

# The Areas of Unfavourable Demographic Processes in Eastern Poland — Selected Aspects

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## Abstract

*Population factors are the most important elements of the socio-economic development of regions. Contemporary structure of population in Eastern Poland is the result of post-war changes, mainly in the field of natural growth and migration. The goals of this article are to assess the present trends of population change in the regions of Eastern Poland and to identify the areas that are characterized by negative effects of selected phenomena. It is also an important research issue to identify the main causes of negative processes shaping the population.*

## Introduction

Population resources are one of the most important elements of socio-economic structure in every region. Population density, age and gender structure, health, natural movement, migration, employment structure and the level of education play important roles in regional development. In research practice they are frequently considered indicators diagnosing the development level of the region.

Contemporary population structure in Eastern Poland results from post-war transformations, primarily in terms of natural movement and migration. Population outflow is constant and selective at the same time, as it involves young people in particular, mainly women. Since the mid-1990s the decrease in the birth rate and the birth depression at the beginning of the 2000s have had an increasingly growing influence on demographic structure. Migration and birth factors had a decisive impact on the population age structure, but also influenced the proportions between the sexes and indirectly influenced the social and professional structures.

Eastern Poland is characterised by researchers (Bański 1999, 2009; Eberhardt 1989, 1996; Flaga 2010; Jelonek 1986; Miszczuk 1993), as an area of unfavourable population transformations, including excessive migration outflow and deformation of demographic structures. These phenomena have been very well recognised and identified in the area, however, they require constant observation and a search for preventive measures, which will alleviate unfavourable demographic problems.

The article attempts to evaluate contemporary population trends in eastern regions of Poland and indicates the areas characterised by unfavourable effects of population phenomena. It is also an important research task to identify the main factors shaping unfavourable population processes. The research concerns selected aspects which—according to the authors—have influence on the present social-economic growth of the region. The basic source material for the analyses has been taken from the Central Statistical Office of Poland (CSOP) (population census, agricultural census, Local Data Bank) and the literature on the subject.

The spatial range of Eastern Poland covers the following voivodships<sup>1</sup>: Podkarpackie, Lubelskie, Podlaskie, Warmińsko-Mazurskie and Świętokrzyskie determined by application needs (EU structural funds available in the Development of Eastern Poland Operational Programme) rather than geographic or historic-cultural aspects. The present article deals with three eastern voivodships:

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1. [Voivodship—Polish administration region on the NUTS 2 level — Ed.]

Podlaskie, Lubelskie, Podkarpackie and the eastern part of Mazowieckie Voivodship, which are located in the immediate neighbourhood of the eastern Polish border.

## 1 The areas of unfavourable gender structure

The population structure in Eastern Poland according to sex has not changed for the last few years. The number of women was slightly above 51% of the analysed population. The feminisation index, with its average value of 105 women per 100 men, does not diverge from the average national level (107). Traditionally, a higher number of women is characteristic for all voivodship capital cities, whereas the highest difference between cities and rural areas was recorded in Lubelskie Voivodship (tab. 1).

**Tab. 1.** Feminisation index in eastern voivodships in 2010

Voivodship	Number of women per 100 men		
	total	in cities	in rural areas
Podlaskie	105	111	108
Lubelskie	106	112	102
Podkarpackie	105	109	101

Source: <http://www.stat.gov.pl/>

The high feminisation index in the eldest age groups is characteristic for eastern regions. In the age group 70+, there are 183 women per 100 men, yet in some rural areas their number is as much as twice as high as the number of men. Such areas include Sokólski and Białostocki counties and the eastern part of Podlaskie Voivodship at the Belorussian border. A similar situation is recorded in border areas with Slovakia in Jasielski and Krośnieński districts. The majority of women in the eldest age groups is, however, the most distinct and common in Lubelskie Voivodship, especially in its central and eastern part.

The cause of such significant disproportions is a substantial difference in average life expectancy among men and women. As CSOP quotes, in 2010 average life expectancy was 72,1 for men and 80,6 years for women.<sup>2</sup> Thus, the difference reached 8,5 years and has risen recently due to the higher death rate of men. In 2007–2010 total mortality of men was over 90% higher than it was among women. By contrast, since the beginning of the 1990s the mortality rate in men aged 50–69 was three times higher than for women.

