Chapter 2. Small farms in Poland

Sebastian Stępień, Poznań University of Economics and Business, Poland
ORCID: 0000-0001-9475-8418

Jan Polcyn, Stanisław Staszic State University of Applied Sciences in Piła, Poland
ORCID: 0000-0001-7847-2743

Katarzyna Maciuszek, Poznań University of Economics and Business, Poland

Paweł Oleszek, Poznań University of Economics and Business, Poland

Abstract
Small farms in Poland constitute the core of the agricultural sector. Their share in the structure of farms, employment in rural areas, total agricultural production and utilised agricultural area is relatively high. These entities also perform many social and environmental functions, which underlines their importance. Therefore, the purpose of this chapter is to indicate the position of small farms against the background of the entire agribusiness sector, to define their role as a provider of public services, and finally to show activities in the field of support policy for this group of market participants. These elements will be preceded by considerations on the definition of a small farm. This study is based mainly on data from Central Statistical Office, Farm Accountancy Data Network and Eurostat, as well as source materials and thematic papers.

Key words: small farms, Polish agriculture, support policy, statistical data
JEL codes: Q12, Q18, E6, O13

2.1. Introduction

Agricultural development is one of the key dilemmas of the modern world. As global population grows, there is a rising demand for food, which demonstrates the strategic role of this sector. There is no single answer to the question of which development model should prevail in current economic, social, environmental and climatic conditions. However, the necessity to consider the above mentioned

criteria on an equal footing, in compliance with the assumptions of sustainable development, is increasingly recognised. This subject is particularly important from the point of view of small agricultural holdings, especially when we take into account their number and their role in the development of agriculture and rural areas. It is estimated that there are about 570 million farms in the world and that about 4% of them are located in highly developed countries [FAO 2014; Lowder et al. 2016]. The great majority of farms, especially those situated in developing or poor countries, are still small farms (here: less than 2 ha). Their number is estimated to be about 475–500 million [Wiggins et al. 2010; IFAD and UNEP 2013; Lowder et al. 2016].

In the second half of the 20th century, the functioning of the economy was perceived through the lens of economic efficiency, treated as the main selection criterion in neoliberal political doctrine [Diaz and Korovkin 1990; Moore 2000; Busch 2010]. In the case of agriculture, it was assumed that its development should involve industrialisation, as well as the consolidation of land and farms. The then market mechanism was based on the triad of ownership, as well as supply and demand regulations in agriculture. It was supposed to lead to the concentration of production, which would lower unit costs, and to the pressure to increase work efficiency, as a precondition for competitive advantage [Hayami and Ruttan 1985; Gruchelski and Niemczyk 2016]. At the same time, the doctrine which postulated the primacy of microeconomic efficiency stimulated the development of oligopolistic and monopolistic structures. As a consequence, small farms were pushed out of the market because in the process of generating economic surplus, they were the weaker party as compared to their market environment. In this approach, small farms were treated as backward and unproductive, and thus constituted a threat for the development of the global economy [Heidhues, Brüntrup 2003]. However, the pressure to increase efficiency did not take into account the full cost of the production process. It is not only about social costs related to the elimination of small-scale farming, but also about the increasing environmental burden and the failure to balance unfavourable factors, such as soil impoverishment, the worsening of hydrologic conditions, the eutrophication of bodies of water, steppe-formation, etc. Therefore, environmental welfare and its uniqueness are not taken into account.

As a response to reservations about industrial farming, there emerged the idea of sustainable farming [Lantiga et al. 2015; Velten et. al. 2015; Zegar and

Wrzaszcz 2017]. It postulates multi-dimensional objectives, starting from food production, through satisfying social and cultural needs, ending with care for our environment. Its integral part are small family farms, which set biodiversity against monoculture large-scale production, environmental sustainability against 'modern' pesticides and fertilisers technology and a high quality of food against industrial high processed manufacturing methods. In this sense, the problem of small farms can be examined from the point of view of their role in the development of agriculture and rural areas, as well as economic and environmental factors which affect their market activity [Shucksmith and Rønningen 2011]. From a practical point of view, a precondition for popularizing the sustainable model of agricultural development is social understanding of the limited nature of our ecosystem and coming to a conclusion that what is important for the agricultural sector are not only market goods, but also non--market and non-commercial (public) goods, such as environmental welfare, the harmony of nature and agricultural production, the vitality of rural areas, etc.

