

Structural changes in the Polish agriculture after accession to the EU in the light of the sector's competitiveness and efficiency

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ABSTRACT

Socio-economic transformations that took place in Poland in the period of EU membership caused a number of structural changes in the resources and distribution of production factors in agriculture. As compared to other sectors of the economy the changes in the agricultural sector seem relatively the most significant ones. The material presented below includes: a brief analyses of structural changes taking place in the Polish agriculture in the 2002-2012 period, information on the absorption of the EU funds for implementation of structural programmes and conclusions from this assessment referring to the issues of competitiveness and efficiency of the Polish sector.

Key words

structural changes in agriculture, competitiveness of agriculture, efficiency of agriculture, State aid for agriculture, Common Agricultural Policy

Introduction and research objectives

Poland's membership in the EU has radically changed the economic conditions of functioning in the Polish agriculture and rural areas. The most important sources of these changes, of course, apart from the European Single Market and macro-economic conditionalities, include Common Agricultural Policy (CAP) and structural funds. Today, we already know that CAP has actually caused an increase in support for agriculture, while structural funds have triggered considerable cash flows intended for modernisation of food economy and rural areas development. As compared to other sectors of the economy the changes in the agricultural sector seem relatively the most significant ones. The research presented below aims at showing the character and pace of changes taking place in economic structures in agriculture under the influence of socio-economic transformations and Poland's membership in the EU, as well as those related to CAP implementation and relate them the issues of competitiveness and efficiency of the agricultural sector.

The article adopts competitiveness and efficiency of Polish farms as indicators of their economic strength and the indicators of competitiveness and efficiency were derived from the definition of competition which is one of the basic economic mechanisms of market economy. Competition is a process used by market participants, who while driving at implementation of their own interests, try to present offers that are more beneficial than others in terms of price, quality or other characteristics influencing the decision to enter into a transaction [Kamerschen, McKenzie, Nardinelli 1991]. At this background competitiveness is a specified state of competition, one of its characteristic features [Adamkiewicz, 1999]. It is an evaluative term determining the desired state that may refer to economic entities, sectors of national economies and countries or regions. Competitiveness of the economy (sector) is something

more than a simple average of competitiveness following from the sum of international competitiveness of economic entities acting on its area [Chesnais 1988, Lubinski, Michalski, Misala 1995].

Another concept evaluating competitiveness takes into account the resources of production factors, efficiency of their use, pace and direction of structural changes. Z. Wysokińska (Wysokińska, 2001) links competitiveness to efficient use of resources of production factors, as well as structural changes taking place in the economy resulting in increased efficiency of farming. According to Meredyk K. (Meredyk, 2001) competitiveness is a feature of economic growth and follows directly from the quantity and quality of labour. The definition of competitiveness relies more and more often on two interconnected pillars of efficiency and quality, since it is the quality of products that preconditions the prices and possibilities of sales. Numerous authors, such as G. Hamel, C.K. Prahalad, J. Barney, J. Kay, M. Cassone do not define competitiveness although they analyse it in their works.

During the 1994 World Economic Forum in Lausanne competitiveness was defined as the ability of a country or enterprise to generate greater wealth than the competitors on the world market [World Economic Forum, 1994]. According to OECD [Competing in the Global Economy, 1994] competitiveness is the ability to produce goods and services that are acceptable on the world market under the conditions of free trade with simultaneous growth of real income of the population in the long-run. M. Porter sees competitiveness through the eye of the ability to create conditions favourable for development of the international competitiveness of companies under individual national industries and branches. This ability is determined by a system of interconnected production factors, demand conditions, mutually connected and supporting branches and strategies of companies, structure of the branch and competitors – the so-called Diamonds of National Advantage [Porter, 1995]. Thus competitiveness analysis can be conducted *ex post* - by assessing the result of competition at a defined moment in time, or *ex ante* - by referring it to a long-term ability to keep or improve the present competitive position.

On the other hand, the economic efficiency is understood as the ratio of achieved effects to the incurred inputs. The economic effect for farms is the income obtained from agricultural activity generated by them, whereas the input is the total labour input, labour input of farmers and their family members expressed in AWF and FWU¹. Many authors commonly use these indicators as measures of economic efficiency of agricultural enterprises [Józwiak 2009, Goraj, Mańko 2011]. However, agricultural enterprises and farms do not usually compete directly with comparable enterprises on foreign markets. Entities that are directly present on international markets and compete there are agri-food processing enterprises and trade enterprises [Ziętara, 2012]. Quality and price of the offered products preconditions their tendering strength. They are most of all dependant on raw materials that are delivered by farms and agricultural enterprises. According to A. Woś the costs of raw materials constitute 2.3 of costs incurred by the food industry [Woś 2003]. Although agricultural producers are not directly present on international markets they have an indirect impact on competitiveness of agri-food products.

The analysis of competitiveness and efficiency for the needs of agriculture presented below has been performed through the eye of competitiveness of resources allocation. Since farming is based on the assumption that resources are limited and that the available skills are selected in a rational manner. When looking for an optimal selection, unlimited needs of consumers are taken into account along with limited available resources and production technologies. Thus the main focus has been drawn to production resources (land, labour and capital) referring to their quantity (sometimes also their quality) and agricultural structures influencing

¹ AWU (annual work unit) – equivalent of labour input of 1 full-time employee (2,200 man-hour/year). FWU (family work unit) – labour input of farmer and his family members (2,200 man-hour/year).

the used production potential expressed by resources. The analysis has been supplemented with references to the sectoral competitiveness shaped through economic policy instruments (primarily CAP) which directly and indirectly influences the competitive possibilities of agriculture.

Statistical data used for analytical purposes in this article were taken from the databases or published materials concerning economic results of farms covered by the FADN² accountancy system, macroeconomic data of the Economic Accounts for Agriculture (EAA), results of CAP implementation provided by the Agency for Restructuring and Modernisation of Agriculture (ARMA) as well as literature studies.

