

THE CAP INSTRUMENTS IMPLEMENTATION IN POLAND: STRENGTHENING OR HINDERING DEVELOPMENTAL PROCESSES. A REGIONAL VIEW

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Abstract

One of the objectives of a second pillar of the European Union Common Agricultural Policy is to increase the competitiveness of agricultural sector. This task is primarily implemented by instruments such as investment subsidies for agricultural holdings and projects aimed at generation changes among people working in agriculture and increasing their knowledge and skills. In the Polish RDP 2007-2013, the objective of improving competitiveness was a priority. The aim of the paper was to assess the influence of an axis I of RDP 2007-2013 instruments on strengthening or hindering development processes in Polish agriculture, with a special reference to a regional aspect. The conducted research showed that the relationship of the Program's initiatives aimed at improving the competitiveness of agriculture with economic progress had a diverse character. Strengthening development processes in Polish agriculture should be linked with the Program's initiatives supporting a modernization of farms. The paper was based on public statistics data and results of evaluation and scientific research concerning this Program. The work uses the methods of comparative and statistical analysis as well as literature review.

Keywords: agriculture, Poland, development, region, CAP, RDP.

Introduction

In Polish economy a special role of agriculture is often emphasized. Significance of this sector reflects a large number of farms and agricultural labour resources, as well as an important contribution to foreign trade¹. Nevertheless, in public debate a need to stimulate structural changes in rural areas and agriculture has been discussed for a long time. These transformations are usually perceived as a reduction of impact of agriculture on the socio-economic system. Decreasing influence of agricultural production on the economy was a consequence of dynamic growth of other sectors and meant an increasing concentration of land, labour and capital resources in agriculture. However, due to an unsatisfactory pace of changes and adverse environmental and social effects of economies of scale, the involvement of an institutional mechanism in market relations was stipulated [Woś, 2003, Czyżewski et al., 2010, Zegar, 2015].

In 2004, along with the accession of Polish agriculture into the European Union Common Agricultural Policy (EU CAP) a possibility of considerable public intervention appeared. Significant financial resources and mechanisms aiming at stimulating economic progress were available under the rural development policy (the second pillar of the CAP). In

¹ According to Eurostat data, agricultural holdings in Poland accounted for 13% of total EU farms, and the share of national labor input in the EU agriculture amounted to 20%. The share of the agri-food export in total Polish exports amounted to 13%.

2007-2015 Poland was the largest beneficiary of this policy in the EU. In the mentioned time span for the implementation of Rural Development Programme 2007-2013 (hereinafter Programme, or RDP 2007-2013) EUR 17.2 billion of public funds² were allocated. Relatively the largest share of financial resources (EUR 7.9 billion), i.e. 46% of the total RDP budget was targeted for the implementation of projects in favour of improving the competitiveness of agriculture³. Therefore, the expenditures on investments in production factors (physical capital), human capital (generational renewal among farmers) and in the qualifications and skills of employees (advisory services, training) were of priority. Effective use of EU support aimed at the development of Polish agriculture was highly determined by differentiation of basic socio-economic rural structures in regions.

The aim of the paper was to analyse the relationship between selected CAP instruments and the developmental processes in Polish agriculture, with special emphasis on the regional aspect. The next part of the text describes the data and methods used in the study. Then paper presents theoretical perspectives on possibilities of agricultural development together with a reference to the spatial disparities of rural Poland. The results section contains the data analysis on the changes in the number of farms and labour resources in agriculture in 2010-2016 at the national and macro-regional level, as well as the assessment of the effects of selected RDP interventions. The paper ends with a discussion and conclusions section.

Data and methods

The paper is based on the analysis of data describing Polish agriculture and the effects of RDP 2007-2013 implementation at the level of five macroregions and sixteen regions (voivodships in Polish) that were gathered by public statistics (Central Statistical Office – Regional Data Bank)⁴. The measures of agricultural development described in the text covered the changes in the number of farms (in total and in selected categories by economic size)⁵, as well as in the scale of agricultural employment⁶.