This approach becomes more common in the strategy of the European Union and is reflected in particular by the Common Agricultural Policy [Swinnen 2015; Czyżewski and Stępień 2018]. Since its very beginning in the 1960s, it has evolved from a pricing policy and intervention buying into a policy geared towards the broadly defined multi-faceted agricultural development, care for the environment, landscape conservation, preserving traditions and the cultural heritage of rural areas [Wilkin 2013]. Small-scale family holdings in the agricultural sector have become the priority of CAP [OECD 2010; European Commission 2017], whereas economic efficiency is not the only criterion for assessing EU budget expenditure for agricultural policy. Supporting small farms is justified by the belief that in the long run and when we consider all the advantages and costs of their business activity, these farms may turn out to be effective both economically and environmentally. To understand this approach better, it is worth presenting the sector of small farms in different European Union Member States. In this chapter, the example is Poland, where the development of agriculture and rural areas in the past has been based on small farms. Where even in conditions of collectivisation of agriculture, this type of unit dominated. The aim of this paper is to determine the position of small farms in the agricultural sector, as well as to present their role and the ways of supporting them. This

study is based mainly on data from Central Statistical Office, Farm Accountancy Data Network and Eurostat, as well as source materials and thematic papers.

2.2. Polish agriculture in the 21st century

When we track economic development in highly developed countries, it is possible to identify 3 consecutive phases. In the first phase, agriculture produces a large share of the gross national income and there is high employment in this sector. The second phase means moving on to industrial economy. In the last phase, the significance of services increases from the point of view of the national income. It includes intangible and financial services, and nowadays also services based on information technology (the so-called digital economy). At the same time, raw materials no longer play such an important role in the structure of the generated value added and employment. An example of such a transformation is Polish economy and its agricultural sector.

At the end of the 2010s, Polish agriculture generates about 2.5% of GDP, whereas in 1990 it was 9%. Investment expenses constitute only 2% of total investment in Poland, whereas the share of gross fixed assets is slightly over 4%. Moreover, this transformation manifests itself in deagrarianisation, that is the decline in employment in agriculture, from 25% of the total workforce in 1990 to about 12% now [Stępień 2019]. The total area of agricultural land is more stable. It amounts to 14.7 million hectares, that is over 2.5 million hectares less than in the 1990s. In this area, there are over 1.4 million farms with an average area of about 10 ha of UAA (an increase by more than 3 ha within 20 years). Most of them are small 5 ha farms, whereas farms with an area of over 50 ha constitute less than 2.5% [Central Statistical Office 2019]. If we take into account economic strength, expressed as standard output (SO),[1] 2/3 of Polish farms fall within the 0–8 thousand euros category, whereas the next 12% fall within the 8–15 thousand euros category. By comparison, in Germany, a little bit over 20% of farms fall within the 8–15 thousand euros category, whereas in France this number reaches 26% [Eurostat 2019]. The regional structure of farms

[1] SO – Standard Output is the average production of 5 years of the crop or animal production expressed in euro in the region's average production conditions.

is still highly diversified. The smallest farms are dominant in southern Polish provinces, whereas the biggest ones are located mainly in northern and western provinces. This process is influenced by multiple historical, economic, social and cultural factors, related strictly to agriculture or to its environment [Baer-Nawrocka and Poczta 2018]. Agricultural lands which used to belong to state-owned agricultural holdings became a resource that made it possible to develop big and privately-owned farms.

Even though the area structure of agricultural holdings is improving, this process is relatively slow. The agrarian structure is still fragmented, which predetermines a relatively low (as compared e.g. with Western European countries) level of production and specialisation. The market is dominated by entities involved in mixed production. Crops have the highest share in plant production, whereas livestock production is dominated by pigs and poultry [Central Statistical Office 2018]. At the same time, in recent years, we have observed the process of regionalisation. There are areas with above-average concentration of specific types of agricultural activity. In central western Poland, farmers opt mostly for breeding pigs and poultry, as well as for cultivating crops and corn (also for fodder). The central eastern part of the country was adapted for orchard cultivation. The cultivation of intensive crops, sugar beet and rape are more common in the south eastern and western part of the country, whereas north eastern Poland focuses on breeding dairy cattle. In submontane and mountain regions, there are mostly small farms, dealing with diverse plant and animal production.

Table 1. Basic characteristics of Polish agricultural sector (2018 data)

Specification	Value
Share of agriculture in GDP	2.4%
Share of investment in agriculture in total investment in Poland	2%
Share of gross fixed assets in agriculture in total assets in Poland	4.2%
Share of employment in agriculture in total labour force	11%*

* The division of employed persons by occupational category, including those employed in agriculture and elsewhere, was based on the criterion of the main workplace. In the case of division of employed persons by sections and divisions, employment in agriculture reaches almost 16%.

Specification	Value
Utilised agricultural area (UAA)	14.7 million of ha
Number of farms (above 1 ha of UAA)	1.4 million
Average size of farm	10 ha UAA

Source: Self-performance based on Central Statistical Office 2018; Central Statistical Office 2019.

