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MACROREGIONAL DIFFERENTIATION OF FARMERS' INTEREST IN POLISH RURAL DEVELOPMENT PROGRAM MEASURES IN POLAND

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ABSTRACT. The objective of the paper was to research farmers' interest in the measures of Polish Rural Development Program 2004-2006 considering its macroregional differentiation. The results show significant regional differentiation in the number of application for PROW measures in four analysed macroregion of Poland. The highest percentage of holding applied for PROW measures in areas already better developed. In particular it concerned the innovative and prospective programs which required more commitment from farmers. The macroregion where the farmers' interest in structural programs was the lowest was the South-Eastern area of Poland, which among all analysed macroregions is characterised by the worst agricultural potential.

Key words: rural development, regional differentiation

Introduction

The act of accession of new member states to the EU defines a special rural development regime for the joining countries in the period 2004-06. It establishes two separate rural development programs: the first one co-financed by the Guarantee Section of EAGGF, and the second one co-financed by the Orientation Section. The total value of these funds in Poland amounts to 5.347 milion Euro for the period between 2004 and 2006. Out of this sum, 3.563 milion Euro is directed towards the Polish Rural Development Program (PROW) and co-financed by the Guarantee Section. The remainder 1.784 milion Euro is contributed by the Orientation Section to support the development of the Sectoral Operational Program (SOP).

In the article I will concentrate on the Polish Rural Development Program (PROW). The official objectives of the PROW include the 'sustainable development' and 'competitiveness' (PROW 2004). The plan contains seven independent measures: early retirement plan, support for less favoured areas (LFAs), agro-environmental measures,

support for semi-subsistence farms, afforestation, support for producer groups, and meeting EU standards. In addition, two programs specific to all new countries are being implemented: technical assistance and complements to direct payments, though because of their different purpose and temporary character we are not considering them in our paper.

Each of the proposed elements (except from LFA which is introduced in geographically delimited priority zones), require some kind of commitments from the framers, for which they are compensated by financial means coming from the PROW. For example, the farmers are required, depending on the program, to fulfill certain environmental restrictions, join producer groups, meet certain production standards or transfer their holding to another farmer or successor. In return they are provided with a grant.

The PROW and its financing plan have been developed by the Polish Ministry of Agriculture and Rural Development. It is based primarily on the Council Regulation (EC) No 1257/99 on the support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF). The Plan covers the whole country and decisions about program priorities and the budget allocation are made in Warsaw, in a centralized manner. According to the Ministry of Agriculture and Rural Development in Poland, "the centralized planning process can be justified as follows: most of the measures within the Plan are horizontal and innovative; due to the complex nature of these instruments, this limits the feasibility of transferring planning to the regional level." (PROW 2004).

The structural funds for agriculture and rural development are provided by the Agency of Restructuring and Modernization of Agriculture (ARMA). This is a governmental body established in 1994 and supervised by the Minister of Agriculture and Rural Development. The ARMA has been appointed by the Government of the Republic of Poland to perform the role of a "paying agency" and an implementing authority for the financial resources from the structural funds of the European Union. The structure of ARMA includes three levels: the headquarters in Warsaw, 16 Regional Offices, and 314 District Offices. Farmers from the whole country can apply for the PROW programs in district regional offices of ARMA, as long as there are sufficient resources in the total budget designed for a specific plan. There are no regional limits for the budget provided by the PROW.

The objective of the paper is to research farmers' interest in PROW measures considering its macroregional differentiation.

Material and methods

The data from the Agency of Restructuring and Modernization of Agriculture were used in order to calculate the percentage of agricultural holdings which applied for PROW measures in four analysed regions. For the purpose of the research, four differing agricultural macroregions were selected using **Ward** (1963) method, taking as simple features the main indexes of agricultural potential of holdings in twelve administrative regions of Poland, such as:

- Average farm area (ha),
- Percentage of meliorated UAA,
- Utilized Agricultural Area (UAA)/1 Annual Work Unit (AWU) (ha),
- Total assets value/1 ha of UAA (zloty),

- Short term assets/1 ha of UAA (złoty),
- Investment /1ha of UAA (złoty),
- Total assets value/ 1 AWU (złoty),
- Agricultural production/1ha of UAA (złoty),
- Agricultural production /1AWU (złoty).

