

DEMOGRAPHIC DETERMINANTS OF RURAL LABOUR RESOURCES IN POLAND

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Abstract

The article discusses the state and age structure of the subpopulation comprising the potential labour force in Polish voivodships and counties, particularly in their rural areas, between 2002 and 2030. It also shows how the balance of the potential labour force changed as a result of the inflow of birth cohorts at early-working age and the outflow of people at pre-retirement and early retirement age. The analysis additionally takes account of selected social characteristics of the population such as education and health. The necessary statistical data were sourced from the publications of the Central Statistical Office.

DEMOGRAFICZNE UWARUNKOWANIA ZASOBÓW PRACY NA OBSZARACH WIEJSKICH W POLSCE

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Słowa kluczowe: potencjalne zasoby pracy, ludność w wieku produkcyjnym, zmiany w strukturze wieku populacji, obszary wiejskie, powiaty.

Abstrakt

W opracowaniu przedstawiono rozważania na temat stanu i struktury wieku subpopulacji tworzącej potencjalne zasoby pracy w latach 2002–2030 w Polsce, w województwach i powiatach, ze szczególnym uwzględnieniem obszarów wiejskich. Sporządzono także bilanse potencjalnych

zasobów pracy, wynikające z napływu do tej subpopulacji młodych roczników z przedpola lub początku aktywności zawodowej oraz odpływu poza rynek pracy roczników z przedpola lub początku wieku poprodukcyjnego. W analizach uwzględniono również wybrane charakterystyki społeczne, jak wykształcenie i stan zdrowia ludności. Źródłem danych były publikacje Głównego Urzędu Statystycznego.

Introduction

This article seeks to answer the question about whether Poland's rural areas can still be a resource for the labour force for industry and services, as they were in the second half of the 20th c., when rural areas, particularly agriculture, were losing labour force or reserve labour because of permanent migration and bi-occupational persons (part-time farmers with industrial jobs) engaging in circular migrations or seeking primary or secondary jobs outside agriculture. Declining demand for labour in the 1990s, especially in industry, considerably reduced the number of bi-occupational persons in rural areas who were usually among the first who lost jobs in industry in the wake of rising unemployment. The farming population temporarily grew in size and the agriculture share of employment considerably increased (from 47.8 to 59.0% between 1988 and 1995) (FRENKEL 2003, p. 111).

This discussion of changes in the size of the potential labour force in rural areas (to the year 2030) focuses on its age structure. Special attention is given to the early-working age group (15–24 years) and the pre-retirement age and early-retirement age groups (55–64 years). It is noteworthy that the term 'potential labour force' is sometimes applied to the working-age subpopulation¹. Many studies (including this one) use a simplified definition of potential labour force, according to which the subpopulation comprises people aged 15–64 years. This article presents research findings for the country, voivodeships and counties. All numerical data used in analyses were sourced from the publications of the Central Statistical Office (GUS).

The size of the potential labour force in Poland and by voivodeship

Changes in the age structure of Poland's population accelerated after the political transition – a declining number of children were accompanied by a rising share of elderly people. The process was driven by a sort of 'swinging' of age structures (birth cohorts of baby-boomers and baby-busters moving to older

¹ The working age groups in Poland are 18–59 years for women and 18–64 for men.

age groups) and by the decreasing number of population living in the peripheral areas (distant from large cities) and in some large cities.

The percentage of population aged 15–64 years was rising until the end of the first decade of the 21st and then, around 2011, a downward trend emerged (in 2010 in towns and in 2013 in rural areas). It will probably continue for the next dozen or so to several tens of years (Fig. 1). Towns had a greater percentage of this population than rural areas until 2013, but since 2014 it is the rural areas where the percentage is slightly higher (it will remain so in the future).

In 2016, the potential labour force accounted for 68.6% of the total population in Poland (68.1% and 69.3% in towns and rural areas, respectively). By 2020 it will drop to 66.3% (65.2% and 67.9%) and by 2040 to 61.5% (60.5% and 62.8%).

The potential labour force that owes its present size to the sizeable birth cohorts of baby boomers from the 1950s and the echo baby boomers from the 1980s is still relatively favourable (it is much larger than in the 1990s), but in the future it will decrease considerably, because of the outflow of both of these age groups (the older one is already leaving it) and because the birth cohorts at early-working age are too small to compensate for the decline in the pre-retirement age subpopulation.

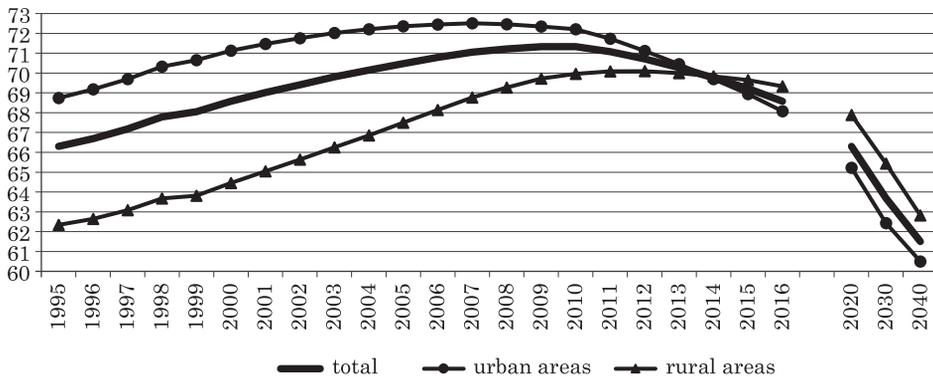


Fig. 1. Population aged 15–64 years, 1995–2016 and 2020, 2030 and 2040 [%]

Source: GUS, developed by the authors.

In 2002, towns had larger percentages of the potential labour force in all voivodeships. By 2016 the situation changed and slightly higher percentages were noted in the rural areas in most voivodeships (the highest in the Zachodniopomorskie voivodeship). The trend implies that by 2030 they will definitely be larger in the rural areas of all voivodeships (Tab. 1).

