# Demographic determinants of the activity of farms in Poland in the aquisition of European Union funds in the years 2004-2006

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# DEMOGRAPHIC DETERMINANTS OF THE ACTIVITY OF FARMS IN POLAND IN THE ACQUISITION OF EUROPEAN UNION FUNDS IN THE YEARS 2004–2006

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**ABSTRACT.** Out of the several assistance measures of the European Union orientated towards the development of agriculture, there are two in which demographic criteria have been set for the beneficiaries, viz. support for young farmers (applications can be submitted by farmers up to 40 years old) and structural pensions (eligible farmers are of pre-retirement age: from 55 to the start of retirement age). The number of applications processed under those measures in the years 2004–2006 (the actual absorption level) as against the total number of young farmers and those of pre-retirement age (the potential absorption level) was adopted as a basis for a spatial analysis and assessment of the use of the EU funds in those fields. Indices constructed on the basis of the number of applications per 1,000 farm operators, both young and of pre-retirement age, showed there to be wide spatial differences. It was shown that the lowest activity of farms in this respect was characteristic of those in south-eastern Poland. In turn, the measures determined by the demographic structure of farmers were the most popular in the voivodeships of Kujavia-Pomerania and Wielkopolska. Such a spatial distribution contributes to a further deepening of regional disparities in Polish agriculture.

**KEY WORDS:** age structure of farmers, setting-up of young farmers, structural pensions, agriculture, Poland.

### INTRODUCTION

Poland's membership of the European Union has given the country's agriculture a strong impulse for modernisation and development. In the years 2004–2006, the Common Agricultural Policy made itself felt not only in direct payments, but also in the implementation of two programmes: the Rural

Development Programme (RDP for short; Plan Rozwoju... 2004) and the Sectoral Operational Programme "Restructuring and Modernisation of the Food Sector and Rural Development" (SOP\_Agri for short; Sektorowy Program... 2004). Those programmes were operational documents drawn up under the National Development Plan 2004–2006, which defined the most important objectives and priorities of Poland's economic development after the country's accession to the European Union.

Launched within the programmes were several measures targeted at farms as beneficiaries, viz.: "Investment on farms", "Setting-up of young farmers", "Diversification of agricultural and agriculture-related activity to ensure a diversity of ventures or alternative sources of income", and "Development and improvement of agriculture-related technical infrastructure" (under the SOP\_Agri), as well as "Structural pensions", "Support for non-commercial farms", "Support for agricultural activity in less-favoured areas", "Support for agri-environmental ventures and improvement of animal welfare", "Afforestation of farmland", "Adjustment of farms to EU standards", and "Groups of agricultural producers" (under the RDP; Rudnicki 2007). The present article offers an analysis of only two of those measures, whose beneficiaries were determined using demographic criteria, viz.:

*A. Setting-up of young farmers.* Under this measure, the targets of financial assistance were young farmers (up to 40 years of age), which was supposed to facilitate the taking over of holdings by new, well-prepared operators. The assistance covered the purchase of both, fixed and current assets necessary to start production. Help was also granted in the form of bonuses (50 thous. zlotys, with the EU share of up to 75% of the total eligible cost) for those who began to run their own farm for the first time and met the required conditions (e.g. agricultural education).

*B. Structural pensions.* The launching of this measure was intended to accelerate the process of generational exchange among farm operators and improve farm profitability (Rudnicki 2004). Support for early retirement helped to enhance the efficiency of the agrarian structure through the takeover of farms by younger persons well-prepared for the farming occupation. The takeover also improved the economic viability of the farms. The measure was addressed to farmers over 55 years of age but not yet of retirement age, who alienated their land permanently or in the form of at least a 10-year lease, and who practised farming for at least the last 10 years (and belonged to an agricultural social security scheme for at least five years). Farms were usually alienated to enlarge other holdings, or went to a successor as a whole. The basic level of a structural pension was established at 210% of the lowest old-age pension (which amounted to 552.63 zlotys in 2004), and it could be raised if other conditions were satisfied.

