Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development
Vol. 23, Issue 4, 2023
PRINT ISSN 2284-7995, E-ISSN 2285-3952

DEMOGRAPHIC CHANGES AND INEQUALITIES: REGIONAL DIFFERENCES WITH A FOCUS ON RURAL AREA IN BULGARIA

Julia DOITCHINOVA[1], Elitsa LAZAROVA[2]

[1]University of National and World Economy, Students city, 1700 Sofia, Bulgaria, Phone/Fax: +35928195280; E-mail: juliadoj@unwe.bg
[2]D. A. Tsenov Academy of Economics, 2 Emanuil Chakarov Str., 5250 Svishtov, Bulgaria, Phone/Fax: +359889223924; Email: e.lazarova@uni-svishtov.bg

Corresponding author: juliadoj@unwe.bg

Abstract

The goal of the paper is to analyze and evaluate the demographic development trends in Bulgaria as well as to identify demographically problematic rural areas and the consequences of their development. Based on information from the National Statistical Institute, the demographic processes in the rural areas of Bulgaria for the period 2011-2021 are analyzed. The obtained results show the high rate of population decline in some regions of Bulgaria and the unfavorable values of the coefficients for demographic dependence and replacement. Rural areas of our country are experiencing faster depopulation than cities. This leads to significant territorial disparities in the manifestation of the observed processes. The last part emphasizes the need to implement regional demographic policies aimed at stimulating families with children and reforming professional education. It is also recommended to implement a proactive immigration policy to attract Bulgarians living abroad and immigrants from third countries with the necessary educational and professional qualifications to reduce the negative effects of the labor shortage in rural areas.

Key words**:** *depopulation, demographic processes, demographic dependence, demographic replacement*

INTRODUCTION

Depopulation has been observed in rural Europe over the past two centuries. The processes of urbanization and economic development are viewed as inevitably leading to a decrease in population density and the depletion of human capital in rural areas.
Researchers [32] view rural depopulation or chronic population loss as a cumulative demographic process that can be tracked historically through specific components of demographic change such as birth rates, death rates, and migration. Depopulation implies the collapse of small towns and rural areas.
In contrast to urbanization, a number of rural areas have been identified as dynamically developing and prosperous in the last decade [26]. The need to change the perception of all rural areas as "shrinking" and to investigate the diversity of rural environment types became apparent.
The population of the EU-27 has increased by 4% since the beginning of the twenty-first century, reaching 447 million in 2021. According to the results of the censuses, there is an increase in the population in seventeen countries, while in the rest it is decreasing. Our country has one of the fastest population declines in the EU. Its quantity dropped by 21.6% (compared to 2001). This indicator is even higher in rural areas of the country and is strongly related to poverty problems there. According to Eurostat data [20], four of the five poorest regions in the EU in 2020 are Bulgarian: the North-West region (36% of the EU average indicator, gross value added per capita), the North-Central region (37%), the South-West (39%), and the South-Central Region (40%).
Some of the highest rates of poverty are found in these rural and remote regions of Italy, Spain, and Romania [18].
The research question in this context is what demographic processes have occurred in Bulgarian rural areas and how these changes affect rural communities' ability to develop viable rural areas. This determines the goal of the paper, which is to analyze and evaluate the demographic development trends in Bulgaria

as well as to identify demographically problematic rural areas and the consequences for their development.

Literature review

According to research, population change is influenced by a variety of factors, including demographic, social, economic, political, geographic, and cultural influences, as well as temporal and spatial influences [17]. At the same time, most papers have only focused at a few of the factors and how they affect each other [7]. The majority of existing studies are carried out within various scientific fields and disciplines [33], [2].

Researchers in economics are particularly and the role that those processes play in the development of rural areas [28], [31], [13], regionalists [21], sociologists and others. There have been a number of studies that have been conducted on topics such as the characteristics and changes of human capital [35], the educational structure in rural areas [36], the model of agriculture and its impacts, and the rate at which demographic change [14], [15], is occurring, and these studies have reached a diverse set of conclusions. Because different studies focus on different factors and influences across disciplinary boundaries while ignoring others, existing research on population change frequently generates different and sometimes contradictory results [8], [9].