Due to a relatively high number of farms[2] and the area of agricultural land, in the years 2017–2018 Poland occupied the seventh position among EU Member States with regard to the volume of agricultural production (Poland was outrun by France, Germany, Italy, Spain, the United Kingdom and the Netherlands) [Eurostat 2019]. Since the beginning of the 21st century (that is for almost 20 years), the value of real global production increased by almost 30%. This growth was caused mainly by higher volume, which shows that there was an improvement in the efficiency of using the factors of production (land, labour and capital). As production grows, foreign trade in food products intensifies as well. In this regard, a positive factor was Poland's accession to the European Union in 2004. After 15 years of being a Member State, Polish export of agricultural and food products accounted for 13% of all export, whereas import reached less than 9%. In 2018, positive balance amounted to 9.7 million euros, whereas negative balance for total foreign trade was -4.6 million euros [Ministry of Agriculture and Rural Development 2019]. The main recipients of Polish food were the 'old' EU states, that is Germany, the United Kingdom, the Netherlands, Italy and France. The share of all EU countries in the export of agricultural and food products amounted to 83%. It is interesting especially because international competitiveness is assessed mainly through the lens of labour productivity. Yet when it comes to Polish agriculture, it is much lower than in the above mentioned countries. So what lies behind the success of Polish export? One of the causes behind this phenomenon is the nature of agricultural production. It is less intensive when it comes to using resources (including fertilisers and plant protection products) and closer to traditional

[2] In 2016, workers employed in Polish farming constituted almost 1/5 of workers employed in farming across the EU, which almost equalled all such workers from France, Spain and the UK put together.

farming, which guarantees the production of food valued by European consumers. In this case, Poland kind of benefits from its underdevelopment, which is treated as a strong side of the Polish agricultural sector [e.g. Czyżewski and Stępień 2011]. The second factor is the influx of foreign investment, including food corporations which benefit from lower labour costs and export agricultural raw materials which were processed in Poland. Moreover, it needs to be noted that Polish plants which process agricultural and food products, as well as distribution networks, were modernised with the help of pre- and post-accession EU funds. Even though the agricultural sector could be regarded as 'backward' in comparison with highly developed countries, Polish food industry belongs to the most advanced in Europe.

A problem of Polish agricultural holdings is the continuing disparity between agricultural and non-agricultural income, even though in recent years, this situation has improved due to the influx of EU funds, mainly from the Common Agricultural Policy. Thanks to these funds, in the years 2004–2016, the nominal per capita income of inhabitants of rural areas increased by 118%, whereas the income of city dwellers increased by 94% [Wilkin 2018]. If only agricultural holdings are taken into account, this income increased by over 150%. Therefore, in terms of income, farmers are the social group which benefited the most from Polish integration with the EU. Nevertheless, in the years 2004–2014, the ratio between agricultural income (for FADN farms[3]) and the average wage level in the national economy, after taking into account payments from the Common Agricultural Policy, reached 66%. If we did not include this EU support in the value of agricultural income, this ratio would be over a half lower and amount to just 29% [Stępień, Smędzik-Ambroży and Guth 2017]. Due to the relatively low level of agricultural income, only one fourth of agricultural holdings make a living mostly from agriculture (i.e. agricultural income constitutes over 50% of their total household income). However, an increasing number of people find jobs in non-agricultural sectors, which bring higher income than farming,

[3] FADN (Farm Accountancy Data Network) is a European system of sample surveys conducted every year to collect micro-economic farm data. The FADN data collection is based on a sampling frame that provides a sample representative of the agricultural sector. Farms covered by the FADN accounting system are economically stronger as compared to other farms, so it may be concluded that the results achieved by them are higher than the average results on a national level.

whereas the Polish social insurance system and social assistance provide support for many inhabitants of rural areas.

2.3. Definition and role of small farms in Poland

Before we move on to discuss data concerning small farms, it is necessary to establish the criteria to define the term 'small farm'. The diversity of the agrarian structure in EU Member States and around the world makes it impossible to clearly define a 'small' farm [Guiomar et al. 2018]. There are many answers to the question 'what is a small farm'. It depends on the context in which this issue is handled. We usually take into account the physical size of a given farm, expressed in hectares of agricultural land, regardless of the type of agricultural production. This methodology is used e.g. by Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD) and the World Bank. However, the area-based criterion for defining a small farm differs from country to country. It is usually defined as an area of less than 1, 2 or 5 ha of agricultural land. For example, according to the methodology of the European Union, a small farm is a farm whose area does not exceed 5 ha of agricultural land (in the EU, there are over 7 million such farms out of 10 million farms in total).

In Poland, there is no single official definition of a small farm. Different criteria are used in order to determine the number of such farms [Hornowski and Kryszak 2016], but the area of agricultural land is the most common one. In literature on this subject, there are various classification proposals. It is for example concluded that a very small farm has an area of up to 5 ha, whereas a small farm has from 5 to 30 ha [Żmija et al. 2013]. Gruchelski and Niemczyk [2016], on the other hand, define a small farm as a farm that has an area of up to 10 ha, whereas a relatively small farm has up to 19 ha.

