

# The development of orchard fruit-growing in Poland in the period of impact of the Common Agricultural Policy. Production-related and spatial issues

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## How to cite:

Wójcik, M. and Traczyk, A. (2020). The development of orchard fruit-growing in Poland in the period of impact of the Common Agricultural Policy. Production-related and spatial issues. *Bulletin of Geography. Socio-economic Series*, 49(49): 19-30. DOI: <http://doi.org/10.2478/bog-2020-0021>

## Article details:

Received: 29 January 2020  
 Revised: 5 May 2020  
 Accepted: 4 June 2020

**Abstract.** In the early 21<sup>st</sup> century, orchard fruit-growing is one of Poland's most rapidly-growing branches of agriculture. The rate and direction of this process of development have obviously been under the fundamental influence of an European Union Common Agricultural Policy (CAP) binding upon Poland since 2004. A series of changes concerning orchard fruit-growing have been ushered in this way, with production intensifying and spatial reorganisation taking place. The work described here has thus sought to determine changes in the level of output achieved by fruit-growing, as well as changes in the distribution of orchards, during the time over which the CAP's instruments have been exerting their influence on Polish agriculture. Research first concentrated on identification of the key CAP instruments capable of influencing the development of orcharding in Poland. Analyses were then carried out in respect of changes in the level of fruit production and the area devoted to orchard cultivation. Impacts on production, including those manifested in increased exports of fresh fruit, are shown to have helped Poland maintain position on European and world markets, with consequences including an increased area assigned to the growing of the most in-demand fruit (i.e. apples and raspberries), in peripheral regions especially. This can therefore be thought to reflect both growing specialisation in farming, and a way of maintaining some economic vitality in rural areas far from large urban agglomerations.

**Key words:**  
 agriculture,  
 orchard fruit-growing,  
 Common Agricultural Policy,  
 Poland,  
 production-related effects,  
 spatial effects

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## 1. Introduction

After Poland's (May 1st) 2004 accession to the European Union (EU), new legal conditions made it possible to speed up restructuring programmes in many branches of the economy. External conditioning proved to be of most significance to the achievement of far-reaching change in Polish agriculture. EU accession gave rise to a change in management conditions, as Polish agriculture came under CAP rules, especially regarding competition on the market for food products (Shucksmith et al., 2005). The key changes in this period would be the ushering-in of new requirements regarding quality of output, the removal of barriers in foreign trade with other EU Member States, the introduction of a system of direct payments for agriculture, and the mobilisation of special programmes of assistance supporting the development of agriculture and rural areas (Judzińska and Łopaciuk, 2011). Agriculture in new EU Member States experienced this as a widening of markets for their produce and products, albeit also with enhanced competition on these markets and a requirement that goods produced should meet exacting standards in force in all Member States (cf. *i.a.* Svobodova and Vezik, 2011). Altered economic and management conditions also led to greater specialisation in Polish farming, with this proving a key factor in raising levels of farm profitability, commercial viability, and income (Smędzik-Ambroży, 2016).

The CAP is obviously a key component of EU Policy acting in support of the development of agriculture in Member States, while also imposing change in configurations of food producers (Bowler, 1985; Ackrill, 2000; Woods, 2005). The direct impact of CAP instruments has been felt for 15 years now in Poland, so the time is ripe for a real-

istic assessment of the transformation achieved in the country's agriculture, including also in its spatial aspect. The fact that evaluation could now reflect a longer time period was seen to be of key importance where "crops" of a more persistent nature were concerned, and most especially the orchard fruits already recognised as subject to some of the most dynamic changes to have affected Poland's post-accession agriculture.

Poland is a remarkably interesting case for identifying changes in agricultural activity, among others due to high absorption of external European Union funds (Jezińska et al., 2014; Rudnicki, 2016). In contrast to other countries with similar historical, structural, and social conditions, attention should be paid primarily to two issues, i.e. the relatively large production potential and the issue of internal regional differentiation (Głębocki, 2014). Poland, unlike other Central European countries undergoing social and economic transformation (Czech Republic, Slovakia, Hungary), has a large share of family farming in the structure of land ownership and crop production (Chaplin et al., 2004). At the same time, due to historical conditions, individual agricultural regions of Poland react differently to factors related to the restructuring of agriculture, especially the support from the Common Agricultural Policy funds (Rudnicki 2009, 2016). The modernisation of Polish agriculture has contributed to an increase in specialist production, especially export-oriented (Czyżewski and Smędzik-Ambroży, 2015). The production of fruit and its sale abroad is one of the industries building the brand of Polish agriculture outside Poland (Kraciński, 2017). These specialisations are one of the ways to improve the quality of life in rural areas (Bauer and Dymitrov, 2014). Regional studies (Lennert, 2017) and individual case studies (Špulerová et al., 2015) in fruit farming activities show very well the transforma-

tion, especially functional, of rural areas (Kudová and Chládková, 2008).

