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SPATIAL DIFFERENCES IN THE USE OF EUROPEAN FUNDS BY AGRICULTURAL HOLDINGS IN POLAND IN THE YEARS 2002-2010

Abstract: The article offers an analysis of the spatial differences in the volume of EU financial support, 90.5 billion zlotys, absorbed by agricultural holdings in Poland over the years 2002-2010. The variables describing both, the total means obtained (per ha AL – Fig. 1, per farm – Fig. 2) and those aiming exclusively at the modernisation of agriculture (in the percentage of total funds – Fig. 3, applications in the percentage of farms – Fig. 4), were presented jointly in the form of a normalised mean and defined as a synthetic index of absorption of financial support by agricultural holdings (Fig. 5). The analysis showed there to be wide territorial differences in the amount and structure of the EU funds acquired by agricultural holdings.

Key words: Common Agricultural Policy, financial support of agricultural holdings, development of agriculture, Poland.

Introduction

Poland's membership of the European Union and the consequent inclusion of Polish farms in a wide array of Common Agricultural Policy (CAP) instruments has given the country's agriculture great possibilities of development. To analyse this influence, the regional sums of assistance obtained by farmers in the years 2002-2010 were calculated (excluding the CAP funds not directed to farms). The scientific goal of the research is to evaluate the spatial diversity of these payments. In the work there was assumed a hypothesis that these differences result both from the general level of agriculture and the natural and non-natural (historical and urbanization-related) conditions.

The financial means obtained by agricultural holdings were taken to embrace direct payments (granted per ha agricultural land, or AL) and those resulting from farm participation in several operational programmes involving the implementation of concrete modernisation measures. The time span analysed was the first financial period

of Poland's EU membership (2002-2004 – the Special Pre-Accession Programme for Agriculture and Rural Development SAPARD [2004], under the Rural Development Plan 2004-2006 [RDP; *cf. Plan Rozwoju ... 2004*] and the Sectoral Operational Programme “Restructuring and Modernisation of the Food Sector and Rural Development” [SOP_Agri; *cf. Sektorowy Program Operacyjny ... 2004*], as well as the current period 2007-2013 of measures implemented under the Rural Development Programme [RDP; *cf. Program Rozwoju ... 2007*], as of the end of 2010.

In the article, use was made of the data of the Agency for Restructuring and Modernisation of Agriculture (AR&MA), assuming its 314 poviats offices as the basic units of spatial analysis. For the lack of information at the poviats level, two AR&MA payments were disregarded: The groups of agricultural producers and the participation of farmers in food quality schemes intended to improve the quality of production and agricultural products meant for consumption. This was also the reason why payments coming from the Agricultural Market Agency (AMA) were not taken into consideration, either (subsidies to seed and for producers of tobacco and starch potatoes – a total of 1,720 million zlotys).

The analysis employed several indices (diagnostic features) characterising the spatially diversified level of absorption of Community support in terms of the total means obtained by agricultural holdings (calculated per ha AL and per farm), and solely in terms of the modernisation measures implemented under the various operational programmes (the share of the operational measures in the total funds obtained and the share of the applications granted under those measures in the total number of farms). Assuming the indices chosen for analysis to be equal in their effect on the level of agriculture, they were presented in the form of a single synthetic index of financial support absorption by agricultural holdings (a normalised mean).

To make a fuller assessment of the spatial patterns obtained, the level of absorption of EU funds was compared against the differences in the general level of agriculture as described by the normalised mean of the diagnostic features adopted (the mean farm size in ha, the agricultural holdings operated by persons with a secondary and higher education in % of the total number of farms, the agricultural holdings investing in fixed assets in % of the total number of farms, the number of combine harvesters per 100 ha of cropland, the area of industrial crops in % of the total cropland area, and the livestock units per 100 ha of agricultural land; 2002 Agricultural Census data). In the analysis the effect of natural and extra-natural conditions was also assessed. Under the former heading, on the basis of the index of the quality of agricultural production space (WjRpp) and the criteria of eligibility for the RDP measure “Support for agricultural activity in less-favoured areas (LFAs)”, areas were distinguished with unfavourable conditions (under 52 WjRpp points; lowland zone), moderately favourable (52-72 WjRpp points; lowland zone), and favourable ones (WjRpp over 72; ineligible for LFA payments). Under the heading of extra-natural conditions, two determinants were distinguished:

- historical – poviats situated in the former Austrian sector and within the boundaries of interwar Poland, in the former Prussian sector and within the boundaries of interwar Poland, in the former Russian sector and within the boundaries of interwar Poland, and in the former Prussian sector and within the boundaries of interwar Germany; and
- urbanisation-related – poviats classed as poorly urbanised (situated in predominantly rural sub-regions), moderately urbanised (situated in intermediate sub-regions), and highly urbanised (situated in predominantly urban sub-regions; the division after the Local Data Bank of the Central Statistical Office, GUS).

1. Financial support of agricultural holdings: its level and structure

In the years 2002-2010 Polish farms gained nearly 90.5 billion zlotys under the domestic and Community support policies. Such a substantial figure of funds obtained resulted from their inclusion in the EU system of direct payments and the implementation of several assistance programmes and measures for agriculture (*cf.* Tab. 1).

The basic instrument supporting Polish agriculture after the country's accession to the EU has been direct payments. They involve financial support whose magnitude is proportional to the area of farmland kept in good agricultural condition irrespective of the kind of agricultural activity conducted. The payment system introduced, which is the chief segment of support, consists of two equal elements: a single area payment (SAP) and complementary area payments (CoAPs). The former is funded wholly from the EU budget.

