

ASSESSMENT OF 20 YEARS OF MEMBERSHIP OF THE EU AND CHALLENGES FOR THE YEARS TO COME: THE COMMON AGRICULTURAL POLICY IN POLAND

Pawel Chmielinski^{1,2*}, Zbigniew Florianczyk^{1,3}, Barbara Wieliczko^{1,2}

¹European Rural Development Network; ²Institute of Rural and Agricultural Development of the Polish Academy of Sciences; ³Institute of Agricultural and Food Economics – National Research Institute

*Correspondence: pawel.chmielinski@erdn.eu

Abstract

In 2004, Poland with nine other countries joined the European Union (EU). The EU membership resulted in a total change of the agricultural policy in Poland with the EU rules and support system offered by the common agricultural policy (CAP). The implementation of the consecutive CAP support measures and access to the EU single market led to significant structural changes in agriculture and agri-food industry.

Both farm incomes as well as the level of the socio-economic development of rural areas have grown and the distance to the EU average has decreased making the rural communities able to benefit from the EU accession and the whole Polish system transition process. This changed the attitudes towards the EU as well as subjective assessment of own financial situation. However, the regional and sector differences are widely visible and the rate of population in danger of poverty is still higher in rural areas.

The ongoing political and economic global processes as well as the challenges related to climate changes will require both from the Polish agriculture and rural areas increasing their resilience and competitiveness to adjust to the new conditions and trying to escape middle income trap which is faced by the whole Polish economy.

Keywords: polish agriculture, EU accession, common agricultural policy.

Introduction

In 2004, Poland and nine other countries joined the European Union (EU) after a long process of changes in the regulations and phytosanitary standards in agriculture and food production. Poland's accession to the European Union in 2004 became the initiating impulse of changes in agriculture and rural areas, accelerating transformation processes of the whole agri-food system. It must be underlined that farmers were the group with the highest share of “no” votes in the Polish accession referendum but 20 years after the accession they remain a group that benefited the most from the

Polish EU membership. During the accession negotiations the support for Poland's EU membership among farmers in 1999 was only 23% and after reaching the accession agreement in 2002 only 38%. Among the concerns raised, the greatest number (80-90% of indications) concerned the deluge of imported food, the increase in difficulties in selling Polish agricultural products, the massive collapse of farms and the purchase of land by foreigners. In 2021 support to EU is declared by "only" 88% of all respondents, 86% of rural residents, 79% of farmers, 93% of residents of the largest cities (Fedyszak-Radziejowska 2024).

The paper focuses on three aspects of changes related to two decades of the Polish EU membership. They include structural changes and incomes in Polish agriculture, socio-economic changes in rural areas as well as the changes in agri-food trade.

Methodological approach

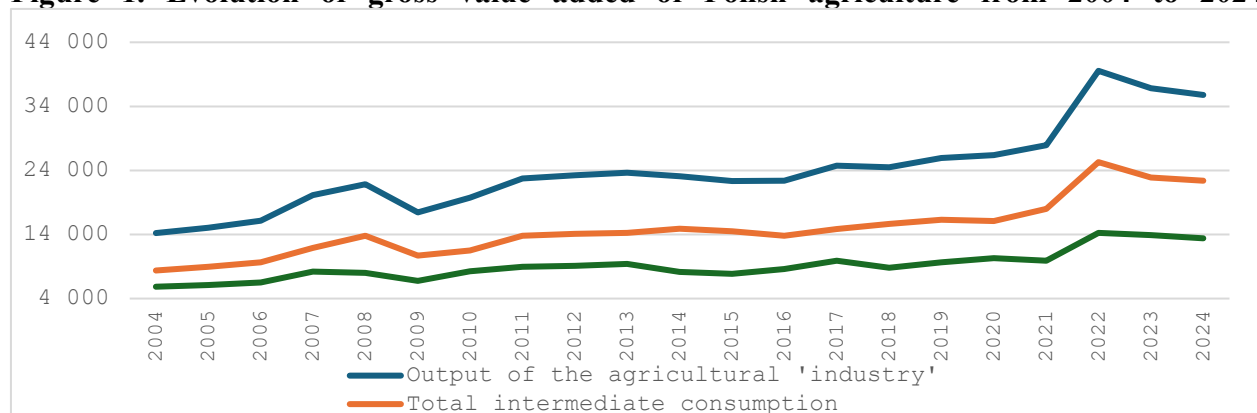
The study is based on literature review and analysis of public statistics, like the Statistics Poland and the Polish Farm Accountancy Data Network (FADN). The period covered in the study encompasses 20 years of the Polish EU membership with the data set for the period 2004-2024, when possible and in case the data for 2024 is not yet available the period until 2023 or 2022.

Analysis results

Structural changes and incomes in Polish agriculture

Accession to the EU resulted in an acceleration of changes in Polish agriculture. First of all, the integration with the EU market resulted in an increase in prices of agricultural products stimulating an increase in the production value of Polish agriculture (Fig. 1). At the same time, the value of intermediate consumption increased, both as a result of production intensification and changes in prices of inputs used in agricultural production. In nominal terms, the added value of Polish agriculture in the first twenty years of EU membership increased from EUR 5.8 to EUR 13.4 billion.

