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## SMALL-SCALE FARMS IN THE ENVIRONMENTAL SUSTAINABILITY OF RURAL AREAS. OPINIONS OF FARMERS FROM POLAND, ROMANIA AND LITHUANIA

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**ABSTRACT:** The aim of the article is to assess the environmental sustainability of small-scale farming. The authors tried to reach the farmers' subjective opinions, their way of thinking, attitudes and determinants affecting environmental performance. The use of in-depth interviews gave a chance to draw reliable and accurate conclusions on the analysed topic and register many elements that could be omitted using quantitative methods. Thus, the work forms a complementary part of research on the sustainability of small-scale farms, which is its main added value. Furthermore, the use of data from three EU member states – Poland, Romania and Lithuania – provided a basis for comparative analysis. Conclusions proved that small farms perform important environmental functions in rural areas. It results from the very essence of this type of farm, based on the cultivation of traditions and experience passed down from generation to generation, as well as from the family nature of these units.

**KEYWORDS:** small-scale farms, environment, sustainability, interviews, producers' opinions

## Introduction

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The common agricultural policy (CAP) of the EU supports the European model of agriculture, which exposes the duality of its functions – apart from food production, it contributes to the broadly understood development of rural areas and provides public goods (Committee, 1999; Fischler, 1999). This model is based on family farms, a large part of which have a small-scale of production. What is more, the observation of subsequent periods leads to a claim that a response to the policy designed in the 1960s was to change the CAP's objectives and adjust new solutions. After the first 30 years of its functioning, this was the case when it changed from a market and price policy to an income and structural policy, and then also to an environmental policy. The construction of the most important instrument of aid, i.e. direct payments, also changed – the dependence of financing on the type and volume of production was almost entirely abandoned, and the so-called decoupling was introduced, along with minimum environmental and animal protection requirements. Thus, there was a reorientation of budget expenditures from those oriented at the continuous increase of productivity of inputs through relatively high food prices to those directly creating the source of farmer's income, with simultaneous care for the development of rural areas and natural conditions. Thus, it can be thought that at the EU level (including, first of all, the wealthiest countries), the upper limit of further „pumping” of productivity has been reached (Czyżewski et al., 2019). It turned out that economic efficiency cannot be the only criterion for assessing EU budget expenditures on agricultural policy due to the peculiarities of the land factor and the role to be played by rural areas for the general public (Czyżewski & Polcyn, 2016; McDonagh et al., 2017).

The study covered three countries belonging to the European Union, two of them – Poland and Lithuania – since 2004, and Romania since 2007. The choice of these countries was not accidental but resulted from the aim of the research. The authors focus on small-scale family farms, as this entity is typical for the Central and Eastern European (CEE) region. Family farms have an important position in the construction of the CAP support system, thanks to which they can function in the environment of large-scale enterprises (Czyżewski & Stępień, 2017). Financing the activities of these entities is also an expression of the desire to ensure fair pay for the farmer's work. This is because under market conditions, with the limitations of the land factor, there is a depreciation of smallholder agriculture in relation to its closer and further surroundings, which is manifested in the relative income deprivation of farms. It turns out that without financial support, agricultural income in many EU countries is not only much lower than non-agricultural income but

also insufficient to cover current operating costs (Guth et al., 2020). In the process of shaping intermediate and final demand, small-scale family farms participate to an inadequate degree in the distribution of value-added of the food supply chains (Thirtle et al., 2004; Marini et al., 2009). The consequence of this process is the disappearance of small-scale farms, which can have negative long-term environmental effects: reduction of biodiversity, landscape conversion, deterioration of soil and water quality through industrial agriculture, etc. (Babai et al., 2015). These are unquestionable reasons for supporting the agricultural sector. An intervention system such as the EU common agricultural policy is compensation for market discrimination of small-scale farms and is justified from the point of view of economic efficiency, but also for environmental reasons (Pe'er et al., 2014).