Over the years 2004-2010, the payments granted under SAP amounted to 29,857 million zlotys, which accounted for 33.0% of the total financial support for agricultural holdings. The rate of this payment grew systematically, from 210.5 zlotys per ha in 2004 to 562.1 zlotys in 2010. Complementary area payments (CoAPs), which amounted to 26,597 million zlotys (29.4% of all means obtained by agricultural holdings), embraced primarily the funds paid by the AR&MA under the following categories:

(a) a basic complementary payment (so-called 'other crops'), embracing a wide variety of crops, *e.g.* cereals and oil plants, whose list was published each year in a Council of Ministers' ordinance (the rate varying from 293 zlotys per ha in 2004 to 327 zlotys in 2010);

(b) a sugar payment, granted since 2006 as a financial recompense for farms owing to the restructuring of the sugar industry in the EU (the rates ranging from 34 zlotys per tonne of sugar beet in 2006 to 50 zlotys in 2010);

(c) an animal payment, for the permanent grassland and grasses grown on farmland for fodder (granted since 2007; the rates ranging from 438 zlotys per ha in 2007 to 439 in 2010);

(d) payment for energy crops, which are a source of renewable energy and a material for the production of biofuels (granted since 2005; initially at a rate of 213 zlotys per hectare of plantation of energy willow and the thornless cultivar of the dog

rose only, later the list was extended to include other plants, *e.g.*, rye, rape and sugar beet, while the subsidy dropped to 190 zlotys per ha of crops in 2009);

Table 1

Payments under the EU assistance programmes for agricultural holdings in Poland in the years 2002-2010, in million zlotys and %

Forms of support	in million zlotys	in %
Direct payments and LFA – total	65,534.0	72.4
Single area payments	29,857.4	33.0
Complementary area payments	26,597.1	29.4
of which:		
- payments for other plants	21,170.9	23.4
- payments for sugar	2,301.3	2.5
- payments for energy crops	30.1	0.0
- payments for hops	15.3	0.0
- animal payments	2,792.5	3.1
- payments for soft fruit	146.9	0.2
- payments for tomatoes	66.5	0.1
- payment for legume crops	20.2	0.0
- payment for cattle	51.6	0.1
- payment for sheep	1.9	0.0
Support of less-favoured areas (LFA, under RDP)	9,079.5	10.0
Measures/programmes	24,966.1	27.6
Diversification into non-agricultural activities	570.8	0.6
Investment on farms	3,030.4	3.3
Structural pensions	5,952.7	6.6
Setting-up of young farmers	1,907.4	2.1
Agri-environmental programme	3,682.9	4.1
Afforestation of land	733.9	0.8
Support for semi-subsistence farms undergoing restructuring	3,062.3	3.4
Adjustment of farms to EU standards	2,437.5	2.7
Development and improvement of farming-related technical infrastructure	149.5	0.2
Modernisation of agricultural holdings	3,434.7	3.8
Restoring agricultural production potential damaged by natural disasters	0.6	0.0
Use by farmers of advisory services	3.4	0.0
Total financial support for agricultural holdings	90,500.1	100.0

Source: Own compilation on the basis of data of the Agency for Restructuring and Modernisation of Agriculture.

(e) payment for hop cultivation, at a rate diminishing – as in the case of production-related payments – from 1,014 zlotys per ha (2004) to 508 zlotys (2009), but compensated for by the introduction in 2008 of payments unconnected with production (called historical), intended for farms departing from this line of crop production (861 zlotys per ha in 2009);

(f) payment for fruit and vegetables, the so-called tomato payment (since 2008; 134 zlotys per tonne, in 2010 increased to 157 zlotys);

(g) transitional payments for the production of soft fruit (since 2008; 1,359 zlotys per ha to 1,594 zlotys in 2010);

(h) payment for cattle, granted in 2010 to support dairy, beef and veal production on the small farms situated in the areas that are sensitive economically (very small farm sizes) and environmentally (mountains), possessing small herds (not more than 10 cows) in the voivodeships of Lubelskie, Małopolskie, Podkarpackie, Śląskie, and Świętokrzyskie (346.43 zlotys/head);

(i) payment for sheep, granted in 2010 to keep up their inventory in the regions where this type of animal production has been a long tradition, addressed to farms with at least 10 female domestic sheep, situated in Małopolskie, Podkarpackie, Śląskie, Opolskie, and Dolnośląskie (105.91 zlotys/head); and

(j) a special area payment for legume crops and small-seed pulses, granted in 2010 in view of the great significance of those crops for the conservation or improvement of the environment (207.28 zlotys/ha of cropland).

Apart from the direct payment system, the community policy of support for agriculture has involved several operational programmes. The first was the Special Pre-Accession Programme for Agriculture and Rural Development (SAPARD, 2002-2004), and in the first financial period of Poland's EU membership (2004-2006) those were: the Rural Development Plan (RDP) and the Sectoral Operational Programme "Restructuring and Modernisation of the Food Sector and Rural Development" (SOP_Agri), followed in the years 2007-2010 by the Rural Development Programme (as part of the 2007-2013 perspective). Those programmes allowed the agricultural holdings in Poland to receive financial support to the amount of 25,966 million zlotys – nearly 27.6% of all subsidies. They embraced 12 measures (*cf.* Tab.1), *viz.*:

1. Diversification into non-agricultural activities; the aim was to support investment projects designed to start an additional economic activity on farms (*e.g.* agro-tourism, or services for agriculture and small-scale processing of produce); those measures were implemented in the years 2003-2004 under SAPARD (including the scheme "Creation of additional income sources on agricultural holdings"), in 2004-2006 ("Diversification of agricultural and agriculture-related activity to ensure a diversity of ventures or alternative sources of income", under SOP_Agri), and 2007-2009 ("Diversification into non-agricultural activities", under RDP 2007-2013). A total of 7.1 thousand applications were granted in this field, which involved a financial support of 571 million zlotys.

