при одновременном увеличении урожая и изменения в жанровой структуре зерновых культур. В Украине площадь культивации и уровня наборов были стабильными.

Ключевые слова: производство зерновых, располагать зерновыми, культивация

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STRUCTURAL CHANGES IN POLISH AGRICULTURE AFTER ECONOMIC TRANSITION AND EUROPEAN INTEGRATION

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Abstract. *Developments in the agricultural sector in Poland after 1989, which are to a large extent policy driven (transition to a market economy, EU accession and the introduction of the CAP) resulted in significant changes in all dimensions of the agricultural structure. Despite still fragmented farm structure, processes of concentration of agricultural land and livestock became visible. The smallest sized herds have continued to disappear, and livestock has moved to larger scale herds on specialized farms. A significant increase in investments in fixed assets in the years that followed accession to the EU should be noted.*

In response to market requirements, and due to the modernization processes that took place in Polish agriculture, the total agricultural output has consistently grown over a long period. Technological advancements in Polish agriculture, productivity increases and positive prices trends in the post-accession period have also resulted in increased farm incomes. A noticeable increase of agricultural outputs and farm incomes characterizes changes also in other new Member States after the EU accession due to the introduction of the Common Agricultural Policy and new market opportunities as a result of growth in domestic demand and increased exports.

Keywords: Poland, structural changes, economic transformation, European integration

Introduction

Economic transition and European integration have contributed significantly to the restructuring of the agricultural sector in Central and Eastern Europe. Poland, like other countries which went through the transition

and process of accession to the European Union, has faced many problems to be solved on the road to a free market economy.

The agricultural sector was not an exception. In Poland, in the first years of transition which was initiated in 1989, farmers experienced severe financial difficulties mainly due to a high inflation and the scrapping of the centralized price regulation system. Since the mid-1990s, however, preparations for accession to the EU, positive price trends and improved productivity resulting from increased inputs due to better terms of trade and technological advancements, had a positive impact on incomes from farming as well as on the modernization of Polish agriculture.

New financial support measures, which re-established subsidizing of agricultural production after the almost complete removal of subsidies at the beginning of the transformation period, and the introduction of the CAP direct payments and other forms of support after EU accession, have injected additional funds into the farming sector available for investments. New economic policies, the recovery of the sector from the transition crisis as well as improved profitability in agricultural production resulted in a growing demand for agricultural land and substantial changes in land ownership and farm structure.

The structural changes in Polish agriculture, which are the most vital result of transition to the market economy in the last 25 years, will be the main focus of this paper.

Role of agriculture in the Polish economy

Rural areas in Poland cover 93% of the country's territory. The total area of agricultural land is about 14.5 mln hectares, which places Poland in the 5th place in the European Union for agricultural land area. In 1990 over 27% of the labour force worked in agriculture. In the mid-nineties the total share of those employed in the sector was reduced to 22%. Overemployment was, in the past, one of the characteristic features of the sector. In the 1990s, and in the first years of the 21st century, the outflow of employment from agriculture was restricted by the high rate of unemployment in the national economy. Due to economic growth in Poland, as well as the most recent structural and demographic changes, the share of employed in agriculture in 2015 is estimated to be 13%[1] (table 1).

At the beginning of the transformation to the market economy in 1989, the share of the agricultural sector in GDP amounted to 8.4%. This share declined to 3.7% in 2004 and further to 3.5% in 2014. Despite this trend, which reflects development processes in Poland and significant trends for growth in other branches of the Polish economy, agriculture is still an important sector due to its production and non-production functions.

Agriculture is not only a source of food and raw materials for a range of different processing industries. It is also a vital partner for the industries that supply agriculture with the means of production. The agricultural sector also includes social functions resulting from its multi-functionality, and provides

[1] The whole European Union agriculture's share of employment from Eurostat data is 5.5% on average.

several public goods. In the case of Polish agriculture, it is very appropriate to say that, taking multi-functionality into account, the absorption of a significant part of the country's workforce, a strong contribution to Polish exports and improving food trade balance, the importance of the sector for the national economy is much greater than its share in the Polish GDP could suggest.