Regardless of the methodological approaches used, the findings of a number of studies lead to the conclusion that the way rural areas evolve is dependent on the capacity of rural communities, i.e., their ability to respond to external changes by adapting the functions and structure of their internal components. Moreover, today's depopulation is unevenly distributed [21]. It is most significant and at a high rate in remote areas, far from major centers of employment, with an aging population, low fertility, and little (if any) immigration [22].

According to some researchers [22], recognizing the historical interaction between net migration and natural increase is required to fully understand rural population dynamics. Continued rural population losses are a result of fundamental changes in the structure of local populations, particularly low birth rates and population aging, both of which reduce the prospect of population growth. Young adults are highly selected for out-migration, which leaves behind an aging population that is increasing and cannot be replaced [23].

Researchers studying negative demographic processes in rural areas [5] emphasize that the negative impact is not only population loss but also the negative impact on the economy and society [30]. The authors identify several cascading effects and extreme negative consequences for community transformation and regional identity formation [16]. Depopulation worsens conditions for rural development not only because local markets shrink but also because skilled and talented workers decrease and are often insufficient to develop rural industries [34], [6], [24]. In practice, the entry into a vicious circle—a declining local economy and depopulation, which not only coexist but also reinforce each other—could be observed.

The uneven spatial distribution of depopulation is a result of historical connections in the rural economy between the decrease in agricultural jobs caused by mechanization and the concentration of agricultural production, as well as the effects of globalization and automation on rural production [1]. Furthermore, with a high share of agricultural employment, greater population losses are observed as reductions in agricultural activities or increases in labor productivity lead to out-migration from the regions [4]. Johnson and Lichter [22] link the decline of small farms in the United States to rural depopulation, which supports this conclusion.

A study of the significance of demographic changes in rural Austria links them to potential regional development approaches to overcome the negative consequences of population loss [10]. The goal of these approaches is to take advantage of specific local assets and show that the diversity of regions is a valuable trait [11]. Transformations of social management and cooperation between different stakeholders in

accordance with common values and attitudes are observed in communities that have successfully renewed their local economies, adapting them to market demand. Local social capital is a prerequisite for establishing effective interactions with the external environment and for accessing financial and political capital that improves development outcomes [27].

MATERIALS AND METHODS

The demographic processes in Bulgaria's various rural areas are the object of this paper. The subject of research includes the analysis of changes in the number of the population and its age characteristics and structures. This predetermines the traditional set of indicators for assessing the demographic situation and development for the period 2011–2021. Among them are the coefficients for evaluating changes in population size and its age structure, as well as these demographic replacements for age dependence, predicted changes, etc. The information is from the National Statistical Institute, and the techniques for defining and calculating the indicators are shown in Table 1.

Table 1. Indicators in use and their definition

Indicators	Content of indicators (definitions)
Population in rural areas	population of territories (municipalities) that meet the national definition of rural areas
Under, at, and over working age population (young, working age and elderly population)	based on the current retirement age, the age limits for distribution of the population by categories under, at, and over working age.
Population age structure	ratio between the population of different age groups
Age dependency ratio (Calculated as a percentage)	number of people in the "dependent" ages (those under the age of 15 (young population) and those aged 65 and older (elderly population) per 100 people in the "independent" ages (working age population) (from 15 to 64 years).
The coefficient of demographic replacement (Calculated as a percentage)	the proportion of the working-age population in the entering working age group of 15-19 years and the exiting working age group of 60-64 years.
The rate of natural increase (RNI) (calculated in parts per million)	the ratio of the difference between the number of live births and deaths during the year and the average annual population number

Source: [29].

RESULTS AND DISCUSSIONS

Assessment of demographic changes

The population of the Republic of Bulgaria dropped by 11% in 2021 when compared to the previous census in 2011. Against this background, and as a result of the change in the definition of rural areas in the new program period, there is a noticeable deepening of the negative trends in rural areas. In 2011, there were 2.891 million people living in rural areas, which represented 39% of the total population. For the ten-year period to 2021, it decreased by 5% to 2.474 million people (or 34%). The year 2021 is used as a reference point for data analysis in order to determine what demographic changes have occurred since the implementation of the new programming period's modifications. Then this trend deepens by another 3% (totalling -8%) due to the loss of 16 settlements by definition, and already the change in rural areas compared to 2011 is even more drastic—it decreases to 1.990 million people (or 27%).