Apart from the physical size of a farm, it is important to determine its economic strength, measured with the help of standard output (SO), which used to be expressed as European Size Unit (ESU). Physical size is not always correlated with production results. In other words, when it comes to industrial production (e.g. pig or poultry fattening), a large area of agricultural land is not required to obtain high revenue. Including economic strength among classification

criteria makes it possible to account for such situations. For example, Eurostat and FADN employed a methodology in which the upper limit for small farms is 25 thousand euros of SO (there are over 9 million such farms in the EU, including 8.5 million below 15 thousand euros).

Still another concept is to treat the workload as the criterion for determining whether a farm should be regarded as small, medium or large. It is justified due to the fact that small farms usually have a lower total workload than larger farms. The word 'total' is very important here, because the ratio of workload consumption changes per unit of area. Estimated data show that Polish farms with a small area of agricultural land require a relatively high workload per 1 ha (on average, it is about 300 hours). As the physical size of a farm increases, the employment figure per one unit of area decreases [Dudzińska and Kocur-Bera 2013]. Moreover, when we take into account the employment figure, it needs to be noted that it is more appropriate to take into account full-time agricultural workers (which is often expressed in Annual Work Unit, AWU[4]) rather than just natural persons, who often engage in work on a part-time basis. In this approach, it is assumed that a small farm uses 0.5–1.5 AWU per year.[5] Finally, classification by workload requires taking into account the business focus of a given farm. A classic example is horticulture, which is highly labour-consuming as compared to other forms of agricultural production, so it may not be compared with cultivating crops or industrial plants.

In order to supplement the above mentioned characteristics and emphasize the difference between small and large farms, we could take into account the level of on-farm consumption. In this sense, a farm is regarded as small if it consumes the majority of its output on its own. If we adopt this criterion, agricultural holdings can be divided into existential ones, which engage in production

[4] Annual Work Unit (AWU) corresponds to the work performed by one person who is occupied on a farm on a full-time basis (in Poland – 2120 hours per year). Full-time means the minimum hours required by the relevant national provisions governing contracts of employment.

[5] According to FADN data, in 2017 only agricultural holdings with economic size of up to 2–8 thousand SO fell within these limits and consumed 1.1 AWU on average. The remaining groups were as follows: 8–25 thousand euros – 1.52 AWU, 25–50 thousand euros – 1.84 AWU, 50–100 thousand euros – 2.10 AWU, 100–500 thousand euros – 3.19 AWU, above 500 thousand euros – 19.05 AWU (FADN, 2019).

mostly to satisfy their own needs (subsistence farms), semi-subsistence farms and commercial farms (which sell most of their output). It is sometimes assumed that small farms are those which use over half of their output to satisfy their own needs [Żmija et al. 2013]. In literature on this subject, one may also come across a definition of semi-subsistence farms which states that such farms sell less than 50% of their output [Wharton 1969]. Among other criteria used to classify agricultural holdings, there is also the method of managing an enterprise, using agricultural contract work, the share of non-agricultural business activity, the degree of specialisation, the development of technology and innovations, risk management, the support received from an agricultural policy (e.g. 1250 euros of yearly direct payments for small farms), as well as other factors.

The criteria adopted for small (or very small) agricultural holdings are usually fulfilled by family farms, even though this group is very much diversified. Apart from owning agricultural land and conducting agricultural activity, family farms are characterised by the fact that agricultural work is carried out by family members. The fundamental thing is that family work should prevail in total labour inputs. Therefore, the household is functionally linked with the agricultural holding, not only through the provision of work, but also due to a high degree of self-supply. The aim of such an entity is existential activity (which includes generating income) rather than profit, as is the case with private enterprises [Zegar 2012].

To sum up, due to a wide variety of approaches towards the qualifying criteria for small agricultural holdings, the idea that seems to be the most appropriate is to take into account several elements at once, e.g. the area of agricultural land, the standard output and labour inputs [Zegar 2012]. What is also important in defining is taking a relative approach towards different countries or regions. Otherwise, what makes a small farm in one country does not have to be regarded as a small farm in another country [European Commission 2011]. Having presented the qualifying criteria for small farms, it is worth thinking about the role that these entities play in the functioning of the agricultural sector and its environment. First of all, it needs to be admitted that due to the number of these entities in Poland, they are the foundation of the agrarian structure and remain a major player in the field of food production. By combining the production and consumption functions, they support many families in rural areas. Because of that, their fight for survival is stronger than in the case of large-scale farms with

contract workers. What is also important in this context is the farmer's personal and emotional connection with the farm, which translates into motivation and high quality of work. Moreover, small farms, as opposed to large industrial ones, 'produce' something more than just agricultural raw materials. Their multifunctionality manifests itself in efforts to maintain the sustainability of rural areas in the social and environmental context. Benefits from such actions include [Czyżewski and Stępień 2013]:

- broadly defined diversification of ownership, plant and animal production, landscape, culture and tradition;
- responsible management of natural resources, water and forests, as well as maintaining animal welfare;
- creating jobs in rural areas, building social ties, greater responsibility for one's own life and the life of the local community, as compared with contract workers;
- combination of one's workplace and family life, gaining knowledge and experience from an early age;
- provision of relatively cheap food produced in a more traditional way, which is tastier and healthier.