This article thus presents work pursued to identify changes in levels of output in fruit-growing, as well as in the distribution and area of orchards, during the period of impact of CAP instruments. Identification of the latter as they concerned fruit-growing thus represented the first step in the work, with that process then followed by assessment of the production-related effects. A final phase of the work then saw the focus shift to the spatial development of fruit-growing regions, *i.a.* as a manifestation of ongoing regional specialisation in Polish agriculture.

## 2. Sources of data

The article points to the main CAP instruments exerting an impact on the output achieved by Polish orchard-based fruit-growing at the beginning of the 21<sup>st</sup> century. In line with the nomenclature used by Poland's Central Statistical Office (*Główny Urząd Statystyczny, GUS*), an orchard is a permanent plantation covering at least 0.1 ha, on which contiguously-planted fruit trees and/or bushes are present. The GUS classification in turn requires that the plantations of trees be of apples, pears, plums, sour or sweet cherries, walnuts, apricots or peaches; while those of shrubs should be either the berry-bearing raspberries, currants, gooseberries, American blueberries or vines, or else hazelnuts. Importantly, this definition ensures that cultivated areas of strawberries or alpine strawberries fall outside the orchard fruit-growing category (*Uprawy ogrodnicze* 2012).

Reports on the activity of Poland's Agricultural Market Agency and Agency for the Restructuring and Modernisation of Agriculture offered a basis by which to determine the funding allocated to the country's orcharding sector in the years 2004-2015, with a view to activity in support of the market for fruit being engaged in. The article considers the dynamics to any change in this activity, as revealed in production of different kinds of fruit in Poland in the years 2000-2015; along with the related dynamics in the same period characterising the sizes of areas of land planted with the different kinds of orchard fruit. Beyond that, the spatial distribution of

orchards across Polish territory was also analysed, in line with the data available for the years 2000 and 2010. The article's coverage extends to all species of fruit cultivated in Poland's orchards.

The chief sources of information on areas these occupy, and on levels of production, are the Statistical Yearbooks of Agriculture published by *GUS*, as well as reports under the title *Rynek Owoców i Warzyw – stan i perspektywy (2006-2016)*, concerning current and prospective markets for fruit and vegetables, as published by the Warsaw-based National Research Institute called the Institute of Agricultural and Food Economics (*Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej – PIB*). A further key source on areas covered by orchards and the share of all farmland they account for was the Bank for Local Data run by *GUS*.

## 3. Instruments of the Common Agricultural Policy impacting on the development of Poland's orcharding sector

For more than half a century, the CAP has fielded a series of instruments in support of the development of agriculture and rural areas, a key result of this being increased specialisation of output (Bowler, 1986). Following Poland's EU accession, key instruments supporting the country's fruit production were the direct payments, as well as means made available within the framework of such programmes past and present as SAPARD, the Plan for the Development of Rural Areas 2004-2006, the Sectoral Operational Programme entitled *Restrukturyzacja i modernizacja sektora żywnościowego oraz rozwój obszarów wiejskich* (dealing with the restructuring and modernisation of the food sector and the development of rural areas), and the official Programmes for the Development of Rural Areas for the 2007-2013 and 2014-2020 periods. The EU Programmes represent an important source by which new investment in orchards has been funded, as well as a tool by which the process of adaptation of farms to new conditions has been accelerated (Rudnicki, 2016). Within the CAP framework, farm production (including orchard production) in Poland is supported through allocation of means from EU Programmes

to farm modernisation and the implementation of new investment. An important role in support of orchard fruit-growing is played by grants to plant fruit trees, shrubs and berry bushes falling within the framework of the single area payment scheme, payments to grow fruit organically, payments for the growing of soft fruits, and co-financing of the activity of groups and organisations of producers.

A consequence of the EU accession was for Poland to be bound by rules the Common Organisation for the Market in Fruit and Vegetables laid down. This denoted new quality requirements for fruit bought and sold on a commercial scale, with further regulation achieved in safeguarding the internal market via rules for foreign trade in fruit. New instruments supporting the market for fruit were brought in (Kapusta, 2014). A particular instrument in this regard was the export subsidy Poland and other Member States were entitled to apply up until 2008 (when refunds on this basis were abolished). Export refunds were provided where the price of a given product on EU markets was higher than that on the markets of third countries (Kierczyńska, 2012). According to ARR data, the period May 1st 2004 to May 31st 2008 saw export refunds applied in respect of 182,800 tons of fresh fruit from Poland. The overall sum designated for this purpose was €5.46M (*Sprawozdanie z działalności Agencji Rynku Rolnego 2005-2008*). Understandably, it was refunds in regard to the export of Polish apples that were overwhelmingly dominant, accounting for 97-100% of the sums refunded in the years in question (Table 1).

