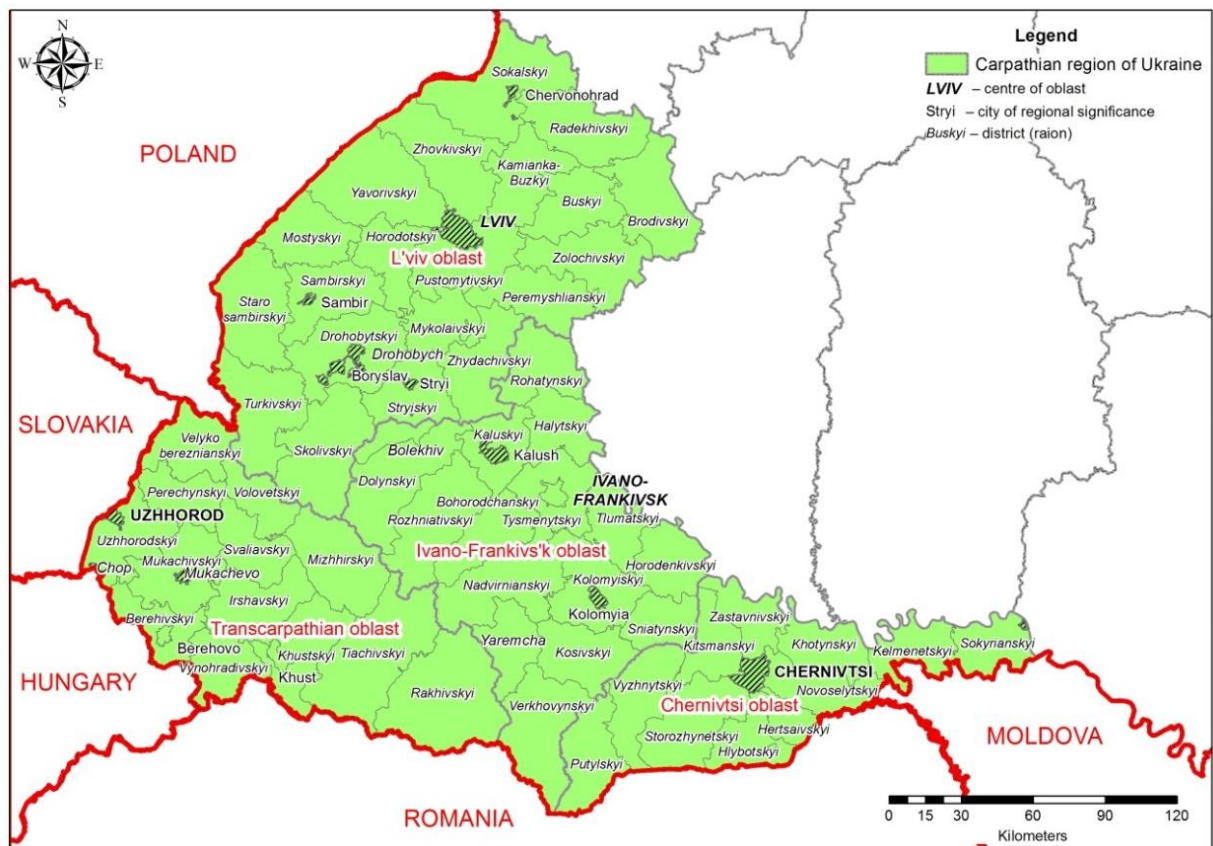


Fig 1. Carpathian region of Ukraine. Source: by the authors on the basis of the administrative divisions map of Ukraine

The Carpathian region of Ukraine is crossed from the north-east to the south-west by the Ukrainian Carpathians, which has greatest impact on its nature, economy and population. It constitutes a certain historical unity. Until 1918, this territory was part of Austria-Hungary for more than 100 years (Austria until 1867)⁴. The consequences of the Carpathian region being part of Austria-Hungary were most reflected in the cultural heritage.

The Carpathian region was one of the last regions of Ukraine to become part of the USSR: Ivano-Frankivsk and Lviv Oblasts – in 1939, Chernivtsi Oblast – in 1940, Zakarpattia Oblast – in 1945. Therefore, its population avoided some of the most terrible consequences of Stalin's totalitarian rule, especially the Soviet famine of 1932–1933, which had an extremely negative impact on the rural population of Ukraine (Zastavnyj, 2003). However, after the end of the Second World War, the population of the region faced the famine of 1946–1947, political repressions, forced relocations to the east, and collectivization in agriculture.

Forming a natural and economic unity, the Carpathian region of Ukraine is at the same time heterogeneous in terms of natural and climatic conditions, features of local history, economic development, culture and traditions of the population. Lviv and Ivano-Frankivsk Oblasts are part of the historical region of Halychyna, Zakarpattia Oblast is part of Carpathian Ruthenia (Transcarpathian or Subcarpathian – depending on the vantage point we are looking from), and most of the Chernivtsi Oblast is part of the historical region of Bukovyna.

2.2 Theoretical framework and literature review

There is a consensus in current academic literature that the changes taking place in rural Europe in the last two centuries are the result of structural changes driven by economic growth due to the spread of the capitalist economy, industrialization and urbanization. In less competitive areas, with their inclusion

⁴ Except for a few districts in the east of Chernivtsi Oblast

in market conditions, the traditional economy based on agricultural activities has collapsed (Commins, 1978; Delgado, 2019; Dunaway, 1996; Cloke, 2006; Rieutort, 2016). This was accompanied by deagrarianization, diversification of the economy, depopulation, and spatial polarization. However, it should be noted that deagrarianization and diversification (partial transition to the service economy) did not lead to the disappearance of rural areas in general, but on the contrary contributed to the emergence of new forms (Collantes, 2007).

The most negative consequence of structural changes in rural areas is depopulation – the process of chronic population loss in the area without any prospects for its recovery and return to previous demographics (Johnson & Lichter, 2019). Depopulation itself is not a crisis, it is not a problem of internal decline of traditional development models. Depopulation in rural areas is the consequences of economic growth, integration into another economic system of areas that are not adapted to new global contexts, not sufficiently economically, socially and territorially cohesive (Coleman & Rowthorn, 2011; Delgado, 2019).

Rural depopulation has long been a common pattern of population change in many of Europe's most developed countries with low birth rates that have passed the demographic transition. In less developed southern and eastern European countries, including Ukraine, the same processes have developed with considerable delay. However, this “lag” has been quickly compensated for over the past few decades. As a result, for a long time, the main problems facing most European rural areas have been low population density, aging, emigration losses, and low birth rates (Smiles, Argent & Griffin, 2002).

Depopulation is particularly threatening for the least developed rural areas, which include mountainous ones. They are usually characterized by a less diversified economic base, poorer accessibility, orographic and climatic adverse factors for agricultural production, the dispersion of small farms, etc. (Dunaway, 1996).

Studies of rural areas in Ukraine overall confirm theoretical generalizations about other regions of Europe. In particular, this was concluded by A. Khomra (1989), who analyzed the historical aspects of demographic processes in Ukraine in the twentieth century, as well as delimited spatial differentiation of rural depopulation trends in the Ukrainian SSR. He showed that despite the specifics of the Soviet economy, in Ukraine, as in Western Europe, industrialization and urbanization led to rural depopulation in most of Ukraine, and explained the specifics of different regions, including the Carpathian region, where the demographic situation was best.

The current state of the rural population demographics in Ukraine was analyzed by Y. Skryzhevskaya and D. Karacsonyi (2009). They found that demographic data for Ukraine clearly demonstrated a serious decline in both the quantity and quality of the rural population. V. Pantyley analyzed the demographic situation of rural population in Ukraine in the period of intensive socio-economic transformation (2009). Noting that the demographic crisis has existed in rural areas of Ukraine since the 1980s, she conducted a more detailed analysis of the causes of rising mortality and declining birth rates. The author also made an important conclusion that one of the main causes of demographic problems in rural areas is the successive blocking and falsifying of agricultural reforms.