Table 1

Population aged 15–64 years in Poland and by voivodeship, years 2002, 2016 and 2030 [%]

Specification	2002			2016			2030		
	total	urban	rural	total	urban	rural	total	urban	rural
Poland	69.4	71.8	65.6	68.6	68.1	69.3	63.7	62.4	65.4
Dolnośląskie	70.7	71.9	67.7	68.9	68.0	70.8	63.4	62.0	66.1
Kujawsko-Pomorskie	69.7	71.5	66.6	69.0	68.4	69.9	63.7	62.3	65.6
Lubelskie	67.4	72.3	63.1	68.5	68.8	68.1	63.4	61.8	64.7
Lubuskie	70.5	72.1	67.5	69.4	68.7	70.7	63.7	62.4	65.7
Łódzkie	69.2	71.6	64.8	67.6	67.4	68.1	62.7	61.4	64.7
Małopolskie	68.2	71.2	65.1	68.5	67.9	69.1	64.5	63.1	65.7
Mazowieckie	68.9	71.3	64.5	67.4	66.7	68.6	64.0	63.4	65.0
Opolskie	70.4	72.3	68.3	69.8	68.7	70.9	63.8	62.0	65.6
Podkarpackie	67.4	71.5	64.6	69.5	69.5	69.5	64.6	62.3	66.1
Podlaskie	67.1	71.0	61.5	69.2	70.3	67.3	63.5	62.9	64.4
Pomorskie	69.9	71.4	66.7	68.3	67.4	70.0	63.9	62.5	66.1
Śląskie	71.6	72.5	68.0	68.5	68.3	69.3	62.8	62.2	64.8
Świętokrzyskie	67.7	72.0	64.2	68.5	68.0	68.8	62.8	60.4	64.6
Warmińsko-Mazurskie	69.3	71.4	66.3	70.0	69.5	70.7	63.8	62.4	65.7
Wielkopolskie	69.8	71.7	67.1	68.7	68.0	69.4	64.3	62.8	65.9
Zachodniopomorskie	70.7	72.2	67.3	69.4	68.6	71.2	63.4	62.2	65.9

Source: developed by the authors based on the GUS data.

Assessment of the potential labour force in rural counties

As already mentioned, the percentages of the potential labour force are higher in rural areas when compared to towns (particularly in the large ones), meaning that the rural areas frequently function as a population reserve for the towns. The research also found the potential labour force to be irregularly distributed in the country, as well as finding changes in its relative percentages (Fig. 2–5). Today, the highest percentages occur in the rural parts of northern and western Poland (>70%) and are somewhat lower in central and southern Poland and around large cities (Fig. 3).

The regional differences in the percentages of this age group are determined by region-specific fertility and mortality rates and the destinations and volume of migration, as well as by the „location rent” and historical circumstances (see STANNY 2010, p. 41). Higher percentages of the potential labour force noted in western and northern Poland are due to the post-war inflow of settlers from Poland’s eastern territories that were incorporated into the USSR, who are younger than the residents of other parts of Poland. In the former Prussian

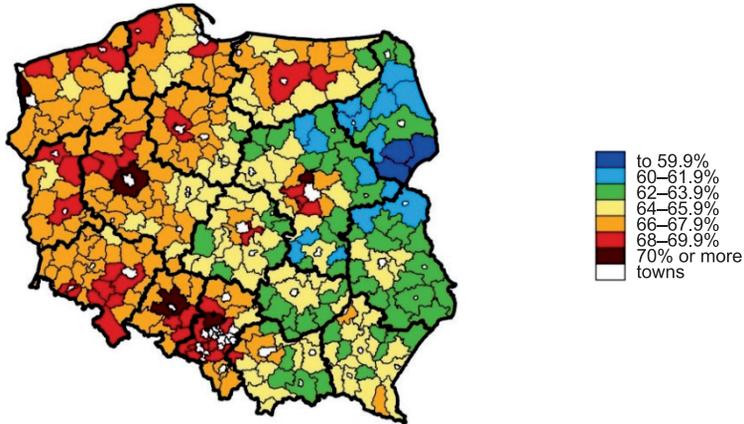


Fig. 2. Population aged 15–64 years in counties' rural areas (2002, %)

Source: developed by the authors based on the GUS data.

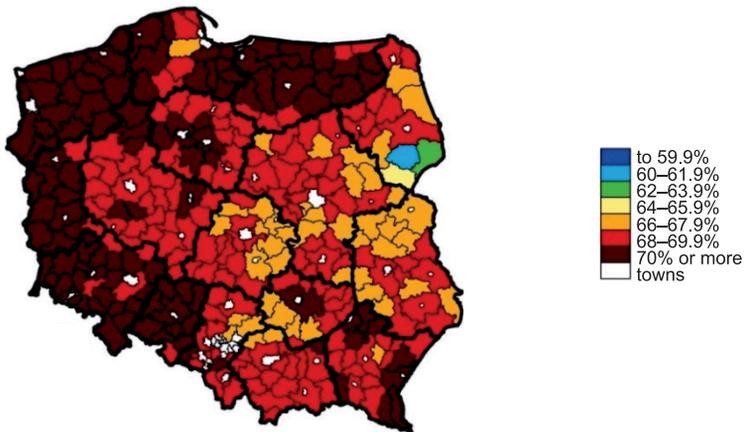


Fig. 3. Population aged 15–64 years counties' rural areas (2016, %)

Source: developed by the authors based on the GUS data.

partition, the percentage of the working-age population is relatively high and the percentage of the retirement-age population is relatively low (unlike the ex-Russian partition).

In 2016, the highest percentages of the potential labour force in rural areas (from 71.7 to 72.1%) were recorded in counties such as Olsztyński (Warmińsko-Mazurskie voivodeship), Lubański (Dolnośląskie), Koszaliński, Białogardzki and Policki (Zachodniopomorskie), Zgorzelecki, Lwówecki and Złotoryjski (Dolnośląskie), and the lowest percentages were noted in Bialski (60.5%), Hajnowski (62.4%), Siemiatycki (65.4%) and Wysokomazowiecki (66.3%) (Podlaskie). Low percentages ranging from 66.4 to 66.6% were also noted in Łosicki, Sokółowski (Mazowieckie), and Opoczyński (Łódzkie).

In the next several years, the percentages of the potential labour force will be falling with the 1950's baby boomers reaching the threshold of old age (Fig. 4 and 5). In 2030, the highest rural percentages of this age group will probably be noted in counties such as Policki in Zachodniopomorskie (70.4%), Głogowski and Wrocławski in Dolnośląskie, Poznański in Wielkopolskie, Legionowski in Mazowieckie, Gdański in Pomorskie and Bydgoski in Kujawsko-Pomorskie (in the latter counties the percentages will range from 68.1 to 69.1%). The lowest percentages will be noted in Hajnowski and Białski in Podlaskie (57.7% and 61.2%) and in Łosicki and Sokołowski in Mazowieckie (61.2% and 61.8%).