Structural changes in agriculture

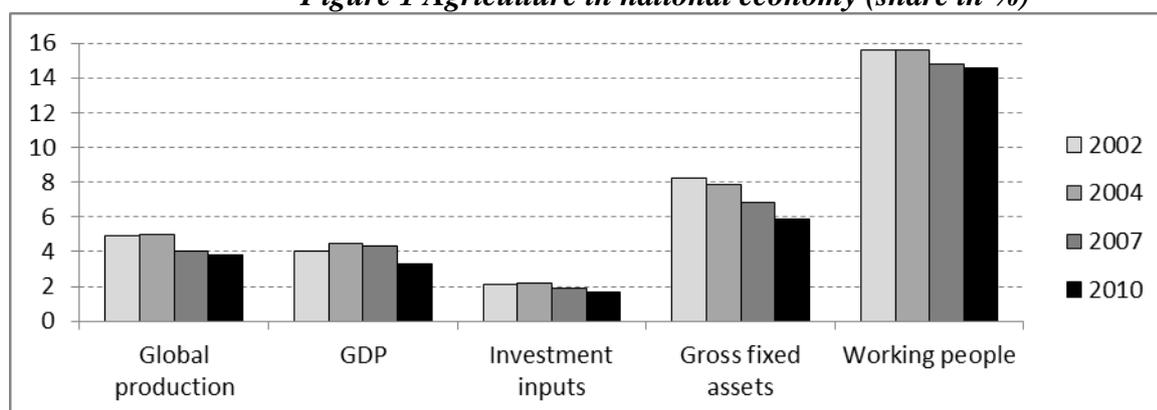
In the years preceding Poland's accession to the EU, in 2004 and the following years structural changes took place in agriculture in the field of employment, resources of utilised agricultural land, production organisation, level of input and progress made. Sometimes they were rather dynamic (e.g. changes in the production structure), on other occasions they took place over generations (employment in agriculture). Usually they were a continuation of the already existing trends (sometimes with slight changes in their intensity), however, on other occasions their directions changed due to new circumstances. After 2004, multiannual trends were continued which were expressed in a slower decrease in the area of agricultural land, sown area or livestock population. They were accompanied by an increased intensity of plant and animal production, crops and unit productivity of animals.

Despite structural changes, sometimes very deep, the Polish agriculture remains an important sector of our Polish economy. This is, primarily, confirmed by the structure of employment and structure of land use. The sector plays an especially important role as it comes to social and economic development of rural areas. Since agriculture uses over half of the total area of the country for economic purposes, it sets the main functions and directions of land use and shapes the natural environment and landscape. The agricultural sector remains the place of work for almost 15% of the total number of working people. However, the number of people working in agriculture points to negative relations between the labour resources and land and capital resources thereby causing low efficiency of labour. On the other hand, from the perspective of Gross Domestic Product (GDP) generation the significance of the agricultural sector in Poland is decreasing. The share of agriculture (including hunting and forestry) in GDP has dropped from ca. 9% in 1990 to 4% in 2003 and 3.3% in 2010. The share of agriculture in replacement and increasing of the assets remains significantly smaller. Investment inputs for the purpose are shaped below 2%, which inevitably leads to further decrease in the role of agriculture as owner of fixed assets in the national economy.

An analysis of labour resources and fixed assets as well as of the share of agriculture in creation of the global product and gross domestic product prove that the productivity of assets is small and that labour productivity in agriculture stagnates (Figure 1). On a country scale, in some regions it still plays an important role, having a strong impact on the level of development and the standard of living of the inhabitants of the regions. In general, agriculture still keeps the traditional character expressed e.g. in fragmented (as compared to such countries as Germany or France) agrarian structure, multi-directional production activity of farms, extensive production techniques, although very radical changes take place also in this scope. These changes are caused primarily by the market economy system and transformation following from CAP instruments and structural policy.

² Farm Accountancy Data Network

Figure 1 Agriculture in national economy (share in %)



Source: “Pracujący w Gospodarce Narodowej” (relevant yearbooks), CSO, Warsaw, “Środki Trwałe w Gospodarce Narodowej” (relevant yearbooks), CSO, Warsaw, “Statistical Yearbook of the Republic of Poland”, CSO, Warsaw 2011; own calculations

In 2002-2010 the land resources of farms have decreased significantly. The total area of land has dropped by ca. 5.5% from 19,325 thousand ha to 18,257 ha, i.e. by over 1 million ha of agricultural land. The decrease has covered only agricultural land and its area has decreased by 1,365 thousand ha (i.e. by 8.1%) from 16,899 thousand ha in 2002 to 15,534 thousand ha in 2010 and this was caused, mainly, by a decrease in the area of land not used for agricultural purposes and the area of grasslands. At the same time, there was an increase in the area of forests and other lands, and or perhaps above all, an increase in area intended for service activities, construction or infrastructure development. The area of agriculture production has decreased by only 415 thousand ha of agricultural land (the aggregated surface of sown area, orchards, meadows and grasslands has dropped from 14,597 thousand ha to 14,182 thousand ha).

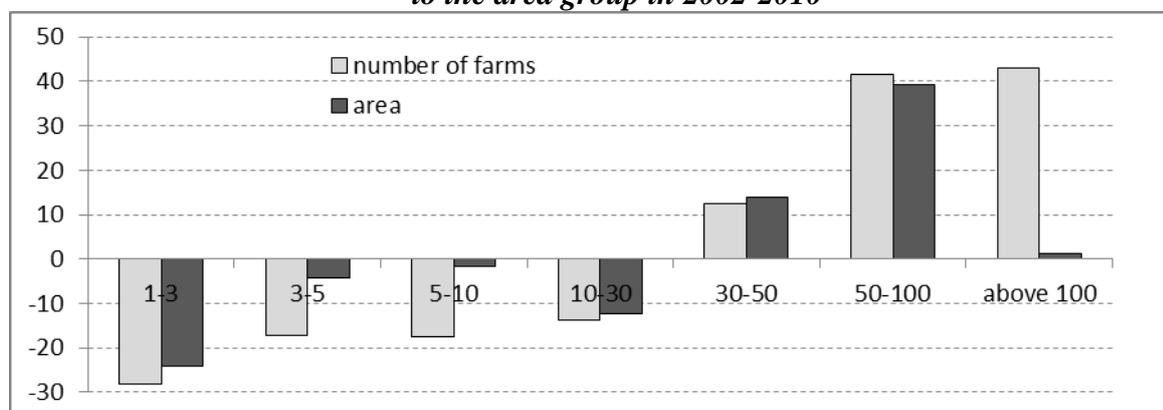
Changes in the area structure of farms have also occurred in the discussed period. The total number of farms has decreased from 2,933 thousand to 2,278 thousand, i.e. by 655 thousand (22%), and the decrease concerned both agricultural parcels (farms up to 1 ha of agricultural land), as well as farms above 1 ha of agricultural land, and the decrease in agricultural parcels amounted to 27%, and in farms above 1 ha of agricultural land – 20% (in 2010 the number of farms above 1 ha of agricultural land was 1,563 thousand, which means a drop as compared to 2002 by 393 thousand). The structural changes were significantly differentiated in individual area groups. The share of farms below 1 ha has also decreased, while there was a simultaneous increase in the share of units above 1 ha (from 66.6 to 68.6%). However, in the second group the changes were multi-directional. The number of farms above 1 ha has decreased by 20% (by 393 thousand), and the number of farms ranging from 1 ha to 30 ha has dropped by 405 thousand, while the number of farms above 30 ha has increased by 12 thousand. A dynamic decrease in the number of the smallest farms (similarly as in the case of agricultural parcels below 1 ha) resulted from not covering some part of land of these farms with direct payments (because of failure to act by their owners or difficulties in proving that agricultural activity is pursued on the lands). The group of farms with the area above 30 ha has increased from 2.6% in 2002 to 4% in 2010, whereas in farms of 30-50 ha the increase amounted to 12.5% and in the group of farms greater than 50 ha of agricultural land – the increase amounted to over 40%. However, in 2010 there were only 63 thousand farms of more than 30 ha of agricultural land. From the perspective of competitive potential the structure of land use is more important than the structure of farms. Changes that took place in this scope