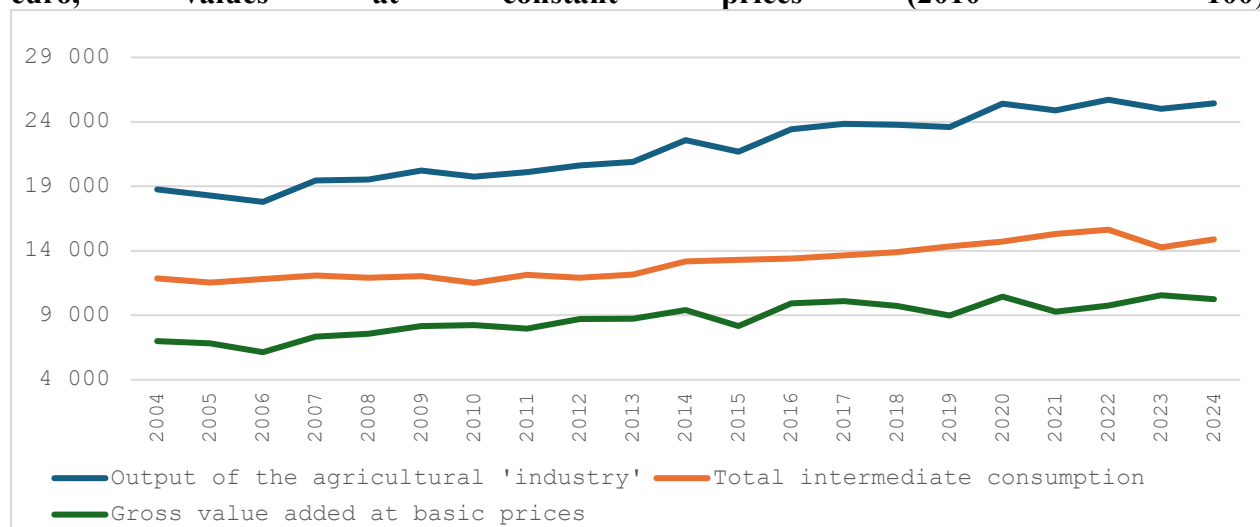
Figure 1. Evolution of gross value added of Polish agriculture from 2004 to 2024



Source: https://ec.europa.eu/eurostat/databrowser/view/aact_eaa01_custom_15581995/default/table

At the same time, gross value added at constant prices increased from EUR 7 to EUR 10.3 billion, reflecting an increase in the efficiency of material input use in Polish agriculture. Increasing efficiency of transformation of inputs into production volume after accession to the EU indicates sustainability of development of agriculture in Poland and strengthening of its competitiveness (Fig. 2).

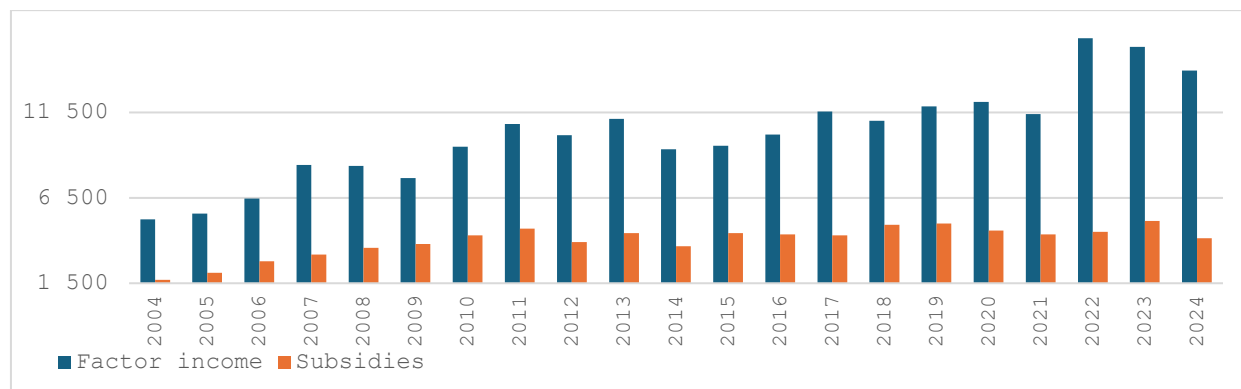
Figure 2. Evolution of gross value added of Polish agriculture in the years 2004 – 2024 (million euro, values at constant prices (2010 = 100))



Source: https://ec.europa.eu/eurostat/databrowser/view/aact_eaa07_custom_15607076/default/table

Apart from the increase in gross value added, direct subsidies have become a permanent income-generating factor in Polish agriculture (Fig. 3). However, the value of subsidies increased only in the first years of accession due to a programmed phase-in process aimed at counteracting the capitalisation of subsidies (Floriańczyk 2009). In subsequent years, the value of direct support has stabilised with a moderate trend of increasing agricultural productivity as a result of technological change (Floriańczyk 2008).

