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## DEPOPULATION IN THE UPPER-SILESIAN BASIN (POLAND) AND THE DONETSK BASIN (UKRAINE)

*The article compares demographic processes taking place in traditional industrial European regions: Upper-Silesian and the Donetsk Basins. During communism, a high population concentration was characteristic. Currently, population decline leads to depopulation. Depopulation in the Upper-Silesian Basin is determined mainly by labour migration to the European Union (EU) and by sub-urbanization. In the Donetsk Basin it is due to severe population decline intensified by migration. The main reasons are the collapse of numerous industrial facilities and the lack of alternative employment.*

**Keywords:** coal basin, Upper Silesia, Donetsk Basin, restructuring of economy, population decline.

**Марчин Рехлович, Марія Ткоц: ДЕПОПУЛЯЦІЯ У ВЕРХНОСІЛЕЗЬКОМУ БАСЕЙНІ (ПОЛЬША) І ДОНЕЦЬКОМУ БАСЕЙНІ (УКРАЇНА).** У статті порівнюються демографічні процеси, що відбуваються в традиційних промислових регіонах Європи: Верхнесілезькому та Донецькому басейнах. За часів комунізму характерна була висока концентрація населення. В даний час скорочення чисельності населення веде до депопуляції. Депопуляція в Верхнесілезькому басейні визначається в основному трудовою міграцією в Європейський Союз (ЄС) і субурбанізацією. У Донбасі це відбувається через різке природне скорочення населення, підсиленого міграцією. Основними причинами є крах численних промислових підприємств і відсутність альтернативної зайнятості.

**Ключові слова:** вугільний басейн, Верхня Сілезія, Донбас, реструктуризація економіки, скорочення чисельності населення.

**Марчин Рехлович, Марія Ткоц: ДЕПОПУЛЯЦИЯ В ВЕРХНЕСИЛЕЗСКОМ БАСЕЙНЕ (ПОЛЬША) И ДОНЕЦКОМ БАСЕЙНЕ (УКРАИНА).** В статье сравниваются демографические процессы, происходящие в традиционных промышленных регионах Европы: Верхнесилезском и Донецком бассейнах. Во времена коммунизма характерна была высокая концентрация населения. В настоящее время сокращение численности населения ведет к депопуляции. Депопуляция в Верхнесилезском бассейне определяется в основном трудовой миграцией в Европейский Союз (ЕС) и субурбанизацией, в Донбассе это происходит из-за резкого природного сокращения населения, усиленного миграцией. Основными причинами являются крах многочисленных промышленных предприятий и отсутствие альтернативной занятости.

**Ключевые слова:** угольный бассейн, Верхняя Силезия, Донбасс, реструктуризация экономики, сокращение численности населения.

Political and economic transformations in Central and Eastern Europe have had a crucial influence on the demographic situation in this part of the European continent. According to the report entitled “The impact of European demographic trends on regional and urban development”, issued within the framework of the Hungarian Presidency of the Council of the European Union (EU) [17], population decline is mostly typical for the new EU member states and the eastern part of Germany. A similar situation is characteristic in the countries of the former Soviet Union. According to the authors, the main cause of population decline lies in political and economic transformations taking place in this part of Europe. The economy restructuring connected with the process of its adjustment to the needs of the local as well as the global markets, forced the liquidation of obsolete facilities, which lead to the reduction of employment and to unemployment, which had been unknown in this part of Europe before 1989. The adaptation to new market conditions was exceptionally difficult in old industrial regions of mono-functional structure of production based on traditional branches of heavy industry. The process of restructuring in such regions, as proved by the experience of Western European countries, is extremely difficult and long-lasting [6][13]. It is most frequently connected with a total or partial liquidation of the worked-out open cuts, technologically obsolete steelworks and processing plants connected with them. In their place, new industries are introduced and services are developed [19]. These, however, are not able to compensate for the loss of jobs in traditional industries, hence, the vast unemployment and emigration of population. The

Silesian Voivodeship constitutes an example of such a region in Poland, with the Upper-Silesian Basin in its central part, while in Ukraine, these are the Donetsk Oblast and the Luhansk Oblast, within which the Donetsk Basin is located. Both regions in the times of the communist economy were characterized by intense growth of industry, mining in particular, and mass inflow of workforce [1][14][15][18]. During the period of economy transformation in Poland, after 1989, and after gaining independence by Ukraine in 1991, in both regions the process of industry restructuring was initiated. It resulted in the liquidation of factories, which did not meet the new market requirements and which applied obsolete and environmentally unfriendly technologies and employed an excessive number of workers [10][12]. Both regions rapidly faced the crisis phenomena of unemployment, an income decrease in households and a dramatic reduction in the standard of living [2]. The consequence of these phenomena is the migration of population, leading to a steady population decline and an alarming phenomenon of urban shrinking reflected in depopulation of centres, outflow of specialized staff and young people [9, 11].