On the domestic market, the main emphasis has been on supporting producers of fruit via the groups and organisations in which they are associated. This reflects the role of the latter in establishing basic mechanisms for the regulation of market processes. The support in question has *inter alia* entailed assistance with withdrawing products from the market or with their non-designation for sale, as well as with the making of payments for a raw material assigned for processing (Kapusta, 2014). Within the Common Organisation for the Market in Fruit and Vegetables framework, producers' groups obtain funding to cover costs of establishment, engagement in administrative activity and the completion of certain investments necessary in early phases of their existence (Kierczyńska, 2012). In 2016, Poland

had 75 producers' organisations and groups associated with fruit alone, as well as 130 involved with the production of both fruit and vegetables (the register of preliminarily recognised groups of producers, recognised producers' organisations and associations thereof and supranational producers and associations thereof, as of 26.02.2016). In the 2004-2016 period, preliminarily recognised groups and recognised associations of producers of fruit in Poland obtained support from the EU to the tune of €1.9bn (*Sprawozdanie z działalności Agencji Restrukturacji i Modernizacji Rolnictwa 2017*).

In 2008, efforts to support the production of soft fruit entailed the introduction of payments for the growing of raspberries and strawberries destined for processing (Kacprzak, 2014). In the period to 2016, these were in the range €207.39-638.15 per ha (Table 2). The largest payments for growing the two species were obtained by producers in 2012, the smallest in 2016. Over the period under analysis, raspberry- and strawberry-growers obtained a total of €134.4 M in additional support (*Sprawozdanie z działalności Agencji Restrukturacji i Modernizacji Rolnictwa 2016*).

Post-accession, Poland's fruit-growing sector was also the subject of crisis-prevention and crisis-support measures, *i.a.* potentially involving the withdrawal of products from the market, the harvesting of still-green fruit or its non-harvesting, various kinds of promotional and communication-related activity and the insuring of harvests (Kierczyńska, 2012). Such instruments gained application in the 2014-2016 period, when Poland felt the impacts of the Russian Federation's ban on the importation of certain agricultural and food products from the EU (including fruit), with obvious attendant problems in finding alternative destinations for output.

It was with the specific aim of supporting orchard-based fruit-growing that a *Tymczasowe nadzwyczajne wsparcie producentów owoców i warzyw* (*Temporary extraordinary support for fruit and vegetable producers*) mechanism was launched to extend temporary exceptional support to producers of fruit and vegetables. Specifically, this entailed three of the measures referred to above, *i.e.* the withdrawal of certain fruit from the market, the collection of certain fruit while still green, and the non-harvesting of crops. In Poland, such measures in respect of fruit were directed at apples, pears, plums,

**Table 1.** Refunding payments made in respect of the export of fresh fruit from Poland, 2004-2008

Details	1.05-31.12. 2004		2005		2006		2007		1.01-31.05. 2008	
	t	€ '000	t	€ '000	t	€ '000	t	€ '000	t	€ '000
Apples	229	6.4	48576	1628.9	53564	1777.9	70962	1802.3	8177	206.4
Peaches and nectarines	0	0.0	0	0.0	0	0.0	496	6.1	330	4.3
Oranges	0	0.0	0	0.0	134	5.1	92	3.4	36	0.9
Lemons	0	0.0	0	0.0	162	9.8	68	4.2	0	0.0
Grapes	0	0.0	0	0.0	0	0.0	36	0.5	0	0.0
<b>Total</b>	<b>229</b>	<b>6.4</b>	<b>48576</b>	<b>1628.9</b>	<b>53860</b>	<b>1792.8</b>	<b>71654</b>	<b>1816.6</b>	<b>8543</b>	<b>211.6</b>

Source: author's own elaboration based on the 2005, 2006, 2007, 2008 and 2009 ARR Reports of Activity

**Table 2.** Size of payment per ha and overall sums disbursed in the context of payments per unit area of land growing soft fruit in Poland, 2008-2016

Year	Size of payment per ha	Total payment disbursed
	€	€M
2008	386.36	12.0
2009	390.96	15.1
2010	399.01	18.3
2011	427.69	22.9
2012	638.15	18.7
2013	378.31	11.0
2014	375.07	10.9
2015	219.66	15.0
2016	207.39	10.5
	<b>Overall</b>	<b>134.4</b>

