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ORGANISATIONAL AND ECONOMIC CHARACTERISTICS OF AGRICULTURE IN POLAND FROM AREAS ESPECIALLY PREDISPOSED FOR THE DELIVERY OF PUBLIC GOODS

DOI: 10.15611/pn.2022.3.13

JEL Classification: Q

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Quote as: Zieliński, M. (2022). Organisational and economic characteristics of agriculture in Poland from areas especially predisposed for the delivery of public goods. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, 66(3).

Abstract: The aim of the study is to assess the organisational and economic characteristics of agriculture in Poland from areas (communes) especially predisposed to provide public goods. The delimitation of these communes was carried out on the basis of the agricultural production area valorization index (APAV) established by the Institute of Soil Science and Plant Cultivation – State Research Institute (IUNG – PIB) in Pulawy. Production potential of agriculture in these communes were obtained from the Agency for Restructuring and Modernization of Agriculture (ARMA). In addition, data from the Statistics Poland (GUS) and Polish FADN were used. It was stated that farms from these communes in comparison to farms from other communes were characterised by, among others, lower total costs per 1 ha of UAA, lower productivity of factors of production and income per 1 ha of UAA. The operating subsidies received were of great importance to them, without which they would often suffer losses.

Keywords: agriculture from ANC's areas, organic farming, afforestation, organizational and economic potential of agriculture, public goods, Common Agricultural Policy 2014-2020.

1. Introduction

According to the Food and Agriculture Organization of the United Nations (FAO), the global pressure of anthropogenic activities to use land resources to feed a growing population has never been as high as it is today (FAO, 2021). To a large extent, this is associated with the growing expansion of agriculture, often at the expense of the loss of wetlands and forests, including tropical forests, and its increase in intensity through the increasing use of fertilizers and pesticides in agricultural production and changes in the structure of crops and livestock breeding (Alexander, Johnson, and Robinson, 2015; Liu et al., 2003; UN, 2019). In the opinion of the Intergovernmental Science – Policy Platform on Biodiversity and Ecosystem Services, however, this situation causes a progressive degradation of agricultural soils due to, among others, erosion, compaction, pollution, salinisation, desertification, and loss of organic matter and biodiversity (IPBES, 2019).¹

To halt the further degradation of agricultural soils, agriculture should play a fundamental role, which, if taking proper care, can provide society not only with healthy and high-quality food, but also a wide range of public goods. According to Wilkin (2010), agriculture is an important source of natural (biodiversity, agricultural landscape, soil conservation, proper water relations), economic (food security, food, and energy security) and socio-cultural (economic and social viability of villages, enriching the national culture, shaping local, regional, and cultural identity) public goods. However, it should be noted that a necessary condition for such provision of them by agriculture in a continuous manner and at the level expected by society, is the presence of the appropriate rules (institutions) that can formulate an order that is the basis of economic growth and development, as well as provide a structure of incentives that guarantee the use of knowledge and skills in a way to bring maximum benefits to individuals (Acemoglu, Johnson, and Robinson, 2004; Menard and Shirley, 2005). According to North (1990) – one of the representatives of the new institutional economics – the institutions constitute “rules of the games” in society, which shape and consolidate its desired behaviour.² In this context, therefore, the opinion of Czyżewski and Kułyk (2015) becomes extremely important. They claim that public goods are significantly related to agriculture and the policy of its financial support, at the same time believing that no compensation for the provision of public goods by agriculture may result in a reduction in meeting the growing needs in this area for the entire society. According to Stiglitz (2013), in this situation one is dealing with one of the basic forms of market failure related to the insufficient supply of public goods. In this context, the role of environmental policy is emphasised by

¹ The International Science – Policy Platform on Biodiversity and Ecosystem Services (IPBES) operates under the auspices of the United Nations (UN).

² According to North, institutions should be divided into formal, informal and mechanisms of their enforcement (North, 1990; Richter, 2015).

Żylicz (2016), who believes that it can consider values that cannot be observed in the form of prices, because they do not apply to goods exchangeable on the market. It should be stressed that the European Commission (EC) in the EU strategic documents, primarily in the 2019 European Green Deal strategy and its thematic strategies for 2020-2021, demonstrates its readiness and willingness to take decisive actions for the protection of public goods related to agriculture, including by increasing the care for the condition of agricultural soils (European Commission, 2019, 2020a, 2020b, 2021a, 2021b, 2021c, 2021d).