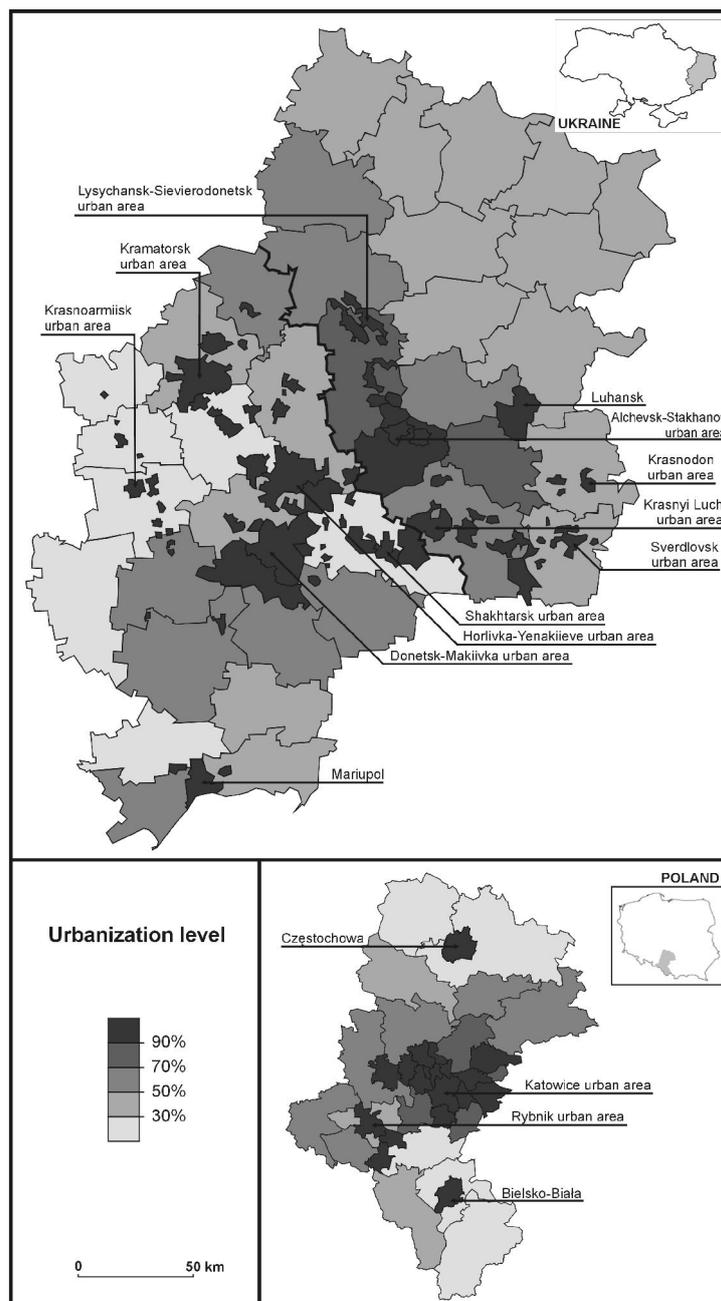
The article aims at a comparison of demographic transformations which took place in the last twenty years in the area of the Silesian Voivodeship and the Donetsk and Luhansk Oblasts in Ukraine, that is in areas intensely developed with vast population inflow, which constituted industrial cores in both countries. An attempt to explain the causes of the observed phenomena was made, including local specifics, in particular. Moreover, contemporary demographic processes were analysed thoroughly and they, to a large extent, reflect the period of the second demographic transition previously

observed in Western Europe, which is characterized by a change in the family model, postponed decisions to marry and a decline in reproduction.

Ever since the beginning of socio-economic changes in Central and Eastern Europe, i.e. from 1988/89 to 2011/12<sup>1</sup> it may be stated that in most countries of this part of Europe, population was characterized by a downward trend [21, fig.3, p.22]. High intensity of the depopulation phenomenon is also typical for majority of former Soviet republics, including Belarus and Ukraine, and is perceived as a consequence of transformations which took place following the collapse of communism [3]. Poland was one of the few countries where population showed a minimal increase.