2. Investment on agricultural holdings; this measure, implemented in the years 2002-2004 (under SAPARD) and 2004-2006 (under SOP_Agri), with a total of 37 thousand applications and payment of 3,030 million zlotys, largely involved the refunds of a part of the outlays for the construction or repair of buildings and for the purchase of machines and equipment.

3. Structural pensions; this measure embraced farmers of pre-retirement age (from 55 years old to the retirement threshold) and was intended to accelerate the process of generational exchange among farm operators and improve the farm-size structure. Over the years 2004-2010 there were 67.7 thousand applications, which meant the payment of 5,953 million zlotys (under RDP 2004-2006 and RDP 2007-2013).

4. Support for agricultural activity in the less-favoured areas (LFAs); this measure was implemented under RDP 2004-2006 and RDP 2007-2013, and by the end of 2010 it had totalled 9,080 million zlotys; such a high payment was a result of a large area being qualified as LFA (9.2 million ha), relatively high rates per ha (*e.g.* in 2009 from 193 zlotys in lowland zone I to 344 in mountain areas), and the ready access to those means (together with a SAP application); in this measure the funds obtained by a farm depended on the area, hence it was a type of area payment.

5. Setting-up of young farmers; this measure was intended to improve the age structure of farm operators; the targets of the financial assistance were young farmers, up to 40 years of age, who started running an agricultural holding of their own. Over the study period, a total of 30.1 thousand such subsidies were granted to the amount of 1,907 million zlotys (50 thousand zlotys per application under SOP_Agri in the years 2004-2006, and 75 thousand zlotys per application under RDP 2007-2013).

6. Agri-environmental payments; amounting to 3,683 million zlotys, they were intended to encourage farmers to introduce or continue the agricultural production methods compatible with the protection and improvement of the environment. This measure was implemented under RDP 2004-2006 as "Support for agri-environmental ventures and the improvement of animal welfare" (payments being granted in the form of seven packages embracing the entire country or selected priority zones), and under RDP 2007-2013 as "The agri-environmental programme" (in the form of nine packages embracing the entire country). One holding could apply for assistance under up to 3 packages, which resulted in a record number of applications (405.9 thousand).

7. Land afforestation; the measure was intended to help extend forest resources on land used by agricultural holdings. It was implemented under RDP 2004-2006 ("Afforestation of agricultural land of low farming use") and RDP 2007-2013 (when the measure was extended to the afforestation of land other than agricultural). In all, there were 15.3 thousand applications and payments to the amount of 734 million zlotys.

8. Support for semi-subsistence farms undergoing restructuring; or financial assistance necessary to help preserve the financial liquidity of farms with a small production scale (up to 4 ESU). This measure was only established under RDP 2004-2006; it embraced 157.7 thousand agricultural holdings and involved spending 3,062 million zlotys.

9. Adjustment of agricultural holdings to EU standards; the aim was to adjust farms to community standards in such fields as environmental protection, hygiene, animal welfare, and food safety. This measure was only implemented under RDP 2004-2006, when 69.7 thousand of applications were granted a total of 2,437 million zlotys.

10. Development and improvement of farming-related physical infrastructure; the measure was intended to improve the equipment of farms with modern physical infrastructure, especially the kind important from an environmental point of view (*e.g.* water-and-sewage facilities). This measure was part of SOP_Agri in the years 2004-2006, when 3.4 thousand applications were granted and subsidised with 150 million zlotys.

11. Modernisation of agricultural holdings; the measure, implemented under RDP 2007-2013, supports investment intended to improve the technical and infrastructural equipment of agricultural holdings; in the years 2007-2010, 29.1 thousand such applications were granted and a subsidy of 3,435 million zlotys was paid.

12. Restoring agricultural production potential damaged by natural disasters and introducing appropriate prevention actions; this was financial support for farms that had lost their production potential as a result of a natural disaster. Over the years 2007-2010, 2.2 thousand such applications were implemented to the amount of 0.6 million zlotys.

13. Use by farmers and forest holders of advisory services; the measure encouraged ventures helping agricultural and forest holdings to adjust to the principle of cross-compliance, boost their profitability and competitiveness, support their restructuring, development and innovation, enforce environmental protection, and improve safety at work. Under this measure 10.9 thousand applications had been granted by the end of 2010, which meant a subsidy of 3.4 million zlotys.

The analysis conducted showed that in the years 2004-2009 there was a complex system of farm subsidies embracing – apart from single area payments – 10 categories of complementary area payments and 15 operational measures under SAPARD 2002-2004, RDP 2004-2006, SOP_Agri, and RDP 2007-2013.

The level and structure of absorption resulted from the implementation of the EU Common Agricultural Policy (*e.g.* under the European Agricultural Guidance and Guarantee Fund in the years 2004-2006 and the European Agricultural Fund for Rural Development in the years 2007-2013). However, the means obtained by farms were not exclusively EU subsidies (SAP, beet payments); they also came from the national budget (the remaining CoAPs), or were combinations of those two sources of funding, *e.g.* RDP: 80% of EU means and 20% of national budget means (with the exception of agri-environmental ventures – 85% of EU support), or payments for soft fruits: 57.5% from the EU budget, 42.5% from the national budget. Besides, in some assistance measures, support of agricultural holdings by public means (community and national) involves engaging their private means in a given investment. Those sums, *e.g.* under RDP 2007-2013, amounted to 50% in the case of diversification into non-agricultural activities, or 60% in the case of farm modernisation.

