

## Article

# The Impact of RDP Measures on the Diversification of Agriculture and Rural Development—Seeking Additional Livelihoods: The Case of Poland

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**Abstract:** The paper's main aim is to assess the measures implemented within the Rural Development Program (RDP) 2007–2013 in Poland. This programme is dedicated to the diversification of business activities in rural areas and rural livelihood and, thus, the improvement of the multifunctionality of rural areas. The analysis covered two measures from Axis 3, Improvement of the quality of life in rural areas and diversification of rural economy: M311, diversification into non-agricultural activities; and M312, Establishment and development of micro-enterprise. The study and the discussion are presented from a geographical perspective and, in a broader context, take into account several conditions (natural, urban, agricultural and historical) and the spatial diversity of the allocation of European Union (EU) funds. Models of a policy of multifunctional rural development, implemented after accession to the EU, are presented. The research's spatial scope covers Poland's territory on two spatial scales: the system of regions (16 NUTS2 units) and poviats (314 LAU level 1 units). The analysis covers all the projects implemented in Poland under the two measures of Axis 3 of the RDP 2007–2013. A set of conditions was prepared for all LAU1 units, forming the background for assessing the impact of the EU funds on the development of non-agricultural activities. To determine the relationship between the RDP measures and the selected groups of conditions, a synthetic index and a correlation index are used. They are also used to determine the mutual relations between the two analyzed activities in terms of the spatial scales used. Access to the EU funds (RDP) has considerably enlarged the opportunities for accelerating agricultural modernisation and restructuration towards multifunctional development, as well as the opportunities for implementing new development and work methods in the countryside in Poland. The attractiveness of the two studied RDP measures varied across regions. The beneficiaries' activity depended on the local potential (resources), culture and tradition of the region, and size and potential of the farm. In the areas where agriculture is deeply rooted, beneficiaries were more willing to engage in ventures tapping into the resources available in their farms. Thus, they create additional livelihood of income and workplaces for household members. In turn, the beneficiaries from the areas where farms are smaller and economically weaker often undertake activities related to setting up a new business (outside farming).

**Keywords:** diversification of agriculture; multifunctional rural development; rural economic activity; rural livelihood diversification; Common Agricultural Policy; RDP



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## 1. Introduction

The future of rural areas in Central and Eastern European countries (CEECs) is an important issue due to their size, high dependence on agriculture, low farm labour productivity and profitability [1]. The process of farm diversification in Western European countries has been going on for several decades. Hence the research on finding new sources of rural livelihood is particularly established there [2–4]. Meanwhile, in Poland (similarly

to other post-socialist countries), a monofunctional economy model with the dominance of the agricultural sector existed until the end of the 1980s and the early 1990s (the beginning of the economic transformation). Since then, rural areas in CEEs have been undergoing a series of dynamic changes [5]. They include, for example, demographic changes (rapid ageing of the rural population); “excess” workforce and the abandonment of agricultural activities; land use transformation, resting mainly in the decreasing proportion of agricultural land; or processes of economic diversification [6,7]. Thus, rural spaces are increasingly designed around alternative agricultural activities and various new industrial, commercial, tourism and leisure undertakings, driving changes in rural identities and lifestyles [8–10]. The New Member States (NMS) of the European Union (EU) have already undergone substantial sector restructuring and socio-economic transformation [11]. Nevertheless, regarding the agricultural sector and rural livelihoods, many of them still display a tremendous disparity compared to the EU15. The rural economy often cannot sufficiently support rural livelihoods. Those living on (semi-) subsistence farming are especially prone to low productivity, low income and vulnerable livelihoods [12,13].