1. Selected characteristics of Polish agriculture*

Specification	1990	2004	2014	Change 2004–2014 [2004=100]
Agricultural land [mln ha]	18.8	16.3	14.6	89.2
Number of farms [thous.]	2,139	1,854	1,395	75.2
Share of farms over 10 ha	17.4	20.1	23.8	118.4
Average farm size [ha]	7.1	7.5	9.5	126.7
Agricultural employment [% of total employment]	25.6	15.2	15	98.7
Share of agriculture of GDP (%)	13.8	3.7	3.4	91.9
Share of exports of agricultural produce (% of total exports)	5.4	8.8	13.1	148.9
Share of imports of agricultural produce (% of total imports)	1.9	6.2	9.2	148.4

*Source: Main Statistical Office GUS – yearbooks.

Policy framework

Historically, agricultural policies in Poland have always supported the sector, although policy goals and measures have been different in specific periods.

In the long period of the centrally planned economy (1945–1989), regulated prices for agricultural commodities and supported prices for energy and other means of production for agriculture allowed farmers to achieve a relatively strong level of financial stability. Farm incomes were not high enough to allow for substantial investments and growth even in the most effective farms. Agricultural policy in that period was in favour of the state and cooperative sector of agriculture. However, private, small scale family farmers were also beneficiaries of regulated prices and markets. In consequence, land ownership and farm size structures were frozen and developments in agriculture were limited. Although the productivity of the land slowly grew the supply of food was constantly lower than demand.

One of the first, key decisions in the initial phase of the transition to the market economy in the early 1990s was the freeing of all prices. In the past, as in all former socialist countries, prices were set "administratively, with little regard for cost and demand considerations" (Koen, De Masi 1997, p.5). Liberalization of prices resulted in high inflation, reaching in some cases a hyperinflation level, and a dramatic escalation of interest rates putting a number of farms (particularly for the many farmers with unpaid loans) into a critical financial situation. Adverse macroeconomic conditions and increased

imports of agricultural and food products that competed successfully with domestic production led to a significant decrease in real agricultural incomes.

In the mid 1990's agricultural policy in Poland underwent further changes due to preparations for accession to the EU. Preferential credits, at interest rates subsidized by the state, which were significantly lower compared to commercial rates, were introduced in 1994. Until 2003 there were almost 300,000 loans for investments in the agricultural sector granted by banks on preferential terms (Rosa, 2011). Over time prices and interest rates have been "gradually converging across transition countries" and "prices of goods rapidly (have) moved toward international levels" (Koen, De Masi 1997). New support measures, including preferential interest rates, positive price trends and increased productivity resulting from technological advancements have had a strong impact on growing farm incomes. The recovery of the sector from a transition crisis, as well as the improving profitability of agricultural production, has resulted in a growing demand for agricultural land (Majewski, 2008), which was an important turning point, initiating future structural changes in the agricultural sector.

The implementation of the Common Agricultural Policy (CAP) after accession to the EU in 2004 has been a milestone for Polish agriculture. Easier access to EU markets, the introduction of direct payments, continuing positive price/cost relationship trends and subsidies from the Rural Development Program had a significant impact on the economic situation of the farming sector. The Rural Development Programme played a significant role in transforming agriculture in Poland. In the period 2007–2013 the Polish RDP focused on three key objectives: improving agricultural competitiveness, improving quality of life in rural areas and better protection of the natural environment.

Since 2007 funds from the Rural Development Programme have helped Poland to: modernise more than 37,000 agricultural holdings, generating investments of more than EUR 3.2 billion, to set up more than 23,000 young farmers, generating a total investment (public and private) of more than EUR 452 million, to invest 1 billion EUR in services available to rural populations, and 345 million EUR in the renewal of 3,700 villages. The new rural development programme was implemented for the budgetary period 2014–2020. Total public funds allocated for the implementation of the RDP 2014–2020 amount to 13.5 billion Euros (EU and national funds).