Despite the surplus of women, there are areas in each voivodship where the proportions between the sexes are balanced or the number of men is higher. These are places where the socio-economic situation causes an outflow of women (i.e., in north and west Podlasie, the eastern part of Mazowieckie and neighbouring districts in Lubelskie). A lower number of women is also characteristic for Polesie, Roztocze and mountain area and Pogórze Przemyskie in Podkarpackie Voivodship.

In reproduction processes, the most important role is played by people at matrimonial age (20–29).<sup>3</sup> For instance, the deficiency in one of the sexes may result in the decrease of marriages or partnerships, which translates into the decrease of the birth rate and the intensification of aging processes. The regions where the phenomena are present cease to develop in terms of demography and economy.

According to Celińska-Janowicz, Miszczuk, Płoszaj and Smętkowski (2010) the problem of an unfavourable sex structure in matrimonial age concerns the whole region of Eastern Poland.<sup>4</sup>

2. [In the journal (in both Polish and English texts) European practice of number notation is followed—for example, 36 333,33 (European style) = 36 333.33 (Canadian style) = 36,333.33 (US and British style). Furthermore in the International System of Units (SI units), fixed spaces rather than commas are used to mark off groups of three digits, both to the left and to the right of the decimal point. — Ed.]

3. Recent years have brought changes in age structure among women giving birth. Generally speaking, the age range of average mothers increases. For example, according to Demographic Yearbook (2010) in 2009 the number of live births per 1000 women aged 30–34 was higher than in the age group 20–24 for the first time.

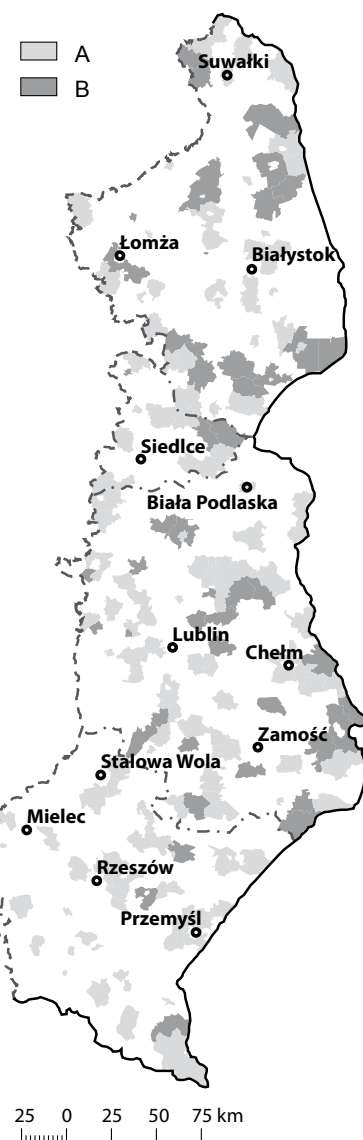
4. The authors consider Eastern Poland as Warmińsko-Mazurskie, Podlaskie, Lubelskie, Świętokrzyskie and Podkarpackie Voivodships.

**Map 1.** The areas of unfavourable gender structure in matrimonial age, *A*—feminisation index in the 20–29 age group under 85 (2010) or the decrease of the feminisation index in the 20–29 age group in 2000–2010 by more than 5 points, *B*—coexistence of both phenomena

In 2009 the value of the feminisation index was 94 for the 20–24 age group, 89,6 for the 25–29 age group and 89 for the 30–34 age group. In comparison to 2002 there was a significant increase of the index in the 20–24 age group (by 5 points), and a decrease in the two other groups (by 1,2 and 2,3 respectively). This is a national trend, however, its dynamics are the highest in the east of the country.

The areas with very high feminisation index in the 20–29 age group are present in scattered regions in Lubelskie, Podlaskie and the examined area of Mazowieckie Voivodships (map 1). In the first decade of the twenty-first century a decrease of the feminisation index in the 20–29 age group can be observed. It is hard to pinpoint certain spatial trends as the areas with unbalanced sex structure are unevenly distributed. However, the largest accumulation of unfavourable phenomena is present in peripheral rural areas (i.e., near the state or regional borders). These are primarily poorly populated, mono-functional regions determined by agriculture. On the other hand, in major cities (Białystok, Lublin, Rzeszów) young women are overrepresented—there are 110 women per 100 men in the examined age group. These cities are the migration destinations for women who look for employment.