Figure 3. Factor income and direct payments (EUR million, current prices)

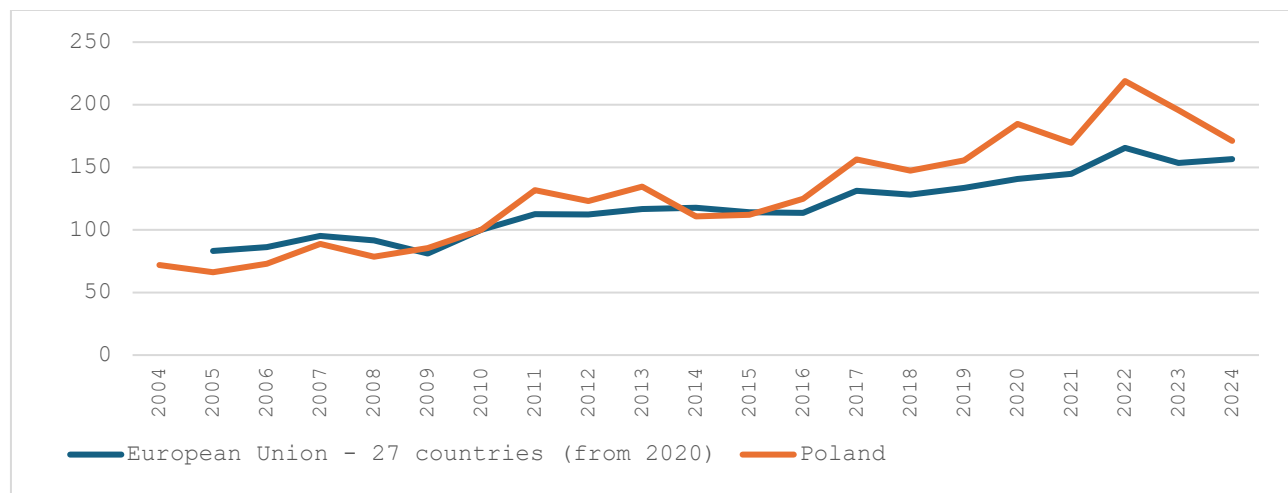


Source: https://ec.europa.eu/eurostat/databrowser/view/aact_eaa01_custom_15581995/default/table

The increase in factor productivity in agriculture in Poland after EU accession was associated with a reduction in agricultural labour input. However this factor of production became remunerated higher than its productivity. Therefore subsidies together with the stable technological changes are critical factors shaping farm incomes in Poland after accession to the EU (Floriańczyk and Rembisz 2023).

Increase dynamics of agriculture income in the Polish agriculture was comparable to observed in EU-27 agriculture level till 2016 (Fig. 4). The period 2017-2022 was more favourable to Polish agriculture due to production price development and introduction of national support to compensate agricultural producers' losses. However, reduction of crop prices connected with war in Ukraine and grain market collapse resulted in deep correction of agricultural incomes in Poland. Finally in 2024 income indicator indices became similar to observed on EU level.

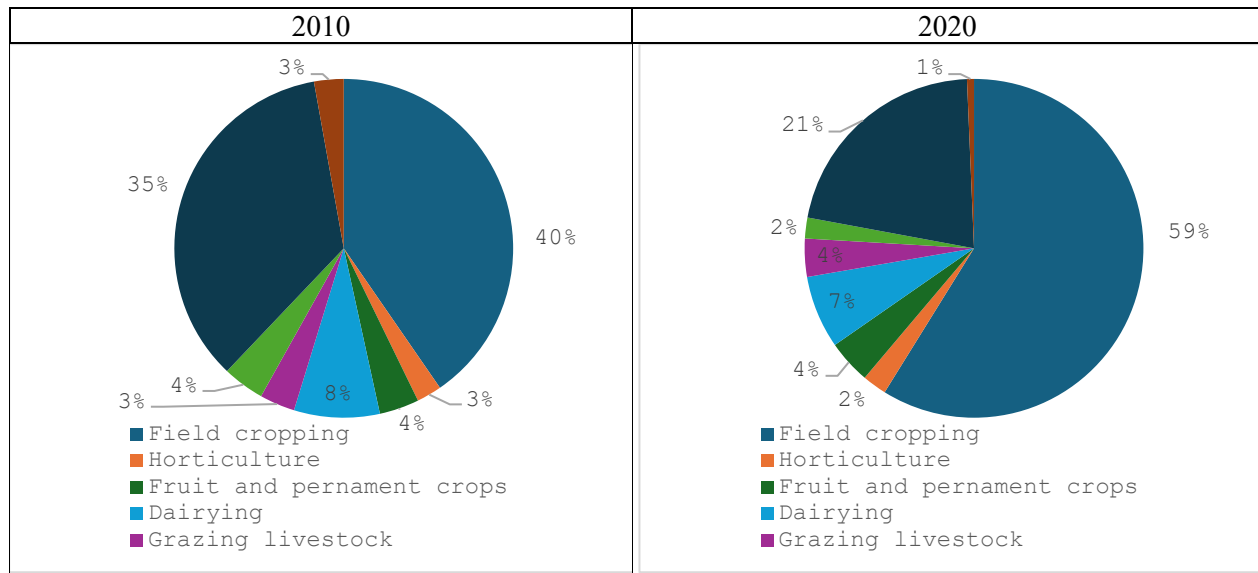
Figure 4. Development of agricultural income indicator A - index of the real income of factors in agriculture per annual work unit



Source: https://ec.europa.eu/eurostat/databrowser/view/aact_eaa06_custom_15662403/default/table

Changes in productivity and income in the agricultural sector were accompanied by significant changes in the structure of farms. In particular, the share of farms specialising in field crops in total farms increased from 40% in 2010 to 59% in 2020, reflecting the tendency to simplify the organisation of farm production (Fig. 5). At the same time, the share of farms with mixed production decreased significantly, which reflects the tendency to specialisation and to reduction the labour intensity of production.