2. Indices of assistance absorption by agricultural holdings

The means obtained by agricultural holdings show the wide differences by voivodeship: from 1,987 million zlotys in Silesia (2.2%) to 11,267 million in Wielkopolskie (12.4%) and 12,869 million in Mazowieckie Voivodeship (13.9% of the total funds obtained over the years 2002-2010; *cf.* Tab. 2).

Table 2

Indices of assistance absorption by agricultural holdings in Poland over the years 2002-2010

Voivodeship	Absorption level (million zlotys)	Funds obtained – total		Means under modernisation programmes		Absorption index (normalised mean)	
		in thous. zlotys per ha AL	in thous. zlotys per farm	in % of total funds obtained	number of applications in % of farms		
Poland – total	90,500.1	6.5	63.8	27.6	62.3	0.00	
of which by voivodeship							
Dolnośląskie	4,914.7	5.6	82.6	21.2	47.5	-0.53	
Kujawsko-Pomorskie	7,139.6	6.9	105.3	28.8	92.6	0.62	
Lubelskie	8,538.1	6.5	47.2	29.6	64.5	0.01	
Lubuskie	2,343.2	6.1	113.8	23.5	89.5	0.14	
Łódzkie	6,277.6	6.5	48.6	31.3	54.9	0.03	
Małopolskie	3,315.1	6.6	24.9	29.3	36.1	-0.28	
Mazowieckie	12,869.2	6.9	60.2	29.4	55.9	0.15	
Opolskie	2,827.3	5.7	97.5	21.4	68.5	-0.30	
Podkarpackie	3,242.0	6.1	26.0	28.6	42.7	-0.40	
Podlaskie	7,257.8	7.2	87.9	26.5	71.8	0.38	
Pomorskie	4,540.1	6.5	115.9	25.2	110.4	0.50	
Śląskie	1,987.0	5.9	37.9	25.9	30.1	-0.61	
Świętokrzyskie	3,436.6	7.0	37.3	40.0	75.6	0.61	
Warmińsko-Mazurskie	5,833.6	6.1	135.6	22.9	90.1	0.26	
Wielkopolskie	11,267.0	6.6	91.8	27.7	72.4	0.26	
Zachodniopomorskie	4,711.2	5.9	164.3	23.9	109.4	0.50	
of which by level of agriculture							
Low	1	16,603.1	6.3	36.4	27.7	45.6	-0.30
Average	2	32,146.9	6.6	63.9	27.3	65.7	0.04
High	3	41,750.0	6.5	90.7	27.7	75.4	0.24

Voivodeship	Absorption level (million zlotys)	Funds obtained – total		Means under modernisation programmes		Absorption index (normalised mean)	
		in thous. zlotys per ha AL	in thous. zlotys per farm	in % of total funds obtained	number of applications in % of farms		
of which by determinants*							
Natural	1	7443.1	7.4	63.7	26.1	62.8	0.22
	2	60201.6	6.6	66.6	27.6	64.1	0.05
	3	22855.4	6.1	57.3	28.1	58.3	-0.18
Historical	1	6091.9	6.2	24.4	27.6	37.0	-0.46
	2	16473.3	6.6	102.9	27.5	86.4	0.40
	3	44679.8	6.8	55.3	30.1	61.5	0.17
	4	23255.1	5.9	115.5	22.7	78.0	-0.02
Urbanisation-related	1	58936.6	6.7	66.0	28.4	68.0	0.16
	2	24781.6	6.1	61.4	25.4	54.1	-0.28
	3	6781.9	6.0	55.3	28.4	48.3	-0.26

*AR&MA poviats offices located in areas distinguished by determinants:

- natural: (1) highly unfavourable conditions – WjRpp under 52 points, (2) unfavourable conditions – WjRpp 52-72 points, (3) favourable conditions – WjRpp over 72 points;

- historical: (1) former Austrian sector and within boundaries of interwar Poland, (2) former Prussian sector and within boundaries of interwar Poland, (3) former Russian sector and within boundaries of interwar Poland, (4) former Prussian sector and within boundaries of interwar Germany;

- urbanisation-related: (1) poorly urbanised poviats (with predominantly rural population), (2) moderately urbanised poviats (predominantly urban population except in metropolitan areas), (3) highly urbanised poviats (in metropolitan areas).

Source: Own compilation on the basis fo AR&MA and GUS data.

The funds obtained by agricultural holdings listed in the AR&MA register in the years 2002-2010, considered in terms of their number (1,419,100) and area of agricultural land (13,944,700 ha – the mean for the years 2004-2010), made it possible to construct two absorption indices presenting subsidies granted per ha AL and per farm (*cf.* Tab. 2).

Thus, the funds obtained by agricultural holdings in the years 2002-2010 calculated per ha AL averaged 6.5 thousand zlotys. This absorption index varied from under 6 thousand zlotys in the voivodeships of western Poland: Dolnośląskie, Opolskie, Śląskie and Zachodniopomorskie, to over 7 thousand zlotys in Podlaskie and Świętokrzyskie. By the AR&MA poviats office, very low indices – under 5 thousand zlotys – were recorded in six poviats of Dolnośląskie, Małopolskie, Śląskie, Warmińsko-Mazurskie and Zachodniopomorskie. In turn, record levels of the index, in excess of 8 thousand zlotys, could be found in five poviats of Podkarpackie, Kujawsko-Pomorskie, Podlaskie and Mazowieckie (*cf.* Fig. 1).