In the development of rural areas with Ukraine, there are many analogies with neighboring countries, especially in Poland. Numerous studies by Polish scientists provide an opportunity to find commonalities and differences in the demographic processes in rural areas of both countries (Bański, 2013; Bański, 2017; Szymanska, Bieganska & Gil, 2009; Biegańska & Szymańska, 2013). As in Ukraine, in Poland, most depopulations were caused by the development of the capital region (a belt of problematic areas was formed at a certain distance from the Warsaw agglomeration) and industrialization due to the development of coal deposits. In the Carpathians, in mountainous areas, depopulation has mostly affected remote areas, especially in the east (Bieszczady). In contrast, the central and eastern Carpathian regions are much more prosperous (Soja, 2008). The distinctive characteristic of Poland is the numerous demographically problematic border areas (with Ukraine, Belarus, Russia) in the east and northeast of the country (Flaga & Wesołowska, 2018; Jakubowski & Bronisz, 2019). Interestingly, in Ukraine depopulation is also growing to rural areas in the northeast and east, in areas bordering Russia. Another

feature of Poland is the stronger development of counterurbanization processes, signs of demographic stabilization in rural areas in some regions, including mountainous areas (Zborowski, 2007; M. Soja, 2012).

In other Carpathian countries, research by scientists has generally confirmed the general trend of depopulation of the rural population of mountainous areas, but also revealed significant local features. In particular, V. Lukic researched demographic problems in the Carpathian region of Serbia. She found that in this area, “continuous negative natural population growth and extremely high rate of emigration” (Lukic, 2011). A. Gajic, N. Krunic, B. Protic (2021) most recently classified the rural areas of Serbia.

From a historical point of view, changes in rurality in the Carpathian Mountains in 1918–1945 in the context of modernization in inter-war Eastern Europe, were analyzed by D. Turnock (2008). He also studied settlement history and sustainability in the Carpathians in the 18th and 19th centuries (Turnock, 2005a), as well as poverty in the Carpathians’ rural areas in current Romania (Turnock, 2005b). D. Nancu analyzed rural population dynamics in the Curvature Carpathians (Nancu, 2013). M. Persu analyzed demographic changes in the rural area of the Southern Carpathians in 1992–2011 (Persu, 2017). In both cases, the authors stated that in the Carpathians, the population is steadily decreasing, simultaneously with advanced aging and depleted birth rate. D. Nancu pointed out that this process was equally influenced by local (regional) and general (all-country) factors. She also noted that the economic crisis and unemployment discouraged migration to town.

J. Nestorova Dicka, A. Gessert and I. Sninčák analyzed rural and non-rural municipalities in the Slovak Republic. The key characteristics of the development of rural settlements in the post-Soviet space under the conditions of socio-spatial transition on the example of peripheral areas in Lithuania were considered by Pociūtė-Sereikienė Gintarė & Kriaučiūnas Edis, (2018).

In general, the literature review shows that researchers do not have a clear idea of rural development trends in the Carpathian region of Ukraine. There is a widespread opinion about the demographic decline of mountain villages, but statistical materials partially deny it, and there is no understanding of local features. In order to fill this research gap, in accordance with the set goal, specific research objectives have been set:

- To indicate the parameters of depopulation of the rural population in the Carpathian region of Ukraine and the spatial characteristics of this process;
- To analyze the dynamics of the number of rural settlements in the region, as well as the prevalence of the village disappearances;
- Investigate the location and development factors of the largest villages in the region to identify processes occurring in transitional urban-rural settlements and areas.
- Describe the most important factors influencing the transformation of the network of rural settlements and determining the specific processes of rural resettlement.

2.3 Data sources and methodological remarks

The article mainly uses quantitative and qualitative methods of analysis (analysis of census data and current statistics, as well as scientific literature), deductive and inductive methods, as well as the cartographic method.

The 1989–2020 period was chosen for the study. In the late 1980s, the Soviet Union began a process of political transition toward democracy, and in 1989, the last Soviet census took place, which provided reliable demographic information about the rural population. Some comparisons also use materials from earlier Soviet censuses of 1979, 1970, and 1959.

In independent Ukraine, the first and most recent census took place in 2002. The lack of recent census data significantly complicates demographic surveys. Current data on the population of the state, which are provided by the state statistics bodies, are in fact evaluation data. Establishing the number of population annually, statistical agencies take into account information about deaths and births in a given area, as well as the proportion of migrants who officially report a change of residence (stay), i.e., change their so-called propiska (propiska [residency permit] is a system of registration (control) of residence

inherited from the USSR). However, in practice, a significant part of migrants, especially the so-called "guest workers", i.e., those who work and live abroad for a long time leaving their settlements without reporting a change in their residence. They are usually further considered to be the residents of the settlement where they are registered. Therefore, current data on the number of inhabitants of individual settlements, especially remote peripheral settlements, where proper censuses are not performed, are questionable.

In Ukraine, an institutional approach is used to differentiate between rural and urban settlements. The specific mechanism on the basis of which urban and rural settlements are determined in Ukraine and, accordingly, the number of rural and urban population is established, is generally inherited from the USSR. The legislation establishes three main types of settlements: city, urban-type settlement, and village. Residents of cities and urban-type settlements are considered urban population, and villagers are considered rural population. Several criteria have been established to determine the type of settlement, the most important of which are the number of inhabitants in the settlement and employment in various sectors of the economy. But these criteria are only approximate guidelines. Many additional criteria can also be considered in each case.

The procedure for changing the type of settlement (from rural to urban, or from urban to rural) is quite cumbersome. It begins with a meeting of the villagers, if there are certain grounds for such a change. The final decision is made by the Verkhovna Rada of Ukraine by a separate law. Similarly, the procedure of amalgamating settlements, for example, amalgamating a suburban village and a large city is not easy. It is a frequent situation when a settlement is actually urban (residents are little involved in farming, have an urban lifestyle, there is high population density), but statistically, it is still considered a village, respectively, its inhabitants are rural residents, because for some reason it is not profitable for the community to change the type of settlement.

Until 1991, when the USSR had a command-and-control system, changes in the type of settlement, as well as changes in their boundaries, occurred more frequently. During this period, such issues were often resolved by administrative methods, without due regard for public opinion. The Soviet government responded fairly quickly to the needs of the planned economy and regularly reviewed the administrative status of settlements. Therefore, in the process of industrialization, new cities and towns were formed all the time (due to the economic development of promising villages), and the surrounding rural settlements were amalgamated to form large cities. After 1991, these processes almost stopped, because such changes require the consent of the inhabitants of the settlement.

The procedure of liquidation (deregistration) of a settlement in which nobody lives anymore is also not easy in Ukraine. It can last for years. Therefore, in Ukraine, especially in its central part, it is often the case that formally a village exists, it is included in statistical reports, directories give outdated population data, but in reality, it no longer has inhabitants.

In the summer of 2020, Ukraine underwent significant changes in the administrative-territorial structure, in particular, they concerned administrative units corresponding to the NUTS 3 and LAU levels. However, in order to ensure comparability of data for the entire period of study, statistical comparisons were made on the basis of the administrative-territorial system, which existed until the summer of 2020. In addition, at the time of writing the article, the current demographic data for 2021 on local administrative units has not been published yet.

3. Results

3.1 Settlement and the current state of the rural settlements network

In the early Middle Ages, some areas in the Carpathian region of Ukraine were quite densely populated, in particular, the fertile valleys of the Dniester River and its tributaries. By the mid-17th century, the network of settlements was mainly formed. As part of the Austro-Hungarian Empire, the region was a backward agrarian periphery, in the second half of the 19th century, the situation of agrarian

overpopulation developed here, and rural people started a large-scale migration to Canada, the United States, and later to Brazil, Argentina, and other countries as early as the 1880s.

Partial industrialization of the Carpathian region of Ukraine in the period after the Second World War did not solve the problem of agrarian overpopulation. In three of the four Oblasts of the region, the majority of the population is rural, with the urban population predominating only in Lviv Oblast. The largest cities (the centers of Oblasts) are not sufficiently developed, which according to some authors, is an important indicator of the region agrarianization (Perlín, 2010). Only Lviv is a large economic and socio-cultural center with a population of over 700 thousand people. It is the largest city in Western Ukraine, in the past, it performed quasi-capital functions, it is associated with the metropolization processes. The population of Chernivtsi and Ivano-Frankivsk exceeded 200 thousand in the 1970s and 1980s, and only a little over 100 thousand people live in Uzhhorod.