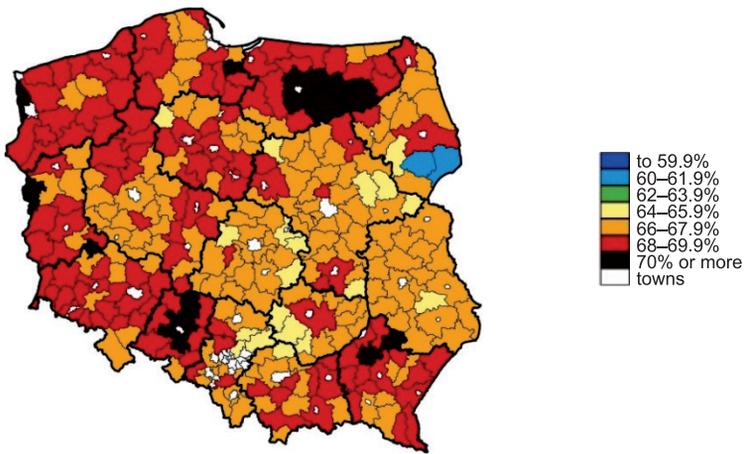


Fig. 4. Population aged 15–64 years in counties' rural areas (2020, %)

Source: developed by the authors based on the GUS data.

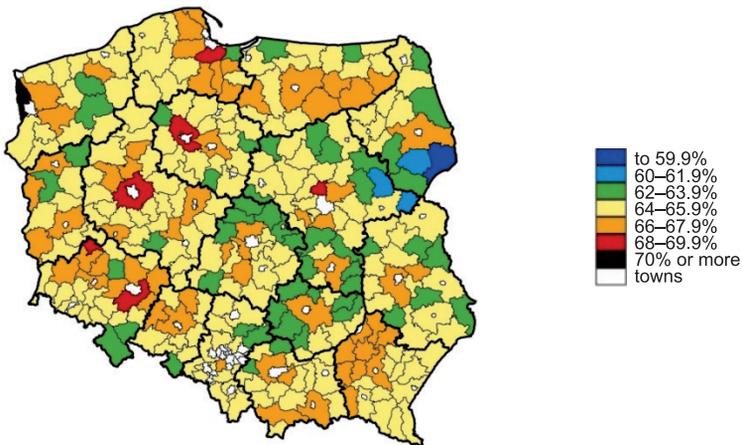


Fig. 5. Population aged 15–64 years in counties' rural areas (2030, %)

Source: developed by the authors based on the GUS data.

The trends that the percentages of the rural potential labour force followed in the years 2002–2016 and 2016–2030 are distinctly different (Fig. 6 and 7). In the first of the periods, increases occurred in almost all counties – the largest in Kolneński, Moniecki and Łomżyński Counties in Podlaskie, but those recorded in Ostrołęcki, Sierpecki, Koziernicki and Białobrzegi in Mazowieckie were also considerable (from 11 to 13%). Decreases (from 0.5 to 3%) were noted in only 10 counties: Piaseczyński, Pruszkowski, Warszawski Zachodni and Legionowski (Mazowieckie), Poznański (Wielkopolskie), and Będziński, Rybnicki, Tarnogórski,

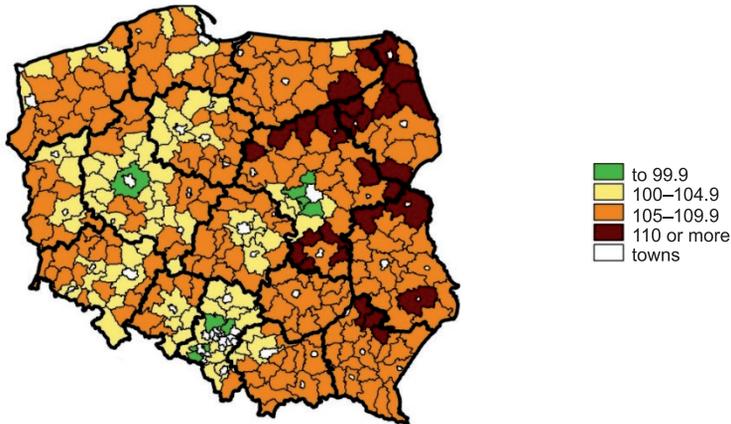


Fig. 6. Changes in the percentage of population aged 15–64 years in counties' rural areas, 2002–2016 (2002=100)

Source: developed by the authors based on the GUS data.

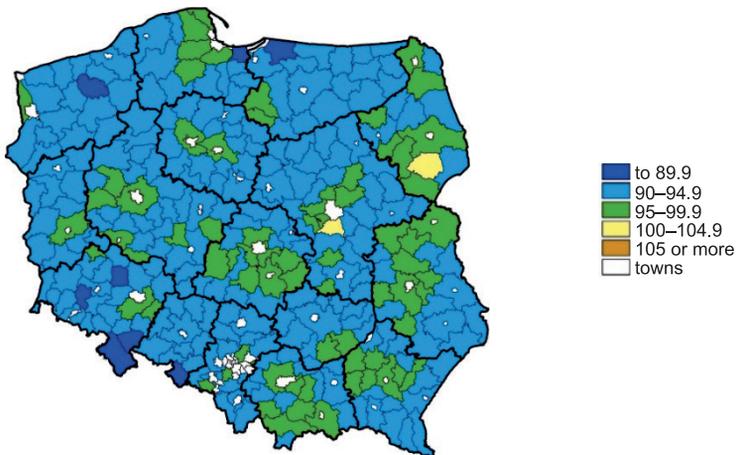


Fig. 7. Changes in the percentage of population aged 15–64 years in counties' rural areas, 2016–2030 (2016=100)

Source: developed by the authors based on the GUS data.

Gliwicki and Wodzisławski (Śląskie). Between 2016 and 2030, decreases will probably be noted in almost all counties. The largest ones, ranging from 10.5 to 11.3%, are predicted to occur in counties such as Ząbkowicki and Kłodzki (Dolnośląskie), Nowodworski (Pomorskie) and Głubczycki (Opolskie). In Piaszczyński (Mazowieckie) and Bielski (Podlaskie), the percentage of the potential labour force is likely to slightly increase (from 0.5 to 1.0%).

The aging of Poland's population has been observed for almost 20 years now. The process changes its age structure – the proportion of the youngest subpopulation is declining while the proportion of the oldest subpopulation is rising (see Tab. 2). Consequently, quantitative changes also affect birth cohorts comprising the potential labour force. In the next ten-to-twenty years, the inflow of the early-working age population (slightly more numerous in rural areas) to the potential labour force will be declining and the outflow of people that are now in the pre-retirement age group will be increasing.

