



INSTITUTE OF AGRICULTURAL
AND FOOD ECONOMICS
NATIONAL RESEARCH INSTITUTE

***Selected demographic
characteristics
of the rural population
in 2000-2005***

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Łukasz Zwoliński



THE ECONOMIC AND SOCIAL CONDITIONS
OF THE DEVELOPMENT OF THE POLISH FOOD
ECONOMY FOLLOWING POLAND'S ACCESSION
TO THE EUROPEAN UNION

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Author
mgr Łukasz Zwoliński

Edited by
dr hab. Alina Sikorska



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task *Factors behind marginalisation and competitiveness in the social and economic
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*Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej
– Państwowy Instytut Badawczy
00-950 Warszawa, ul. Świętokrzyska 20, skr. poczt. nr 984
tel.: (0·prefiks·22) 50 54 444
faks: (0·prefiks·22) 50 54 636
e-mail: dw@ierigz.waw.pl
<http://www.ierigz.waw.pl>*

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Introduction

In 2005, rural areas accounted for 93.2% of Poland's total area and for 38.5% of the population. According to the UN, Poland ranked seventh in the European Union in terms of share of the rural population¹. With regard to the number rather than the share of rural residents, Poland ranked third in the EU, only behind Germany (20.5 million) and Italy (18.8 million). The above proportions between EU Member States are expected to remain virtually unchanged for the next decade, despite the anticipated fall in the total rural population in the Community (by ca. 6%) as well as in its share (by approx. 2 percentage points)².

On account of such considerable human potential in rural areas, it seems vital to describe socio-demographic characteristics of rural residents. Those features determine the competitiveness of the rural population in the labour market, economic activity, entrepreneurship, as well as the income level.

The source of the analysed data was the survey of families residing in 76 villages across Poland, conducted by the Institute of Agricultural and Food Economics – National Research Institute (IAFE-NRI) in 2005, whereas some macroeconomic developments were described on the basis of GUS statistics.

The sampling of villages for the surveys was purposeful and representative, based on socio-economic features of the population and the land structure of holdings located in the distinguished regions. The survey covered all the families residing in the selected villages. Rates of change were calculated with reference to the findings from the survey of the same group of villages conducted in 2000.

A number of questions concerning the functioning of agricultural holdings included living conditions in rural areas, education, demographic characteristics and economic activities of the rural population³.

The survey covered 8,604 families, of which 3,705 were households owning a farm of more than 1 ha of agricultural land (farming families) and 4,899 had no farm or cultivated small agricultural plots of less than 1 ha of agricultural land (non-farming families).

¹ *World Urbanization Prospects. The 2005 Revision*, Department of Economic and Social Affairs, United Nations, New York, 2006, p. 33.

² Such changes are anticipated to be more significant in countries characterised by the highest share of the rural population in the total population, i.e. within the next ten years the proportion of the rural population will decrease by ca. 3%.

³ A. Sikorska, *Zmiany strukturalne na wsi i w rolnictwie w latach 1996-2000 a wielofunkcyjny rozwój obszarów wiejskich. Synteza*, IERiGŻ, 2001, p. 5.

Compared to 2000, the sample remained basically unchanged (down by 0.5%), but the number of families in the surveyed villages did change. The number of households decreased in 38 villages (50% of the sample), it went up in 32 villages (42%), whereas it remained unchanged in 6 villages (8%).

Similar relations were observed with regard to the surveyed population. The survey conducted by IAFE-NRI in 2005 covered 30,016 persons (15,114 members of farming families and 14,902 persons from non-farming families), i.e. the population in question fell by 1.1% on 2000.

As in previous papers presenting the results of IAFE-NRI surveys, regional differences in Polish rural areas were shown on the basis of the division into five macroregions⁴.

This paper attempts to establish the following:

- current socio-demographic characteristics of the rural population,
- whether such features changed during the previous five years,
- whether there are differences between farming and non-farming families or across Poland,
- whether there are differences in socio-demographic characteristics between persons leaving rural areas, farm managers or self-employed persons and the rural population as a whole.

The analyses of socio-demographic structures contribute to the determination of economic changes in rural areas. The features of socio-demographic structures largely stem from the specific character of and trends in economic changes⁵.

⁴ The distinguished macroregions include the following voivodships: I – Central-Western – the Kujawsko-Pomorskie and Wielkopolskie voivodships; II – Central-Eastern – the Łódzkie, Mazowieckie, Lubelskie and Podlaskie voivodships; III – South-Eastern – the Świętokrzyskie, Małopolskie, Podkarpackie and Śląskie voivodships; IV – South-Western – the Opolskie, Lubuskie and Dolnośląskie voivodships; V – Northern – the Zachodniopomorskie, Pomorskie and Warmińsko-Mazurskie voivodships. Cf. A. Sikorska, *Zmiany strukturalne na wsi i w rolnictwie w latach 1996-2000 a wielofunkcyjny rozwój obszarów wiejskich*. Synteza, IERiGŻ, 2001, pp. 6, 7.

⁵ A. Sikorska, *Struktura społeczno-demograficzna i wykształcenie ludności wiejskiej*, IERiGŻ, Warszawa, 1999, p. 5.

I. DEMOGRAPHIC CHARACTERISTICS OF THE RURAL POPULATION

1.1. Age

Changes concerning the structure by age and sex represent the focus of demographic surveys. The two main factors determine other demographic processes, particularly births and deaths.

Furthermore, analyses of the population by age are also aimed to describe the relations between age groups, i.e. to establish changes in the share of particular age groups in the total population or youth and old-age dependency ratios (the demographic “burden” of young/elderly persons on the working age population).

According to general statistics, Poland’s rural population is younger than the urban population. In 2005, every fourth rural resident was under 18 years of age, whereas under-age persons accounted for one-fifth of the population in urban areas.

Age differences are also observed within rural areas. The age structure varies between regions and socio-occupational categories, i.e. in farming and non-farming families.

Differences in the age structure can be described by the share of particular age groups in the total population or by a composite statistical measure – the median age. The median age of a given population is the age separating the group into halves: 50% of the population is under the median age and the other 50% is over.

According to the IAFE-NRI survey, in 2005 farming families were relatively younger than the non-farming population. It was mostly reflected in the 4 percentage points lower share of the post-working age population (see Figure 1).

Over the previous decade, the proportion of the post-working age population remained virtually unchanged both in farming and non-farming families⁶. However, there were significant changes in the share of children and young people in the rural population. In 1996-2005, the share of the pre-working age population decreased by 5.7 percentage points in farming families and by 6.8 percentage points in non-farming families. It should be added that the

⁶ According to the IAFE-NRI survey, in 1996 the share of post-working age persons was 15.4% in farming families and 18.9% in non-farming families.

sharpest fall in the proportion of children and young people in the rural population was noted in the previous five years⁷.

Figure 1. Age structure of the farming, non-farming and rural population in 2005



Source: 2005 IAFE-NRI survey.

In 2005, the highest share of children and young people in rural areas as well as the lowest proportion of the post-working age population was found in the Central-Western and Northern macroregions. Similar regional differences characterised farming and non-farming families. As regards non-farming households, a high share of the pre-working age population and a low share of the post-working age population was also recorded in the South-Eastern macroregion (see Annex, Table I).

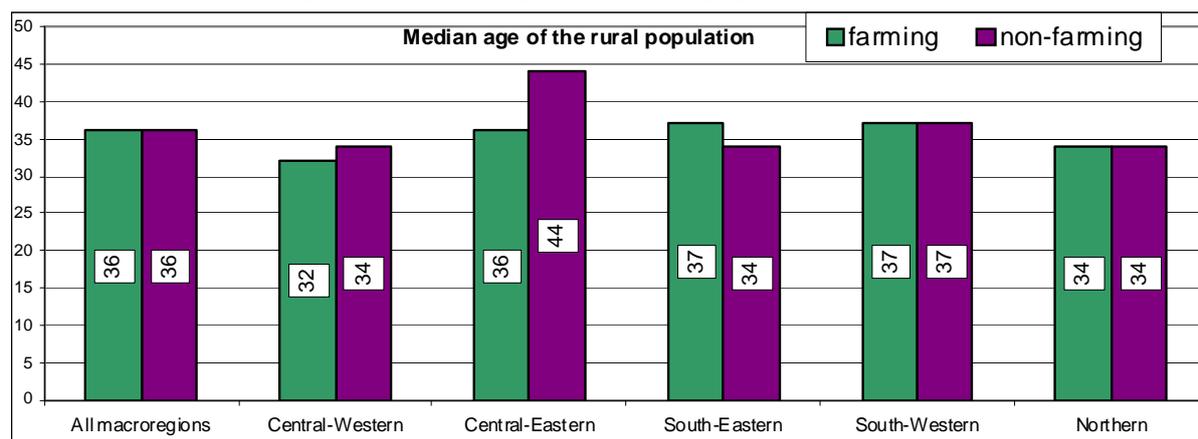
The most unfavourable age structure in 2005, also observed in previous surveys⁸, was found in the Central-Eastern macroregion. Negative trends, i.e. the lowest share of children and young people and the highest proportion of the post-working age population in Poland, primarily affected non-farming families.

In 2005, the median age was the same in farming and non-farming families. It varied between regions, with the most significant differences observed in the Central-Eastern macroregion (see Figure 2).

⁷ Between 2000 and 2005, the share of the pre-working age population declined by 4.0 percentage points in farming families and by 4.3 percentage points in non-farming households.

⁸ Cf. A. Sikorska, *Zmiany w strukturze społeczno-ekonomicznej ludności niechłopskiej w okresie transformacji ustrojowej*, IERiGŻ-PIB, Warszawa 2005, p. 29.

Figure 2. Median age of the rural population in 2005



Source: 2005 IAFE-NRI survey.