At this point, the role of small farms in sustainable development should be stressed. The Food and Agriculture Organization (FAO, 2014) emphasises the importance of small-scale farming for alleviating hunger and poverty and improving food security and living standards in rural areas while protecting the environment and biodiversity. Moreover, small family farms and related rural areas are places of residence and work for nearly 50% of the world's population (Wiggins et al., 2010). The role of smallholders in economic growth is also emphasised since small-scale agriculture has higher multiplier effects in creating demand than other sectors (World Bank, 2007; Janvry & Sadoulet, 2010). Furthermore, small farms have a positive influence on developing the density of the rural population, including the borderland and less beneficial territories. Hence, to some extent, they are responsible for rural viability (Borychowski et al., 2020). Therefore, the role of small family farms in creating a sustainable model of agriculture is global (FAO-OECD, 2012; Hanzel, 2011). At the European scale, the best concretisation of this problem is provided by the CEE countries with fragmented agrarian structures (Fritsch et al., 2010). Studies on the sustainability of agriculture in the CEE countries are numerous, and they cover different aspects. European Union's Horizon 2020 project 'SALSA' (SALSA, 2020) found that in order to develop and increase the resilience of small farms, as well as contribute to food delivery stability, it is necessary to diversify their crop and animal production. Indeed, this form of biodiversity is a way of reducing production and price risks and is recommended for farms with a high degree of self-supply.

On the other hand, small farm businesses should be able to demonstrate strong commercial performances to reinforce sustainable food and nutrition security. This requires strengthening the position of small-scale farms in the food supply chain through horizontal and vertical integration processes and shortening the marketing channels. Discussing various resilience strategies for farms in several regions in Poland and Latvia, Czekaj et al. (2020) note that economically strong individuals are more able to guarantee social and

environmental sustainability. In turn, Sharma & Shardendu (2011) assessed the link between the improvement in the agricultural economic performance of family farming and the sustainability levels of rural regions. They identified a positive relationship between these two dimensions, similarly to Volkov et al. (2020). However, achieving favourable financial results in small-scale family farming requires external support. Bojnec & Fertő (2019) and Guth et al. (2020) appraised the impact of CAP subsidies on the stabilisation of farm incomes and their sustainability and resilience.

Family farms account for 97 per cent of the 12 million farms in the European Union (Eurostat, 2021), and a large part of them are small-scale units, located particularly in Central and Eastern Europe and peripheral regions, such as the Northern Scandinavia, Scotland and Ireland, South-eastern Europe, the Mediterranean countries and mountain ranges (Claros, 2014; Pinter and Kirner, 2014; Salvioni et al., 2014). Because of their contribution to environmentally sustainable rural development, specific support programs have been launched, reflected in the agricultural policy priorities for 2021-2027 (European Commission, 2021). In the literature, one can find many positions indicating the importance of family farms. Such works have been published for years both at the level of political institutions, such as the European Parliament (2014), the European Commission (2013), and the Council of the European Union (2013), as well as in the scientific sphere (e.g. Hill, 1993; Christiaensen & Swinnen, 1994; Allen & Lueck, 1998; Darnhofer, 2010; Davidova et al., 2013; Matthews, 2013; Gioia, 2017; Stępień & Maican, 2020). They largely present quantitative analyses and modelling using publicly available statistical data (e.g. Eurostat, 2021; FADN, 2021) or survey data.

As in the sources cited above, the aim of this article is to assess the environmental sustainability of small-scale farming. However, unlike many quantitative works, the authors tried to reach the farmers' subjective opinion on a specific problem. This approach made it possible to get to know the farmers' way of thinking, their motivations, and attitudes and to understand the determinants of the analysed entities' actions (Gaskell, 2000). The application of this method gives a chance to draw reliable and accurate conclusions about the studied reality. Additionally, the nature of the assessed phenomenon makes the use of in-depth interviews possible to register many elements that could be omitted using other methods (e.g. traditional questionnaire survey). Thus, the work forms a complementary part of research on the sustainability of small-scale family farms, which is its main added value. To the best of our knowledge, qualitative studies covering the impact of those farms on environmental sustainability are rare, which makes a significant contribution to existing scientific research. The use of data from three different EU member states – Poland, Romania and Lithuania – provides a basis for comparative

analysis, which is a unique feature of the research. The structure of the paper is as follows: the next section indicates materials and methods, followed by research results and discussion, and finally, conclusions.