Table 2

Age structure of Poland's population (total, urban and rural)
years 2002, 2016, 2020 and 2030 [%]

Year	Place of residence	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+
2002	total	100.0	4.9	5.8	7.1	8.5	8.4	7.7	6.5	6.3	7.4	8.2	7.4	4.9	4.2	4.1	8.7
	urban	100.0	4.4	5.1	6.4	8.2	8.7	8.0	6.5	6.2	7.5	8.8	8.1	5.3	4.4	4.2	8.2
	rural	100.0	5.7	7.0	8.2	8.8	7.8	7.3	6.6	6.5	7.2	7.1	6.2	4.2	3.9	4.1	9.4
2016	total	100.0	4.9	5.4	4.7	5.0	6.0	7.2	8.4	8.1	7.4	6.2	6.1	7.1	7.2	5.9	10.5
	urban	100.0	4.8	5.1	4.3	4.5	5.3	6.9	8.7	8.4	7.4	6.0	6.0	7.3	7.8	6.6	11.2
	rural	100.0	5.1	5.9	5.4	5.8	7.1	7.6	7.9	7.7	7.3	6.5	6.4	6.8	6.2	4.9	9.4
2020	total	100.0	4.5	4.9	5.4	4.7	5.2	6.3	7.4	8.5	8.1	7.1	6.0	6.1	7.1	6.6	12.2
	urban	100.0	4.3	4.7	5.1	4.2	4.6	5.8	7.4	8.7	8.3	7.0	5.8	6.0	7.4	7.3	13.4
	rural	100.0	4.9	5.3	5.9	5.4	6.0	7.0	7.4	8.0	7.7	7.2	6.3	6.3	6.6	5.6	10.4
2030	total	100.0	4.0	4.4	4.7	5.0	5.5	4.8	5.3	6.4	7.5	8.5	8.0	6.9	5.7	5.7	17.6
	urban	100.0	3.7	4.1	4.4	4.7	5.2	4.5	5.0	6.1	7.5	8.7	8.2	6.9	5.6	5.7	19.7
	rural	100.0	4.4	4.8	5.1	5.4	6.0	5.2	5.7	6.9	7.5	8.2	7.7	7.0	5.9	5.7	14.7

Source: GUS, developed by the authors.

The percentages of age groups 15–19 and 20–24 years considerably decreased between 2002 and 2016, by 3.5 percentage points (3.7 p.p. in towns and 3 p.p. in rural areas) and 2.4 p.p. (3.4 and 0.7 p.p.), respectively. In the next years, the trend will continue in both rural areas and towns (see Tab. 2). The increases in

the age groups: 30–34 years, 35–39 years, 55–59 years and 60–64 years were caused in the sampled years by large inflows of baby boomers of the 1950s and 1980s. In the period of 5–10 years after 2016, both age groups will grow smaller because of the aforementioned ‘structural swinging’. The younger cohort will enter the 40–44 and 45–49 year age groups and the older cohort will leave the potential labour force (see Tab. 2).

In 2016, the percentages of the rural population aged 15–24 years were relatively high in most counties. The highest were noted in Limanowski and Nowosądecki in the Małopolskie voivodeship (15.2%). In Kolneński (Podlaskie), Iławski and Piski in Warmińsko-Mazurskie, Wejherowski and Bytowski in Pomorskie and in Mławski, Ostrołęcki, Białobrzegi and Sierpecki in Mazowieckie they ranged from 14.4 to 15.0%. The lowest percentages, from 9.6 to 10.8%, occurred in Będziński, Gliwicki and Raciborski (Śląskie), Hajnowski (Podlaskie), Poznański (Wielkopolskie), Opolski (Opolskie), Wrocławski (Dolnośląskie) and Pabianicki (Łódzkie) (Fig. 8). In the next 14 years, the 15–24 year age group will significantly decrease in proportion to the total population in most rural areas.

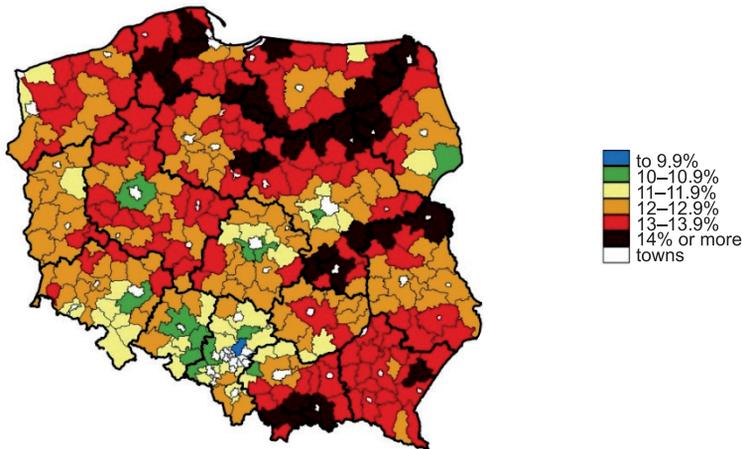


Fig. 8. Population aged 15–24 years in counties' rural areas in 2016 [%]

Source: GUS, developed by the authors.

In 2030, its lowest percentages (8–9.7%) will be noted in counties such as Hajnowski, Siemiatycki and Sejneński (Podlaskie), Kazmierski and Sandomierski (Świętokrzyskie), as well as Głubczycki, Kędzierzyńsko-Kozielski, Krapkowicki and Opolski (Opolskie). The highest percentages (12.9–13.8%) will occur in Kartuski and Wejherowski (Pomorskie), Poznański and Gnieźnieński (Wielkopolskie), and Nowosądecki (Małopolskie) (Fig. 9).

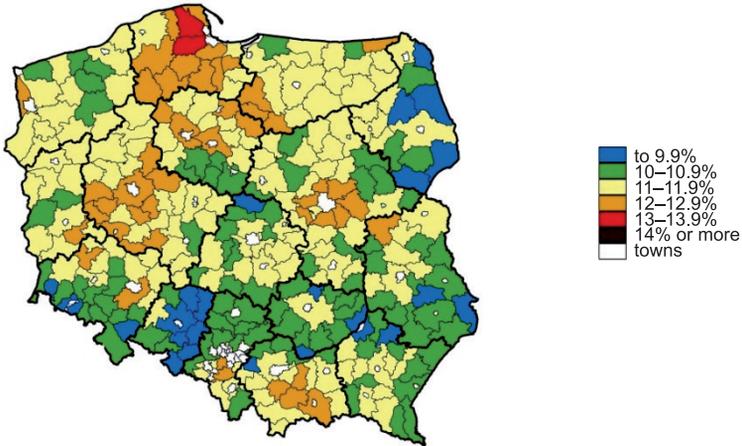


Fig. 9. Population aged 15–24 years in counties' rural areas in 2030 [%]

Source: GUS, developed by the authors.