The emergence in Poland of the concept of multifunctional rural development (on the verge of economic transformation) related to modernisation and non-farm diversification was a response to the perceived difficulties arising from the development model in place [14]. A review of the literature on rural areas at that time shows numerous references to the concept of multifunctionality as the way leading to the sustainable development of rural areas [15–18]. It has become one of the basic policies in Poland designed for the development of rural areas. Examples worth following were sought in Western European countries, mainly the UK [3,19], Italy [20,21], France [22] and Germany [23]. In the conditions of the dominance of the agricultural function and most farms’ economic weakness, the primary task in stimulating rural areas was the development of non-agricultural business activities [24–27]. Polish rural areas have a considerable “excess” workforce, estimated at 800–900 thousand [28]. The results of the last agricultural censuses indicate, however, a significant increase in the share of farms conducting business activity; it rose from 5.1 per cent to 16.4 per cent (for the sake of comparison: this value exceeds 25 per cent in leading EU states, e.g., Finland, France and the UK). Even with the high dynamics much still needs to be done to achieve farm livelihood diversification. This also indicates a research gap that should aim to clarify barriers and opportunities for developing non-agricultural livelihoods.

During the early stages of transition, farms moved into the non-farm economy due to poverty, high unemployment in urban centres and a lack of on-farm opportunities, mainly induced by lack of profitability or small landholdings. Currently, it is more often determined by the opportunities that appeared after Poland acceded to the EU in 2004. At that time, Poland automatically became an executor of the Common Agricultural Policy (CAP). With the introduction of the Agenda 2000 reforms [29], one of the CAP’s objectives is to initiate changes in the economic outlook and behaviour of farmers in the EU [23]. The Rural Development Regulation (RDR) asks the EU member states to advertise and encourage rural economies’ development and diversification [4,25]. A steep rise in the attractiveness of non-agricultural activities has been observed since the accession. This is the effect of access to the EU funds and better possibilities of providing funds for ventures. This factor has become a catalyst enabling the utilization of the entrepreneurial potential hidden in the society, defined as the “entrepreneurial capital” [30].

Numerous authors conducted studies on the diversification of livelihoods of households in rural areas in CEEs, e.g., Kapsdorferova [31] in NMS; Davis and Pearce [32], Tanic and Lonc [33] in Central European countries; Bański [24] in Poland; Djordjevic-Milosevic and Milovanovic [34] in Serbia; Herslund [35], Jirgena [36] and Žakevičiūtė [37] in the Baltic States; Iorio and Corsale [38] in Romania. This article is a voice in the ongoing discussion on multifunctional development and diversification of livelihoods of households in rural areas in post-socialist countries, this time based on CAP instruments. Taking the ongoing discussion into account, it can be seen that many important research themes have

surfaced regarding the development of rural multifunctionality, especially the impact of EU policies [8].

This paper's main aim is to assess the impact the EU funds have on stimulating non-agricultural business activities in rural areas, mapping the current state of absorption of the EU funds in Poland and highlighting the selected trends in seeking additional ways of rural livelihood diversification. This was possible owing to the two measures implemented within the Rural Development Program (RDP) 2007–2013 Programme: M311, diversification into non-agricultural activities (DNAA), and M312 establishment and development of micro-enterprises (EDME). The research was to answer the following questions: To what extent have the RDP funds contributed to the development of economic activity (more non-agricultural business entities)? What has shaped beneficiaries' activity patterns (the role of the influence of local conditions on beneficiaries' activity and the level of absorption of EU funds)? In which regions were beneficiaries more attracted to the diversification of business activities, and where was this development direction of negligible importance? What were the types of activities undertaken and what were the new functions of rural areas? The empirical operationalization and analysis of the spatial distribution of EU funds supporting economic activity were carried out using a solid set of indicators and a coherent method.