For the new budgetary framework 2014–2020 the RDP priorities have been changed. Ensuring economic viability, modernization and enhancing competitiveness of the sector is still the main objective in Poland. The recently introduced RDP for the present budgetary perspective also focuses strongly on environmental aspects as well as on facilitation of knowledge and innovation transfer. The greatest part of the RDP funds goes for investments and programmes enhancing the introduction of technological advancements, modernization and, overall, improving the competitive position of Polish agriculture. Significantly more of the new RDP will be spent on activities supporting environmental protection and the delivery of public goods by the sector.

Structural changes in the agricultural sector in Poland

The structure of the agricultural sector can be defined in several ways, as discussed by Was (2013). From the macroeconomic point of view it might be considered as a structure of basic production factors – land, labour and capital, which are used to produce agricultural output to meet demand, although in the production processes unwanted externalities are also generated. There is a specific relationship between volume and modernity of production factors and methods of production used, for countries and phases of development of agricultural sector, as well as production and economic results. Considering the allocation of production, the structure of the sector can also be presented as a structure of farms, which in Poland is strongly diversified. Taking into account all these aspects the definition of the structure of agriculture proposed by Balmann (1997) is very appropriate: "who is producing what, in what amounts and by what means".

Developments in the agricultural sector in Poland after 1989, to a large extent policy driven (transition to the market economy, EU accession and introduction of the CAP, followed by financial support) resulted in significant changes in all dimensions of the agricultural structure.

For a number of decades before the transition agricultural land was divided in Poland between three sectors: family, state owned and cooperative farms, with a dominating share (about 75%) of private, individual farms in land use. As a result, the ownership structure of agricultural land in Poland was unique among the former socialist Central and East European countries. Privatization processes, which were a part of the transformation to the market economy that has been initiated in Poland in 1989, led to a significant reduction of the state ownership of land (table 2).

2. Changes in the structure of ownership of agricultural land in Poland*

Item	1990	2000	2010	2014
Private (%)	75.8	94.0	96.3	98.2
Of which:				
Family Farms (%)	71.9	86.8	88.1	90.0 (est,)
Public (%)	24.2	6.0	3.7	1.8

*Source: Authors' calculations based on GUS Statistical Yearbooks 1990–2015.

Polish agriculture is characterized by a large number of farms and strong fragmentation of the farming sector but slowly, over time, the farm structure is improving – the number of farms has noticeably decreased and the concentration of agricultural land in a reduced number of farms is observed. According to national statistics there were 2,172,200 holdings in the year 2002, and 1,413,000 farms in the year 2014. This decrease was caused by a significant reduction in the number of the smallest farms, below 5 hectares of agricultural land (table 3).

At the other end of the spectrum, the number of larger farms is growing. Agricultural land is moving mainly to the cluster of the largest farms (50 hectares and more), while the change in the area of the smaller farms is

negative. This trend is most likely to continue in the future leading to a concentration of the land in a decreasing number of farms.

3. Structure of farms and structure of agricultural land use in Poland in the years 2002 and 2014*

Item	Farm size cluster				
	0–5 ha	5–10 ha	10–20 ha	20–50 ha	Above 50 ha
Structure of farms [%]					
2002	58.7	21.8	16.9	1.6	1
2014	52	22.4	20.3	2.9	2.4
Change in % points	-6.7	+0.6	+3.4	+1.3	+1.4
Structure of agricultural land use [%]					
2002	16.7	18.4	31.5	7.2	26.2
2014	12.7	15	30.9	10.3	31.1
Change in % points	-2.1	-1.9	-2.7	+1.4	+5.3

*Source: Authors' calculations based on Rolnictwo i Gospodarka Żywnościowa w Polsce. MRIRW, 2015.

It should be emphasized that the majority of the smallest farms (0–5 ha), as well as some farms from the 5–10 ha cluster can be characterized as subsistence or semi-subsistence farms. Their contribution to the market of agricultural produce is insignificant and non-agricultural sources provide the greatest part of the personal incomes of their owners.