The study took into account the RDP 2007-2013 instruments implemented in 2007-2015⁷, which were the payments addressed directly to beneficiaries (investment grants, social transfers). The majority of the measures under the Programme axis I meet that criterion and

² Most of these funds (77%) came from the European Agricultural Fund for Rural Development (hereinafter the EAFRD).

³ The name of the first axis of RDP was *Improving the competitiveness of the agricultural and forestry sector*.

⁴ The text uses the administrative division of Poland into voivodships (NUTS-2 level) and the classification of macroregions developed by the Institute of Agricultural and Food Economics-National Research Institute (IAFE-NRI). Macroregions were defined there due to historically shaped structural features of agriculture (area size of farms) and other socio-economic characteristics of rural areas. Under the IAFE-NRI categorization there are five macroregions, which include following voivodships: Central-Western (I): kujawsko-pomorskie (KPM) and wielkopolskie (WLK); Central-Eastern (II): łódzkie (LDZ), mazowieckie (MZW), lubelskie (LBL) and podlaskie (PDK); South-Eastern (III) : świętokrzyskie (SWT) , małopolskie (MLP), podkarpackie (PDK), śląskie (SLS) South-Western (IV): opolskie (OPL), lubuskie (LBS) and dolnośląskie (DLN); Northern (V): zachodniopomorskie (ZPM) , pomorskie (PMR), warmińsko-mazurskie (WMZ).

⁵ Four different size groups of farms were analyzed: small (up to EUR 15 thousand. standard output – SO), medium (from 15 to 25 thousand), large (from 25 to 50 thousand) and very large (50 thousand. and more).

⁶ Employment in agriculture was based on the Labor Force Survey (LFS) data.

⁷ In accordance with EU regulations (n + 2 rule), all payments from the Programme should have been transferred by the end of 2015.

were as follows: 112 *Setting up of young farmers*, 113 *Early retirement*, 121 *Modernization of agricultural holdings*, 126 *Restoring agricultural production potential*, 132 *Participation of farmers in food quality schemes*, 141 *Support for semi-subsistence farming* and 142 *Agricultural producer groups*. The other measures available in the first axis were not analysed due to the fact that they were not included in Programme (5 measures), lack of data at the regional level (measure 111), small interest of beneficiaries (125 and 133) and different conditions and form of support (111, 114 and 123). In the paper in order to analyse the impact of RDP instruments on development processes in agriculture, the regression and correlation analysis was used. In particular, in analysed territorial units the frequencies of using of measures: 112, 113, 121 and 141 was determined⁸ (in macroregions), as well as the relationship between use of these measures and the changes in the size of selected group of farms and the scale of agricultural employment (in regions) were defined. For that purpose, the indicator of support intensity (ISI) was calculated⁹.

1. Literature review

In theory the concept of development is defined in many ways. As for the agriculture, the division into two concepts describing different premises, ways and directions of economic progress of this sector has been established, namely the idea of industrial and sustainable agriculture [Kowalski and Rembisz, 2005, Buttel, 2006, Zegar, 2015] (table 1). The former model is based mainly on the assumptions of classical and neoclassical economics. The latter refers to the Keynesian and post-Keynesian economics, as well as environmental economics and the concept of multifunctionality of agriculture [Buttel, 2006 Kulawik, 2016].

For the industrial model of agriculture an essential condition for development of the sector is the intensification of production, which is closely linked with the increase in the size of farms and the scale of production. At the microeconomic level, an adequate production potential, and as a consequence, a high level of marketability translates into a satisfying income for agricultural producer. In case of the whole sector, a high concentration of production resources and commercial agricultural production determined its competitiveness. Consolidated and effective supply side of markets means an optimal allocation of resources and meeting a food demand. According to the assumptions of industrial model, a public intervention should be limited only to creation of an equal and favourable conditions for the development of business activity. Hence, governments are not able to cause structural adjustments in the sector because may disturb the interactions between producers and consumers by taking their actions (table 1).