At the NUTS 1 level, the inverse asymmetry between the regions is observed, and if the population in North and South-Eastern Bulgaria in 2011 prevailed (51%), then in 2021 it was reduced to 49%. In the period 2011–2021, more than half of the country's population was located in South-Western and South-Central Bulgaria (49% in 2011 and 51% in 2021). Even though the population is shrinking, the proportion of people living in rural areas in North and South-East Bulgaria (from 22% in 2011 to 18% in 2021) has always been likely to be higher than in South-West and South- Central Bulgaria (from 17% in 2011 to 12% in 2021).

At the NUTS 2 level, the demographic problems worsen in all six regions by 2021. However, the South-West region has been least affected by the changes between 2011 and 2021, even though it also went down by 1%. At the same time, the relative share of the population in the Southwest region in 2021 increased to 31%, making it the region with the largest concentration of population.

This trend is also confirmed when studying the population in rural areas (Table 2): the region with the largest population of this type is South-Central (7%), and the region with the smallest population of this type is North-Central (4%). It is important to note that in 2011, the North-Central region was a laggard along with the North-Eastern region, but in 2021, the North-Central region was permanently behind. Another important point is that the number of people living in rural areas is going down, and not just in the South-West. In 2011, 6% of this population lived in the North-West.

In the remaining regions, in 2021, cohesion was observed according to this indicator (5% of the population in rural municipalities). Similarly, in all regions, the rural population was decreasing, with only the North-Eastern region maintaining the relative share of the population in 2011 and 2021 at the level of 5%.

Table 2. Population distribution in total and by rural areas at NUTS 2 level in 2011 and 2021

Indicators	**Population at NUTS 2 level (total)**			**Rural population (NUTS 2)**		
	Structure by regions 2011	Structure by regions 2021	Absolute change	% change	Relative share of the country's population 2011	Relative share of the country's population 2021
North-West	12%	11%	-156,453	-2.1%	6.4%	5.1%
North-Central	12%	11%	-160,878	-2.2%	4.5%	3.8%
North-Eastern	13%	13%	-134,144	-1.8%	5.1%	4.7%
South-East	15%	15%	-118,826	-1.6%	5.9%	4.6%
South-West	29%	**31%**	-108,444	**-1.5%**	7.6%	5.1%
South-Central	20%	20%	-166,036	-2.3%	9.6%	**7.1%**
Total:	100%	100%	-844,781	-11.5%	39.1%	30.4%

Source: Own calculations.

At the NUTS 3 level (Table 3), a decrease is reported in 6 provinces (Dobrich, Pleven, Silistra, Smolyan, Vratsa, and Veliko Tarnovo). Most provinces (18 of them) managed to keep their relative share of the population in 2021 as well. Only in 4 provinces is there an increase in the population (Plovdiv, Sofia Province, Sofia (capital), and Varna). There is no increase in the population in any of the rural areas, but the preservation of the relative share of the rural population in 19 provinces stands out as a positive trend. In 8 provinces within which the rural population lives, a decrease is observed (Burgas, Blagoevgrad, Gabrovo, Pazardzhik, Plovdiv, Sliven, Vidin, and Vratsa). Upon closer examination of the data, it is noticeable that in 5 provinces the relative share of the rural population is insignificant (Gabrovo, Kyustendil, Pernik, Sliven, and Vidin are 0%), where Pernik and Kyustendil retain the same relative share in 2011 and 2021.

It is important to note that in 2021, changes occur in 10 provinces due to the dropping of 16 municipalities from rural areas in connection with the Strategic Plan for the Development of Agriculture and Rural Areas for the period 2023–2027, and they fall from 231 to 215 rural area municipalities. In this way, strategic factors are added to demographic ones, and the rural population reduction by province reaches -9% by 2021.

The rate of natural increase

In 2021, the rate of natural increase for the country amounts to -13.2‰. At the NUTS 1 level, the trend toward faster depopulation of North and South-Eastern Bulgaria is confirmed. In South-West and South-Central Bulgaria, a negative rate of natural increase is also observed, but the rates of population decline are lower. This imbalance is evident

in Figure 1, which depicts NUTS level 2 regions.

