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Diploma Thesis

Rural Development Policy of the EU: Case study of Eastern Poland

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DIPLOMA THESIS ASSIGNMENT

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Thesis title

Rural Development Policy of the EU: Case study of Eastern Poland

Objectives of thesis

The purpose of this study is to analyze rural development policy of the EU in context of the accession of Poland to the EU. In particular, impact on the development of agriculture between the years 1999 – 2009 (that is the period of 5 years before accession to 5 years after accession) is being examined. On a case study of Eastern Poland, major structural changes and mechanisms as well as decisive actors in the process are being analyzed. As main research outline, data about Polish agriculture from years 1999 – 2009 are being collected and subsequently compared (time periods 1999 – 2004 and 2004 – 2009). Finally, the data from both sets will be synthesised to evaluate the impact of the investigated process on agriculture in Eastern Poland.

Methodology

Primary and secondary data analysis will be carried out. The theoretical part deals with the literature and relevant strategies and concepts review, identifying main trends and research questions of the issue.

Case study of Eastern Poland outlines the empirical part of this thesis, while applying the comparative method. Conclusions are based on the synthesis of the theoretical literature review in confrontation with the practical outcomes of the empirical study.

The proposed extent of the thesis

60 – 80 str.

Keywords

rural development, policy, EU, Eastern Poland

Recommended information sources

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Declaration

I declare that I have worked on my diploma thesis titled "Rural Development Policy of the EU: Case study of Eastern Poland" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break any copyrights.

In Prague on 30.03.2021

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Rural Development Policy of the EU: Case study of Eastern Poland

Abstract

This diploma thesis aims to analyse the impact of accession to the European Union on agriculture in the region of Eastern Poland which consist of 5 voivodships: lubelskie, podkarpackie, podlaskie, świętokrzyskie and warmińsko-mazurskie. It consists of two parts, theoretical and practical. In the theoretical part, the necessary background is presented to illustrate the role of agriculture in the economy of the region. This is done providing historical background of agriculture in the country and the region as well as the significance for the economy. The practical part further analyses the economic, social, and environmental changes that occurred in the discussed area. This analysis is based on selected factors including prices of goods and land, yield and production of goods, modernisation of production, agricultural land, land fragmentation, standard of living and employment in agriculture. Further the evaluation of impact on each voivodship is conducted considering both soft and hard indicators. Conclusions are based on the outcome of the analysis and the mentioned evaluation.

Keywords: Poland, Eastern Poland, European Union, agriculture, Common Agricultural Policy

Politika rozvoje venkova Evropské unie: případová studie východního Polska

Abstrakt

Tato diplomová práce si klade za cíl analýzu dopady vzstupu do Evropské unie na zemědělství ve Východní části Polska, které zahrnuje 5 voivodství: lubelskie, podkarpackie, podlaskie, świętokrzyskie and warmińsko-mazurskie. Práce skládá se ze dvou částí, teoretické a praktické. V teoretické části jsou představeny nezbytná fakta pro ilustraci role zemědělství v ekonomice země a regionu. Praktická část dále analyzuje ekonomické, sociální a environmentální změny, ke kterým v této oblasti došlo. Tato analýza je založena na vybraných faktorech zahrnující Cenu zboží a půdy, výtěžnost a produkce zboží, modernizace produkce, zemědělská půda, fragmentace půdy, životní úrovně a zaměstnanosti v zemědělství. Dále se hodnotí dopad tvrdých i měkkých ukazatelů na každé voivodství. Závěry vycházejí z výsledků analýzy a uvedeného hodnocení.

Klíčová slova: Polsko, Východní Polsko, Evropská unie, zemědělství, Společná zemědělská politika

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List of Abbreviations

CAP – Common Agricultural Policy

EU – European Union

MRiRW – Ministry of Agriculture and Development of Rural Areas

1. Introduction

Agriculture is a very specific sector of Polish economy as it is one of the biggest industries in the country remaining relatively underdeveloped. According to statistical data in 2016 only 4.2% of total professionally active population was working in agriculture while in Poland it was 10% (Eurostat, 2016) which was the fourth biggest number of people employed in the sector of agriculture in the European Union. Rural areas in this country account for 93% of the total area which inhabits almost 40% of the total population

Polish agriculture is highly characterized by regional diversification coming from natural conditions, historical reasons, density of population, level of industrialization, tradition and farming culture, development of infrastructure and national spatial planning policies (Harasim, 2006).

Poland is administratively divided into 16 voivodships (see 8.1 in Appendix) This thesis is focused on a specific region of Eastern Poland consisting of 5 voivodships: lubelskie, podkarpackie, podlaskie, świętokrzyskie and warmińsko-mazurskie that are the least economically developed voivodships in Poland, moreover, in 2005 those 5 voivodships had the lowest GDP per capita in the European Union (Ministerstwo Rozwoju Regionalnego, 2011). Simultaneously agriculture has more economical significance in this region than in other regions of the country – the employment in agriculture there is higher than in other regions of the country.

As the title ‘Rural Development Policy of the EU: Case Study of Eastern Poland’ suggests this thesis will analyse the impact of accessing the European Union on agriculture and its development in those five voivodships.

2. Aim and methodology

The aim of this thesis is to assess the changes that occurred in agriculture in Eastern Poland after the accession to the European Union and the influence of the accession itself on said changes. The evaluation is based on data from the period of years 1999 -2009 which is 5 years before accession and 5 years after.

The theoretical part of this thesis focuses on presenting crucial background for understanding why the region of Eastern Poland is different from the rest of the country and how important agriculture is in discussed voivodships. Further, the author presents and describes all European funds allocated to support Polish agriculture both before and after the accession. In this part, secondary sources were collected and used to present data.

In the practical part, to develop the evaluation, data about various economic and social factors is collected and presented for each of the analysed years. Agri-food trade, prices, production of certain goods, income, technology used in agriculture, farming structure, level of sustainability and investment outlays are examined and further assessed. Lastly, the conclusions drawn based on findings are presented.

For this research purposes the primary data focused on the analysis area, was collected by the author come from the Main Statistical Office of Poland and Eurostat. This statistical data is used to present the changes year-by-years in selected economic and environmental factors. To assess social changes data from opinion polls conducted by the Centre for Public Opinion Research was used.

In order to illustrate the above-mentioned changes thoroughly the analysis of primary data was complimented by content analysis of reports prepared by public institutions dealing with the development in agriculture in Poland. The papers used include reports on Agriculture and food economy in Poland released yearly by the Ministry of Agriculture and Rural Development, Yearly Report on the Rural Areas Development Plan prepared by the Agency of Restructuring and Modernisation of Agriculture. The author used international papers such as The Diversity of effects of EU Membership on Agriculture in New Member states prepared by FAO Regional Office for Europe and Central Asia or Nots on Poland's Political and Economic Situation and its Realisations with the European Union with a View to Accession prepared by the European Parliament.

In the last part of the practical part, data is evaluated taking into account all discussed changes and the impact of accession to the European Union on the agriculture in Eastern Poland is assessed.

3. Literature review

The following chapter will focus on presenting the necessary background for understanding fully the significance of agriculture in the economy of Poland and the discussed region.

3.1 Specification of Polish agriculture

Agriculture is one of the oldest and the most basic parts of economic activities in the history of humanity. Aside from production of food it provides materials for industry, it creates workplaces, shapes the landscape, and regulates the biodiversity. In order to present the whole picture of the impact of the accession of the European Union on Polish agriculture the necessary theoretical background shall be presented. The aim of this chapter is to briefly present how Polish agriculture has changed over the years and what was its significance for the economy of Poland from the beginning of farming in the Polish lands until the present day.

3.1.1 Historical background

The history of Polish agriculture begins in 5th century when territorial collectiveness was getting stronger, richer families were becoming leaders with better tools, more grain, bigger farmland, or flock inaccessible to poorer families. As a result of higher intensity of farming for the first time in history more efficient production led to surplus of produce which resulted in people changing professional activity from farming to manufacturing.

Period between 12th and 14th century was characterized by very fast and dynamic development of farming. Growing population led to colonisation which caused mass grubbing of forests and bushes to transform the remaining land into farming land. The 15th century brought the opportunity to export grains to England and the Netherland which was a great motivation for the nobility to intensify production mostly by increasing the land. Thanks to that the 16th century is called the 'golden period' of Polish agriculture (Bański, 2009).

Another important milestone for agriculture in Poland was the period of partitions. The lands under Austrian Partition suffered from almost full stagnation in farming due to inhumane

fees and duties that Polish farmers had to pay to the state Treasury. In the Prussian Partition the main rule was to take maximum advantage of the land in benefit of the country. Additionally, after the year 1870 germanization got stronger and Polish farmers were highly discriminated; they were not allowed to own a property nor a piece of land. In the third partition – Russian after manifesting and ceasing to pay duties to the nobility and the treasure, the authorities were forced to reform the legal regulations concerning land ownership. As a result, Polish farmers were allowed to own land and pay a land tax that was a big addition to the treasure of the country (Bański, 2009).

After the World War I Polish agriculture was highly diversified considering special aspects, legal regulations, innovation. However, despite initial hard economic situation and little financial abilities, Polish government succeeded to innovate in the field of mechanisation.

The most catastrophic period was World War II that brought utter destruction to the economy. As almost 7,5 ha of farmland remained used the government decided to parcel it and share amongst farmers with larger families. This led to creation of 814 thousand new agricultural holdings and in total 980 thousand farms benefited from the process of parcelling (Olszewski, 1985). There was consistent problem of not sufficient production to feed the whole country, obligatory payments in the form of food products were introduced but it started a wave of complaints and protests so eventually it was renamed to become land fee paid in nature.

A breakthrough moment for Polish agriculture after the war was creation of State Agricultural Farms (Państwowe Gospodarstwa Rolne) in 1949 that were a form of collective farming firstly build on lands regained from Germany and further in Eastern and Southern parts of the country. The assets were growing fast due to including abandoned land and properties in the farms. A great role in creating social aspects of agriculture were popping up associations of farmers that were helping farmers with machinery and knowledge. Further, the Polish government facilitated purchasing new tractors, let farmers buy more land, introduced loans for development and pensions for farmers. In the early 1970s Polish farmers were greatly supported by the authorities however in mid 1970s the economic situation in Poland worsened significantly, the crisis impacted farmers as well (Bański, 2009).

The great success of socialist government ended. State Agricultural Farms ceased to exist in 1989 as the period of economic transformation started. One of the main reasons for closing the farms and redistribute the land to private owners was their lack of contribution to

the creation of free market. The consequence of this was the increase of unemployment rate in lands where State Farms were. Investments in agriculture were slowed down in 1990s as they were only accessible to big and rich farms, smaller farmers did not have enough income to think about improving the state of machinery or buying new land (Bański, 2009).

3.1.2 Significance of agriculture for Polish economy

Agriculture has always been a significant sector for Poland even the name of the country Polska comes from the word *pole* which means part of land. The first Polish tribes – Polanie took their name from agriculture and working with land (Długosz-Kurczabowa, 2003).

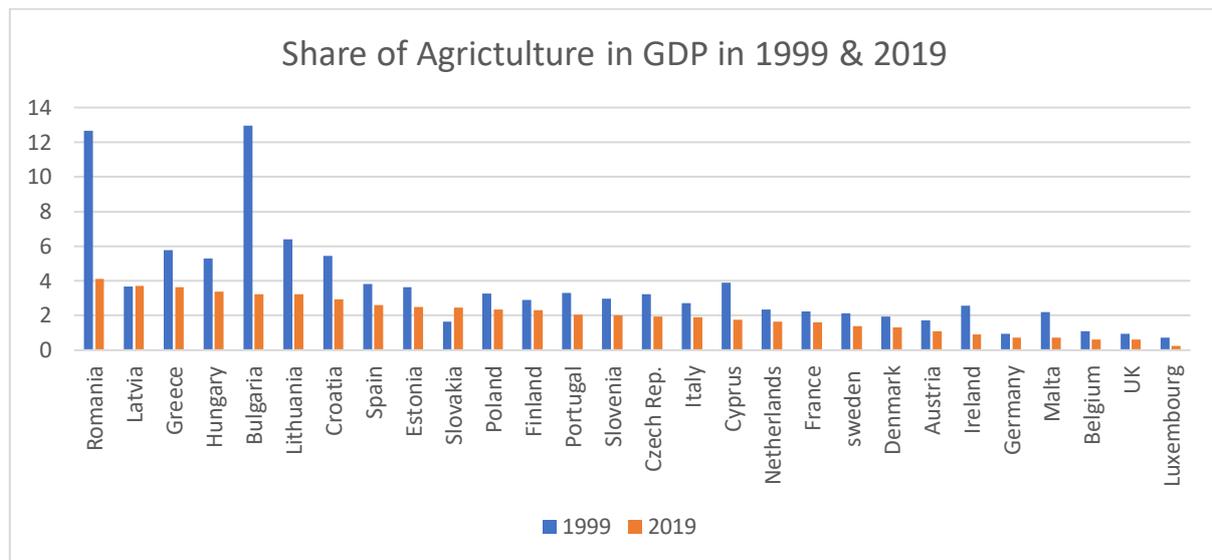
The economic impact, as shown in the presentation of historical background was present since the 5th century. Additionally, it has always been a vital factor for social development of rural regions in the country, strongly contributing to employment rates, social exclusion or even life expectancy. The basic function of Polish agriculture is production of food but what is becoming more and more important not exclusively in high quantity, but also good quality products made in a sustainable way. There is a growing role of agriculture in the production of energy as well as materials for industry. Due to big interaction with natural environment, the farming process has a big impact on the usage of natural resources, making it the most important player in forming of ecosystems and biodiversity. This sector is also one of the biggest contributors of CO₂ emissions, globally it accounts for 11% of total emissions, in Poland in 2017 the share of agriculture in national greenhouse emissions was 6.97% (FAOSTAT, 2017), as a result it initiates various activities designed to decrease this number by introducing control systems for instance by creating Agricultural and Food Quality Inspection or Accreditation centre.

There are various governmental institutions operating agriculture in Poland. The highest in the structure is the Ministry of Agriculture and Development of Rural Areas that is responsible for agricultural policies, international cooperation, competitiveness of Polish agriculture, food safety and social policies. The financial institution that overlooks the implementation of European projects and holds the accreditation power is the Agency of Restructuring and Modernisation of Agriculture. Polish Agriculture workers also fall under

Agricultural Social Insurance Fund that covers pension, accident, sickness, and maternity insurance for farmers.