At the same time, the population of the Silesian Voivodeship declined by nearly 300 thousand people (from 4.9 million to 4.6 million – that is by 5.9%), in the Donetsk Oblast by 900 thousand (from 5.3 million to 4.4 million – that is by 17.4 %), in the Luhansk Oblast by almost 600 thousand (from 2.9 million to 2.3 million – that is by 20.6%).

An intensive population inflow to the Upper-Silesian and the Donetsk Basins during communist times was accompanied by the development of urbanization processes, therefore, the researched basins in Poland and Ukraine are characterized by a high index of urbanization (fig.1).



**Fig. 1. The spatial diversification of the urbanization factor in 2011/12 (own study).**

<sup>1</sup> Polish statistical offices publish data as of the last day of the year (31 December) whereas Ukrainian offices - as of the first day of the year (1 January). Therefore, the article adopted double dates, for example, data for the year 2011/12 refers to population in Poland on 31 December 2011 and 1 January 2012 in Ukraine

Such high indexes result from the development of cities and urban agglomerations where industry constituted the economic basis. Apart from high urbanization and industrialization, these regions are distinguished by a high degree of population concentration (fig. 2). It is mostly visible in the case of the Donetsk and the Luhansk Oblasts, where over 75% of population live on 10% of the regions' areas, whereas

in the case of the Silesian Voivodeship it is only half of its population. The high concentration of population in the area of the Donetsk Basin was influenced by various factors, the most important being prevailing significance of heavy industry, especially coal mining, in the economic structure of the Donetsk Basin, and thereby constant attractiveness of large industrial cities as places of residence.

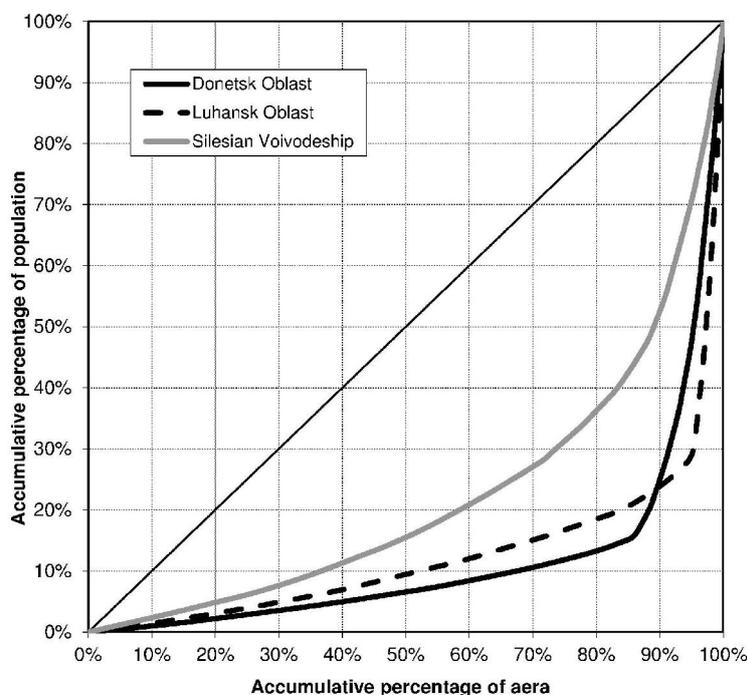


Fig. 2. The concentration of population curve in 2011/12 (own study)

The high concentration of population in the Silesian Voivodeship was influenced by strong industrialization of its central part, which lasted continuously since 1740, when the first coal mine was opened. A consequence of it was the development of large and medium-sized cities comprising the Katowice conurbation, the largest metropolitan type area in Poland.

Several factors had influence on the changes in population during the times of the economic transformation of both countries, that is from the beginning of the 1990s. Firstly, social and economic transformations, connected with the transition from the centralized model of the country and the command-and-quota economy to capitalism and, above all, de-industrialization. Participation of industry in the formation of Ukraine's national income in the period of 1991-2009 decreased from 45.7% to 30.0% [11], in the Silesian Voivodeship from 37% to 29%. The impact of this factor was especially strong in urban centres dominated by large industrial plants. The largest population decline (by over one quarter) was observed in those cities where traditional branches of industry serving as the source of income for its inhabitants, were liquidated or significantly limited their employment. This refers to such centres as: Stakhanov, Kirovsk, Krasnyi Luch and Pervomaisk in the Luhansk Oblast and Shakhtarsk, Yenakiieve, Krasnyi Lyman, Torez,

Kostiantynivka and Snizhne in the Donetsk Oblast, where the decline amounted to 25-33%.