Source: <http://www.arimr.gov.pl>, *Sprawozdanie z działalności ARiMR*, 2017

raspberries, blackberries, gooseberries and grapes (*Sprawozdanie z działalności Agencji Rynku Rolnego* 2017). Over the 2014-2016 period, the aforesaid mechanism acting in support of fruit- and vegetable-growers accounted for some €209.5 M of earmarked EU funding. Specifically, the relevant co-financing concerned 600,000 tons of fruit and vegetables, with 80% of this being apples. Where area was concerned, activity to harvest while green or refrain from harvesting took in some 3500 ha under fruit or vegetable cultivation (Trajer, 2017).

#### 4. Production aspects

Poland is a country growing fruit that is typical for a temperate climate. Indeed, the country is among the world's leading producers of such fruit. When it comes to the key species in orchard cultivation – the apple – Poland is seen to be on a par with countries of large area and population like China, the USA and Turkey. However, given the climatic conditions, fruit production in Poland is always a seasonal affair, and is also characterised by considerable differences in yields from one year to another (*Rynek owoców w Polsce* 2014). Where years have a

favourable configuration of weather conditions, Poland takes third place among the world's producers of apples (as in 2014, 2008 and 2004, where years in the 21<sup>st</sup> century are concerned). In the new millennium (from 2001 on), the most typical placing for Poland was 4<sup>th</sup> (achieved 6 times). However, in years when the country was afflicted by series of spring frosts, the position taken was lower – as for example in 2007, when the country could only manage 12<sup>th</sup> place in the world (based on FAOSTAT data, <http://www.fao.org/faostat>). Equally, Poland is at present the EU's largest producer of apples, cherries, raspberries and currants, as well as being a major producer of gooseberries.

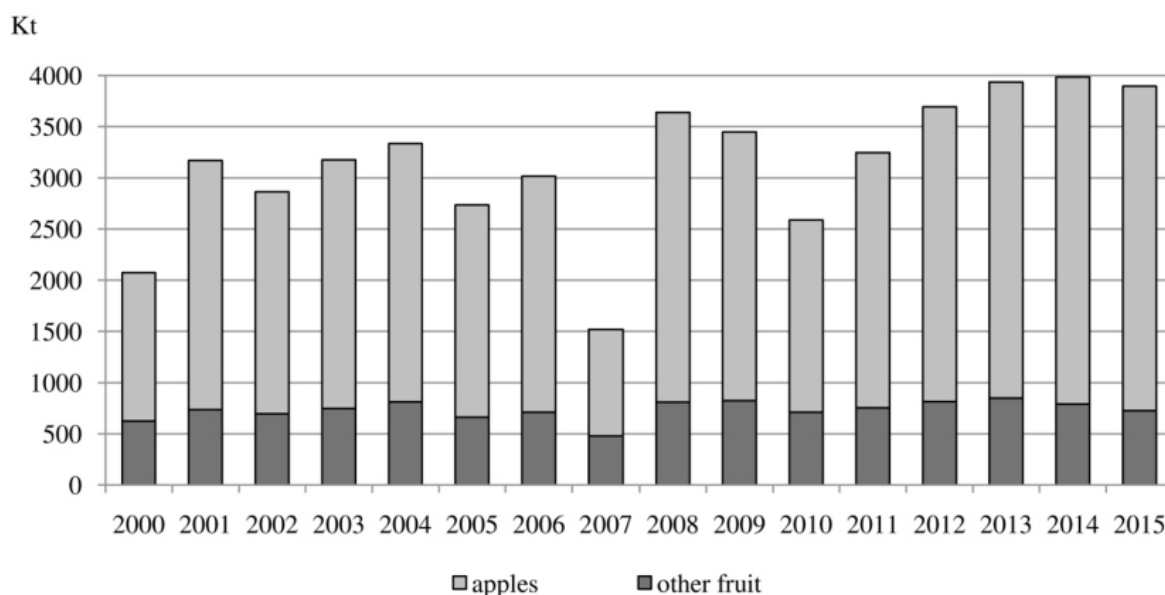
In the 2000-2015 period, the level of output of fruit from Poland fluctuated in the 1.5-4.0 Mt/year range. Most fruit was picked in the years 2013-2015, least in 2007. However, despite fluctuations in the sizes of harvests brought about by unfavorable weather conditions, the overall trend for production of fruit in the period was an upward one. Indeed, the mean calculated for this is of +4.3% annually.