In light of the above, it should be concluded that small and medium agricultural holdings in Poland should be protected. Moreover, what should be emphasized is their strategic significance for securing food needs and the necessities of life, also during economic, political and military crises. This issue should become a priority due to the long-lasting deactivation of small farms, changes in their business focus and the lack of successors. Small agricultural holdings cannot be treated as a reserve of cheap land, easily accessible natural resources and cheap workforce, which induces large agricultural producers and entrepreneurs active in the agricultural and food market to compete for these small farms. They need to have appropriate conditions for revitalisation. Apart from developmental (investment) support, there need to be some provisions concerning potential markets (including direct and local sale) and links with the food processing industry.

2.4. Small-scale farms in statistics

For the purposes of this analysis, I adopted the area criterion (10 ha of agricultural land) and the economic size criterion (15 thousand euros SO). Even though these are just conventional limits, they seem to be appropriate for describing small-scale agriculture in Poland. And so, in Poland the number of entities whose area does not exceed 10 ha of agricultural land is about 1 million, which represents ¾ of all agricultural holdings. However, in the last ten-odd years, there was a significant drop in their number, especially severe in the case of the smallest farms, whose area does not exceed 2 ha of agricultural land (see Table 2). This process was accompanied by the shrinking of the area used by small farms (Table 3). What is clearly visible is the transfer of agricultural land to stronger agricultural producers. Small entities go out of business naturally (as their owners are getting old) or because family members decide to change their business focus. The diversity of farm structure still stands on the regional level. The highest share of small-scale farms was recorded in south eastern Poland, whereas the lowest share was recorded in the north eastern part of the country.

Table 2. Number of small farms (thous.) in Poland by agricultural area

Specification	2005		2010		2013		2017	
	number	%	number	%	number	%	number	%
Total number of farms (thous.)	2,476	100	1,509	100	1,429	100	1,406	100
Including farms (thous.):								
up to 1 ha UAA	1,218	49.2	25	1.6	34	2.4	21	1.5
1–1,99 ha UAA			301	19.9	278	19.4	263	18.7
2–4,99 ha UAA	533	21.5	490	32.6	455	31.8	450	32.0
5–9,99 ha UAA	370	14.9	346	22.9	315	22.1	316	22.5

Source: Self-performance based on Central Statistical Office 2018; Central Statistical Office 2017.

Table 3. Structure of agricultural land use in small farms in Poland by agricultural area

Specification	2005		2017	
	Area	%	Area	%
Total agricultural area (thous. of ha)	14,755	100	14,620	100
Including farms (thous. of ha):				
up to 1 ha UAA	865	5.9	17	0.1
1–1,99 ha UAA			389	2.7
2–2,99 ha UAA	1,727	11.7	459	3.1
3–4,99 ha UAA			987	6.8
5–9,99 ha UAA	2,635	17.9	2,205	15.1

Source: Self-performance based on Central Statistical Office 2018; Eurostat 2019.

Similar conclusions may be drawn on the basis of an analysis of data concerning the economic strength of agricultural holdings (Table 4). Moreover, in this case, we can see a significant drop in the number of economically weakest entities, mostly those which fall within 0–2 thousand euros group, and in their share in the total number of agricultural holdings in Poland (the 8–15 thousand euros group was the only one where it rose slightly). The convergence of results should not come across as surprising if we consider the fact that there is a close relationship between the physical size of a farm and its economic strength. Table 5 shows how the area of agricultural land increases with the increasing economic strength. Moreover, the range with the highest number of agricultural holdings shifts in particular area groups. Most farms with economic strength of 0–2 thousand euros have 1–2 ha of agricultural land, whereas most farms that fall within the 4–8 thousand euros and 8–15 thousand euros groups have 5–10 ha of agricultural land. Therefore, it may be assumed that the data for farms divided with regard to their physical and economic size will be very similar. This is why we will classify farms by the area of agricultural land (except for data concerning economic results).

Table 4. The number and percentage of small farms in Poland by the economic size SO

Economic class SO	2005		2010		2013		2016	
	Number	%	Number	%	Number	%	Number	%
0–2 thous. euro	1,402,600	56.6	485,400	32.2	402,781	28.2	391,344	27.7
2–4 thous. euro	338,560	13.7	290,340	19.2	283,509	19.8	269,775	19.1
4–8 thous. euro	300,820	12.1	274,240	18.2	262,110	18.3	252,788	17.9
8–15 thous. euro	205,370	8.3	195,020	12.9	183,607	12.8	184,704	13.1

Source: Self-performance based on Central Statistical Office 2017; Eurostat 2019.