The outlook is slightly different in the case of the Silesian Voivodeship, where the change of residency and urban centres depopulation were equally influenced by the restructuring of traditional branches of industry as well as migration connected with the return of population to their home towns and the economic migration, initially mainly to Great Britain and Ireland, but after access to the EU, also to other countries which progressively opened their job markets. Nevertheless, the top of the list are the cities where at least several large industrial plants were liquidated, mainly coal mines and old steelworks, i.e. Katowice, Chorzow, Ruda Slaska, Piekary Slaskie and Bytom. Population decline is approximately half, in comparison to Ukraine and amounts to about 15-17%.

On the other hand, there are centres where industry restructuring happened only on a small scale and until present, a majority of industrial plants operating in the socialist times are still open; they are not public property any longer though, they have been privatized. A flagship example of such cities are large centres of metallurgy and steel working, such as Alchevsk (-10.7 %) in the Luhansk Oblast, Mariupol (-10.1 %) in the Donetsk Oblast and Dabrowa Gornicza (-8.1 %) in the Silesian Voivodeship, where the largest steelworks in Poland,

constructed in the 1970s, was sold to a world leader in steel production - Lakshmi Mittal (presently Arcelor Mittal).

Moreover, the following centres are worth mentioning:

- in the Silesian Voivodeship: Jaworzno (-3.4 %) with developed energy production, and Tychy (-6.4 %) with automotive industry (Fiat, Isuzu Motors),

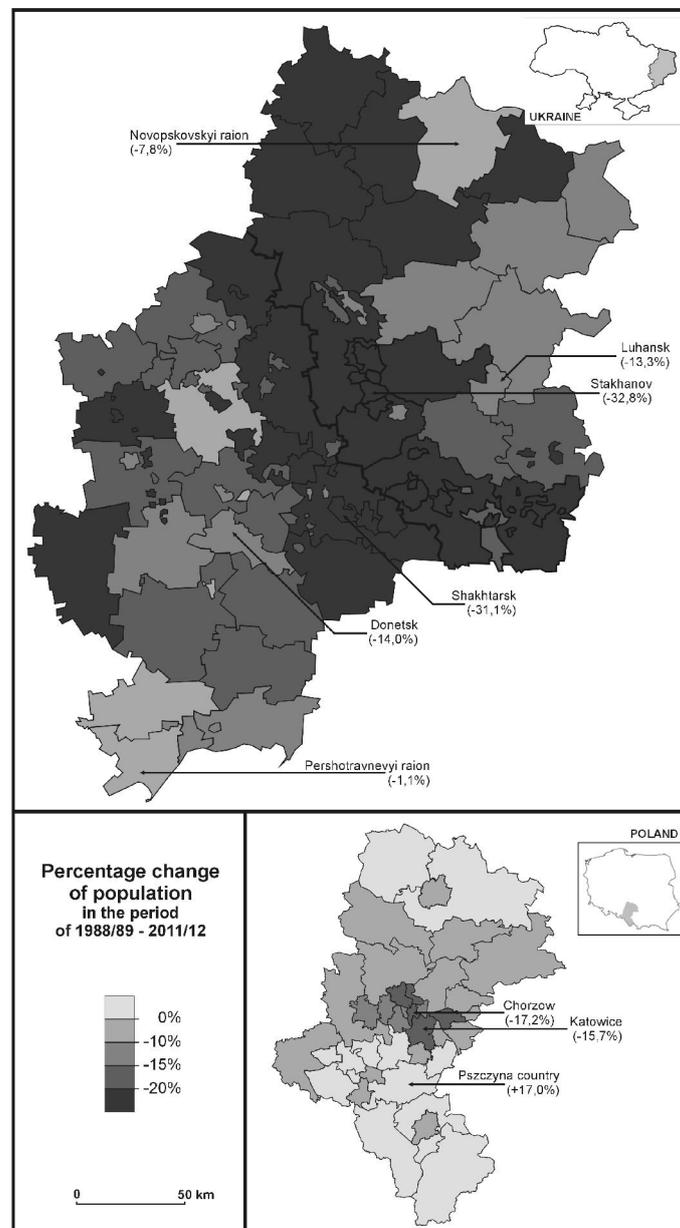
- in the Donetsk Oblast: Dokuchaievsk (-8.9 %) with building materials industry, Yasynuvata (-9.1 %) – an important railway junction with a high percentage of people employed by railway, and Avdiivka (-11.3 %) with a coke plant,

- in the Luhansk Oblast: Sievierodonetsk (-15.0 %) with chemical industry plants.