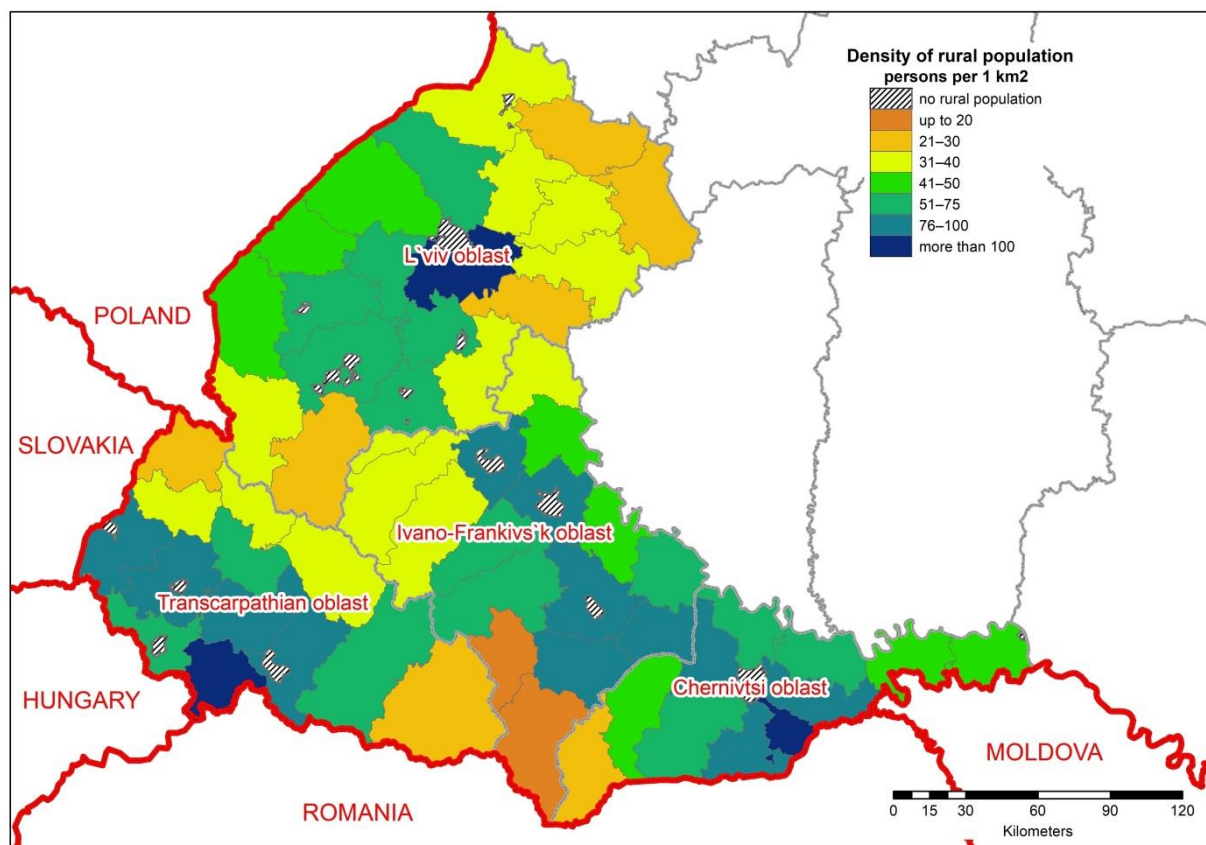


Fig 2. Density of rural population in the Carpathian region (2020). Source: by the author based on State Statistics Service of Ukraine

As of the beginning of 2020, the total number of rural residents in the Carpathian region was 3.04 million people; there were a total of 3,591 rural settlements. The highest density of rural population is observed in the suburban areas of large cities – regional centers with a population of over 200 thousand people, as well as in the Precarpathian and Transcarpathian (Prytysnianska) lowlands. In these areas, it often exceeds 100 people per 1 sq. km. The lowest density of rural population is observed in remote mountainous areas and in the east of Lviv Oblast (Fig. 2).

The density of rural settlements is highest in the Lviv Oblast, in particularly in the suburban area of Lviv, as well as in the plains, specifically in the valley of the Dniester River. It is lowest in the mountainous areas (Fig. 3). The average population of rural settlements is higher in the south of the Carpathian region, where it can exceed 2.5 thousand inhabitants. It is the lowest in the east of Lviv Oblast and in some mountainous areas with less than 500 people (Fig. 4). Indicators of the rural population density, rural settlements density, and their population are most related to the level of urbanization, terrain, microclimate, some local factors.

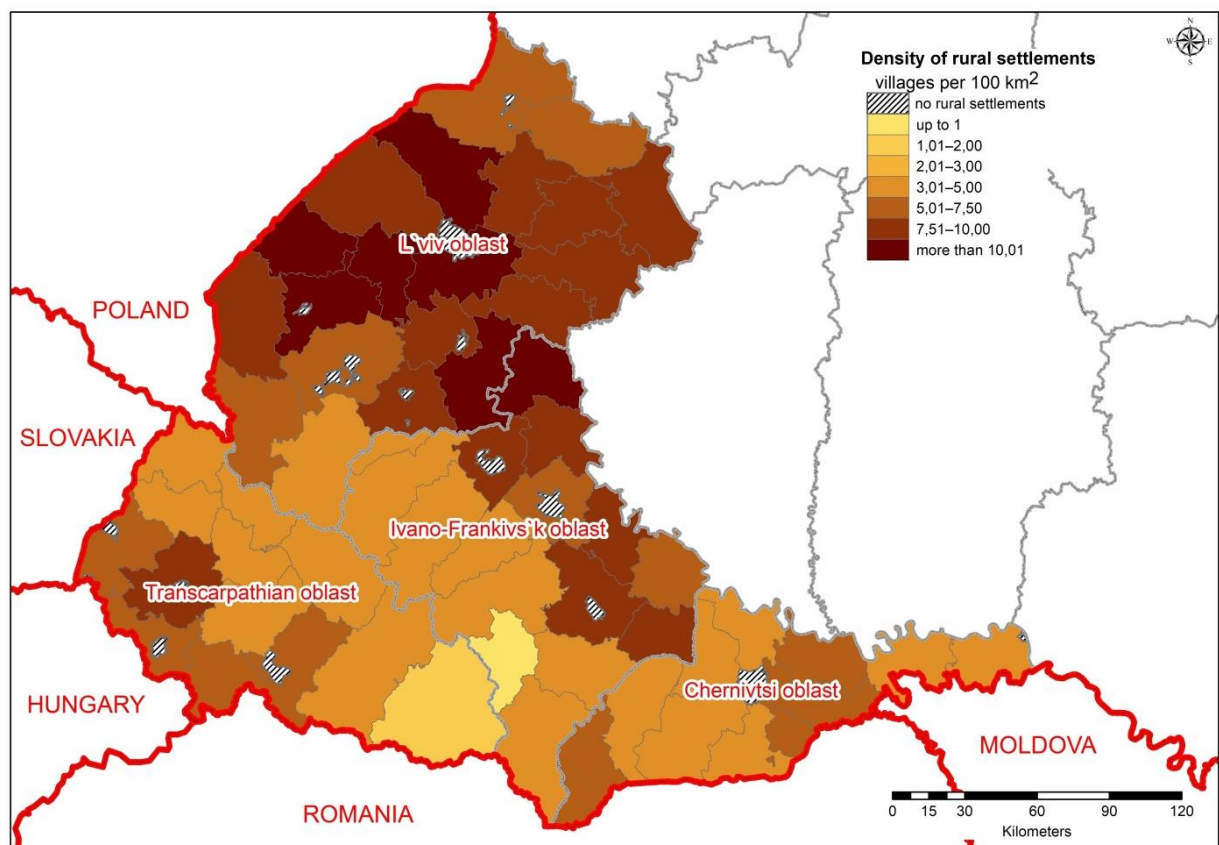


Fig 3. Density of rural settlements in the Carpathian region (2020). Source: by the author based on State Statistics Service of Ukraine

In the plain and hilly part (with small relative heights) of the Carpathian region (north and east of Lviv Oblast, north of Ivano-Frankivsk Oblast), the rural settlements are located more or less evenly around cities. The villages are small, with a population of up to 500 people. In the Precarpathians, on hilly ridges, in the lowlands of the Carpathians, the location of villages and their population are significantly influenced by local factors. They can be concentrated in hollows, along the valleys of mountain rivers, or scattered over a large area in the lowlands, or on the convenient slopes of the hills.