When it comes to share of agriculture in national GDP it is possible to observe on Figure 1 that in certain countries the share of agriculture in GDP changed greatly over 20 years and after the accession to the European Union. In Bulgaria, the share dropped from 12.96% to 3.24% and in Lithuania 12.65% went down to 4.1%. In Poland the number stayed relatively

Figure 1 Figure 1. Share of Agriculture in DGP in 1999 and 2019 of countries present in EU-28



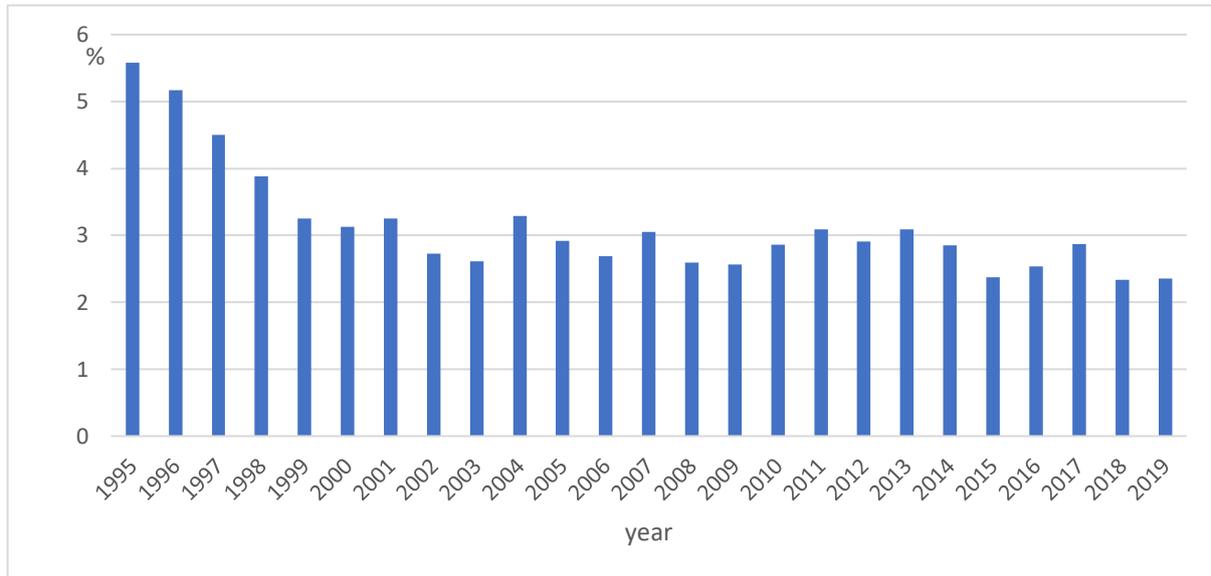
Source: The World Bank

stable compared to the changes that occurred in countries of EU-28 between 1999 and 2019 which were successively 3.25% and 2.35%. Looking at both measures, all these years Poland stayed among countries with higher share of agriculture in GDP. In 1999 it was the 12th country with highest shares and in 2019 -11th. Looking at the European Union, in 2018 agriculture contributed to only 1.1% of GDP when in Poland it was significantly more – 2.4%. This means that the sector of agriculture has a greater economic importance than in many countries of EU-28.

Figure 1 shows the change in share of GDP in Poland on the course of 24 years from 1999 to 2009. There is a visible drop in shares from 1995 until 1999, since then the share has fluctuated however these were not significant fluctuations as in case of for instance Czech Republic, that joined the European Union at the same time as Poland, which noted almost constant decrease of shares of agriculture in GDP from 1995 until 2010 excluding 1998 and 2000 where the shares were significantly greater than the previous year (see 8.3 in Appendix)

(The World Bank, 2019). This leads to the conclusion that agriculture is still important for Polish economy.

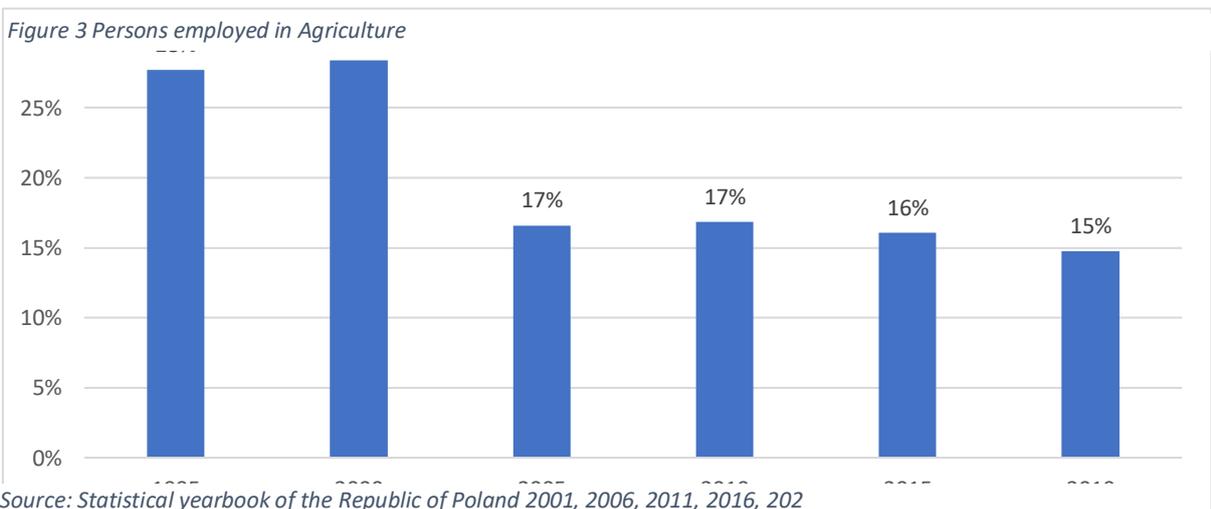
Figure 2 Share of Agriculture in DGP of Poland in years 1995 - 2019



Source: The World Bank

To assess further importance, it is possible to look at the percentage of people employed in agriculture. The data for selected years is presented in Figure 3. Despite the big change in numbers from 28% in 1995 to 15% in 2019 it is still far more than the European average that in 2019 amounted to 4.4% of total working population (Eurostat, 2020). It is important to mention that due to unstable weather conditions and the production focused on warmer months of the year, employment in Poland is seasonal.

Figure 3 Persons employed in Agriculture



Source: Statistical yearbook of the Republic of Poland 2001, 2006, 2011, 2016, 202

When it comes to gross production of agricultural products, in 2018 Polish enterprises were on the 7th place in the European Union right after France, Germany, Italy, Spain, Great Britain and the Netherlands. The most important products are apples – Poland is the biggest producer of this fruit in the EU-28 and 4th biggest in the world, raw milk – Poland is the 4th biggest producer in the EU-28, sugar – 3rd biggest producer in the EU-28, and meat (including poultry) – 4th biggest producer in EU-28. Aside from that there are processed products – frozen vegetables and fruit – world's 1st exporter, fruit syrups – 2nd biggest production of apple sirup, and fodder.

Looking at those indicators the role of agriculture is visibly becoming smaller in favour of the sector of services and industry however in comparison with western European countries it is still relatively high even with the soil and climatic conditions being less favourable comparing to most of the European countries due to weak and acidic soils that lower the usefulness of agricultural land as well as the weather conditions and water resources in the county not being optimal for agriculture. (MRiRW, 2019).

3.2 Specification of Agriculture in Eastern Poland

This chapter is necessary to understand why the discussed region is so special and interesting to conclude the analysis on it. Due to various historical, geographical, and cultural reasons Eastern Poland developed far more slowly than the rest of the country and decisions of modern authorities did not facilitate the process either. There is a line drawn in the middle of the country. It is common among Poles to make a division into Poland A- part to the West of Vistula River and Poland B - lubelskie, podkarpackie, podlaskie, świętokrzyskie and warmińsko-mazurskie voivodships. As offensive as it is, the division still exists until the present day.

The following part will present the brief history of the region and present it on the background of the whole country.

3.2.1 Historical and cultural background

The western part of the country had always been in better condition compared to the Eastern part; all innovations were coming from the West, the East was less populated than the West, this is where aristocracy had palaces in forests, people were going to be around nature.

This side of the country has been and still is stigmatized as ‘the worse one’ in journalism, everyday conversations as well as in academic texts.

The moment in history when the difficulties for Eastern Poland started was the First Partition of Poland in 1772 when the country was divided into three parts among Prussia, Habsburg empire and Russian Empire. The part that fell under the Russian Empire was not administered as properly as the Western part, where the urban network was greatly developed and connected with rivers, channels, and location of natural resources as in the richest regions – Upper and Lower Silesia being the centre of mining in Eastern Europe. Thanks to great care, the railway system was very dense and was able to access even the smallest cities, the technology used in agriculture and industry was advanced – that is why those regions were among the richest in the whole Europe at that time.

The Russian partition treated Polish territory as a periphery that would simply add up space on the map, not many investments were made, the location capital was not taken advantage of. Local population had no knowledge of modern way of farming which led to very low productivity, they as well had very low level of trust towards the authorities and no motivation towards introducing changes. Under Prussian and Austrian partitions enfranchisement of land happened relatively late not giving farmers the full control over the land they worked on. As the enfranchisement happened, the land started getting divided into smaller pieces to satisfy everyone that wanted to take advantage of this economic right. This resulted in land fragmentation (Dzun, 2018) which will be discussed in the next section. As the railway in the Russian Empire was used solely for military purposes, there was no need of expanding it to the newly gained land, it was close to impossible to transport goods and people to smaller cities and villages.

The second period that contributed to this poor condition was the privatisation of so-called State Agricultural Farms mentioned before that started in 1989. Western agricultural companies became items of potential interest to local and foreign investors from big holdings from France or Germany. Because of lack of interest the farms had to be closed, employees were fired and forced to retrain, move to cities in order to find a job in a different sector or just remain unemployed. These events delayed the development of agriculture in Eastern Poland that is visible until now, even with current progress of development and investments is still considered poor in minds of people from Western Poland (Sadowski, 2013).

3.2.2 Eastern Poland and the rest of the country

As shown in previous sub-chapters, the historical events had a great impact on how the society and economy are shaped now. Regarding the share of agriculture in added value in voivodships of Eastern Poland it is still very high, higher than in other voivodships excluding mazowieckie with 9.2% of total. Right after that, as the second biggest contributor is podlaskie – 6.4% warmińsko-mazurskie - 5.5%, lubelskie – 5.2 %, świętokrzyskie 4.1%, only podkarpackie does not have significant shares as it contributes only in 1.5% to added value (Main Statistical Office, 2018).

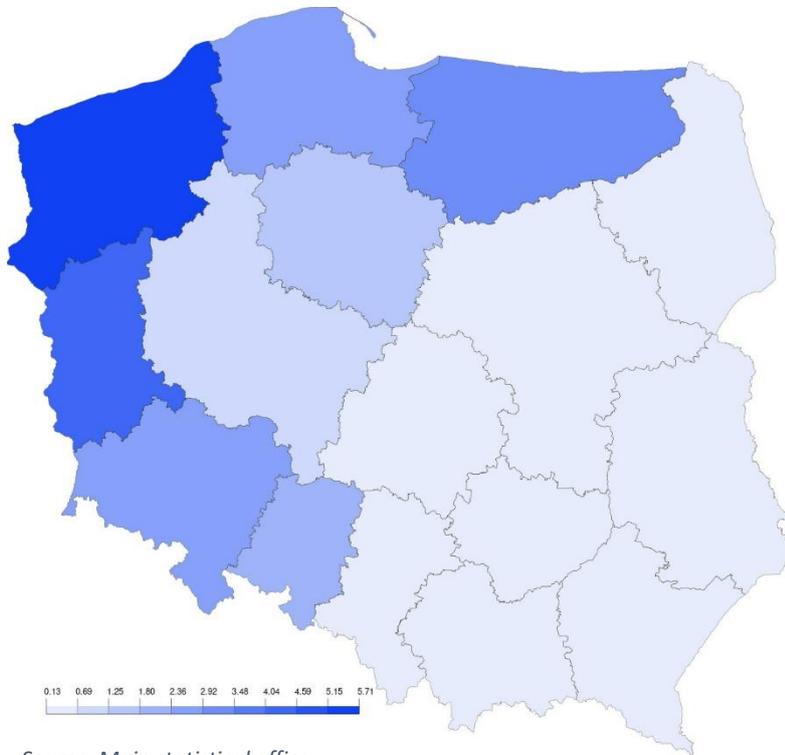
Another factor with significant differences between East and West is the number of working people in the sector of agriculture. The highest number – more than 300 thousand workers represent lubelskie voivodship, in podkarpackie it is 250 thousand, podlaskie and świętokrzyskie 120 – 140 thousand and warmińsko-mazurskie, on the fourth last position nationally hires 65 thousand of people to work in agriculture (Agricultural Statistical Yearbook, 2019). It is quite understandable for regions with the highest contribution towards added value in national agriculture.

In 2005, Polish government initiated the discussion about starting a programme that would help those regions, as they were considered 5 regions with the lowest GDP per capita in the whole EU-25. European Commission made the decision of assigning additional 882 million EUR as part of the Rural Development Programme. The Ministry of Regional Development along with local councils of those regions created a separate programme – Operational Programme Development of Eastern Poland that was active in years 2007 – 2013, later changed into Operational Programme Eastern Poland and is active until present day. This activity is discussed further in Chapter 4.

One of the most significant problems of agriculture in Eastern Poland that are not as vital for other regions is the fragmentation of farming structure which is incomparably higher than in the rest of the country, this leads to unfulfillment of production and non-production functions as enrichment of landscape and protection of the environment. The fragmentation is a result of the post-war rural policies, land heritage rules that led to dividing land into pieces to share with all children.

In the Figure ... the share of agricultural holdings with size of more than 100 ha in 2016 is presented. It is clearly visible that the percentage of those in Eastern Poland is lower than in the Western part.

Figure 4 Share of big agricultural holdings (above 100 ha) in 2016



Source: Main statistical office

the Western part. On average in discussed voivodships, big agricultural holdings amount to 0.5% of total agricultural holdings while the average for the rest of the country is 4.6% (Main Statistical Office, 2016). The percentage of small agricultural holdings (up to 5 ha) in the regions are as follows: podkarpackie – 82%, świętokrzyskie – 65%, lubelskie – 56%, warmińsko-mazurskie – 30% and podlaskie 28%. The average share of small holding for the country is 54% (Main

Statistical Office, 2016). Podkarpackie, świętokrzyskie and warmińsko-mazurskie do not come out positively in this comparison. Interestingly, it is common in Eastern Poland not to hire employees to work on agricultural holdings smaller than 5%. In 2016 around 85% of people working on holdings of size 0-1 ha were family members, for holdings up to 5 ha it was almost 100% (Main statistical office, 2016). Research on impact of high land fragmentation suggests that it negatively affects productivity and effectiveness of farming, it raises the cost of production and the decrease of technical efficiency – the cost of gasoline raises as well as the effect per hour with additional commute between fields and setting up equipment. It might also be a factor that discourages farms to innovate and invest. Another negative effect of land fragmentation is losing the ground in favour of technical roads and borders, conflicts among neighbours and difficulties in cultivating certain type of plants. Currently it is considered one of the biggest problems of rural areas impeding land management. (Dudzińska, 2012).

3.3 EU resources allocated to the development of agriculture in Poland

This chapter aims to present all funds provided by the European Union that Poland took advantage of both before and after accession, as well as the negotiating position of Polish governments concerning agriculture starting from year 1998.