are, however, similar in their direction since there was a very significant decrease in agricultural land of the smallest farms (1–2 ha by over 30%), several percent (13.8–17.4%) in the group of farms of 2-20 ha and an increase in the utilised land resources in the farms of more than 30 ha of agricultural land (the greatest by almost 40% in the group of 50–100 ha of agricultural land).

The idea behind economic activity in agriculture, just like in other production sections, is production. Introducing elements of production structure to the analysis of agriculture's productivity results from the fact that the volume of obtained production depends not only on the intensity of involvement of production factors and labour force resources (under the given natural conditions), but also on the area of activity on which these factors were involved [Rudnicki, 1997]. However, it is without doubt that structural changes in production are closely related to changes in area structure. In 2002-2010, the number of farms sowing crops has changed by ca. 28% (from 2,007 thousand to 1,449 thousand), and the average sown area has increased by 1/3 to 7.2 ha (by 1.8 ha) (Table 2.13). There was also a drop in the number of farms growing vegetables (by over 80%), potato (by 75%), sugar beet (by 50%) and cereals (by 22%), while the number of farms growing rapeseed (by 100%) and maize (by 20%) increased. Production concentration has been visible both in plant and animal production. The size of an average bovine herd has increased from 5.9 to 11 units (and more than 60% of the population was gathered in herds of more than 20 units), cows from 3.3 to 5.9 units (herds of 10 and more units gathered 67.6% of the population), pigs from 24 to 38 units (herds of more than 500 units gathered 33% of the population). In 2010 herds of more than 20 thousand units gathered over 68.2% of the population of laying hens and over 90% of the population of broilers.

The direction of changes in the number and structure of farms should be deemed positive. Farms bigger in terms of land, which gather an increasing percentage of agricultural land, are more and more important. In 2002 the number of farms of more than 20 ha of agricultural land amounted to 51 thousand (2.6% of farms of more than 1 ha of agricultural land) and as of 2010 it increased to 63 thousand, but it still is less than 4% of farms of more than 1 ha of agricultural land. In 2002 these farms utilised 5,509 thousand ha of agricultural land (33.4% of agricultural land in farms of more than 1 ha of agricultural land), while in 2010 – 6,039 thousand ha of agricultural land (almost 40% of land resources in farms of more than 1 ha of agricultural land). However, the pace of changes is clearly unsatisfactory (Figure 2).

Figure 2 Changes in the number of farms and area of agricultural land according to the area group in 2002-2010

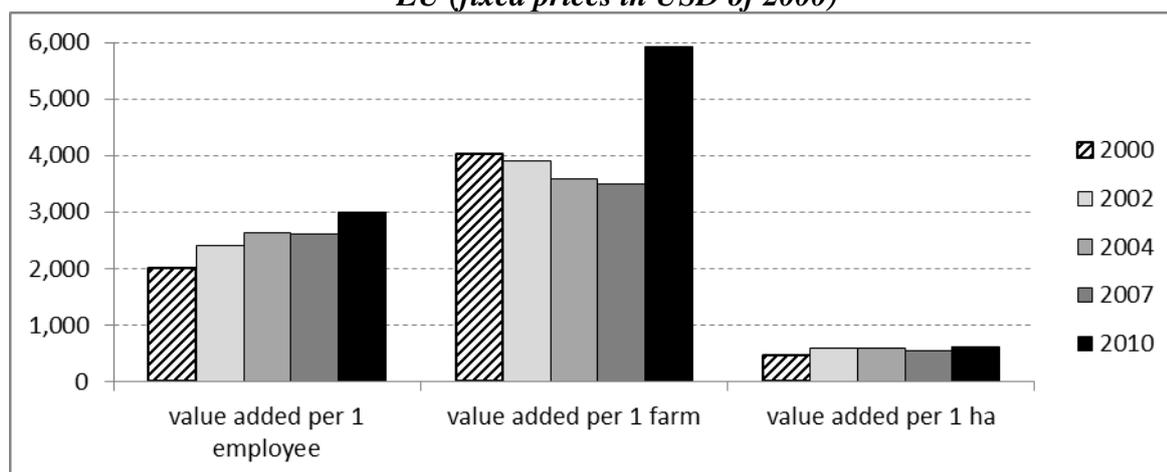


Source: Raport z wyników – Powszechny Spis Rolny 2010, CSO, Warsaw 2011; own calculations.

In 2010 the Polish agriculture had at its disposal ca. 8.5% of land resources, it involved 18% of labour input and 5.1% of capital input in the EU-27 agriculture. Although these relations are not favourable, there was, however, a systematic although relatively small improvement in the relation between land resources (area of agricultural land) and labour input (expressed in AWU³), or the sum of indirect consumption and depreciation and labour input. In 2010 the area of agricultural land per 1 AWU in Polish agriculture amounted to only 7.7 ha, which was less than half of the value in the EU-27 (16.4 ha). One unit of labour input has used capital input (sum of indirect consumption and depreciation) with the value of EUR 7.3 thousand, which amounted to only 30% of the average level in the EU-27, while intensity of production measured with capital input per 1 ha of agricultural land has amounted to EUR 941, which corresponded to ca. 60% of the level of these input in EU-27. The relations showing the provision of the active factor in the production process - i.e. labour, with the two other production factors, namely land and capital give evidence to a weak competitive position of the Polish agriculture as regards the competitive potential and preordains low efficiency of labour in sectoral terms and relatively low intensity of agricultural production (relation: capital input - land resources) determines rather low productivity of land [Poczta, 2012].