In structural terms, Polish fruit production continues to be dominated by apples, as was the case both before and after accession to the EU, with the share this one species accounts for within overall fruit production at around 76% (Figure 1). However, a peak harvest of apples of 3.2 million tones,

achieved in 2014, stands in contrast to a 2007 figure of just one million tons.

Beyond that, sour cherries play a more major role (accounting for around 6% of fruit produced), along with currants (also around 6%). However, it was in other years that peak output to date was noted for sour cherries (201,700 tons in 2004 and 2008), as well as currants (198,500 t in 2013). The low point for harvests of sour cherries again came in 2007 (when a total of just 107,700 t was achieved), while the poorest harvest of currants was reported for 2000 (when the total was 146,800 t). Other types of fruit have so far never accounted for more than a small share of overall production, with plums at a level around 3%, pears and raspberries on about 2% each, and sweet cherries and gooseberries on about 1% each.

The overall 2000-2015 period witnessed clear increases in Poland's production of apples, raspberries, cherries of both kinds and currants (Table 3). The most marked increases expressed on a year-to-year basis were noted for apples (+5.4% on average) and raspberries (+4.8%). Smaller annual increases, though still reflecting a marked upward trend overall, were the +1.7, +1.5 and +0.6% a year noted for sour cherries, sweet cherries and currants respectively. This left two species (pears and plums) experiencing average annual declines of around 1%, with



**Fig. 1.** Levels of production of fruit achieved in Poland in the years 2000-2015

Source: author's own work, based on *Rocznik Statystyczny Rolnictwa i Obszarów Wiejskich* 2006; *Rocznik Statystyczny Rolnictwa* 2013; *Rynek Owoców i Warzyw – stan i perspektywy* no. 36 2010; *Rynek Owoców i Warzyw – stan i perspektywy* no. 48 2016.

**Table 3.** Changes in levels of fruit production in Poland, 2000-2015 (where previous year = 100%)

Year	all fruit	apples	pears	plums	sour cherries	sweet cherries	raspberries	currants	gooseberries
	%								
2000	x	x	x	x	x	x	x	x	x
2001	152.8	167.8	94.9	123.4	128.7	115.5	112.8	119.4	103.5
2002	90.3	89.1	119.0	78.0	96.3	91.5	100.2	89.8	73.3
2003	110.9	112.0	83.8	106.5	110.4	108.1	95.5	122.2	93.5
2004	105.0	103.9	113.1	121.0	105.5	109.8	132.4	101.0	98.0
2005	82.1	82.3	67.9	68.9	69.4	77.5	115.3	96.0	83.9
2006	110.2	111.1	100.0	102.4	139.3	102.4	80.2	104.1	97.0
2007	50.4	45.1	51.8	57.2	55.3	52.6	107.4	71.3	84.6
2008	239.6	272.2	237.1	212.3	187.3	202.0	144.7	141.8	118.2
2009	94.8	92.8	114.0	106.3	93.8	124.0	100.2	99.9	97.5
2010	75.1	71.5	56.0	69.4	77.8	79.2	113.6	100.1	89.9
2011	125.4	132.8	135.1	109.5	118.9	94.8	127.0	86.2	102.8
2012	113.7	115.4	103.0	111.7	100.2	108.2	107.7	114.7	111.6
2013	106.6	107.2	117.0	99.9	107.3	115.8	95.2	102.1	92.0
2014	101.3	103.6	97.4	103.6	93.8	101.1	104.0	81.9	82.7
2015	97.7	99.2	94.4	89.4	101.6	100.0	63.5	98.3	97.6
<b>mean annual change</b>	<b>4.3</b>	<b>5.4</b>	<b>-1.1</b>	<b>-0.8</b>	<b>1.7</b>	<b>1.5</b>	<b>4.8</b>	<b>0.6</b>	<b>-5.6</b>