A closer look at the trends shows that from 2002 to 2016 the rural areas of almost all counties experienced a decline in the 15–24 year age group. The largest decreases in the range of 35 to 40% occurred in western and northern Poland and in the counties surrounding large cities such as Poznański (Wielkopolskie), Wrocławski, Kłodzki and Dzierżonowski (Dolnośląskie), Opolski (Opolskie), Międzyrzeczki (Lubuskie) and Pszczyński and Raciborski (Śląskie). In Siemiatycki (Podlaskie), the proportion of the population aged 15–24 years did not change throughout the period of analysis (Fig. 10).

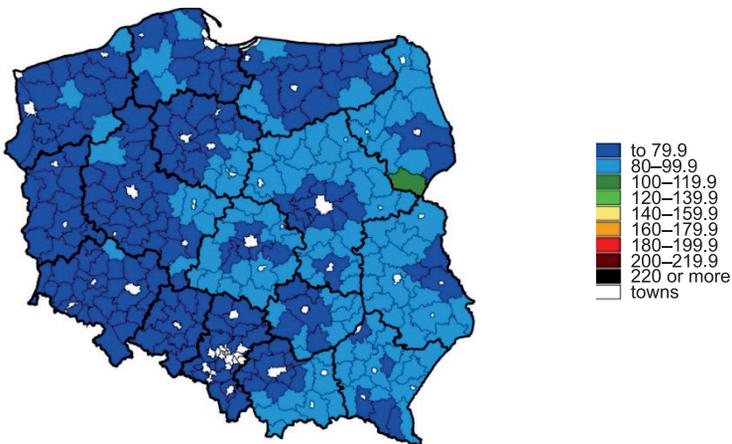


Fig. 10. Changes in the percentage of population aged 15–24 years in counties' rural areas, years 2002–2016 (2002=100)

Source: GUS, developed by the authors.

In the next dozen or so years, the percentage of the 15–24 year age group will be shrinking in most counties, but more slowly than before. Between 2016 and 2030, the largest decreases (from 25 to 30%) will be noted in Siemiatycki, Moniecki and Sejneński Counties (Podlaskie), Nizański, Kolbuszowski and Tarnobrzegi (Podkarpackie), Janowski (Lubelskie), Dąbrowski (Małopolskie) and Przysuski (Mazowieckie) (Fig. 11).

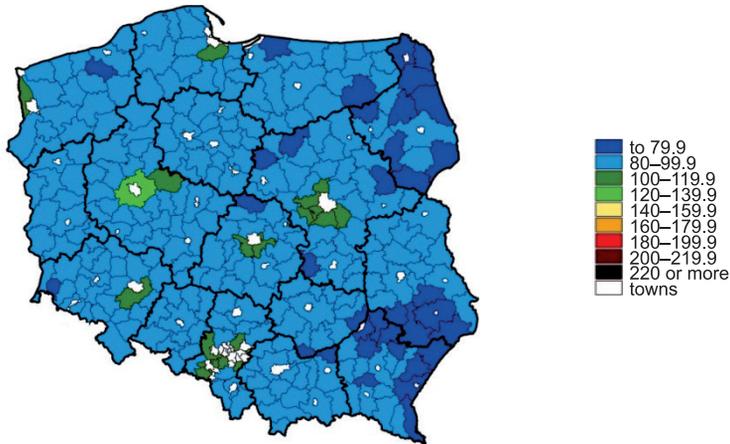


Fig. 11. Changes in the percentage of population aged 15–24 years in counties' rural areas, years 2016–2030 (2016=100)

Source: GUS, developed by the authors.

In 2016, the percentage of rural residents aged 55–64 years (gradually leaving the labour market) was relatively high in most counties. Its largest values, ranging from 16 to 16.6%, were noted in counties such as Jeleniogórski, Kłodzki, Wałbrzyski, Lwówecki, Ząbkowicki, Kamiennogórski and Dzierżonowski (Dolnośląskie), and also in Kamieński (Zachodniopomorskie). The group of counties with the lowest values, between 10.3 and 11%, included Nowosądecki and Limanowski in Małopolskie, Kolneński in Podlaskie, Kartuski and Wejherowski in Pomorskie, and Mielecki and Ropczycko-Sędziszowski in Podkarpackie (Fig. 12).

In the next ten-to-twenty years, the outflows of the 1950s baby boomers will slightly reduce the percentage of rural residents aged 55–64 years in most counties (fig. 13). In 2030, they will probably be the smallest (11 to 11.5%) in counties such as Poznański (Wielkopolskie) and Kartuski, Gdański and Wejherowski (Pomorskie), and the highest (14.5 to 15.5%) in Siemiatycki, Hajnowski, Sokólski and Grajewski (Podlaskie) and Opolski, Głubczycki, Kędzierzyńsko-Kozielski, Oleski and Krapkowicki (Opolskie).

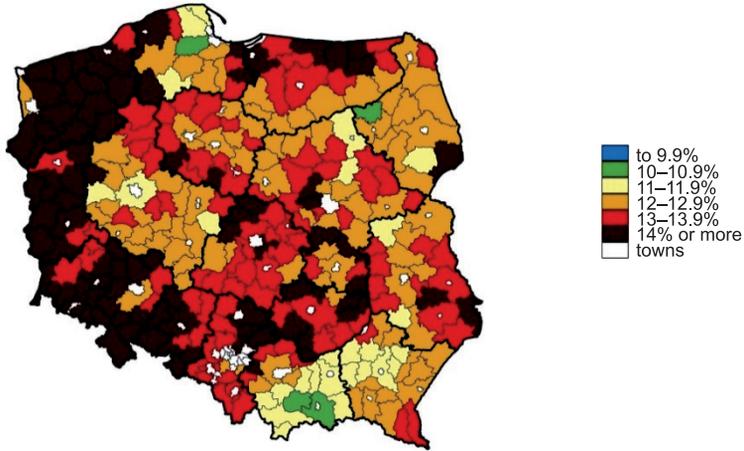


Fig. 12. Population aged 55–64 years in counties' rural areas in 2016 [%]

Source: GUS, developed by the authors.