Similar indexes of agricultural potential were used by **Poczta** and **Mrówczyńska-Kamińska** (2004) for the typology of rural areas in Poland. The results of the cluster analysis are presented on Figure 1.

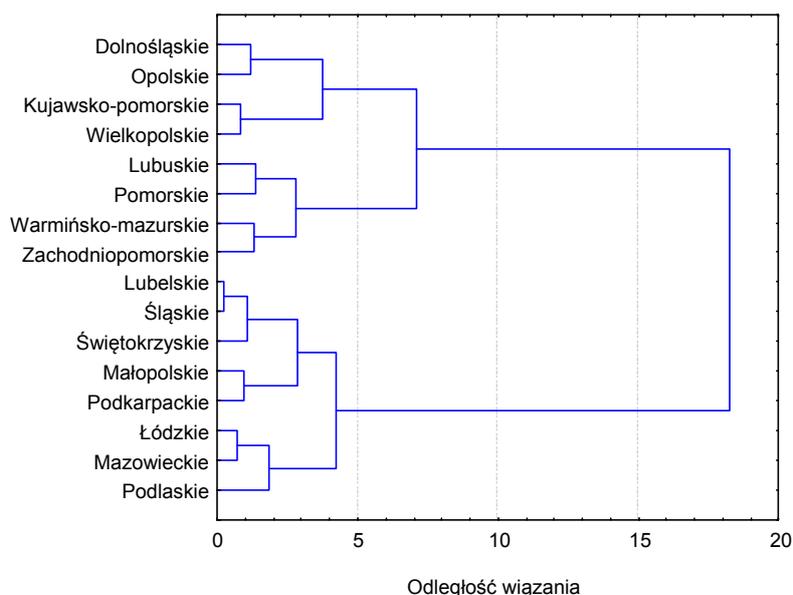


Fig. 1. Clusters of agricultural regions in Poland

Source: own calculations based on Rocznik statystyczny... (2005), conducted using STATISTICA PL software.

Ryc. 1. Skupienia regionów rolniczych w Polsce

Źródło: obliczenia własne na podstawie Rocznika statystycznego... (2005), przeprowadzone z wykorzystaniem programu STATISTICA PL.

A hierarchical cluster analysis does not automatically result in one optimal number of clusters. In the first step of the clustering procedure twelve administrative regions of Poland were divided into two large groups of eight regions. This division shows the differences in the level of agricultural potential and productivity between Eastern and Western Poland, since all regions from the first group are situated in the West, while all from the second one are located in the East of Poland. In the second step of clustering each of the groups was divided into two clusters of regions. As **Baum et al.** (2004) underline, a cluster analysis provides no singular measure to decide on the most appropriate number of clusters for the research problem investigated. Thus the results of a cluster analysis are always to some degree subjective. For the purpose of the research four clusters of regions were selected. Geographically delimited areas are presented on the Figure 2.

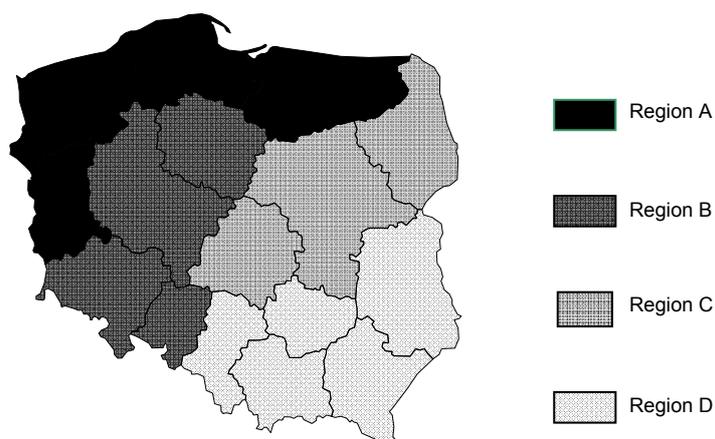


Fig. 2. Selected agricultural macroregions of Poland
 Source: Own calculations based on Rocznik statystyczny... (2005), conducted using STATISTICA PL software.

Ryc. 2. Wytypowane rolnicze makroregiony Polski
 Źródło: Obliczenia własne na podstawie Rocznika statystycznego... (2005), przeprowadzone z wykorzystaniem programu STATISTICA PL.