Unbalanced sex structure in rural areas causes economic stagnation of numerous agricultural holdings. In peripheral communes as many as 20% of men will be unable to find a wife.<sup>5</sup> With lack of family and an heir to the holding, it is hard to expect that such an enterprise will develop. This also results in aging of the rural areas and increasing demographic burdens.



## 2 The areas of unbalanced age structure

In 2010 the population of eastern voivodships was constituted primarily by people of post-productive age. Considering their share in total population number, it can be stated that the general conditions in the researched regions do not diverge significantly from the average situation in Poland. The share of the productive group in the total Polish population was 64.4%, thus, the values in the eastern region were only slightly lower than the national average (tab. 2).

The regions with the highest share of people of post-productive age are scattered. They consist of cities and their neighbouring communes, populated primarily by the incoming population from cities. A particularly high share of such a population, above 64%, is characteristic for the largest urban centres, including Białystok, Lublin and Przemyśl. An equally high share of population of productive age is characteristic for Beskid Niski and Bieszczady. On the other hand, a relatively low share of this group—under 60%—is recorded in the east and south part of Podlaskie Voivodship and the communes in the south-central part of the Lublin Upland.

The people in pre-productive age constitute less than 20% of the population of the researched area, whereas their share in rural areas is lower than in cities (21% and less than 18% respectively).

5. According to Census of Population and Households from 2002, ca. 35% of men in rural areas are unmarried, whereas, only 22,7% of women are unmarried. Yet, it is comforting that in 1988–2002 the increase of unmarried women was higher than of unmarried men, which proves a moderation of these disproportions.

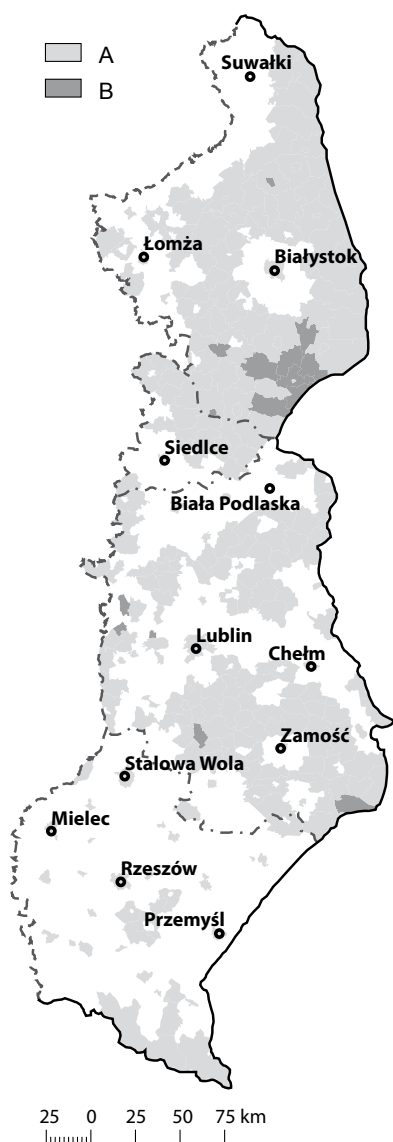
**Tab. 2.** Population structure according to age in Eastern Poland in 2005 and 2010

Voivodship	The share of people in different age groups in total population (%)					
	pre-productive age		productive age		post-productive age	
	2005	2010	2005	2010	2005	2010
Podlaskie	21,7	18,8	61,7	63,6	16,6	17,6
Lubelskie	21,6	19,2	61,9	63,1	16,5	17,7
Podkarpackie	23,1	19,9	62,0	64,1	14,9	16,0

Source: <http://www.stat.gov.pl/>

The most favourable situation in this respect is in Podkarpackie, whose rural areas with strong family traditions have always been characterised by a high birth rate, and consequently, a high share of the young population (21,4%).