There are significant differences in the natural population movement of the Carpathian region. Almost everywhere, it is negative. In the plain and hilly part (eastern districts), it can be even -10% and higher. Before the COVID-19 pandemic, it was positive (up to $+1\%$) only in some mountainous districts of Zakarpattia and Ivano-Frankivsk oblasts.

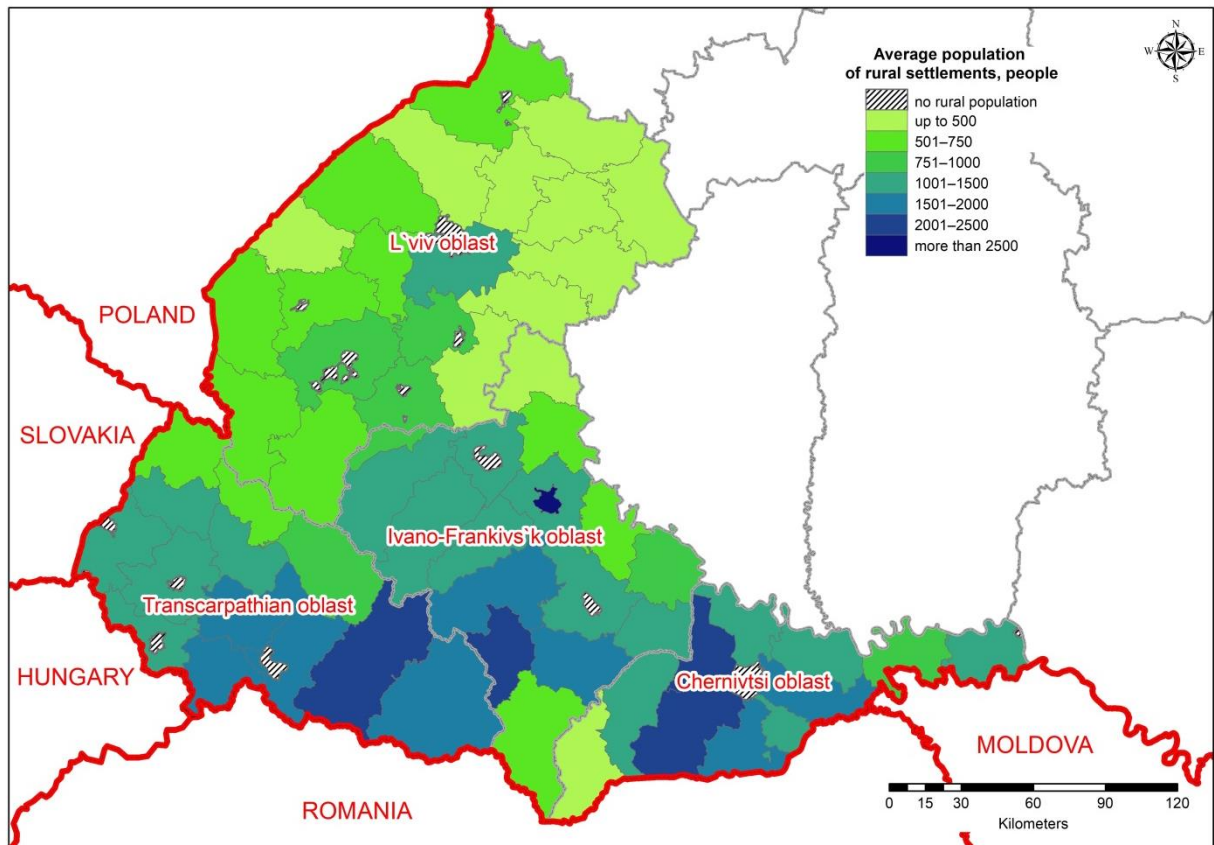


Fig 4. Average population of rural settlements in the Carpathian region (2020). Source: by the author based on State Statistics Service of Ukraine

Within the Carpathian region of Ukraine there are several villages unique for Ukraine by certain parameters. In the Ivano-Frankivsk Oblast, in the ethnographic region of Hutsulshchyna, in the lowlands of the Carpathians, the largest village in Ukraine – Kosmach – covers the area of 84.3 sq. km. In the Chernivtsi Oblast, on the southern slope of the Khotyn Upland, there is the so-called “Kolinkovetsko-Nedoboivska Rural Agglomeration”, ten large villages, which territorially “merged”, with a total population of over 35 thousand people (Fig. 5).



Fig 5. Kolinkovetsko-Nedoboivska Rural Agglomeration. Source: Google maps, accessed April 10, 2022

3.2 Rural depopulation

During the second half of the 20th century, the number of rural population in the Carpathian region of Ukraine gradually decreased due to the processes of industrialization and, accordingly, the urban sprawl, population urbanization (Fig. 6).

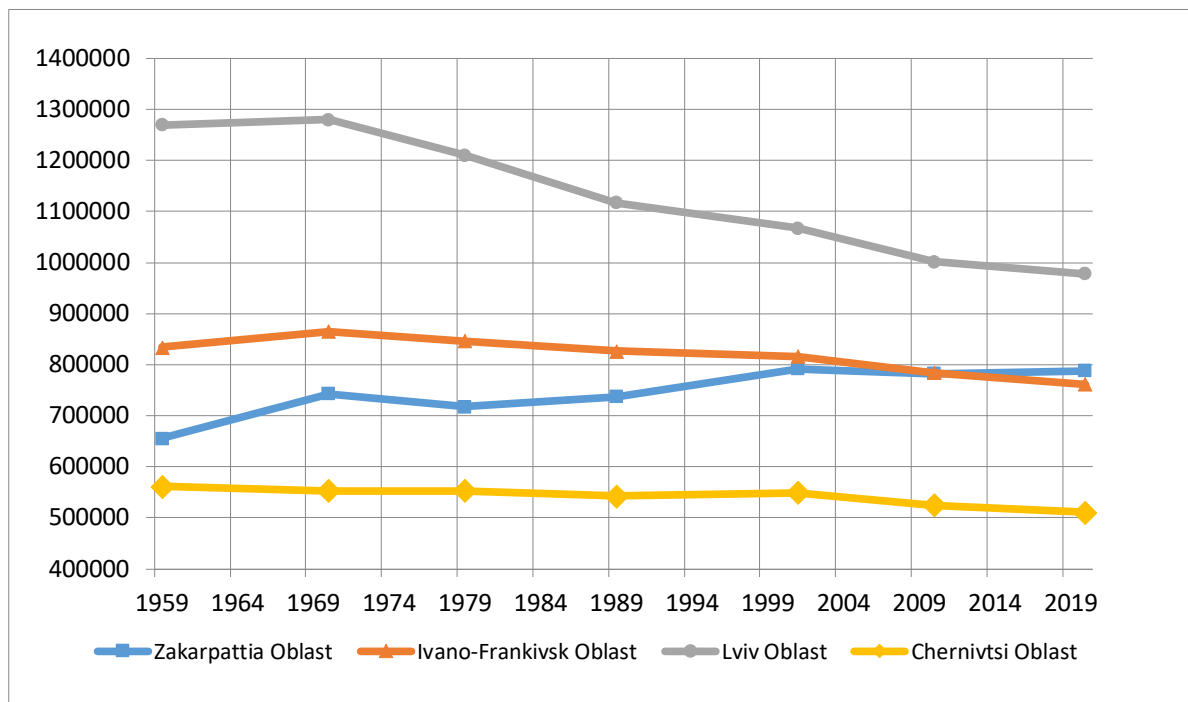


Fig 6. Number of the rural population in the Carpathian region (1959–2020). Source: by the author based on State Statistics Service of Ukraine

In rural areas, depopulation occurred due to negative indicators of natural and migratory population movements. The rural population increased only in the least industrialized Zakarpattia Oblast.

In the 1990s, during the most difficult period for Ukraine's economy, there was no economic growth for almost a decade, due to the crisis caused by the collapse of the USSR, followed by the Asian financial crisis of 1997–1998. According to current population statistics, confirmed by the 2001 census, the depopulation of the rural population in the Carpathian region as a whole has stopped. Its number has increased slightly, despite the fact that the total population of the region has decreased. That is, the dezurbanization of the population began. However, the analysis in terms of administrative districts shows that rural population growth took place in the southern, especially mountainous and foothill areas. It was the largest in Zakarpattia Oblast, where the rural population has grown by 20%. In almost all districts of Lviv Oblast, and in the Dniester districts of Ivano-Frankivsk and Chernivtsi Oblasts, depopulation in rural areas has not stopped (Fig. 7).