In contrast, the model of sustainable development of agriculture highlights the imperfectness and incompleteness of a market mechanism. It recognizes also a specificity of agricultural sector in the economy, which leads not only to the need of income redistribution and usefulness of support of agricultural investments, but also to the necessity of rewarding of agricultural producers by the society for the provision of environmental services and creation of positive externalities [Kulawik, 2016]. According to the concept of sustainable agriculture the remuneration of farmers for supplying the goods not valued by the market's rests on the

⁸ These were the following RDP 2007-2013 measures: 112, 113, 121 and 141. Their selection stemmed from the high total share in the first axis budget (over 80%) and a considerable number of beneficiaries.

⁹ The index of support intensity was a relative measure. It was calculated as a ratio of the total number of beneficiaries of a given measure of the Programme in 2007-2015 and the total number of farms in 2010 multiplied by 100.

government. A system of public incentives supporting the implementation of sustainable agricultural production creates positive effects and results in availability of high-quality products (organic food), preservation and improvements in the natural environment, mitigation of climate change, and also in the increase of the living standard of farming families (social cohesion) [Zegar, 2015, 2017]. An important determinant of development of the sustainable agriculture is also associated with the innovations spill-overs, as well as with an increase of environmental awareness of producers and consumers (table 1). Promotion of high-quality agricultural production and provision of various farm services is linked with the development of different functions of agriculture (multifunctionality), which stimulate viability of rural areas (in-migration, job creation).

Table 1. Economic development and the model of industrial and sustainable agriculture

| developmental model | industrial paradigm | ssustainability paradigm |
|-----------------------------|---|--|
| aim | >creating equal and optimal conditions for agricultural markets >satisfying income level | >lowering income/developmental gaps between sectors and areas >preserving the natural environment >increasing of the level of life |
| determinants of development | >production intensification (economies of scale) >increasing farm size (area, livestock) | >knowledge (innovations) and ecological awareness >farm organization and size >reduction of market failures |
| effects | >increased competitiveness, >optimal allocation of resources >meeting a food demand | >high quality of food products >biodiversity, renewed eco-systems >viability of family farms and rural areas (rural jobs) |
| instruments | >legal and institutional tools in favour of development of business activity | >public intervention >promotion of environmental services >demand-side support (income subsidies) |
| theory | >classical and neoclassical economics | > Keynesian and post-Keynesian economics >environmental economics >multi-functional agriculture |

Source: own elaboration based on: [Kowalski i Rembisz, 2005, Buttel, 2006, Zegar 2015, Kulawik, 2016].

Under the conditions of Polish agriculture, the pace and scope of economic transformations in this sector are highly determined by differentiation of the basic socio-economic characteristics in regions [Chmieliński, 2006 Sikorska, 2013]. In the South-Eastern macroregion a relatively large number of small farms is located. At the same time, a high level of non-agricultural employment and diversification of local economies is observed there. The eastern part of the country is dominated by small and average in size farms as well (Central-Eastern macroregion). In this region the areas of fragmented and traditional

agriculture function along with the highly commercial and effective farms, particularly specialised in dairy, fruit, vegetable and poultry production. In turn, in the south-west of Poland (South-Western macroregion) the urbanization, social mobility and development of infrastructure resulted in the intensive transformations within agricultural structures. A decline in the number of small units in favour of a growth of highly-commercial farms was noted there. The Central-Eastern macroregion is traditionally associated with the most effective and professional agriculture in Poland. In that region many agricultural holdings could be characterised as large, commercial and often specialized in livestock production. A significant share of market-oriented farms with large area of agricultural land is also observed in the Northern macroregion.