A relatively low population decline characterizes regional and sub-regional centres, such as Bielsko-Biala (-2.2 %) or Luhansk (-13.3 %).

When explaining the reasons for spatial differentiation in population, one may not take notice of such a crucial factor as the attractiveness of the natural environment. This mostly refers to areas with low levels of urbanization, which are attractive not only from the point of view of their present inhabitants, but also to potentially new inhabitants.

The dependence of the change in population from the attractiveness of natural environment is apparent mostly in the Silesian Voivodeship, in districts located in the southern part, where population increase amounted to 5 to 15 % (fig.3). The location in vicinity to the Beskids, as a place of leisure and recreation is not negligible [12], but on the other hand, it is in proximity to large urban agglomerations, which are places for work and education and well developed transportation systems [16]. The significance of the natural environment is noticeable in Ukraine in the precincts of the Sea of Azov.



**Fig. 3. Population changes in the examined regions in the period of 1988/89 – 2011/12 (own study based on [5, 7, 8, 20])**

The information presented above lead to a conclusion that considerable depopulation, resulting from various reasons, is present in all researched regions. To find out the reasons, the classic method of J.W. Webb [25] was applied. Figure 4 presents a chart depicting demographic changes in 2011, with the division not only on downstream administrative units, but also the types of these units. Municipal units have been identified - in the case of Poland, these are township districts, and in the case of Ukraine - mis'krady, and land units - respectively - country districts and raions. The feature that diversifies the researched areas the most is undoubtedly natural migration of population. In respect to it, the the most advantageous is the situation in the Silesian Voivodeship, where natural population increase was observed in a large part of the administrative units, whereas in the Do-

netsk and the Luhansk Oblasts, all the researched administrative units experienced natural population decline. The dominance of depopulation types E and F clearly points this out. According to [11], the birth rate in 2002 decreased to one of the lowest in the world, amounting to 0.9 live births per 1000 women. In both oblasts, natural decline is additionally deepened by migration losses (F). The situation in the Silesian Voivodeship is different; here, the largest group of units is characterized by the predominance of migration outflow over the natural decline (G). The presence of areas with migration inflow and population growth is favourable. In contrast to the Ukrainian oblasts, all types distinguished by Webb (fig.4) are represented in the Silesian Voivodeship, which indicates that demographic processes are more diversified in this region, in comparison to Ukraine.

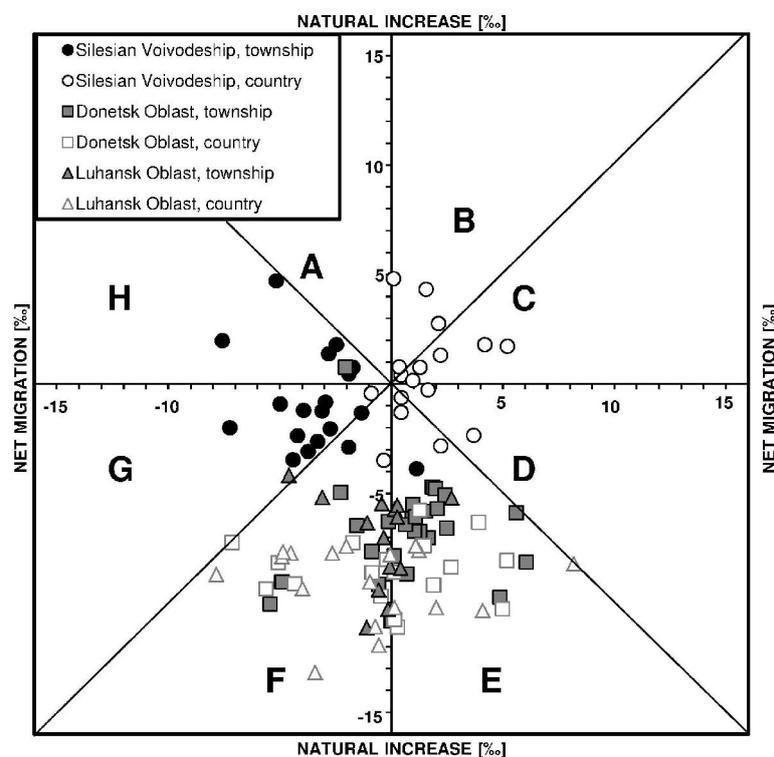


Fig. 4. A typology of demographic changes in the analysed area in 2011 (Webb's chart, own study based on [5, 7, 8])