In Poland, the areas that are mostly predisposed to deliver public goods in a sustainable and stable manner are those with difficult and particularly difficult conditions for their management. It should be pointed out that an important advantage of the areas is usually the great value and diversity of the landscape. In these areas there also often operate farms with extensively organised agricultural production and with limited opportunities to increase intensity, which generally makes it difficult to improve the effectiveness of their agricultural production, and contributes to the need to seek additional opportunities aimed at improving their economic situation (Jadczyzyn and Zieliński, 2020; Prandeki, Wrzaszcz, and Zieliński, 2021; Zieliński, Łopatka, and Koza, 2020). A possibility to maintain the economic viability of the farms is to conduct agricultural production focused on the benefits for the natural environment, including agricultural soils. It should be stressed that their capability is to an increasing extent supported by the Common Agricultural Policies (CAP) of the European Union (EU), which are revised every few years.

The aim of the study was to assess the features of the organisational and economic potential of agriculture in areas (communes) with difficult and particularly difficult farming conditions, as well as to emphasize the role of three dedicated measures under the CAP 2014-2020, which can facilitate the functioning of farms in difficult conditions and offer public goods to society. These measures are: (1) payments for areas facing natural or other specific constraints (ANCs), (2) organic farming, (3) investment in forest area development and improvement of forest viability. The strength of this analysis is also the assessment of the economic situation and development possibilities of farms participating in the activities from communes with difficult and particularly difficult conditions for farming, as compared to farms not participating in it from other communes.

2. Research method

To accomplish the aim of the analysis, the first part of the study established the features of the production potential of agriculture in communes with difficult and particularly difficult farming conditions. The delimitation of the communes was carried out based on the agricultural production area valorization index (APAV) established by the Institute of Soil Science and Plant Cultivation – State Research Institute in Puławy, used to differentiate compensation payment rates depending on

the degree and nature of the restrictions in ANCs areas designated in the country under the CAP 2014-2020 (Zieliński et al., 2020).³

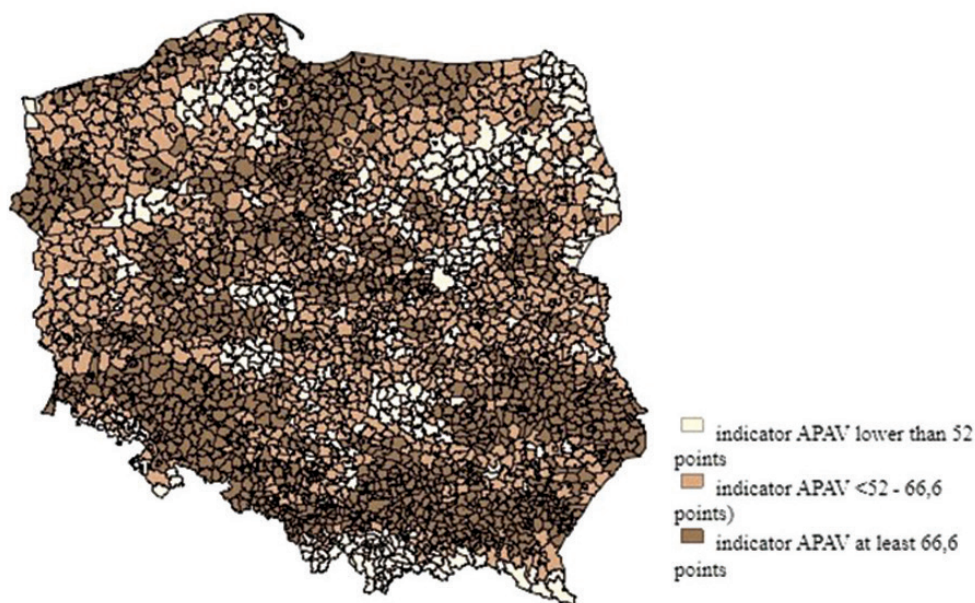


Fig. 1. APAV indicator (points) in communes in Poland

Source: own study based on the Institute of Soil Science and Plant Cultivation – State Research Institute data.

The average APAV was 66.6 points from the possible 120 points, although in 58.4% of all communes it is lower than the national average. In 40.1% of the communes it was within the limits <52-66.6 points), which reflects their difficult farming conditions. In the remaining 18.3% of communes, this indicator was lower than 52 points and indicates particularly difficult farming conditions. In communes with difficult and particularly difficult conditions, the average WRPP was 59.4 and 46.1 points, respectively.