## Material and research methods

The analysis covered three countries belonging to the European Union, two of them – Poland and Lithuania – since 2004 and Romania since 2007. Data on these countries were obtained as part of a scientific project titled ‘The role of small farms in the sustainable development of the food sector in Central and Eastern European countries’. In this project, apart from the three mentioned, Serbia and Moldova were included. However, the latter two countries do not belong to the European Union and are not covered by the support mechanism of the common agricultural policy, hence they were excluded from this study. The choice of these countries, both for the project and for publication, was the effect of a similar path of economic transition of the countries belonging to the so-called Soviet bloc and the transformation from a socialist economy system to a market economy. As a result, a dual structure of agribusiness has emerged, with large-scale enterprises and small-scale family farms participating side by side. The latter, due to their multifunctional character, is crucial for the functioning of rural areas, hence the important question about the attitudes of agricultural producers towards sustainable development. At the same time, these three countries are covered by the support of the common agricultural policy, the system which seeks to strengthen the environmental role of smallholder farms.

Different definitions of a small family farm were used in the selection of units for the study. The literature most often points to criteria such as agricultural area, economic strength, number of animals, and market participation (Guiomar et al., 2018; European Commission, 2011). For example, very small farms can be defined as those whose agricultural area is less than 2 ha or 5 ha (Lowder et al., 2016), while small farms are those whose area does not exceed 20 ha (Gruchelski & Niemczyk, 2016). In turn, Eurostat and the Farm Accountancy Data Network, by taking into account the classification of economic strength (SO<sup>1</sup>), apply the upper limit for small farms as 25 thousand euros (FADN, 2021). Additionally, in order to emphasize the family character of the farm, the criterion of the dominant share of the farm family members’ work is adopted to exclude from the analysis those persons who, although possessing agricultural land, actually work outside agriculture (Zegar, 2012). Taking these elements into account, for the purposes of this study, the following criteria were adopted: agricultural area up to 20 ha, standard production up to 25 thousand euros and at least 75% of family members’ labour input.

In the first stage, the analysis was based on surveys conducted in Poland in 2018 and in 2019 in Romania and in Lithuania. The samples numbered 710 farms in Poland, 1000 in Lithuania and 900 in Romania. Data were collected in the form of direct interviews by agricultural advisors. Questions concerned economic, social and environmental sustainability. In the second stage, using these data, we ordered farms according to the synthetic sustainability measure applying the CRITIC-TOPSIS method. The criteria importance through inter-criteria correlation (CRITIC) method is based on the standard deviation and uses correlation analysis to measure contrasts between criteria (Odu, 2019). The technique for order preference by similarity to ideal solution (TOPSIS) method refers to the determination of the best alternative nearest to the ideal solution (with the shortest Euclidean distance) and farthest from the negative ideal solution (Helmy et al., 2021). Table 1 presents the set of variables (stimulants and destimulants) taken into account to determine the synthetic sustainability measure. Weights for particular coefficients were determined by the CRITIC method on the basis of standard deviations and correlation between the coefficients. A distinctive feature of that method is assigning higher weights to features that have high rates of variability, along with a low correlation with other features. The weight coefficients  $w_j$  were determined according to the following formula:

$$w_j = \frac{c_j}{\sum_{k=1}^m c_k}, j = 1, 2, \dots, m; c_j = s_{j(z)} \sum_{k=1}^m (1 - r_{ij}), j = 1, 2, \dots, m, \quad (1)$$

where:  $c_j$  is the measure of the informational capacity of the  $j$  feature,  $s_{j(z)}$  is the standard deviation calculated from of the standardised values of the  $j$  feature,  $r_{ij}$  is the correlation coefficient between features  $j$  and  $k$ . The sum of the coefficients is 1 (Borychowski et al., 2020b).

Next, farms were ordered according to the synthetic measure and a group of the most sustainable farms, the so-called Top-20, was determined for further research in each country.

**Table 1.** Variables used to determine the synthetic measure of the sustainability of surveyed farms in Poland, Romania, and Lithuania

Sustainability component	Variable name	Variable type*	Weight of variable for the individual sustainability component	Weight for the synthetic measure of sustainability
Economic	Income gap indicator (difference between average income in the national economy and total income of the agricultural holding)	D	0.1280	0.3304
	Subjective assessment of the household's financial situation	S	0.3398	
	Level of agricultural investment	S	0.3356	
	Estimated market value of the holding	S	0.1967	
Social	Dwelling/house furnishing index	S	0.1819	0.3089
	Usable floor area of dwelling/house per family member	S	0.0959	
	Participation in lifelong learning system	S	0.1511	
	Participation in social or cultural events	S	0.2823	
	Membership in an organisation, club, association etc.	S	0.2887	
Environmental	Livestock Units (LSU) per ha of UAA**	D	0.1383	0.3608
	Monoculture index	D	0.2730	
	Eco-efficiency (according to DEA – data envelope analysis)	S	0.1133	
	Share of forest in the farm area	S	0.0315	
	Share of permanent grassland in the farm area	S	0.0784	
	Share of arable land covered with vegetation during winter	S	0.1992	
Balance of soil organic matter***	S	0.1664		

\* Variable type: S – stimulant, D – destimulant.