Eastern Poland is a specific case of an aging region because the phenomena have been observed there for years (Eberhardt 1989; Jelonek 1986). The aging of the population has been primarily related to depopulation processes. Demographic old age is primarily characteristic for Podlaskie Voivodship (excluding its western part), eastern part of Mazowieckie and three large areas in Lubelskie Voivodship (Pojezierze Włodawsko-Łęczyńskie, Polesie Lubelskie, Wyżyna Lubelska with Roztocze and communes neighbouring Świętokrzyskie) (map. 2).



In Podlaskie and Lubelskie voivodships, from which young people emigrated and which are considered to be the oldest in terms of their demography in Poland, the share of post-productive population in the total population is higher than the national average (16,9%) and makes 17,6%. The relatively low share of population in post-productive age, both in comparison to the whole country and in the researched region, is characteristic for Podkarpackie. Moreover, in Podkarpackie there are no significant differences between urban and rural areas in this respect—the share of elder people oscillates around 16%. A different situation is observed in Lubelskie Voivodship and Podlaskie, to an even larger extent—these areas are characterised by a higher share of post-productive population in the total number of people, in comparison to cities. In Lubelskie Voivodship the difference is 2%, whereas in Podlaskie it is higher by as much as 5%. While in the cities in the researched voivodships the number of elder people is lower than the national average, the figures for rural areas are 20,5% in Podlaskie and 18,6% in Lubelskie, with the national average below 16%. In the decade between 2000 and 2010 the increase of the older population was slower in comparison to the previous decade. In relation to other regions, Eastern Poland was characterised by the largest fall in the share of the pre-productive population and relatively lower increase of the post-productive population. The most intensive aging process was recorded in the south-east part of Podlaskie Voivodship, in Bieszczady and Beskid Niski as well as in suburban areas around major cities. Other areas are most probably “saturated” with an elderly population.

Further changes in the size of the pre-productive population, with a relatively stable total fertility rate will depend on demo-

**Map 2.** The areas with unbalanced age structure, *A*—the share of 65+ population over 16% (2010) or the increase of 65+ population by over 2% in 2000–2010, *B*—coexistence of the two phenomena

graphic ups and downs. Their results will be revealed in various periods as changeable numbers of births, increasing the number of the youngest population. The birth rate will thus depend on the population structure of women, primarily in productive age. After a few years of an increasing birth rate, resulting from the realization of parental plans of people who were born during the demographic period in 1980s, weakening of the reproductive processes is anticipated. The decrease of population in pre-productive age will cause further limitations in labour resources, decrease in demand for educational services and the necessity to increase spending on social care and the development of the related social infrastructure.

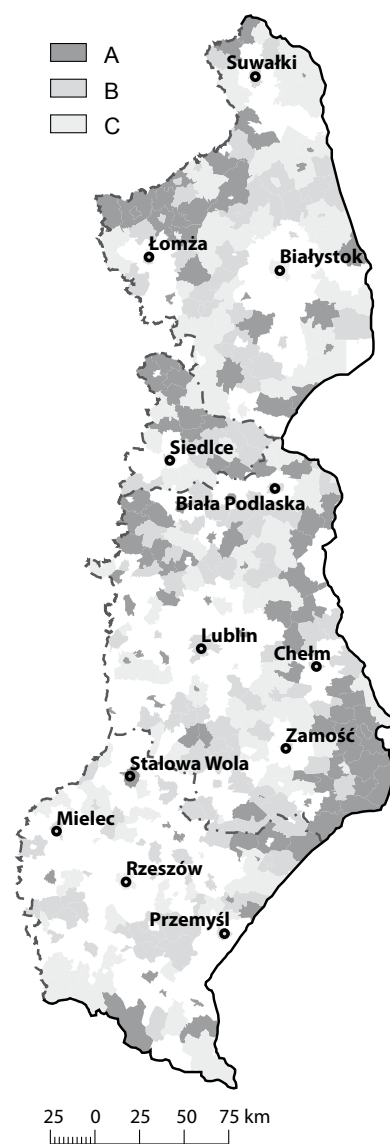
### 3 The areas of excessive and lasting population outflow