Obtained research findings relating to the problem of significance of the natural mobility and migrations in shaping demographic transformations in the analysed area, closely correspond with findings presented in existing literature. As Flaga observes [4, p.325], the main reason for population decline in Ukraine after 1993 is primarily a sudden weakening of population growth. At the local level, it is confirmed by the research of Mykhnenko, et al. [11], who point out the decrease in birth rate as the reason for depopulation in Donetsk and Makiivka.

Spatial differentiation of the birth rate index in 2011 was presented in figure 5. The first point to mention is that the general value of the birth rate for the Silesian Voivodeship equalled 9.68 of live births per one thousand inhabitants, while in the case of the Donetsk and the Luhansk Oblasts, it was 9,47% and 9,38% re-

spectively.

A big problem for traditional mining regions in Central and Eastern Europe is a high number of deaths and shorter average lifespan, in comparison to other regions. It is especially apparent in the Donetsk Basin, where factors such as high pollution of natural environment by obsolete industrial plants, insufficient medical services or social problems, mainly alcoholism, are superimposed [4].

Table 1 presents the number of administrative units in specific value groups for death index, calculated as the number of deaths per one thousand inhabitants. A big discrepancy between the situation in the Silesian Voivodeship and the Donetsk and the Luhansk Oblasts is noticeable, making it basically impossible to compare the phenomenon applying one scale of values in the arrangement of all analysed regions.