Figure 5. Structure of farms by type in Polish agriculture



Source: https://ec.europa.eu/eurostat/databrowser/view/ef_m_farmleg_custom_15673730/default/table

The trend towards specialisation and simplification of farm production, despite its positive impact on income growth, is seen as detrimental to the environment. Specialisation to decouple animal and crop production may result in unsustainable agricultural land management (Ziętara et al. 2021).

Changes in socio-economic structure in rural areas

Since accession to the EU in 2004, the Polish countryside has been experiencing dynamic social changes. The rural population increased by around 5% (over 700 000) between 2000 and 2020, while the urban population decreased by around 4% (1 million), mainly as a result of migration from cities to the countryside with decreasing natural growth. Growth is concentrated in suburban areas, while many areas away from the metropolis are being depopulated. Projections indicate a further decline in the rural population by 2050, especially in peripheral regions (Stanny, Komorowski, Rosner 2022).

Rural areas have experienced an accelerated process of de-agrarianisation since Poland's accession to the EU, influenced primarily by dynamic economic growth and the creation of new non-agricultural jobs. The share of the population living off agriculture has fallen dramatically - the percentage of farmers has decreased from 38% in 2000 to 10% in 2020, and the non-agricultural population (mainly labourers and service workers) now accounts for about half of the rural population. There has also been a marked educational advancement: the percentage of rural residents with tertiary education has increased from 4.2% to 16.6%, and those with primary education has decreased from 40% to 19.6%. The structure of rural livelihoods has also changed. The majority of rural families derive their income mainly from hired or non-agricultural labour, and less than 10% of households rely primarily on agriculture for their livelihood. Thanks to the

diversification of income sources, there has been a noticeable improvement in living standards. The average per capita disposable income in rural areas more than tripled between 2000 and 2020, approaching from 79% to 85% of the national average income. Disparities between rural and urban areas in terms of income and living conditions have therefore eased (Chmielewska, Zegar 2022).

The reasons for the changes should be seen as a combination of internal and external factors. The continuation of the transformations of the 1990s (e.g. population outflow from agriculture, development of non-agricultural labour markets) overlapped with the impact of integration with the European Union. EU membership brought an influx of funds (infrastructure development, agricultural subsidies) and the opening of labour markets, which favoured rural modernisation and income diversification. At the same time, the infiltration of urban and Western European cultural patterns has contributed to changes in educational aspirations, family models (lower fertility rates) and lifestyles. The consequence of these changes is that the socio-occupational structure of the countryside has become more similar to the rest of the country and the economic gap with cities has narrowed, not least due to an increase in income. The negative effects include progressive depopulation and ageing of many peripheral villages, which threatens further marginalisation of these areas and deepening of spatial polarisation (Halamska 2016).

Table 1. Change in selected socio-demographic indicators of the Polish rural areas

Indicator	2000	2010	2020
Demographics			
Number of rural population (thousand)	14 584	15 101	15 311
Population growth (perc. points)	1.4	1.4	-2.3
Balance of internal migration (thousand)	4.2	46	39.4
Balance of international migration (thousand)	-3.9	0.1	1.6
Education of the population (%)			
- higher education	4.2	10.3	16.6
- secondary and post-secondary education	21.7	26.7	30.4
- basic vocational education	28.2	27.6	24.9
- primary education	40	33.1	19.6
Employment			
Employed	21.7	46.5	48.9
Employed persons working on farms	19.4	–	–
Farmers	12.5	12.9	9.6
Self-employed	4.3	7.3	7.4
Pensioners	38.1	29.3	32.9
Income per person as % of national average	79	79	85

Source: Główny Urząd Statystyczny (GUS), 2023; GUS, 2017; Halamska 2024.

Observed trends indicate that in the next decades the Polish countryside will be increasingly integrated into the structure of society. Demographic forecasts predict further depletion and ageing of the rural population (especially outside suburban areas) with a continuing low fertility rate (GUS 2022). Only areas around large cities will continue to attract new residents (suburbanisation).