In 2001–2020, the depopulation of the rural population in the Carpathian region of Ukraine as a whole accelerated. However, many southern mountainous and foothill areas have also survived, where the rural population continued to grow. In addition, the population began to grow rapidly in the villages located in the suburban areas of the largest cities, Lviv, Chernivtsi, Ivano-Frankivsk, Uzhhorod (Fig. 8).

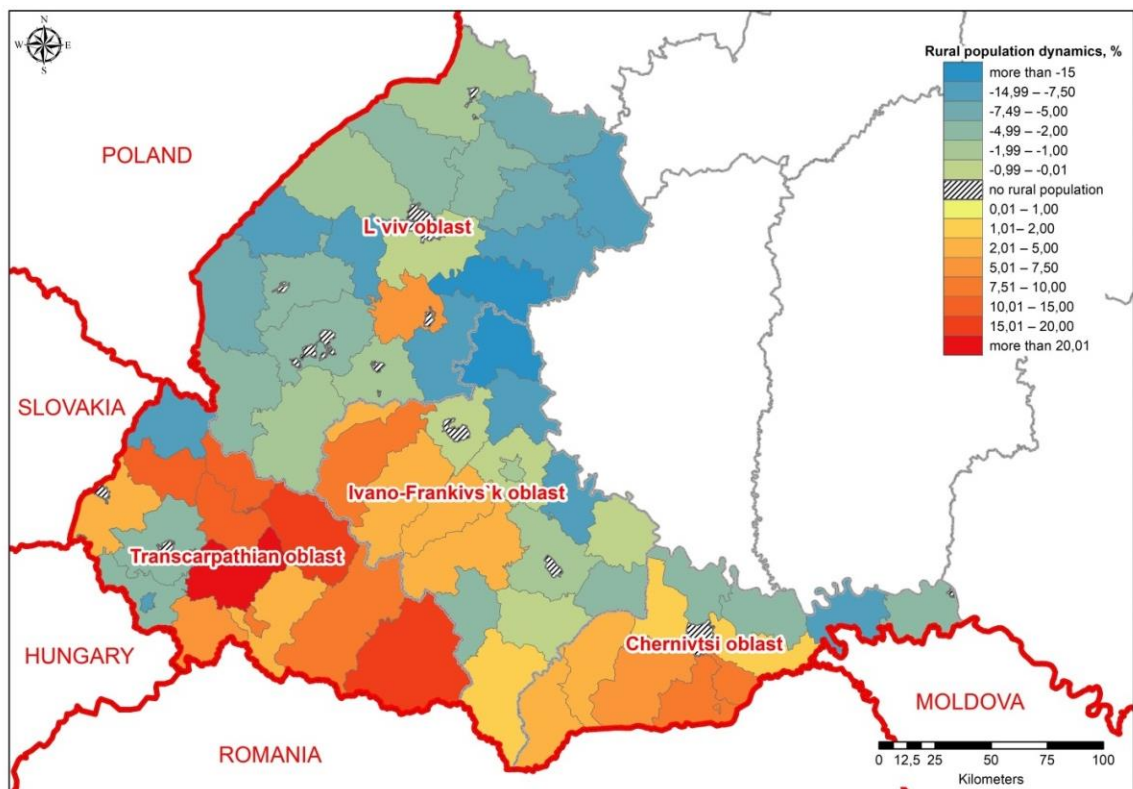


Fig 7. Rural population dynamics in the Carpathian region (1989–2001). Source: by the author based on State Statistics Service of Ukraine

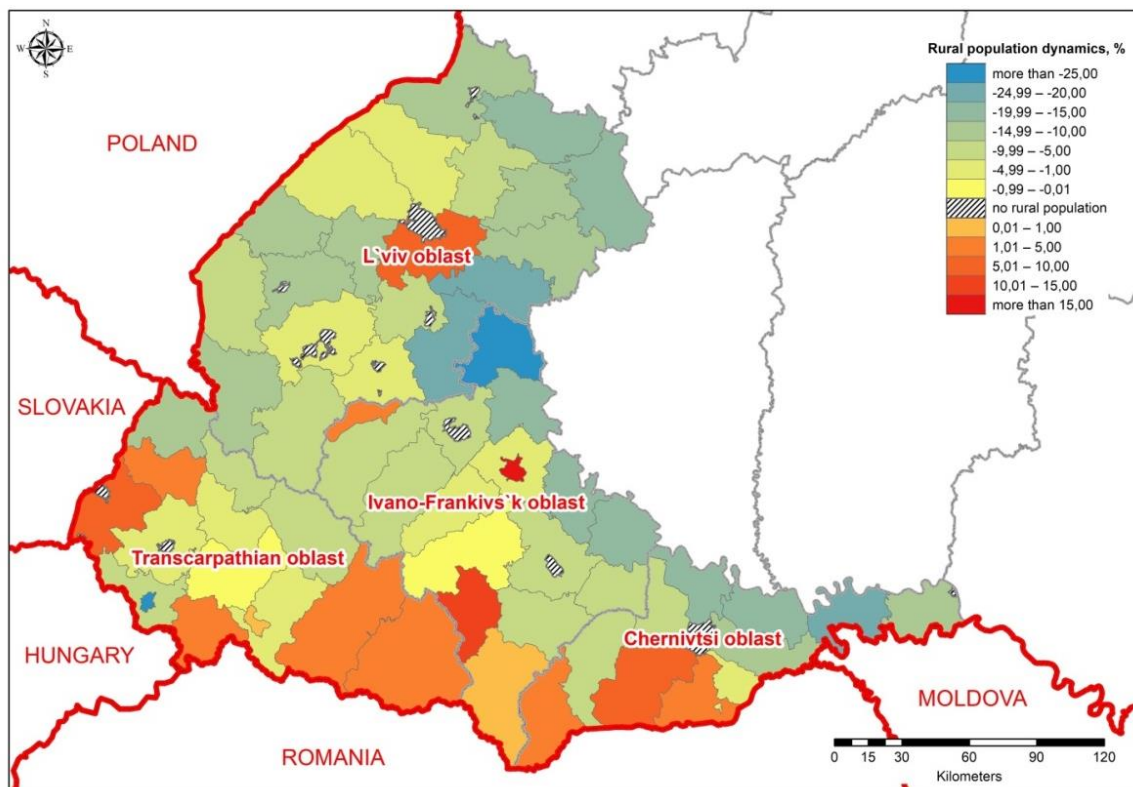


Fig 8. Rural population dynamics in the Carpathian region (2001–2020). Source: by the author based on State Statistics Service of Ukraine

3.3 Number of Rural Settlements and disappearance of villages

In the 1990s, the number of rural settlements in the Carpathian region of Ukraine increased (Tab. 1). This fact explains the reasons for the "deurbanization" in the region mentioned above. Of course, completely new villages were not founded. It turns out that in the 1990s, 8 settlements, all in Zakarpattia Oblast, changed their status. They were transformed from towns (urban settlements) into villages as a result of residents' decisions supported by the regional council and the Verkhovna Rada. In all cases, these were settlements that recently became urban in the 1980s. In addition, in 11 other cases, new villages appeared as a result of the "separation" of part of the city, also after the decision of local residents. That is, in the 1990s, the number of rural residents in the Carpathian region increased primarily due to administrative transformations, i.e. it was "administrative" deurbanization. In total, due to the villages that appeared as a result of changes in the status of settlements and as a result of secession, the rural population increased by almost 50 thousand people, the largest increase was observed in Zakarpattia Oblast, with approximately 40 thousand people.

Tab 1. Number of rural settlements in the Carpathian region. Source: by the author based on State Statistics Service of Ukraine

Oblast	1989	2001	2010	2020	1989–2020
Chernivtsi	394	398	398	398	+4
Ivano-Frankivsk	754	765	765	765	+11
Lviv	1863	1852	1850	1850	–13
Zakarpattia	561	579	579	578	+17
Total	3572	3594	3592	3591	+19

Part of the reason for the "administrative" deurbanization was the loss of attractiveness of the status of urban settlements, due to the economic decline of cities during the crisis of the 1990s, the liquidation of industrial enterprises, large-scale unemployment in cities. However, such decisions were mostly influenced by the emergence of a limited land market. In Ukraine, several laws and bylaws were adopted, as a result of which villagers received certain advantages over residents of urban settlements, in particular, as a result of the land decollectivization (ukr. "rozpayuvannya"), workers employed in collective farms (including former ones who had already retired but lived in the village) were given the right to receive a land plot that was previously in collective ownership.