Differentiation of the structure of farms is often showed as one of the main factors deciding on the economic results of the sector. In order to eliminate the impact of different pace of price change in individual countries on the results of the sector, the economic results of agriculture were analysed in fixed prices of 2000 (Figure 3). In 2000-2010 there was a permanent and significant increase in the value added per 1 employee, but it was small as calculated per 1 ha of agricultural land. The ability to cumulate resources for new investments and perceiving a takeover of farms as an attractive alternative by future successors is significant from the perspective of durability and possibility of further development of farms. Thus it is necessary to assess the production effects in which farms have their share. An increase in the value added from ca. USD 4 to nearly 6 thousand, even under eastern European conditions, does not give evidence to significant economic strength of farms in these countries.

Figure 3 Value added generated in agriculture per 1 employee, farm and 1 ha in the EU (fixed prices in USD of 2000)

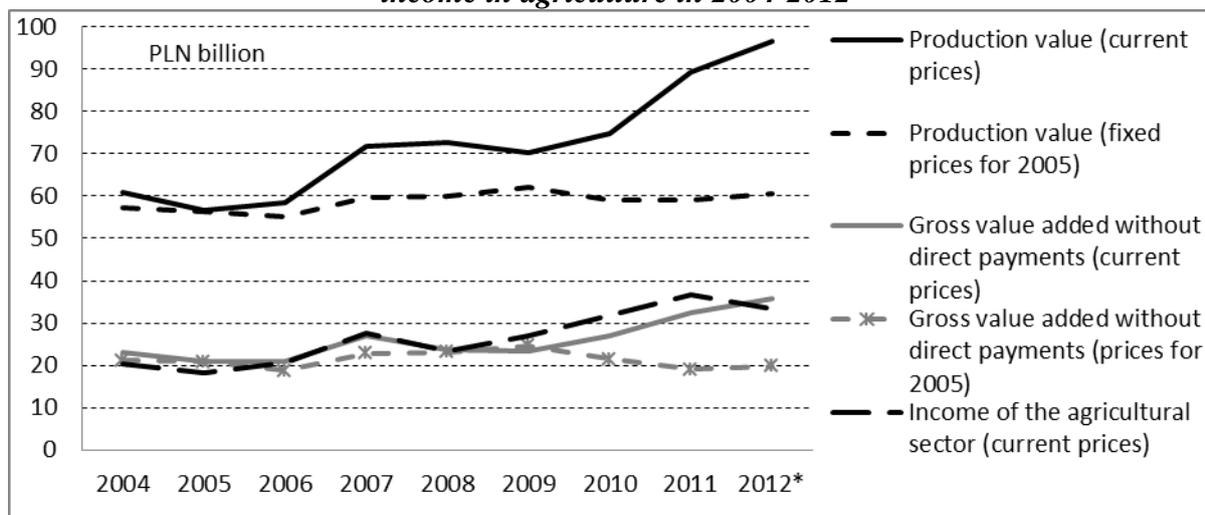


Source: own elaboration based on the data of Eurostat (table ef_lu_ovcropa) and World Bank [World Development Indicators & Global Development Finance table EconomicPolicy&Debt\National Accounts\Agriculture, value added (constant 2000 USD)].

³ 1 AWU (Annual Work Unit) - CSO makes it 2,120 work hours per year (265 days x 8 hours)

The analyses conducted with the use of Economic Accounts for Agriculture (EAA)⁴ [Floriańczyk, 2013] show that in 2004-2012 (i.e. in the years of Poland's membership in the EU) the value of production in the agricultural sector in current prices, excluding payments to products, has increased from almost PLN 61 billion to over PLN 96 billion. And the increase in nominal value of production was especially strong in 2011 and 2012 (Figure 4). The increase in the value of production was linked primarily to the increase in the prices of agricultural products. For comparison, the value of production in fixed prices (2005) in the examined period has increased from PLN 58.0 billion to PLN 60.5 billion, i.e. within the range of 3%. The highest value of production in fixed prices has been observed in 2009 which was linked to the extremely high crops.

Figure 4 The value of production, gross value added without direct payments and income in agriculture in 2004-2012



* estimated data

Source: Data for EAA.

Gross value added (GVA) is an important indicator of the effects of agriculture. It is the source of replacement of assets and payment for own work, foreign production factors and taxes, as well as possible resources that may be allocated to different objectives. In 2012 the GVA of the agricultural sector without payments to products reached PLN 35.7 billion and was higher by over 50% as compared to 2004. It is the highest value of GVA since the time of the accession to the EU. The comparison of GVA in fixed and current prices shows that a high increase in the latter was related to a stronger increase in the prices of agricultural products than inputs observed in the last years. Also in real terms, the value of GVA has increased slightly in 2012 although in the previous years it dropped strongly.

As for the value of income from the agricultural sector in 2012 they have reached the level of PLN 33.3 billion (in current prices) and were by almost 15% lower as compared to 2011. This is an effect of decreasing the total amount of direct support on account of finishing the previous programming period. As a result, in 2012 the total amount of direct support constituted 37% of agricultural income while in 2011 it was nearly half of that. However, given the record level of income in agricultural sector in 2011 it may be assumed that the high level of income in Polish agriculture after the accession to the EU has been continued.

When examining the EAA it may be seen that in the analysed period the value of plant and animal production has increased, as well as the value of production services provided by agricultural producers for other entities operating in agriculture. This was not caused only by

⁴ These are satellite accounts as regards some national accounts and they are made by IAFE-NRI in cooperation with the CSO for the needs of the European Commission.