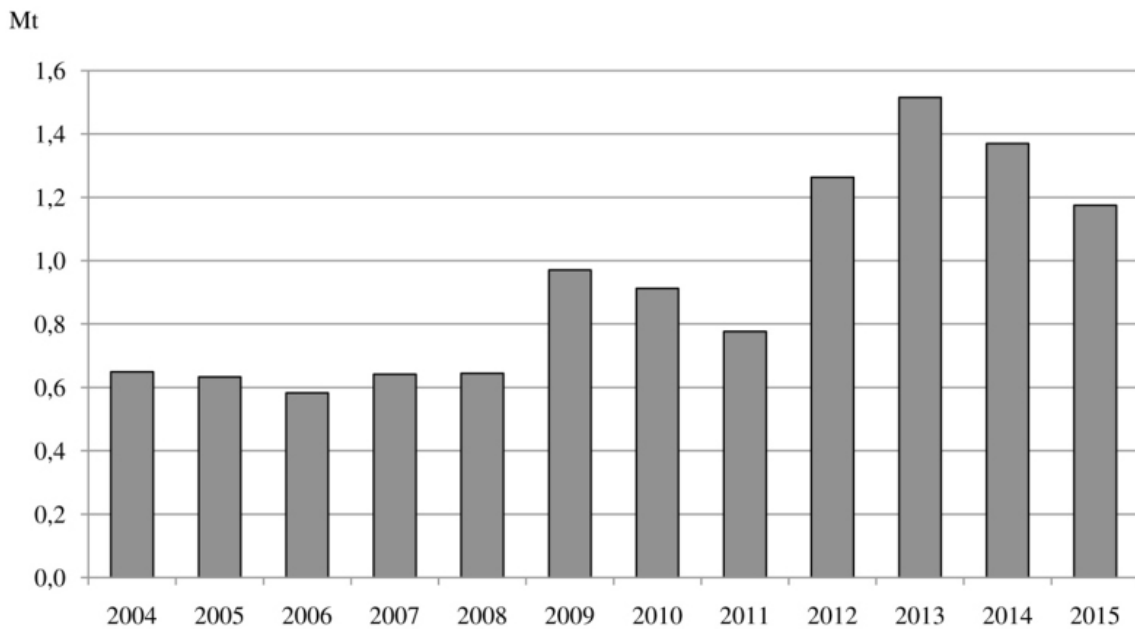
Source: author's own work, based on Rocznik Statystyczny Rolnictwa i Obszarów Wiejskich 2006; Rocznik Statystyczny Rolnictwa 2013; Rynek Owoców i Warzyw – stan i perspektywy no. 36 2010; Rynek Owoców i Warzyw – stan i perspektywy no. 48 2016

this still contrasting rather strikingly with the situation of gooseberries, for which the output was down each successive year by as much as 5.6% on average.

Export was a factor seen to impact significantly on Poland's production of fruit in the years 2004-2015 (Figure 2). When customs tariffs were lifted following accession to the EU, the market that had existed before widened, making the "disposal" of surpluses of fruit produced an easier matter. In the years 2004-2015, exports of fruit from Poland doubled (from 0.6 to 1.2 Mt), while the income this generated tripled (from €195.4 M to €549.9 M). Apples accounted for the major share of this, at between 67 and 80% of the overall export of fruit (*Rynek Owoców i Warzyw – stan i perspektywy* 2006-2016).

## 5. Spatial aspects

In the 2000-2015 period, there was a steady increase in the area of Poland taken by orchards. A 2000 figure of 267,500 ha (equal to 1.4% of the country's agricultural land) compared with corresponding data for 2015 of 349,900 and 2.4%, according to BDL data. This equates to an average increase in area under orchards across the period of 1.8% annually, 30% in total. Both before and after EU accession, Poland had a prevalence of apples within its area under orchards, equal to about 70% of the total. Further positions in the hierarchy were taken by sour cherries (13% of the orchard area), plums (7%), sweet cherries (4%) and pears (also 4%). Beyond these, only a very limited share of the area planted with fruit trees has been accounted for by



**Fig. 2.** Exports of fresh fruit from Poland in the years 2004-2015

Source: author's own elaboration based on *Rynek Owoców i Warzyw – stan i perspektywy*, 2006-2016

either apricots, peaches or walnuts – which take around 2% of the total when all summed together. Where the berry-fruits are concerned, it is currants that predominate (accounting for some 55% of the land planted with berry bushes). These are followed by raspberries (28%). Around 7% of the area of Poland growing berries is in turn occupied by chokeberry bushes, with American blueberries accounting for 5%, gooseberry bushes on 3%, and other “fruits” (mainly hazel trees and grapevines) together present on 2%.

The years 2000-2010 brought a change in the spatial distribution of orcharding in Poland (Figure 3), and a major influence in increasing the overall area was exerted by EU accession, specifically as the farming sector came under CAP rules. Accession served to intensify processes of specialisation in agriculture, with a consequent increase in the area of land given over to orchards. While fruit-growing had new market requirements to adjust to (Kacprzak, 2014), this also entailed programmes of support (with payments for example conferred for the growing of soft fruit, and for organic methods of production). These had a major influence in developing production and increasing the area under trees and berry-bearing shrubs. Further help came within the framework of the EU as-

sistance programmes, which came to represent key instruments accelerating on-farm modernisation, as well as better adjustment to EU requirements.

While the orchards present in Poland in 2000 were mainly concentrated in central and south-eastern parts, by 2010 a clear increase in both area and spread (and hence also importance) had taken place. A particular increase in areas under this type of cultivation occurred in the north-west and north of the country, i.e. regions in which orchards had accounted for less than 1% of the area of agricultural land back in 2000.