\*\* Livestock Unit (LSU) – is a reference unit that facilitates the aggregation of livestock of various species and ages according to convention by using specific coefficients established initially on the basis of the nutritional or feed requirement of each type of animal.

\*\*\* Calculated according to the methodology of the Institute of Soil Science and Plant Cultivation in Pulawy, Poland.

Source: authors' work based on methods accepted.

Table 2 presents descriptive statistics for individual sub-measures (economic, social and environmental) and the synthetic one, i.e. the arithmetic mean and the standard deviation, taking into account the division into analysed countries. As the data shows, the highest value of the synthetic sustainability index was observed in Poland, followed by Romania and Lithuania. In Poland, the highest value among sub-measures is achieved by economic sustainability (0.57), similarly in Romania (as much as 0.58), with relatively

small standard deviations (0.17 and 0.15, respectively). In both countries, the lowest value is recorded for the environmental sustainability sub-measure – in Poland 0.49 and in Romania only 0.38. Therefore, it can be assumed that small-scale farms in Romania are the least sustainable in terms of the environmental component. Lithuania indicates a different situation – the environmental sustainability index, in relation to the economic and social one, is the highest (0.55). The economic component is particularly low (0.35). This structure may indicate a relatively strong commitment of farms to environmental issues at the expense of poorer financial performance.

**Table 2.** Descriptive statistics for the individual (economic, social and environmental) and the synthetic measure of sustainability for farms in Poland, Lithuania and Romania (the arithmetic average and in brackets-standard deviation)

Country/measure	Sub-measures			Synthetic measure
	economic	social	environmental	
Poland	0.57 (0.17)	0.54 (0.09)	0.49 (0.18)	0.54 (0.11)
Lithuania	0.35 (0.11)	0.54 (0.16)	0.55 (0.15)	0.48 (0.10)
Romania	0.58 (0.15)	0.46 (0.17)	0.38 (0.27)	0.52 (0.14)

Source: authors' work based on methods accepted.

The third stage of the research was qualitative and included in-depth interviews with 'Top-20' farms from Poland, Romania and Lithuania (20 in each country). In-depth interviews offer a comprehensive picture of reality as perceived by the individual. They can be used to describe phenomena and develop and test theories (Van Maanen, 1998). Therefore, our use of in-depth interviews lets us obtain information that, according to (Miles, 1979), is „succinct, complete, real, creating access to causality” and which meets the criteria of interpretative evaluation, as focused on the individual perspective, on the unit and on his/her interpretation of reality (Konecki, 2000; Denzin & Lincoln, 2000). Thus, interviews provided plausible as well as reasonable explanations for a deeper understanding of the reasons why small farms undertake, if any, activities for the conservation of natural resources. The main objective of our analysis was to find out and compare the opinions of the owners of small-scale farms about their role in a sustainable development of rural areas. The interview was conducted by members of the research team in a scientific project (including one of the authors of this study) in 2020 and covered economic, social and environmental issues. In this article, due to the volume of research, we focused on the environmental sustainability aspect. Thus, the questions asked to farmers concerned about identifying actual and planned measures with beneficial impacts on natural resources.

Besides, the respondents were asked to assess the implementation of pro-environmental activities in the group of small family farms, including an assessment of their own activity. Respondents were asked the following questions:

- Do you think that your farm and other small-scale family farms are environmentally friendly? If so, in which aspects? If not, why? What is the assessment in comparison to the group of large-scale farms?
- What measures has your farm implemented to improve the environment?

The final step of this stage was to 'clear' and code the responses and classify them according to the method adopted. SPSS (Statistical Package for the Social Sciences) software was used for the analytical part.

## Research results and discussion

The table below presents the basic statistics of the analysed units. The average area of farms where the in-depth interviews were conducted ranged from 10.3 ha in Lithuania to 13.4 ha in Poland (Table 3).