Results and discussion

Rural areas cover approximately 90% of Poland, and are inhabited by nearly 40% of the Polish population. The economical and structural conditions of the rural areas greatly differ between various Polish regions (**Mrówczyńska-Kamińska** and **Kiryluk** 2005). The reasons of these discrepancies are numerous. Not only are they influenced by differences in the environmental agricultural conditions, but also they relate to important social and historical factors. Over one hundred years of Poland's partition between Prussia, Russia, and Austria (1795-1918) created a long-lasting division of the country into regions with distinctly different levels of economic activity and varying dynamics of agricultural development. The western part of the country traditionally exhibits the highest socio-economic level, which is followed by the southern parts, and then by the eastern parts of Poland (Polska wieś... 2002). As **Swianiewicz et al.** (2000) prove, this division has many dimensions, and includes levels of local government and administrative activity.

Despite the centralized system introduced in Poland after the Second World War, these historical differences were maintained, and rapid industrialization continued preferentially in the already developed areas. Similarly, these regional differences were reinforced in agriculture, mainly by the creation of the state farms. The farm and agricultural production structure differed in the northern regions, where the agriculture was mostly collectivized, while the southern parts maintained private but small and inefficient agricultural holdings. During the process of the post-socialist transformation, the regions most and least developed have not diverged from their trajectories: the best become even better and the worst have even worse (**Gorzela** 1998).

The classification of Polish rural areas has been attempted several times using different methods and indicators (e.g. **Rosner** 2002, **Stola** 2004, **Zgliński** 2001). In general, there is a clear division between more developed West and less developed East visible in all typologies of Polish rural areas. The typology done for the purpose of the research is presented on Figure 2. It is similar to the one developed by the Institute of Agricultural Economics and Food Economy (IAEFE) during the implementation of the Farm Accountancy Data Network (FADN) program (Plan wyboru... 2004). It divides all rural areas in Poland into four macroregions (A: Pomorze and Mazury, B: Wielkopolska and Śląsk, C: Mazowsze and Podlasie, D: Małopolska and Pogórze) according to the development structure (Fig. 2).

The selected areas differ in terms of the agricultural production structure and the agricultural potential. To demonstrate the differences, the main relations between the production factors (land, labour and capital), as well as productivity indexes and percentage of meliorated utilized agricultural area have been calculated and presented in Table 1.

Table 1
Indexes of agricultural potential in four different macroregions in Poland
Średnie wartości wskaźników potencjału i produktywności rolnictwa charakteryzujące wydzielone makroregiony

Index Wskaźnik	Region				
	A	B	C	D	Poland Polska
Average farm area (ha) Przeciętna powierzchnia gospodarstwa powyżej 1 ha UR	19.1	13.0	8.6	4.7	8.4
Percentage of meliorated UAA Udział zmeliorowanych użytków rolnych (%)	48.7	48.8	39.9	24.4	41.1
UAA*/1 AWU** (ha) Powierzchnia UR a 1 zatrudnionego (ha)	17.4	10.4	6.5	4.6	7.5
Total assets value/1 ha of UAA (złoty) Środki trwale na 1 ha użytków rolnych (zł)	5 823.6	7 231.4	8 120.9	7 525.5	7 165.0
Short term assets/1 ha of UAA (złoty) Nakłady środków obrotowych na 1 ha użyt- ków rolnych (zł)	2 140.0	2 905.7	2 962.5	2604.5	2 682.2
Investment/1 ha of UAA (złoty) Nakłady inwestycyjne na 1 ha UR (zł)	135.2	152.2	154.9	104.0	140.9
Total assets value/1 AWU (złoty) Środki trwale na 1 pracującego (zł)	100 083.6	74 126.7	52 411.6	34 600.1	53 452.6
Agricultural production/1ha of UAA (złoty) Produkcja globalna /1haUR (zł)	3 119.2	4 429.0	4 405.9	3 768.3	3 988.5
Agricultural production /1AWU (złoty) Produkcja globalna /1pracującego (zł)	53 478.1	44 630.5	28 282.0	17 222.5	29 755.0

*Utilized Agricultural Area.

**Annual work unit.

Source: calculations based on the data from Rocznik statystyczny... (2005).

Źródło: obliczenia własne na podstawie Rocznika statystycznego... (2005).