3.3.1 Negotiating position of Poland concerning agriculture

The negotiations about the accession started in March 1998. The three most problematic areas that were known to be difficult in the process were the free movement of persons, sales of farmland and agriculture. From the very beginning, the two points of view were contradictory and were representing utterly different ideas starting with funds for adjustments and restructuration that Polish representatives wanted to receive already in the year 1998 but the Union planned to start subsidizing Poland only in the year 2000. This was a part of the Agenda 2000 that guaranteed funds for new member states only after the year 2006. The European Union was also reluctant to apply Common Agricultural Policy right away after the accession as Polish negotiators expected because of the state of Polish administration, need to create systems, structures, and institutions, and not adjusted health and food safety regulations. For this reason, the European Union planned to apply a long-term approach to applying CAP in Poland instead of promising and providing money.

During the presentation of position in December 1999 the Polish government had four very clear goals that were set to ensure stability, competition, and opportunity for equal development for Polish farmers.

- full incorporation of the agriculture in Poland into CAP
- high level of production quotas for dairy products, potato starch, raw tobacco, isoglucose and dried fodder in particular
- ensure stable income sources for employees hired in agriculture
- including Polish agro-food products in the Single European Market

The Polish government was very determined in negotiating the conditions even though there was no money included in the EU budget destined for direct payments for the new member states from Eastern Europe. In addition to objections of most European leaders, Franz

Fischer criticized and accused Poland of not acting in compliance with goals of market liberalisation due to new, raised custom duties on cereals in Poland. After eventually signing the liberalization agreement the negotiations took another turn following a change of the government in the country. The negotiations slowed down as the ruling party waited to avoid any controversies due to declining support before upcoming elections.

The newly elected government decided to be more flexible and speed up the negotiation process however among others, agriculture remained a difficult point for both parties. It was only at the beginning of 2002 that the European Union agreed to pay out 25% of available and eligible direct payments already in 2004 and increasing relatively in the period of 10 years which surely did not satisfy Polish public opinion as shown in CBOS survey. The survey showed that 59% of questioned people wanted the government to demand full eligible direct payments from the moment of accession even if it caused the end of negotiations and eventually not being part of this organisation (CBOS, 2002).

Pushed from all sides by public opinion, interest groups, and opposition Poland started using very aggressive negotiation strategies that eventually forced both Poland and the EU to revise their positions. The Polish government was ready to accept partial direct payments under three conditions

- redirect 60% of funds meant for rural development after the accession to direct payments
- tariff protection for certain food products
- protection for farmers that were hit the most by removing barriers in trade by a right to equalize pay-out level for farmers from Poland and the EU from the national budget

The new postulates were formulated based on public opinion polls however they were still not fully accepted by the European Union's Agricultural Commissioner. Before the Copenhagen Summit, the Danish presidency made it clear that the negotiations should finish as soon as possible or the conditions for candidate countries could have worsened and the accession could have been postponed by many years. There was an obvious suggestion that Poland should be grateful for the offer it received and should accept it as it is (Gherghisan, 2002).

After difficult negotiations, during the summit a final agreement was made; the ten candidate countries will become a part of the European Union as of 1 May 2004, they will receive before mentioned 25% of the direct payments, being gradually increased as part of the rural development package. Farmers from those countries would immediately after the accession get full access to Common Agricultural Policy rules and measures. Additionally, Polish negotiations managed to get certain quotas increased as they wanted in the previous stages of the negotiations (Conferences on accession to the European Union..., 2002).

Before accession to the European Union, Polish people were not overly optimistic about the effects of this transaction on the agriculture in the country. In 1999, shortly after the negotiations had started 41% of interviewed claimed that being a member of the EU will not have a positive impact, 31% believed it would be beneficial and 28% admitted that they did not have sufficient expertise to assess it. Interestingly, mostly farmers themselves felt uneasy about the accession, the group that was mostly positive about it were younger people, under 24 years of age (CBOS, 1999). A similar poll was conducted in 2002 by the same institution. It took only 3 years to observe a significant shift in answers: 35% of responders believed that the accession to the EU will not have a positive impact on Polish agriculture and 46% - 15 percentage points more – was convinced it would impact agriculture positively. Only 19% of people did not express their opinion (CBOS, 2002). The change in opinion was tightly related to the negotiation position of Polish government, people started trusting the organization more.

3.3.2 Pre-accession funds

Poland has been receiving financial aid from the European Union since the early 1990s. The funds were mostly aimed at projects helping with integration and adjustments of institutions and legal regulations. Access to external funds gave a change to create opportunities for the development of rural areas as the biggest barrier for the development of rural areas in Poland was the financial barrier.

PHARE programme

PHARE programme - Poland and Hungary; Action for the Restructuring of the Economy was active in years 1990-2003. It was the beginning of the structural dialogue between the heads of member states and associates. This enabled and facilitated the processes of adjustment of laws and institutions to EU membership requirements. The programme intended to facilitate the integration to the European Union supporting small and medium

projects to enable long-term development of economy. Originally it was aimed only at Poland and Hungary however it was later directed to countries planning to join the European Union in either 2004 or 2007. In total the sum of paid out funds amounted 3,9 billion euros, around 280 million euro per annum which made Poland the biggest beneficiary of this programme (Business and Strategies Europe, 2015).

70% of funds were meant for investment support and 30% for public institution restructuring and enhancement to make them properly adjusted for EU membership requirements. This project was not aimed at agriculture however it contributed to adjustment of legal regulations, mostly regarding hygiene and food safety and building of institutions responsible for administration and control (Serwis Służby Cywilnej, 2009).

SAPARD programme

The breakthrough moment for agriculture in candidate countries, including Poland was the European Council summit in Luxembourg in 1997 during which decisions of starting new financial aid were made. It was the start of SAPARD - Special Accession Programme for Agriculture and Rural Development which is considered the first European project supporting the development of Polish agriculture and rural areas. The budget included 708.2 million euro from the European Union, 235.8 million euro from national funds and 140 million euros moved from the Rural Development Programme. As part of this programme, investors could receive up to 50% return for their investments. Only post-soviet regions, located in the western part of the country, due to their extreme poverty could receive up to 75% of investments back. According to data gathered by the Agency of Restructuring and Modernisation of Agriculture there were 27 761 requests submitted and 21 760 realized with 3.9 billion zloty paid out which stated 82.5% of all available funds (Agencja Restrukturyzacji i Modernizacji Rolnictwa, n.d.)

ISPA programme

In June 1999, the council of the European Union created a fund ISPA – Instrument for Structural Policies for Pre-Accession to help candidate countries reach standards and norms of the European Union when it comes to infrastructure of transport and environmental protection.

Its focus was mostly put on financing projects dealing with potable water, sewage, waste, and air protection. Poland was one of 10 beneficiaries of this fund in years 2000 –2003 receiving up to 37% of established budget with sum amounting to nearly 1.3 billion euros for 3 years (Narodowy Fundusz Ochrony Środowiska I Gospodarki Wodnej, n.d).

3.3.3 Post-accession funds

This Chapter presents European programmes aimed at development of Polish agriculture, describes the objectives and measures used in each activity as well as shown the budget and its distribution. In the later part the author focused on a special, one and only supra-regional programme in the European Union – Operational Programme Development of Eastern Poland and its continuation – Operational Programme Eastern Poland.

Rural Development Plan 2004-2006

As part of the rural Development Plan for years 2004 -2006 two strategic objectives were created to assure proper distribution of funds.

1. Sustainable Development of Rural Areas was based on four pillars including supporting farming in less-favoured areas, supporting agri-environment and animal welfare and meeting EU standards.
2. Improving the Competitiveness of the Agri-Food Economy was supposed to be achieved by introducing early retirement, supporting semi-subsistence farms undergoing restructuring and supporting agricultural producers' groups.

Connected to both objectives there were two additional measures introduced by the Agency for Restructuring and Modernization of Agriculture: technical assistance and complements to direct payments.

The total budget of this program amounted to 3.6 billion EUR out of which 2.9 billion were subsidized by the European Union. Most funds were used to support less-favoured areas, programmes related to this objective received 958 million EUR with 765 million provided by the European Union. The objective with second biggest budget was directed into complementing direct payments, there were 682 million EUR in total (545 from European funds) allocated to that objective. Helping agricultural enterprises meet UE standards was the

third most subsidized area, those projects received 637 million EUR out of which 509 came from the European Union (ARiMR, n.d.).

Rural Development Programme for 2007-2013

Second period of Rural Development Programme planned for years 2007 – 2013 was planned with more details and the objectives were more elaborate and aimed at a bigger group of farmers. It revolved around 4 axes with multiple subpoints.

Axis 1 – Improvement of the competitiveness of the agricultural and forestry sector

As part of this axis the authorities established 10 measures to ensure proper implementation of the programme: professional training for people employed in agriculture, setting-up of young farmers, early retirement, use of advisory services, modernising agricultural holdings, increasing the added value of production, improving and developing the infrastructure, farmers' participation in food quality schemes, information and publicity, agricultural producers' groups.

Axis 2 – Improving the environment and the countryside

Second axis focused on support for agricultural production in mountain and less-favoured areas, agri-environmental programmes, afforestation of Agri-land and non-Agri land along with restoring forestry production damaged by natural disasters and introducing preventative measures.

Axis 3 – Improvement of the quality of life in rural areas and diversification of rural economy.

This axis was based on four objectives – diversification into non-agricultural activities, establishing and developing micro-enterprises, basic services for the economy and rural population as well as village renewal and development.

Axis 4 – LEADER

LEADER is a still running programme aimed at creation and implementation of Local Development Strategies put together by local communities, initiating cooperation projects and Local Action Groups that are a partnership including representatives of public, economic and

social sector. Those activities started projects connecting different areas: human, natural, cultural, and historical resources.

Under this programme Poland received a total of 13.2 billion EUR that together with national funds of around 4 billion EUR gave the sum of 17.2 billion EUR. The beneficiaries requesting money under the projects concerning running agricultural production in rural areas received the highest amount of money – 4.7 billion PLN, secondly early retirement scheme received 3.2 billion PLN and agri-environmental programmes 2.5 billion PLN. (ARiMR, n.d.).

Rural Development Programme for 2014-2020

The third and the latest part of the Rural Development Programme was planned for years 2014 – 2020. The total budget established for this period is 13.5 billion EUR out of which 8.6 billion from EU funds and 4.9 billion from national funds. There are 6 priorities formulated for the allocation of funds:

4. Facilitation of the transfer of knowledge and innovations in agriculture, forestry and rural areas
5. Improvement in the competitiveness of various types of agricultural businesses and increase in the economic viability of agricultural holdings
6. Improvement in the organisation of the food chain and promotion of risk management in agriculture
7. Restoration, protection and strengthening of ecosystems dependant on agriculture and forestry
8. Support for effective resource management and for the shift to low-emission, climate-change-proof economy in the agricultural, food-production and forestry sectors
9. Promotion for social inclusion, poverty reduction and promotion of economic development in rural areas (ARiMR, n.d.)

As the programme is still running, it is no possible to assess to which priority was allocated the highest amount on money.

Operational Programme Development of Eastern Poland and Operational Programme Eastern Poland

As mentioned before, the programme started at the initiative of Polish Government 2005, back then the five voivodships had the lowest GDP per capita in the European Union. The programme was supposed to be an important step to equalizing the opportunities for development and modernizing not only agriculture but other every-day issues. This programme took place in years 2007 – 2013.

The priorities for this plan were divided into 5 Axes that were further divided into detailed measures and defined the spectre of projects that were eligible for funds.

Axis 1 Modern economy

1. University infrastructure
2. Financial engineering infrastructure
3. Support for innovation
4. Promotion and cooperation

Under the framework of the first axis project that aimed to increase the economic and investment attractiveness of the region. The activities aimed to improve the quality of education on higher schools as well as upgrading and expanding industrial and technological parks, business incubators, innovations centres, excellence centres, and research laboratories. As the most vital priority it received the highest funding, 930 million EUR – 34.7% of the total amount (European Commission, 2008).

Axis 2 Infrastructure of information society

1. Broadband network in Eastern Poland

This priority's purpose was to eliminate a very visible digital division between the region and the rest of the country by providing access to Broadband internet to households, public institutions, and private holdings for commercial use. The new connection improved the exchange of data and gave the inhabitants the opportunity to broaden interests, find a job easier as well as take part in e-learning courses. 300 million EUR, around 11.3% of total budget of the Operational Programme (European Commission, 2008).

Axis 3 Regional Growth centres

1. System of public transportation

2. Infrastructure of congress and market tourism

Five capital cities of the region: Lublin, Białystok, Rzeszów, Kielce and Olszyn were supposed to be provided with a better network of public transportation connecting rural areas with bigger cities. Second part of the axis included investments into event halls/exhibition centres together with encouraging local entrepreneurs to open up to new market opportunities. Implementing those measured cost 532 million EUR - 19.9% of funding (European Commission, 2008).

Axis 4 Transport infrastructure

1. Road infrastructure

Projects that supported building or modernisation of regional roads that facilitated commute between voivodships, urban centres, investment terrains, tourist attractions, and country borders were eligible to apply for funding under this axis. 29% of the budget -777 million EUR were dedicated to open up the regions to other transport systems (European Commission, 2008).

Axis 5 Sustainable tourism based on Natural Assets

1. Promoting sustainable development of tourism
2. Biking lanes

Eastern Poland is very rich in natural tourist attractions including lakes, clean environment, forests, mountains, architecture attractions, and varied culture. Aside from that, this region is characterised by diversity of ethnic groups natural resources. This gives a great opportunity to develop the touristic sector. As this was not the most significant objective at that time, it received only 55 million EUR - 2.1% of total funding (European Commission, 2008).

Axis 6 Technical Assistance

1. Support project implementation and promotion of the programme

Activities that counted as technical support contained of providing human resources necessary for functioning of the programme, evaluation monitoring and audit of projects being realized under the programme, financing institutions that promoted funds and informed about

eligibility for structural funds along with technical and financial support for efficient implementation of the tasks. Axis 6 used approximately 3% of the total budget – 80 million EUR.

The total amount of money dedicated to implementation of Operation Programme Development of Eastern Poland reached 2.6 billion EUR out of which 2.2 billion EUR was an EU investment and 400 million EUR was a National Contribution (European Commission, 2008).

The second edition of this project, with a slightly changed name to Operational Programme Eastern Poland took place in years 2014 – 2020. The regions still were among the least developed and least competitive regions in EU – 27. It was the effect of traditional structure of economy with the domination of non-efficient farming which was a result of a low level of innovation and infrastructural delays. Another problem that contributed to the lack of development was ageing society, depopulation and migration of young people that were not willing to work in agriculture but preferred getting higher education and work in services. The priority axes for this programme are as follows:

Axis 1 Entrepreneurial Eastern Poland

1. Higher number of start-ups in Eastern Poland
2. Increased activity of small and medium enterprises on the international market
3. Increased activity of small and medium enterprises on innovative activities

The scope of this axis was to promote entrepreneurship especially by enabling the economic exploitation of innovative ideas and supporting the creation of new firms through business incubators. Another important objective was to internationalise business models for already existing small and medium enterprises and support for creating and developing for products and services. The beneficiaries of those programmes will receive in total 720 million EUR for development (MIiR, 2015).