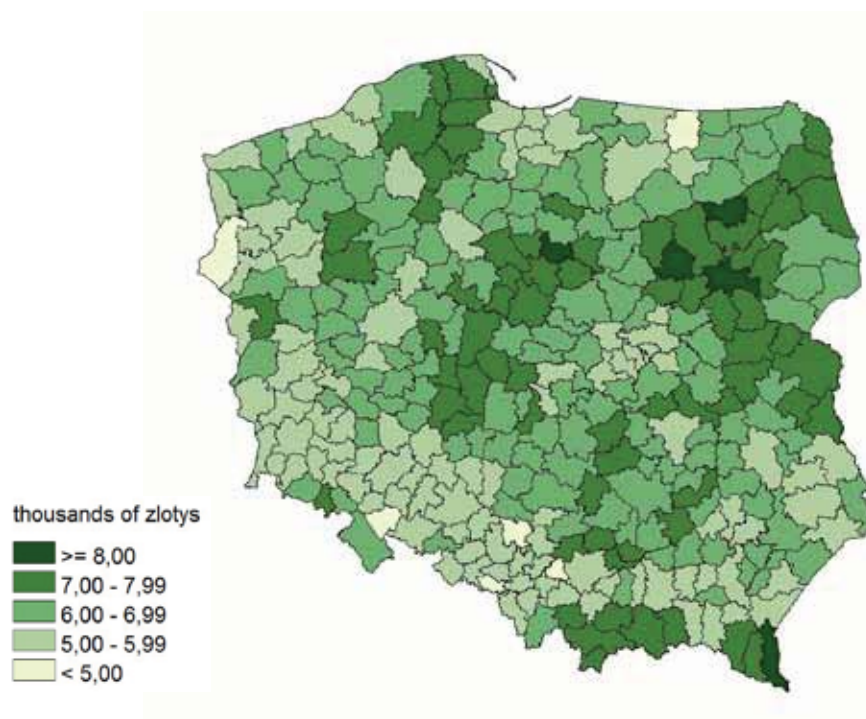


Figure 1. Indices of assistance absorption by agricultural holdings in Poland over the years 2002-2010: total funds obtained in thousand zlotys per ha AL

Source: As in Table 2 (Figs. 1-4).

A low level of absorption defined in this way was recorded in voivodeships with the largest mean farm sizes in the country. This factor ensured those farms an inflow of big sums in the form of area payments, which reduced their activity in seeking other assistance means. This dependence is corroborated by the marked difference between the figures obtained for poviats situated in the areas included into Poland after the Second World War (5.9 thousand zlotys on average) and those in the former Russian sector (6.8 thous. zlotys; *cf.* Tab. 2).

The index was also found to be lower in the poviats with favourable natural conditions (an average of 6.1 thousand zlotys/ha AL, as against 7.4 thous. zlotys/ ha in those with unfavourable ones). This, in turn, was due to the fact that the natural conditions in those poviats as a rule are also better for farming, which limits the access of their farms to community subsidies for land situated in the less-favoured areas (LFAs) as well as their participation in RDP measures under the agri-environmental programmes and those dealing with the afforestation of farmland.

The analysis also revealed significant differences in the funds obtained per ha AL between the poorly and highly urbanised areas (6.7 thous. against 6.0 thous. zlo-

tys). This is indicative of the limitations in the access to EU means in the rural areas strongly connected functionally with large cities (*e.g.* very small farms, up to 1 ha AL, are not eligible for EU assistance).

The funds obtained by agricultural holdings were also calculated in terms of the number of farms that are the AR&MA agricultural producers. It was shown that in the years 2002-2010 the means per farm amounted to nearly 64 thousand zlotys. The lowest figures – under 30 thousand zlotys per farm – were registered in the south-eastern voivodeships of Małopolskie (25 thousand zlotys) and Podkarpackie (26 thousand zlotys). By powiat, this threshold was not reached by 43 units concentrated in south-eastern Poland. In turn, high figures (in excess of 100 thousand zlotys) could be found in the northern and western regions of Poland, with records of 136 thousand zlotys in Warmińsko-Mazurskie and 164 thousand zlotys in Zachodniopomorskie (*cf.* Tab. 2, Fig. 2).

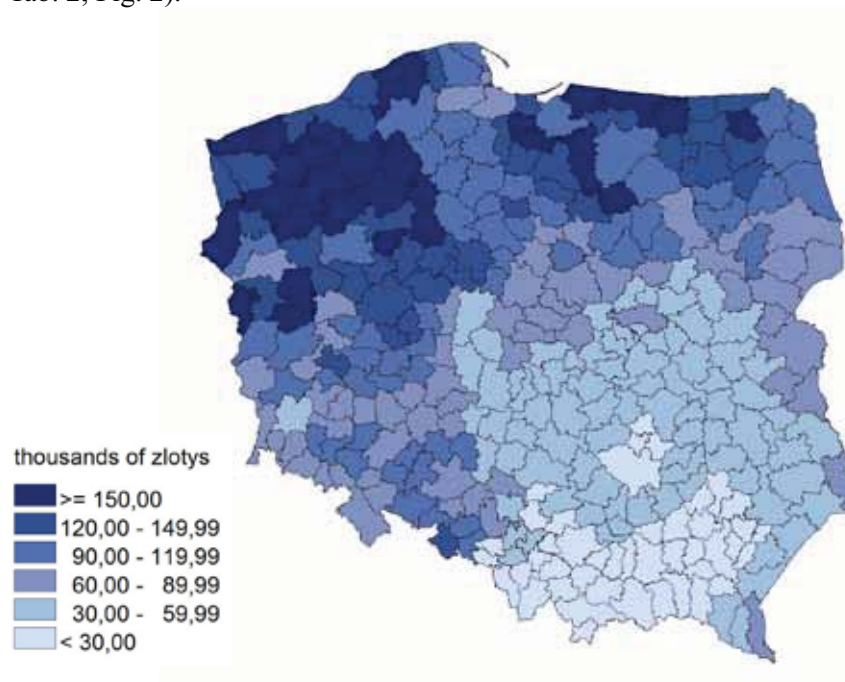


Figure 2. Indices of assistance absorption by agricultural holdings in Poland over the years 2002-2010: total funds obtained in thousand zlotys per farm.