Table 3. Distribution of provinces (NUTS level 3) by direction of population changes (total and in rural areas) by 2021 compared to 2011

Direction of changes	Changes in population at NUTS 3 level compared to 2011		Changes in the population in rural areas (NUTS 3) compared to 2011	
	Total	Provinces	Total	Provinces
Decrease	6	Dobrich, Pleven, Silistra, Smolyan, Vratsa, Veliko Tarnovo	8	Burgas, Blagoevgrad, Gabrovo, Pazardzhik, Plovdiv, Sliven, Vidin, Vratsa
Retain the same	18	Burgas, Blagoevgrad, Gabrovo, Haskovo, Yambol, Kyustendil, Kardjali, Lovech, Montana, Pazardjik, Pernik, Razgrad, Ruse, Shumen, Sliven, Stara Zagora, Targovishte, Vidin	19	Dobrich, Haskovo, Yambol, Kyustendil, Kardjali, Lovech, Montana, Pernik, Pleven, Razgrad, Ruse, Sofia region, Shumen, Silistra, Smolyan, Stara Zagora, Targovishte, Varna, Veliko Tarnovo
Increase	4	Plovdiv, Sofia region, Sofia (capital), Varna	0	-

Source: Own calculation.

The region with the highest rate of natural increase in 2021 is the North-West region (-20.7‰), followed by the North-Central region (-18.1‰), and the two regions with the smallest decreases according to this indicator are the South-West region (-9 .9‰) and South-East (-11.6‰).

At the NUTS 3 level, the provinces with the lowest rate of natural increase are Sofia district (the capital) (-6.58‰), followed by Sliven province (-9.0‰), and Burgas province (-9.9‰). (table 4). Regardless of the lowest reported rates for natural increase, these areas anticipate losing between 20,000 and 50,000 people over the course of the new program period. Because of this, it will be necessary to mobilize the labor potential in order to maintain the levels that were achieved in 2021. The provinces with the most serious deterioration according to this rate are Vidin (-25.7‰), Montana (-23.1‰), Gabrovo (-22.0‰), and Kyustendil (-22.0‰).

At the same time, the rates of natural increase in cities for the country are -10.5‰, and at the NUTS 2 level, by region, they vary between -8.2‰ and -16.1‰, with marginal values in the South-West and North-West regions, respectively. The fastest depopulating cities are in Gabrovo (-18.7‰) and Silistra (-8.6‰) provinces, and the villages in these provinces, on the other hand, have above-average values for this indicator. The rate of natural increase in the villages in Bulgaria decreases by -20.2‰, and the trend is also preserved at the NUTS 2 level; the border regions according to this indicator are: (a) the fastest depopulating - North-Western (-28.7‰), and (b) the South-East has more slow rates of depopulation of villages (-16.2‰).

At the NUTS 3 level, Vidin province has the worst indicators (-39.9‰); however, despite the fact that there have been no changes in the new program period, it emerges as the region with the greatest concentration of negative demographic trends. On the other hand, villages in Sliven province (9.3‰) have the slowest rates of depopulation.

The most unfavorable are the tendencies to reduce the population in the villages. In 16 oblasts of the country (57% of all oblasts), the population has decreased by more than 20%. Among these districts are the four in which the population has shrunk by more than 30%.

Changes in the population age structure

When analyzing the population age structure in the Republic of Bulgaria, it is found that it is maturing. This is clearly evident from the demographic replacement rate: 56.7% of the population is in the "dependent" age groups (those under the age of 15 (young population) and those aged 65 and older
(elderly population). And accordingly, only 43.3% of them are of an age that allows full-time work.

At the NUTS 1 level, South-West and South-East Bulgaria have a more positive age structure (53.8% of the population is of

working age), whereas North and South-East Bulgaria have 59.9%.