2. Changes in the number of farms and farming population in Polish agriculture in macroregions

According to the data, in 2010-2016 both at the level of the country, as well as in macroregions the structural changes have been observed. These processes were primarily reflected in the decrease in the number of farms and people working in agriculture (table 1). In the analysed time span the group of total farms in Poland decreased by less than 100 thousand. (6.5%) entities (from 1.5 to 1.4 million), and the total size of agricultural labour resources decreased by 348 thousand employees (i.e. by 17.3%, from 2.0 to 1.7 million).

The shrinkage of agricultural holdings and their employees was noted in all macroregions. Nevertheless, these processes showed a different intensity at the regional level. In South-Eastern macroregion, characterized by a predominance of small-scale and semi-subsistence agriculture, the number of farms decreased by 43 thousand (9.5% of all entities from the region) and the number of people employed there fell down by 157 thousand (27.7%). In contrast, in Northern macroregion only the minor changes were noted. In 2010-2016, the number of farms decreased there by 3.6 thousand (3.1%) and the number of persons working in agriculture decreased by 1 thousand (0.6%).

Table 2. Changes in the number of farms and agricultural employment in Poland and in Polish macroregions in 2010-2016

| Specification | no of farms (in thousand) | | | no of persons employed in agriculture* (in thousand) | | | no of very large farms by economic size** (in thousand) | | |
|-----------------|------------------------------|-------------|----------------|---|-------------|----------------|---|------------|----------------|
| | 2010 | 2016 | change in % | 2010 | 2016 | change in % | 2010 | 2016 | change in % |
| Macroregions | | | | | | | | | |
| Central-Western | 194 | 185 | -4,6 | 308 | 257 | -16,6 | 17 | 26 | 56.1 |
| Central-Eastern | 632 | 598 | -5,3 | 824 | 694 | -15,8 | 18 | 36 | 101.0 |
| South-Eastern | 456 | 413 | -9,5 | 566 | 409 | -27,7 | 4 | 7 | 69.0 |
| South-Western | 112 | 103 | -8,2 | 148 | 139 | -6,1 | 6 | 10 | 68.4 |
| Northern | 115 | 112 | -3,1 | 165 | 164 | -0,6 | 9 | 14 | 51.0 |
| Poland | 1509 | 1411 | -6,5 | 2011 | 1663 | -17,3 | 95 | 109 | 71.2 |

* LFS data, persons working in agriculture, forestry, hunting and fishing.

** Farms with the economic size of EUR 50 thousand of SO and more.

Source: own elaboration based on CSO Regional Data Bank.

In 2010-2016, the limitation of agricultural labour resources and production units was associated with the changes in the size of groups of farms with different economic size (table 1) According to the public statistics data, in the country and in each macroregion the number of large and very large farms grew by 15% and 71% respectively. The highest growth of these categories of entities in Central-Eastern and South-Western was recorded (primarily in Podlaskie and Lubelskie region), as well as South-Eastern macroregions (Świętokrzyskie and Podkarpackie). Simultaneously, at the national level, the number of medium-sized agricultural holdings slightly decreased (by 2.5%). This phenomenon was spatially diversified. The category of medium-sized farms decreased mainly in the central-western and northern part of Poland, while in the south-western and south-eastern macroregions it grew up. At the same time, in all Polish macroregions the group of small agricultural holdings has been considerably reduced.

3. The effects of selected RDP 2007-2013 instruments on agriculture in Poland and in macroregions

Diagnosed barriers in the development of agricultural sector in Poland such as low profitability and competitiveness of agricultural holdings resulted from insufficient equipment with modern technical means of production and agricultural land, as well as deficits in qualified managers and other workers. Therefore, in the various strategic documents and in RDP 2007-2013 the improvements were linked mainly with investments in production potential, growth of the agricultural land area and generational changes among farmers [Strategy of sustainable..., 2012 RDP 2007-2013]. relatively The largest amount of public funds within the Programme have been allocated on these ways of improving the market position of farms.

With regard to the level of public expenditures and potential impact on agricultural production, the most important instrument of the RDP was the measure 121. In 2007-2015 for its implementation EUR 2.5 billion (31% of the total budget of first axis) was allocated. The total number of beneficiaries of this measure amounted to 58 thous. persons (table 2).