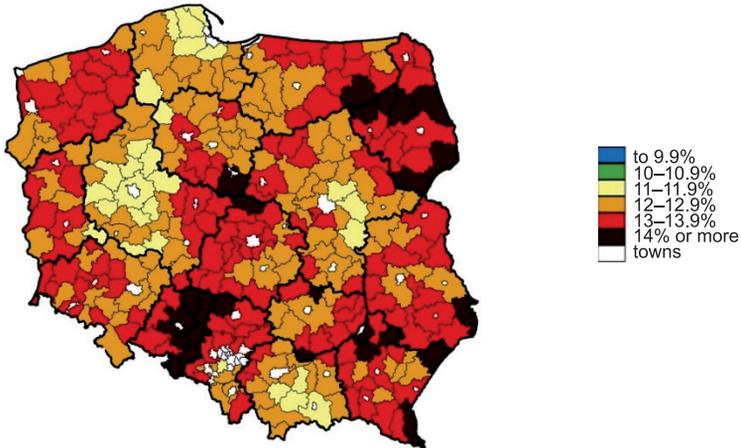


Fig. 13. Population aged 55–64 years in counties' rural areas 2030 [%]

Source: GUS, developed by the authors.

Between 2002 and 2016, the percentage of people aged 55–64 years increased in the rural areas of all counties, because of sizeable birth cohorts of baby boomers born in the 1950s reaching this age group. The largest increases (exceeding 200%) took place in the western part of Poland, being the highest in Lwówecki, Świdnicki, Lubański, Kamiennogórski, Jeleniogórski and Złotoryjski counties (Dolnośląskie), and in Świdwiński and Kamieński (Zachodniopomorskie) in the latter ranging from 125 to 135% (see Fig. 14). According to estimates, between

2016 and 2030 the percentage of this subpopulation will increase in the central, eastern and southern parts of Poland by 20–35%, the most in counties such as Siemiatycki and Kolneński in Podlaskie and Dębicki, Mielecki and Kolbuszowski in Podkarpackie. In the other rural areas decreases will take place, the largest (33%) in Kłodzki and Lwówecki counties in Dolnośląskie and Kamieński in Zachodniopomorskie (Fig. 15).

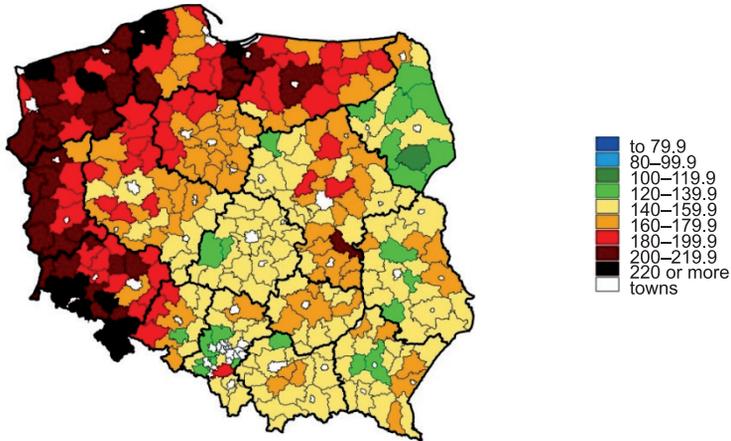


Fig. 14. Changes in the percentage of population aged 55–64 years in counties' rural areas, 2002–2016 (2002=100)

Source: GUS, developed by the authors.

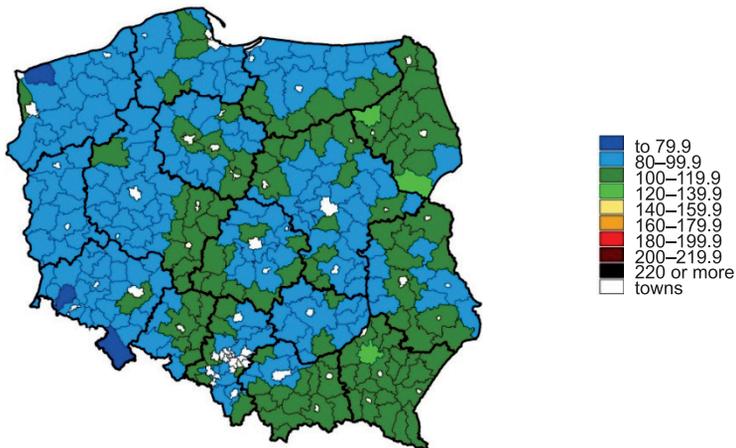


Fig. 15. Changes in the percentage of population aged 55–64 years in counties' rural areas, 2016–2030 (2016=100)

Source: GUS, developed by the authors.

Economic consequences of the changing age structure of the potential labour force in Poland

A decreasing potential labour force and a lack of improvement in the economic activity of the population have many, mostly negative, consequences for the economy. Because Poland has a primarily redistributive pension system (funded from the working population's premiums), the situation is a threat to its stability. However, an advantage of this system is that a smaller supply of labour may still sufficiently meet the demand, resulting in a relatively low rate of unemployment or even its absence.

Labour replacement ratios (a quotient between the number of people aged 15–24 years and the number of people aged 55–64 years) show that in the early 21st c. the number of people at the early-working age still considerably exceeded the number of people leaving the labour force in all Polish voivodeships (in urban as well as rural areas). After a decade, it was the subpopulation aged 55–64 years that dominated countrywide and in most voivodeships (see Tab. 3).

Table 3

Population aged 15–24 and 55–64 years and labour replacement ratios (L_{15-24}/L_{55-64}) in Poland, years 2002, 2016, 2020 and 2030

Year	TOTAL			URBAN			RURAL		
	15–24	55–64	L_{15-24}/L_{55-64}	15–24	55–64	L_{15-24}/L_{55-64}	15–24	55–64	L_{15-24}/L_{55-64}
2002	16.8	9.1	1.86	17.0	9.7	1.75	16.6	8.1	2.06
2016	11.0	14.3	0.77	9.7	15.1	0.64	12.9	13.1	0.99
2020	9.9	13.2	0.75	8.8	13.4	0.66	11.4	12.8	0.89
2030	10.5	12.7	0.83	9.9	12.5	0.79	11.3	12.9	0.88

Source: GUS, developed by the authors.

In rural areas, the 2002 ratio between the early-working age population (15–24 years) and the pre-retirement age population (55–64 years) was 206 to 100 (in all voivodeships the younger subpopulation was in the majority). By 2016, the ratio dropped to only 99 to 100 (the younger subpopulation predominated in 8 voivodeships only; the largest percentages were noted in Pomorskie and Małopolskie). The trend shows that in 2030 the ratio will be 88 to 100 (see Tab. 3 and 4).