³ The analysis used the latest update of APAV, which was made by the Institute of Soil Science and Plant Cultivation – State Research Institute in 2017 and was used in the work for the purpose of carrying out a new delimitation of ANCs areas in Poland from 2019 under the CAP 2014-2020. In its structure, this indicator considers such components as: soil quality, agroclimate, water conditions and land relief; the weight of each of them is proportional to their impact on the yield of arable crops. The maximum value of this indicator in Poland is 120 points (Jadczyzyn et al., 2013).

To determine the characteristics of the production potential of agriculture in communes with difficult and particularly difficult farming conditions compared to other communes, data from the Agency for Restructuring and Modernization of Agriculture (ARMA) were used, based on the applications submitted by 1,269.5 thousand farms which were beneficiaries of the CAP 2014-2020 for granting direct payments under the 2021 campaign. The data concerned the agricultural area (UAA) and the number and average UAA in farms, which were summarised by communes.

Next, the characteristics of the three selected measures under the CAP 2014-2020 were made, for their implementation of agriculture from especially predisposed communes with difficult and particularly difficult farming conditions. Activity of the following was characterised by: (1) payments to areas facing natural or other specific constraints, hereinafter referred to as the ANCs measure (Table 1), (2) organic farming, hereinafter referred to as the ecological measure, and (3) investments in the development of forest areas and improvement of forest viability, hereinafter referred to as the afforestation measure (Rural Development Programme..., 2022). For this purpose, among others, data from Statistics Poland contained in the *Statistical Yearbook of Agriculture for 2021*, as well as ARMA data from *Annex 8 of the Annual Report on the Implementation of the Rural Development Programme (RDP) for 2014-2020 for 2021* were used. ARMA data were also obtained from farms conducting organic production under the current CAP for 2019-2021.

Table 1. Scheme of the analysis of farms from communes with different conditions for agricultural production

Farms from communes with difficult and particularly difficult conditions for farming:			Farms from other communes
participating in the ANCs measure, including:			
participating in the ecological measure	participating in the afforestation measure	other	

Source: own study.

In the second part of the study, the functioning of farms participating in the ANCs measure was assessed, including the ecological and afforestation measures in communes with difficult and particularly difficult farming conditions, compared to farms not participating in them from other communes (Table 1). For this purpose, the study used accounting data from farms which kept the accounts for the Polish FADN in 2018-2020.

3. Features of the production potential of agriculture from communes with difficult and particularly difficult conditions for farming

Communes with unfavourable conditions for agricultural production are significant for the production potential of domestic agriculture; according to ARMA data for 2021, there were 508.5 and 201.4 thousand farms, respectively, in communes with difficult and particularly difficult farming conditions, which accounted for 40.1% and 15.9% of the total number in Poland, respectively. They used 5 660.5, and 1 883.7 thousand ha of UAA, i.e. respectively 39.8% and 13.3% of the total UAA in Poland.⁴ In these communes, compared to other communes, farms were, on average, characterised by a smaller UAA. What is more, in communes with particularly difficult farming conditions this was lower than the national average (11.1 ha) (Table 2) (Statistics Poland, 2021a).

Table 2. UAA, number of farms and their average UAA in communes with difficult farming conditions in 2021

Variable	unit of measure	Communes:		Other communes
		with particularly difficult farming conditions	with difficult farming conditions	
UAA	thousand ha	1 883.7	5 660.5	6 674.1
Number of farms	thousand	201.4	508.5	559.6
Average UAA in farms	ha / farm	9.4	11.1	11.9

Source: own study based on ARMA data for 2021; data generated by ARMA based on applications for direct payments for the 2021 campaign.

In communes with unfavourable farming conditions, only farms with the ability to adapt to their constraints can maintain their viability in the longer term, one of the most important is agricultural production for the benefit of the natural environment. Hence, for farms that care for environmental conditions in the communes, it is important to have financial support for having ANCs, compensating them for at least some additional costs and lost income related to difficulties in agricultural production occurring locally. It should be noted that this support is intended not only to facilitate continuing agricultural production in the difficult conditions, but also to maintain and promote sustainable systems of agricultural activity (European Commission, 2018). According to the new ANCs delimitation carried out in Poland in 2019, the areas eligible for this support are found in 2,149 communes, i.e. in 86.8% of the

⁴ It concerns the total number of farms and UAA covered in 2021 by the CAP 2014-2020.

total number of communes. In 1,299 communes, their share is equal to or greater than 75% of the total UAA. It should be added that in 667 communes this results from the presence of one ANC's zone (communes with particularly large share of one zone of ANCs), and in 632 communes from the combined presence of at least two ANCs zone.⁵ (communes with particularly large share of at least two zones of ANCs combined). It is worth noting that in communes with particularly difficult farming conditions, the share of those with at least a 75% share of ANCs in the total UAA was 98.9%, while in communes with difficult farming conditions – 83.1%, and in others – 4.6% (data from the Institute of Soil Science and Plant Cultivation – State Research Institute, MARD Regulation, 2019) (Figure 2, Table 2).