In the 2000s, the number of rural settlements in the Carpathian region stabilized. As in the 1990s, it did not make sense for the villagers to change their settlements into urban ones. In addition to the land issue, villagers gained other advantages. Parties were created in the country that focused on the rural voters. They lobbied for several important laws to support villagers. The number of rural settlements decreased only in Lviv Oblast. In this Oblast, after the Second World War, urbanization was most active. Back in the 1960s and 1970s, the process of population ageing in villages and their depopulation began there.

In Ukraine, as in many neighboring countries of Central and Eastern Europe, dozens of villages disappear every year. In total, according to rough estimates, about 800 villages have disappeared (abandoned) in the country over the past 30 years (Statistics of Ukraine, (2021). This problem is major in the central and northeastern regions of Ukraine, which underwent forced industrialization and urbanization in the 1930s. In western Ukraine, where industrialization began later and was not very active, the process of village disappearance did not become large-scale.

In the Carpathian region of Ukraine for the period 1989–2020, according to official information, 17 villages ceased to exist (were deregistered): 13 in Lviv Oblast, 3 in Chernivtsi Oblast and 1 in Zakarpattia Oblast (Fig. 9). Most of them disappeared in the 1990s in the east of the most urbanized Lviv Oblast, where the process of depopulation of the rural population lasted for decades.

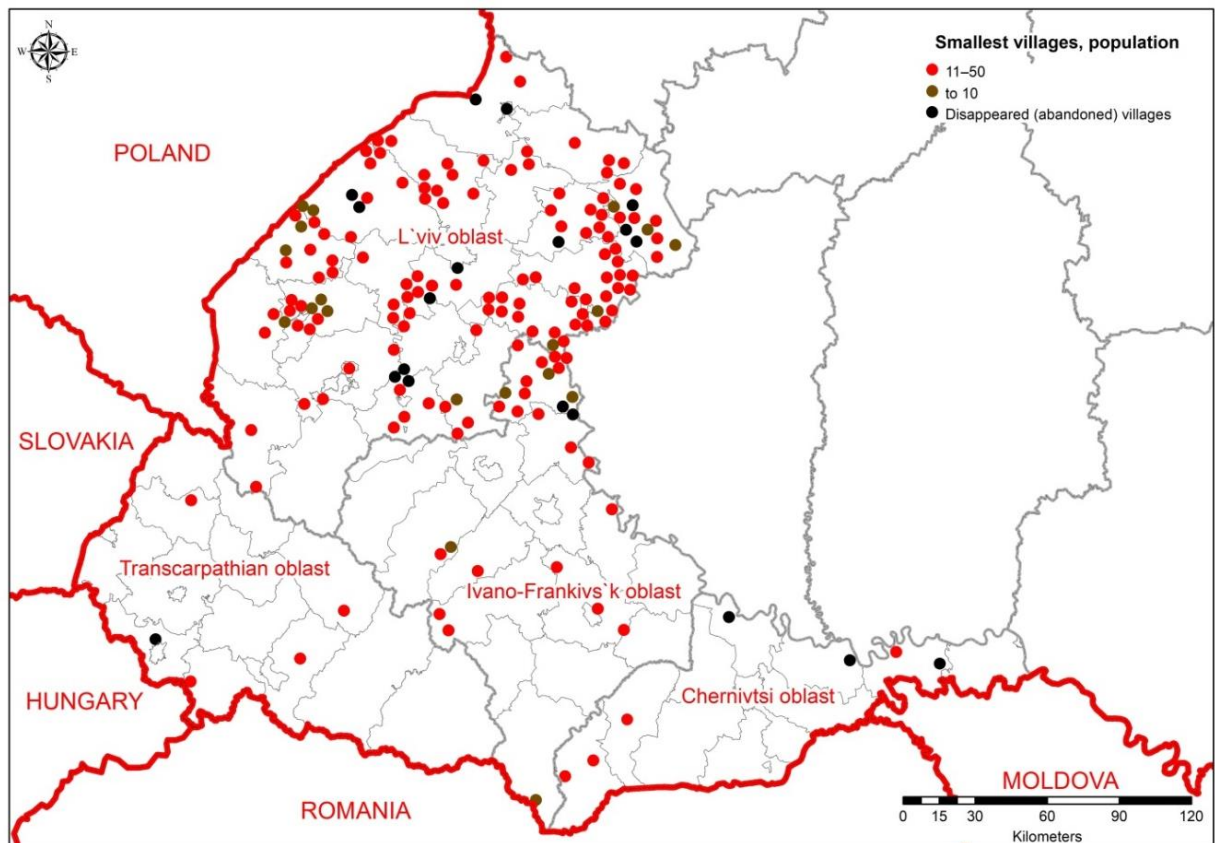


Fig 9. Disappearance of villages in the Carpathian region (1989–2021). Source: by the author based on State Statistics Service of Ukraine

The number of small villages on the verge of extinction is much higher. In 2020, the total number of villages with 50 inhabitants or less in the Carpathian region of Ukraine was 159. This is about 5% of all villages in the region. 125 of them were located in Lviv Oblast, 25 – in Ivano-Frankivsk Oblast, 4 – in Zakarpattia Oblast, 3 – in Chernivtsi Oblast. Most likely, there are actually more extinct villages and villages on the verge of extinction, but all of them can be identified only after a new census.

3.4 Largest villages

Residents of the largest villages, with a population of 2–3 thousand people and above, are often assigned to the transitional group of the so-called "semi-urban" population (Perlín, 2010). The development of these settlements indicates important trends in the development of the entire system of settlements in the region. There are many large villages in the Carpathian region of Ukraine, especially in the foothills and Transcarpathia, due to the peculiarities of the terrain.

In total, there were 148 villages with a population of over 3,000 people in the Carpathian region in 2020, i.e. 5% of all villages. The largest number of such villages is observed in Zakarpattia Oblast – 66, Ivano-Frankivsk Oblast – 36, Chernivtsi Oblast – 29, Lviv Oblast – 17 (Fig. 10). In total, more than 700 thousand people live there, 20–25% of the rural population of the region. Not all of them have up-to-date population information. However, in most of them, there has been no significant depopulation in the last 30 years, in many of them, the population has increased significantly. There are 34 villages with a population of more than 5 thousand (1%).

The largest villages are divided into three types. The first type represents suburbanized villages in suburban areas of large cities. This type includes the largest village in the region, Zymna Voda, a suburb of Lviv, with about 11 thousand people. The second type covers foothill and mountain villages. These are mostly villages located on gentle slopes with the heights of 200–350 m, in hollow, river valleys. As a rule, they are large in area, but the population density may not be too high. The third type includes all

the others, mostly plain villages, often transport hubs of important roads. Often, in the past, they were towns with limited Magdeburg rights.