The county labour replacement ratios changed as well. In 2002, people aged 15–24 years predominated over those aged 55–64 years in the rural areas of all counties (Fig. 16). The difference was still observed in 2016 (but much smaller than in 2002). In 128 counties, mainly Limanowski, Nowosądecki and Nowotarski in Małopolskie, Kolneński in Podlaskie, and Kartuski and Wejherowski in Pomorskie, the ratio between people aged 15–24 years and 55–64 years was 130–147 to 100.

Table 4

Labour replacement ratios (L_{15-24}/L_{55-64}) in rural areas in Poland,
years 2002, 2016, 2020 and 2030

Specification	2002	2016	2020	2030
Poland	2.06	0.99	0.89	0.88
Dolnośląskie	2.38	0.82	0.80	0.85
Kujawsko-Pomorskie	2.22	0.99	0.91	0.91
Lubelskie	1.79	1.01	0.89	0.83
Lubuskie	2.41	0.88	0.83	0.87
Łódzkie	1.66	0.92	0.85	0.83
Małopolskie	2.13	1.11	0.97	0.92
Mazowieckie	1.99	1.00	0.92	0.91
Opolskie	1.94	0.82	0.69	0.70
Podkarpackie	2.05	1.12	0.95	0.82
Podlaskie	1.66	1.05	0.86	0.76
Pomorskie	2.75	1.10	1.02	1.06
Śląskie	1.78	0.85	0.77	0.83
Świętokrzyskie	1.86	0.92	0.83	0.79
Warmińsko-Mazurskie	2.43	1.02	0.88	0.89
Wielkopolskie	2.27	1.01	0.95	0.98
Zachodniopomorskie	2.46	0.89	0.83	0.87

Source: GUS, developed by the authors.

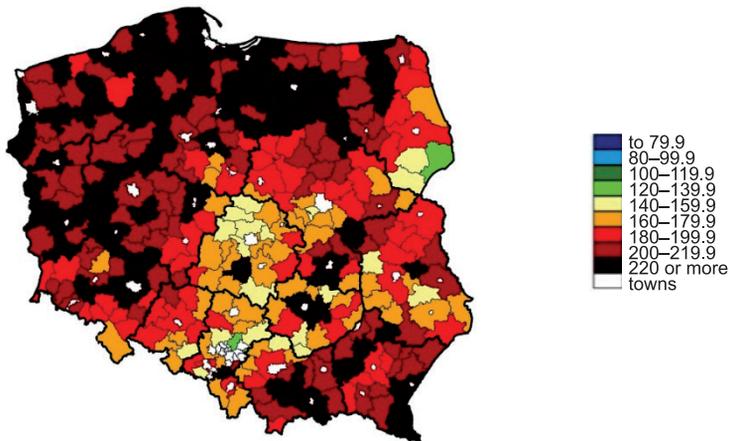


Fig. 16. Labour replacement ratios in counties' rural areas in 2002

Source: GUS, developed by the authors.

The lowest ratios (63–72 to 100) caused by the largest predominance of the older subpopulation were noted in counties such as Będziński in Śląskie and Hajnowski in Podlaskie, as well as in Kłodzki, Jeleniogórski, Wałbrzyski and Dzierżoniowski in Dolnośląskie (Fig. 17).

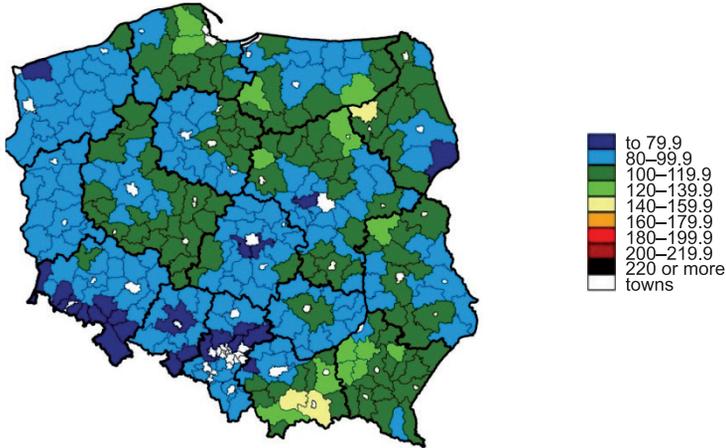


Fig. 17. Labour replacement ratios in counties' rural areas in 2016

Source: GUS, developed by the authors.

In the next several to ten-to-twenty years, most counties will have labour replacement ratios in rural areas below 1. The 2030 ratios (53–65 to 100) will be the lowest in Hajnowski and Siemiatycki in Podlaskie and Głubczycki and Kędzierzyńsko-Kozielski in Opolskie (Fig. 18–19). In only 38 counties the ratios will be

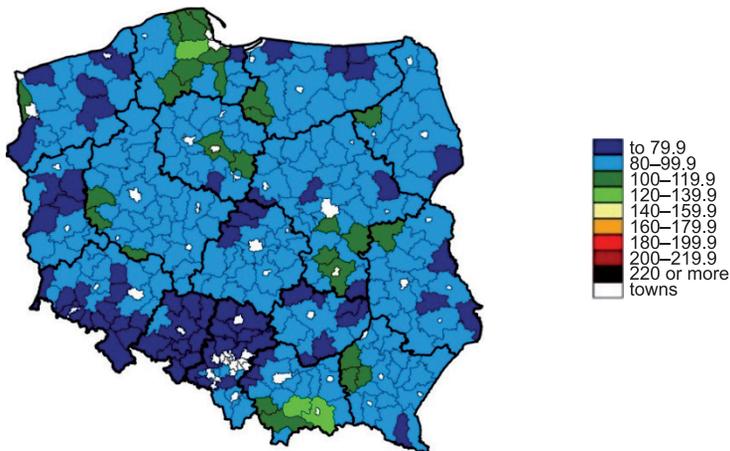


Fig. 18. Labour replacement ratios in counties' rural areas in 2020

Source: GUS, developed by the authors.

at least 1:1, meaning that the inflow of the younger birth cohorts will at least compensate for the outflow of the older ones. The highest ratios (110–126 to 100) will be noted in counties such as Kartuski and Wejherowski in Pomorskie and in Poznański, Gnieźnieński and Nowotomyski in Wielkopolskie (Fig. 19).