The median age allows to establish that in 2005 the rural population with holdings of more than 1 ha of agricultural land was found the youngest in the Central-Western and Northern macroregions, whereas the oldest in the south of Poland, i.e. in the South-Western and South-Eastern macroregions.

Slightly different relations were observed with regard to non-farming families. The youngest population resided in the Central-Western, South-Eastern and Northern macroregions, whereas the oldest – in the Central-Eastern macroregion, with the median age 10 years higher than in the Central-Western macroregion.

The combined analysis of farming and non-farming families revealed regional differences similar to those observed with regard to the age structure. In 2005, the median age was the lowest in the Central-Western and Northern macroregions (33 and 34 years respectively), and the highest in the Central-Eastern macroregion (39 years). For all rural areas the median age was 36 years, one year more than the GUS figure⁹.

As compared to the previous survey, in 2005 the median age increased by two years in the case of farming families and by one year in non-farming households. Between 2000 and 2005, the least significant changes in the median age were observed in the Central-Western macroregion (up one year for farming families and down one year for non-farming families), whereas the greatest changes were recorded in the Central-Eastern and South-Eastern macroregions, particularly with regard to non-farming households (up three years).

⁹ According to GUS statistics, in 2005 the median age of the rural population was 34.8, whereas the respective indicator for urban areas reached 38.0.

The demographic dependency ratio, i.e. the number of young and elderly persons per 100 working age persons, allows a more accurate description of the age structure and the shares of specific age groups in the total rural population. This indicator is determined by two other ratios, namely the old-age dependency ratio (the number of persons aged 60/65 or over per 100 persons between 18 and 59/64 years of age), and the youth dependency ratio (the number of persons aged 0-17 per 100 persons aged 18 and 59/64 years of age).

In 2005, for both the farming and non-farming population the demographic dependency ratio decreased on 2000 (see Annex, Table III). As compared to 2000, 2005 also witnessed reduced disproportions in this respect between farming and non-farming households.

As regards the farming population, the lower demographic dependency ratio resulted from a fall in the youth dependency ratio. This development stemmed from an unfavourable reduction in the number of births in rural areas observed in previous years¹⁰.

In the case of non-farming families, the decrease in the demographic dependency ratio in the period in question followed a fall in both the youth and old-age dependency ratios. It resulted from a reduced number of births, as well as from the ageing of the 1980s population boom, which pushed up the working age population.

1.2. Sex

The most frequently applied measures describing the population by sex include the shares of men and women in the total population and the sex ratios (in Poland referred to as the feminisation ratio, i.e. the number of women per 100 men)¹¹.

According to GUS statistics, at the end of 2005 women accounted for 51.6% of Poland's total population. The population by sex had been rather stable for the previous ten years, with the feminisation ratio of 106 to 107 (with a slight upward trend). As regards the urban population, in 2005 the feminisation ratio was 111, whereas in rural areas there were 101 women per 100 men.

According to IAFE-NRI surveys, rural areas had been characterised by balanced sex ratios from the early 1990s. Broken down into farming and non-farming families, the rural population showed certain differences, but changes in

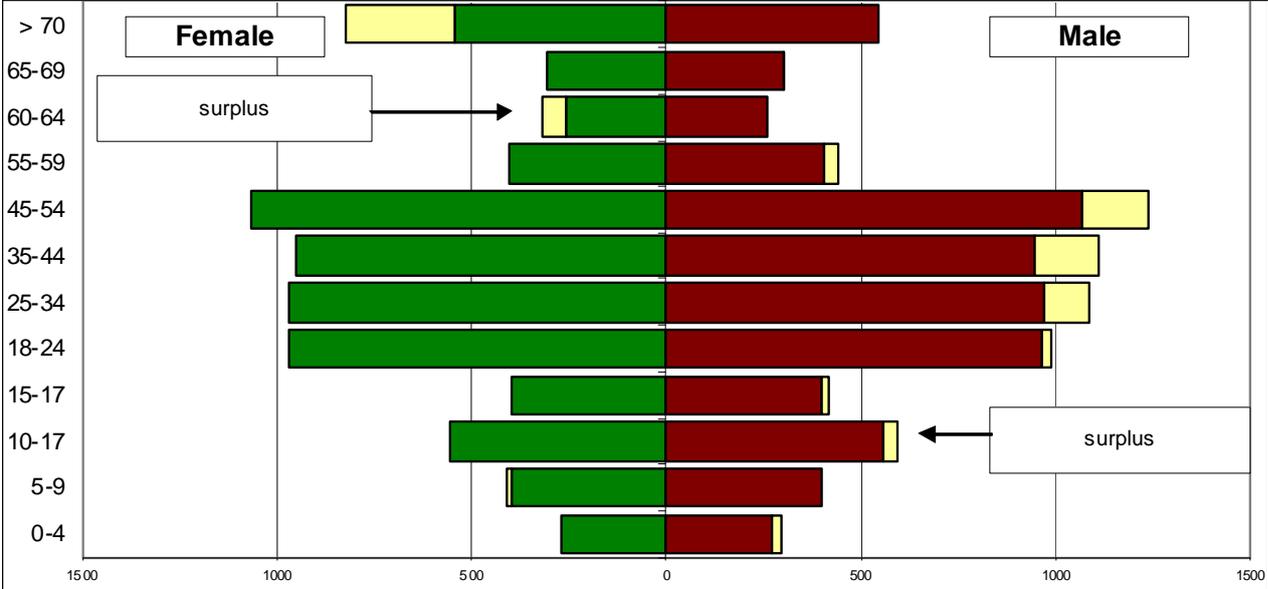
¹⁰ As a result of the lower number of births, the number and share of children declined in the youngest age groups. In 2005, the share of children aged 5 or under in the rural population was 4.6%, whereas it reached 5.5% in 2000. At the same time, the number of children in this age group dropped by 21.5%.

¹¹ J. Z. Holzer, *Demografia*, Polskie Wydawnictwo Ekonomiczne, Warszawa, 2003, p. 130.

this respect had been marginal for the previous fifteen years. In 2005, there were 97 women per 100 men in farming families, whereas the respective figure for non-farming families was 104.

Analyses of the population by sex are known to reveal disproportions in the number of women per 100 men in specific age groups. Differences between the farming and non-farming population were also observed in this respect.

Figure 3. Farming population by sex and age in 2005



Source: 2005 IAFE-NRI survey.

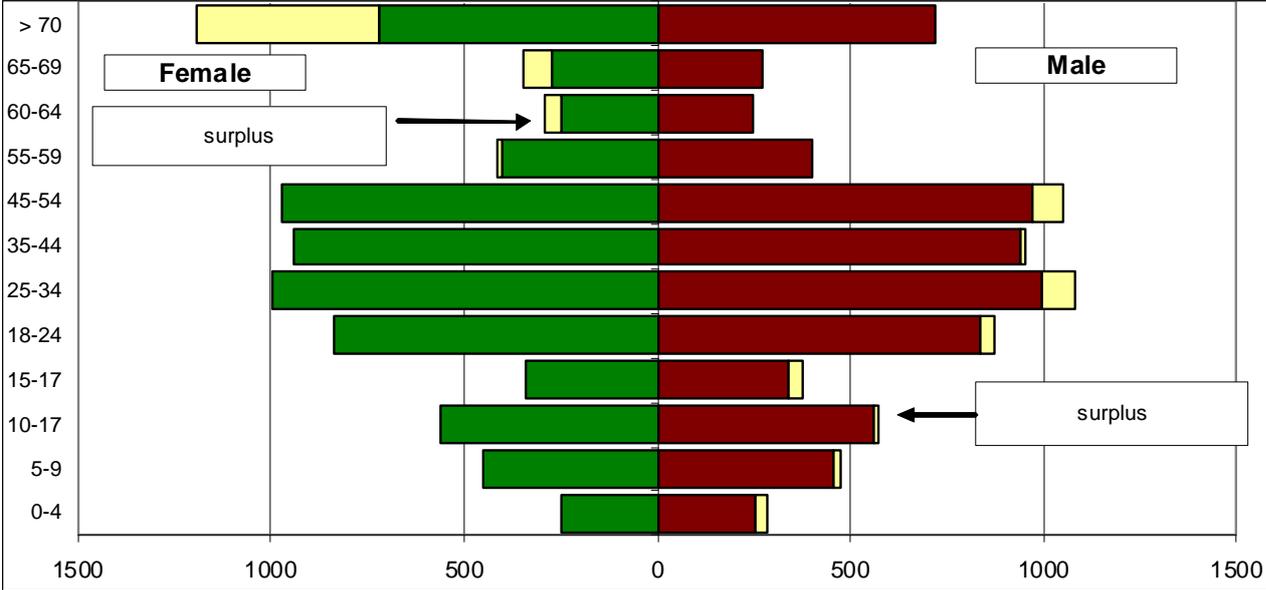
The IAFE-NRI surveys demonstrated (see Figures 3 and 4) that in the case of non-farming families a greater number of women than that of men was observed in younger age groups than in the farming population¹². In addition, the farming population was characterised by an insufficient number of women in the age group of 25-54, i.e. an average number of women per 100 men in those cohorts was ca. 20% lower than in other age groups.

The low number of women per 100 men in the age group of 25-54 in farming families resulted from migration conditions and the specific character of agricultural activities. Reluctant to engage in hard work in agriculture, women tend to leave their families and seek better opportunities elsewhere. Women accounted for nearly 58% of persons who had left farms and their villages (moving to another village, urban areas or other countries). As regards

¹² As regards farming families, the number of women exceeded that of men starting from the age group of 55-59, whereas in non-farming families this development was noted in the next cohort, i.e. persons aged 60-64.

women from non-farming families, the respective share was more than 4 percentage points lower.

Figure 4. Non-farming population by sex and age in 2005



Source: 2005 IAFE-NRI survey.