Axis 2 Modern transport infrastructure

1. Higher use of urban transport in voivodship capital cities and their functional areas
2. Increased accessibility of voivodship capital cities and their functional areas to road infrastructure

As the infrastructure in this region on Poland had been outdated compared to the rest of the country, the objective was to promote low-carbon emission and sustainable solutions for urban mobility and other adaptation measure that would help in smooth shift towards less climate - impactful ways. 916 million EUR were allocated in the budget for improvement of transport infrastructure (MIiR, 2015).

Axis 3 Supra-regional railway infrastructure

1. Increased accessibility of Eastern Poland to railway infrastructure

This priority focused on developing and improving the railway infrastructure that would connect rural areas with capital cities as well as the region with other regions by creating high-quality, interoperable, and noise-reducing measures. PKP PLK SA – Polish Railways as the only beneficiary received 330 million EUR for implementation of these objectives (MIiR, 2015).

Axis 4 Technical Assistance

The specific objectives of this axis included management and implementation of projects and effective distribution and use of assigned funds as well as promotion and sharing information with the public. The organizations managing the implementation processes were assigned 34 million EUR (MIiR, 2015).

After the first programme - Operational Programme Development of Eastern Poland the quality of urban transportation increased significantly; new eco-friendly busses adjusted for needs of handicapper were bought enabling people easier and faster commute between cities. The funds facilitated building and renovating congress centres, new markets and events were organized which led to establishment of new business relations between farmers. Polish government is putting high hopes in the success of the second programme as well.

4. Practical part: changes in selected sectors in the period of years 1999 – 2009

This chapter's aim is to analyse the change that occurred over 10 years for selected factors. The analysed factors are: prices of selected goods, land prices, yield and production of selected goods, value of investment outlays, modernisation of production, total agricultural land, land fragmentation, standard of living and employment in agriculture.

The practical part of this diploma thesis presents data extracted from Statistical Yearbooks of the Republic of Poland, Eurostat, and Main statistical Office regarding various factors in years 1999 – 2009 in lubelskie, podkarpackie, podlaskie, świętokrzyskie and warmińsko-mazurskie voivodships. This allows to observe the change, positive or negative, over those years.

Polish agriculture after transformation was lacking a long-term perspective and frequent changes in the Ministry of Agriculture in both strategies for development and the ministers themselves. This limited its effectivity and productivity. Only implementation of pre-accession programmes forced Polish government to create a strategic document – Common structural policy of the development of rural areas and agriculture, as this was one of the requirements for starting the funding.

4.1 Economic changes

Possibly, the biggest changes in agriculture in the discussed region could be observed looking at the economic factors of agriculture, such as prices of goods, land prices, yield and production together with modernisation of production. The data for those factors for years 1999 – 2009 is gathered and presented to clearly illustrate the development.

4.1.1 Prices of selected goods

The prices of agricultural products grew in the majority of new member states of EU-25 after the accession, on average for all those countries the prices increased by 3.8% in 2004 and the dynamic of price changes accelerated for all 10 countries in 2007.

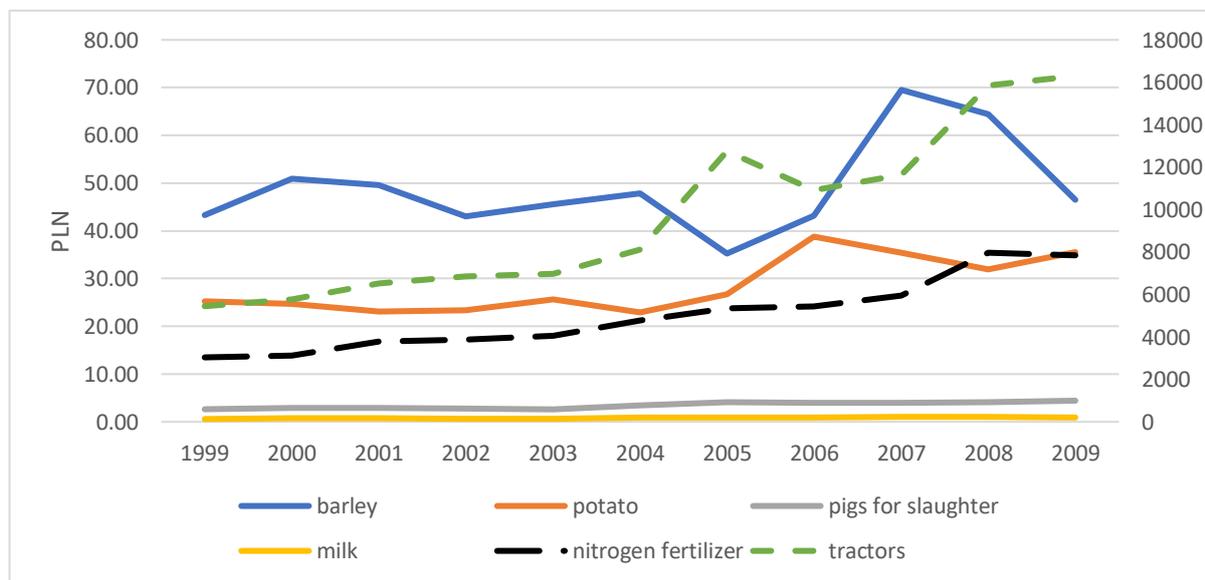
Procurement is one of the three most vital elements of commercial production in agriculture together with supply of production means and demand on production services.

Procurement is a mean of trade of goods based on purchasing goods from agricultural holding for further distribution or processing (Piwowar, 2008). This sub-chapter will discuss the change of procurement prices of selected goods: barley, potato, calf, and milk as those belong among the most important goods for agriculture in Eastern Poland.

To put together average procurement prices, the author collected the average procurement prices for four selected goods: barley, potato, livestock, and milk for years 1999 – 2009 for all discussed voivodships (Figure 8.2 in Appendix). Further, the average value per good per year for all five voivodships were calculated. The data is visible in the Figure 4.

Until the year 2004 the prices of food were relatively decreasing, this was happening already in the last decade of 20th century. The dynamics indicators were significantly lower than the inflation as well as consumers’ incomes. Simultaneously, the cost of means of production for agriculture were rising more rapidly than the procurement prices and price on the marker-place received by farmers. It is possible to observe that the increase of price of fertilizers was rather smooth until 2007 when a significant acceleration of dynamics occurred – the price of nitrogen fertilizer went up by 32%. The same rule applied to other means of

Figure 5 Average procurement prices in years 1999 - 2009. Barley PLN per 1dt, Potato PLN per 1dt, Calf PLN per 1kg, Milk PLN per 1L, average nitrogen fertilizer PLN/25 kg, average price of tractors



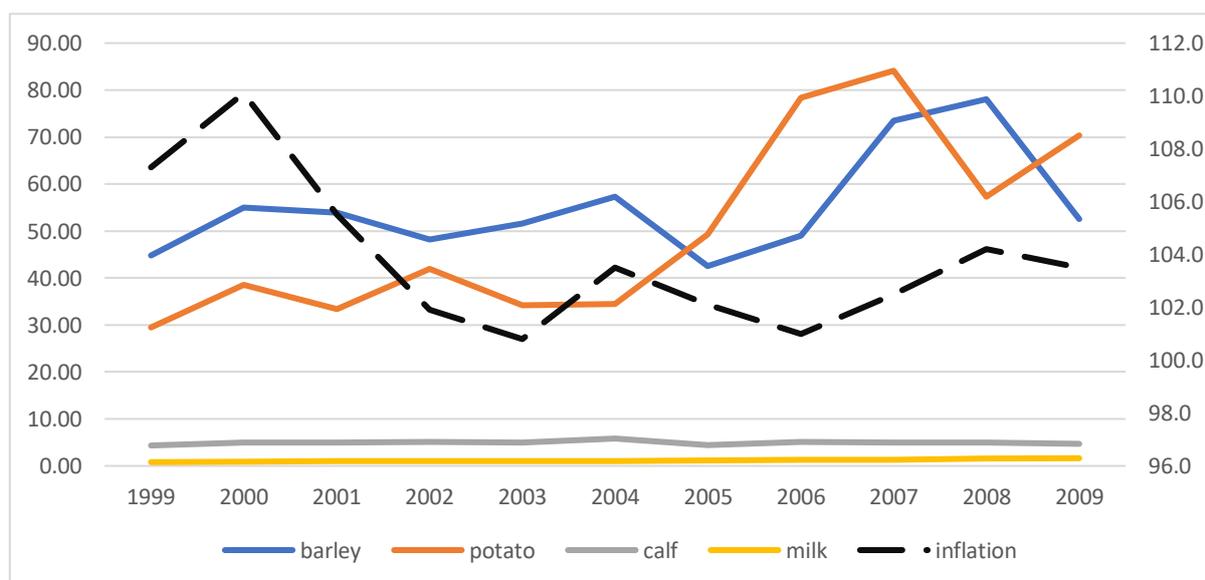
Source: Main Statistical Office and own calculations

production, for instance tractors which price rose by 37%. This caused lower production profitability for farmers (Urban, 2007).

Since 2004 the growth dynamics of food products process accelerated. This process was influenced by the difference in prices between Poland and older member states of the European Union. The first increase of procurement prices of grains (here presented on the example of barley) can be observed in 2004 with a notable drop of 26%, from 47.83 PLN/dt in 2004 to 35.24 PLN/dt in 2005, due to a very high crop and supply together with opening to European market and implementing regulations regarding grain production imposed by Common Agriculture Policy. Soon after that, in 2005 the influence of drastic changes in unemployment rates in the country – changes from 19% in 2004 to 9.5% in 2008 (Main Statistical Office, 2008) and rapid growth of incomes together with destabilisation of world's food market led to record procurement prices of grains – the price of barley increased by 60% from 43.12 PLN/dt in 2006 to 69.52 in 2007. Deep fluctuations of procurement prices of grains were causing the profitability of livestock and poultry production as well because around 65% of national production of grains is used as fodder. (Seremak-Bulge, 2010)

The prices of livestock remained relatively stable in first years after the accession. Together with low grain prices it was highly profitable to breed livestock in years 2004-2007. The sudden growth in grain prices in 2007 contributed of deterioration of profitability of meat production. As result the production decreased, and the procurement prices increased. that was

Figure 6 Average market place prices received by farmers



Source: Main Statistical Office

a stimulus for further development of this activity by farmers (Mroczek, 2007)

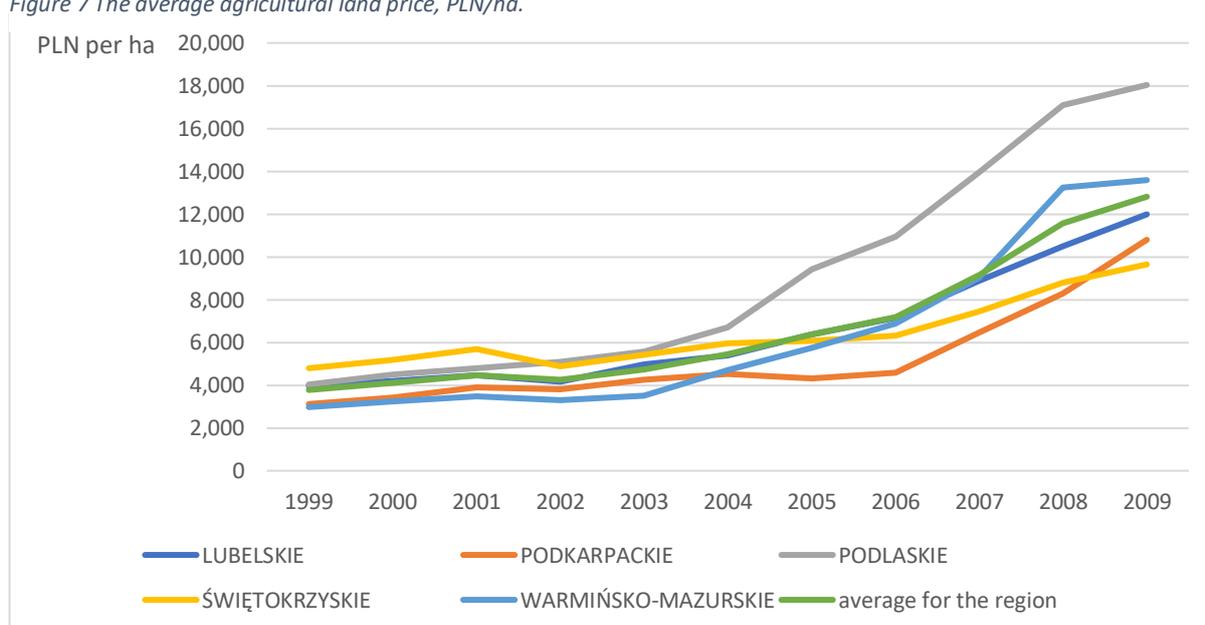
Together with procurement and means of production prices the average market-place prices received by farmers grew as well. Potatoes' and grains' prices begun to increase significantly in 2006/2007. The price of barley grew by nearly 50% in 2007 compared to the previous year, the price of potatoes changed already in 2006 by 59% compared to the previous year. The price of livestock and milk changes as well, however not as visibly. The change in consumer price was present in most new member states.

Even though the prices in first years after the accession were rather fluctuant, this was predicted and expected. Introducing Common Agricultural Policy's intervention rules in Poland gave the predictability of behaviour of prices on the national market. The sudden increase of prices of nearly all agricultural products resulted in better functioning of Polish agricultural market in the European market. This gave the producers and farmers the opportunity to choose where to purchase means of production (Stańko, 2008).

4.1.2 Land Prices

It is highly possible that land prices are the factor influenced the most by the accession to the European Union. Until the year 2003 the price of land in Poland was influenced mostly by the activities of the Treasury Agricultural Property Agency that was responsible for distribution of land after the State Agricultural Farms. When the process of privatization started in 1991, the prices of agricultural land in Poland started systematically increasing together with the structural changes. The average land price in Eastern Poland in 2004 – 4738 PLN per ha,

Figure 7 The average agricultural land price, PLN/ha.



Source: Main Statistical Office

was 44% higher than in 1999 – 3778 PLN per ha. However, the biggest change can be observed in 2004, after the accession to the European Union when the landowners started receiving direct payments. The average price of a hectare of agricultural land in Eastern Poland amounted to 12811 PLN which is 170% more than 5 years before.

The data presented in the Figure clearly shows a constant increase of land prices in years 1999 – 2009 which the exception of 2002 when the prices dropped slightly however the next year the increasing tendency returned and remained until the end of the analysed period. The average highest growth of price in the region can be observed in 2005 but the dynamics of price growth increased visibly after the accession to the European Union in 2004.

The rising of prices did not apply only in case of good quality soil but also in low quality soil, which means that the increase in land prices rose regardless of land quality (Grontkowska, 2015).

An important factor shaping the land prices in Eastern Poland were certain instruments of Common Agricultural Policy which aimed to raise the attractiveness of agricultural production, such as direct payments. This instrument supported agricultural producers while maintaining sustainable development of rural areas, trying to avoid land exploitation for maximisation of profits. However important this as, the correlation between price and direct payments is not strong enough to associate the growth with direct payments exclusively. According to Anna Grontkowska the key factor was the relatively low land price before the accession. Since then, the agricultural land became a mean of investment not only for farmers but also for financial institutions (Grontkowska, 2015). As a result, the demand for land became very high and the supply stayed low.