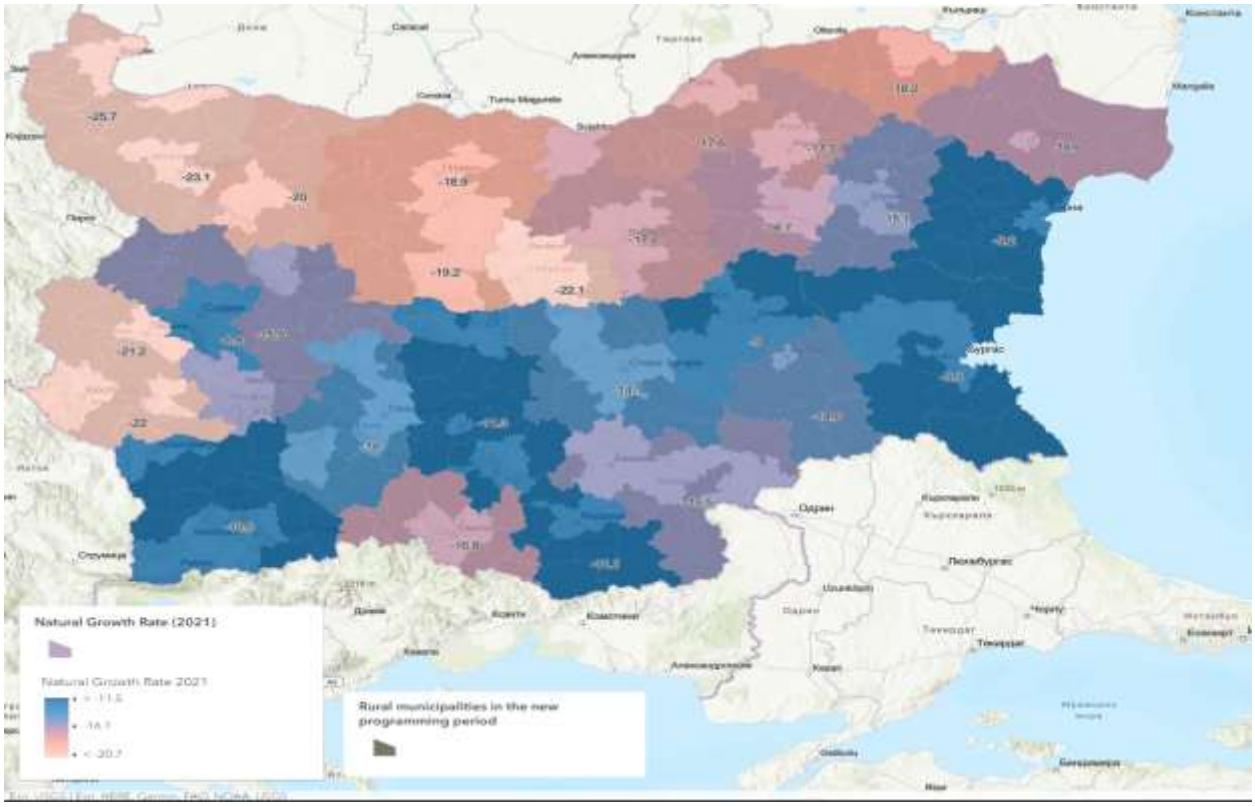

Fig. 1. The rate of natural increase by region at NUTS 2 level (in ‰)
Source: Own calculations in ArcGIS Online.

The worst demographic structure at the NUTS 2 level is in North-West Bulgaria, where the indicator reaches 66.9%, followed by North-Central (60%) and South-East (59.8%). As expected, the South-West region had the lowest indicator values (51.7%), followed by the North-Eastern (54.8%).

The indicator's dynamics deepen at the NUTS 3 level. Outside of working age, the population in Vidin province is 71.4%, while in Gabrovo province it is 68.6%. Sofia (the capital) has the only population below 50% outside of working age, at 48.2%.

When the demographic replacement analysis is applied to the ratio of the population of retirement age to the population of working age, it is discovered that 34% of the population is of retirement age in the country, and the trend at the NUTS 1 level is sustained in favor of the South-West and South-Central Bulgaria with 31.3%. North-West and North-Central regions have the worst ratios, 44% and 39.2%, respectively, while South-West Bulgaria has 29.5%. The trend is also confirmed at the NUTS 3 level, with Vidin (50.9%) and Gabrovo (49.2) having the highest proportion of elderly people, while Sofia (the capital) has the lowest (25.7%).

According to the analyzed data, the deterioration of the age structure of the population in the country and in rural areas has an impact on the labor market, exacerbating the difficulty of locating suitable labor, but it also has the potential to constrain rural economic growth in the country. At the same time, the percentage of the country's population that is 65 and older in comparison to the population that is under the age of 14 reaches 34%, but there are areas where it reaches 50%, which is an indication of a significant aging of the population.

Two provinces stand out in the study in 2021, which have achieved an optimal demographic situation in all indicators (Sofia-region and Varna) against the background of the general decrease.