The analysis showed that the greatest EU support went to the farms in the poviats with a high level of agriculture – 90.7 thousand zlotys (as against 36.4 thousand zlotys in the poviats with a low farming level), those situated in the former Prussian sector and within the boundaries of interwar Germany – 115.5 thousand zlotys (the poorest support being recorded in the former Austrian sector – 24.4 thousand zlotys),

and those with a low urbanisation level – 66.0 thousand zlotys (as against 55.3 thousand zlotys in the poviats with a high urbanisation level; *cf.* Tab. 2). The amount of the EU funds obtained by a farm depended primarily on its area (the effect of the area payments, accounting for 62% of all the subsidies). That is why variations in the index depended mainly on the size structure of the farms.

The financial assistance given to the agricultural holdings was not uniform from the point of view of the changes in agriculture [Rudnicki 2010]. It covered two forms of support: passive and active.

Passive forms, not connected with a declaration of farm restructuring, had an indirect effect on the development of agriculture. They included: the single area payment (SAP), complementary area payments (CoAPs with their 10 categories), and funds for farming in the less-favoured areas (LFAs, a measure under the RDP). Over the period studied, the passive forms of support amounted to 65.5 billion zlotys, or 72.4% of the total means obtained. Farmers applying for those payments filled in a single form (the application form for direct payments was also a form for payments under the Support for agricultural activity in the LFAs), and they could put the funds thus obtained to any use, whether to make an investment in agriculture (thus boosting the level of farming) or to give children education, improve housing conditions, buy a car, *etc.* While this certainly ended in better living conditions of the farming population (making up for the years-long neglect in this field), the improvement did not follow from the development of agricultural production.

Active forms of support (directly boosting the development of agriculture) involved the subsidising of the concrete modernisation measures under the RDP (without the LFAs) and SOP_Agri (25 billion zlotys, or 27.6% of the total means granted). In this case the farmer had to prepare an application for a subsidy (often with the help of a consulting firm) explaining the purpose of the planned venture and presenting a schedule of the steps to be taken (a business plan), and the spending of the funds obtained was controlled by an external body.

Because of the great influence of operational programmes on the development of agriculture, active forms of farm support are presented in the form of two indices illustrating the share of those means in total assistance and the number of applications granted under those measures in the total number of agricultural holdings.

The proportion of funds directly involving the implementation of modernisation measures in the total means obtained by agricultural holdings over the years 2002-2010 ranged from 21.2% in Dolnośląskie to 40.0% in Świętokrzyskie. By powiat, the difference varied from under 20% in 30 units, mostly situated in Dolnośląskie (9 poviats), Warmińsko-Mazurskie (4) and Zachodniopomorskie (4), to over 40% in 9 poviats in the voivodeships of Lubelskie, Małopolskie, Mazowieckie and especially Świętokrzyskie (5 poviats; *cf.* Fig. 3).

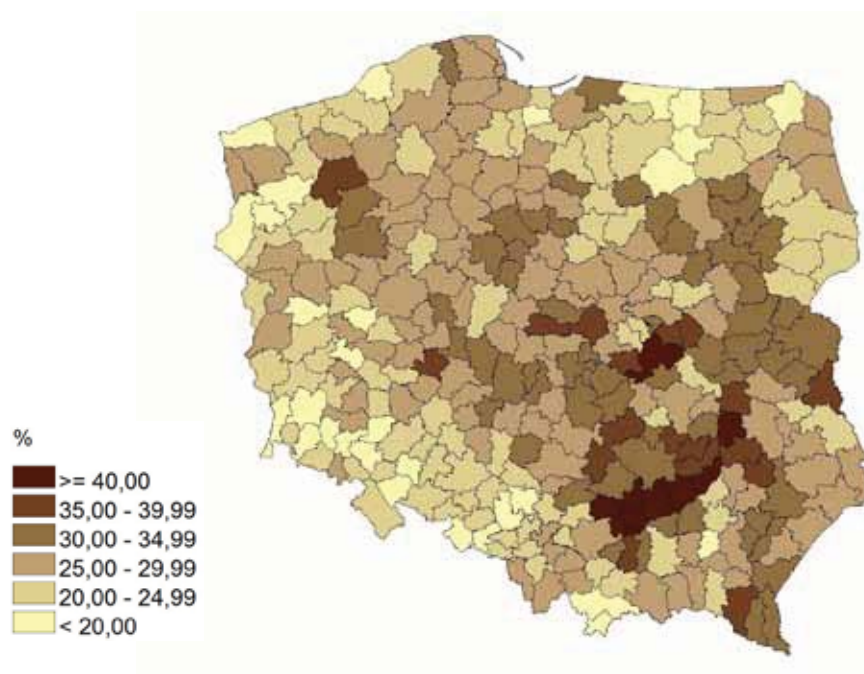


Figure 3. Indices of assistance absorption by agricultural holdings in Poland over the years 2002-2010: means under modernisation programmes in % of total funds obtained

In terms of the determinants adopted, significant differences in the value of the index were only recorded in the case of historical determinants, *e.g.* 22.7% in poviats situated in the former Prussian sector and within the boundaries of interwar Germany, as against 30.1% in the lands formerly belonging to the Russian sector (*cf.* Tab. 2).