On the one hand, high feminisation ratios in older cohorts (particularly in the non-farming population) stem from a longer life expectancy of women as compared to that of men, and on the other hand, they suggest that more women than men decide to leave agricultural holdings. This is confirmed by data on migration by members of farming families aged 55 or over. In 2005, women who had left the farm but remained in the village accounted for 56.6% of the surveyed group. A higher number of women than that of men results from the fact that 37.2% of women who had left agricultural holdings were unmarried (the respective figure for men was 9.1%). It was more frequent for elderly unmarried women¹³ to sell, lease or transfer their farms, thus becoming non-farming persons.

Differences in feminisation ratios were found not only between farming and non-farming families, but also across Poland. In the farming population, the lowest number of women per 100 men in 2005 was recorded in the Central-Western macroregion (92), whereas the highest figure characterised the South-Eastern macroregion (100). Compared to the 2000 survey, in most macroregions the feminisation ratio showed no major changes. Only in the South-Western macroregion the number of women per 100 men had declined by 4.1% over the

¹³ Those were usually late farmers’ wives (widows) who for various reasons wished to discontinue farming activities.

previous five years (to 97 in 2005), whereas it had increased by 2.3% in the Northern macroregion (to 96 in 2005).

The structure of the farming population by sex is related to socio-economic conditions prevailing in specific regions of Poland. In areas where income earning was widespread among members of farming families, women accounted for a relatively higher share of the surveyed group than in typically agricultural regions, where women were more engaged in farm work¹⁴.

As regards the non-farming population, the lowest feminisation ratios were recorded in the Northern and South-Eastern macroregions (100 and 101 respectively), whereas the highest figures characterised the Central-Eastern and South-Western macroregion (108 in each). In comparison with the previous survey, no major changes in the feminisation ratio were observed in any macroregion (the most significant change was found in the South-Western macroregion – a fall by 1.6%).

The structure of the population by age and sex is related to another important demographic characteristic, namely the marital status. The migration patterns of rural women as well as the observed tendency of young people to put off the decision to marry¹⁵ have pushed up the share of unmarried persons in recent years. It is an unfavourable development as the structure of the population by marital status continues to determine the number of births in Poland¹⁶.

According to the IAFE-NRI survey, in 2005 the share of unmarried persons aged 18-34 was 67.7% in farming families (73.9% of single men and 61.2% of single women), i.e. 4.6 percentage points higher than the figure for non-farming families. As regards members of farming families, the proportion of unmarried men rose by 3.2 percentage points compared to the 2000 figure (70.7%), whereas the share of unmarried women went up by 6.5 percentage points (54.7% in 2000). In 2005, in both farming and non-farming families, the lowest shares of unmarried persons were found in the Central-Western macroregion, and the highest figures were noted in the Northern macroregion. The comparison of the 2000 and 2005 surveys indicates that the greatest increases in the share of single men and women were recorded in the Central-

¹⁴ A. Sikorska, *Struktura społeczno-demograficzna i wykształcenie ludności wiejskiej*, IERiGŻ, Warszawa, 1999, p. 26.

¹⁵ According to GUS data, in 2005 the median age of persons entering into marriage in rural areas was 26.3 for men and 23.9 for women, and it had increased by approx. one year for both sexes over the previous five years.

¹⁶ The vast majority of births are registered in marriage. According to GUS data, in 1990 births outside marriage accounted for 6.2% of the total number of births, whereas the 2004 figure was 17.1%.

Western and Northern macroregions, and the respective shares rose the least in the Central-Eastern macroregion.

Much more significant changes were observed with regard to the non-farming population aged 18-34. In the period in question, the share of unmarried men increased by 12.5 percentage points (from 56.4% in 2000), and that of unmarried women grew by 13.3 percentage points (from 43.8% in 2000). The largest increases were found in the Central-Eastern macroregion, where the share of unmarried men jumped by 15.6 percentage points (from 51.9% in 2000), and the proportion of unmarried women went up by 17.1 percentage points (from 41.9%). At the same time, the least significant changes were observed in the Central-Western macroregion, where the share of unmarried men rose by 7.1 percentage points (from 53.2% in 2000), and that of unmarried women increased by 6.9 percentage points (from 38.5% in 2000).

Further growth in the share of unmarried men and women will have an adverse effect on the number of marriages, thus on the number of births. According to GUS data, in 2000-2004 the marriage rate¹⁷ in rural areas fell by 11.8% (by 8.0% in urban areas). At the same time, the number of live births per 1,000 inhabitants went down by 12.0% and 1.1% in rural and urban areas respectively. The year 2005 witnessed opposite trends, i.e. a rise in both the marriage rate and the number of live births in comparison with previous years. However, patterns observed in 2005 do not indicate positive changes with regard to the number of marriages and births as they primarily result from the 1980s youth bulge entering older cohorts.

1.3. Education

The level of education, vocational abilities and skills represent the basis for both individual and collective labour resources¹⁸. Combined with certain physical characteristics, state of health, values etc., this basis constitutes the human capital of a region. Furthermore, education also affects the situation in the labour market, reflected in the unemployment rate relative to the educational level. Persons with better education learn new or additional skills more quickly and they are more responsive to changes in demand for labour.

Studies of demographic developments describe the educational level with a number of indicators: the share of persons with primary education, the share of persons with post-primary education, the share of persons with

¹⁷ The number of new marriages during the year in a given area per 1,000 inhabitants.

¹⁸ G. Sychalski, *Mezoeconomiczne aspekty kształtowania rozwoju obszarów wiejskich*, IRWiR PAN, Warszawa, 2005, pp. 173-174.

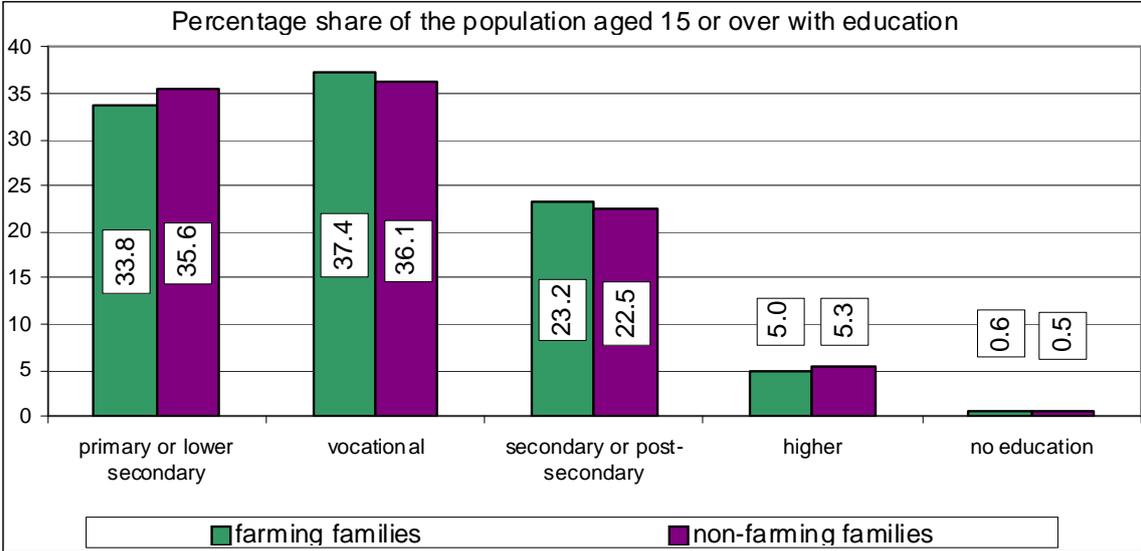
secondary or higher education and the share of persons with higher education. In this paper, comparisons of the educational level are based on information concerning the percentage share of persons with at least secondary education in the surveyed group.

Rural and urban areas significantly differ in the educational level of the population. According to GUS estimates, in 2004 the share of persons with secondary, post-secondary or higher education was 55.5% in cities (of which persons with a university degree accounted for 17.5%), whereas the respective proportion was 29.9% in rural areas (with university-educated persons representing 5.4%)¹⁹.

According to the IAFE-NRI survey, in 2005 28.0% of the rural population had secondary, post-secondary or higher education (persons with a university degree accounted for 5.1%)²⁰. Compared to 2000, this share increased by 10.4 percentage points (as regards persons with higher education, it rose by 2.7 percentage points, i.e. it doubled).

No significant differences were observed with regard to the educational level of the farming and non-farming population. The share of persons with at least secondary education was a mere 0.4 percentage point higher in farming families, therefore the difference was statistically insignificant (see Figure 5).

Figure 5. Rural population by level of education^a in 2005



^a Completed education.
 Source: 2005 IAFE-NRI survey.

¹⁹ *Rocznik Demograficzny 2005*, GUS, Warszawa, 2005, p. 155. Data on the population aged 13 or over.

²⁰ The presented data from IAFE-NRI surveys concern the educational level of the population aged 15 or over.

As regards the farming population, in 2005 the lowest share of persons with secondary, post-secondary or higher education was found in the Central-Western macroregion (24.8%), whereas the highest proportion (32.4%) characterised the South-Western macroregion (see Annex, Table II).

The pattern observed also in previous surveys was a high share of persons with vocational education in the Central-Western macroregion. Furthermore, the farming population in those areas was also characterised by the lowest proportion of university-educated persons.

As regards members of non-farming families, in 2005 the share of persons with at least secondary education was found to be the lowest in the Northern and Central-Western macroregions (21.3% and 22.5% respectively) and the highest in the South-Eastern macroregion (36.4%). The South-Eastern macroregion was characterised by the highest share of persons with a university degree in Poland, with regard to both farming and non-farming families (5.5% and 7.0% respectively).

As has already been mentioned, in 2005, as compared to 2005, the educational level showed a significant improvement. The share of persons with secondary, post-secondary or higher education increased in both farming and non-farming families, by 11.7 percentage points from 16.5% in the former, and by 8.8 percentage points from 19.0% in the latter. As regards the situation in specific macroregions, in the period in question a marked increase in this proportion was observed in the South-Western macroregion, in both the farming population, by 16.5 percentage points from 15.9%, and in non-farming families, by 12.1 percentage points from 15.6%. At the same time, the least significant growth was found in the Central-Western macroregion (by 9.5 percentage points from 15.3% in farming families) and in the Northern macroregion (by 3.9 percentage points from 17.5% in non-farming families).