Macroregion A mostly includes the areas, where agriculture was collectivized in the prior centralized system. As a result of the transformation, relatively large farms were bought or leased by private investors. Thus, this area is characterised by the highest average farm area (19.1 ha) of all analysed regions. The privatization of state land established the labor productivity in this macroregion on a relatively high level. This is related to a favourable land-labour relation: one person employed in agriculture uses on average 17.4 ha of land, which is the highest among all regions. However, the new farms created by privatization employ only about 30% of the former workforce of the state farms. Consequently, unemployment becomes one of the largest problems in the rural areas of this area. The value of agricultural production per 1 ha is the lowest (3119.2 zloty/1 ha of UAA). The low land productivity is mostly caused by less favourable natural conditions. The intensity of production measured by the value of inputs per 1 ha in the region is on a rather low level (2149 zloty/1 ha).

Macroregion B includes the area of Western Poland characterised by intensive and productive agriculture. The average farm area is 13 ha. The relation of utilized agricultural area to the number of people employed in agriculture reaches 10.4 ha. Labour as well as land productivity are on a relatively high level. The value of inputs and the rate of investment are the highest in comparison to other macroregions. Agriculture in this area is characterized by an intensive use of mineral fertilizers, the biggest grain crops, the highest milk production and the biggest stock of pigs in agricultural holdings (Regionalizacja... 2005). As Michna (2001) recalls the farmers from this macroregion are characterised by the high level of adaptability.

Agriculture in **macroregion C** is characterised by an average farm area of 7 ha, 38% of meliorated arable land, and less than average level of investment. Overpopulation, leading to low labour productivity in agriculture is one of the biggest problems in this area.

In **macroregion D**, small and highly dispersed agricultural holdings dominate. The average farm size is 4.7 ha. The large number of people employed in agriculture causes very unfavourable land-labour relation: one person employed in agriculture uses on average not even 5 ha of land. Not even 25% of the land is meliorated. Agriculture in this macroregion is characterised by a low level of investment per 1 ha of arable land (on average 104 zloty/ha/year).

Taking into account strong regional differences in agricultural structures, it seems that proper and purposefully selected targeting of structural measures in different regions will be of crucial significance for their effectiveness. However, as Bański (2003) underlines, the greatest number of pre-accession structural projects of the EU has been implemented by the strong and powerful local and regional authorities in the better-developed regions, while less developed areas have not benefited enough.

Recent data showing the number of applications for the PROW programs reveal that the majority of the structural funds are allocated into areas where agriculture is already in a relatively good condition. In years 2004-2006 for PROW funds applied over 1 million of agricultural holdings. Figure 3 presents the percentage of holdings which applied for PROW measures in four analysed macroregions.

The highest value of this index is observed in macroregion A, where almost 86 out of 100 agricultural holdings applied for any of PROW measures. Relatively big number of application was also in macroregions B and C, where respectively 71.0 and 81.1 percent of holdings applied for PROW. In contrast in macroregion D only 45 percent of holdings applied for financial means coming from PROW.

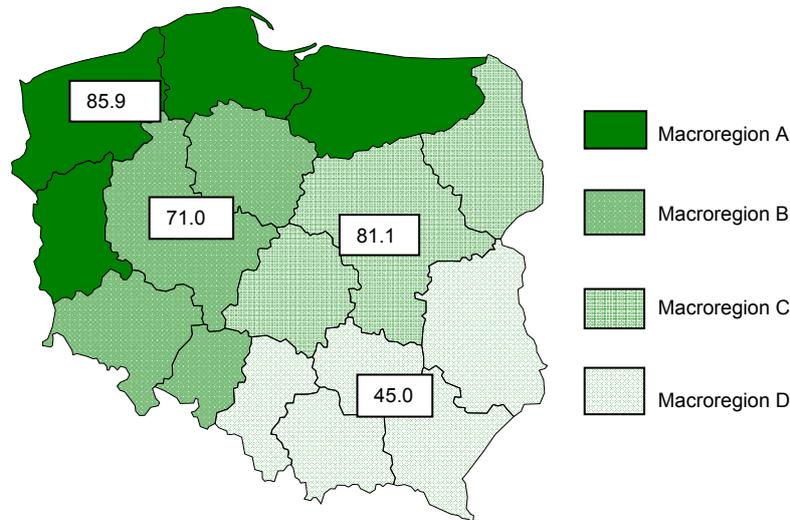


Fig. 3. The percentage of holdings which applied for PROW measures in four analysed macroregions (2004-2006) (%)

Source: own calculations based on the data from the Agency of Restructuring and Modernization of Agriculture.