The land prices after the accession were rising faster than consumer prices of agricultural products due to slow changes in procurement prices and rich crops in 2004. Thanks to that there was no shock price occurring right after the accession.

4.1.4 Yield and production of selected goods

The impact of accession to the European Union on the volume of agricultural production is undeniably great. Nonetheless it is crucial to remember that the agricultural production is highly dependent on external factors and it can fluctuate due to, for instance,

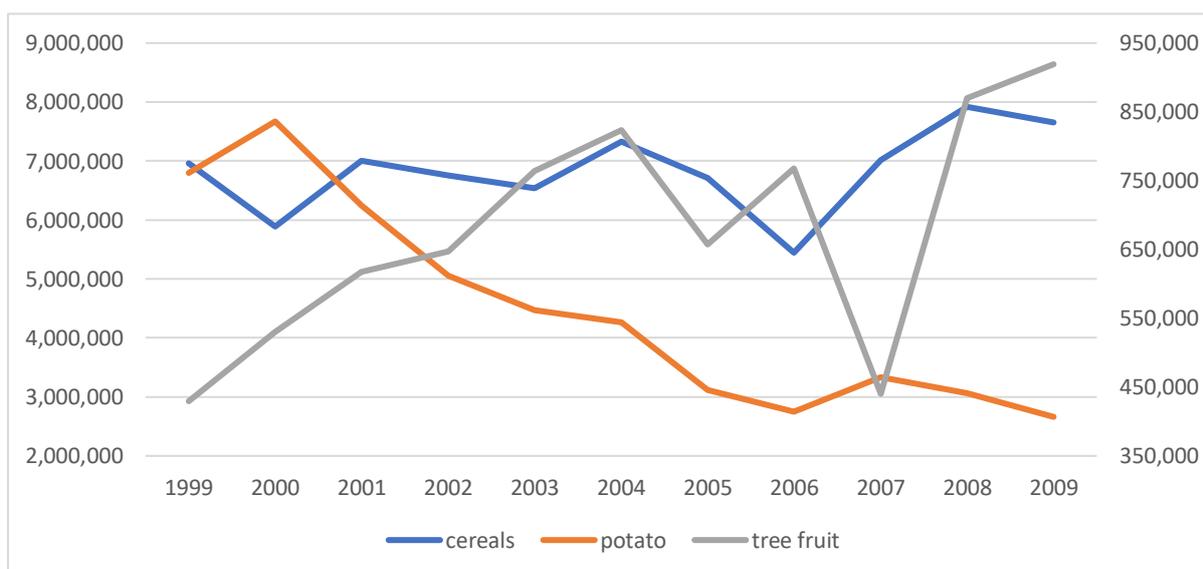
natural catastrophes such as drought in Poland in 2006. Natural conditions uncontrollable by human forces impact the yield and crop.

According to Robert Rusielik, the productivity of agriculture after the accession increased noticeably until 2008 when it slightly decreased, which could be understood as the beginning of stabilization process (Rusielik, 2014). This tendency can be observed in the case of cereals. The yield increased from 2.66 t/ha in 1999 to 3.04 t/ha in 2004, later to 3.1 t/ha in 2008 and then decreased to 3 t/ha in 2009. Similarly, the yield of potato amounted to 15.9 t/ha in 199, 18.4 t/ha in 2004, 19.1t/ha in 2008 and 17.5 t/ha in 2009. The Figure 7 and 8 present the volume of production of certain agricultural goods divided into animal production and non-animal production.

The importance of potato production started to decrease notably since 2000 and until 2007 was decreasing constantly resulting in 65% drop in production. In 2007 a small increase can be observed however not permanent and in 2008 the volume decreased again and in 2009 the production amounted to 2.6 million tonnes for the region. This tendency however could be observed in the majority of European countries as the crop area got smaller, most likely due to changing nutrition trends across Europe (Dzwonkowski, 2017).

The production of cereals in the region of Eastern Poland had a more complex dynamic. As seen in the changes of yield of cereals, in the years on weak yield the production was

Figure 8 Production of selected goods in tonnes.



Source: Main statistical Office.

smaller. Additionally, at the beginning of the analysed period the trade situation was very unfavourable for the farmers, as nearly every year the trade balance was negative, this tendency started changing in 2003 where the balance was positive and the situation of exporters of cereals in Poland improved. However, the production of cereals in Eastern Poland did not increase as much as in the rest of country. In 2009 it was almost 10% higher compared 1999 while in the rest of the country it was possible to observe 18% growth in the given period. Farmers from Eastern Poland did not produce as much as they were able to because of low land productivity, below European average (Czakowski, 2013).

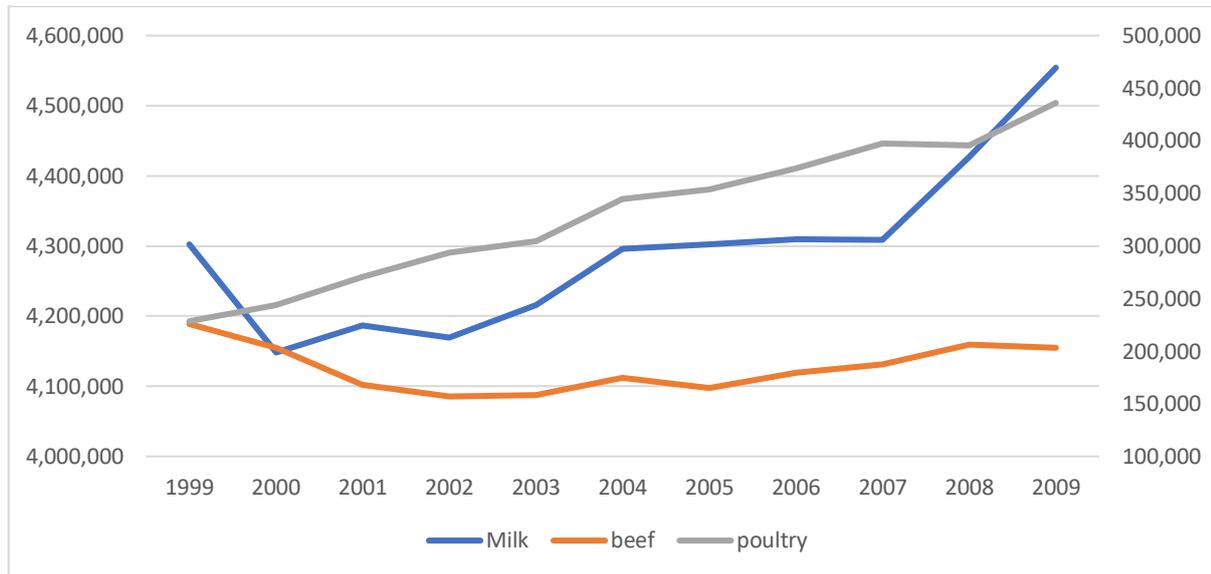
A production of tree fruits changed notably in years 1999 – 2009. It is important to emphasize that the change in 2007 was specific due to extremely unfavourable weather conditions in the country. The production of tree fruit is very dependent on weather conditions, more than other goods as well as on trade possibilities. The growth in production after the year 1999 could be associated with pre-accession funds described before that allowed orchardmen in Eastern Poland to modernize, purchase land and new trees (Czernyszewicz, 2008). Despite the year-to-year fluctuations the production of tree fruit increased by 114% in 2009 to 1999.

When it comes to animal production, the following commodities will be discussed: milk, beef and poultry, which changes can be observed in Figure 8. The changes are relatively calmer compared to plant production as animal production is not as dependent on weather conditions.

The production of milk was visibly growing however the number of farms with milking cows decreased, this was the result of dynamic improvement in effectiveness of milk production caused by technological development. The biggest changes occurred in podlaskie (74% of growth in production) and warmińsko-mazurskie (43% growth in production)

voivodships. The decrease in Production was observed in świętokrzyskie and podkarpackie, however for the whole region the production of milk increased by 6% in 2009 to 1999.

Figure 9 Production of selected goods in tonnes.



Source: Main Statistical Office.

The volume of production of poultry increased for all voivodships and for the region combined the production increased by 90% comparing 2009 and 1999. The possible reasons for that could be growing popularity of this meat type due to its low-fat content and relatively low price compared to other types of meat. Second reason was the removal of the duty fees for export. Polish poultry was considered cheap on the European market due to cheap workforce which resulted in increasing dynamics of export (Czakowski, 2015).

The same trend could not be observed in the case of beef. The prices of beef livestock for slaughter were low hence the production was not profitable. As poultry meat was cheaper and more nutritious, the demand for beef was decreasing together with its production. After the accession in years 2004-2009 an upward tendency was shown. This occurred due to growing demand for exporting this type of meat (Pasińska, 2015).

4.1.6 Modernisation of production

Before linking the process of modernisation with accession to the EU, it is necessary to remember that those processes occur nonetheless, as part of civilizational and technological progress. Another factor influencing the development are national funds such as investment

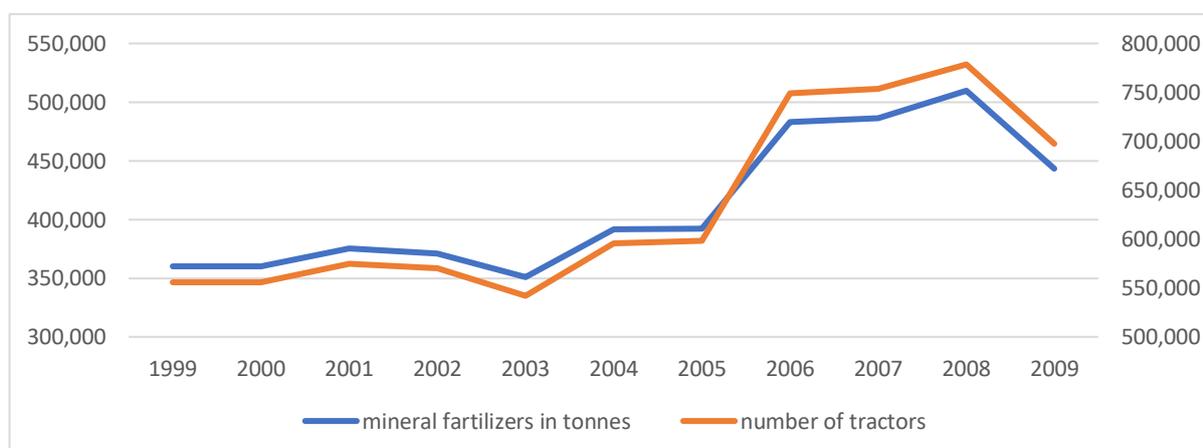
loans. However, after the accession the sector of agriculture was granted access to a wide range of funds and programmes aiming at modernisation of agricultural processes.

Low level of productivity in Polish agriculture before the accession was caused by faulty agrarian structure, too high employment per hectare and lack of modernisation of production infrastructure. After the period of communism, Polish agriculture had to make up for years of neglecting the sector. The direct payments and operational program supported by the Common Agricultural Policy contributed greatly to the development of innovation in the region especially in holdings with bigger areas. The development can be seen mostly in means of production such as usage of machinery or mineral fertilizers.

To assess the development of modernisation of agriculture in Eastern Poland the author collected data about the total number of tractors used in discussed voivodships. The number of registered tractors rose significantly in all voivodships. The highest growth can be noticed in warmińsko-mazurskie where the number rose by 76%. In total for all voivodships the number went from 409 thousand to 539 thousand, which gives 30% more in 2009 than in 1999. The usage of machines did not grow as dynamically before or after as in 2004/2005 due to price increase that was caused by applying 22% VAT on agricultural machines. Those price jumps did not occur later in discussed period.

Another factor that helps to assess the process of modernisation is usage of mineral fertilizers. In the case of Eastern Poland, the number of mineral fertilizers with a similar dynamic to the number of tractors as visible in Figure 9.

Figure 10 Usage of mineral fertilizers in tonnes and number of registered tractors.



Source: Main statistical Office.

The number started increasing visibly in 2004/2005 and until 2009 kept this tendency. In 2004 farmers in Eastern Poland experienced a price shock of mineral fertilizers, that did not occur again after that. The increase of usage is equal to growth of production intensification. The usage of means of production decreased then as in December 2008 the prices increased drastically as the demand for those increased, especially in developing countries. The demand increased but there was no possibility to raise the supply due to the extraction of raw materials used to produce potassium and phosphorus fertilizers.

One very important factor that has a direct effect on modernisation of production is access to professional knowledge. The money from direct payments would not be spent in an effectively without the awareness of newest technologies increasing the productivity of production. The start of Operational Programme Development of Eastern Poland led to opening institutions providing Support for Agricultural Counselling initiatives and Training.

4.1.7 Investment outlays

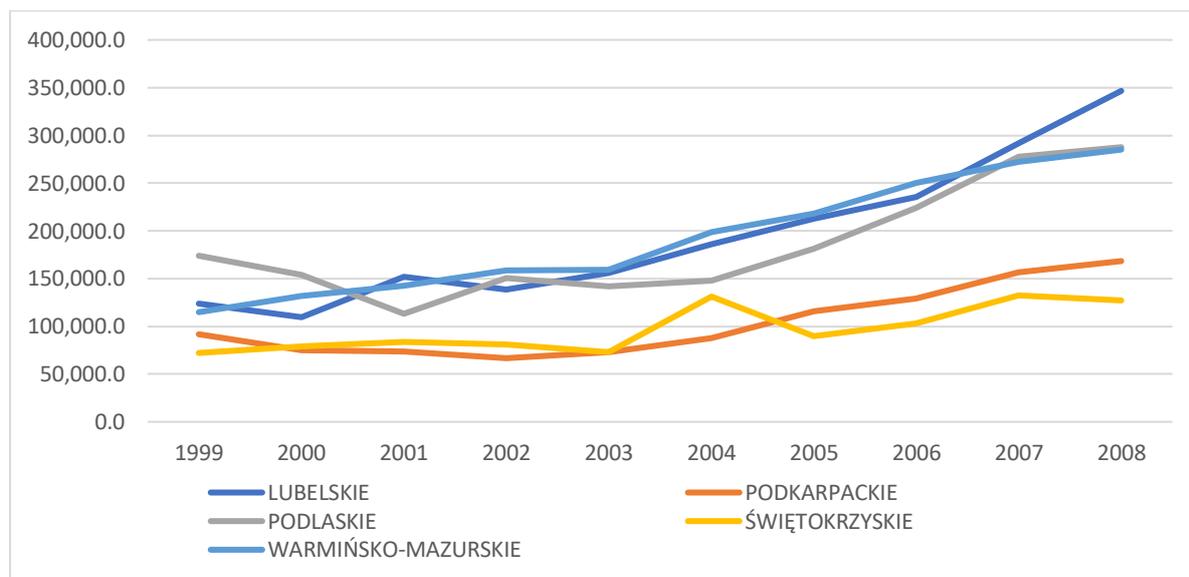
A crucial determinant of the development of a sector is the value of investment outlays in this specific area. Because of volatility of agriculture, unstable supply of products, climate change and dependency on weather, investment in agriculture helps countries to achieve food security and can protect the self-sufficiency on agricultural products. At the same time the demand for food is constantly growing globally. To sustain or increase the potential of production is necessary to increase the value of investment outlays. The investments are necessary for purchasing machinery, buildings, land and means of production which are later utilized to increase the productivity of land. Aside from investment aiming to increase the effectiveness, farm owners invest in means that have no direct impact on the outcome of production but provide safe working environment or more sustainable processes.