Table 4. Rural areas at the NUTS 3 level by province in 2021 and in the new planning period

	Rural Population (2021) -Persons-	**Population in rural areas (planning period)**	**The rate of natural increase (2021)**			**Age dependency ratio (2021)**	
			Total (‰)	City (‰)	Village (‰)	Young and elderly to working age population (%)	Elderly to working age population (%)
Blagoevgrad	223,149	109942	-10.6	-8.5	-13.9	53.7	31.0
Burgas	183,704	137,383	-9.9	-8.9	-13.2	55.7	31.8
Varna	112,585	112,585	-9.2	-7.7	-16.8	52.6	29.5
V. Tarnovo	64,602	64,602	-17.2	-12.0	-29.0	58.7	38.2
Vidin	27,561	27,561	**-25.7**	-17.9	**-39.9**	**71.4**	**50.9**
Vratsa	91,071	91,071	-20.0	-15.8	-26.2	62.7	39.8
Gabrovo	37,326	**16,830**	-22.1	**-18.7**	-35.4	68.8	49.2
Dobrich	76,251	76,251	-16.6	-15.2	-19.6	57.9	36.0
Kardjali	79,172	79,172	-11.1	-7.4	-13.5	56.0	34.1
Kyustendil	**24,861**	24,861	-22.0	-17.2	-33.2	66.3	46.2
Lovech	77,695	50,811	-19.2	-15.7	-24.9	68.3	45,5
Montana	73,679	52,431	-23,1	-16.6	-34.7	66.6	43.7
Pazardjik	138,446	68,669	-14.0	-12.8	-16.2	57.0	33.2
Pernik	29,815	29,815	-21.2	-17.1	-35.8	60.7	40.5
Pleven	112,989	112,989	-18.9	-15.6	-25.3	67.8	44.1
Plovdiv	257,284	210,500	-11.3	-9.3	-17.0	55.6	32.2
Razgrad	59,565	59,565	-17.3	-16.5	-18.1	56.4	35.0
Ruse	52,127	52,127	-17.6	-14.7	-26.9	57.9	37.5
Silistra	56,004	56,004	-18.2	-18.6	-17.8	62.6	40.1
Sliven	59,800	29,231	-9.0	-8.7	-9.3	63.8	33.2
Smolyan	62,596	62,596	-16.8	-12.2	-22.8	59.8	41.6
Sofia (capital)	-	-	-15.5	-11.5	-21.4	58.7	37.0
Sofia Province	231,989	165,887	-6.8	-6.5	-11.6	48.2	25.7
St. Zagora	86,573	86,573	-14.1	-11.2	-20.9	60.8	36.4
Targovishte	49,071	49,071	-16.7	-13.8	-20.1	57.8	34.8
Haskovo	85,591	43,204	-15.5	-12.1	-24.3	60.9	37.5
Shumen	72,298	72,298	-15.1	-13.5	-17.5	56.2	34.7
Yambol	47,927	47,927	-14.6	-10.4	-24.0	66.4	41.0
For the country	2,473,731	1,989,956	-13.2	-10.5	-20.2	56.7	34.0
The lowest value of the indicator							
Highest values of the indicator (in 3 cases)							

Source: [29] and own calculations.

CONCLUSIONS

Changes in human capital and its characteristics are among the main factors influencing the development of a territory. Rural areas of our country are experiencing faster depopulation than cities. This leads to significant territorial disparities in the manifestation of the observed processes and to a "greater strengthening of polarization in the demographic space" [3].

Depopulation and population aging cause a variety of problems, including: reproductive potential depletion; a reduction in the population under working age and working age, making it difficult for the labor market to function; access to healthcare, education, and other social infrastructure objects; etc.

Several highly depopulated areas have been identified by researchers [3], including the North- West region, Central Stara Planina and Pre-Balkan, Sakar-Strandzhan region, and Kraishte, for which the concept of "demographic deserts" is already in use. According to the most pessimistic forecast, they will continue to grow and will cover more than half of the country's territory by 2030 [3]. Another concerning trend is the growing number of villages that will be completely depopulated. Settlements without a population made up 4.4% of the village structure in 2011, and they will account for nearly 25% of Bulgarian settlements by 2040. The number of villages with more than 1000 inhabitants is expected to fall from 10.9% in 2011 to 5.04% in 2040.