Table 5. The average size and land use structure of small farms in Poland by the economic size SO in 2016

Specification	Economic size (SO in euro)			
	0–2	2–4	4–8	8–15
Average size (ha UAA)	2.2	3.6	5.8	9.2
Structure of farms by area class (ha UAA) in %:				
up to 1	3.5	1.0	0.2	0.5
1–2	**53.0**	16.1	6.0	1.4
2–3	26.5	22.9	10.5	4.0
3–5	14.5	**40.1**	26.6	13.5
5–10	2.2	19.4	**47.2**	**43.6**
More than 10	0.3	0.5	9.4	37.1

Source: Self-performance based on Central Statistical Office 2016.

In agricultural holdings, small area of agricultural land determines how efficiently workforce can be used. Even though general inputs in an average farm are lower than in larger holdings, when it is expressed per 1 ha of agricultural land, the use of this factor of production is actually four times higher (Table 6). Moreover, small farms are more often than large farms managed by older people with lower education. It could be one of the reasons for relatively low absorption of EU funds from the Rural Development Programme and the lower tendency to undertake non-agricultural activity, which is particularly advisable in this group. Due to the small scale of their business activity, less than 70% of small farms sell their output, whereas in larger farms this number reaches almost 100%. At the same time, almost ¼ of small farms use over 50% of their agricultural output to satisfy their own needs (in farms with an area over 10 ha it is just 2.4%).

Table 6. Selected characteristics of small farms in Poland against the background of larger farms in 2016

Specification	Farms up to 10 ha UAA	Farms above 10 ha UAA
Annual labour inputs in AWU per 1 farm	0.94	1.91
Annual labour inputs in AWU per 1 ha UAA	0.24	0.06
Share of farms managed by male	66%	87%
Share of farms accorging to the age of manager:		
below 40 lat	18%	28%
40–64 years	68%	67%
65 and more	14%	5%
Education of manager:		
primary education/no education	13%	7%
vocational education	37%	33%
vecondary education	37%	41%
higher (bachelor or master degree)	13%	19%
Share of farms conducting non-agricultural activities	2.6%	4.9%

Specification	Farms up to 10 ha UAA	Farms above 10 ha UAA
Share of farms selling their own agricultural products over a period of last 12 months	68%	98%
Share of farms consuming more than 50% of their own agricultural production	23.5%	2.4%
Share of farms with direct sales over 50% of the total sales of agricultural products	19%	10%
Share of farms using ecological methods of production	0.4%	7%
Share of farms benefiting from support under RDP	48%	68%

Source: Self-performance based on Central Statistical Office 2017.

On the other hand, when it comes to small producers, the share of those who sell over half of their output through direct sale is higher than in the case of larger farms. Using these sales channels is gaining popularity due to the fact that consumers are more and more interested in food produced in a traditional, natural and environmentally sound manner, characterised by natural seasonality and high biological value [Sieczko 2015; Domański and Bryła 2013, pp. 97–109]. For small farms, it is an opportunity to find an alternative source of income. The lack of organic production certificates (only 0.4% of small farms conduct such a business) should not become a barrier to the development of small farms.

Agricultural land use structure in small farms varies significantly (Table 7). In comparison with larger holdings, the share of sown land is lower (especially in the smallest farms), whereas the share of meadows and forests is higher. Therefore, we should look at this matter through the lens of environmental impact. If meadows and forests are treated as a sort of public good, small farms are more focused on providing this type of goods than large-scale agricultural holdings. Moreover, small farms use less inorganic fertilisers. Lower intensity of breeding cattle and pigs (Table 8) also means that they generate less liquid manure and dung. Therefore, the data show that in comparison with large-scale farming, small farms in Poland are more environmentally sustainable.

Table 7. The structure of agricultural land use and fertilisers consumption on farms in Poland by the area of UAA in 2016

Specification	Area group (ha UAA)				
	1–2	2–3	3–5	5–10	>10
sown land	40%	45%	51%	58%	70%
permanent meadows	26%	23%	21%	18%	16%
permanent pastures	2%	2%	2%	2%	3%
parmanent crops	3%	4%	4%	4%	2%
forests and forest land	12%	12%	11%	9%	4%
other land	17%	14%	12%	8%	5%
fertilisers consumption* kg per 1 ha UAA	63.1	73.1	85.2	105.8	152.0

* nitrogen, phosphorus potassium

Source: Self-performance based on Central Statistical Office 2016.

Table 8. The scale of animal production on farms in Poland by the area of UAA in 2016

Number of animals (pcs.)	Area group (ha UAA)				
	1–2	2–3	3–5	5–10	>10
Cattle per 1 farm	2.4	3.1	3.9	7.5	29.1
Cattle per 100 ha UAA	8.0	12.6	16.6	32.4	47.6
Pigs per 1 farm	6.8	9.1	11.5	20.3	115.7
Pigs per 100 ha UAA	10.0	15.7	24.7	50.5	89.9
Poultry per 1 farm	82.1	111.9	125.1	215.1	647.5
Poultry per 100 ha UAA	1,815.6	1,558.9	1,198.8	1,196.7	722.3

Source: Self-performance based on Central Statistical Office 2016.