Table 3. Impact of RDP 2007-2013 on changes in Polish agriculture

| measure no* | beneficiaries (in thousand) | public expenditures (in mln euro)** | share in total axis I budget (in %) | impact on agricultural development*** |
|-------------|-----------------------------|-------------------------------------|-------------------------------------|---------------------------------------|
| 112 | 38.9 | 779.5 | 9.5 | P/H |
| 113 | 73.5 | 2514.1 | 30.6 | N/H |
| 121 | 57.9 | 2517.0 | 30.6 | P/H |
| 126 | 6.9 | 200.2 | 2.4 | P/L |
| 132 | 21.4 | 12.6 | 0.2 | P/L |
| 141 | 152.9 | 524.7 | 6.4 | N/L |
| 142 | 1.4 | 198.4 | 2.4 | P/L |

* Full names of RDP measures are provided in Data and methods section.

** domestic budget and EFARD contribution; exchange rate EUR = 4.06PLN.

*** direction – P: positive; N: negative; intensity – H: high; L: low.

Source: own elaboration based on RDB and MARD data, as well as literature review.

Relatively lower public expenditures were related with the aid for semi-subsistence farms (6.4% of the total first axis budget). The number of beneficiaries of this measure amounted to 153 thousand persons running agricultural holdings. They received EUR 1250 premium subsidy paid per annum for three to five years¹⁰. These funds were spent mainly on the purchase of farm machines and livestock (in case of 3/4 beneficiaries) [Ex-post Evaluation ..., 2009]. The biggest group of recipients of assistance for semi-subsistence farming were from Central-Eastern macroregion, where the index of support intensity amounted to 12.4%. At the regional level, the positive correlation between this index and growth rate of medium-sized farms was noted and reached high values particularly in the eastern part of the country (figure 1).

The main aim of RDP measures no 113 and 112 was a contribution to generational change among farmers and the modernization of agricultural production assets. The former instrument lunched in the previous edition of the Programme covered 74 thousand farmers who were given a pension in return for agricultural land for successors from their families or for increasing other farms. For the implementation of early retirement scheme the significant amount of public funds (EUR 2.5 billion) was allocated. Analysis of data showed that at the level of regions the positive correlations between the value of index of support intensity and the decline in the growth rate of small farms and the population working in agriculture were noted (figure 1). On the other hand, under the measure 112 a total of EUR 0.8 billion has been submitted for one-off payment (up to EUR 24 thousand) for young farmers to help start agricultural activities and modernise agricultural holding after the takeover. As a result, this financial assistance contributed to the purchase of agricultural machinery, equipment and tools, means of transport, as well as to the projects of building and modernisation of farm buildings in case of 39 thousand of beneficiaries. The highest participation in projects for young farmers in the Central-Western part of the country was observed. At the regional level, the use of this support was strongly correlated with the growth rate of economically strong agricultural holdings (figure 1).

Agricultural investments in farms co-financed by the EU funds were granted also under the measure 126 which was aimed at restoration of production assets damaged by natural disasters (mainly hail and floods). This support covered 7 thousand beneficiaries. The value of expenditures, although important for affected farmers (mainly from the Mazowieckie, Lubelskie and Świętokrzyskie regions), for agricultural sector in the country and particular macroregions was of limited importance. At the macro level, the Programme intervention to improve the quality of agricultural production and development of collective forms of agricultural production had small impact as well¹¹. For the development and creation of agricultural producer groups (1.4 thousand entities) only a small share of the Programme's budget¹² have been allocated.

¹⁰ This support was granted in 2005-2006, i.e. under the RDP 2004-2006. For RDP 2007-2013 the measure 141 was a financial commitment.

¹¹ Under the measure 132 the quality of products was to increase in the group of 21 thousand of beneficiaries. The small support was granted for five years. Beneficiaries of these subsidies were usually managers of ecological farms located in the northern part of the country.