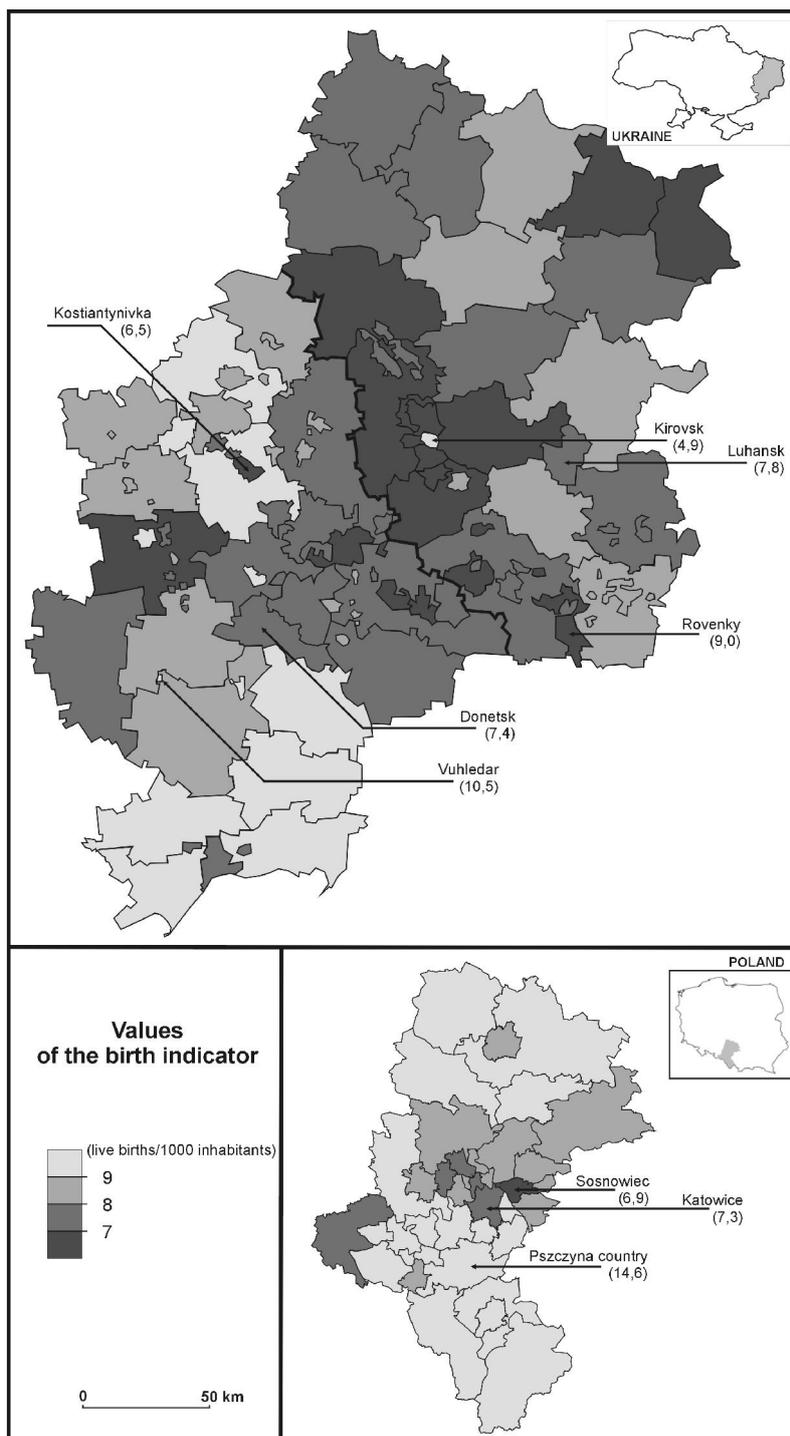


Fig. 5 The spatial diversification of the birth indicator in 2011 (own study)

Table 1

The value of the death indicator in the analysed regions in 2011

Region	The value of the death indicator [number of deaths / 1000 inhabitants] in the lower level units [number of units]							
	<10	10-11	11-12	12-13	13-14	14-15	15-20	>20
The Silesian Voivodeship	19	5	9	2	1	0	0	0
The Donetsk Oblast	0	0	1	0	2	1	37	3
The Luhansk Oblast	0	0	0	0	1	2	25	4
<b>Total</b>	<b>19</b>	<b>5</b>	<b>10</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>62</b>	<b>7</b>

Source: own study based on [5, 7, 8]

In eleven units, the number of deaths exceeds 20%, which is rare in Europe. This refers only to the Donetsk Basin, and mainly to areas with a low level of urbanization. These are the following raions in the Donetsk Oblast: Kostiantynivka, Dobropillia and Sloviansk, and in the Luhansk Oblast: Kreminna, Antratsyt and Sverdlovsk.

The Webb's chart (fig.4) shows that migrations have a lesser influence on the shaping of demographic changes in the researched regions. Only in the case of

the Silesian Voivodeship the dependence between the type of administrative unit and the migration balance is clearly visible. In 2011, almost all township districts observed negative migration balance values (from +1,1 in Chorzow to -7,6 in Jastrzebie Zdroj), while in country districts, it was only in Raciborz (-0,9) and Zawiercie (-0,3). All other country districts had positive migration balances (up to +5,2 in the Bielsko-Biala district). The Donetsk and the Luhansk Oblasts do not reveal such a dependence.

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#### Summary

#### **Marcin Rechlłowicz, Maria Tkocz. DEPOPULATION IN THE UPPER-SILESIA BASIN (POLAND) AND THE DONETSK BASIN (UKRAINE).**

Traditional industrial regions in Poland and Ukraine, whose genesis is connected with coal mining and the related intense development of other industry branches, especially of low level processing industries, are presently in their decadent stage of development. In the past, they were characterized by an excessive concentration of population, particularly in cities, which is still sustained, hence the contemporary population decline may be treated as positive for the regions. The main reason for depopulation is emigration and natural outflow. Heavy population outflow in the Upper-Silesian Basin is linked to employment perspectives beyond Polish borders, due to its membership in the EU since 2004 and the intensifying sub-urbanization process, reflected by migration and population growth in the southern part of the

Silesian Voivodeship. Population decline in the Donetsk and the Luhansk Oblasts is considerably higher and more alarming due to the fact that it is determined by a deep natural outflow intensified by migration. The main reason is the poor economic state of regions connected with the collapse of many industrial plants and also the lack of alternative work places.

**Keywords:** coal basin, Upper Silesia, Donetsk Basin, restructuring of economy, population decline.

УДК 911.3

*Bulent Acma*

## NEW PATHS TOWARDS SUSTAINABLE RURAL DEVELOPMENT: LESSONS FROM SOUTHEASTERN ANATOLIA REGION DEVELOPMENT PLAN IN TURKEY

*The aim of this study is to analyse and to bring out the different aspects of the revised version of the GAP Master Plan. For this reason, firstly, the steps of the plan from the first version to last one will be examined. Next, both regional and national cases and conditions will be evaluated. In the third step the participatory and sustainable dimensions of the GAP Master Plan will be discussed. And, in the last step, in order to complete project in time planned, what should be done and lessons learned from the process will be analyzed.*

**Keywords:** Regional Development Plan, Participatory, Sustainable Regional Development, Southeastern Anatolia Region, The Southeastern Anatolia Project (GAP).