A structural pension is paid monthly for a period of up to 10 years (up to the beneficiary reaching retirement age).

The article relied on the data from the 2002 Agricultural Census (concerning the age structure of farm operators) and the System of Managerial Information of the Agency for Restructuring and Modernisation of Agriculture (AR&MA) (concerning the number of applications processed under the measures analysed). An analysis of spatial differences was carried out by voivodeship (Tables 1 and 2) and by the 314 AR&MA Poviat Offices (Figs 1–6).

# AGE STRUCTURE OF OPERATORS OF INDIVIDUALLY HELD FARMS

By the statistical definition of the Central Statistical Office, a farm operator is a natural person (or group of persons), an artificial person, or an organisational unit with no artificial personality that is an actual land user, irrespective of whether he/she or it is an owner, tenant, or holds some other title (Podstawowe informacje... 2003). Given the criterion of participation in the EU assistance measures, the basis of analysis was the number of operators of individually held units of over 1 ha of farmland. The 2002 census showed there to be 1,897,100 such persons. By region, their number varied between 30.9 thous. in Lubuska Land to 282.3 thous. in Mazovia. In turn, by the AR&MA Poviat Offices, the lowest number of farm operators amounted to about 1 thous. in the poviats of Lobez in West Pomerania (974) and Słubice in Lubuska Land (1,010), while the highest figures exceeded 25 thous. in the poviats of Cracow (25.5 thous.) and Kielce (27.0 thous.).

The age structure of operators of individually held farms in Poland is illustrated in Table 1, in which seven age groups are distinguished, viz.: below 29 years of age, 30-39, 40-49, 50-54, 55-59, 60-64, and over 65, aggregated in three age categories: young (up to 40 years old), middle-aged (40-59) and older farmers (over 60; see Table 1).

The present analysis covered only two age groups of operators of individually held farms: young farmers (up to 40 years old) and those of pre-retirement age (55–64).

Young farmers (age groups of up to 29 and 30–39; 40 years of age is the upper limit of eligibility for the SOP "Support for young farmers" measure) accounted for an average of 29.3% of the total number of individual operators of holdings (556.8 thous. persons). Their high proportion is indicative of the efficiency of the generational exchange process on farms and helps to enhance the innovativeness of agriculture. By region, the proportion ranged from under 24% (Subcarpathia 23.0% and Silesia 23.9%) to over 34% (Kujavia-Pomerania 34.4% and Wielko-

Voivodeship	Total number of farm operators (thous.)	of which (%)									
		young farmers – aged $\leq 40$			middle-aged farmers – aged 40–59			older farmers – aged $\geq 60$			
		total	of which		1	of which			1	of which	
			≤29	30–39	total	40-49	50–54	55–59	total	60–64	≥65
Dolnośląskie	80.3	27.4	8.4	19.1	57.7	35.6	15.5	6.7	14.9	4.6	10.2
Kujawsko-pomorskie	77.6	34.4	10.6	23.9	57.3	36.2	14.5	6.6	8.3	3.5	4.7
Lubelskie	216.9	31.4	9.7	21.7	52.2	31.5	13.3	7.4	16.3	5.4	10.9
Lubuskie	30.9	26.5	7.9	18.6	55.1	33.1	14.7	7.3	18.5	5.6	12.9
Łódzkie	160.5	30.7	9.3	21.4	54.4	32.5	14.0	8.0	14.8	5.0	9.9
Małopolskie	211.1	27.7	8.3	19.4	48.3	27.9	12.4	8.0	24.0	7.3	16.8
Mazowieckie	282.3	30.1	9.1	21.1	53.6	32.3	13.8	7.6	16.2	5.3	11.0
Opolskie	40.3	32.7	9.2	23.5	51.5	32.1	12.9	6.5	15.8	6.1	9.7
Podkarpackie	192.2	23.0	6.2	16.8	47.5	26.2	12.8	8.5	29.5	8.6	20.9
Podlaskie	97.2	33.3	9.9	23.4	49.6	30.1	12.0	7.5	17.0	5.2	11.8
Pomorskie	50.7	33.1	10.0	23.1	55.6	34.9	14.2	6.4	11.4	4.3	7.0
Śląskie	107.1	23.9	6.1	17.8	51.7	29.9	13.6	8.2	24.4	7.8	16.6
Świętokrzyskie	122.1	25.6	7.4	18.2	52.0	30.2	13.8	7.9	22.4	6.3	16.0
Warmińsko-mazurskie	50.0	33.8	10.0	23.9	54.8	35.0	13.5	6.2	11.4	4.2	7.2
Wielkopolskie	138.9	34.5	10.9	23.6	55.7	34.6	14.4	6.8	9.8	3.9	5.8
Zachodniopomorskie	39.0	26.9	7.8	19.2	59.6	36.8	15.6	7.3	13.4	4.5	8.9
Poland – total	1897.1	29.3	8.7	20.6	52.6	31.4	13.6	7.6	18.1	5.8	12.3