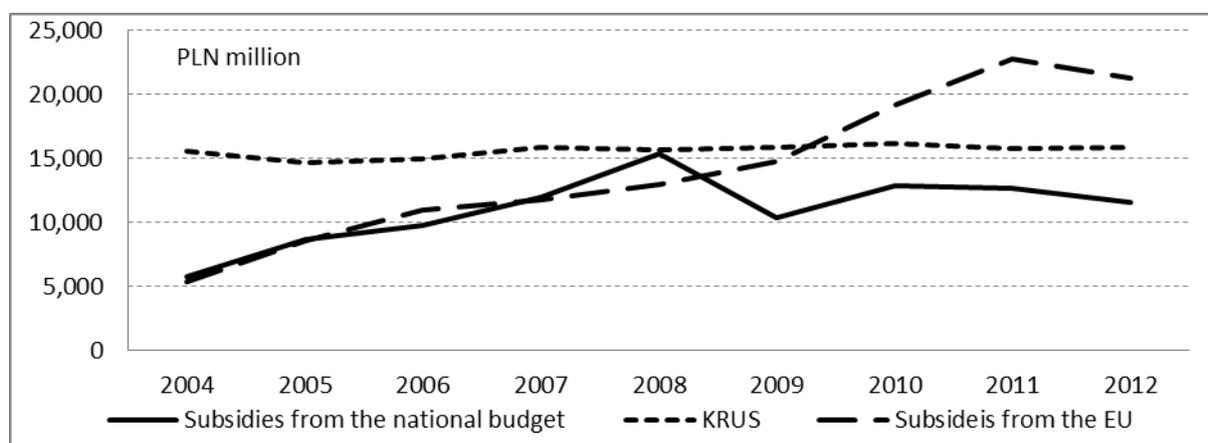
a change in prices, but also different forms of progress, growing level of provision of farms with technical means, reduction of production under unfavourable conditions. Moreover, the rapidly processing denaturalization of consumption affected a drop in the value of home-processed agricultural products despite a price growth [Józwiak, 2012]. Starting from 2004 the amounts of payments to production and certain types of products have increased incrementally. Because of the above, the increase in the value of agricultural income, despite an increase in the costs of indirect consumption, was faster and, consequently, the increase in the gross value added was also more rapid.

The progress made in the national agriculture was a resultant of activities undertaken by agricultural producers following from growing competition, changes in the prices of agricultural products and means of production, payments to production and products, State aid in the field of investment support and introduced innovations. The last concept encompassed each significant change in the scope of products and production processes, which resulted from solutions created in the country on the basis of licences bought abroad, foreign innovative means of production, results of national research and local invention and technology improvement activities.

Policy for agriculture and rural areas - financial and material dimension

The increase in expenditure on the agricultural sector both in nominal and real terms is the measurable effect of Poland's accession to the EU. This refers to expenditure from the national budget as well as the EU budget (Figure 5). The share of expenditure on agriculture (excluding KRUS) in State budget expenditure has increased over twofold (from almost 2% in 1997-2004 to ca. 4% in the 2005-2012 period). An increase in budget expenditure for agriculture and rural areas is a consequence of covering Poland with the CAP and structural policy instruments of the EU, and it follows from the principle of co-financing of the operational programmes and co-financing of the direct payments from the national budget. After 2003 for the first time (since the system transformation) there occurred a chance for direct improvement of the income situation of national agricultural producers and reproduction processes on their farms. The recession in Poland took place as a result of improvement in the macroeconomic conditions of functioning of the economy, which were seen as an opportunity to stop the growing degradation of the Polish agriculture and rural areas. Increased budgetary inputs were not, of course, able to solve the basic problems of the agricultural sector in Poland on-the-spot, since this requires several years of consistent agricultural policy [Czyżewski, Matuszczak, 2012].

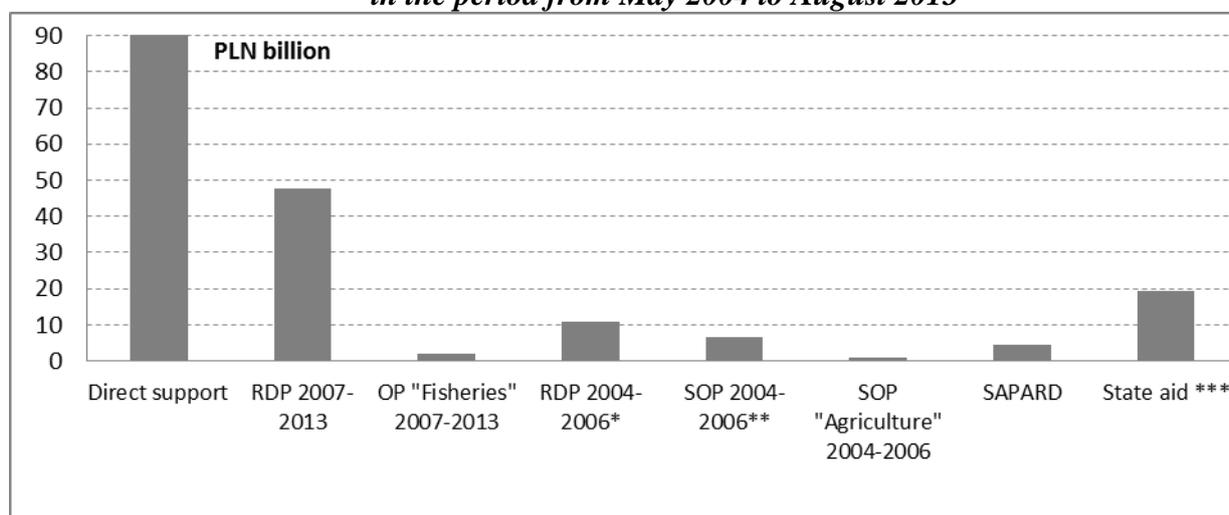
Figure 5 Budgetary expenditure for the agricultural sector in 2004-2012 (PLN million)



Source: Own elaboration on the basis of "Analiza produkcyjno-ekonomicznej sytuacji rolnictwa i gospodarki żywnościowej w 2011, 2009 i 2006 roku", IAFE-NRI, Warsaw (subsequent years) and Czyżewski A., "Opinia o ustawie budżetowej w częściach dotyczących rolnictwa, (individual years) Opinie i ekspertyzy, Chancellery of the Senate, the Analyses and Documentation Office

The budget of the European funds was the main source of financing of the increase in budgetary expenditure on the development of agriculture, food industry and rural areas. In 2012 it amounted to ca. 53% of the budgetary expenditure for the agricultural sector (including KRUS). From the beginning of membership in the EU until June 2013 Poland has received over PLN 180 billion under different support instruments from the EU resources (market intervention, direct support system, rural development programmes, and fisheries policy) and national support (excluding KRUS). The greatest share in these transfers belonged to direct payments (over 50%) and payments to implementation of rural development programmes (almost 40%) (Figure 6).