**Table 3.** Basic statistics for the 'Top-20' farms, 2020 (values in brackets for the entire population involved in the questionnaire survey)

Farm characteristics	Average value		
	Poland	Romania	Lithuania
Farm area (ha of UAA)	13.4 (14.1)	13.2 (12.1)	10.3 (10.5)
Standard output (EUR/year)	17.905 (12.830)	12.650 (10.320)	7.501 (5.614)
Household income (EUR/month) – only from agriculture	1.917 (1.843) 1.076 (985)	1.219 (1.106) 751 (693)	1.230 (1.022) 533 (433)
Share of support in agricultural income	35% (35%)	57% (50%)	55% (55%)
Estimated farm value (thous. EUR)	209.6 (n/a)	25.7 (24.5)	51.5 (49.7)
Estimated farm liabilities (thous. EUR)	6.6 (n/a)	3.0 (2.6)	0.4 (0.5)
Age of farm manager	49 (49)	46 (47)	48 (48)
Level of education of farm manager*	4.6 (4.6)	4.8 (4.5)	5.1 (4.9)

\* Level of education in the range from 1 to 7, where 1 – no education, 7 – higher education

Source: authors' work based on interviews data.

More pronounced differences between countries can be observed in the case of production and farm income – in Poland, they were the highest, while in Lithuania the lowest. However, the most significant discrepancies were observed in the case of estimated farm assets.

Such a large gap in farm value between Poland and the other two countries could be due to higher prices of land and other real estate on the Polish

market (Palen et al., 2018). Interestingly, the high value of assets does not translate into the level of indebtedness of the surveyed units. It is relatively low in all countries, which confirms the risk aversion of farms (see also Binswanger & Sillers, 1983; Theuvsen, 2013; Sulewski et al., 2020). As for demographic variables – age and education – they are similar in the three cases.

All farmers surveyed (100%), regardless of the country, stated that their farms were environmentally friendly. They unanimously answered that they use less mineral fertilisers and chemical plant protection products than in the case of larger farms. Lack of money was often mentioned as the reason for this. Besides, they unanimously stated that lower fertilisation results from taking care of their own and their family members' health, as much of the food produced was consumed in the household. The following statements appeared in the questionnaires: „We use and eat everything we produce ourselves, so the products are really good”, „I grow products for my children, grandchildren and family”. On this basis, it can be concluded that the self-sustaining nature of smaller farms has a positive impact on their environmental sustainability. Also, the experience and tradition passed down from generation to generation, so characteristic for smaller farms, are of great positive importance for their management in an environmentally sustainable way. This aspect was particularly emphasised by Polish farmers. They argued as follows: „my father taught me, and his father taught him, etc.”. They indicated that they grew plants that enrich and decorate the landscape (e.g. blueberries), applied extensive animal husbandry, reused resources, maintained natural meadows, applied crop rotation, and did not pollute nature.

However, some differences between the countries concerned farmers' intentions related to environmental activities. Polish farmers indicated the need for more precise fertilisation, which in their opinion should be reinforced by training in this field. They noted that such actions would increase the environmental benefits of their production. On the contrary, farmers from Lithuania and Romania claimed that it would be better if they did not have to change anything in their current activities related to the use of artificial fertilisers and plant protection products. Only three of them (two in Lithuania and one in Romania) noted that more widespread financial support for pro-environmental agriculture would encourage actions to obtain organic farm certification. At the same time, Romanian farm owners complained most about the current support system under the EU's common agricultural policy. They argued that agri-environmental payments are taken over by big actors. However, the in-depth discussion revealed a low level of knowledge about the possibilities of applying for EU funds. In Poland and Lithuania, education in this field was at a relatively high level.

Concluding this part of the research, it should be stated that the results confirm the high level of environmental sustainability of small farms, which

is often emphasised in the literature. The respondents' answers indicate that the high sustainability of this group of farms is due to the favourable influence of tradition, care for their own and family member's health (the self-supply character of smaller farms), and, paradoxically, the unfavourable economic situation, which determines the lack of financial resources to purchase chemical fertilisers and plant protection products. It is also worth emphasising that farmers are aware of the fact that their farms are environmentally friendly. This is supported by the activities undertaken, which have a positive impact on the natural environment. Furthermore, farmers from the analysed countries in the vast majority do not feel the need to change their pro-environmental activities.