In Poland, in 2020 support under the ANCs measure covered 876.8 thousand farms using 8,848.5 thousand ha of UAA, i.e. 61.9% of the total UAA covered by support under the CAP 2014-2020 (Statistics Poland, 2021b).

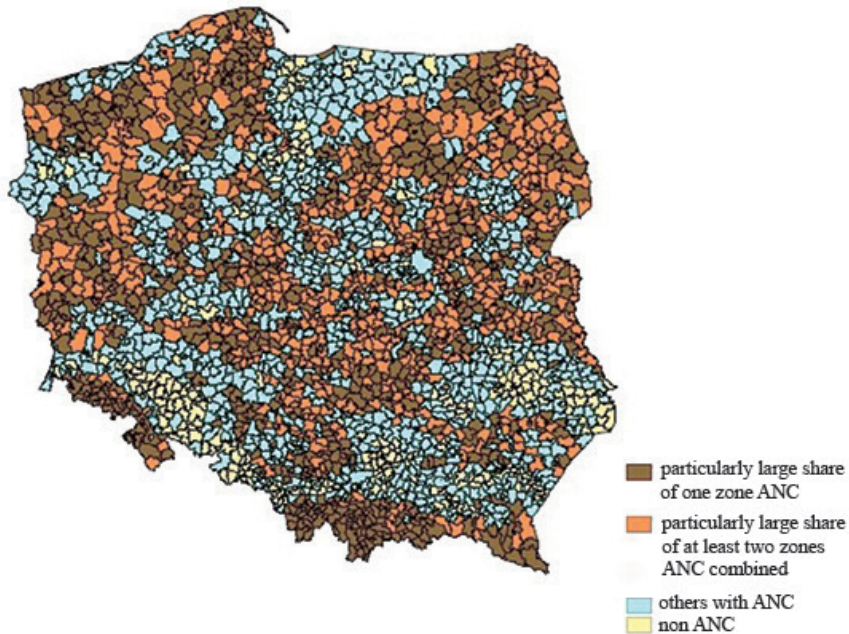


Fig. 2. Distribution of communes with a particularly high saturation of one or at least two zones of ANCs in total UAA, communes remaining with ANCs and outside ANCs in Poland

Source: own study based on the Institute of Soil Science and Plant Cultivation – State Research Institute data and the Regulation of the Ministry of Agriculture and Rural Development of 4 June 2019, Journal of Laws 2019, item 1112.

⁵ In Poland, five ANCs zones have been operating since 2019 (1) ANCs facing significant natural constraints-zone 1, (2) ANCs facing significant natural constraints-zone 2, (3) ANCs affected by specific constraints-zone 1 (4) ANCs affected by specific constraints-zone 2, (5) ANCs mountain.

Table 3. Share of communes with at least 75% share of ANC's in the total UAA in Poland

Variable	Unit of measure	Communes:		Other communes
		with particularly difficult farming conditions	with difficult farming conditions	
Share of communes with at least 75% share of ANC's in the total UAA, including:	%	98.9	83.1	4.6
• share of communes with at least 75% share of one ANC zone	%	59.3	44.4	4.4
• share of communes with at least 75% share of two or more ANC's zones in total	%	39.6	38.7	0.2

Source: own study based on data from (Institute of Soil Science and Plant Cultivation..., 2019).

In communes with unfavourable conditions, organic production also has a lot to offer, the more so as a positive factor for its development is often the presence of favourable natural conditions in the communes, resulting from the value of the landscape and its great diversity. It should be pointed out that for many farms in the areas, including those that suffer from the negative financial effects of conventional agricultural production, this may be a real chance to improve their situation as a result of selling certified organic products and received payments for management.

Based on the data in Figure 3, it can be seen that in Poland in 2019-2021 there were between 16.4 thousand and 17.8 thousand farms with organic production supported under the CAP 2014-2020, which accounted for 88.2% of the total number.⁶ In communes with difficult and particularly difficult farming conditions, it ranged from 73.2% to 74.2% of the total number of farms with supported organic production. Farms from communes with difficult farming conditions dominated among them (Figure 3).