Figure 6 Aggregated expenditure to CAP implementation in the period from May 2004 to August 2013



* excluding CNDP 2004-2006; ** along with measures of the Foundation of Assistance Programmes for Agriculture (FAPA) and Offices of the Marshal; *** Mainly subsidies to interest rates on loans

Source: Author's own compilation based on ARMA Management Information System, www.arimr.gov.pl (accessed on: 02.09.2013)

These financial resources intended for agriculture development and paid from the EU budget may be divided into four groups according to their impact on growth and structural changes in agriculture:

- entirely direct impact: modernisation of farms, early retirements and diversification of agricultural activity, setting up of young farmers;
- entirely indirect impact: infrastructure, land drainage, land re-parcelling, afforestation, agri-environmental schemes, advisory services;
- partly direct impact: direct payments, support for agricultural activity in less-favoured areas (LFA), market intervention expenditure, establishment of agricultural producer groups, establishment of micro-enterprises;

- partly indirect impact: quality of life on rural areas, support to processing industry, PHARE programmes, LEADER programme, village renewal, training, technical assistance.

Direct payments are, of course, the basic instrument of support to agricultural income. Poland, like the majority of the new EU Member States, applies the Single Area Payment Scheme (SAPS), under which Single Area Payments (SAP) and Complementary National Direct Payments (CNDP) are provided. Payments are awarded to each hectare of agricultural land in good agricultural condition of a farm whose area exceeds 1 ha. Total area entitled to SAPS in Poland is 14.1 million ha. Each year, applications for single area payments are submitted by ca. 1.35 million farmers and complementary payments - ca. 1.2 million farmers. The Single Area Payments constitutes ca. 60% of the total amount of payments, while the complementary payments - 30% of the amount of payments. Other forms of direct payments are insignificant in terms of the total budget of paid direct payments (e.g. animal payments amounted to 5% of total budget of payments and sugar payments to 4%).

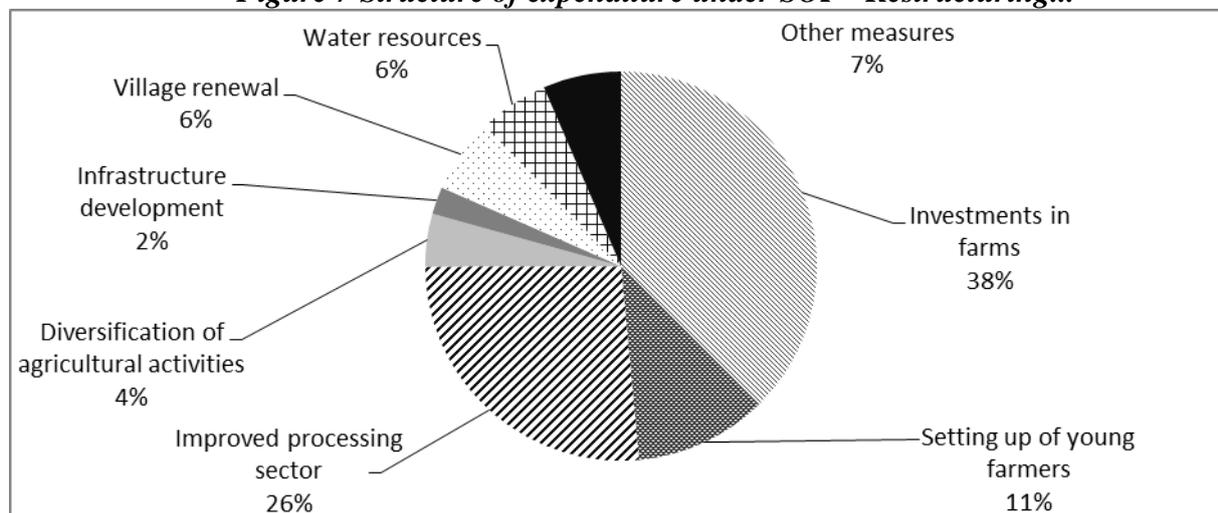
The initial level of the Single Area Payment received by Polish farmers was much lower than the average level of payments in the EU-15, since Poland was covered by a 10-year transition period. The default rate of payment in 2004 amounted to 25% of the rate in the EU-15, 30% in 2005, 35% in 2006, after which it increased by subsequent 10% each year until reaching 100% of the average level of payments in the EU-15 in 2013. At the same time, complementary payments were paid from the state budget. They involved all crops excluding fallow land, potatoes other than starch, vegetables and decorative plants (both annual and perennial). In 2004-2010, the amount of co-financing from the state budget reached 30%, in 2011 it was 20% and in 2012 it was 10%. In the 2004-2012 period the total amount of support under SAP and CNDP expressed in PLN per 1 ha has increased from ca. PLN 503 to PLN 943 in 2012. The continuous increase in expenditure allocated for direct payments caused an increase in the role of these payments as an income-generating factor in agriculture. Before the accession the subsidies accounted for less than 9% of the farmers' income, while in the 2009-2012 period (despite the increase in the value of agricultural production in real terms by 20%) their share exceeded 60%.

The resources from structural funds of the EU were rather insignificant as it comes to funding changes in the Polish agriculture in 2000-2002. In subsequent years the share of EU budget resources in the funding of changes in the agricultural sector was, however, more significant. The first real programme addressed to villages and rural areas was the pre-accession SAPARD programme with the budget of EUR 946 million. In subsequent years - 2004-2006 (and actually, because of programme settlements, until the end of 2008), two programmes were implemented, e.g.: Rural Development Plan for 2004-2006 (RDP for 2004-2006, with the budget of EUR 3,592 million) and the Sectoral Operational Programme "Restructuring and Modernisation of the Food Sector and Rural Development 2004-2006" (SOP "Agriculture", with the budget of EUR 1,788). The Rural Development Programme (RDP 2007-2013, with the budget of EUR 17,420 million) has been implemented in Poland since 2007. The total amount of public resources – both EU, and national – allocated to rural development under SAPARD, RDP 2004-2006, SOP "Agriculture", and RDP 2007-2013 is EUR 23.7 billion. Financial resources under the programmes implemented in 2000-2006 (a total of EUR 6.3 billion) were used in full. The RDP 2007-2013 enjoys as much popularity among beneficiaries as its earlier versions.

The SOP "Agriculture" was focused on implementation of two priorities, i.e.: 1 - Supporting changes and adjustments in agricultural and food sector, 2 - Sustainable development of rural areas. The so-called technical assistance was also funded under the programme. The greatest significance from the perspective of improved competitiveness of the agricultural sector and better efficiency of farms operation belonged to measures concerning investments in farms

(over 28.2 thousand of projects were implemented for the amount of ca. PLN 2,412 million), setting up of young farmers (14.2 thousand of projects were implemented for the amount of ca PLN 707 million), improved processing conditions in the food industry (1.2 thousand of projects were implemented for the amount of ca PLN 1,622 million) and differentiation of the sources of income on a farm (4.4 thousand of projects were implemented for the amount of ca PLN 280 million) (Figure 7).