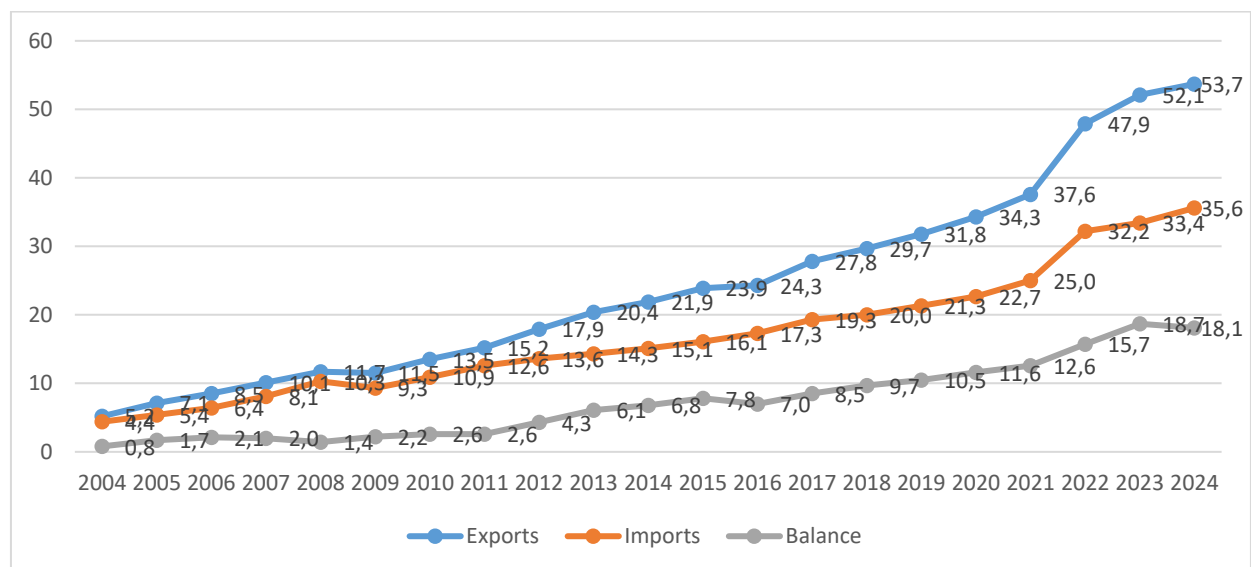
Human capital in rural communities will continue to grow - younger generations are increasingly better educated and work mainly outside agriculture (Kamińska 2016). The role of agriculture as a source of livelihood will continue to decline, although small family farms may still have complementary functions (source of additional income, element of local identity). The key challenge will become the socio-economic activation of less developing rural regions and the provision of better access to education, services and infrastructure for rural inhabitants. The effectiveness of rural development policies (both national and EU) will determine whether the positive changes of recent years will continue throughout the countryside, reducing regional disparities.

Agri-food foreign trade

The EU accession fundamentally change the directions and scale of the Polish agri-food foreign trade. Since becoming an EU member, Polish agri-food exports has experience significant annual increases in value (Bułkowska 2024). This was a phenomenon observed also in other sectors of the Polish economy as the access to the EU single market made the trade easier for the Polish exporters and importers. However, the increase in agri-food trade was much higher leading to a significant increase of the agri-food products in the Polish exports from 8.8% in 2004 to 13.9% in 2022 (MRiRW 2023). The agri-food exports increased in the period 2004-2022 from EUR 5 billion to EUR 48 billion, while imports from EUR 4 billion to EUR 32 billion which creates a significant positive balance (KOWR 2023). Yet, it must be mentioned that Poland also observed steady decrease in raw agricultural products and increase in processed agri-food products (Baer-Nawrocka and Poczta 2022). This phenomenon was accompanied by a substantial increase in the share of exports in the value of sales of agri-food industry from 18.1% to 49% in the analyzed period (Ambroziak 2023).

Given easier access to the EU market, Polish agri-food trade with the EU member states rapidly grew after the accession reaching over 70% of its value (Bułkowska 2024). As shown in Fig. 6, the Polish agri-food trade within the EU single market in the period 2004-20022 was steadily increasing and showing positive trade balance. However, this dependence on the EU market can become an important obstacle in the coming years as the competition based on price is becoming impossible for Poland due to fast increasing energy and labor costs. Moreover, the competition from Ukraine can endanger the Polish position on the EU market. This is especially important to find other competitive advantages as the demand for food in Poland is not growing dynamically and the only potential way for further development of the agri-food production is increase in exports (Bułkowska 2024).

Figure 6. Polish agri-food trade with the EU member states in the years 2004-2024 (in EUR billion)



Source: KOWR (2024).

As already mentioned, both value and exporting directions of agri-food exports changes since the EU accession. However, most of the key export destinations remained the same. From the list of top ten countries importing Polish agri-food products in 2004 only two at that time were not EU members. Both of them were not on the list of ten most important exporting destinations for the Polish agri-food products in 2022 – Russia and the USA. Among the 2022 top ten there was only one non-EU member – Great Britain which was part of the EU in 2004 and left it after the Brexit in 2020 but its economy is still closely linked with the EU one and its food production is not sufficient thus, it is in need of significant imports from the nearby countries (tab. 2).

Table 2. Main destinations of the Polish agri-food exports in 2004 and 2022

No.	Country	Exports (in million EUR)	Share (%)	Country	Exports (in million EUR)	Share (%)
	2004			2022		
1.	Germany	1343.6	25.6	Germany	11969.9	25.0
2.	Russia	404.7	7.7	Great Britain	3682.7	7.7
3.	Netherlands	313.2	6.0	Netherlands	3123.0	6.5
4.	Great Britain	303.3	5.8	France	2937.8	6.1
5.	Czech Republic	280.0	5.3	Italy	2340.6	4.9
6.	Italy	273.8	5.2	Czech Republic	2200.5	4.6
7.	France	175.9	3.4	Spain	1600.7	3.3
8.	Hungary	168.3	3.2	Belgium	1191.0	2.5
9.	USA	160.2	3.1	Hungary	1180.9	2.5
10.	Denmark	143.1	2.1	Romania	1160.3	2.4
Total		3566.0	68.0	Total	31387.7	65.6

Source: Bułkowska (2024), Tab. 1.