Farmers were aware of their environmental friendliness. Their view of the pro-environmental nature is also reflected in the literature. Indeed, many researchers have proved that the characteristic of small farms is their relatively high environmental sustainability. This is due to the peculiarities of these producers, especially highlighted by comparative analysis with large farms. Herrero M. et al. (2017) demonstrated that in agricultural production, diversity decreases with increasing farm size.

On the other hand, Ricciardi et al. (2018) confirmed that small-scale farms have significantly higher biodiversity than their larger counterparts. The former generate landscape diversity and stimulate biodiversity (Ebei, 2020) but also provide numerous valuable ecosystem services to the society (Chen, 2010). This is because of the multidirectional of crop production and adaptation to local environments, including low dependence on external inputs (Holt-Giménez, 2012). Among the indications in our survey were those of lower fertiliser and chemical plant protection use in relation to larger units, either because of a lack of money or out of concern for food quality. This fits to earlier findings by Altieri & Nicholls (2012) and Holt-Giménez & Altieri (2013), in which it was shown that small farms are less dependent on commercial inputs than large ones. Small farms benefit from a wide range of resources, such as manure and compost produced on the farm. In addition, Wibbelmann et al. (2013) found that small farms tend to use less machinery than large farms and therefore consume less fossil fuel, which reduces their operating costs and, at the same time, increases their environmental sustainability. Assessing the environmental sustainability, the farmers interviewed also highlighted the beneficial impact of their cultivated experience and traditions. This was recognised earlier by Wibbelmann et al. (2013) and Koohafkan (2019), noting that peasants benefit from traditional ecological knowledge embedded in cultural and religious traditions and thus increase the sustainability of their farming systems. Besides, Nicholls (2018) noted that agroecological systems are deeply rooted in small-scale farming traditions. The high beneficial impact of peasant traditions on the environmental sus-

tainability of farms was also justified, using Mexico as an example, by Arnés et al. (2013), pointing out that the abandonment of traditional farming techniques (unsustainable in the absence of abundant family labour) significantly increases the costs of resource conservation. The cited research results, confirmed by the analysis of the statements of the owners of small family farms from Poland, Romania and Lithuania, therefore speak in favour of greater financial support for small family farms due to their pro-environmental character and their difference in this respect from large farms.

## Conclusions

On the example of small family farms from three analysed countries, it was indicated that the view found in the literature that small farms perform important environmental functions in rural areas is correct and applies to countries with a fragmented agrarian structure, such as Poland, Romania and Lithuania. It results from the very essence of these farms, based on the cultivation of traditions and experience passed down from generation to generation, as well as from the family nature of these units. It is also worth emphasising that farmers are aware of their pro-environmental functions and intend to continue this attitude, which is essential from the point of view of social benefits. On the other hand, the economic performance of this group of producers is relatively worse in relation to both larger area farms and average wages in the economy. In the long run, this leads to the disappearance of this group of agricultural producers, with negative consequences for the environment and society. This argument determines the necessity of financial support for these farms, in accordance with the so-called European model of agriculture, which exposes the double function of agriculture in Europe – apart from food production, it contributes to the broadly understood development of rural areas and provides environmental public goods. The demonstrated pro-environmental behaviours implemented by small family farms justify the necessity to ensure economic conditions for their survival through appropriately adapted tools of the common agricultural policy. As indicated by the owners of the surveyed farms, the most desirable directions of aid are administratively simple area payments (which de facto function in the current CAP system), price stabilisation instruments and those increasing the added value in the food supply chain.

The article has two limitations. First, there may be some doubt regarding the small sample of farms interviewed in the research. It is worth recalling that qualitative research is characterised by labour-intensive data collection (Miles, 1979) and much more significant financial expenses than quantitative research, which weakens the charge of an insufficient number of respond-

ents. Moreover, as Pasikowski (2015) points out, the implementation of qualitative research in the grounded theory most often coincides with the use of a sample size of 20-30 units. The second limitation is its static approach. To demonstrate changes in the pro-environmental attitude of small farms, a dynamic approach would be required. These limitations should be considered in future research. It should also be remembered that the sample of respondents included farms diagnosed as showing the highest degree of sustainability (in economic, social and environmental order).

Further on, the research should include small farms with different degrees of sustainability, which will make it possible to generalise the results to the entire sector of small family farms. The study should also include other countries besides the three analysed. Work is currently underway to extend the scope of the survey to include the Czech Republic and Slovakia.

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Sebastian Stępień: conceptualisation, investigation and resources, writing – original draft, funding acquisition, project administration, supervision.

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