The above analysis of the educational level in the farming population demonstrated that the share of university-educated persons is higher in areas where the rural population is not only engaged in traditional agriculture, e.g. in the South-Eastern and South-Western macroregions. In rural areas, non-agricultural economic activities as well as migration patterns encourage education-oriented attitudes, i.e. young people make efforts to obtain the best possible education.

1.4. Economic activity

According to GUS data, in 2005 the rural population was 14.7 million, of which ca. 6.5 million represented family farms of more than 1 ha of agricultural land. Compared to the mid-1990s, there was a fall in the number of persons living on family farms by slightly over 1 million.

The above figures indicate that approx. 56% of Poland's rural population are not farmers or members of farming families. Similar relationships were found in the survey conducted by the IAFE-NRI in 2005.

This survey of 8,604 families from 76 representative villages across Poland showed that 56.9% of households had no farm, and 49.6% of the rural population represented non-farming families.

Among the various socio-economic aspects covered by the IAFE-NRI survey, issues related to economic activities of the rural population seem to be of particular importance. For the purpose of IAFE-NRI surveys, the group of economically active includes persons aged 15 or over who work (on or outside the farm) or are unemployed. The unemployed are those registered in labour offices or declared as job seekers.

In general, the farming population was characterised by much greater economic activity than the non-farming population. In 2005, the economic activity rate²¹ among members of farming families reached 80.6%, whereas in the non-farming population it was one-third lower, i.e. 49.0%.

As regards members of non-farming families, in 2005 the unemployment rate²² was four times higher than in the farming population (see Table 1). Such a high unemployment rate resulted from the fact that the number of unemployed persons was two times higher, whereas the number of economically active persons was two-thirds lower than in the case of the farming population.

Different patterns concerning the relation between the unemployment rate and the educational level were found in farming and non-farming families. As regards members of farming families, the lowest unemployment rate was found in the case of persons with the lowest level of education, i.e. primary education, and those with a university degree. As far as non-farming families are concerned, the unemployment rate below 10% was only noted among persons with higher education. The above figures suggest that a higher level of education

²¹ The economic activity rate is defined as the share of economically active persons in the total population (aged 15 and over).

²² The unemployment rate is calculated as the share of unemployment persons in the number of economically active persons (aged 15 or over).

indicates a stronger position in the labour market for both the farming and non-farming population.

Table 1. Unemployment rate^a by level of education in the rural population aged 15 or over in 2005

Level of education	Unemployment rate (%)	
	farming population	non-farming population
Total	7.5	30.2
Primary, lower secondary, no education	3.5	49.7
Vocational	8.8	31.5
Secondary, post-secondary	9.2	26.1
Higher	8.3	8.2
Rural population, total	16.0	

^a The unemployment rate was calculated as a percentage share of unemployment persons (in IAFE-NRI surveys the group includes those registered in labour offices or declared as job seekers) in the number of economically active persons, i.e. those employed and unemployed.

Source: 2005 IAFE-NRI survey.

Furthermore, there were significant differences in the unemployment rate across macroregions (see Annex, Table IV). As concerns members of farming households, the lowest unemployment rate (4.2%) was found in the Northern macroregion, whereas it was double the figure in the South-Eastern macroregion. The opposite was the case with regard to unemployment in non-farming families. The lowest unemployment rate (23.3%) characterised the South-Eastern macroregion, and the highest rate was noted in the Northern macroregion (40.2%).

Lower unemployment rates recorded in the farming population in comparison with the non-farming population do not directly imply positive developments in Polish agriculture as they primarily result from the specific character of agricultural production, i.e. significant seasonal fluctuations in necessary labour input and the need to engage family members in agricultural activities²³.

Another reason for the relatively low unemployment rate in agriculture that fact that the vast majority of Polish farms are not market-oriented. In such agricultural holdings, on account of poor machinery and technical equipment, limited and mostly subsistence production involves rather significant labour input. According to IAFE-NRI data, only 34.5% of persons aged 15 or over declaring employment on the farm indeed work on a permanent full-time basis. As regards other persons employed on the farm, i.e. permanent part-time

²³ B. Karwat-Woźniak, P. Chmieliński, *Praca w indywidualnych gospodarstwach rolnych*, IERiGŻ-PIB, Warszawa, 2006, p. 19.

workers, seasonal or casual labour, the respondents indicated that for 16.3% of family members there is no need to engage in farm work on a full-time basis²⁴. Persons considered redundant in agricultural holdings, with no off-farm employment and not registered as unemployed represent the so-called hidden unemployment in agriculture.

Another feature of Polish agriculture, related to the above-mentioned characteristic, is the fact that members of farming families engage in multiple activities. According to the survey, 24.1% of the farming population combine farm work with off-farm employment, whereas another 9.6% exclusively engage in non-agricultural activities.

In 2005, the highest share of persons combining work in agriculture with off-farm jobs was found in the south of Poland (the South-Western macroregion – 27.6%, the South-Eastern macroregion – 26.7%). Multiple activities were less widespread in the Northern and Central-Western macroregions (19.7% and 20.1% of employment respectively).

The regional distribution of members of farming families not engaged in farm work was different. The highest proportion of such persons, i.e. 10.8% of all workers, was noted in the Central-Eastern macroregion, whereas the lowest share (8.5%) characterised the South-Eastern macroregion.

Economic activity is related to the level of agricultural, earned or unearned income. Insofar as the level of earnings and unearned income can be easily established, agricultural revenue should be reduced by related costs. Since accurate information on all agricultural inputs is unavailable, IAFE-NRI surveys relied on averaged figures. Production costs were assumed to account for 60% of agricultural sales. Therefore, agricultural income was established at 40% of commercial production. In the 2005 survey, on account of Poland's accession to the European Union and the inclusion of Polish agriculture in the common agricultural policy, agricultural income was increased by direct payments.

In 2005, income per farming family was three-fourths higher than that per non-farming family. Considering the higher average number of family members in the farming population as compared to the non-farming population²⁵, the gap between income per capita was slightly narrower, less than one-third. Income disparities between farming and non-farming households result from differences in the income structure. As regards non-farming families, unearned income

²⁴ The number of persons declaring that they do not perform farm work on a permanent full-time basis as there is no need, and those declaring the willingness to leave the farm (or to take up paid employment).

²⁵ In 2000, the number of persons per farming family was 2.54 and the respective figure for a non-farming family was 1.16.

sources (old-age and disability pensions, unemployment benefits etc.) accounted for 38.5% of total income, whereas the respective proportion for the farming population was only half the figure (20.7%). Nevertheless, farming activities remain economically justified even in areas dominated by subsistence or semi-subsistence agricultural holdings.

In 2005, the highest average income (per family and per person) in Polish farming families was observed in the Central-Western macroregion. At the same time, the lowest income was found in the South-Eastern macroregion. However, the figure was still higher (income per family – by 32.3%, income per person – by 6.0%) than average income obtained by non-farming households in the same macroregion (among the highest in Poland’s non-farming population).

Table 2. Income of farming and non-farming families in 2005

Macroregion	Farming families		Non-farming families	
	per family	per person	per family	per person
	PLN thousand			
Total	36.5	8.9	20.8	6.8
Central-Western	47.8	10.8	19.8	6.4
Central-Eastern	34.4	8.5	17.8	6.9
South-Eastern	32.1	7.9	24.2	7.4
South-Western	39.7	10.6	22.2	7.6
Northern	42.1	10.4	19.5	5.6

Source: 2005 IAFE-NRI survey.

The low income of farming families in the South-Eastern macroregion in 2005 is attributable to the highest share²⁶ of unearned income, usually lower than earned income.

The analysis of total income (from agricultural and non-agricultural activities) of farming families may suggest that farms in the South-Eastern macroregion are less market-oriented (i.e. semi-subsistence) than agricultural holdings located in other regions of Poland. This is also reflected in the above-mentioned high proportion of persons combining farm work with non-agricultural paid employment, as well as in the lowest (19.7%) share of family members engaged in agricultural activities on a permanent full-time basis.

Very different patterns were observed in the South-Western macroregion. Although characterised by the highest share of persons combining farm work with off-farm employment in Poland, semi-subsistence agricultural holdings are not as widespread as in the case of the South-Eastern macroregion. In the southwest of Poland the average farm area (measured by the area of agricultural

²⁶ In the South-Eastern macroregion, unearned income accounted for 28.3% of total income, whereas the national average was 20.7%.

land per farm) was 165.0% higher than in the South-Eastern macroregion and 20.0% higher than in the Central-Eastern macroregion. In addition, the share of unearned income in total income reached 16.1%, i.e. nearly half the figure for the South-Eastern macroregion and 4.9 percentage points less than in the Central-Eastern macroregion. On account of the above-mentioned factors, in 2005 income obtained by farming families in the South-Western macroregion was among the highest figures in Poland²⁷.

The analysis of the Northern and Central-Western macroregions in terms of income and agricultural activities indicates that farms located in those macroregions are more market-oriented and less semi-subsistence than agricultural holdings in other regions of Poland. In addition to the above-mentioned low share of members of farming families combining farm work with off-farm employment, the two macroregions were characterised by the highest proportion of the farming population engaged in agricultural activities on a permanent full-time basis (in the Central-Western macroregion – 50.8%, in the Northern macroregion – 46.8%). Furthermore, the average area of agricultural land in those macroregions is the highest in Poland, at 18.1 ha in the Northern macroregion, and 13.8 ha in the Central-Western macroregion. For the rural population in the Central-Western and Northern macroregions agricultural activities provided the main source of income. This is reflected in the lowest proportion of unearned income and of income from paid employment in Poland in 2005²⁸. It should be added that income of the farming population in both macroregions was significantly above the national average.