The main agri-food products in the Polish exports also changed during the 20 years of the Polish EU membership. However, the key agri-food sector leading in Poland remain the same. Most of them are related to meat and fruit production which are also the ones with a significant share of foreign capital which invested in Poland after the transformation process in the 90's of the 20th century and expended during the EU accession process (Ambroziak 2024). Also milk processing benefitted from the transition process and is among the key Polish exports leading branches. It is important to mention a flagship branch of the Polish agri-food transition process that is poultry production (tab. 3). However, since the EU-Ukraine agreement on the trade, the Ukrainian poultry meat production is a growing competitor for the Polish poultry production's position in the EU.

Table 3. Main agri-food products in Polish exports in 2004 and 2022

No.	2004				2022				
	HS4	Product	Exports*	Share (%)	HS4	Product	Exports*	Share (%)	
1.	2009	Fruit juices	244.0	4.7	0207	Poultry meat	4296.9	9.0	
2.	0207	Poultry meat	242.2	4.6	2402	Cigarettes	3538.8	7.4	
3.	1806	Chocolate	241.9	4.6	1905	Pastrycooks' products	2513.0	5.2	
4.	1905	Pastrycooks' products	238.6	4.6	1806	Chocolate	2255.0	4.7	
5.	0811	Frozen fruit	216.5	4.1	2309	Feed for animals	1931.2	4.0	
6.	0402	Powder milk	207.1	4.0	2106	Other food products	1743.7	3.6	
7.	0406	Cheese and white cheese	191.1	3.6	1602	Preserved meat	1621.0	3.4	
8.	2106	Other food products	173.5	3.3	0201	Fresh or cooled beef	1498.9	3.1	
9.	0203	Pork	169.0	3.2	1001	Wheat	1340.6	2.8	
10.	1701	Sugar	161.3	3.1	1005	Maize	1239.4	2.6	
Total			2085.3	39.8	Total			21978.4	45.9

*in million EUR.

Source: Bułkowska (2024), Tab. 2.

The increase in the Polish agri-food trade with the EU member states made Poland a more important player in the EU agri-food market. In 2004 Poland was a 10th exporter and 12th importer of agri-food products in the Eu, while in 2022 it was 7th both as an exporter and importer. The dynamics of exports increases was impressive during most of the studied (tab. 4).

Table 4. Dynamics of the Polish foreign trade in agri-food products in the years 2004–2022 (previous year = 100)

Years	Exports			Imports		
	Total	EU	3rd countries	Total	EU	3rd countries
2005	135.8	140.7	125.3	123.9	131.8	104.2
2006	119.6	122.6	112.1	117.9	116.0	123.9
2007	117.7	119.2	113.6	124.5	126.5	118.7
2008	114.8	115.9	111.8	126.3	130.5	112.8
2009	98.5	98.1	99.6	90.6	90.5	90.8
2010	118.0	115.5	125.1	118.0	118.5	116.1
2011	111.7	110.4	115.1	114.5	113.5	118.5

2012	119.2	116.0	127.4	108.9	108.0	111.8
2013	113.0	114.5	109.8	104.5	106.8	96.6
2014	107.5	108.9	104.0	106.1	105.0	110.3
2015	109.2	112.0	102.1	106.2	104.9	110.8
2016	101.6	99.9	106.1	107.2	108.4	103.3
2017	115.1	115.0	115.3	112.3	112.4	112.0
2018	106.3	107.6	102.9	103.3	103.2	103.6
2019	107.1	106.2	109.5	106.4	105.0	111.1
2020	107.6	105.1	114.2	106.4	105.6	108.9
2021	110.0	112.6	103.8	110.4	113.4	100.5
2022	126.3	128.6	120.1	128.2	121.1	154.7

Source: Pawlak and Poczta (2024), Tab. 6.

Discussion

The 20th anniversary of the Polish EU accession was an occasion for all kinds of studies analyzing the impact of the EU funding, regulations and single market on different sectors of the Polish economy and regions. The CAP had after the cohesion policy funds the largest share in the net support received by Poland. The funding offered to farmers and rural areas was channeled through different policy instruments clearly stated objectives, like measures within the CAP's pillar 2, and no specified way of using the resources, like CAP's pillar 1 direct payments.

The efficiency and effectiveness of the way Poland distributed the CAP funds among policy instruments and beneficiaries can be debatable but the share level of support resulted in a significant increase in resources available both for direct consumption and investment. The basic investment needs have been satisfied but the development of new technologies and natural processes of wearing down of the equipment and all the facilities call for a new round of investment. Yet, the resources available are not sufficient to satisfy of the existing needs. Therefore, a well thought out need prioritization should be undertaken to make the most of the EU and national funding.

After the EU accession the Polish agriculture became highly dependable of the EU support and policy directions. The changes in the CAP and other EU policies (such as the EU Green Deal) strongly influence the development potential and pathways of the whole agri-food sector. However, the EU policies are not the only factor determining the future of the sector. Climate changes will play a crucial role. The most important threat for the development of agriculture in Poland is the water scarcity. The most agriculturally developed Polish regions are at the same time the ones most in vulnerable to water shortages and droughts.