In the period 2019-2021, the UAA area with the support of organic production accounted for 74.8% to 77.1% of the total area nationally., while in communes with difficult and particularly difficult farming conditions ranged from 74.5% to 76.8% of the total UAA with supported organic production. By far the largest UAA was found in communes with difficult farming conditions (Figures 4-5).

⁶ According to IJHARS data for 2019 and 2020, data on the total number of farms with organic production in the country for 2021 is currently not available (IJHARS 2019; 2020).

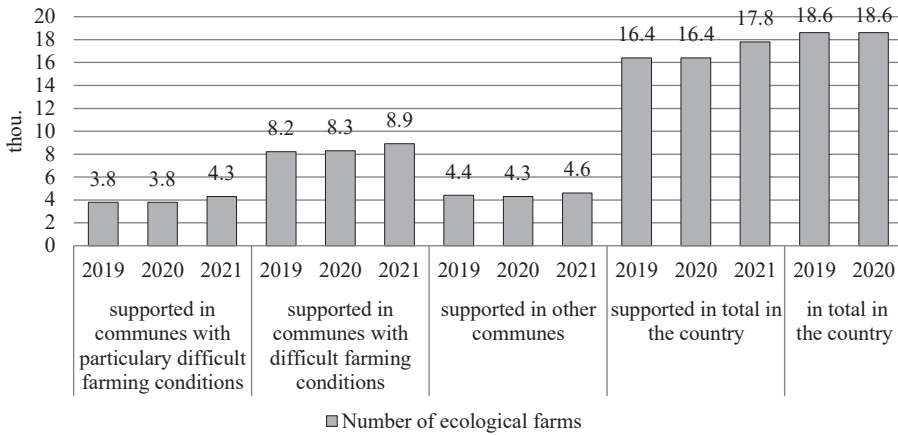


Fig. 3. Number of farms with organic production supported under the CAP 2014-2020 and in total in 2019-2021

Source: own study based on ARMA data for 2019-2021. Data generated by ARMA based on applications for organic payments for the 2019-2021 campaign. IJHARS data for 2019-2020.

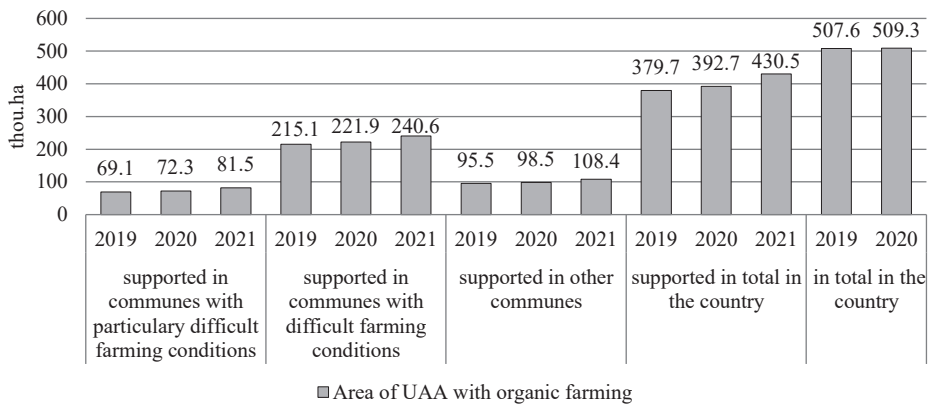


Fig. 4. UAA with organic production supported under the CAP 2014-2020, including in communes with difficult and particularly difficult farming conditions in 2019-2021

Source: own study based on ARMA data for 2019-2021. Data generated by ARMA based on applications for organic payments for the 2019-2021 campaign. IJHARS data for 2019-2020.

In communes with difficult and particularly difficult conditions for farming, there is also land, which, being exceptionally unsuitable for agriculture, may constitute a potential area for afforestation eligible for financial support under the CAP 2014-2020 (Rural Development Programme..., 2022). Yet, it is worth noting