²⁷ As regards average income of farming families in the South-Western macroregion, in 2005 income per family was 20.3% lower and income per person – 2.0% lower than the respective figures for households in the Central-Western macroregion, characterised by the highest income of farming families in Poland.

²⁸ In the Central-Western macroregion unearned income sources accounted for 13.6% of total income, whereas the respective share for the Northern macroregion was 14.5%. At the same time, the proportion of earned income was 22.3% in the Central-Western macroregion, and 24.8% in the Northern macroregion.

II. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF SELECTED GROUPS OF THE RURAL POPULATION

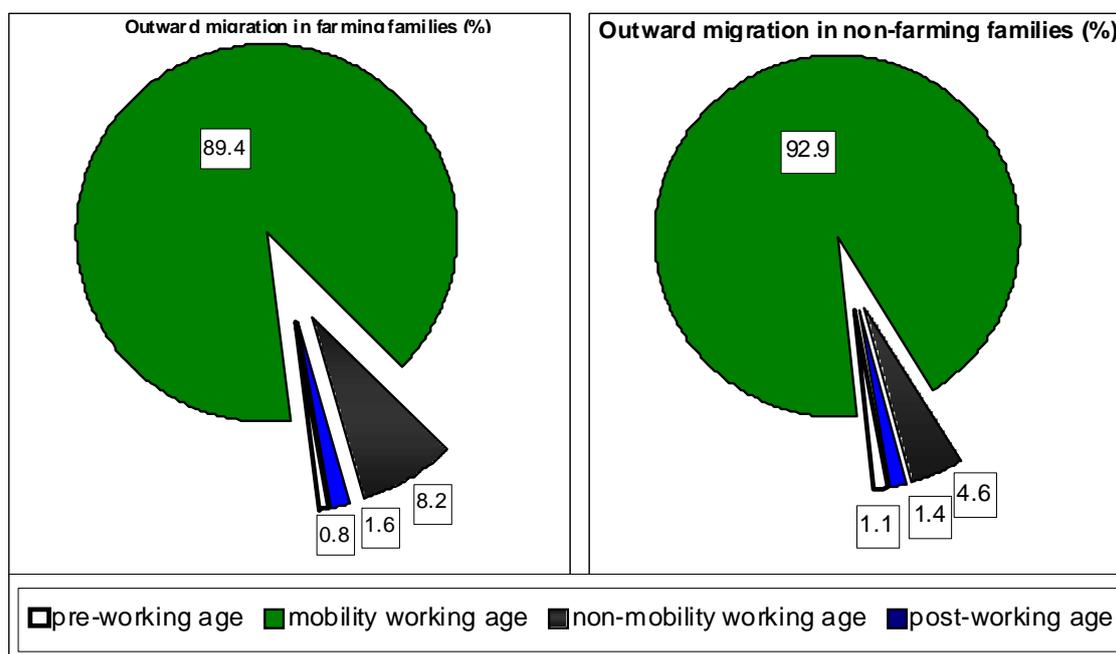
2.1. Outward migration

Lower absorption of university-educated persons in the labour market, fewer job opportunities, lower earnings and generally less favourable living conditions in rural areas as compared to cities all represent major reasons for outward rural migration – to urban areas or to foreign countries.

However, there are a number of recognised mobility barriers. Such hindering factors include high prices in the real estate market, high costs of living in cities, the difficult situation in the labour market, as well as certain fear of the unknown, particularly with regard to migration abroad.

According to previous IAFE-NRI surveys, young persons were characterised by the highest mobility. It resulted from the fact that outward migration from rural areas, even considering the risk involved, is frequently seen by rural youth as a unique opportunity to improve living standards²⁹.

Figure 6. Outward rural migration by age in 2005



Source: 2005 IAFE-NRI survey.

²⁹ A. Szemberg, *Przestrzenna mobilność ludności w latach 1996-2000*, IERiGŻ, Warszawa, 2003, p. 6.

The survey conducted in 2005 confirmed that outward rural migration primarily concerned young persons. The median age for members of farming families aged 15 or over who had left rural areas was 28 years, whereas for the entire surveyed farming population it was 42 years of age. Similar relations were observed in the case of the non-farming population. The median age of outward migrants and of all members of non-farming families was 27 and 43 years respectively.

The low median age noted in outward rural migration implies that the vast majority were persons in early working life. In 2005, nine out of ten migrants who had decided to leave rural areas represented mobility working age. A slightly greater share (3.5 percentage points higher) of persons at the mobility working age was noted with regard to the non-farming population.

No major regional differences were observed in terms of age of outward rural migrants. The analysis of the median age (see Annex, Table V) of the farming population indicates that the youngest migrants were found in the Northern macroregion (26 years of age), and the oldest – in the South-Western macroregion (29 years of age). In the case of the non-farming population, the lowest median age of outward rural migrants was noted in the Central-Eastern and South-Eastern macroregion (26 years in each), and the highest – in the Northern macroregion (29 years).

Another consequence of outward migration from rural areas, with a major effect on changes in the socio-demographic structure of the rural population, is the educational level. As confirmed by previous surveys, migrants are usually characterised by a higher educational level than the rest of the rural population. Since migrants tend to be younger and better educated compared to the rural population as a whole, outward migration is frequently selective in nature.

According to the IAFE-NRI survey, in 2005 an average of 63.8% of members of farming families who had left rural areas had at least secondary education. The highest educational level among outward migrants was found in the Central-Eastern macroregion, where almost seven out of ten such persons had secondary, post-secondary or higher education.

A slightly lower, but still significant (65.6%) share of persons with at least secondary education among migrants to urban areas or foreign countries was also noted in the South-Eastern macroregion. Outward migration of educated persons from the South-Eastern macroregion was encouraged by the overpopulation of rural areas and a great number of subsistence and semi-subsistence farms. As demonstrated by the survey, this macroregion is characterised by the highest number of families per village and the highest (at the same level as in the

Central-Western macroregion) number of persons per rural family as well as by the smallest area of agricultural land per farm in Poland.

Table 3. Outward migrants from farming families^a by level of education in 2005

Macroregion	Percentage share of persons with education				
	Primary or lower secondary	Vocational	Secondary or post-secondary	Higher	No education
Total	8.7	25.9	37.7	26.1	1.7
Central-Western	16.0	30.0	28.0	20.0	6.0
Central-Eastern	11.1	18.9	38.9	29.1	2.0
South-Eastern	3.9	30.5	37.5	28.1	0.0
South-Western	0.0	45.2	38.7	16.1	0.0
Northern	6.7	36.7	43.3	13.3	0.0

^a Migration to urban areas or foreign countries.

Source: 2005 IAFE-NRI survey.

It should be added that in 2005 the Central-Eastern macroregion, unlike the South-Eastern macroregion, was characterised by a limited share of persons with secondary, post-secondary or higher education in the farming population, therefore outward migration among educated persons will contribute to further deterioration of the competitiveness of those areas.

The lowest share of persons with at least secondary education among migrants from rural areas was noted in the Central-Western macroregion (48.0%). It mostly stemmed from rather modest educational aspirations in the farming population in those areas. In 2005, in this macroregion nearly 45% of rural residents had vocational education, whereas the share of persons with secondary, post-secondary or higher education was the lowest in Poland. Due to the above factors combined, outward rural migration in such areas was dominated by persons with vocational education, but this group was not as significant as in the rural population as a whole. One should bear in mind that one factor reducing the mobility of better educated persons could have been satisfactory job opportunities in the place of residence. Such a presumption is supported by relatively high income per farming family and per person in this macroregion, the highest in Poland. On account of a less pronounced income gap between the rural and urban population in the Central-Western macroregion, economic reasons for outward migration were less relevant.

The analysis of outward migration in farming families by level of education also demonstrated that it mostly concerned women (accounting for 56.7% of migration to urban areas or to foreign countries), who determined the relatively high educational level of persons leaving rural areas. In 2005, among migrant members of farming families 71.2% women had secondary, post-secondary or higher education, whereas the respective share of men was 54.1%.

In terms of spatial distribution, the highest proportion of women among migrant members of farming families was noted in the Central-Eastern macroregion (58.6%), and the lowest figure characterised the Northern macroregion (53.3%).

Similar relations concerning the educational level of migrants from rural areas were observed in the non-farming population.

Table 4. Outward migrants from non-farming families^a by level of education in 2005

Macroregion	Percentage share of persons with education				
	Primary or lower secondary	Vocational	Secondary or post-secondary	Higher	No education
Total	8.2	28.0	37.9	25.9	0.0
Central-Western	11.1	51.9	22.2	14.8	0.0
Central-Eastern	4.3	16.3	51.1	28.3	0.0
South-Eastern	2.4	18.3	35.4	43.9	0.0
South-Western	11.6	38.4	33.7	16.3	0.0
Northern	16.1	33.9	33.9	16.1	0.0

^a Migration to urban areas or foreign countries.

Source: 2005 IAFE-NRI survey.

In 2005, the share of persons with at least secondary education among migrants from rural areas was exactly the same as in farming families, i.e. 63.8%.

The highest proportion of persons with secondary, post-secondary or higher education (eight out of ten migrants) was recorded in the Central-Eastern and South-Eastern macroregions, whereas it was found the lowest (37.0%) in the Central-Western macroregion.

Compared to farming families, outward migration in non-farming households was characterised by less significant disproportions between the educational level of men and women. In 2005, the share of men who had left rural areas and had secondary, post-secondary or higher education was 58.6%, and the respective figure for women was 68.3%.

The share of women (54.2%) among migrant members of non-farming families was lower than in the case of farming families. As regards spatial distribution, the highest proportion of women in total outward rural migration was observed in the Northern macroregion (58.9%), whereas the lowest figure was found in the Central-Western macroregion (51.9%).