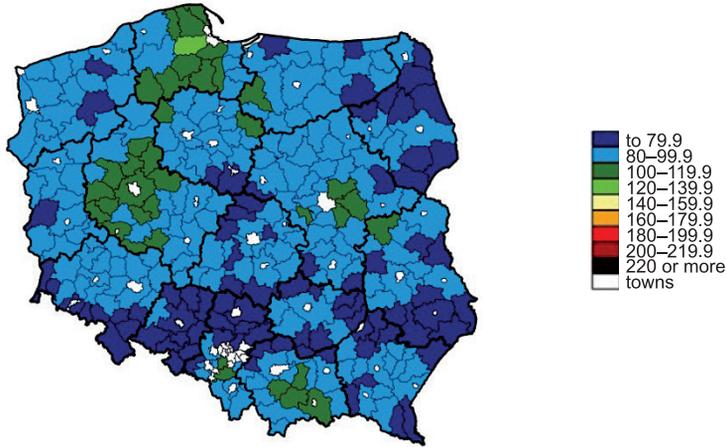


Fig. 19. Labour replacement ratios in counties' rural areas in 2030

Source: GUS, developed by the authors.

Socio-economic aspects of changes in rural labour force

Populations living in rural areas are generally less educated than the residents of towns, because „the educational environment in rural areas is definitely worse than in towns and the average teaching quality tends to be lower. Educational opportunities available to rural children are affected by frequent inefficiencies in the functioning of the rural system of education, such as insufficient number of kindergartens, less qualified teachers and lower quality of secondary schooling. Frequently faced with financial problems, rural families seek secondary or tertiary schools in the vicinity to avoid the cost of renting a room” (PRUS 2008, p. 136). Still, many young people choose to leave rural areas and move to towns to pursue their educational and/or career plans. In most cases their new place of residence turns into a permanent home.

Labour force quality is primarily determined by the educational attainments of its members. The share of people with tertiary education should not be applied as the only measure of labour force quality, because for some jobs vocational education is appropriate and sufficient.

In 2016, 31.8% of urban residents and 15.6% of rural residents aged 15–64 years had tertiary education, but the rates varied regionally. The highest rates in the rural areas were noted in Śląskie (18.2%) and Mazowieckie (16.9%), and the

lowest in Warmińsko-Mazurskie (12.2%) and Lubuskie (13.1%). Rural areas had larger percentages of residents with basic vocational education than towns (32.2% versus 20.6%), as well as larger percentages of people with completed elementary and junior secondary education (19.6% and 11.2%).

The quality of the potential and actual labour force is determined not only by the level of education and vocational training but also by human health. Studies (e.g. those conducted in 2004) have not shown rural and urban adults to significantly differ in the self-assessment of health. However, some health and mortality indicators (e.g. further life expectancy, mortality from malignant tumours, circulatory diseases, respiratory diseases, external causes) show that the male adults in rural areas are disadvantaged compared with their urban peers (WOJTYNIAK et al. 2016, p. 52–54).

The level of socio-economic development and the distance from urban centres are important factors influencing the residential appeal of rural areas. STANNY (2012a, p. 110, 111) showed rural areas in Western Poland and around large cities to have attained a relatively higher level of socio-economic development.

Polish rural areas have been marked by the years of political transition, the onset of which coincided with an increase in potential labour force. One consequence of the transition that was particularly painful in the rural areas was the emergence of open unemployment. The demand-side factors that contributed to it included economic restructuring, the liquidation of socialized agriculture, and decreasing hidden unemployment outside agriculture; on the supply side, the considerable increase in the labour force played an important role (STANNY 2010, p. 57).

According to KOŁODZIEJCZAK and WYSOCKI (2015, p. 98), „the traditional model of individual farming in Poland, with its fragmentation of arable land, small farms, mostly unspecialised production and labour-intensive work proved economically inefficient (...). In this situation (...), the only way to improve the economic status of rural population is to provide its members with jobs outside agriculture”.

The working-age rural population unengaged in agriculture can be a major resource for the labour force making up for its shortages in urban areas. STANNY (2012b, p. 4) argues, however, that finding methods for relocating rural labour resources will not be easy. The process requires flexible solutions for rural and urban labour markets, orientation and educational measures, and support for circular migrations.

Final remarks

Because of higher percentages of children and of the working-age population, the current age structure of Poland's rural population is more favourable than in towns. At the same, strong interregional variations in the percentages are

observed. The largest percentages of both these age groups are noted in the rural areas of northern and western Poland and the smallest in central and eastern Poland and in the Opolskie voivodeship. This geographical pattern will change in the next ten-to-twenty years: the highest rates of the potential labour force (in relative terms) will be noted in municipalities surrounding large cities.

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References

- Bank Danych Lokalnych. GUS. <https://bdl.stat.gov.pl/BDL/start> (dostęp 30.06.2017).
- KOŁODZIEJCZAK W., WYSOCKI F. 2015. *Determinanty aktywności ekonomicznej ludności wiejskiej w Polsce*. Wydawnictwo Uniwersytetu Przyrodniczego, Poznań.
- Prognoza ludności na lata 2014–2050*. 2014. GUS, Warszawa.
- PRUS P. 2008. *Współczesne problemy rolnictwa i obszarów wiejskich w Polsce*. Zeszyty Naukowe SGGW w Warszawie – Problemy Rolnictwa Światowego, 5(20).
- Stan zdrowia ludności Polski w 2004 r.* 2006. GUS, Warszawa.
- STANNY M. 2010. *Ludność i jej aktywność zawodowa – tendencje zmian na obszarach wiejskich*. In: *Przestrzenne, społeczno-ekonomiczne zróżnicowanie obszarów wiejskich w Polsce. Problemy i perspektywy rozwoju*. Eds. M. Stanny, M. Drygas. Instytut Rozwoju Wsi i Rolnictwa PAN, Warszawa.
- STANNY M. 2012a. *Poziom rozwoju społeczno-gospodarczego obszarów wiejskich w Polsce – pomiar zjawiska złożonego*. In: *Rozwój wsi i rolnictwa w Polsce. Aspekty przestrzenne i regionalne*. Ed. A. Rosner. Instytut Rozwoju Wsi i Rolnictwa PAN, Warszawa.
- STANNY M. 2012b. *Zasoby demograficzne wsi – kierunki reagowania na zmianę*. *Polityka Społeczna*, 8.
- WOJTNYIAK B., STOKWISZEWSKI J., GORYŃSKI P., ZDROJEWSKI T. 2016. *Długość życia i umieralność ludności Polski*. In: *Sytuacja zdrowotna ludności Polski i jej uwarunkowania*. Ed. B. Wojtyniak, P. Goryński. Narodowy Instytut Zdrowia Publicznego, Państwowy Zakład Higieny, Warszawa.