Table 1. Age structure of operators of individually held farms, 2002.

Source: own compilation on the basis of *Basic information from the 2002 National Census of the Population and Housing and the Agricultural Census* published by individual Voivodeship Statistical Offices.

polska 34.5%; cf. Table 1). This age group of farm operators showed wide spatial differences by poviat. The lowest percentages of farm operators, below 20%, were recorded in 11 poviats located in five voivodeships: Subcarpathia (the poviats of Brzozów 15.4%, Krosno 17.0% and Tarnobrzeg 17.1%), Silesia (Żywiec 15.1%, Będzin 19.0% and Bielsko-Biała 19.9%), Świętokrzyska Land (Skarżysko-Kamienna 11.4%, Starachowice 14.2%, and Końskie 16.5%), Małopolska (Chrzanów 15.4%), and Mazovia (Szydłowiec 15.1%). In turn, the highest figures, in excess of 40%, were found in the poviats of Kartuzy, 40.2% (Pomerania); Żuromin, 42.7% (Mazovia); Kolno, 42.9% (Podlasie); as well as Rawicz, 40.8%, and Grodzisk, 42.2% (Wielkopolska; cf. Fig. 1).

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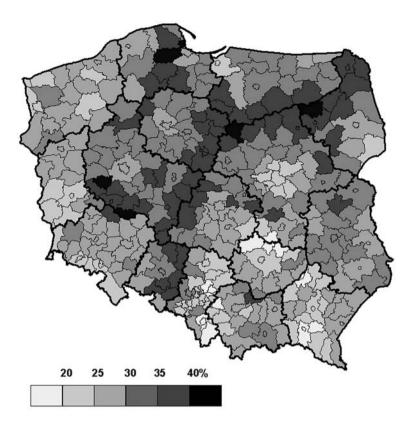


Fig. 1. Operators up to 40 years old as a proportion of the total number of operators of individually held farms, 2002.

Source: as in Table 1

By the criterion of pre-retirement age, an eligibility condition in the structural pensions programme under the RDP, the research covered 253.1 thous. farm operators aged 55–64 (from close to 4.0 thous. in Lubuska Land to 36.2 thous. in Mazovia). Their average proportion in the total number of farm operators in Poland was 13.3%, varying by region from 10–11% in Kujavia-Pomerania (10.1%), Pomerania (10.7%), Warmia-Mazuria (10.5%) and Wielkopolska (10.7%) to more than 15% in Małopolska (15.3%), Silesia (16.0%) and Subcarpathia (17.1%; cf. Table 1).

By poviat, minimum values of the index (7–8%) were recorded in the poviats of Nowy Dwór (Pomerania), Iława (Warmia-Mazuria) as well as Grodzisk, Kościan and Rawicz (all three in Wielkopolska). In turn, the highest proportions of farmers of pre-retirement age were found to occur in two poviats of Subcarpathia: Brzozów (20.2%) and Tarnobrzeg (20.3%).