Since joining the EU Poland the level of investment changed greatly as the country got the access to new innovations and technological solutions. The focus of Polish farmers was mostly on production factors such as land, workforce, and fixed assets. As Poland entered the European market, Polish farmers were forced to invest to be able to face the new competitors by introducing modern technological, structural, and biological solutions. The changes in the value of investment outlays are visible in Figure 11. It is possible to observe the increase before

the accession in lubelskie and warmińsko-mazurskie voivodships, possibly to the EU due to pre-accession funds for agriculture. The authorities feared that due to lack of funds for down payments and lack of knowledge about the procedures owners of agricultural holdings will not be willing to apply for European funds supporting investments however the rapid increase in the value of investments indicates that every year the interest of the beneficiaries was higher (Czubak, 2019).

A visible spike for all voivodships can be observed in 2004 which allows us to establish a correlation between the increasing value of investment outlays and the accession. The highest growth was noted in lubelskie voivodships where the value of investments in 2008 was 181% higher than in 1999. In warmińsko-mazurskie the number increased by 148%, in podkarpackie by 184%, in świętokrzyskie by 176% and lastly in podlaskie by 165% in 2008 compared to 1999.

Figure 11 Volume of investment outlays in PLN.



Source: Main Statistical Office.

Investments were mostly made in the area of modernisation and development. The dominating directions were purchasing of machinery and mobile equipment. Owners of agricultural holdings did not focus as much on purchasing on buildings. A big share of investors were small and medium holdings which contributed to a big share of equipment purchasing in total value of investments.

The main result of investments of Polish farmers were reduced costs of production as well as increased revenues. Aside from economic benefits, increased investments resulted in organisational development, quicker reaction to consumers' needs or higher quality of processes of production. Additionally, introducing CAP and direct payments that resulted in increasing the value of investments led to higher demand for land (Bórawski, 2020) .

According to research conducted by Andrzej Hornowski, the investments done by Polish farmers were based mostly on intuition not on an economic analysis of current needs for the agricultural holdings (Hornowski 2015).

4.2 Environmental changes

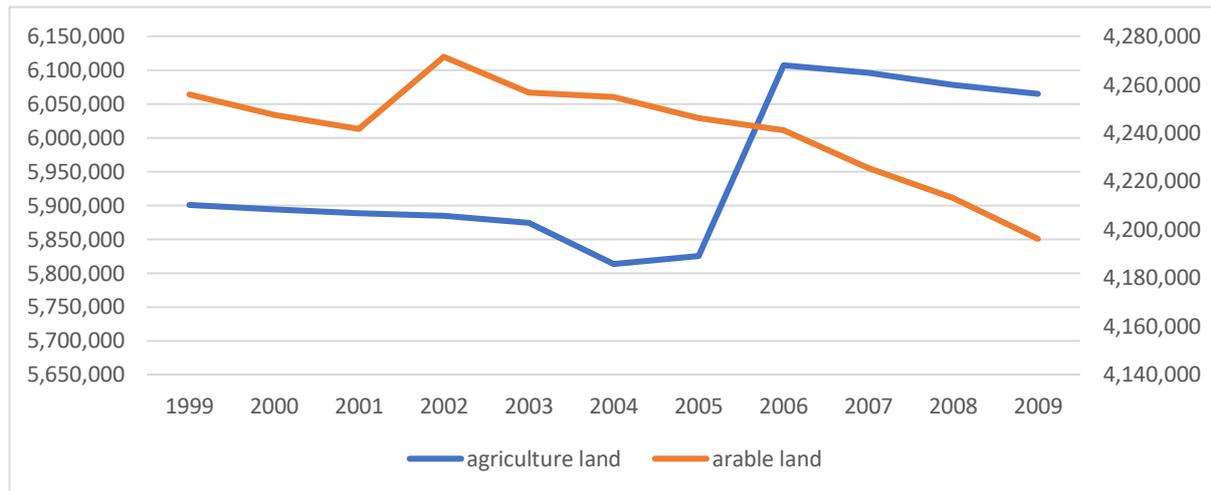
Environmental changes in the agriculture in Eastern Poland occurred as well as economic changes. The factor taken under analysis in the part is the negative and positive change in total agricultural and arable land in discussed period in the region. Changes in land fragmentation will also be discussed, as this was earlier classified as one of the most crucial issues of agriculture and its development in the region of Eastern Poland.

4.2.1 Total agricultural land

The total area of agricultural land in Eastern Poland changed as all other factors. First decrease and later increase in the area can be connected to the improvement of economic conditions of agricultural production, mainly with new opportunities to get direct payments which encouraged people to invest in farming.

Another reason for the changes, both negative and positive are process that aimed to adjust Polish agriculture to requirements of Common agricultural Policy. Another event that triggered changes in the agricultural land area was the updating land and building register that resulted in classification of some areas as agricultural land.

Figure 12 Total agricultural land and arable land in hectares.



Source: Main Statistical Office.

At the end of the analysed period, it is possible to observe a small decrease, possibly due to lack of utilization of the land and transforming it into non-agricultural land for further development. A decrease can be associated to a small extend with strong process of reforestation that were particularly dynamic before entering the EU, however right after introducing direct payment is slowed down.

The total arable land however was changing with a different tendency. Difficulties related to land management after liquidation of State Agricultural Farms caused the decrease of arable land until 2002/2003. The area grew right before the accession, likely due to the promise of direct payments however it started decreasing drastically after the accession because of low profitability and which led to abandoning farming activities. This happened mostly in small farms, that did not classify for direct payments (Dzun, 2021).

4.2.2 Land fragmentation

As discussed before, land fragmentation is one of the main problems in agriculture in Eastern Poland. Among main goals of agricultural policy in Poland for years 2004 – 2013 was to decrease the fragmentation as it results in income inefficiency of agricultural holdings. To assess the change, the author collected data about the number of farms smaller than 1 ha in

discussed voivodships in years 2000 – 2009. The data for the year 1999 was unavailable hence

Table 1 Number of agricultural holdings of up to 1 hectare.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
LUBELSKIE	75,827	77,656	82,549	87,186	81,259	75,077	64,292	67,400	57,362	54,508
PODKARPACKIE	108,318	125,730	113,235	126,193	122,569	123,395	117,789	115,934	122,156	119,205
PODLASKIE	19,654	18,161	20,218	26,860	21,150	18,843	16,548	18,137	15,001	15,453
ŚWIĘTOKRZYSKIE	41,877	49,239	46,533	43,801	48,533	52,113	38,098	37,223	37,951	38,836
WARMIŃSKO-MAZURSKIE	33,181	28,195	28,501	28,548	27,928	24,683	19,635	21,479	19,669	19,141

Source: Main Statistical Office.

the omission of this year in the analysis.

The number of small holdings with areas of up to 1 ha decreased in all voivodships apart from Podkarpackie voivodship where the number increased noticeably. It is important to realise that this region is characterised by mountain landscape that does not allow the creation of bigger holdings. The decrease however is not drastic, and it is hard to say it is a big improvement in this regard.

The decrease could have been caused by lack of direct payments for those holdings. The same applies for holdings with area of up to 20 ha for the region. The number of those decreased from 671 180 to 602 161 - 11%. The small holdings were incorporated into big holding with the area above 20 ha. The number of those increased by 16% in the region.

The impact of direct payments from CAP is multidirectional regarding the development of land fragmentation in Poland. They allowed to conduct resettlement of fallow lands and discouraged farmers to abandon agricultural activities among small landowners and family agricultural holdings, which strengthened the fragmentation. On the other hand, due to access to European funds and the improvement of price relations the economic barriers for production intensification weakened which allowed bigger holdings to expand to new land, consuming small farms and further intensify the production (Instytut Ekonomiki Rolnictwa I Gospodarki Żywnościowej, 2021).

Even though the changes were visible they were still weak and did not cause significant structural changes in the agriculture in Eastern Poland. The share of small farms of up to 20 ha was very high in all voivodships in 2009 - in Lubelskie 96%, Podkarpackie 99%, Podlaskie 88%, Świętokrzyskie 99% and Warmińsko-Mazurskie 83% (GUS). In 2010 the total number

of agricultural holdings in Poland was the second highest in the European Union with right after Romania and before Italy (Eurostat).

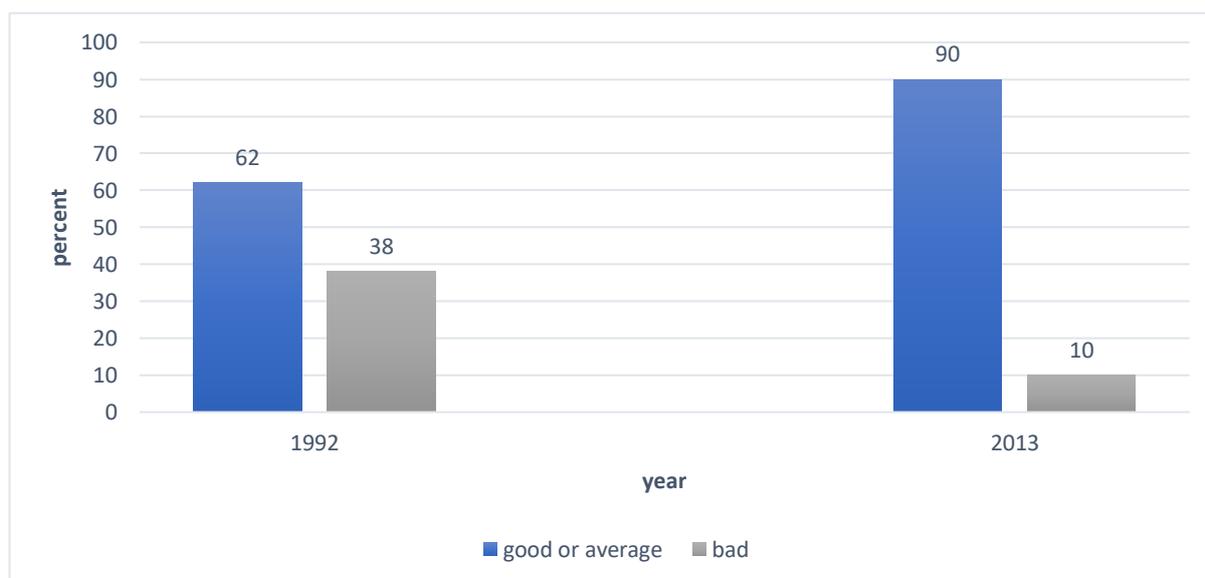
4.3 Social changes

As clearly visible above, the accession on the European Union had a great impact on economy of agriculture and environment in Eastern Poland. However, it had a social significance as well. This subchapter will focus on the social impact that the accession to the UE had on farmers in the debated region. This part will focus on discussing the social changes that occurred in years 1999 – 2009, specifically changes in the standard of living and employment in agriculture in the region. Due to lack of data to analyse the change of the standard of living among farmers in Eastern Poland, this matter will be presented for the whole country.

4.3.1 Standard of living

Standard of living among farmers is discussed at the end of analysis because it might be directly influenced by all above-mentioned factors. As explained by researchers from Melbourne University explained that wealth and income have a great impact on subjective well-being. A conclusion can be drawn that rising of income of Polish farmers was followed

Figure 13 Standard of living among farmers, Q: How would you asses your current standard of living?



Source: CBOS: *Rolnicy o sytuacji rolnictwa i warunkach życia na wsi, 1993* and *Wieś Polska – Charakterystyka ludności rolniczej, 2013*.

by a significant improvement of living standard (Headey, Wooden, 2004).

For this part of the analysis, the author used data from various opinion polls conducted by the Centre of Public Opinion Research.

Polish Centre for Public Opinion research carried out two similar studies in 1992 and 2013. The research aimed at assessing the standard of living of Polish agricultural workers. The interviewers asked Polish farmers if they are satisfied with their current standard of living. It is possible to observe a growth of 28 percentage points in assessing the living standard as good or average between years 1992 and 2013.

Like in the whole country, the tendency of increasing incomes applied for farmers. The difference between declared income per family in 2002 and 2007 is significant. The number of agricultural households with the income not higher than 1500 pln decreased from 42% to 10%. Almost triple growth can be seen for households that earned more than 2251 pln. However, it is hard to assess this change fully as the number of people that restrained from declaring their income increased from 37% to 51%.

Table 2 Monthly Net income per household.

MONTHLY NET INCOME PER HOUSEHOLD	2002	2007
	in %	
UP TO 750 PLN	14	2
751 - 1500 PLN	28	8
1501 2250 PLN	11	11
2251 - 3000 PLN	10	11
3001 AND MORE	10	17
NO ANSWER	37	51

Source: CBOS. *Jak żyje się rolnikom, 2008.*

In 2007 32% of interviewed farmers assessed the change of material conditions as better than in 2004, 52% claims that they did not change significantly and 16% believed they worsened. Interestingly, the vast majority of farmers declaring improvement combines their farming job with other profession; most commonly teaching, office jobs or entrepreneurship. It leads to the conclusion that the material conditions of families owning agricultural holdings improved mostly for families with main income coming from outside of their agricultural activities. In addition, the increase of income did not bring satisfaction. In 2007 only 21% of agricultural workers were satisfied with their incomes, 34% were rather satisfied and 45% not satisfied at all.

When it comes to satisfaction with the condition of the agricultural holding big changes can be observed in the answers of respondents. In 2007 29% were satisfied with the condition while in 1999 it was only 11%, similarly, in 1999 36% of interviewed assessed at the condition as bad or rather bad and in 2007 only 14%. There was almost no change in the number of responders that claimed the state if their agricultural holding is average – 52% in 1999 and 56% in 2007. Most likely those holdings are not sufficient to provide for the whole family, but they remained the main source of income.

The researchers also asked farmers about their satisfaction with future perspectives. 35% of responders were very satisfied, 42% rather satisfied and 22% not satisfied. The same group was asked about the direction of life standard of their families in 4-5 years, 58% of farmers believed the situation will be better, 30% that it will not change and only 12% that it will be worse than in 2007.

These statistics lead to the conclusion that in 2007 the farmers were not fully satisfied with the standard of living after the accession but expected it to change within a couple of years. A positive change was observed in the polarization of incomes, the group of poverty got significantly smaller. The most benefitting group were farmers that also relied on another source of income.

4.3.2 Employment in agriculture

This subchapter will focus on employment in agriculture in Eastern Poland. As mentioned before, agriculture is very significant for the economy of the region and as a result employs a substantial number of people. In the case of employment two problems can be identified: surplus of workforce and high percentage of family members among agricultural workers.

The surplus of employment in agriculture indicates unfavourable relation between resources of work, land and capital which results in ineffective production. This leads to lower productivity of agricultural production than in other European Countries that further leads to the level of income of agricultural producers. The surplus of employment in agriculture also leads to low *per capita* income which impedes the local non-agriculture enterprises (Kołodziejczak, 2016).