Figure 7 Structure of expenditure under SOP "Restructuring..."

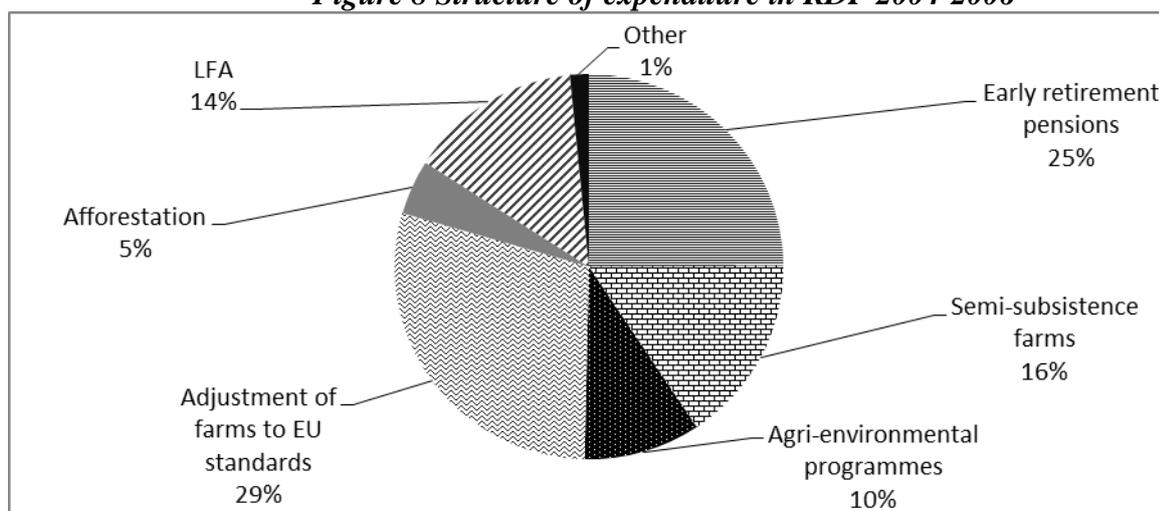


Source: Author's own compilation based on "Informacja o stanie realizacji SPO „Rolnictwo...”, Wydział Monitorowania, www.minrol.gov.pl (accessed on: 02.09.2013)

The RDP 2004-2006 was a social programme, although some of the measures conducted under it additionally contributed to environmental protection and indirectly also to the improvement of the competitiveness and efficiency of agricultural holdings. The most important measures from a financial point of view included: early retirement pension scheme (owing to its implementation over 53,000 holdings were transferred to the successors, and the value of paid pensions exceeded PLN 2,083 million), semi-subsistence farms (assistance provided to 172,000 farms, and its value exceeded PLN 1,316 million), agri-environmental programme (it applied to 79,000 projects and assistance amounting to ca. PLN 815 million), adaptation of holdings to EU standards (73,000. projects worth about PLN 2,437 million) and afforestation (29,000 projects worth about PLN 385 million) (Figure 8). From the financial point of view, however, the programme to support economic activity within less-favoured areas (LFA) for agricultural development under natural conditions was most important (in 2004-2006, there were 628,000-718,000 applications submitted every year for the amount of PLN 1,145-1,295 million)⁵.

⁵ Implementation of the RDP 2004-2006 programme ended on 31 December 2008. The presented data were obtained from the Management Information System of the Agency for Restructuring and Modernisation of Agriculture (ARMA).

Figure 8 Structure of expenditure in RDP 2004-2006

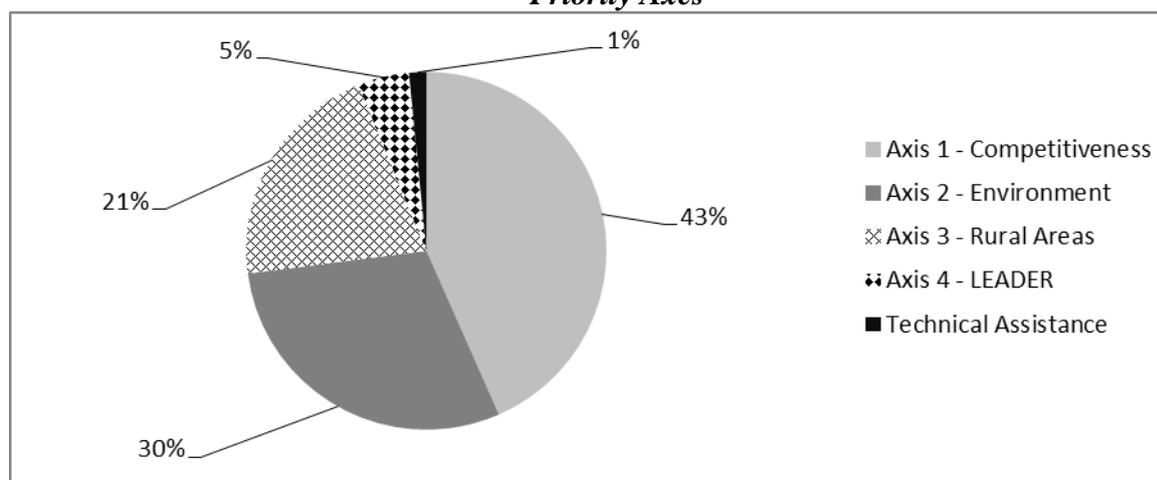


Source: Authors' own compilation on the basis of the data from the Management Information System of the Agency for Restructuring and Modernisation of Agriculture (ARMA) (accessed on 02.09.2013)