A low proportion of farm operators aged 55–64 (below 10%) occurred in 55 poviats lying as a rule in the voivodeships of Lower Silesia (5 poviats), Kujavia-Pomerania (10 poviats), Mazovia (4 poviats), Pomerania (8 poviats), Warmia-Mazuria (7 poviats), and Wielkopolska (14 poviats). In the remaining voivodeships such low figures were recorded only sporadically (Lubuska Land: Wschowa poviat, Małopolska: Proszowice poviat, Opole: Prudnik poviat, Podlasie: Suwałki and Sejny poviats, West Pomerania: Pyrzyce and Goleniów poviats), while in five regions the variable was found to be altogether absent (Lubin, Łódź, Subcarpathia, Silesia and Świętokrzyska Land; cf. Fig. 2).

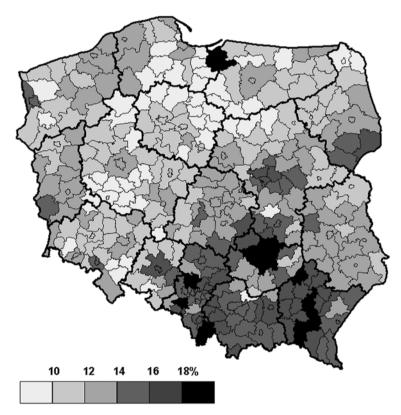


Fig. 2. Operators of pre-retirement age (55–64) as a proportion of the total number of operators of individually held farms, 2002.

Source: as in Table 1

A high proportion of people of pre-retirement age in the total number of operators of individually held farms – over 16%, indicative of an unfavourable process of deformation of the demographic structure in agriculture, was recorded

in 39 poviats, mostly those situated in the voivodeships of south-eastern Poland: Małopolska (7 poviats), Subcarpathia (16 poviats), Silesia (7 poviats), and Świętokrzyska Land (3 poviats). There were also single poviats with such characteristics in the voivodeships of Łódź (Opatów poviat), Opole (Opole poviat) and Podlasie (Hajnówka poviat; cf. Fig. 2).

The above analysis revealed primarily a lasting legacy of the historical factor contributing to spatial differences in the demographic structure of Polish agriculture. This is largely shown by a marked contrast between areas in the former Austrian partition and those in the former Prussian sector and interwar Poland with regard to the proportions of young farm operators (24.7% and 33.3%, respectively) and those of pre-retirement age (16.5% and 11.0%, respectively). Another finding was the blurring of differences in the age structure of farmers between areas of the former Russian sector (those up to 40 years old, 30.4%; those aged 55–64, 13.0%) and the so-called Regained Territories acquired by Poland in the west after the Second World War (farmers up to 40 years old, 29.4%; those aged 55–64, 11.7%).

# THE SOP\_AGRI MEASURE "SETTING-UP OF YOUNG FARMERS"

Over the years 2004–2006, a total of 14,341 persons (from 215 in Lubuska Land to 2,347 in Mazovia; cf. Table 2) availed themselves in Poland of the measure offering an easier start to young farmers (up to 40 years old). An analysis by the AR&MA Poviat Offices showed there to be no applications in Tatra poviat (Małopolska) and single ones in the poviats of Chrzanów (Małopolska), Bieruń-Lędziny (Silesia) and Skarżysko-Kamienna (Silesia), while their number exceeded 200 in the poviats of Łowicz (Łódź voivodeship, 202 applications processed), Opole (Lublin voivodeship, 247) and especially Grójec (Mazovia, 388).

Under the "Setting-up of young farmers" measure, the national number of applications processed per 1,000 operators of individually held farms aged up to 40 averaged 25.8. This index attained the lowest values in areas with a fragmented size structure of farms responsible for unfavourable parameters in the economic assessment of agriculture, mostly in the voivodeships of south-eastern Poland: Małopolska (9.1) and Subcarpathia (8.4). In turn, high proportions of operators securing EU means for the setting-up of young farmers were characteristic of voivodeships with a favourable agrarian structure and a high level of commercial farming, viz. Podlasie (35.7), Pomerania (34.2), Warmia-Mazuria (41.4), Wielkopolska (36.4), West Pomerania (41.2), and especially Kujavia-Pomerania (53.9).