One of the important and most characteristic changes in Polish agriculture is the growing concentration in the animal production sector (table 4).

4. Concentration in livestock production in the period 1991–2013*

	Share of the total national herd [%]			
	Pigs		Dairy cows	
herd size (units)	1-2	> 100	1-2	> 10
1991	12.4	6.2	40.6	1.6
2000	3.8	30.4	34.6	22.9
2005	2.5	44.5	22.2	50.2
2013	1.3	63.4	10.1	72.9

*Source: Authors' calculations based on Main Statistical Office [GUS] yearbooks.

In the past the majority of Polish farmers kept livestock in highly diversified, small farms. The smallest size herds have almost disappeared, and the livestock has moved to larger scale herds on specialized farms.

As a result of adjustments to the market situation and technological advancements in agricultural production, important changes have taken place in the cropping structure (table 5).

In 1990, at the beginning of the economic transformation, the share of cereals, that continuously dominate the cropping structure in Poland, was about 60%, followed by fodder crops (14.2%) and potatoes (12.9%). In the subsequent years cereals gained a greater share, up to a level of 72–73%,

mainly at the expense of potatoes. Potatoes were traditionally used on small farms as the main component of feed for pigs. Along with the concentration of pigs in a smaller number of farms and larger herds, the feeding regime for pigs became more and more based on concentrates. This created an increased demand for cereals grown for feed, and has reduced the importance of potatoes. Also, the share of rapeseed was significantly increased, mainly due to the EU renewable energy policy imposing on fuel producers' requirement for the use of biofuel components.

5. Changes in the cropping structure in Poland in the period 1990–2014 (%)*

Crops	1990	1995	2000	2010	2014
Cereals	59.5	66.1	71	73.3	71.8
Potatoes	12.9	11.8	10.1	3.7	2.6
Sugar Beet	3.1	3	2.7	2.,2	1.9
Rapeseed	3.5	4.7	3.5	9	9.1
Fodder crops	14.2	8.5	7.4	8.3	11.1
Other crops	6.8	5.9	5.3	3.4	3.5

*Source: Authors' calculations based on Main Statistical Office [GUS] yearbooks.

Similar changes, technology and market driven, took place in the numbers of livestock (table 6).

6. Livestock number in selected years (mln head)*

Livestock group	1990	2004	2007	2014	2014 [2004 = 100]
Cattle	10.0	5.2	5.4	5.9	113%
of which: dairy cows	*4.9*	*2.77*	*2.74*	*2.48*	*89%*
Horses	0.94	0.32	0.33	0.21	65%
Poultry	61.2	130.3	134.2	133.1	102%
Pigs	19.4	17.4	17.6	11.7	67%

*Source: Authors' calculations based on Main Statistical Office [GUS] yearbooks.

The most spectacular effect is the significant drop in the number of pigs. This is due to decreasing profitability of production, growing competition within the EU market but also because of the withdrawal of small scale farmers from pig production. In other sectors of animal production, the situation has stabilized after accession.

Regarding fixed assets, which constitute the main component of capital in agriculture, again noticeable changes can be pointed out (table 7).

A significant increase in investments in fixed assets in the years that followed accession to the EU should be emphasized. This reflects both the structure of the financial support for the farming sector, focused strongly on improving competitiveness of the sector, and the modernization needs. This is important because of the decapitalization of fixed assets in Polish agriculture on average. The investment processes increased the value of fixed assets in the agricultural sector, although the investments were concentrated in larger, economically viable clusters of farms. This deepened the polarization of the agricultural sector in Poland, which in a highly simplified way can be seen as

the co-existence of small, often semi-subsistence farms using traditional production technologies, and at the other end of the spectrum, large-scale, modern and competitive farm holdings.