Changes in the intensity of development are also a result of the constant population decrease. The small number of residents in a number of municipalities is the reason for the lack of the necessary critical mass of active local residents to develop and implement strategies for local development. This necessitates the cooperation between interested parties from several neighboring territories in order to create local capacity to implement projects with European funding.

The structure of local labor markets has been deteriorating as a direct result of unfavorable demographic processes, which has led to a reduction in the potential labor force. As a result, a lack of human capital can limit investment inflows and reduce the region's development potential. Investing in human capital is seen as the principal method of reversing unfavorable trends in changing demographic structures and processes in all countries affected by accelerated aging and depopulation [19]. The latter involves improving the system of healthcare, education, and other social services as well as raising the standard of living for people who live in rural areas [25]. To reach this goal, regional demographic policies need to be made that take into account the demographic and socioeconomic characteristics of each region. Families with two or more children and single parents need financial incentives and tax reductions, under the conditions of a minimum educational threshold for the parents [12]. There should be a place in regional programs for reforming vocational education, which should be fully linked to the needs of business and the labor market and carried out on a modern material and technical basis while providing production practices, scholarships, and securing successful jobs for graduates.

Last but not least, it is necessary to develop and implement a proactive immigration policy to attract Bulgarians living abroad, ethnic Bulgarians in foreign countries, and immigrants from third countries with the necessary educational and professional qualifications to actively join the labor market in Bulgaria and reduce the negative effect of labor shortages.

ACKNOWLEDGEMENTS

The report was developed under the project "Development of Rural Territories in the Conditions of an Economy Transforming to Sustainability" (RTtowardsSE).
The project is financed by the "Scientific Research" fund and is implemented by the D. A. Tsenov Academy of Economics Svishtov, in partnership with the University of National and World Economy - Sofia and the University of Economics - Varna, 2021-2024, contract KP-06 PN 55/1 dated 15.11.2021.

REFERENCES

[1]Anderlik, J.M., Cofer, R., 2014, Long-Term Trends in Rural Development and Their Implications for Community Banks. FDIC Quarterly 8(2):44–59.
[2]Baerwald, T. J., 2010, Prospects for geography as an interdisciplinary discipline, Annals of the Association of American Geographers, Vol. 100(3), 493–501.
[3]Bardarov, G., Ilieva, N., 2020, Horizon 2030 – demographic trends in Bulgaria. Horizont 2030 – demografski tendentsii v Bulgaria, Sofia: http://library.fes.de/pdf-files/ bueros/sofia/14730.pdf
[4]Brezzi, M., Piacentini, M., 2010, Labour mobility and development dynamics in OECD regions, Paper presented at the OECD workshop "Migration and Regional Development", Paris, 7 June 2010.
[5]Brown, D. L., Shucksmith, M., 2016, A new lens for examining rural change. European Countryside, 8(2), 94–188. doi:10.1515/euco-2016-0015
[6]Carr, P.J., Kefalas, M.J., 2009, Hollowing Out the Middle: the Rural Brain Drain and what it Means for America. Beacon Press, Boston.
[7]Chi, G., 2010, The impacts of highway expansion on population change: an integrated spatial approach," Rural Sociology, Vol. 75(1), 58–89.
[8]Chi, G., Marcouiller, D., 2011, Isolating the effect of natural amenities on population change at the local level," Regional Studies, Vol. 45(4), 491–505.
[9]Chi, G., Ventura, S., 2011, Population Change and Its Driving Factors in Rural, Suburban, and Urban Areas of Wisconsin, USA, 1970–2000, International Journal of Population Research Volume 2011, Article ID 856534, doi:10.1155/2011/856534
[10]Dax, T., Fischer, M., 2017, An alternative policy approach to rural development in regions facing population decline, European Planning Studies,
[11]Dax, T., 2015, The evolution of European Rural Policy, chapter 3. In A. K. Copus & P. De Lima (Eds.), Territorial cohesion in rural Europe, the relational turn