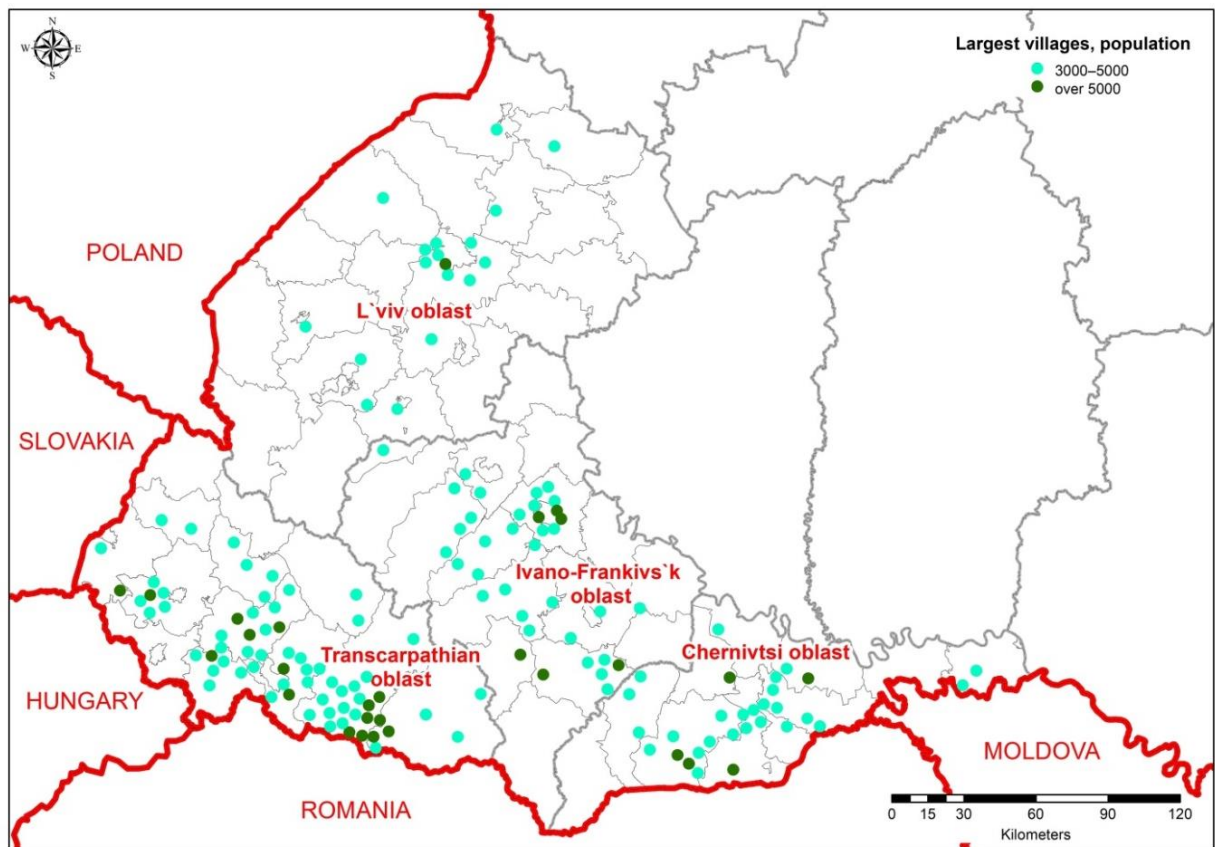


Fig 10. Largest villages in the Carpathian region (2020). Source: by the author based on State Statistics Service of Ukraine

3.5 Suburban villages

The population has grown in suburban villages near all four regional centers of the Carpathian region of Ukraine: Ivano-Frankivsk, Lviv, Uzhhorod, and Chernivtsi. It has also increased in many villages within the so-called Drohobych-Boryslav agglomeration, as well as near Mukachevo, Kolomyia. In many suburban villages, the population increased by more than 50% between 1989 and 2020, and in some of them, such as Solonka near Lviv, doubled. Many of them have already "merged" with the city, i.e., constitute a completely built-up area. Accordingly, their inhabitants have an urban or semi-urban lifestyle. The process of peri-urbanization has become widespread, i.e., the emergence of hybrid landscapes that have both rural and urban features.

The process of urban sprawl in the largest cities through the merge of the suburban villages, despite the declining population in the country, is a typical feature of countries that emerged after the collapse of the Soviet Union. This process is also significantly related to the transition to market conditions with the beginning of democratic transit. During the Soviet period, opportunities for private development of suburban areas were limited. There was no land market. A city resident could be allocated a small plot of land for use as the so-called "dacha" (second home or summer house) – a cottage to live in during summer vacation (Lovell, 2003). However, there were size restrictions. People were allowed to build a small building, often using a standard project.

After the collapse of the USSR, restrictions on housing development in the suburbs were lifted. As a result of the distribution and privatization of land plots for individual development (including dachas), a land market appeared. Accordingly, the chaotic development of the suburban area began, large-scale construction of first individual houses began, followed by the development of cottages, high-rise buildings. Instead, in large cities, the development of high-rise apartment buildings has almost stopped

for a while. During the Soviet era, this was done by large state-owned construction companies, which ceased to exist in the 1990s. Large-scale housing development was also hampered by low salaries, non-transparent legislation and corruption in the construction sector.

3.6 Mountain villages

The Ukrainian Carpathians cover an area of more than 24 thousand sq. km, which is more than 40% of the Carpathian region of Ukraine. They are mostly represented by low (up to 1,000 m) and medium (1,000–2,000) mountains in absolute heights. Heights over 2,000 m can be observed only in one mountain range – Chornohora – located on the border of Zakarpattia (Rakhiv District) and Ivano-Frankivsk (Verkhovyna District) Oblasts.

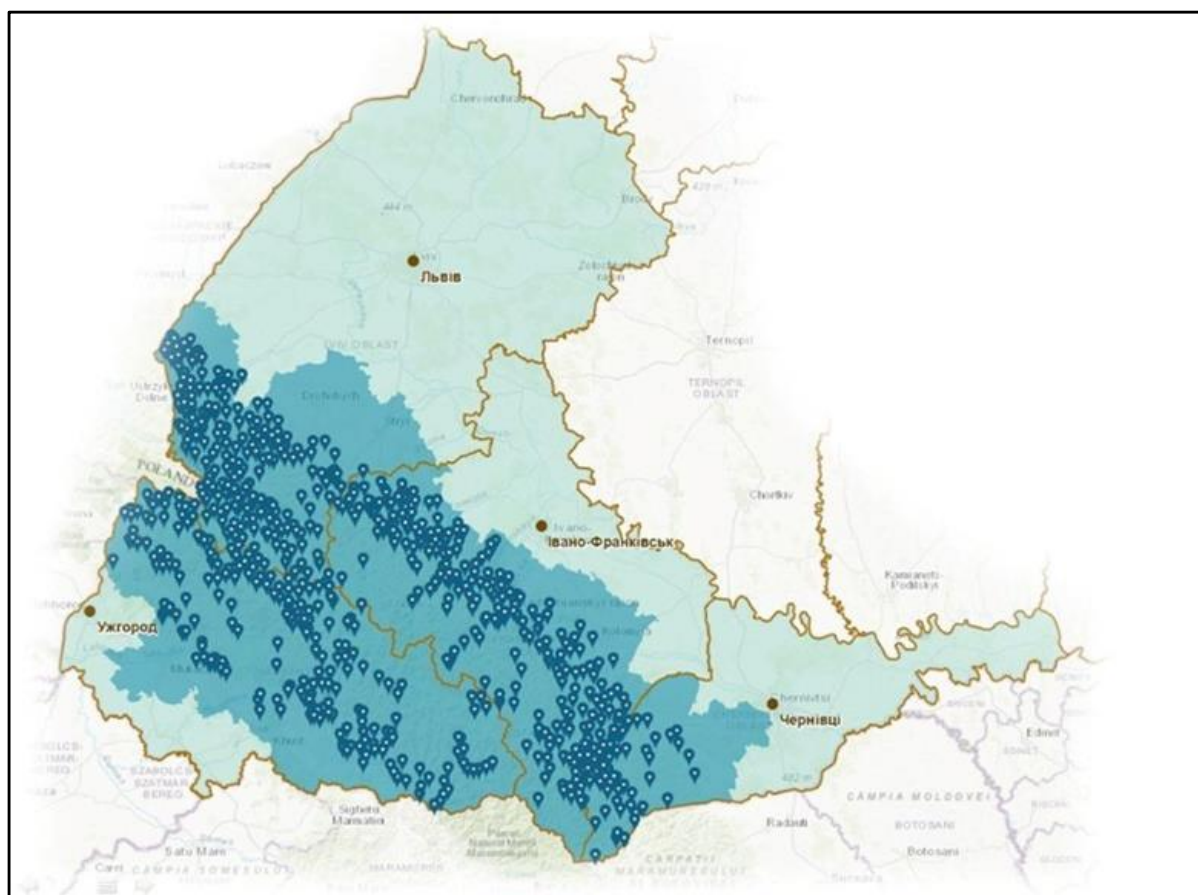


Fig 11. Mountain settlements in the Carpathian region according to the Law Ukraine “On the Status of Mountain Settlements in Ukraine”. Source: Ministry for Communities and Territories Development of Ukraine⁵

In most mountain villages, the depopulation was much smaller compared to the lowland villages. However, long trips abroad to earn money have become a widespread phenomenon. In the mountain villages at the time of the USSR collapse, an expanded type of population reproduction was still preserved in some places. Therefore, even now, there is a slightly higher birth rate, and there are many large families. An important source of employment in the mountainous areas is forestry. The forest industry has a significant share of the shadow sector, which is associated with illegal logging and the export of raw wood.