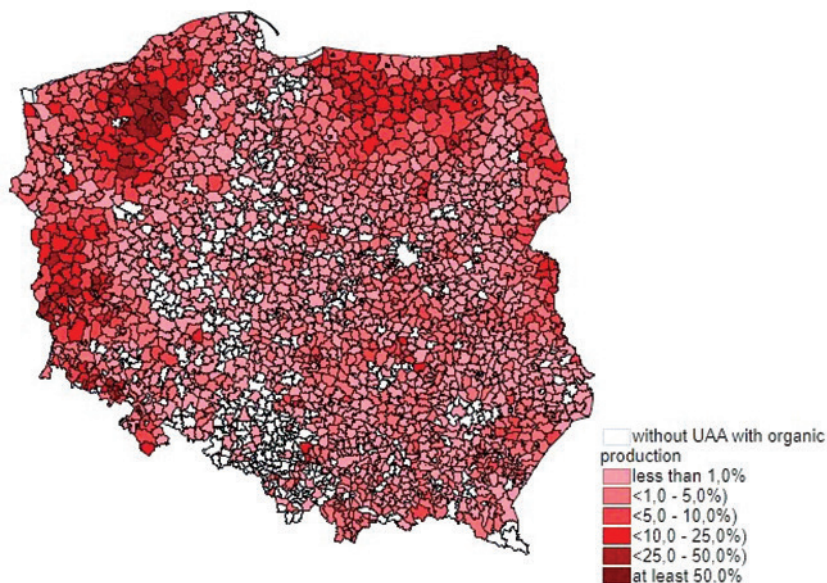


Fig. 5. Share of UAA with organic production supported under CAP 2014-2020 in the total UAA of communes in 2021

Source: own study based on ARMA data for 2021. Data generated by ARMA as based on applications for organic payments for the 2021 campaign.

that in the areas there is an exceptionally valuable component of the natural environment, contributing not only to the absorption and protection of the organic carbon in them, but also enriching biodiversity and limiting the significance of wind erosion in the neighbouring farmlands, particularly essential in low-quality soils for their better adaptation to the progressive effects of climate change in the form of drought. Under the CAP 2014-2020, 76.7 thousand hectares of forested land have been supported so far (Figure 6). Until to now, the largest afforestation area was financed under the current CAP in 2006 and 2007 and amounted to 16.1 thousand and 14.0 thousand hectares, respectively⁷. In the last years of the analysis, however, the process of limiting the afforestation area has been progressing. In 2019-2021, afforestation was carried out at 0.8, respectively; 0.5 and 0.2 thousand hectares of land. It should be assumed that the recent decline in supported afforestation is due in some farms to the improvement of their production potential and economic strength, including through their participation in the CAP measures 2014-2020,

⁷ Currently, under the CAP 2014-2020, afforestation is financed in the form of an afforestation premium, also under the CAP 2004-2006 and 2007-2013. For example, under the CAP 2004-2006, it was established that the afforestation premium to afforested land will be paid for the next 20 years from the year of afforestation (NIK, 2012).

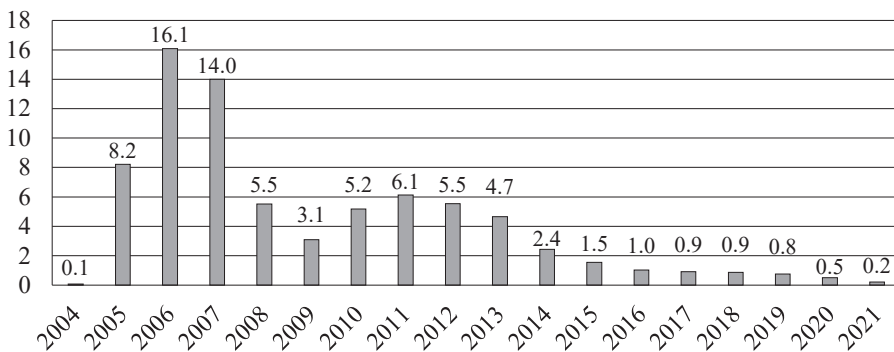


Fig. 6. Afforested UAA supported under the CAP 2014-2020 in 2004-2021

Source: own study based on ARMA data included in Annex 8 to the annual report on RDP implementation for 2014-2020 for 2021.

which, additionally, strengthened their propensity to develop. It cannot be ruled out that important reasons for this condition in other farms should also be seen in the complicated procedures for applying for funding for afforestation, as well as the criteria for access and selection of operations (Kaliszewski, 2013; Zieliński, 2021).

4. Economic situation and development opportunities for farms from communes with difficult and particularly difficult conditions for farming compared to farms from other communes

In farms from communes with difficult and particularly difficult conditions for farming, and with other important reasons for the diversification of the economic situation and development opportunities, firstly, one should look for their different quantitative and qualitative equipment with basic production factors.