The other important threat to the development of the whole agri-food system in Poland is the fact that competing strategy solely based on price is not sustainable any more. The production costs in Poland are sharply growing due to labor shortages leading to increasing wages as well as the structural problems of energy production in Poland causing ongoing energy increases. Additionally, Polish agriculture is very slowly implementing modern technologies (with the

exception of the largest farms) thus limiting its potential to successfully compete with countries with better natural conditions for agricultural activity such as Ukraine. The implementation of modern biological crop protection or integrated plant production as well as other green practices is limited, among others due to the weakness of Polish AKIS.

An important factor shaping the development pathways of the whole Polish agri-food sector will be the EU common agricultural policy in the programming period after 2027. The recent global events such as COVID-19 pandemic and war in Ukraine showed that there is need to improve the security of value chains and to make the EU more self-sufficient. The new EU strategy must not only support strengthening the industry but also agriculture as a source of vital components for numerous industries. This should be directly translated to the CAP policy tools which should focus on the competitiveness and resilience of the EU agriculture and the same should apply to the Polish national agri-food policies.

Conclusions

Poland's integration into the structures of the European Union is one of the most important events in the history of our country. The last 20 years are a very clear demonstration of this - a period of development leap which has brought about spectacular changes in the economy, but also in the foundations of state and society. For Europe, Poland has become an example of a successful integration process, but above all a leader in economic development and a country of growing importance in EU politics. The EU enlargement process has benefited all the countries in the area, first and foremost from the enormous opportunities offered by the single, open market, the free movement of goods, services and people.

But above all, EU membership has opened up development opportunities in all key spheres of state, society, culture and economy. The processes of adaptation to EU rules have laid the foundations for a new institutional order, but also positively influenced the perception of the rule of law, which in the EU is defined as: a transparent, accountable, democratic and pluralistic process of law enactment, the certainty of its operation, but also the prohibition of an arbitrary approach in the operation of executive authorities. These values, contrary to popular belief, accompany the development of EU policies, where broad public consultation, dialogue and consensus are important, but also the freedom to decide on a national approach (in line with the principle of subsidiarity) to dealing with the specific problems faced by individual countries. In Poland, two fundamental processes can be identified: one is the separation of the concept of rural development from that of agricultural development, even though research clearly shows that the interpenetration of these two spheres determines the economic strength of a given territory. Globalisation has brought about the unification of lifestyles, and has equalised the aspirations of rural and urban residents regarding access to public services and the quality of infrastructure or transport accessibility. This is important in terms of ensuring the attractiveness of settlements (as shown by the increase in the number of rural residents, although this is occurring in suburbs).

The second is the still sectoral approach to economic policy, overlooking a systemic view of the economy, but above all not sufficiently reflecting the complex interrelationship between the economy, social development and environmental challenges.

Taking into account the scope of changes in Poland, one can point to the need for rural areas to be strongly embedded and integrated into the regional economy, depending on their detailed characteristics providing different functions for the inhabitants, from settlement (with a good base of public services) to a place of modern entrepreneurship, social innovation (as in the case of the smart village concept) to places where inevitable depopulation caused by demographic processes is skilfully managed.

References

Ambroziak Ł (2023) Co dalej z tym eksportem? (What's next with this export?). In: Międzynarodowa Konferencja Naukowa IERiGŻ-PIB (International Scientific Conference of IAFE-NRI). Institute of Agricultural and Food Economics – National Research Institute, Warsaw.

Ambroziak Ł (2024) Kapitał zagraniczny w sektorze rolno-spożywczym Polski (Foreign capital in Polish agri-food sector), p. 33-50. In: Chmieliński P & Gorzelak G (Eds.), Polska wieś i polskie rolnictwo. 20 lat w Unii Europejskiej (Polish rural areas and Polish agriculture. 20 years in the European Union), 441 p., ISBN: 978-83-89900-78-4. Instytut Rozwoju Wsi i Rolnictwa PAN, Warsaw.

Baer-Nawrocka A & Poczta W (2022) Nowe szanse i zagrożenia dla polskiego rolnictwa wynikające z polityki unijnej i sytuacji globalnej (New opportunities and threats for Polish agriculture stemming from the EU policy and global situation), p. 83-98. In: Wilkin J & Hałasiewicz A (Eds.) Polska wieś 2022. Raport o stanie wsi (Polish rural 2022. Report on the state of rural areas), p. 224, ISBN: 78-83-66849-54-9. Wydawnictwo Naukowe Scholar, Fundacja na rzecz Rozwoju Polskiego Rolnictwa (FDPA), Warsaw.

Bułkowska M (2024) Dywersyfikacja polskiego eksportu rolno-spożywczego (Diversification of Polish agri-food exports), p. 27-42. „Annals PAAAE”, XXVI (1). DOI: 10.5604/01.3001.0054.4045.

Chmielewska B & Zegar J (2022) Z czego żyje wieś? Źródła dochodów ludności wiejskiej, ich ewolucja i zróżnicowanie (What does the countryside live on? Sources of income of the rural population, their evolution and diversification), p. 247-272. In: Wilkin J & Hałasiewicz A (Eds.) Polska wieś 2022. Raport o stanie wsi (Polish rural areas 2022. Report on the state of rural areas), 224 p., ISBN: 78-83-66849-54-9. Wydawnictwo Naukowe Scholar, Fundacja na rzecz Rozwoju Polskiego Rolnictwa (FDPA), Warsaw.