7. Value of fixed assets in agriculture during the period 2005–2013*

	2005	2008	2011	2013
Net value of fixed assets [mln EUR]	7,630.3	8,057.8	6,790.4	8,566.5
Cumulated depreciation [%]	71	74.9	76.8	76.7
Investments in fixed assets in agriculture:				
- total [mln EUR]	595.8	1,117.3	1,039.8	1,166.7
- per hectare	37.46	71.59	68.71	79.86

*Source: Authors' calculations based on Main Statistical Office [GUS] yearbooks.

1. Production and economic results

Productivity of the land and economic results differ strongly in Polish agriculture, depending on the farm size and production orientation. The value of production per hectare of agricultural land in the sample of FADN farms differs significantly between the clusters of small, medium and large farms as presented in the fig. 1.

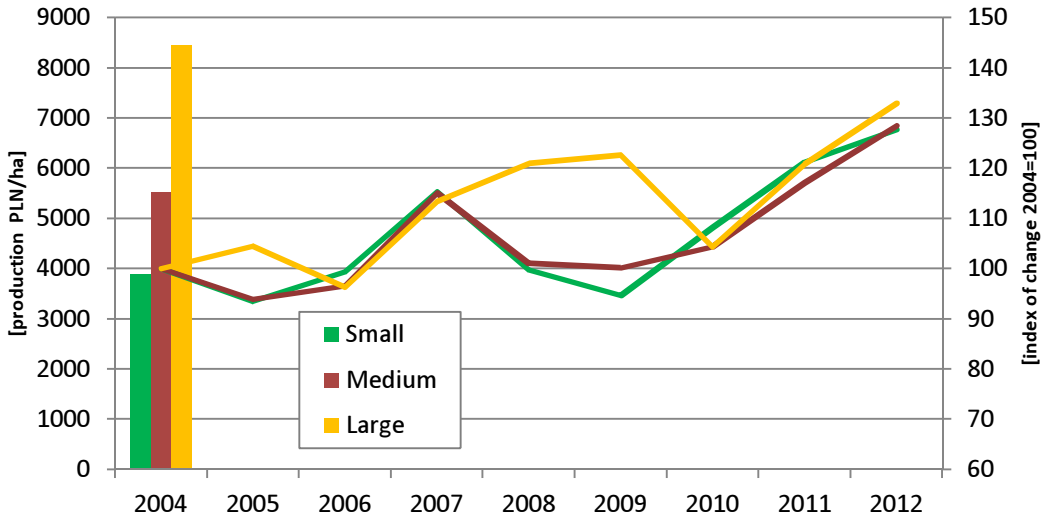

Fig. 1. Productivity of land in Poland on farms of different size 2004–2012 [PLN/ha]*

*Source: own calculations based on the FADN data.

What is noteworthy is that in the period after accession in 2004, the productivity of land grew at a similar rate in all three size clusters of farms. The initial value of production per hectare on the smallest size farms in 2004 was about 50% of productivity level on the largest farms.

The total agricultural output has grown over a long period of time in other countries – and in some of the new member states even at much higher rate than in Poland (fig. 2).