¹² Measure 142 was an important condition for the functioning and development of the majority of such enterprises in the country.

Conclusions

The paper presents research results on the impact of selected Polish RDP 2007-2013 instruments on strengthening and hindering the developmental processes in Polish agriculture with a special focus on regional aspect. Given the argument for increasing economic competitiveness and multiplicity of meanings concerning the concept of development, manifestations of the latter were perceived in the light of selected premises of sustainable and industrial agriculture [Zegar, 2015]. On the one hand, due to the land fragmentation, agricultural overemployment and insufficient level of capital expenditures, desirable direction of change was associated with structural changes including concentration of production resources, specialization and increase of production scale. At the same time, the impact of historical conditions and the market imbalances affecting the sector, as well as limited funds for activation of growth constituted a reasonable basis for financial support of developmental processes, especially in the production and socio-professional structures [Baer-Nawrocka and Mail, 2016]. In this context, the changes in the population of farms and agricultural labour force supply occurred in 2010-2016 were analysed.

The discussed transformations involving a decrease in the number of production units (by 6.5%) and employees in the sector (by 17%) should be assessed positively. These changes stemmed from continuation of economic growth, dynamic infrastructure development and rural urbanization process [Sikorska, 2013]. In the economy the disagrarisation were determined by phenomena occurring mainly in non-agricultural labour market and within the agri-food sector itself.

Analysed data showed that both in the country and in particular macroregions, the increase in the number and in the share of large and very large farms in terms of economic size was noted. In relative terms, this process took place in the central-western and northern part of Poland, that is in areas with commercial and effective agriculture, where concentration of strong and modern production entities has been for a long time.

According to both results of evaluation studies and carried out calculations, the development processes in Polish agriculture was partly supported by subsidies available under the RDP 2007-2013. Investment projects contributing to the improvement of market position were implemented mainly under measures 121 and 112 in a relatively small group of farms in the country (over 6% of total Polish agricultural holdings). Compared to persons who did not use the RDP instruments, beneficiaries of public funds aimed at modernization and generational changes in agriculture, increased the fixed assets and production scale while limiting costs, which resulted in growth in gross value added in their farms [Ocena wpływu..., 2015].

In turn, investment subsidies for small farms contributed to the maintenance of the production in some of these entities. As a result, a slight and average increase in the scale of production among beneficiaries of measure 141 was observed [Ewaluacja ex-post..., 2009]. The analysis of gathered data indicated indirectly that this support helped small farms to increase their economic size and join to the category of medium-sized units. However, this process concerned the small number of beneficiaries, mainly from the Lubelskie, Łódzkie and Świętokrzyskie regions. It should be emphasised that the funds offered within measure 141 could not contribute to a significant improvement of market position. Therefore, it is claimed that the aid for small farms was mainly a kind of social transfer [Bułkowska and Chmurzyńska, 2007].

In 2007-2015, the early retirement programme in Poland had a limited effect¹³. Firstly, the impact of this measure on the age structure of farmers and on concentration of agricultural land [Ocena wpływu..., 2015] was relatively small. Secondly, at the level of regions, structural pensions financed by the EU were not linked with considerable reductions in the agricultural labour resources and the number of the smallest agricultural holdings. This reflected the fact that in the whole country, especially in regions with fragmented agrarian structure, agricultural land was often transferred within the farming family members [Ewaluacja ex-post..., 2009 Ocena wpływu..., 2015]. High level of public expenses allocated to the measure 113 along with its unsatisfactory impacts suggested the occurrence of significant alternative cost and deadweight loss. This also resulted in the preservation of fragmented production structures in Polish agriculture. Public funds allocated for the early retirement pensions were above all social transfers that should be spend for other actions, including initiatives in favour agricultural investments and innovations [Rowiński, 2009].

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¹³ This measure was implemented primarily as a financial commitment under the previous RDP 2004-2006.

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