The transition to a market economy has given impetus to the development of tourism in the Ukrainian Carpathians. Since the early 2000s, this industry has been developing dynamically. First, the flow of tourists to traditional mountain resorts (Slavske, Yaremche) resumed. Subsequently, several new ones

⁵ https://www.minregion.gov.ua/wp-content/uploads/2019/08/Rozvitok_girskih_teritoriyi.pdf

were built, the most famous of which are Bukovel and Drahobrat. These resorts are now among the largest in Central and Eastern Europe in terms of annual number of visitors, number of accommodation facilities, the number and length of ski slopes. The tourism industry is capable of rapid recovery after economic crises (Lozynskyy & Kushniruk, 2020).

In 1995, the Verkhovna Rada of Ukraine adopted the Law Ukraine "On the Status of Mountain Settlements in Ukraine", according to which the legal category "mountain settlement" was introduced (Law, 1995). The main criterion for acquiring this status is the location of the entire settlement, or that part thereof where the majority of residents live at an altitude of more than 400 m; location of most agricultural lands on 15% slopes; unfavorable climate, in particular a large amount of precipitation, etc. Residents of such settlements have many state-guaranteed benefits, in particular, they get statutorily raised salaries. State pensions and scholarships, all other types of state welfare assistance are 20% higher than average. As of the spring of 2021, there were 714 mountain settlements in the Carpathian region, including 682 villages (Fig. 11), which is 19% of all villages in the Carpathian region of Ukraine (Ministry for Communities, 2021). In Zakarpattia Oblast, such villages account for about 35%, in Ivano-Frankivsk Oblast – 30%, Lviv Oblast – 10, Chernivtsi Oblast – 15.

3.7 Border villages

The Carpathian region of Ukraine borders on five countries – Poland, Slovakia, Hungary, Romania, and Moldova. During the Soviet era, the state border served as a barrier. Along the border, there was a border area several kilometers wide to visit which non-locals had to obtain a special permit. There was no free crossing of the state border, it was not easy to leave the USSR altogether. Accordingly, the development of villages located in the border area has slowed down.

Now the role of the state border is conditioned by a number of other factors: the presence of border crossing points, the level of economic development of border areas in neighboring countries, the population structure in villages. In general, the role of the border is rather positive, it performs a contact function, border infrastructure provides additional jobs, the difference in prices for different categories of goods facilitates cross-border trade, often illegal one (smuggling of alcohol, cigarettes). However, the location of villages near the border also encourages emigration to more developed countries that are members of the European Union.

In general, the depopulation of villages near the border with Poland in Lviv Oblast is slightly lower than in the villages in the east of the Oblast. However, a special situation is observed in the mountain villages where the borders of the three states, Ukraine, Poland, Slovakia, converge, and where the territory of Poland forms a ledge (Western Bieszczady). There are no border crossings here, and the population on the Polish side is small. Accordingly, the adjacent Ukrainian border areas are a classic mountain periphery with a high level of rural depopulation.

There are many villages along the border in Zakarpattia and Chernivtsi Oblasts, where majority of the population are Hungarians and Romanians. There are about 100 Hungarian villages in Zakarpattia Oblast, and more than 70 Romanian villages in Zakarpattia and Chernivtsi Oblasts (Census, 2001). The governments of Hungary and Romania actively support their compatriots abroad, and many Ukrainian Hungarians and Romanians have dual citizenship, although it is officially banned in Ukraine.

Hungary is more economically developed than Romania, so Hungarian Ukrainians migrate outside Ukraine faster. The level of economic development of the Romanian territories bordering Ukraine is lower than in Romania as a whole. In addition, Ukrainian villages have been preserved there. Migration level to Romania is lower than to Hungary. Residents of border villages enjoy the many benefits of their border position. There are several villages along the border with Romania, which the media like to refer to as the richest villages in Ukraine. Such is, for example, the Romanian village of Nyzhnia Apsha in Tyachiv District of Zakarpattia Oblast, with more than 7,000 people. There, almost every resident is the owner of a 10- or 15-room luxurious "palace". The main sources of income for the villagers are employment abroad and cross-border trade.

4. Discussion and conclusions

After the declaration of independence of Ukraine, the most important demographic and settlement processes in the rural settlements of the Carpathian region did not stop, which began in the Soviet period. These processes have acquired certain specific features related to the peculiarities of political transition in the country. The situation in rural areas of Ukraine is partly obscured by official statistics. The legal division of settlements into urban and rural ones in Ukraine is outdated. Instead, there is no scientific research that would reveal the true classification of the territory of Ukraine into urban, semi-urban and rural areas on the basis of methods developed by scientists (Perlin, 2010).

The economic crisis did not stop the processes of depopulation in remote peripheral rural areas, where they had previously, during the period of Soviet industrialization, changed irreversibly, where the process of population aging in rural settlements reached a critical point. It was only in the 1990s, at the time of the deepest economic crisis, when a lot of large state-owned industrial enterprises were liquidated in the cities, that relocation from villages to large cities stopped for some time. However, there was no real deurbanization on a large scale. Even after losing their jobs for a long time, city dwellers did not get back to villages. They were engaged in farming in suburban areas, which they received in the Soviet period (dachas), helped relatives who remained in the villages. Certain increase in the rural population in the first decade of independence was due to purely administrative changes (administrative deurbanization).

In the Carpathian region of Ukraine, the urbanization of rural settlements located in the suburban areas of large cities and functionally connected with them has not stopped. It is in suburban villages that the population has grown most dynamically in recent decades. The process of suburbanization accelerated, i.e., the development of urban suburbs, the relocation of part of the urban population there. However, the main reason for suburbanization was not the high cost of land in the big city, like in the classic case of Western cities. Suburbanization during the Soviet era was hampered by the lack of a land market, low incomes, low levels of motorization, and some other constraints related to the planned economy. With the beginning of democratic transition and the transition to a market economy, these restrictions were lifted. The rapid development of suburban villages began, which was not stopped by either the economic or demographic crisis. However, they also preserved the classic suburban farming, focused on the needs of the inhabitants of the big city. It was the fastest to adapt to the conditions of a market economy, as it was already partially market-based during the Soviet period.

As early as the 2000s, the development of private enterprise, services (trade, finance, education, tourism, etc., i.e., industries that did not have the conditions for proper development in the USSR) contributed to the resumption of migration from villages to large cities. In addition, labor migration abroad intensified. This accelerated the depopulation of villages. However, the process of disappearance of villages also did not become widespread, due in part to the historical peculiarities of the formation of a network of rural settlements, as a result of which the share of small villages in the region at the time of the USSR collapse in the Carpathian region was small.

In the 2000s, after some improvement in the economic situation in Ukraine, a large group of villages appeared in the Carpathian region, which began to develop quite dynamically, although they are located at a considerable distance from large urban areas. These villages are concentrated mostly in Zakarpattia Oblast, partly in the Precarpathians and in the Carpathians. Historically, there have been many large villages with a population of several thousand people, a low level of urbanization, there was no significant depopulation, population aging and rural decline.

After the collapse of the USSR, with the transition to a market economy, these villages received new opportunities for development. Recreational and forest resources, partial opening of the land market due to decollectivization, the possibility of seasonal labor migration abroad provided the rural population with additional sources of income. The proximity of the border with the countries of the European Union, state support for mountain villages, the peculiarities of the ethnic composition of the population, have become additional favorable factors. Demographically and economically, these villages are deagrared due to the development of the service economy, but these processes do not lead to the disappearance of rural areas, but rather diversify its forms, as in other countries (Delgado, 2019).

The biggest problems facing the villages of the Carpathian region of Ukraine today are depopulation in peripheral areas, chaotic development of suburban villages, loss of identity and destruction of traditional culture in mountain and foothill villages due to tourism development, problems in families due to long stays of some of the family members abroad. However, the processes taking place in rural areas in the Carpathian region of Ukraine cannot be referred to as unique or purely local. They have much in common with those occurring in other European regions in the mountains, foothills and plains. Accordingly, there are “recipes” for addressing current problems in the villages of the Carpathian region of Ukraine.

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