	Setting up farm		Structura	l pensions	Effect of demographic factor		
Voivodeship	number of applications processed	$\begin{array}{l} \text{applications} \\ \text{per 1,000} \\ \text{farm} \\ \text{operators} \\ \leq 40 \text{ years} \\ \text{old} \end{array}$	number of applications processed	applications per 1,000 farm operators aged 55–64	level – normalised mean	structure – types of activity *	
Dolnośląskie	610	27.7	3007	331.2	0.61	4	
Kujawsko-pomorskie	1 440	53.9	4160	528.7	1.51	4	
Lubelskie	1 547	22.7	5501	197.8	-0.23	1	
Lubuskie	215	26.3	556	140.0	-0.42	3	
Łódzkie	1 306	26.5	5886	283.3	0.34	4	
Małopolskie	531	9.1	2374	73.5	-1.04	1	
Mazowieckie	2 347	27.6	9416	260.0	0.23	4	
Opolskie	401	30.4	1558	306.2	0.43	4	
Podkarpackie	372	8.4	2608	79.3	-0.91	1	
Podlaskie	1 156	35.7	4392	355.8	0.76	4	
Pomorskie	574	34.2	1579	290.1	0.23	4	
Śląskie	340	13.3	1514	88.2	-0.82	1	
Świętokrzyskie	624	20.0	3489	200.4	-0.01	1	
Warmińsko-mazurskie	700	41.4	1840	351.9	0.58	4	
Wielkopolskie	1 745	36.4	4909	329.0	0.41	4	
Zachodniopomorskie	433	41.2	1307	284.7	0.59	4	
Poland – total	14 341	25.8	54096	213.7	0.00	-	

Table 2. Demographic determinants of the activity of farms in the acquisition of EU funds – selected assessment elements.

\* type: 1. Below mean activity levels in both, setting up young farmers and structural pensions

2. Below mean activity level in setting up young farmers and above mean activity level in structural pensions

3. Above mean activity level in setting up young farmers and below mean activity level in structural pensions

4. Above mean activity levels in both, setting up young farmers and structural pensions

Source: own compilation on the basis of data of the Agency for Restructuring and Modernisation of Agriculture's System of Managerial Information and the Central Statistical Office's *Basic information from the 2002 National Census of the Population and Housing and the Agricultural Census.* 

In turn, by the AR&MA Poviat Offices, the index ranged from zero applications in Tatra poviat (Małopolska) to more than 100 applications processed in the poviats of Żnin in Kujavia-Pomerania (104.8), Malbork in Pomerania (130.1) and Środa in Wielkopolska (153.5).

Low figures (under 10 applications/1,000 young farmers) were registered in 61 poviats, with their highest number in the voivodeships of Małopolska (15 poviats), Subcarpathia (14 poviats) and Silesia (11 poviats). No poviats

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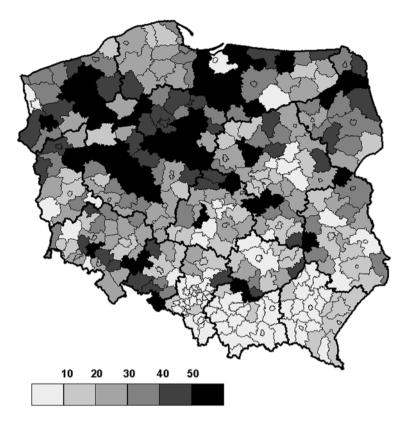


Fig. 3. Applications for the setting-up of young farmers as a proportion of the total number of operators of individually held farms up to 40

Source: as in Table 2

with such a low activity of young farmers in the acquisition of EU means were recorded in four voivodeships: Kujavia-Pomerania, Podlasie, Pomerania, and Wielkopolska. A high level of the index (more than 50 applications) was found in 54 poviats, largely in the voivodeships of north-western Poland: Kujavia-Pomerania (10 poviats), Wielkopolska (10 poviats), and West Pomerania (6 poviats; cf. Fig. 3).