This relatively low share of active means (in comparison with the more readily available passive forms) should be regarded as unfavourable for the development of Polish agriculture, hardly accelerating the rate of its structural transformation. This remark concerns primarily small (non-commercial) farms, whose inclusion in the area payment scheme is as a rule a welfare measure which fossilises their presence in the size structure of agricultural holdings. However, there were also several large farms, mostly specialising in extensive crop production, which, satisfied with the relatively high area payments, made no effort to work out projects making them eligible for means under the EU operational programmes.

As a rule, a high proportion of active forms of payment in the total assistance granted under the Common Agricultural Policy was characteristic of the regions of intensive agriculture as defined by a substantial share of industrial crops and high stocking rates, and by the specialisation of farms in the production of fruit and vegetables. Those are areas where agricultural holdings are the leaders in using the EU funds to modernise and compete successfully on the Common Market.

In the years 2002-2010, under the various measures supporting the modernisation of agricultural holdings, a total of 885 thousand applications were granted under the SAPARD, the RDP (without the LFAs) and the SOP_Agri. The programme enjoying the greatest popularity among farmers was the agri-environmental one (44.9%) in which one farm could submit up to three applications for its various packages. Apart from it, three other measures had a high share (over 7%) in the structure of the applications granted: Support for the semi-subsistence farms undergoing restructuring (17.8% – only RDP 2004-2006), Adjustment of agricultural holdings to the EU standards (7.9% – only RDP 2004-2006), and Structural pensions (a total of 7.7% over the years 2004-2010).

Because of the great significance of the active forms of community payments for the modernisation of Polish agriculture, their analysis was extended to include an index of the proportion of such applications per 100 agricultural holdings. The national average was 62.3%, but there were wide regional differences: from 30.1% in Silesia to more than 100% (the number of applications granted higher than the number of farms) in Pomorskie (110.4%) and Zachodniopomorskie (109.4%); and by poviats, from under 25% in 18 poviats situated in Małopolskie (7 poviats), Podkarpackie (4) and Śląskie (7), to over 125% in 26 poviats, mostly in Pomorskie (6 poviats), Wielkopolskie (4) and Zachodniopomorskie (6; *cf.* Fig. 4). High indices of farm activity were often recorded in the less-favoured areas. This was mostly due to the large share of agri-environmental subsidies in the structure of applications under analysis.

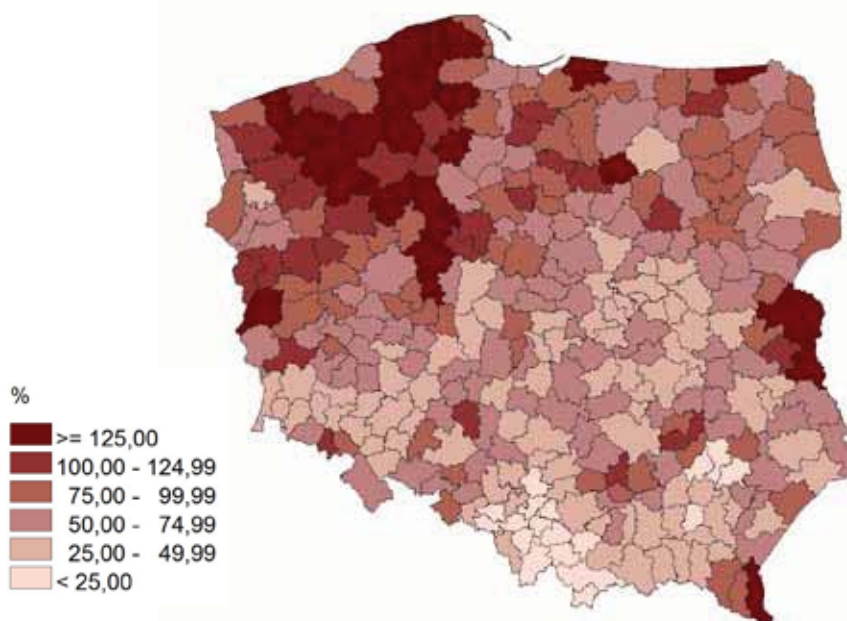


Figure 4. Indices of assistance absorption by agricultural holdings in Poland over the years 2002-2010: applications granted under modernisation measures in % of the total number of farms

The index also attained the highest values in the areas with a high level of agriculture – 75.4% (as against 45.6% in the poviats with a low level), those situated in the former Prussian sector and within the boundaries of interwar Poland – 86.4% (as against 37.0% in the former Austrian sector), and those with a low urbanisation level – 68.0% (as against 48.3% in the highly urbanised poviats; *cf.* Tab. 2). In terms of natural conditions, farms that displayed the highest activity in obtaining EU funds were situated in the poviats with average conditions (64.1%), making it possible for them to participate in a variety of assistance measures, both those involving environmental limitations (*e.g.* LFAs) and those intended for the development of production (*e.g.* investments on farms under RDP).

3. Final remarks: an attempt at a synthesis

The analysis conducted showed that over the years 2002-2010 payments granted under the Common Agricultural Policy programmes were the most important factor of development in rural areas and of the modernisation of Polish agriculture because of the magnitude of the sums transferred, mass participation of agricultural holdings (834,500), and the variety of payment forms (a total of 15 measures).