2.2. Farm managers

Education represents a major factor affecting social and economic activity of the population. Basically, theoretical knowledge combined with work experience is important in any trade or profession. It is a widespread opinion that farming is characterised by somewhat different features and the level of

completed formal education is not an indispensable prerequisite for occupational advancement and increased income³⁰. Barriers to successful farming, despite a high level of education, are frequently found in structural characteristics of agriculture. It is difficult to quickly change a holding of several hectares of agricultural land into a commercial farm providing income comparable to that from paid employment, particularly with limited available funds.

Before analysing the effect of the educational level of farm managers on agricultural income, important demographic characteristics of the group in question, i.e. age and sex, should be taken into account as well.

In 2005, the median age of farm managers was 47 years, whereas in the case of the total farming population aged 15 or over it was 42 years. Differences in the median age stem from a marginal share of farm managers under 18 years of age, which is reflected in the analysis of the age structure of the whole group in question (see Table 5).

Changes in the median age indicate that compared to 2000 the average age of farm managers increased by two years, whereas it rose by one year in the case of the farming population aged 15 or over.

Table 5. Farm managers aged 15 or over by age^a and sex in 2005

Macroregion	Farm managers (%)				
	by age			by sex	
	working age		post-working age	men	women
	mobility	non-mobility			
Total	43.8	46.6	9.6	78.7	21.3
Central-Western	47.2	48.6	4.2	85.3	14.7
Central-Eastern	44.7	46.6	8.7	80.9	19.1
South-Eastern	40.6	45.6	13.8	73.2	26.8
South-Western	44.6	46.7	8.7	79.5	20.5
Northern	46.1	46.8	7.1	78.5	21.5

^a The group of farm managers at the mobility working age was expanded to include one person between 15 and 17 years of age.

Source: 2005 IAFE-NRI survey.

The lower median age for the whole farming population (aged 15 or over), as compared to farm managers, was determined by a significantly higher share (6.5%) of pre-working age persons. A greater proportion than that among farm managers was observed in the case of the mobility working age population and the post-working age population (4.4 and 8.6 percentage points higher,

³⁰ A. Sikorska, *Struktura społeczno-demograficzna i wykształcenie ludności wiejskiej*, IERiGŻ, Warszawa, 1999, p. 37.

respectively). As regards non-mobility working age persons, the share was found to be 27.2%, i.e. 19.4 percentage points lower than the figure for farm managers.

Nevertheless, the group of farm managers is characterised by a relatively favourable age structure, reflected in a low proportion of post-working age persons. Compared to the 2000 survey, however, the demographic ageing was observed in the group of working age persons.

According to IAFE-NRI surveys, in 2000-2005 the share of mobility working age persons fell by 2.7 percentage points from 46.5%. Over the same period, the proportion of non-mobility working age persons went up by 3.4 percentage points (from 43.2%). With regard to the percentage share of post-working age persons, there was a minor decrease, i.e. by 0.7 percentage points (from 10.3% to 9.6%).

As regards regional distribution, in 2005 the youngest group of farm managers was found in the Central-Western macroregion (the median age of 45 years). This macroregion was also characterised by the highest share of mobility working age persons and the lowest proportion of post-working age persons in Poland. On account of rather young age, a favourable demographic structure of farmers was also observed in the Northern macroregion (the median age of 46 years). Furthermore, this macroregion had an above-average share of mobility working age population and a below-average proportion of post-working age persons. The oldest farm managers were found in the South-Eastern macroregion (the median age of 48 years). This macroregion was also characterised by the lowest share of mobility working age persons in Poland and the highest proportion of the post-working age population.

In general, farm managers were mostly men. The lowest share of women managers in agricultural holdings was recorded in the Central-Western macroregion, and the highest (nearly double the figure) in the South-Eastern macroregion. Compared to 2000, there was no major change in the proportion of women (up 0.2 percentage point).

Regional differences in the share of women managers in agricultural holdings are related to the type of agriculture prevailing in a given area. In the Central-Western macroregion, women tend to be less engaged in agricultural activities due to specific features of agriculture in those areas, i.e. high productivity. This type of agriculture entails significant involvement of the farmer in farm work, continuous availability, various skills, and still significant physical strength and fitness, despite advanced mechanisation³¹.

³¹ A. Wrzochalska, *Kobiety kierujące gospodarstwami rolnymi*, IERiGŻ, Warszawa, 2003, p. 32.

Considerable involvement of women in agricultural activities in the South-Eastern macroregion results from different characteristics of agriculture from those in the Central-Western macroregion. In the southeast of Poland most agricultural holdings are small subsistence or semi-subsistence farms. Farming in such holdings does not require as much work as in the case of commercial farms, therefore it is possible to combine routine maintenance of the household with agricultural activities.

From the point of view of evaluating the quality of human capital in agriculture, the educational level of managers of family farms represents an important factor. In 2005, the share of farmers with at least secondary education was slightly (1.7 percentage points) lower than that for the whole farming population. The highest proportion of farm managers with secondary, post-secondary or higher education was noted in the South-Western macroregion (29.2%), and the lowest – in the Central-Western macroregion (24.4%). With regard to the share of persons with at least secondary education, the same pattern, i.e. the highest and the lowest figures recorded in the South-Western and Central-Western macroregions respectively, was also observed in the whole farming population.

Table 6. Farm managers aged 15 or over by level of education^a in 2005

Macroregion	Percentage share of managers with education				
	Primary or lower secondary	Vocational	Secondary or post-secondary	Higher	No education
Total	26.5	46.7	22.0	4.5	0.3
Central-Western	20.8	54.6	21.2	3.2	0.2
Central-Eastern	30.3	43.5	21.0	4.6	0.6
South-Eastern	25.6	47.0	22.7	4.6	0.2
South-Western	22.8	48.0	24.9	4.3	0.0
Northern	25.4	46.4	22.3	5.5	0.3

^a Completed education.

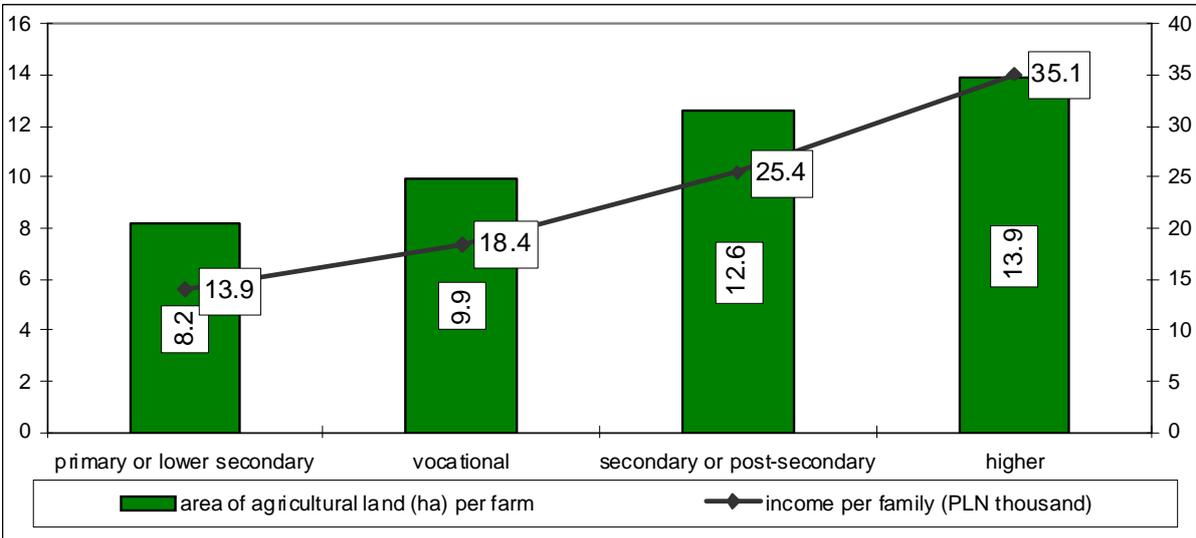
Source: 2005 IAFE-NRI survey.

In the surveyed sample of 3,705 farm managers, 16.1% were not engaged in farm work at all or only performed such work on a casual basis for a limited number of days during the year. It seems appropriate to exclude farm managers who are not significantly involved in current farming activities from further analysis of agricultural income in relation to the educational level of the farm manager.

The analysis of the above-mentioned relations, i.e. the level of agricultural income³² and the educational level of the farmer working on the farm on a permanent full-time or part-time basis, revealed a positive correlation between the two characteristics. Agricultural income gained by farm managers with higher education was more than double the figure for those with primary education.

The educational level of farm managers was also related to the average area of agricultural land. A higher level of education of farm managers was accompanied by an increase in the area of agricultural land per farm. University-educated managers had an average of 69.8% more agricultural land (see Figure 7) than those with primary education.

Figure 7. Area of agricultural land and agricultural income per farm by level of education of the farm manager^a in 2005



^a Farm managers engaged in farming on a permanent basis.

Source: 2005 IAFE-NRI survey.

An additional criterion adopted for the classification of farm managers by level of education was also vocational education, agricultural or non-agricultural (see Annex, Table VI). According to the IAFE-NRI survey, in 2005 farm managers with agricultural education (obtained at school) cultivated a larger average area of agricultural land and gained a higher level of agricultural income than those with non-agricultural vocational education or without vocational education.

In general, the analysis suggests that farm managers from macroregions associated with the most advanced agriculture are characterised by a more favourable socio-demographic structure than farmers in other rural areas. For

³² Excluding earned and unearned income.

instance, the highest share of farm managers with a university degree was found in the Northern macroregion.

2.3. Persons pursuing non-agricultural activities in rural areas

Studies of agriculture and rural areas frequently raise the issue of excess labour supply in agriculture. Proposed solutions aimed to reduce agricultural employment include the development of non-agricultural activities in rural areas. However, the implementation of such measures is also hindered by the very characteristics of the rural population. In 2005, in the rural population aged 35-59 years seven out of ten persons only had primary or vocational education. With regard to the population aged 15-34 years, the share of persons with primary or vocational education was 52.5%.