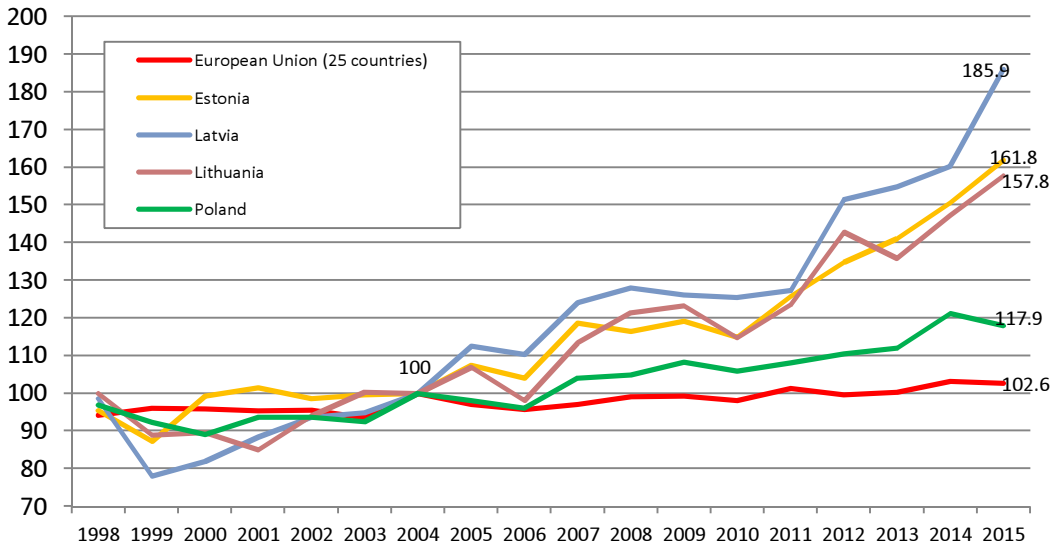

Fig. 2. Dynamics of Total Agricultural Output change in Poland and in selected EU countries in the period 1998–2015 (2004=100)*

*Source: Authors' calculations based on Eurostat data.

The increase in the agricultural output of some new EU Member States after the accession shows the importance of financial support available consequent to the introduction of the Common Agricultural Policy and new market opportunities as a result of growth in domestic demand and increased exports. The total agricultural output of the European Union remained at about the same level in the period analysed despite a significant increase in output in several countries. The greatest and most impressive progress was achieved in the Baltic republics (Latvia, Estonia and Lithuania), but the indices for Poland were also significantly higher than the values for the overall EU25.

8. Value of agricultural output per AWU (thousand euros/AWU)*

Country	1998	2004	2010	2015	Dynamics 1998–2015	Dynamics 2004–2015
The Netherlands	101.6	123.4	145.5	157.8	155.3	127.9
Denmark	86.8	115.8	142.8	162.8	187.6	140.6
Belgium	65.8	90.7	105.8	120.0	182.4	132.3
Germany	49.2	67.2	74.0	76.3	155.1	113.5
France	52.4	61.2	67.4	74.8	142.7	122.2
Czech Republic	17.1	23.6	29.2	34.0	198.8	144.1
Estonia	6.2	11.5	19.9	34.1	550.0	296.5
Slovakia	9.2	15.0	23.8	28.4	308.7	189.3
Hungary	7.4	10.8	10.7	12.2	164.9	112.9
Latvia	3.3	3.9	8.0	13.3	403.0	341.0
Lithuania	4.7	7.7	10.3	13.4	285.1	174.0
Slovenia	8.0	11.1	12.2	11.6	145.0	104.5
Poland	4.8	6.2	7.9	8.7	181.3	140.3
Poland – FADN sample	n.a.	*10.7*	*15.6*	*18.3***	n.a.	171.0
All EU	24.7	31.2	35.9	39.0	157.9	125.0

*Source: Authors' calculations based on Eurostat data.

** Year 2013.

Analysis of the dynamics of total agricultural output in the period before accession shows that all transition countries experienced the shock of significantly falling production but recovered successfully after 2004.

Despite a significant increase in the productivity of labour in Poland and in other new member states, there remains a significant gap to the most advanced West European countries such as the Netherlands, Denmark, Belgium, France or Germany (table 8).

In the case of Poland, although productivity of labour has slowly increased it has remained at a relatively low level in recent years, due to quite stable and high employment in the small-commercial and semi-subsistence farm sectors. Much higher values for the labour productivity indicator characterizes farms from the FADN sample, which consisted of larger and more effective, market oriented farms.