The above variables describing both, the total means obtained (per ha AL, per farm) and those aiming exclusively at the modernisation of agriculture (as a percentage of total funds, applications as a percentage of farms), were presented jointly in the form of a normalised mean and defined as a synthetic index of absorption of financial support by agricultural holdings (an absorption index). This procedure allowed assigning individual regions to five classes of the absorption level, *viz.*:

- a very low level (standard deviation δ under -0.75): absent at the level of voivodeships; recorded in 28 poviats;
- a low level (from -0.75 to -0.25): in Dolnośląskie, Małopolskie, Opolskie, Podkarpackie and Śląskie; recorded in 73 poviats;
- an average level (from -0.25 to 0.25): in Lubelskie, Lubuskie, Łódzkie and Mazowieckie; recorded in 93 poviats;
- a high level (from 0.25 to 0.75): in Kujawsko-Pomorskie, Podlaskie, Pomorskie, Świętokrzyskie, Wielkopolskie, Warmińsko-Mazurskie, and Zachodniopomorskie; recorded in 63 poviats; and
- a very high level (δ over 0.75): again absent at the level of voivodeships; recorded in 57 poviats (*cf.* Tab. 2, Fig. 5).

That there are significant problems with the development of agriculture in Poland as an EU member is indicated by regions with negative values of the absorption index. This was the situation found in a belt of five voivodeships in the south, from Dolnośląskie to Podkarpackie (Fig. 5), which can be ascribed to the poor condition of agriculture there, largely owing to a great number of very small farms and a low level

of education of their operators. In the rest of the country, the process of adaptation of holdings to the EU agricultural policy has been much more successful, as indicated by the regions with positive values of the index. Outstanding here are the voivodeships where high and very high levels of the index were recorded, clustering mainly in the north-western part of Poland (Kujawsko-Pomorskie, Pomorskie, Wielkopolskie and Zachodniopomorskie). Elsewhere such high figures were only noted in Podlaskie and Świętokrzyskie. The high position of Świętokrzyskie Voivodeship is primarily the effect of its being the top-ranking region in the proportion of means under the operational programmes in the total assistance funds obtained by its agricultural holdings.

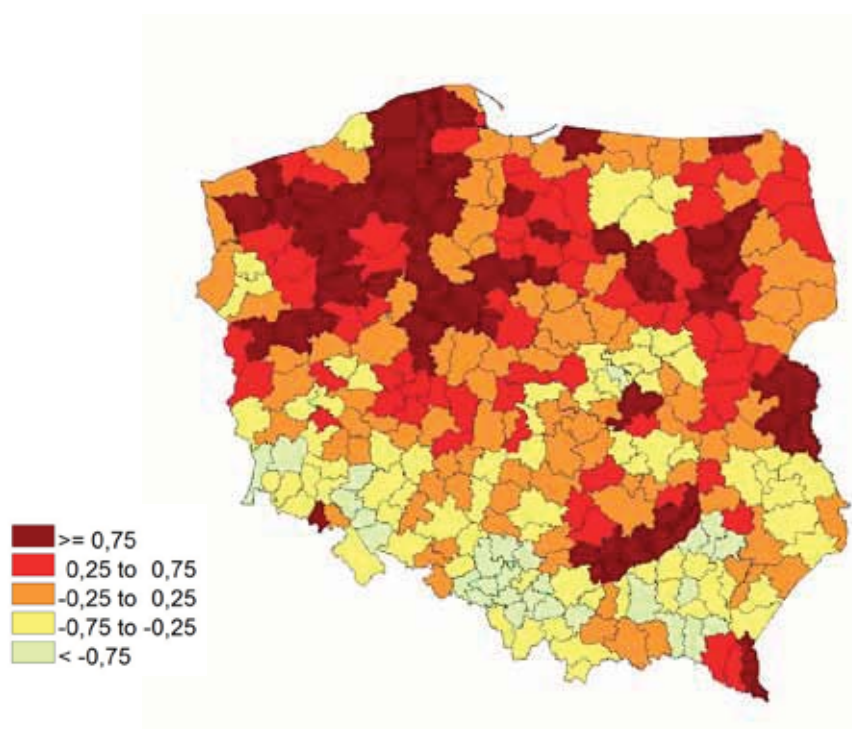


Figure 5. Index of financial support absorption by agricultural holdings
[a normalised mean of the diagnostic variables adopted: I – δ under -0.50, II – δ from 0.00 to -0.50, III – δ from 0.00 to 0.50, IV – δ over 0.50].

Source: Own compilation.

An assessment of the spatial differences in the index in question shows it to attain higher values in areas with a high level of agriculture (0.24), especially against poviats with a low level (-0.30). This disproportion demonstrates that the EU funds have not helped a lot in reducing the spatial differences in Polish agriculture. This feature is primarily an effect of historical determinants, as corroborated by the wide differences in the value of the index between the poviats situated in the former Prus-

sian sector and within the boundaries of interwar Poland (0.40) and those in the former Austrian sector (-0.46). However, the EU funds have also been observed to have a beneficial effect in narrowing the territorial disproportions in the development of agriculture and rural areas. This shows in the elevated values of the index in areas with unfavourable natural conditions (0.22, as against -0.18 in the poviats with favourable natural conditions) and in the poorly urbanised poviats (0.16, as against -0.26 in the highly urbanised ones) (*cf.* Tab. 2).

The analysis showed there to be wide territorial differences in the amount and structure of the EU funds acquired by agricultural holdings. The very high sum total of the above payments (90.5 billion zlotys) makes it possible to state firmly that the funds under the various EU programmes are the basic factor of the modernisation and development of Polish agriculture today.

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