As presented before, the yield of farms in Eastern Poland increased as well as general production of goods. However, higher production did not mean higher employment in agriculture. Before accession to the European Union, high employment in the sector of agriculture was considered an issue. It was a consequence of low access to job in other areas of national economy (Kołodziejczak, 2016).

Table 3 Share of professionally active people employed in agriculture.

	LUBELSKIE	PODKARPACKIE	PODLASKIE	ŚWIĘTOKRZYSKIE	WARMIŃSKO-MAZURSKIE
1999	35.0	24.3	33.4	32.5	13.8
2000	39.0	26.8	33.8	31.7	14.5
2001	38.6	28.5	36.6	31.2	15.7
2002	39.4	30.8	36.5	31.0	17.9
2003	37.5	30.3	35.0	29.6	17.4
2004	36.5	28.7	36.1	31.7	16.7
2005	35.9	25.7	34.4	33.3	16.4
2006	35.8	25.2	29.7	34.0	15.5
2007	33.7	25.5	27.1	31.3	13.2
2008	29.7	22.8	27.2	25.1	12.7
2009	28.1	22.5	26.6	22.1	12.8

There is no uniform tendency for all five voivodships on the subject of changes in employment in agriculture. According to the statistical data, the employment in agriculture

Source: Main Statistical Office.

decreased profoundly only in some voivodships in 2009 compared to 1999. The highest drop can be observed in Świętokrzyskie where the percentage of labour force in agriculture in total employment changed from 32.5 to 22.1, similarly in lubelskie and podlaskie with a drop of around 7 percentage points. The change in podkarpackie and warmińsko-mazurskie is nearly unnoticeable.

This might be a consequence of lack of new workplaces in sectors other than agriculture after the accession. Looking at the same date for the country the percentage of employed in agriculture was 18.1 and in 2009 dropped to 13.3.

Continuing high employment in agriculture in Eastern Poland may cause another worrying tendency that is very present in the discussed region. Unnecessary employment of

family members seems to be a big problem that might stand on the way of effective development and increasing the effectiveness of agricultural production. In 2007 in all discussed voivodships more than 97 % of people employed in individual agricultural holding were family members (GUS). This phenomenon has a negative impact on cost of production, effectiveness of production and income *per capita*. Employing workers with proper expertise and experience would be more beneficial for the agricultural holdings.

Despite many tools of support from the European Union there is still a big distance in the level of employment in agriculture between Eastern Poland and other regions in the EU. The lack of big progress of employment dynamics in Eastern Poland may be caused by lack of job opportunities in other sectors of economy as well as lack of access to education. The unfavourable structure of education results in no opportunities to adjusting to changes in the labour market. Moreover, the employment in agriculture is impacted by low mobility of population or connection to the land (Szczukocka, 2021). As shown in a research conducted by the Centre of Public Opinion Research, in 2007, 52% of interviewed felt strong connection with the farming profession, 67% with their agricultural holding and 84% with their village. Only 22% did not feel any connection to the profession, 17% with the land and 2% with their village. This explains why farmers from Eastern Poland are reluctant in selling their land and changing the profession that appears more stable and provides better financial conditions.

5. Results and Evaluation

It is important to realize that changes described before occurred not only due to the accession to the European Union itself but were a result of civilizational development and evolution of technology used in agricultural production. Additionally, agriculture is a specific sector that is highly dependent on external factors such as weather and trends. Therefore, no change can be fully associated with the accession to the European Union.

5.1 Results and Evaluation according to analysed sectors

Procurement prices is one of the most important factors impacting the competitiveness of farmers from Eastern Poland on the European market. The fluctuation of prices right after the accession was not surprising for the farmers as they expected it be a result of introducing CAP in intervention rules. The highest fluctuations occurred for prices of grains and vegetables due to opening to a new market and introducing regulations of grain production. The average market-place prices received by farmers were growing providing higher incomes for agricultural workers.

The dynamics of prices of agricultural land started accelerating significantly in 2004, right after the accession and continued to grow until 2009. This occurred for all discussed voivodships; however, the biggest price change can be observed for podlaskie voivodship. Seemingly negative, price growth of agricultural land is a positive phenomenon as it is a result of introducing policies aiming at raising the attractiveness of landownership. Direct payments for farmers played a big role in the price fluctuation however the most important factor was the low price of land in Eastern Poland before the accession. Land in the region became more appealing not only for agricultural production but also as a potential investment. This resulted in attracting investors which accelerated the development processes in the region.

In view of effectiveness of agricultural production, it is hard to assign full merit in the improvement to the accession to the UE due to high dependency of production on the weather conditions. Nonetheless, the overall effectiveness increased significantly which is clearly indicated by the progress of changes in the milk industry in Eastern Poland where the biggest change can be noted. The production was constantly growing together with decreasing number of milk farms thanks to constant technological development of the process.

As Poland entered the European market, the production of certain goods increased mostly due to new export opportunities. Initially, Polish goods were cheaper than produce from Western Europe so the demand for it increased. A good example of this phenomenon is poultry which production nearly doubled within 10 years. A similar trend occurred in the case of apples, in case of this commodity the production in 2009 amounted to 214% of the production in 1999. A negative change can be observed in beef production however this is often associated with changing of nutrition trends.

The rising effectiveness of agricultural production can be strongly associated with dynamic improvement of technology used in farming. As Polish farmers were granted the access to a variety of programs, loans, and direct payments they were able to invest in newest machines, more effective fertilizers, and professional knowledge. The positive changes can be easily observed in the rapid increase in number of newly registered tractors, growing constantly until the year 2009. The same tendency occurred for the usage of mineral fertilizers that increased the effectiveness of plant production.

Evaluating at data presented in connection with the value of investment outlays, the change can be assessed as positive as for all analysed voivodships the value increased significantly. This allowed the owners of agricultural holdings to modernise and develop the production that eventually led to increasing the productivity of land. However, farmers from Eastern Poland were not provided enough education and knowledge to base their investments on actual economic analysis of the business' needs but mostly on intuition.

The changes occurring in the area or agricultural and arable land were both positive and negative. A visible decrease in arable land after the accession was a result of low profitability of farming for small holdings as they were not eligible for direct payments that forced them to be excluded from this activity. Seemingly enormous increase in the total agricultural land was a result of administrative changes that allowed Poland to align the land registers with European regulations.

As mentioned before on the thesis, one of the biggest problems of agriculture in Eastern Poland was land fragmentation. Due to the above-mentioned rising attractiveness of land in Poland bigger holdings started acquiring smaller farms to increase production. This resulted in decreasing land fragmentation in 4 of the discussed voivodships. Lower land fragmentation contributes to lowering the process of production and consequently to lowering the consumer

prices of agricultural products. The changes however were not significant and land fragmentation remained an issue in 2009. The number of small farms increased in podkarpackie voivodships most likely due to mountainous landscape that does not easily allow the creation of big holdings.

Dealing with the subject of social changes an undeniably positive change occurred in the standard of living of farmers. This could be a result of the overall positive change in agricultural processes, effectiveness, rising prices of agricultural products and incomes. On the other hand, the positive change in material conditions was mostly declared by agricultural works that were combining farming with another professional activity. This might suggest that the better life conditions came from improvement not in the agricultural undertaking but the second occupation.

As mentioned before, the employment in agriculture in Eastern Poland before the accession was considered excessive and not favourable for the economy. For this reason, a big drop in employment in agriculture is considered a positive occurrence as it was connected to a better access to jobs in different sectors. The outcome of lower employment in agriculture was a higher income *per capita* in the region, higher effectiveness of productions and lower costs of production. A big decrease was observed in lubelskie, podlaskie and świętokrzyskie voivodships however in podkarpackie and warmińsko-mazurskie the change was not as notable. This might be a consequence of slower pace of new workplaces creation, meaning that people had no possibility of changing profession as easily.

Second issue related to employment in agriculture in Eastern Poland was the very high percentage of family members hired as agricultural workers. This solution is not optimal for the cost of production as well as effectiveness. This phenomenon occurs mostly on small farms where it is not profitable for the owners to hire a worker with proper expertise and experience.

As seen above, the provided data about changes that occurred in agriculture the debated region allows to observe both negative and positive impact that the accession to the UE had on the analysed topic. It is also possible to see difference of impact on the same factor in different voivodships as in the case of land fragmentation. In some cases, the processes occurred at a different pace or with less significance however all 5 voivodships showed a lot of similarities in behaviour during the period of preparation to become an EU member state as well as in first 5 years after.

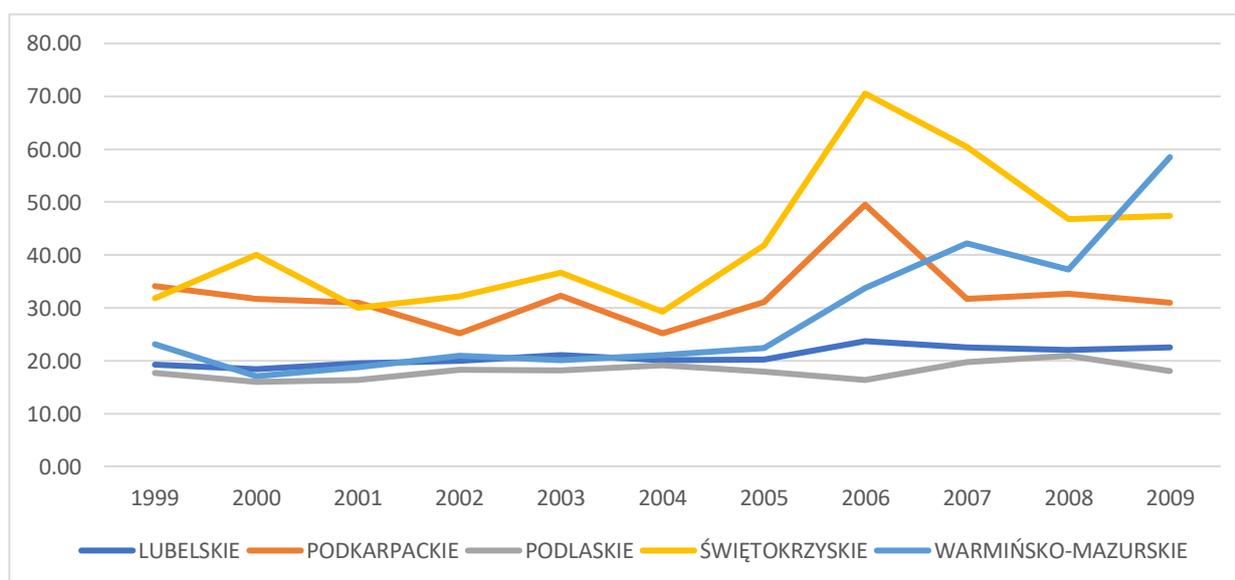
5.2 Results and Evaluation according to analysed voivodships

It is not easy to evaluate the changes that occurred for whole region as for each analysed sectors the impact was different for each voivodship, it is then necessary to not only present them as a whole but individually as well. This sub-chapter will focus of evaluating and presenting results of changes separately for the 5 discussed voivodships.

In lubelskie voivodship almost all sectors to all other voivodeships causing the same impact as described in the previous sub-chapter. The sector that was impacted in a different way was the sector of investment outlays which amount in this part of the region was significantly higher. This can also be seen in the number of tractors registered there that in 2009 was exceeding 188 thousand while in the second tractor-rich part it was 110 thousand, which might have been a result of higher investment outlays. An interesting occurrence can be observed in the usage of mineral fertilizers. The volume of used mineral fertilizers started decreasing in 2008 however it is hard to see the reasons as the decrease is visible only for one year and as not as significant. Together with this very positive change, all other sectors were impacted positively.

As in lubelskie, in świętokrzyskie the volume of mineral fertilizers used in agriculture

Figure 14 Volume of used mineral fertilizers per voivodship, in tonnes



Source: Main Statistical Office

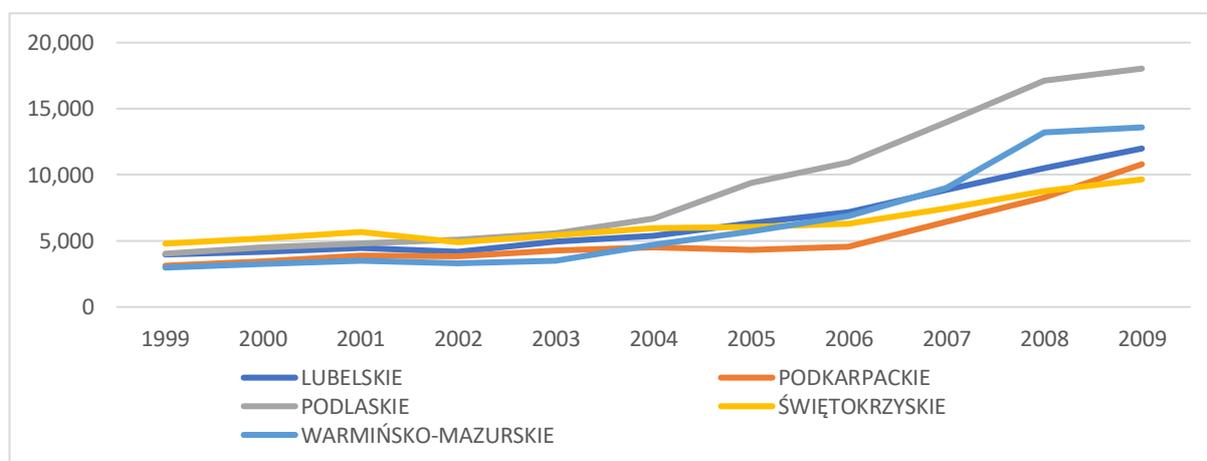
dropped in 2009 however the change was not significant. Interestingly, in świętokrzyskie the procurement prices of potatoes were growing in a different tempo than in other parts. The price

started growing drastically in 2004 and in 206 was twice or three times as high in other voivodships, which might have caused a problem for farmers that at that time were not as competitive. What is worth mentioning is that this voivodship is a leader in reducing employment in agriculture which changed from 32.5% in 1999 to 22.1% in 2009. This could have been a result of implementing new solutions aiming at increasing productivity and opening job opportunities in other sectors of economy.

In podkarpackie voivodship, similarly to świętokrzyskie (seen in Figure 17) the procurement prices of potatoes grew dynamically however not as fast and only price jump can be observed only for the year 2006. Similar to lubelskie, the usage of mineral fertilizers started decreasing in 2009 even though it was relatively stable throughout the analysed years. Podkarpackie was in overall impacted positively in all areas aside from one. As mentioned in the practical part, the problem of land fragmentation in podkarpackie was not reduced as expected but increased, the number of holding of up to 1 ha increased from 108 thousand to 119 thousand. This phenomenon occurred only in this voivodship.

Concerning podlaskie voivodeship, it was growing steadily without showing many unusual or negative tendencies compared to other parts. A sector that developed differently was the price of land that can be characterized by a higher dynamic. At the end of the analysed period, the price per ha was nearly twice as high as in świętokrzyskie, as seen on the Figure 17. This could be a result of high animal production that is specified by strict requirements of stocking density (Tygodnik Poradnik Rolniczy, 2021) which would make it a natural occurrence.