UAA and its quality is one of the most important production factors in a farm. As can be seen from the numbers presented in Table 3, in farms afforesting land and with organic production in communes with farming difficulties, the average UAA was greater than in farms in other communes. The difference was the largest in the former and amounted to 31.3%. However, a different direction of this difference occurred in the farms of the other communes with farming difficulties. In these farms the average UAA was lower by 10.4% than in farms operating under favourable conditions. However, it should be noted that in farms from communes with farming difficulties, the average soil valuation index amounted to 0.5-0.6 points, and was lower than in the farms being their reference point, where it was at the level of 1.1 points (Table 4).

Table 4. Characteristics of farms from communes with difficult farming conditions in 2018-2020

Variable	Farms from communes with difficult and particularly difficult conditions for farming: from ANC's areas:			Farms from other communes
	with organic production	afforesting land	other	
Number of farms	229	70	3 580	3 331
Soil valuation index (points)	0.5	0.5	0.6	1.1
UAA area (ha)	32.2	41.5	28.3	31.6
Labour input (hours/ha)	165.7	124.3	150.8	150.7
Total costs (PLN/ha)	2 792.0	3 418.5	4 494.7	4 954.1
Direct costs (PLN/ha)	911.3	1 505.8	2 073.8	2416.7
Land productivity (PLN/ha)	2 964.8	3 392.8	5 244.0	6 031.6
Labour productivity (PLN/ha)	38 034.7	57 942.8	73 833.3	84 710.2
Income (PLN/ha)	2 065.7	1 881.6	2 197.9	2 374.5
Income less subsidies (PLN/ha)	-78.4	-89.7	474.0	1003.8
Net investment rate (%)	1.9	-43.7	4.5	10.7

Source: own study based on the Polish FADN data for 2018-2020.

Labour input is also an important factor determining the production potential of a farm. The highest labour input per 1 ha of UAA was recorded on farms with organic production from communes with farming difficulties, which proves that production in them was the most labour-intensive. On the other hand, farms afforesting land in the communes involved the lowest labour input.

In farms from communes with farming difficulties, compared to other farms, the basic production factors led to a lower production value, and an important reason for this situation was their lower production intensity measured by the value of total costs, including direct costs per 1 ha of UAA. In terms of production value per 1 ha of UAA and per 1 Annual Work Unit (AWU), the greatest disproportions to their disadvantage occurred in the case of farms with organic production and amounted to 50.8% and 55.1%, respectively. On the other hand, the smallest differences to the disadvantage of farms from communes with farming difficulties, were recorded in other farms, and amounted to 13.1% and 12.8%, respectively (Table 4).

The intensity of the conducted production and the productivity of the factors of production determine the farm's ability to generate income. Therefore, it was characteristic for farms from communes with farming difficulties that they had lower income per 1 ha of UAA than farms from other communes. The worst results in this regard were those of farms afforesting land, and farms with ecological production. For these farms, in comparison with farms from communes with favourable conditions, the income was lower by 20.8% and 13.0%, respectively. However, in

the event of depriving the farms of subsidies for operating activity, they would suffer a loss of PLN 78.4 and PLN 89.7 per 1 ha of UAA, respectively. In this respect, other farms appear better, compared to those from communes with favourable conditions, where income per 1 ha of UAA was lower by 7.4%. Importantly, in the situation of depriving the farms of operating subsidies – unlike farms afforesting land and with organic production – they would be able to generate income in the amount of PLN 474.0 per 1 ha of UAA. However, it should be noted that in farms from communes with favourable conditions, the income after clearing operating subsidies would be much higher, as it would amount to PLN 1003.8 per 1 ha of UAA.

Only in one group of farms from communes with farming difficulties, compared to farms from comparable communes, did the worse economic situation deprive them of the possibility of investing financial resources to a degree that would ensure that they at least maintained the current state of possession of fixed assets and, as a result, confirmed their stagnation in this respect. The situation concerned farms afforesting land where a negative net investment rate was found, as defined by the ratio of net investment to depreciation. Yet, the situation was reversed in this respect for farms with organic production and other farms, which, like farms from communes with favourable conditions, had a positive net investment rate. In the case of farms with organic production and others, in comparison to farms being the reference point, the scale of their development investments was clearly smaller (Table 4).