The IAFE-NRI surveys cover two groups of individuals pursuing non-agricultural activities. One includes entrepreneurs, i.e. those who hire at least one employee. Self-employed persons represent the other group.

In 2005, the share of persons declaring to be entrepreneurs was marginal, both in farming and non-farming families (0.4% and 0.7% respectively). Compared to 2000, both the number and share of entrepreneurs remained virtually unchanged.

In terms of spatial distribution, relatively the highest proportion of entrepreneurs was noted in the South-Eastern macroregion (0.6% of members of farming families) and in the South-Western macroregion (1.3% of members of non-farming families).

Entrepreneurs were distinguished by young age and a high level of education. According to the IAFE-NRI survey, in 2005 39.7% of entrepreneurs in farming families were aged 35-44 years, whereas they accounted for as much as a 75.0% share of the group in question in the Central-Western macroregion. As regards entrepreneurs from non-farming families, the proportion of persons between 35 and 44 years of age was even higher, at 46.4%. The median age of members of farming and non-farming families was 43 and 40 years respectively, i.e. in both cases it increased by one year in comparison with 2000.

Self-employed persons³³ play a prominent role in rural areas, even though they do not hire employees. Pursuing non-agricultural activities alleviates social effects of transition to the market economy as such income represents a

³³ For the purposes of this study the sample was limited to persons working on a permanent basis.

significant share in rural household budgets³⁴. Furthermore, self-employed persons are also characterised by greater economic activity and adaptability to market needs than paid workers.

In 2005, the share of self-employed persons was 1.3% in farming families and 1.5% in non-farming families. As regards the farming population, this proportion had remained unchanged for the previous five years, whereas a slight fall (by 0.5 percentage point) was observed among members of non-farming families.

Minor fluctuations in the share of self-employment do not imply that the number of self-employed persons (working on a permanent basis) remained unchanged. Between 2000 and 2005, the number of such persons dropped by 6.4% (from 204 to 191) in farming families, and by 18.2% (from 280 to 229) in non-farming families.

The age structure of self-employed persons was more diverse than that of entrepreneurs, particularly with regard to farming families. Among self-employed members of farming families, persons aged 45-54 years accounted for 35.1% of the surveyed group, and those aged 35-44 years – for 34.6%. Despite the differences in the share of specific age groups, in 2005 the median age of self-employed persons was 43 years in farming families and 40 years in non-farming families, i.e. the same as in the case of entrepreneurs. Over the previous five years, the median age increased by three years in the farming population, and by one year in the non-farming population.

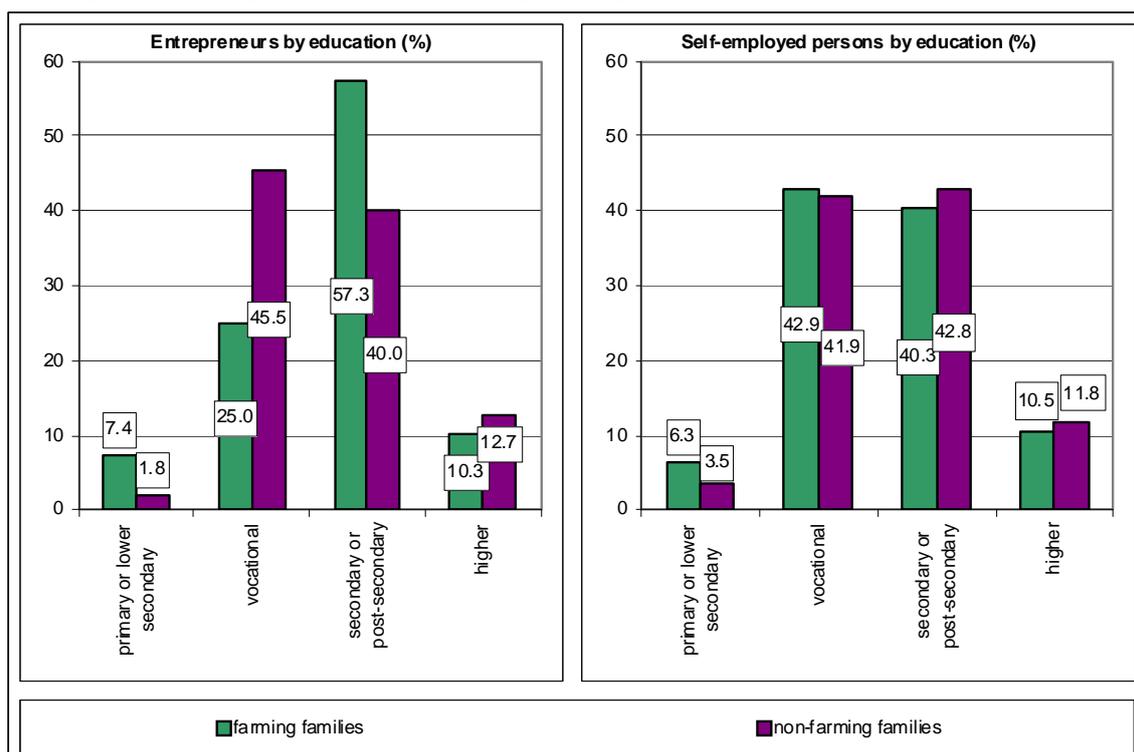
In 2005, both entrepreneurs and self-employed persons were characterised by a greater level of education than the rural population as a whole.

As regards entrepreneurs, the share of persons with at least secondary education was 67.6% in farming families and 52.7% in non-farming families.

Self-employed persons represented a little lower educational level than entrepreneurs. In 2005, the proportion of persons with secondary, post-secondary or higher education among members of farming and non-farming families was 50.8% and 54.6% respectively.

³⁴ A. Otłowska, P. Chmieliński, *Rozpowszechnienie nierolniczej działalności gospodarczej na obszarach wiejskich*, Conference proceedings: Ekonomiczne i społeczne uwarunkowania rozwoju polskiej gospodarki żywnościowej po wstąpieniu Polski do Unii Europejskiej, Pułtusk, 11-12 December 2006 r., p. 11.

Figure 8. Entrepreneurs and self-employed persons by level of education in 2005



Source: 2005 IAFE-NRI survey.

The significant share of persons with at least secondary education among self-employed members of rural families implies a minor proportion of those with primary education. The above data indicate that a high level of education determines labour market activity, which results in both self-employment and the employment of paid workers.

According to the IAFE-NRI survey, in 2005 pursuing an economic activity was much more widespread among men than among women. With regard to entrepreneurs from farming families, men accounted for 63.8% of the surveyed group, whereas the respective share in non-farming families was 73.6%. Similar relations were found for self-employed persons. The proportion of male members of farming and non-farming families was 62.3% and 72.9% respectively.

Summary and conclusions

The presented analysis suggests that in 2005 the rural population was younger than the urban population. It was reflected in a more favourable age structure of rural residents as well as in the median age over three years lower.

According to the 2005 IAFE-NRI survey, there were no major differences in age between the farming and non-farming population. In both groups, the median age was the same (36 years), although in farming families

the share of post-working age persons was 4 percentage points lower (19.0% in non-farming families).

In regional terms, in 2005 demographically the youngest population was found in the Central-Western and Northern macroregions, whereas the oldest – in the Central-Eastern macroregion.

Over the previous five years, the most significant changes were observed with regard to the pre-working age and working age population, as a consequence of a fall in the number of births and the 1980s youth bulge entering working age cohorts. For the previous decade, the share of the post-working age rural population showed no major changes, unlike in the case of the urban population.

Due to an increased number of young persons entering the working age population, in 2005 the demographic dependency ratio both for farming and non-farming families dropped on 2000. The highest dependency ratio was found in the Central-Eastern macroregion, and the lowest – in the Northern macroregion.

According to IAFE-NRI surveys, from the early 1990s the rural population was characterised by a rather balanced structure by sex, although there were more men in farming families and more women in non-farming families.

A detailed analysis of specific age groups broken down by sex indicated two important patterns. Firstly, in farming families there are much fewer women aged between 25 and 54 years than in other age groups. This results, among other things, from the fact that young women are reluctant to engage in agricultural work and tend to seek other career opportunities. Secondly, in non-farming families older age groups are characterised by a much higher number of women than that of men. It is rather frequent for elderly women to sell, lease or transfer their farms, thus becoming non-farming persons. Furthermore, a longer life expectancy of women as compared to men also contributes to higher feminisation ratios in the oldest cohorts.

According to the survey, in regions where agriculture provides the main activity for the rural population (the Central-Western and Northern macroregions) the number of women per 100 men is lower than in areas where paid off-farm employment is widespread (southern Poland).

A negative development observed in rural areas is that an increasing number of young people aged 18-34 years put off the decision to marry. The breakdown of traditional family ties will push down the number of births as the vast majority of children in Poland continue to be born in marriage. As regards the survey sample, more unmarried persons were found in farming families than in non-farming households, but over the previous five years in the non-farming

population the share of single men and women had increased at a much higher rate (more than double the figure) than in farming households.

Rural and urban areas significantly differ in the educational level of the population, although growing educational aspirations have been also observed in the rural population. In 2005, the share of persons with at least secondary education in the rural population was nearly half the figure for the urban population, whereas the respective proportion of persons with a university degree was more than three times lower. Compared to 2000, the share of university-educated persons in rural areas showed a twofold increase (from 2.4% to 5.1%).

According to the IAFE-NRI survey, there were no major differences in the level of education between farming and non-farming families. The highest share of persons with secondary, post-secondary or higher education was noted in southern Poland, whereas the lowest proportion – in western Poland.