Fedyszak-Radziejowska B (2024) Mieszkańcy wsi i rolnicy o Unii Europejskiej (Villagers and farmers about the European Union), p. 87-100. In: Poczta W & Hałasiewicz A (Eds.) Raport o stanie wsi. 20 lat w Unii Europejskiej (State of the village report. 20 years in the European Union), 296 p., ISBN: 978-83-66849-67450-84-3. Wydawnictwo Naukowe Scholar, Fundacja na rzecz Rozwoju Polskiego Rolnictwa (FDPA), Warsaw.

Floriańczyk Z & Rembisz W (2023) Changes In Production Factor Relations and their Determinants in Agriculture in Selected European Union Countries, p. 26-51. *Problems of Agricultural Economics* 377(4). DOI: 10.30858/zer/176771.

Floriańczyk Z (2008) Produktywność polskiego rolnictwa w pierwszych latach członkostwa w UE na tle wybranych krajów europejskich (Productivity of Polish agriculture in the first years of EU membership in comparison with selected European countries), p. 9-22. In: Alińska A, Floriańczyk Z & Toczyński T *Zagadnienia produktywności, regionalnego zróżnicowania nakładów pracy i kredytowania produkcji rolniczej w świetle Rachunków Ekonomicznych dla Rolnictwa* (Issues of productivity, regional variation in labour inputs and credit for agricultural production in the light of the Economic Accounts for Agriculture), 62 p., ISBN: 978-83-60798-83-6. Institute of Agricultural and Food Economics – National Research Institute, Warsaw.

Floriańczyk Z (2009). *Rolnictwo polskie w pierwszych latach akcesji do UE w świetle Rachunków Ekonomicznych dla Rolnictwa* (Polish agriculture in the first years of accession to the EU in the light of the Economic Accounts for Agriculture), 120 p., ISBN: 978-83-7658-053-1. Institute of Agricultural and Food Economics – National Research Institute, Warsaw.

Główny Urząd Statystyczny (2017) *Sytuacja społeczno-ekonomiczna gospodarstw domowych w latach 2000-2015. Zróżnicowanie miasto-wieś* (Socio-economic situation of households between 2000 and 2015. Urban-rural differentiation). GUS, Warsaw.

Główny Urząd Statystyczny (2022) *Prognoza ludności na lata 2022–2050* (Population projection 2022-2050). GUS, Warsaw.

Główny Urząd Statystyczny (2023) *Rocznik Demograficzny 2023* (Demographic Yearbook 2023). GUS, Warsaw.

Halamska M (2016) *Zmiany struktury społecznej wiejskiej Polski* (Changes in the social structure of rural Poland). *Studia Socjologiczne*, 1(220), 37–66.

Halamska M (2024) *Zmiany struktury społecznej wsi 2004–2024* (Changes in social structure in rural areas in years 2004-2024), p. 303-316. In: Chmieliński P, Gorzelak G (Eds.), *Polska wieś i polskie rolnictwo. 20 lat w Unii Europejskiej* (Polish rural areas and Polish agriculture. 20 years in the European Union), 441 p., ISBN: 978-83-89900-78-4. Instytut Rozwoju Wsi i Rolnictwa PAN, Warsaw.

Kamińska W (2016) *Poziom wykształcenia zasobów wiejskiej siły roboczej w Polsce: analiza przestrzenna* (Educational attainment of the rural labour force in Poland: a spatial analysis). *Studia Obszarów Wiejskich*, 44, 9–30.

KOWR (2023) *Wyniki polskiego handlu zagranicznego towarami rolno-spożywczymi za cały 2022 r. – rekordowy wzrost wartości polskiego eksportu* (The results of Poland's foreign trade in agri-food goods for the full year 2022 - Record increase in the value of Polish exports). Available at: <https://www.gov.pl/web/kowr/handel-zagraniczny-produktami-rolno-spozywczymi>

KOWR (2024) *Wyniki polskiego handlu towarami rolno-spożywczymi w 2024 r.* (Results of Polish agri-food trade in 2024). Available at: <https://www.gov.pl/web/kowr/handel-zagraniczny-produktami-rolno-spozywczymi>

Pawlak K & Poczta W (2024) *Polskie rolnictwo na tle europejskim: produkcja i handel zagraniczny* (Polish vs. European agriculture: production and foreign trade), p. 177-210. In: Chmieliński P, Gorzelak G (Eds.), *Polska wieś i polskie rolnictwo. 20 lat w Unii Europejskiej* (Polish rural areas

and Polish agriculture. 20 years in the European Union), 441 p., ISBN: 978-83-89900-78-4. Instytut Rozwoju Wsi i Rolnictwa PAN, Warsaw.

Stanny M, Komorowski Ł, & Rosner A (2022) Monitoring rozwoju obszarów wiejskich. Etap IV – synteza. Dekada przemian społeczno-gospodarczych (Monitoring of rural development. Phase IV – synthesis. A decade of socio-economic changes), 285 p., ISBN: 978-83-89900-64-7. Instytut Rozwoju Wsi i Rolnictwa PAN, Warsaw.

Ziętara W, Zieliński M, Mirkowska Z & Józwiak W (2021) Systemy i skala produkcji a obciążenia środowiskowo-klimatyczne (Systems and scale of production vs. environmental and climate pressures). Europejski Fundusz Rozwoju Wsi Polskiej, Warsaw.