## THE RDP MEASURE "STRUCTURAL PENSIONS"

Over the years 2004–2006, a total of 54.1 thous. individually held farms took part in the structural pensions programme in Poland, ranging from 0.6 thous. in Lubuska Land to 9.4 thous. in Mazovia (cf. Table 2). By the AR&MA

Poviat Offices, there were wide spatial differences in the figure, from under 20 applications in the poviats of Chrzanów in Małopolska (11), Skarżysko-Kamienna in Świętokrzyska Land (14), and Sulęcin (17) and Słubice (19) in Lubuska Land to over 500 applications processed in the poviats of Jędrzejów in Świętokrzyska Land (506), Ostrołęka in Mazovia (539), Białystok in Podlasie (548), Zamość in Lublin (570) and Płock in Mazovia (726; in the last two poviats the number of applications was higher than in entire Lubuska Land).

On average, 213.7 applications for structural pensions per 1,000 farm operators of pre-retirement age were processed over the study period in Poland. This index of the activity of farmers aged 55–64 varied from under 100 in the voivodeships of Małopolska (73.5) and Subcarpathia (79.3) to more than 500 in Kujavia-Pomerania (528.7; cf. Table 2). By the AR&MA Poviat Offices, the difference ranged from 19 applications in Chrzanów poviat in Małopolska to 873 in Wąbrzeźno poviat in Kujavia-Pomerania.

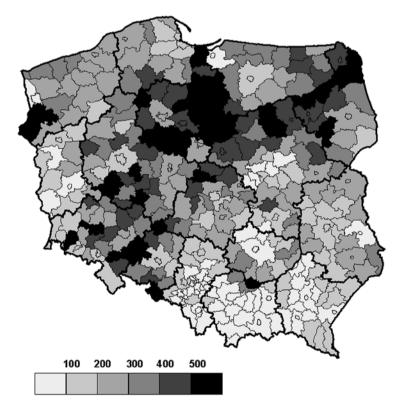


Fig. 4. Applications for structural pensions as a proportion of the total number of operators of individually held farms aged 55–64.

Source: as in Table 2

A low level of the index (under 100) was recorded in 48 poviats, mostly in south-eastern Poland: in the voivodeships of Małopolska (15 poviats), Subcarpathia (11 poviats), and Silesia (10 poviats). In turn, high figures were registered in 43 poviats, in the voivodeships of Lower Silesia (5 poviats), Podlasie (5 poviats), Wielkopolska (5 poviats), and especially Kujavia-Pomerania (13 poviats; cf. Fig. 4).

An analysis of this spatial distribution, including the low number of applications for structural pensions processed in south-eastern Poland, justifies the statement that the structural pensions programme implemented over the years 2004–2006 contributed to a further widening of differences in the size structure of farms in Poland.

# LEVEL AND STRUCTURE OF THE IMPACT OF THE DEMOGRAPHIC FACTOR

To synthesise the data on demographic determinants in the acquisition of EU funds in agriculture, the two indices/diagnostic variables employed (setting-up of young farmers per 1,000 farm operators aged up to 40; and structural pensions per 1,000 farm operators of pre-retirement age) were standardised and presented in the form of normalised means (statistical distributions have the means equal to zero, while their variances and standard deviations are equal to unity; Racine, Raymond 1977). This, in turn, provided a basis for determining the level and structure of the impact of the demographic factor on the use of EU funds in agriculture.

The level of impact of the demographic factor on the activity of farms in the acquisition of EU funds was determined on the basis of the normalised mean of the above diagnostic variables. Low values of the index thus constructed were mostly recorded in southern Poland, in the voivodeships of Małopolska (-1.04), Subcarpathia (-0.91), and Silesia (-0.82; cf. Table 2). It was there that the greatest spatial concentration of poviats with the index under -1.00 was found (a total of 32 poviats, with 13 in Małopolska, 8 in Subcarpathia, and 6 in Silesia). So low values of the index were only recorded in 5 poviats situated elsewhere: Żary (Lubuska Land), Skarżysko-Kamienna (Mazovia), Police (West Pomerania), and Szydłowiec and Warsaw (Mazovia; cf. Fig. 5).