The analysis of spatial differences in the educational level of the rural population demonstrated that the main factors contributing to increased educational aspirations of rural youth included non-agricultural activities in rural areas as a career choice as well as outward migration to urban areas or foreign countries.

In 2005, certain negative developments concerning economic activity were observed in the non-farming population. Specifically, the economic activity rate was two-thirds lower, and the unemployment rate four times higher than the respective figures for farming families.

At the same time, the farming population was characterised by different patterns of the unemployment rate relative to the educational level, compared to both non-farming families and the urban population. In the group in question, lower unemployment rates were related to lower levels of education, which largely resulted from hidden unemployment in agriculture.

Nearly one-fourth of the farming population combined farm work with non-agricultural employment. Such a situation was the most widespread in southern Poland, whereas it was relatively less frequent in the north and west of Poland.

According to the survey, farming families were characterised by a more favourable income situation than non-farming households. Income per farming family was three-fourths higher than the respective figure per non-farming family. As regards income per person, the gap between farming and non-farming families was nearly one-third in favour of the former. The above disparities in income between the farming and non-farming population result from the fact that

the share of unearned income in non-farming households was almost double the figure for farming families (38.5% against 20.7% respectively).

In 2005, the highest income per farming family was noted in the Central-Western macroregion, and the lowest – in the South-Eastern macroregion. As regards non-farming families, the highest income per family was found in the South-Eastern macroregion, was the lowest figure was recorded in the Central-Eastern macroregion.

The analysis of demographic characteristics of outward migration shows that it usually concerned young and educated people. In 2005, nine out of ten persons leaving rural areas represented mobility working age, whereas six out of ten migrants had secondary, post-secondary or higher education. In both farming and non-farming families, more women than men decided to leave rural areas, which determined the relatively high educational level of migrants as women tended to be better educated than men.

The level of education has a positive impact on economic activity of both the farming and non-farming population. Better educated farmers are capable of using production factors more efficiently³⁵, whereas persons with the highest levels of education are more active in adapting their skills and qualifications to labour market needs. IAFE-NRI surveys of socio-demographic characteristics of farm managers and of persons pursuing non-agricultural activities in rural areas confirm this notion.

According to surveys of socio-demographic features of farm managers, the group was characterised by a rather favourable age structure, primarily reflected in a low share of the post-working age population. The youngest farm managers were found in the Central-Western macroregion, and the oldest – in the South-Eastern macroregion. In 2005, the educational level of farm managers was slightly lower than that for the farming population as a whole (the proportion of persons with secondary, post-secondary or higher education was 1.7 percentage points lower).

The analysis of the educational level of farm managers and agricultural income indicated that in the case of university-educated managers income per farm was more than double the figure for those with primary education. Furthermore, the survey demonstrated a relationship between the educational level and the area of agricultural land (on average, managers with a university degree had 69.8% more agricultural land than those with primary education).

³⁵ Cf. B. Klepacki, *Sytuacja dochodowa rolników o różnym wykształceniu w okresie przemian gospodarczych*, *Wieś i Rolnictwo*, no. 2, IRWiR PAN, Warszawa 1997, p. 63.

According to the survey, there was a correlation between the educational level and labour market activity of persons pursuing economic activities, resulting in self-employment or hiring paid labour. In 2005, a high level of education was mostly found in the case of rural entrepreneurs from farming families as nearly seven out of ten had secondary, post-secondary or higher education. A lower share of persons with such education (slightly over 50%) was noted among self-employed persons, but it was still double the proportion for the rural population as a whole.

In conclusion, the data presented in this paper confirm the notion that socio-demographic characteristics, particularly age and the level of education, may have a significant effect on development and improvement of living conditions of the rural population.

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Annex

Table I. Rural population by age and sex in 2005

Macroregion	Percentage share of the											
	farming population						non-farming population					
	by age			by sex			by age			by sex		
	pre-working	working	post-working	men	women		pre-working	working	post-working	men	women	
Total	22.1	62.7	15.2	50.8	49.2		22.2	58.8	19.0	49.1	50.9	
Central-Western	24.2	63.7	12.1	52.1	47.9		25.3	57.3	17.3	49.5	50.5	
South-Eastern	22.7	61.8	15.5	51.0	49.0		17.3	53.2	29.4	48.1	51.9	
South-Eastern	20.3	62.2	17.5	50.1	49.9		24.3	59.3	16.4	49.7	50.3	
South-Western	19.7	67.3	13.0	50.7	49.3		22.0	60.4	17.6	48.1	51.9	
Northern	25.0	63.1	12.0	51.1	48.9		22.8	62.9	14.3	50.0	50.0	

Source: 2005 IAFE-NRI survey.

Table II. Rural population by level of education in 2005

Macroregion	Percentage share of the population aged 15 or over with education ^a											
	from farming families						from non-farming families					
	primary or lower secondary	vocational	secondary or post-secondary	higher	no education		primary or lower secondary	vocational	secondary or post-secondary	higher	no education	
Total	33.8	37.4	23.2	5.0	0.6		35.6	36.1	22.5	5.3	0.5	
Central-Western	30.7	44.4	21.2	3.6	0.1		37.8	39.2	18.1	4.3	0.6	
Central-Eastern	38.1	33.5	22.6	4.9	0.9		46.0	26.7	21.8	5.1	0.4	
South-Eastern	31.9	37.9	24.0	5.5	0.7		24.6	38.7	29.4	7.0	0.3	
South-Western	26.5	41.1	27.2	5.2	0.0		33.4	38.3	22.0	5.7	0.6	
Northern	33.5	38.3	22.5	5.1	0.6		39.0	39.2	17.6	3.7	0.5	

^a Completed education.

Source: 2005 IAFE-NRI survey.

Table III. Demographic dependency ratios of the rural population in 2005

Macroregion	Demographic dependency ratios ^a			
	youth dependency	old-age dependency	youth dependency	old-age dependency
	farming families		non-farming families	
1996	48.9	27.2	55.5	36.3
2000	43.9	24.6	48.9	36.1
2005	35.2	24.1	37.8	32.3
Central-Western	37.9	18.9	44.2	30.2
Central-Eastern	36.8	25.0	32.5	55.3
South-Eastern	32.7	28.1	41.0	27.7
South-Western	29.3	19.4	36.4	29.2
Northern	39.6	18.9	36.2	22.7

^a The number of pre-working age or post-working age persons per 100 working age persons.

Source: 2005 IAFE-NRI survey.

Table IV. Unemployment rate and economic activity rate of the rural population in 2005

Macroregion	Unemployment rate ^a (%)			Economic activity rate ^b (%)		
	farming families	non-farming families	rural families, total	farming families	non-farming families	rural families, total
Total	7.5	30.2	16.0	80.6	49.0	65.0
Central-Western	6.1	27.2	13.1	75.7	46.5	62.6
Central-Eastern	8.2	29.5	13.2	76.0	41.7	63.7
South-Eastern	8.6	23.3	13.3	87.1	52.0	71.6
South-Western	5.4	30.2	19.3	85.9	51.1	62.2
Northern	4.2	40.2	27.7	78.2	52.2	59.0

^a The unemployment rate was calculated as the ratio of unemployed persons (in IAFE-NRI surveys the category includes those registered in labour offices or declared as job-seekers) to the economically active population, i.e. workers and unemployed persons.

^b The economic activity rate is the share of economically active persons in the total population (aged 15 or over).

Source: 2005 IAFE-NRI survey.

Table V. Outward migration^a by age in 2005

Macroregion	Percentage share of outward migrants by age										Median age ^b of outward migrants from		
	from farming families					from non-farming families							
	pre-working age	working age		post-working age	pre-working age	working age		post-working age	mobility	non-mobility	post-working age	farming families	non-farming families
		mobility	non-mobility			mobility	non-mobility						
Total	0.8	89.4	8.2	1.6	1.1	92.8	4.6	1.4	27	27	27	27	
Central-Western	3.8	86.5	5.8	3.8	0.0	96.4	3.6	0.0	27	27	27	27	
Central-Eastern	0.4	89.2	8.4	2.0	1.1	93.5	4.3	1.1	28	28	26	26	
South-Eastern	0.8	89.8	8.6	0.8	0.0	94.0	6.0	0.0	28	28	26	26	
South-Western	0.0	93.5	6.5	0.0	2.3	89.8	5.7	2.3	29	29	28	28	
Northern	0.0	90.0	10.0	0.0	1.8	92.9	1.8	3.6	26	26	29	29	

^a Persons included in the 2000 survey who were staying in urban areas or abroad during the 2005 survey (excluding military service).

^b The median age divides the surveyed group into halves: 50% of the population under the median age, and 50% of the population over the median age.
 Source: 2005 IAFE-NRI survey.

Table VI. Area of agricultural land and income from agricultural activities per farm by level of education of the farm manager^a in 2005

Specification	Education														
	total					agricultural education					non-agricultural vocational education or no vocational education				
	number of managers	area of agricultural land per farm (ha)	income per family (PLN thousand)	number of managers	area of agricultural land per farm (ha)	income per family (PLN thousand)	number of managers	area of agricultural land per farm (ha)	income per family (PLN thousand)	number of managers	area of agricultural land per farm (ha)	income per family (PLN thousand)	number of managers	area of agricultural land per farm (ha)	income per family (PLN thousand)
Primary or lower secondary	830	8.2	13.9	-	-	-	830	8.2	13.9	830	8.2	13.9	830	8.2	13.9
Vocational	1473	9.9	18.4	562	13.6	28.0	911	7.7	12.6	911	7.7	12.6	911	7.7	12.6
Secondary or post-secondary	650	12.6	25.4	235	16.6	38.5	415	10.4	18.0	415	10.4	18.0	415	10.4	18.0
Higher	117	13.9	35.1	27	25.3	94.0	90	10.5	17.4	90	10.5	17.4	90	10.5	17.4

^a The table includes farm managers working on the farm on a permanent full-time or part-time basis.

Source: 2005 IAFE-NRI survey.