Analysis of changes in the spatial distribution of orchards points to a particular curtailment of output in the areas surrounding large or medium-sized cities. The main reasons have been the expansion into such suburban areas of non-agricultural functions like new buildings and infrastructure, as well as a decline in a previously well-marked phenomenon by which the outskirts of Polish cities were associated with the supply of those cities in food (Bański, 2016; Rosner and Stanny, 2014).

This dissociation process has entailed increases in areas of orchards in more-peripheral regions, where a key element in development (also helping to safeguard employment) is ongoing farm specialisation, mostly also modernisation. These trends

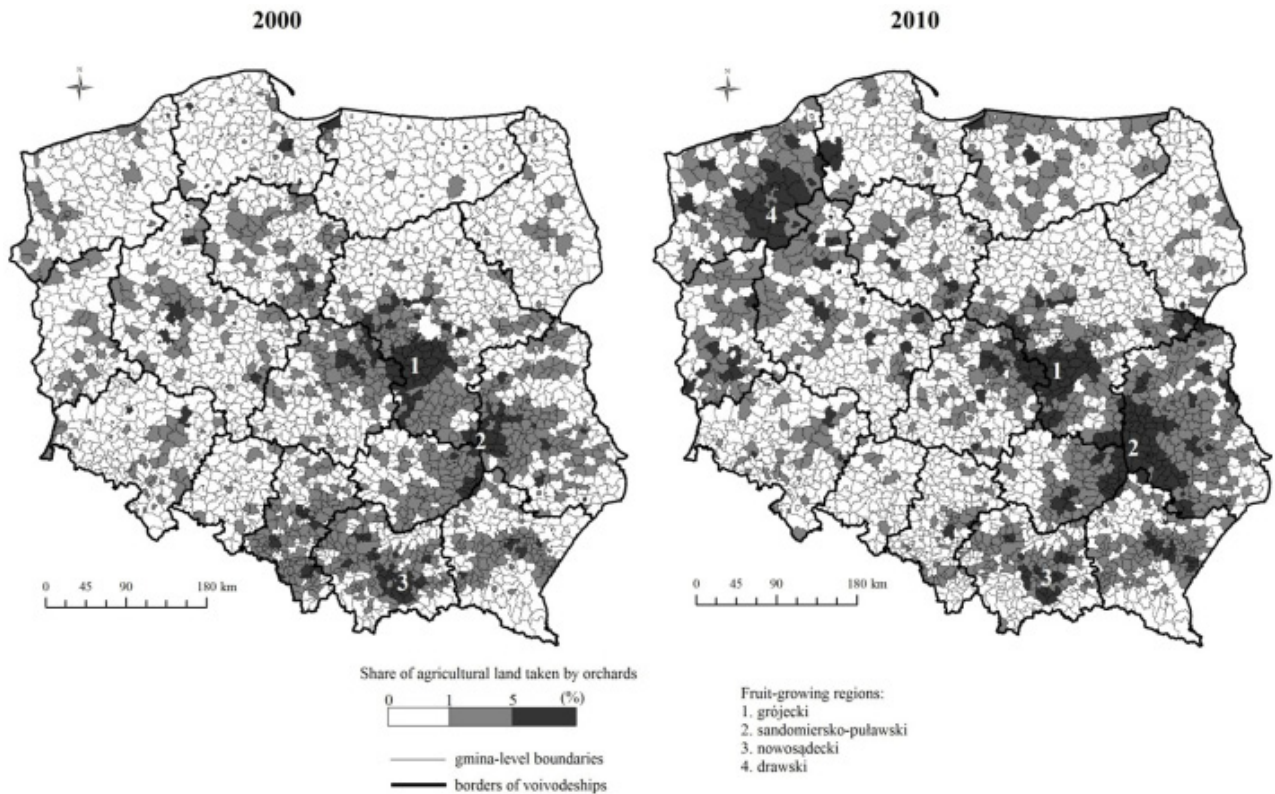


are especially visible in a spatial expansion of orchards in the Grójec area (i.e. the borderland between the province-regions (voivodeships) of Łódź and Mazowsze), as well as the Puławy-Sandomierz area (i.e. the borderland between the Świętokrzyskie and Lublin voivodeships). In turn, a large new region involved in orcharding lies in Western Pomerania (Zachodniopomorskie voivodeship), in the Drawsko-Pomorskie area, as mainly linked with the founding of walnut plantations (Kacprzak, 2014).