In turn, a high level of absorption of EU means reflecting great activity in this field of both, young farmers and those of pre-retirement age, was recorded in the voivodeships of Lower Silesia (0.61), Kujavia-Pomerania (1.51), Podlasie (0.76), Warmia-Mazuria (0.58), and West Pomerania (0.59; cf. Table 2). By poviat, high figures – over 1.00 – were found in as many as 74 poviats, mostly in Kujavia-Pomerania (15 poviats) and Wielkopolska (11 poviats; cf. Fig. 5).

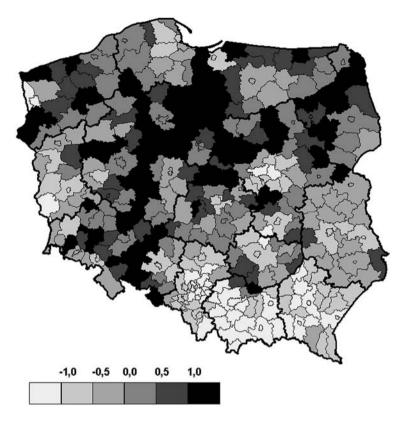


Fig. 5. Effect of the demographic factor on the activity of farms in the acquisition of EU funds (normalised mean)

Source: as in Table 2

Apart from the general level of the demographically determined activity of farms in the acquisition of EU means, an analysis was also made of the structure of this phenomenon. Assuming the average values of the two diagnostic variables as a basis of delimitation, four types of activity were distinguished, viz.:

1. Below the mean activity levels in both, the setting-up of young farmers and structural pensions. This type reflected the average situation in the voivodeships of Lublin, Małopolska, Subcarpathia, Silesia, and Świętokrzyska Land (cf. Table 2). By the AR&MA Poviat Offices (101 poviats in all), it was only absent from Kujavia-Pomerania and Warmia-Mazuria, while the greatest number of units of this type were found to occur in Małopolska (17 poviats), Mazovia (10 poviats), Subcarpathia (21 poviats), and Silesia (16 poviats; cf. Fig. 6).

- 2. Below the mean activity level in the setting-up of young farmers and above the mean activity level in structural pensions. This type was not recorded at the level of voivodeships (cf. Table 2). By poviat, its greatest concentrations were found in the voivodeships of Lower Silesia (6 poviats), Łódź (8 poviats), Mazovia (11 poviats), and Warmia-Mazuria (5 poviats), while it was absent from Kujavia-Pomerania, Małopolska, Silesia, and Wielkopolska.
- 3. Above the mean activity level in the setting-up of young farmers and below the mean the activity in structural pensions. This type is characteristic of the average situation in Lubuska Land (cf. Table 2). It occurs in 23 poviats, mostly in the voivodeships of Lublin (5 poviats), Lubuska Land (4 poviats), Mazovia (4 poviats), and West Pomerania (3 poviats) (cf. Fig. 6).

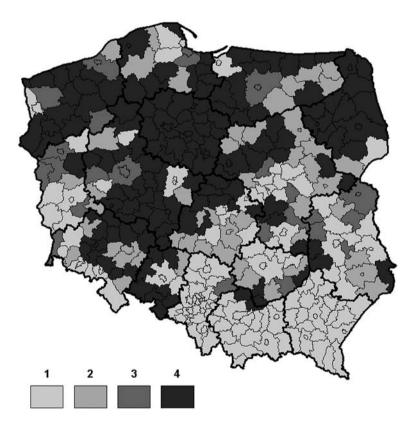


Fig. 6. Types of activity of farm operators in the fields of setting-up of young farmers and structural pensions

Source: as in Table 2

4. Above the mean activity levels in both, the setting-up of young farmers and structural pensions. This type reflected the average situation in the voivodeships of Lower Silesia, Kujavia-Pomerania, Łódź, Mazovia, Opole, Podlasie, Pomerania Warmia-Mazuria, Wielkopolska, and West Pomerania (cf. Table 2). By poviat, it was found the most frequently in Kujavia-Pomerania (18 poviats) and Wielkopolska (23 poviats; (cf. Fig. 6).