Migration processes in Eastern Poland are determined by socio-economic features of the region, determined primarily by economic causes. The location in the area of interaction with the spatial boundary, which is the border, and high share of population occupied with ineffective agriculture are the factors influencing the negative balance of migration from this area. Additionally, a high share of population participate in temporary migration—CSOP data shows that about 120 thousand people were temporarily absent from their place of residence in 2011. The region, however, is not homogenous in terms of migration. The inhabitants of rural areas take part in internal migrations. The analysis of city-village population flow indicates explicit trend of movement from large and medium cities to their suburbs. Migration increase is characteristic for suburban areas around major cities (i.e., Suwałki, Białystok, Lublin, Rzeszów, Łomża, Siedlce, Biała Podlaska, Zamość, Mielec and Przemyśl). The process is typical for the whole of Poland (Wesołowska 2006; Bański 2012).

The highest intensity of migration outflow concerns peripheral areas in Lubelskie Voivodship (mostly along the state border) and Podlaskie Voivodship (located at the border with Warmińsko-Mazurskie). The north-east area of the country was influenced by the strongest depopulation in the entire post-war history. Eberhardt (1989) distinguished this area as a depopulated area, on the basis of population changes between 1946–1978.

The population outflow in the researched area concerns rural areas primarily (map. 3). This is a constant and common process, in which the village loses its internal development prospects. Due to the selectivity of migration (young, well-educated and more enterprising people in the first place), potential resources of the labour force are lowered in their quality (Miszczyk and Wesołowska 2012). Not only is the outflow of young and educated people observed, but the process of a society aging is advancing due to a falling birth rate.

The largest losses in population related to migration are observed in mono-functional communes where agriculture is predominant. One can also notice positive aspects in a form of land concentration and stronger agricultural holdings. This is particularly important in the Lublin Upland and Podkarpacie, where the average agricultural household is too small to compete in the agricultural market.



**Map 3.** The areas of population outflow, *A*—in 2000–2010 period, with 9 or 10 years of negative migration balance and the outflow under 5% of inhabitants, *B*—with 9 or 10 years of negative migration balance and the outflow above 5% of inhabitants, *C*—in the 2000–2010 period, 7 or 8 years with negative migration balance

The main direction of inter-voivodship population outflow is Mazowieckie Voivodship (nearly 45% of migrants), the second one is Małopolskie (over 15% of migrants), with foreign migration being relatively insignificant. However, official migration statistics most probably do not reflect the scale of the phenomenon, due to migrants' failures to meet registration duties, especially with regards to temporary migration for a period longer than 3 months (Wesołowska 2011).

#### 4 The areas of social and economic passivity

The social and health structure of the population in Eastern Poland diverges in minus from the national indicators. These are the areas that manifest numerous features characteristic for the areas of socio-economic depression. Agricultural households and non-employment sources are the main sources of income.

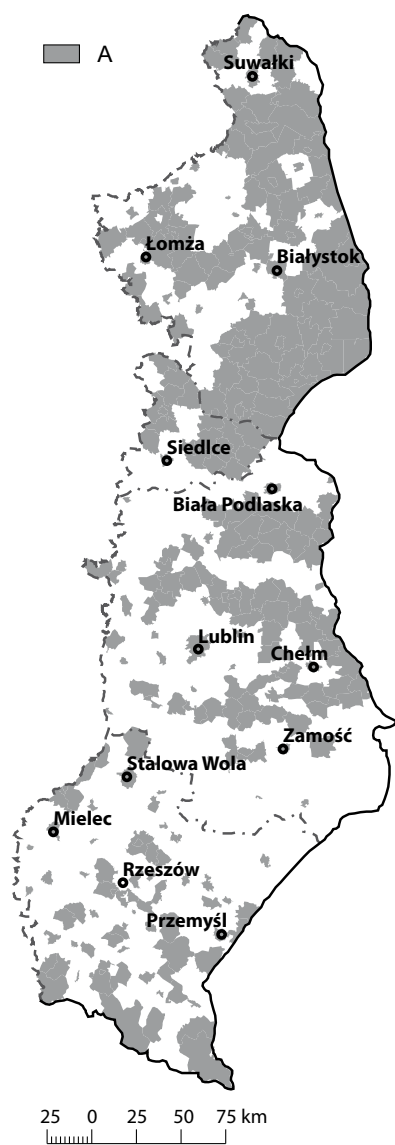
In 2011 on the territory of Eastern Poland 1 046 000 people were employed. According to CSOP data, 7,2% of these people worked in sector I, 25% in sector II, and 67,6% in sector III. The largest number of people working in sector I were employed in the southern part of the region, which was related to the state-owned forests in Bieszczady and in Podlaskie Voivodship, where

large cattle breeding farms function. The largest share of industrial employment was registered in Podkarpackie Voivodship.