Given that reliable data on areas occupied by orchards are only available through the Agricultural Censuses (of which the last took place in 2010), a further assessment of the durability of this centre of orchard fruit-growing will have to wait for several more years yet.

### 6. Closing remarks

As Poland is among the world’s leading producers of fruit, the conditions and change mechanisms present in this branch of agriculture represent key issues for the country. Given its relative persistence in land-management or spatial-organisation terms, as well as the attendant longer preparation times, and the delays inevitably present before profit is obtained, orchard fruit-growing offers an interesting case-study in both agricultural economics and economic geography. Poland’s EU accession put in place conditions for relatively rapid structural and technological change in Polish orcharding, such that 15 years of impact of CAP rules do represent sufficient time for an assessment of production-related and spatial effects. In this context, it is important to recall that none of the many EU programmes and



**Fig. 3.** The shares of agricultural land accounted for by orchards in 2000 and 2010, with a breakdown by voivodeship (province-region) and gmina (unit of local-government administration)  
 Source: author’s own work, based on BDL data

measures have been specifically addressed to orchard-based fruit-growing. Thus, producers of fruit seeking grants for development of their orchards have had to do so in the wider context of means allocated to agriculture in general, or under programmes targeted at SMEs.

Where the production-related impacts are concerned, a major one is obviously the increase in exports of fresh fruit (mainly apples) that it has proved possible to achieve, with this only serving to reinforce Poland's position as a key player on both European and world markets. A consequence of the associated increased output has been an expansion in the area cultivating the fruit most in demand (i.e. apples and raspberries), most especially in peripheral regions of the country, with this also being seen as a manifestation of ongoing specialisation in agriculture, and a means by which a certain economic vitality can be retained in rural areas far from the major urban agglomerations.

It is interesting in this respect to compare the situation in Poland with other Central European countries (Hungary, Slovakia, Czech Republic). Poland invariably shows the predominance of family farming, while in other countries in this part of Europe commercial farming dominates. This is of key importance for the development of the horticultural industry due to workforce resources. Similar analyses carried out for Hungary and Slovakia showed that fruit production was decreasing (Német and Masár, 2014). As a much larger producer, Poland was better able to cope with competition in the European Union and external markets, and the concentration of production in small farms favoured the flexibility of this industry. Poland also has a large internal market and a very well-functioning fruit and vegetable processing industry (Nosecka and Szczepańska, 2019). Competition from Poland in this respect results in other neighbouring countries importing more and more fruit, which was generally considered an unfavourable and weakening phenomenon for the domestic industry (Német and Masár, 2014). Research on the fruit industry in the Czech Republic highlighted that barriers to entry into the fruit production market were relatively high, which discouraged investors. The result was higher imports (Kudová and Chládková, 2008).

A further essence of the above process has been a shift in the zones playing host to different kinds

of fruit-growing. Technological change, especially as regards cold-storage, has combined with development of Poland's transport system (and hence greater accessibility of some formerly-peripheral areas) to reduce what was formerly a major role for zones in the hinterlands of cities. Such functions are now far more feasibly transferred to peripheral areas. This kind of phenomenon can be regarded as a positive impact of European Union farm policy, with an open space for trade in farm products now taking shape, and with financial support for production (particularly of a specialised nature) in place.

As indicated earlier, the European Union funds for the agricultural sector are currently a key factor in the development and stabilisation of this sector of the Polish economy. Due to the predominant character of Polish agriculture, i.e. the dominant share of family farms, agricultural policy has an important function in the social changes of rural areas (Wójcik et al., 2019). European funding has allowed for the development of innovative agricultural specialisations and their spatial concentration in a relatively short time. Spatial specialisation is mostly related to areas where such a tradition in agricultural production already existed (Kacprzak, 2014). Fruit production is remarkably linked to family farming and prevails where such farms almost completely dominate. The growing importance of horticulture as an agricultural industry is due to the openness to innovation of family farms and the perception of specialisation as an opportunity for economic development and improvement of quality of life in rural areas. Fruit farming as a direction of land use intensified and spatial diffusion followed (Wójcik and Traczyk, 2017). The impact of European funds also creates specialisations, which may be temporary in nature. They are primarily related to the operation of commercial agricultural companies and the collection of subsidies for specific crops. This was the case in the analysed period with the establishment of walnut orchards, mainly in northern and western Poland. This area did not have a tradition of orchards and this area was once dominated by state agriculture (State Farms), whose land was taken over (bought or leased) by commercial companies (Kacprzak, 2014). On the one hand, this leads to the renewal of the productive function of the land (often after a period of abandonment), while on the other, it raises doubts about the

effectiveness of the use of funds in the long term. The effect of such investments will be known after a long time.

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