## CONCLUSIONS

The conducted analysis showed that the age structure of operators of individually held farms in Poland was highly diversified spatially. Areas with a fragmented size structure of farms, a poor level of their technical equipment, and a low level of commercial farming – as a rule owing to out-migration of young people – display an unfavourable demographic structure in agriculture. This situation can be found in south-eastern Poland, in the voivodeships of Małopolska, Silesia, Świetokrzyska Land, and especially Subcarpathia (23.0% of young farm operators, up to 40 years old, and 29.5% of older ones, over 60; cf. Table 1). In turn, a favourable population situation is characteristic of Kujavia-Pomerania and Wielkopolska; registered here were the highest proportions of young farmers of up to 40 years old (ca. 34.5%) on the one hand, and the lowest ones of older farm operators, over 60, on the other (8.3% and 9.8%, respectively; cf. Table 1). This area is ranked the highest in terms of the agrarian, technical and production features of agriculture in Poland (Bański 2007). It was shown that a high, historically developed level of agriculture had a greater influence on the participation of farmers in the demographically determined EU assistance measures (the actual absorption level of EU funds in setting-up of young farmers and structural pensions) than the number of farmers eligible by the age criterion (the number of farm operators aged up to 40 and 55–64 – the potential absorption level of EU funds in setting-up of young farmers and structural pensions). This regularity is best exemplified by Kujavia-Pomerania, a voivodeship standing out for the highest number of applications processed per 1,000 individually held farms in Poland, both in the setting-up of young farmers (54 applications) and in structural pensions (529; cf. Table 2).

## REFERENCES

- **Bański, J.** 2007: *Geografia rolnictwa Polski* (Geography of Polish agriculture). PWE, Warszawa, pp.196–202.
- **Plan Rozwoju Obszarów Wiejskich.** 2004 (Rural Development Programme). Ministerstwo Rozwoju Wsi i Rolnictwa, Warszawa.
- **Podstawowe informacje** z Narodowego Spisu Ludności i Mieszkań oraz Powszechnego Spisu Rolnego 2002. 2003 (Basic information from the 2002 National Census of the Population and Housing and the Agricultural Census). GUS, Warszawa.
- Racine, J.B. and Reymond, H. 1977: *Analiza ilościowa w geografii* (Quantitative analysis in geography). PWN, Warszawa.
- Rudnicki, R. 2004: Renty strukturalne jako nowy instrument kształtowania struktury obszarowej indywidualnych gospodarstw rolnych w Polsce (Structural pensions as a new instrument shaping the size structure of individually held farms in Poland). [In:] Parysek J. (ed.), *Rozwój regionalny i lokalny w Polsce w latach 1989–2002*, UAM, Bogucki Wydawnictwo Naukowe, Poznań, 275–288.
- Rudnicki, R. 2007: Zróżnicowanie regionalne aktywności gospodarstw rolnych w Polsce w zakresie pozyskiwania funduszy Unii Europejskiej w latach 2004–2006 (Regional differences in the activity of farms in Poland in the acquisition of European Union funds over the years 2004–2006). [In:] *Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu*, v. 9, no. 1, Warszawa–Poznań–Kraków, pp. 416–422.
- Sektorowy Program Operacyjny "Restrukturyzacja i modernizacja sektora żywnościowego i rozwój obszarów wiejskich". 2004: *Narodowy Plan Rozwoju na lata* 2004–2006 (Sectoral Operational Programme "Restructuring and Modernisation of the Food Sector and Rural Development": National Development Plan 2004–2006). Ministerstwo Rolnictwa i Rozwoju Wsi, Warszawa.

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