Ryc. 3. Makroregionalne zróżnicowanie aktywności rolników w ubieganiu się o finansowanie działań w ramach PROW w latach 2004-2006 (%)

Źródło: obliczenia własne na podstawie danych Agencji Restrukturyzacji i Modernizacji Rolnictwa.

In the less developed macroregions, where dispersed agriculture of limited commercial viability predominates, farmers usually react slower to any changes and are less willing to apply for structural funds compared with farmers from well developed areas with a tradition of self-organization. Table 2 presents the percentage of holdings which applied for PROW programs in the four analysed macroregions by measures.

Table 2
Percentage of holdings, which applied for different PROW measures in four analysed macroregions
Udział gospodarstw, które złożyły wniosek na działania PROW w czterech analizowanych makroregionach

Regions Regiony	Early reirement Renty strukturalne (%)	LFA ONW (%)	Agri-environmental Rolno- środowiskowe (%)	Semi- subsistence Niskotowarowe (%)	Afforestation Zalesienia (%)	EU standards Standardy UE (%)
A	3.62	58.48	8.7	6.3	1.7	7.1
B	4.60	43.77	5.2	6.9	0.7	9.7
C	4.19	56.13	3.3	11.4	0.7	5.2
D	2.11	28.76	3.5	10.1	0.6	0.9
Poland Polska	3.29	42.01	4.2	9.6	0.8	4.3

Source: own calculation based on the data from Polish Agency of Restructuring and Modernization of Agriculture.

Źródło: obliczenia własne na podstawie danych ARiMR.

The smallest percentage of farms that applied for the PROW funds is in the macroregion with the biggest structural problems of agriculture (region D). Only 0.9% of the holdings in region D applied for the EU standards program, 3.5% for the agro-environmental and 2.11% for the early retirement program. The farmers from the poorer and less developed areas are more skeptical about the EU support. They likely require more time to understand the new form of support, while farmers from the macroregions already better developed benefit more from the structural funds. As a consequence of the central budgeting system with no regional limits, farmers from the less-developed areas actually benefit the least.

Conclusions

The results show that the level of agricultural potential of holdings has an important impact on farmers' interest of structural programs. The highest percentage of holding applied for PROW measures in macroregions is already better developed. In particular it concerned the innovative and prospective programs which required more commitment from farmers e.g. meeting EU standards or agri-environmental programs). The region where the farmer's interest in structural programs was the lowest was macroregion D, which among all analysed regions is characterised by the worst agricultural potential. The results show that in introduced in Poland central budgeting system, with no regional limits, farmers from the less-developed regions actually benefit the least. This way of allocating the structural aid could lead to an intensification of regional differences in agricultural development. Thus, to ensure the effectiveness of structural policy for the whole country, there is a need for region-specific programs and for an institutional structure for regional budget distribution in Poland. Measures for rural development should be adapted to the specific regional conditions and national programmes should allow for different regional priorities.

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MAKROREGIONALNE ZRÓŻNICOWANIE AKTYWNOŚCI ROLNIKÓW W UBIEGANIU SIĘ O ŚRODKI FINANSOWE PLANU ROZWOJU OBSZARÓW WIEJSKICH

S t r e s z c z e n i e

Celem badań jest analiza zróżnicowania regionalnego aktywności rolników w ubieganiu się o środki finansowe Planu Rozwoju Obszarów Wiejskich 2004-2006 nadanych przez rolników. Wyniki badań wskazują na istotne zróżnicowanie zainteresowania rolników działaniami PROW w wyodrębnionych w pracy makroregionach rolniczych kraju. Największą aktywnością wykazywali się rolnicy z makroregionów lepiej rozwiniętych. Dotyczyło to w szczególności działań prorozwojowych lub wymagających pewnego zaangażowania ze strony rolników. Natomiast w makroregionie Południowo-Wschodnim odnotowano najmniejszą aktywność rolników. Ten makroregion charakteryzuje się niekorzystną, wręcz anachroniczną, strukturą agrarną, przeludnieniem i rozdrobnieniem gospodarstw, co powoduje niską produktywność rolnictwa.