RDP 2007-2013 is the largest assistance programme that invests in rural areas. Among the EU Member States, Poland has at its disposal the largest allocation from EAFRD (EUR 13.4 billion) for the implementation of measures covered by RDP 2007-2013. These funds are supplemented with a State budget contribution, which amounts to EUR 4 billion. In addition, the commitments from 2004-2006, which amount to EUR 3 billion and were undertaken under the Rural Development Plan 2004-2006, are also financed under EAFRD. The RDP 2007-2013 measures are implemented under four strategic priority axes (Figure 9): Axis 1: Improving the competitiveness of the agricultural and forestry sector; Axis 2: Improving the environment and rural areas; Axis 3: Improving the quality of life in rural areas and diversification of the rural economy; Axis 4: LEADER. From the point of view of improving the competitiveness of the agricultural sector and improving the effectiveness of agricultural holdings, major importance is attached to farm modernisation measures (over 45,200 projects for a total of ca. PLN 7,105 million), early retirement pensions (20,100 projects for a total of PLN 1,240 million), facilitation of business start-up by young farmers (23,100 projects for a total of ca. PLN 1,594 million), improvements to processing in the food industry (932 projects for a total of ca. PLN 1,906 million) or in improving the standard of living within rural areas, including the support for implementation of basic services for the economy and rural population (1,800 projects worth PLN 4,061 million), diversification of sources of income of an agricultural holding (11,700 projects for a total of ca. PLN 1,023 million) and establishment of micro-enterprises (6,700 projects worth ca. PLN 1,107 million)⁶. Besides, the RDP 2007-2013 contained the follow-up measures from RDP 2004-2006. These are: early retirement pensions, support to agricultural producer groups, support to semi-subsistence farms, agri-environmental programmes, afforestation of agricultural land.

⁶ The presented data refer to programme implementation according to the data at the end of August 2013.

Figure 9 Breakdown of funds for the implementation of the RDP 2007-2013 by Priority Axes



Source: RDP Operational Programme 2007-2013, the Ministry of Agriculture and Rural Development

The current structural transformations in the Polish agriculture are an effect of multiple factors, both the ones associated with economic cycles, geopolitical ones and the current generation-related changes. Both macro-economic conditions that arise from the presence within EU structures and the presence within the Single Market and State aid programmes addressed to the agri-food sector under the CAP contribute to it. The process of concentration of production and concentration of land takes place first of all by way of market sales of agricultural land [Sikorska, 2013]. To a much lesser degree, the transformations result from the transfer of agricultural holdings within a family because in such a case the land is perceived not as a form of production, but as assets that is transferred a generation by generation. The inflow of EU funds from the EU was an important incentive that triggered structural changes and hence the improvement of the effectiveness of farming and the competitiveness of agriculture. However, the public policy instruments currently in use, which were supposed to promote convergence of the regions, are not able to prevent their polarisation. Even an increasing economic and spatial polarisation can be seen. Economic disparities between commercial farms with strong links to the market increase and the farms that produce mainly for self-supply and are social in their nature. The development distance between rich regions or the ones becoming richer and the poor regions clearly gets larger. Rich areas develop due to the use of their potential and economic situation whereas the poor areas are stuck in stagnation [Rosner, 2011].

Conclusions

When searching for the paths towards modernisation of the Polish agriculture and increase in the income of the population working in that sector, the improvement of agrarian structure is always mentioned. In the Polish agriculture, just like in the Southern Europe countries and unlike in the Northern and Western Europe countries, there are mostly small farms (up to 10 ha of farmland). The number of agricultural holdings is higher only in the Romanian and Italian agriculture. Large farms with an area of over 50 ha of farmland represent only 1.7% (of the total of holdings that are involved in agricultural activities), and 30% of farmland is concentrated in them. In the western and northern countries of the Community, as well as in Hungary, Slovakia and in the Czech Republic, 75-90% of the total farmland is concentrated in the largest farms. The gap between an average farm area in Poland and an average farm area in the EU decreases.

A weakness of the Polish agriculture consists in the concentration of the most of the production potential (resources) in the agricultural holdings that produce on a small scale. The measures for the acceleration of structural transformations are justified mainly by the increase in competitiveness of the food sector on the domestic and international market, reasonable use of factors of production and the improvement in the living conditions of the population that is maintained from the work in family farms. The faultiness of agricultural structures often translates into mistakes in the applied production technologies, and both areas entail low productivity of the factors of production. The micro-economic weakness of most agricultural holdings determines the sectoral weakness of the Polish agriculture on the European Single Market.

The percentage of the contemporary agricultural sector in the generation of the final food product and the generation of the GDP shows a downward trend. Yet, the contribution of non-agricultural elements of food economy increases in that account. The Engel's law, which states that as consumers' income rises, the proportion of income spent on food (in particular the processed one) falls, although nominal value of the expenditure on food rises, has clearly revealed in the Polish food economy, just like in the entire global economy.

When analysing the competitiveness through the prism of stabilisation of agricultural markets and modernisation of the agricultural sector, it should be stated that, after Poland's accession to the EU, significant changes took place that were connected with the previous trend for socialisation of the budget expenditure for growth of expenditure earmarked for financing of structural changes in the agriculture and within rural areas. Among other things due to them, the number of farms in 2002-2012 decreased within area groups in which there are difficulties in achieving a parity income level and development opportunities. An increase in the number of farms took place in area groups in which there was appropriate income guarantees proper performance of the consumption function (parity income level) and the production function (implementation of net investments). The still present faultiness of agricultural structures and the necessity to make adjustments in the relations between the factors of production is a proof that it is necessary to introduce changes consisting in continuing the reduction of labour resources in the agriculture and modernisation of fixed assets.

The CAP instruments covering Poland resulted in doubling the actual income of farmers, which improved their economic situation and increased the opportunities to finance the current expenditure and to implement modernisation investments. However, the agricultural sector needs further transformations in the field of agrarian and production structures, and the EU's CAP should be an important stimulant thereof. After the accession, a considerable production and economic progress was made, but its competitiveness does not represent a strong foundation of international competitiveness. In the Polish exports on the European Single Market there are mostly higher processed products (which results from labour costs and processing fees in the Polish food sector) and labour-intensive products. Because of cheap labour force, the agricultural sector has an advantage in labour-intensive production areas, which is in accordance with the Heckscher-Ohlin theorem. Therefore, Poland should obtain competitive advantages in exports in the area of agri-food products such as fruit, vegetables, meat, meat offal and processed meat.

The positive impact of the EU agricultural policy on the shape of the domestic policy on rural areas is expressed in the increasing importance of environmental matters, protection and conservation of natural resources, the valuable habitat of which is represented by rural areas. The environmental awareness of farmers increases, and they started to be referred to as "the guardians of nature and landscape". More and more often (in the financial dimension – State aid programmes; in the social dimension – the environmental awareness), their roles in the preservation, protection and care of natural resources (public goods) is appreciated. Despite substantial funds from the EU that are used by the Polish agriculture and the Polish rural areas

both indirectly and directly, the socio-economic development level of rural areas was equalised neither in urban-rural terms (the centre and the peripheries), nor in the regional terms.

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