in rural development, Series Regions and Cities 76, (pp. 35–52). Abingdon: Routledge.
[12]Dermendzhiev, A., Doykov, M., 2020, The demographic processes and the regional disparities in Bulgaria, International scientific conference GEOBALCANICA 2020, pp. 423-430.
[13]Doitchinova, J., Wrzochalska, A., 2022, Demographic processes and problems in rural areas of Poland and Bulgaria, in Innovative development of agricultural business and rural areas, UNWE Publishing complex, p. 115-124.
[14]Doitchinova, J., Miteva, A., 2020, Agriculture and rural development: paths of change and consequences, Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development", Vol. 20(3), 207-214.
[15]Doitchinova, J., Stoyanova, Z., 2020, Regional Differences and Impact of Agriculture in Rural AREAS. Ikonomika i upravlenie na selskoto stopanstvo, 65(4), 66-73.
[16]Emery, M., Flora, C., 2006, Spiraling-up: Mapping community transformation with community capitals framework. Community Development, 37(1), 19–35. doi:10.1080/15575330609490152
[17]Entwisle, B., 2007, Putting people into place, Demography, Vol. 44(4), 687–703.
[18]EPRS, 2021, Demographic Outlook for the European Union.
[19]European Commission, 2020, Report on the Impact of Demographic Change. https:// ec.europa.eu/info/sites/default/files/demography_report _2020.pdf, Accessed on 11/2/2023.
[20]Eurostat regional yearbook – 2022 edition
[21]Ilieva, N., Bardarov, G., 2021, Regional demographic imbalances in Bulgaria. Quantitative dimensions, causes, policies and measures to optimize the situation, Friedrich Ebert Foundation.
[22]Johnson, K. M., Lichter D. T., 2019, Rural Depopulation: Growth and Decline Processes over the Past Century, Rural Sociology 0(0), 2019, pp. 1–25 DOI: 10.1111/ruso.12266
[23]Johnson, K.M., Richelle W., 2015, Migration Signatures across the Decades: Net Migration by Age in U.S. Counties, 1950–2010, Demographic Research 22(38):1065–80.
[24]Karwat-Woźniak, B., 2022, Procesy depopulacyjne na obszarach wiejskich – implikacje dla rolnictwa, [w]: M. Wigier, W. Wrzaszcz (red.), Społeczne uwarunkowania rozwoju rolnictwa i obszarów wiejskich w Polsce w latach 2004-2030, IERiGŻ-PIB, Studia i Monografie nr 196, Warszawa, s. 107-141.
[25]Lazarova, E., Pavlov, P., Petrova, M., Shalbayeva, S., 2023, Analysis and Assessment of Infrastructural Potential in Rural Territories. Economics. Ecology. Socium 2023, 7, 1-14.
[26]Li, Y., Westlund, H., Liu, Y., 2019, Why some rural areas decline while some others not: An overview of rural evolution in the world, Journal of Rural Studies, Volume 68, May 2019, Pages 135-143.
[27]Li, Y.H. et al., 2016, Bottom-up initiatives and revival in the face of rural decline: case studies from China and Sweden, Journal of Rural Studies, Volume 47, Part B, October 2016, Pages 506-513.
[28]Mitova, D., 2018, Demographic processes in Bulgaria after EU Accession and problems of human resource development in rural areas (based on the European zoning typology) Bulgarian Journal of Agricultural Economics and Management**,** 63, 2/2018, 60-74.
[29]National Statistical Institute, 2022, Population - demography, migration and projections.
[30]Nikolova, M., Linkova, M. Nenova, R., 2018, Development of rural areas. Razvitie na selskite rayoni. AE "Tsenov", Svishtov.
[31]Sugareva, M., Murgova, M., 2021, What are the real demographic problems of Bulgaria?. Kakvi sa realnite demografski problem na Bulgaria? Statistika, p. 9-40.
[32]Veneri, P., Ruiz, V., 2013, Urban-to-rural population growth linkages: evidence from OECD TL3 regions.
[33]Ward, N., Brown, D.L., 2009, Placing the rural in regional development, Regional Studies, Vol. 43(10), 1237–1244.
[34]Wood, R.E., 2008, Survival of Rural America: Small Victories and Bitter Harvests, University Press of Kansas, Kansas.
[35]Wrzochalska, A., 2015, Selected determinants of human capital of rural population in Poland, Bulgarian Journal of Agricultural Economics and Management**,** 60(3), 2015, 81-95.
[36]Wrzochalska, A., Łaba, S., 2022, Demographic and educational structural changes in Polish villages, 2000–2021. Ikonomika i upravlenie na selskoto stopanstvo, 67(4), 45-59 (Bg).