However, even though from the environmental point of view small farms can be regarded as more sustainable, in the case of microeconomic calculation the results that they achieve are much lower than those of larger entities. Table 9 presents data for small farms covered by the FADN system which fall within different economic size groups. Let us remember that according to the FADN classification, small agricultural holdings are those which reach up to 25 thousand euros of standard production. It is clearly visible that both the productivity and the profitability of these small-scale producers deviate from the average results achieved by large-scale farms. Particularly large differences are visible in data expressed in workforce units. When it comes to standard production, the difference between the lowest (2–8 thousand euros) and the highest (over 500 thousand euros) class is over thirteen times larger, similarly to the difference in income between the lowest class and the 100–500 thousand euros class.

Table 9. Economic results of farms in Poland by classes of economic size in 2017

Farm economic size SO (euro)	Total output/ AWU	Total output/ 1 ha UAA	Farm net income/ AWU	Farm net income/ 1 ha UAA
2 000–8 000	5,537.0	862.4	1,483.2	231.0
8 000–25 000	9,909.2	1,078.2	3,703.9	403.0
25 000–50 000	19,455.4	1,500.3	8,341.3	643.3
50 000–100 000	34,452.4	1,831.6	14,616.2	777.1
100 000–500 000	60,172.7	2,227.1	19,629.2	726.5
>500 000	74,889.7	2,558.8	7,279.8	248.7

Source: Self-performance based on Farm Accountacy Data Network, 2019.

2.5. Policy towards small farms in Poland

As the paradigm of agricultural development evolved, the approach towards small farms changed as well. Even a few decades ago, they were treated as underdeveloped and inefficient, which meant that they were an obstacle on the path towards the modernisation of the agricultural sector. Agricultural policy

focused on large farms, whereas small farms were advised to combine their agricultural production or give it up altogether. An example of such actions was collective farming in Poland after the Second World War and the establishment of state agricultural farms. Since the 1990s, this situation started to slowly change. It was partially the result of political factors (the liquidation of state agricultural farms and a large part of agricultural cooperatives) and partially due to the growing consciousness of negative results brought about by the industrial model of the food industry and the growing importance of multifunctional farming [Zegar 2012]. For several years, we have observed increasing efforts to strengthen the position of family farming, which is a result of changing the focus of the Common Agricultural Policy. The attitude of authorities towards small agricultural holdings is evidenced by the quoted excerpt from Sustainable Development Strategy for Rural Areas, Agriculture and Fishery for the years 2012–2020 [Ministry of Agriculture and Rural Development 2012]: '(...) they play a vital environmental and social role. Despite their low commercial production capacity, they have the potential to produce traditional local food or niche products. At the same time, the structure of agricultural land belonging to small--scale farms brings added value to maintaining landscape and environmental assets.' In Sustainable Development Strategy for Rural Areas, Agriculture and Fishery for 2030 [Ministry of Digitization 2019], the multifunctional nature of small and medium farms is emphasised by '(...) extending (supplementing) the scope of current production functions to provide services to inhabitants of rural areas and city dwellers, as well as to the environment.'

The above quotes show that the viability of small agricultural holdings in Poland is of overriding importance. This is the aim of practical solutions under intervention policy. Support trends can be divided into four groups: 1. developing agricultural production; 2. diversifying business activity; 3. transferring one's farm to another farmer; 4. administrative facilitations. In the years 2014–2020 (EU budgetary outlook), the first point is going to be addressed with the help of an action called 'Restructuring Small Farms' (total budget 750 mln euros), which constitutes a part of Rural Development Programme 2014–2020. Support is granted to farms with economic size of up to 6 thousand euros of SO for restructuring the production of agricultural products, preparing them for sale, selling them directly or processing them [The Agency for Restructuring and Modernisation of Agriculture 2019]. When it comes to the addressed problem,

this programme is similar to the support programme aimed at small-scale agricultural holdings which was carried out after 2004 [European Parliament 2013]. Unfortunately, the new programme is limited to producers who are engaged exclusively in agricultural activity. It is clearly contrary to the nature of small farms, whose essence should be both agricultural and non-agricultural activity. When it comes to diversification, a small agricultural holding (up to 15 thousand euros) may apply for a bonus to start non-agricultural activity (RDP 2014–2020, total budget above 400 million euros). Moreover, Rural Development Programme 2014–2020 also includes a special payment for farmers qualifying for the small farm system who permanently transferred their holdings to another farmer (30 mln euros budget). The requirement is that the acquiring person needs to undertake to conduct agricultural activity in the extended farm for at least 5 years [The Agency for Restructuring and Modernisation of Agriculture 2019]. Therefore, this solution is similar to the so-called structural pensions granted in the years 2004–2013. Still another way of supporting small farms was the establishment of a simplified direct payment system within the first pillar of the Common Agricultural Policy, which came into being in 2015. The system was open for farmers who received direct payments of up to 1,250 euros per year, that is those who owned farms with about 5–6 ha of agricultural land. In this case, facilitation means the relaxation of criteria for checking compatibility with cross-compliance[6] and greening[7] rules with regard to direct payments, which simplifies the procedure of granting these payments.