5. Conclusions

Agriculture in communes with difficult and particularly difficult farming conditions makes a significant contribution to its overall production potential in Poland, but not only in this context is its role important. It should be noted that the areas, despite their limitations, should remain viable, also due to non-economic aspects related to their great role for the protection of the natural environment and providing public goods for society. The weakness of farms in these areas, however, often results from the limited possibilities of obtaining agricultural income allowing them to ensure a satisfactory standard of living for farmers and their family members, which is an important condition for their provision of public goods at the level expected by society. One should note that, especially given their farming conditions, achieving acceptable agricultural income is not possible without the presence of appropriate rules that are able to motivate them to create the desired behaviour, including the protection of the natural environment. In the trend of the new institutional economics, they have been calls for institutions that reduce uncertainty of action and direct individuals to economic activity which brings them and society the expected benefits. Thus, in this context, the EU EGD strategy and its thematic strategies are of particular importance, as well as the CAP, which is revised every few years. There is no doubt that currently for farms from communes with limitations, support

under the CAP 2014-2020 is important, including under the ANCs, ecological and afforestation measures.

The study undertook an assessment of the functioning of farms participating in the ANCs measure, including the ecological and afforestation measures in communes with difficult and particularly difficult farming conditions, as compared to farms not participating in them in other communes. To achieve this goal, data from the Polish FADN for 2018-2020 were used. It was established that:

- Farms from communes with difficult and particularly difficult conditions for farming, as compared to farms from other communes, are characterized by a diversified direction and strength of differences in the average area of agricultural land and labour input. Farms afforesting land had the largest average UAA, and labour input per 1 ha of UAA were the highest for farms with organic production in communes with difficulties. The common feature of farms in the communes as compared to farms in other communes was the definitely worse quality of their soils, determined by the soil valuation index.
- For farms from communes with difficulties, as compared to farms from other communes, a lower intensity of agricultural production was also characteristic, which, together with the low quality of their soils, was reflected in lower productivity of production factors. They also achieved lower income per 1 ha of UAA. It should be stressed that their situation in this respect would be even worse if their income was cleared of subsidies to operating activities. Without the support, farms with organic production and afforestation from communes with limitations would suffer a loss.
- Farms from communes with farming difficulties, despite having worse management conditions, see opportunities for themselves in the future. This situation applies to farms with organic production and other communes that achieved a positive net investment rate. There is, however, a departure from the picture outlined in this way, which applies to farms taking over land in which there was a depreciation of fixed assets. It is noteworthy, however, that the scale of investments for the purchase of new fixed assets was the highest on farms from other communes.

Many premises indicate that the growing challenge faced by domestic agriculture, including those from communes with unfavourable conditions for farming, will be to meet the growing expectations of society to conduct agricultural production for the benefit of the natural environment and, as a result, provide it with public goods. As stated above, support under the CAP 2014-2020 plays an important role in this context. However, it is worth emphasising that under the CAP 2023-2027, even more ambitious activities in environmental protection are planned. It is vital that at the same time they can strengthen the development of farms implementing them, especially in communes with difficult and particularly difficult farming conditions.

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CECHY ORGANIZACYJNE I EKONOMICZNE ROLNICTWA W POLSCE Z OBSZARÓW SZCZEGÓLNIIE PREDESTYNOWANYCH DO DOSTARCZANIA DÓBR PUBLICZNYCH

Streszczenie: Celem opracowania jest ocena cech organizacyjnych i ekonomicznych rolnictwa w Polsce z obszarów (gmin) szczególnie predestynowanych do dostarczania dóbr publicznych. Delimitację tych gmin przeprowadzono na podstawie ustalonego przez Instytut Uprawy Nawożenia i Gleboznawstwa – PIB (IUNG – PIB) w Puławach wskaźnika Waloryzacji Rolniczej Przestrzeni Produkcyjnej (WRPP). Dane dotyczące potencjału produkcyjnego rolnictwa z tych gmin uzyskano z Agencji Restrukturyzacji i Modernizacji Rolnictwa (ARiMR). Ponadto wykorzystano publikowane dane Głównego Urzędu Statystycznego (GUS) oraz dane Polskiego FADN za lata 2018-2020. Stwierdzono, że gospodarstwa z tych gmin na tle gospodarstw z gmin pozostałych cechowały się m.in. mniejszymi ponoszonymi kosztami ogółem w przeliczeniu na 1 ha UR, mniejszą produktywnością czynników produkcji oraz dochodem w przeliczeniu na 1 ha UR. Istotne znaczenie miały w ich dochodach otrzymywane dopłaty operacyjne, bez których ponosiłyby nierzadko stratę.

Słowa kluczowe: rolnictwo z ograniczeniami naturalnymi lub innymi szczególnymi ograniczeniami (ANCs), rolnictwo ekologiczne, zalesianie, potencjał organizacyjny i ekonomiczny rolnictwa, dobra publiczne, Wspólna Polityka Rolna 2014-2020.