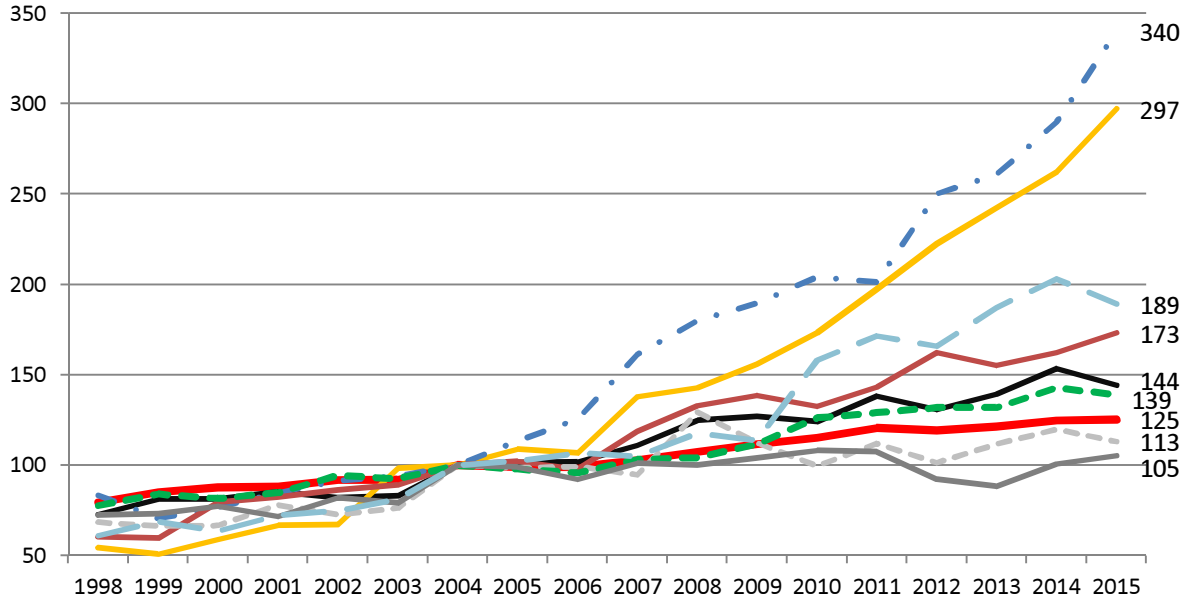

Fig. 3. Dynamics of Total Agricultural Output per AWU (working unit) in Poland and in selected EU countries in the period 1998–2015 (2004=100)*

*Source: Authors' calculations based on Eurostat data.

Technological advances in Polish agriculture, productivity increase and positive prices trends in the post-accession period also resulted in increased farm incomes (table 9).

The dynamics of income increase were slightly stronger in the small farms size cluster, but with a very low initial level these farms remain unviable and the personal income of the farmer's family is dependent on income from non-agricultural activities. Greater progress was made in the large farms cluster in the analysed period.

Farm incomes have also increased on farm types with different production orientations, largely due to technological advancements, increased productivity and improved quality of farm produce. Pig farms achieved the highest incomes

per hectare, but it should be emphasized that their size, measured by the number of hectares of agricultural land is, on average, the lowest.

9. Nominal farm incomes in different clusters of farms in Poland*

Specification	2004 (PLN/ha)	2012 (PLN/ha)	Dynamics (2004 = 100)
ACCORDING TO ECONOMIC SIZE			
Small	861	1,671	194
Medium	1,539	2,622	170
Large	1,920	3,554	185
ACCORDING TO PRODUCTION ORIENTATION			
Field Crops	1,356	2,661	196
Cattle	1,249	2,174	174
Pigs	2,779	3,771	136
Mixed	981	1,776	180

*Source: Authors' calculations based on Eurostat data.

Summary. Developments in the agricultural sector in Poland after 1989, to a large extent policy driven (transition to a market economy, EU accession and the introduction of the CAP, followed by financial support) resulted in significant changes in all dimensions of the agricultural structure. Polish agriculture is characterized by a large number of farms and strong fragmentation of the farming sector, but the number of farms is considerably decreasing and the concentration of agricultural land is noted. Agricultural land is becoming concentrated mainly in the size cluster of the largest farms while the change in the area of smaller farms is negative.

The characteristic feature of the animal production sector is the concentration of livestock. The smallest sized herds have continued to disappear, and livestock has moved to larger scale herds on specialized farms. Regarding the cropping structure, this is dominated by cereals, which share in arable land has increased from about 60% to about 72% in the period 1990–2014.