Figure 15 Average price land, PLN/hectare.



Source: Main Statistical Office.

Warmińsko-mazurskie was developing mostly without the occurrence of special phenomena apart from an unusual potato procurement price behaviour from 2005 until 2009 which can be observed in Figure 17. The price grew suddenly in 2006 and again in 2008 which could have resulted in lowering the competitiveness of potato producers in this region. An interesting change happened in the area of employment in agriculture. In all discussed voivodships the percentage of people working in agriculture decreased significantly, however in warmińsko-mazurskie the change is barely visible. It changed from 13.8% in 1999 to 12.8% in 2009 which means that it was relying on agriculture in employment to the same extend.

Deciding of the positive or negative impact of the accession to the European Union on agriculture in Eastern Poland is not easy or straightforward. As seen in this and the previous sub-chapter most of the changes in the analysed period were positive. However, there were areas for improvement that after first years of membership did not experience a significant positive change. Nonetheless, there was no analysed sector that was harmed in a strong level. The agriculture in overall was in a better condition after 5 years from the accession than in 1999, still soon after the structural changes in Polish economy.

5.3 Discussion

This such-chapter aims to present the agriculture in Eastern Poland in the context of the current CAP reform for years 2021 – 2027 as the agriculture in the discussed region still faces problems that could be solved or worsened by the said reform.

The Common Agricultural Policy for years 2021 – 2027 proposal aims at sustainability and competitiveness of agricultural sector. The main focus areas are stable economic future for farmers, environmental and climate action as well as protecting the position of agriculture in Europe's society. The European Commission has set nine objectives to achieve those goals: ensure a fair income for farmers, increase competitiveness, rebalance the power in the food chain, climate change action, environmental care, preserve landscapes and biodiversity, support generational renewal, foster vibrant rural areas, protect food and health quality (European Commission, 2020). This chapter aims to present the potential challenges and opportunities for the agriculture in Eastern Poland in the context of the Reform.

To encourage younger generations to start their professional activities in agriculture, farmers of under 40 years of age and less than 5 years since the beginning of the activity might

receive extra support for the development. This creates a great opportunity for the region however the share of farmers above 40 years of age is so great that they might become a disadvantaged group. The share of young farmers is very low in all discussed voivodships, in podkarpackie it is 16%, warmińsko-mazurskie, świętokrzyskie and lubelskie 21% and in podlaskie 23% (GUS, 2016).

An important part of the CAP reform is the European Green Deal which is a collective of actions aiming to make the European economy more sustainable. Concerning agriculture, one of potential threats might be the rising awareness of consumers and low demand for not sustainable products. Another obstacle for farmers in Eastern Poland that are still struggling with technological development and keeping up with the condition of agriculture in the rest of the country in other regions in the EU might be the need of adapting to new rules in order to obtain funds from direct payments. What intensifies that are the potential sanctions for not fulfilling the criteria of the Green Deal.

The strong focus of CAP on environmental protection and extra support for holdings that implement environmentally sustainable solutions might be hurtful for farmers in Eastern Poland as they still rely on older technologies and industry, as explained by Janusz Wojciechowski, the Commissioner for Agriculture (TVP 3 Bydgoszcz, 2020). The infrastructure in the region is not as developed, it does not protect against heavy weather conditions hence the focus of farmers in this part of the country lies on improving the basic infrastructure and only then in implementing sustainable solutions.

An opportunity that may help to decrease the fragmentation of land in Eastern Poland is the continuation of providing direct payments to landowners whose land is bigger than 3 ha. This may lead on one side to abandoning farming activities by micro farmers and reducing the number of farms of under 3 ha and on the other side to purchasing extra land by small farmers.

Whether the upcoming CAP Reform will be a threat or an opportunity in overall strongly depends on the actions taken up by the owners of agricultural holdings as well as the Strategic Plan for CAP prepared by the ministry of Agriculture and the Development of Rural Areas which is currently being in the initial preparations stage (Serwis Rzeczypospolitej Polskiej, 2020).

6. Conclusions

The aim of this thesis was to assess the impact of the accession to the European Union on the agriculture in Eastern Poland. The subject of agriculture in Eastern Poland is crucial as the region in the year 1999 was depending heavily on it while the sector remained strongly underdeveloped compared to the rest of the country. Historically, farming on these lands had its highlands but mostly it was seriously neglected which shows up to this day.

The thesis was divided into two parts- theoretical and practical. In the theoretical part, the overall view on the agriculture in the region was presented. This was done by presenting the historical background of agriculture in Eastern Poland and its significance for the economy of the region. Further, the author presented the EU resources that were allocated into the development of agriculture in Poland and described support programmes aiming at agriculture in the discussed region directly. This is needed to understand the value and individuality of the region of Eastern Poland.

The practical part of the thesis focused on the analysis of changes occurring for selected factors. The author displayed changes appearing in the agriculture in Eastern Poland in the period of 5 years before the accession and 5 years after. Social, economic, and environmental factors were taken into account to achieve the overall picture of changes. The discussed items were prices of goods and land, yield and production of goods, modernisation of production, agricultural land and land fragmentation, standard of living and employment in agriculture. Lastly, an evaluation of results of the analysis was carried out to assess whether the impact on those specific factors was positive, negative, or neutral. This chapter focuses on assessing the impact of the accession to the European Union on the agriculture in Eastern Poland based in the evaluation of results in the previous chapter.

The author chose the topic Rural Development Policy of the EU: Case study of Eastern Poland due to the uniqueness of the region. On the account of historical and geographical reasons the five discussed voivodships are put together in the region called Eastern Poland. This area even after many years of equal opportunities remains underdeveloped when compared to other voivodships in Poland. The agriculture in this part of the country plays a big role both socially and economically. This suggests that the impact of introducing Poland to the

CAP could be very significant for the owners of agricultural holdings and agricultural workers and their families.

The accession to the European Union meant upcoming big changes for the economy of agriculture not only Eastern Poland but in the whole country. Poland was still dealing with the post-communism structural changes when the negotiations started. Introducing the agriculture, to international market was a big and scary step for agricultural workers as it could have resulted in a quick inflow of foreign products eliminating them from the market. As mentioned before, Polish farmers feared the process as they were not aware of what this change means for them.

The research conducted by the author led to many interesting findings about the impact of the accession to the European Union on agriculture in Eastern Poland. However, the verdict whether impact of the accession to the European union was positive or negative is not apparent nor straightforward, especially that agriculture is a specific sector that is highly dependent of the climate and weather conditions. As presented in the evaluation part of the thesis the changes were mainly positive. Concerning prices of goods and land all analysed goods and types of land experienced an increase in price however it is necessary to remember that they grow together with the inflation and occurred as a natural process in this case. The volume of investment outlays increased significantly as the landowners gained the access to direct payments from the European funds. As a result, the number of used tractors and new technologies increased as well. This further led to the increase in the effectiveness of production as the new machines were assisting with that. A sector that is strongly connected to effectiveness of production is the employment in agriculture that decreased for the whole region. As mentioned before, overemployment in agriculture was a serious problem of this region as it leads to low effectiveness and higher consumer process. In regard to other social changes standard of living as declared by agricultural workers increased after the accession which is interconnected with higher salaries in this profession. Those are all positive changes; however, in some cases the positive change has a negative element as in the case of the direction of the new investment carried out by owners of agricultural holdings or land fragmentation that increased only for podkarpackie voivodship.

With respect to areas for improvement an important issue occurs in the employment rates in agriculture. A problem persisting in 2009 was the access to non-agricultural jobs in

podkarpackie and warmińsko-mazurskie voivodships as the percentage of people employed in the agricultural sector was still relatively high compared to other regions. Better access to jobs in services or industry could increase the income *per capita* and raise the effectiveness of production in those regions. This would possibly solve the problem of employing family members in agricultural holdings as well. Agricultural holdings in Eastern Poland did not benefit from the accession as much as other regions in the country due to relatively high fragmentation of land. Stronger and bigger holdings had better access to direct payment for which many small holdings were not eligible. The land fragmentation remained an important issue in this part of the country and it should be among the areas of focus for the future. Last area for potential improvement is insufficient access to professional knowledge about best directions of investments which, if used properly, could be very beneficial for the development, modernisation and increasing effectiveness of agricultural production in Eastern Poland.

Despite the visible positive changes that occurred in the sector of agriculture in Eastern Poland, there are areas that still need attention and further development to reach the level of other regions, not only in Poland but in the whole European Union. The region has a big potential to become more productive and efficient, get richer and improve the standard of living of local agriculture workers.

In conclusion the region of Eastern Poland came through major changes in the period of 1999 – 2009 and improved significantly in almost all analysed areas. Notwithstanding the fact that the discussed factors did not improve equally, the overall balance of membership in the European Union was positive for agriculture in Eastern Poland. There are certain areas that require more focus and improvement that, if implemented, can unleash the full agricultural potential of lubelskie, podkarpackie, podlaskie, świętokrzyskie and warmińsko-mazurskie voivodships.

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8. Appendix

8.1 Administrative division of Poland



Source: <https://stat.gov.pl/statystyka-regionalna/jednostki-terytorialne/podzial-administracyjny-polski>

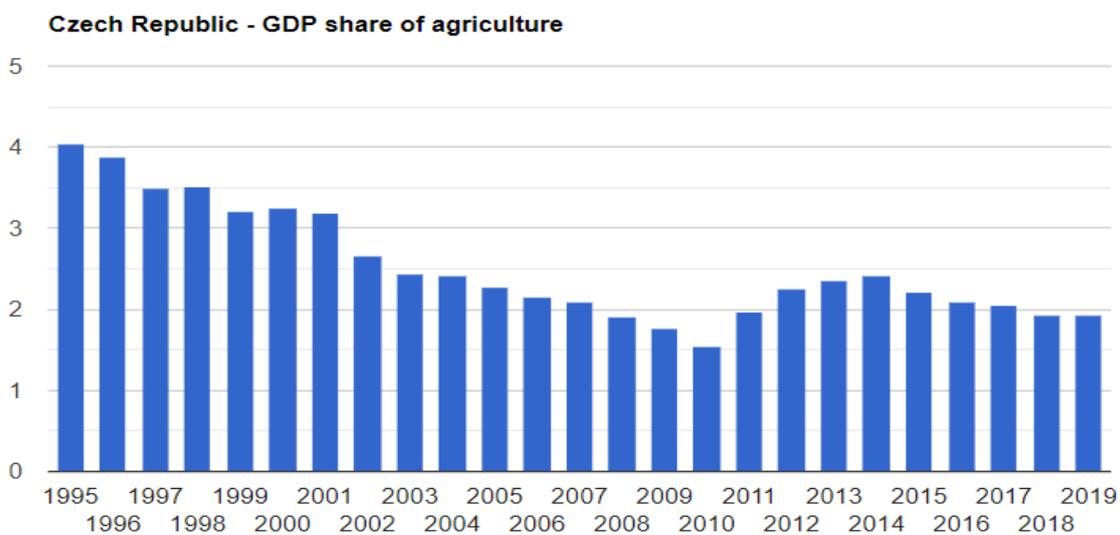
8.2 Average procurement prices for selected goods

average procurement prices											
year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
barley											
LUBELSKIE	42.2 5	50.8 8	49.8 5	41.8 3	46.4 8	50.0 2	34.5 3	43.5 1	70.2 2	65.7 5	46.0 4
PODKARPACKIE	43.2 0	50.9 9	47.7 2	42.0 5	45.7 5	46.2 6	33.4 4	42.9 7	67.6 1	64.3 3	44.2 7
PODLASKIE	43.7 8	51.0 8	49.8 5	43.0 3	44.4 9	45.7 0	36.0 0	43.7 5	70.0 5	65.3 9	47.8 2
ŚWIĘTOKRZYSKIE	42.7 9	51.2 5	49.4 9	43.4 6	46.2 7	52.4 7	34.5 9	42.2 1	69.2 1	66.8 5	45.4 5
WARMIŃSKO-MAZURSKIE	44.1 2	50.0 6	51.0 5	44.6 3	44.7 5	44.6 9	37.6 5	43.1 7	70.5 2	59.5 3	49.1 6
average for the region	43.2 3	50.8 5	49.5 9	43.0 0	45.5 5	47.8 3	35.2 4	43.1 2	69.5 2	64.3 7	46.5 5
potato											
LUBELSKIE	19.1 9	18.3 9	19.4 3	20.0 2	21.0 9	20.0 7	20.2 0	23.6 9	22.5 6	21.9 8	22.5 6
PODKARPACKIE	34.1 6	31.7 2	30.9 7	25.1 9	32.2 4	25.1 7	31.1 0	49.5 1	31.7 3	32.6 3	30.9 5
PODLASKIE	17.7 2	15.9 8	16.2 9	18.3 0	18.1 3	19.0 7	17.9 7	16.3 7	19.7 5	20.9 3	17.9 9
ŚWIĘTOKRZYSKIE	31.7 7	40.0 7	29.9 7	32.2 2	36.6 5	29.2 7	41.8 6	70.5 4	60.4 7	46.8 4	47.4 1
WARMIŃSKO-MAZURSKIE	23.1 2	17.0 5	18.7 9	20.9 1	20.0 6	21.0 0	22.3 3	33.7 9	42.2 1	37.2 5	58.5 1
average for the region	25.1 9	24.6 4	23.0 9	23.3 3	25.6 3	22.9 2	26.6 9	38.7 8	35.3 4	31.9 3	35.4 8
calf											
LUBELSKIE	5.18	5.65	5.40	5.50	4.90	8.06	10.2 6	9.80	8.69	7.79	9.32
PODKARPACKIE	6.38	6.68	6.67	6.60	6.43	8.88	10.7 0	11.5 5	9.84	8.42	10.1 9
PODLASKIE	5.81	6.18	5.69	5.39	5.30	7.50	9.48	11.2 1	8.24	7.17	9.76
ŚWIĘTOKRZYSKIE	5.74	5.73	5.35	5.42	5.57	6.58	8.26	9.00	7.93	7.82	9.31
WARMIŃSKO-MAZURSKIE	3.64	5.87	5.34	5.28	4.53	7.88	9.73	10.4 4	7.71	6.93	8.58
average for the region	5.35	6.02	5.69	5.64	5.35	7.78	9.69	10.4 0	8.48	7.63	9.43
milk											
LUBELSKIE	0.60	0.76	0.76	0.68	0.67	0.80	0.86	0.84	1.04	0.97	0.87
PODKARPACKIE	0.53	0.67	0.66	0.60	0.59	0.71	0.76	0.78	0.98	0.93	0.80
PODLASKIE	0.66	0.87	0.86	0.78	0.79	0.99	1.01	1.01	1.13	1.09	0.99

ŚWIĘTOKRZYSKIE	0.54	0.67	0.67	0.62	0.63	0.76	0.83	0.84	0.96	0.94	0.82
WARMIŃSKO-MAZURSKIE	0.58	0.80	0.79	0.72	0.73	0.91	0.95	0.97	1.05	1.03	0.90
average for the region	0.58	0.75	0.75	0.68	0.68	0.83	0.88	0.89	1.03	0.99	0.88

Source: Main Statistical Office.

8.3 Czech Republic – GDP Share of Agriculture



Source: Eurostat.