**Бюлент Акма. НОВІ ШЛЯХИ ДО СТІЙКОГО РОЗВИТКУ СІЛЬСЬКИХ РАЙОНІВ: УРОКИ ВІД ПЛАНУ РОЗВИТКУ РЕГІОНУ ПІВДЕННО-СХІДНОЇ АНАТОЛІЇ В ТУРЕЧЧИНІ.** Метою даного дослідження є аналіз і виявлення різних аспектів переглянутого варіанту Генерального плану Проекту Південно-Східної Анатолії (ППА). З цієї причини, по-перше, будуть розглянуті кроки плану від першої версії до останніх. Далі будуть оцінені як регіональні, так і національні питання і умови. На третьому етапі обговорюватиметься участь і стійкі виміри Генерального плану ПЮА. І на останньому етапі планується, що повинно бути зроблено, з тим щоб завершити проект в строк, і будуть проаналізовані уроки, вилучені з процесу.

**Ключові слова:** План регіонального розвитку, участь, стійкий регіональний розвиток, Південно-Східний Анатолійський Регіон, Проект Південно-східної Анатолії (ПЮА).

**Бюлент Акма. НОВЫЕ ПУТИ К УСТОЙЧИВОМУ РАЗВИТИЮ СЕЛЬСКИХ РАЙОНОВ: УРОКИ ОТ ПЛАНА РАЗВИТИЯ РЕГИОНА ЮГО-ВОСТОЧНОЙ АНАТОЛИИ В ТУРЦИИ.** Целью данного исследования является анализ и выявление различных аспектов пересмотренного варианта Генерального плана Проекта Юго-Восточной Анатолии (ПЮА). По этой причине, во-первых, будут рассмотрены шаги плана от первой версии до последней. Далее будут оценены как региональные, так и национальные вопросы и условия. На третьем этапе будет обсуждаться участие и устойчивые измерения Генерального плана ПЮА. И на последнем этапе планируется, что должно быть сделано, с тем чтобы завершить проект в срок, и будут проанализированы уроки, извлеченные из процесса.

**Ключевые слова:** План регионального развития, участие, устойчивое региональное развитие, Юго-Восточный Анатолійський Регіон, Проект Юго-Восточной Анатолии (ПЮА).

### I. INTRODUCTION

Southeastern Anatolia Region, which is a part of Upper Mesopotamia, faces many of the problems that are typical of underdeveloped regions in the world. Compared with the rest of Turkey, the region has had higher fertility rates and lower literacy rates, as well as lower school enrolment rates - especially among girls - and lower access to education, health care and sanitation. The region also experienced net out migration - both seasonal agricultural migration and permanent rural-to-urban migration, as a response to high unemployment in the region, threatening valuable agricultural land (GAP Master Plan 1991). The region's economy is based largely on agriculture, but productivity historically has been low (Acma, 2001). In 2011, per capita income in the region was half of the national average. In spite of these bottlenecks, Region has potentials. These are water, land and human resources. The majority of the Region lies in the Euphrates and Tigris basin. The two rivers represent over 28 % of the nation's water supply by rivers and economically irrigable areas in the region make up 20 % of those for the whole country (Olca, 1999). The population of the region in 2000 census was 6, 6 million. A distinguishing feature of human resources

was the number of young people. In 2000, 50% of region's population was within the 0-14 age group and 45% was in the 15- 64 age group. Ratio of working age population to the total is very high. But labour productivity is very low (GAP Administration, 2010).

The Turkish government has placed increasing emphasis on the reduction of inter-regional disparity in

the Nation's socio-economic development. Development of land and water resources in the Southeastern Anatolia Region is still considered the backbone of the Southeastern Anatolia Project (GAP). GAP Project was originally created as a water and land resources development package for the construction of 13 main irrigation and energy projects on the Euphrates and Tigris river basins. The project includes 22 dams, 19 hydro-power plants, and irrigation networks to irrigate 1.82 million hectares of land (Unver and.Grupta, 2002). It was later transformed in the early 1980's to an integrated multi-sectoral regional development programme and new organisation the Southeastern Anatolia Project Regional Development Administration (GAP-RDA) was established under the auspices of the Prime Ministry in 1989 and then into a sustainable human development programme in the 1995 (GAP Administration and UNDP September 1997).