A significant increase in investments in fixed assets in the years that followed accession to the EU should be noted. The investment processes resulted in the increase of the value of fixed assets in the agricultural sector, although investments were concentrated in the larger, economically viable clusters of farms.

In response to market requirements, and due to the modernization processes that took place in Polish agriculture, the total agricultural output has consistently grown over a long period. Technological advancements in Polish agriculture, productivity increases and positive prices trends in the post-accession period have also resulted in increased farm incomes. A noticeable increase in agricultural output and incomes in a selection of the new EU Member States after accession shows the importance of the financial support available due on the introduction of the Common Agricultural Policy and new market opportunities as a result of growth in domestic demand and increased exports. The greatest and impressive progression was achieved in the Baltic republics (Latvia, Estonia and Lithuania), but also indices for Poland are well above the values at the whole EU25 level.

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СТРУКТУРНІ ЗМІНИ В ПОЛЬСЬКОМУ СІЛЬСЬКОМУ ГОСПОДАРСТВІ ПІСЛЯ ПЕРЕХОДУ ДО РИНКОВОЇ ЕКОНОМІКИ ТА ЄВРОПЕЙСЬКОЇ ІНТЕГРАЦІЇ

Е. Маєвський,
А. Мелак-Равліковська

Анотація. *Зміни в сільськогосподарському секторі Польщі після 1989 р., які, значною мірою, визначаються політикою (перехід до ринкової економіки, вступ до ЄС і введення САП), призвели до значних змін в усіх вимірах структури сільського господарства. Незважаючи на всі ще фрагментовані структури ферми, процеси концентрації сільськогосподарських земель і худоби стали видимими. Найменші стада продовжують зникати, і домашню худобу перемістили в більші стада на спеціалізованих фермах.*

Слід відзначити значне збільшення інвестицій в основний капітал наступними роками при приєднанні до ЄС. У відповідь на вимоги ринку, а також за рахунок модернізації процесів, що мали місце в польському сільському господарстві, загальний обсяг сільськогосподарського виробництва постійно зростав протягом тривалого періоду. Технологічні

досягнення в області польського сільського господарства, підвищення рівня продуктивності й позитивних тенденцій в цінах після періоду приєднання призвели до збільшення доходів фермерів. Помітне збільшення сільськогосподарських заходів і фермерських доходів характеризує зміни також і в інших нових державах-членах після вступу в ЄС, у зв'язку із введенням загальної сільськогосподарської політики та нових ринкових можливостей в результаті зростання внутрішнього попиту й збільшення експорту.

Ключові слова: Польща, структурні зміни, економічна трансформація, європейська інтеграція

СТРУКТУРНЫЕ ИЗМИНЕНИЯ В ПОЛЬСКОМ СЕЛЬСКОМ ХОЗЯЙСТВЕ ПОСЛЕ ПЕРЕХОДА К РЫНОЧНОЙ ЭКОНОМИКЕ И ЕВРОПЕЙСКОЙ ИНТЕГРАЦИИ

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Аннотация. *Изменения в сельскохозяйственном секторе в Польше после 1989 года, которые в значительной степени определяются политикой (переход к рыночной экономике, вступление в ЕС и введение САР), привели к значительным изменениям во всех измерениях структуры сельского хозяйства. Несмотря на все еще фрагментированные структуры фермы, процессы концентрации сельскохозяйственных земель и скота стали видимыми. Меньшие стада продолжают исчезать, и домашний скот переместили в большие стада на специализированных фермах.*

Следует отметить значительное увеличение инвестиций в основной капитал за последующие годы при присоединении к ЕС. В ответ на требования рынка, а также за счет модернизации процессов, имевших место в польском сельском хозяйстве, общий объем сельскохозяйственного производства постоянно возрастал в течение длительного периода. Технологические достижения в области польского сельского хозяйства, повышение уровня производительности и положительных тенденций в ценах после периода присоединения привели к увеличению доходов фермеров.

Ключевые слова: Польша, структурные изменения, экономическая трансформация, европейская интеграция