Having analysed the sources of income in population, it was stated that the largest number of people declared their income as unrelated to employment—49% (pension, old-age pension, welfare aid). This results from the fact that the researched region is a typical agricultural area, with poorly developed extra-agricultural enterprises. Agriculture is the main source of income primarily for the south-western part of Podlaskie Voivodship, the north and south Lubelskie Voivodship. Whereas the predominant source of income for the west part of the researched area are employment unrelated sources. The results of the National Agriculture Census in 2010 showed that in virtually the whole Podlaskie, Lubelskie and north part of Podkarpackie voivodships most agricultural holdings run independent activities (over 80%). It should be emphasised that there are numerous very small farms, sized up to 1 hectare, southwards from Lublin. These are non-market enterprises, which supply food for their own purposes and the products are considered to be only a supplementary source of income.

The clear dominance of the agricultural sector in the area has an influence on the low economic activity in the region. The index of business enterprises changes in 2000–2010<sup>6</sup> that was employed in the research allows for the selection of a coherent group of communes in the east part of Podlaskie and north part of Lubelskie that are characterised by low economic activity (map. 4). The defined area is characterised by low social activity, which was measured by voter turnout.

Economic passivity can also be measured by the unemployment rate. In 2011 the number of registered unemployed people was 412 000. Their real number is higher, due to the fact of



**Map 4.** The areas with low economic activity, A—the increase of the number of economic enterprises in 2000–2010 by less than 20%

6. One should be aware of the error level in this indicator; not all businesses register the ending of their operations and work “on paper” only, moreover, some areas can be “saturated” with businesses, that is why the development of new businesses is slow. This remark seem to be irrelevant for the defined area.



hidden unemployment in agriculture. The share of unemployed in the total productive population was 9,6% in 2010, yet in some communes (over 40%) the value exceeded 10%.

## Conclusion

Eastern Poland is identified as a problem area which is characterised by the accumulation of numerous unfavourable phenomena concerning the population. Particular concentration of these phenomena is present in the central and east part of Podlaskie Voivodship (districts: Sejny, Augustów, Sokółka, Białystok, Hajnówka, Kolno, Grajewo, Mońki), where as many as 3 or even 4 negative factors coexist. The worst situation is in Lipsk, Płaska, Czarna Białostocka, Szczuczyn, Wąsosz, Stawiski, Goniądz, Krasnopol, Sejny, Nurzec, Sokółka and Szudziałowo communes. In Lubelskie Voivodship there are two areas of problem accumulation: Polesie Lubelskie and the national border neighbourhood. A particular accumulation of problems is present in Dołhobyczów, Ułhówek, Trzeszczany, Jeziorzany, and Stary Brus communes. Finally, Podkarpackie Voivodship is in a much more favourable demographic situation, therefore, problem areas cover only some spots in Bieszczady, the borderland near Slovakia, and Przemyśl region.

The areas of population problem concentration are located in peripheral regions, far from main communication routes and large urban centres. The largest number of communes with negative population features is located at the borderland and administrative borders between regions. The communes in Białystok vicinity are the only exception where condensed problem areas were identified. This most probably results from the city's failure to develop a zone of economic influence and its becoming a destination for population from neighbouring communes. On the other hand, a significant number of Białystok inhabitants migrate to other regions.

It can be stated that the problems concerning the identified areas are of permanent character, as they had been already mentioned by other researchers in previous decades. A major improvement of the population situation should not be expected in the region, yet the dynamics of the negative processes can be weakened.

Eastern Poland has been an important beneficiary of European funds, which can bring positive changes in a longer perspective in terms of economy and spatial conditions. Still, it is important to use the available aid tools in a smart and consequent manner by directing funds to the most important tasks, rather than patching gaps in all sectors of the economy. It seems that supporting human and social capital should be one of the key priorities in the region.

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