The policy towards small and medium farms in Poland is also evidenced by the redistribution of support through targeted direct payments. As is shown by multiple studies [e.g. European Commission 2015; Matthews 2016; Bournaris and Manos 2012; Swinnen 2015], the allocation of area payments to small and large farms is highly unequal. As a result, there is a disproportion between the cumulative participation of beneficiaries and the cumulative amount of transfers from the EU budget, expressed as 80/20. It means that 80% of the economically

[6] Cross-compliance is a mechanism that links direct payments to compliance by farmers with basic standards concerning the environment, food safety, animal and plant health and animal welfare, as well as the requirement of maintaining land in good agricultural and environmental condition.

[7] Greening is an element of direct payment, introduced by the 2013 CAP reform, which financially rewards farmers for taking care of the environment.

weakest agricultural holdings in the EU receive 20% of all resources for the Common Agricultural Policy subsidies, whereas 20% of the strongest farms receive 80% of available support. This situation is similar in Poland. When it comes to the division of farms into economic classes (FADN farms data), due to subsidies from the Common Agricultural Policy, in the years 2004–2013 there was an increase in the agricultural to non-agricultural income ratio in each of these economic classes. However, this influence was varied and ranged from almost 9 percentage points for the smallest farms (up to 8 thousand euros of standard output per year) up to 2000 percentage points for the biggest farms (above 500 thousand euros of standard output). It was characteristic that the higher a given farm's output (which determined its economic class), the higher the positive impact of CAP subsidies on the income level. Similarly, the share of subsidies in agricultural income for farms from the lowest economic class reached 36% in the years 2004–2013, whereas in the highest economic class it was 159%. In light of the above, it was appropriate to introduce the so-called first hectare payment. Since 2015, owners of land covered by uniform area payments with an area over 3 ha have received additional payments for acreage which does not exceed 30 ha. Thanks to it, total support per area unit increases by about 20%. In its justification for the programme, the government states that targeting additional payments in this way 'will make it possible to more effectively support the income of those farms which cannot benefit from the scale of their production as much as the biggest farms, but still stand a chance for sustainable development' [Pokora-Kalinowska 2019].

2.6. Conclusions

An integral part of the sustainable development model for Polish agriculture are small family farms. They set biodiversity against large-scale production, environmental sustainability against modern technology and a high quality of food against industrial manufacturing methods. Small farms constitute a buffer protecting rural areas against poverty, they shape rural landscape and transmit intangible cultural and historical values [Michalska 2012]. Their presence is conducive to maintaining the demographic potential of rural areas and local economy, including the circulation of income between entrepreneurs and

consumers. Therefore, they are a precondition for the development of rural areas in Poland, even if their existence seems to be unjustified from the microeconomic point of view. Nevertheless, the microeconomic criterion is superficial because long-term costs of liquidating such entities would be enormous, not only in the economic sense, but also in the social and environmental context.

Therefore, when it comes to choosing between the two paths for the development of agriculture, that is supporting small farms or leaving them in the conditions of free market game, it is definitely the first solution that should be chosen. It is not only about passive social assistance, but rather about actions which will turn small family farms into active participants in the economic and social life in rural areas. The only thing we need to do is define the functions which such entities should fulfil. One of them is definitely the provision of public goods, which is generally not guaranteed by large agricultural holdings. It is about maintaining biodiversity, the rural landscape and clear environment, as well as about transmitting our cultural heritage. Small farms should be rewarded for being 'the guardians of the landscape' because this function is not appreciated in the market. Possible solutions are e.g. payments for the number of hectares on which erosion was counteracted, for the amount of carbon bound in soil, for profits lost due to the fact that a given farm does not use fertilisers and plant protection products. These types of actions could be remunerated as a bonus added to the basic direct payment (including the flat fee). Its source could be ecological taxation, levied on large-scale agricultural holdings (the criteria defining a large--scale agricultural holding are yet to be established). This solution should not provoke public opposition, so implementing it would be easier.

Still another form of support is subsidising the process of adjusting a farm to a chosen type of business activity (be it agricultural or non-agricultural activity) and providing counselling. Small agricultural holdings should choose a strategy which fits their limited possibilities but at the same time guarantees an adequate income. When it comes to agricultural production, it could be organic, traditional or niche food. Small producers, who are not of interest for big trade networks, can successfully cooperate with nearby processing plants and establish so-called local food systems. Examples of such actions can be found for instance in the United States. Small farms may also undertake activities closely related to agriculture, such as herbal production, beekeeping and floriculture, or other non--agricultural forms of business activity (food processing, handicraft, agritourism,

workshops). To conclude, when we come up with solutions for small farms, it is important to bear in mind that they should serve as an incentive for modernisation and finding one's place in specific local markets, rather than constitute mere examples of social assistance.

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