## 2. Theoretical Background—Diversification of Non-Agricultural Activities in Light of Concept of Multifunctionality

Rural areas, which occupy 93 per cent of Poland's area and are inhabited by about 40 per cent (15.3 mln) of the country's total population, include the majority of natural and production resources. Despite the fact that agriculture in Poland still plays an important role [39] and forms the basis of the local economy, its economic significance is gradually waning, and the ongoing process of modernisation leads to the release of the workforce in farms [40]. This process necessitated creating new workplaces for people who drop out of agricultural activity. The panacea was to be the policy of multifunctional development. Multifunctionality is an extensive term and a sign of progress of civilization, involving a combination of various economic, social and environmental roles [41]. It can be considered in terms of spatial aspects (multifunctionality of rural areas), specific sectors (multifunctionality of agriculture), and production units (multifunctionality of a farm). It is a multi-faceted process that engages numerous entities and stakeholders [13,42,43].

Multifunctionality of rural areas means economic diversification connected to the development of companies and increased employment in non-agricultural sectors of the economy, which follows the assumptions of the post-Fordism development paradigm [44]. Rural areas with new functions give inhabitants opportunities to increase income and depart from the dominion of farming's production-oriented role [6]. Moreover, the attractiveness of rural areas as a place of residence and a place of work in the non-agricultural sector is increasing. Thus, another area of discussion appears: post-productivist transition of rural areas [45–49]. In economically stable countries (e.g., the UK, Belgium, Austria, the Netherlands), diversification constitutes a vital feature of rural economies. In contrast, in the countries undergoing economic transformation (especially Poland, Czechia, Slovakia, Hungary, the Baltic States and, to a lesser extent, Romania and Bulgaria), the number of farms with income from non-agricultural sources is much lower [31,50].

The primary sector in rural areas is agriculture, which plays an essential role as a platform for the economic diversification of rural communities [51]. It is an essential element of the multifunctionality of rural areas [52–54] and uses local natural resources [55–57]. Multifunctionality is most often considered (1) as pluriactivity in agricultural and industrial systems; (2) as the post-productivism paradigm, where agriculture loses the central position in the local economy to the benefit of other types of land utilization; (3) within the paradigm of sustainable development, where agricultural production is connected with the socio-economic development of rural areas and integrated with the entire economy [58,59]. The concept of multifunctionality rests on the capacity of agriculture to generate services satisfying various social needs [60,61], e.g., lifestyle, food security [62–64] and preserving

the rural landscape, biodiversity and cultural heritage [65–67]. Therefore, the combination of market functions (food and industry) and non-market ones (e.g., environment and spatial development, services) should be targetted [68]. Van Huylenbroeck [69] divided non-market functions into green (managing land resources), blue (managing water resources), yellow (maintaining cultural tradition and identity of rural areas) and white (providing food security and healthy food).

Irrespective of the multifunctionality of both rural areas and agriculture, a farm's multifunctionality is also distinguished. In farms with the ability to introduce changes, adjustments are made, either by introducing changes in the scope of agricultural activity or diversifying the sources of income of the farmer and his/her family as a result of taking up gainful employment outside the farm or developing non-agricultural activities [70,71]. It is conspicuous, particularly in small and medium family-run farms, where social and cultural impacts are more visible than in the case of agricultural enterprises producing on an industrial scale [72]. The term is most often connected to farmers' pluriactivity and farm diversification [73]. Pluriactivity is most often found on very small farms (below 1 ESU; European Size Unit). As opposed to pluriactivity, farm diversification is undertaken predominantly in bigger agricultural holdings.

Non-agricultural economic activity is an essential element of farms' functioning, both in Poland and throughout the European Union [74,75]. Studies conducted by various authors indicate that in Poland, it is of particular economic importance for farms characterized by small acreage and low income from agricultural production [76,77]. In this case, it is an element of farm restructuring, leading to changes in the production organization and reallocation of resources, resulting in the marginalization of agricultural activity and diversification of livelihoods. In the context of small farms in Poland, such changes should be considered desirable because their effect will be the maintenance of farms with the highest economic viability on the market, while eliminating non-profit farms. It should be noted that in the case of small family farms, the recessive processes take on a more evolutionary nature and consist in gradual withdrawal from individual activities and transfer of the possessed factors of production to other forms of economic activity [78].

Rural livelihood is a specific term and separate analytical category. According to Food and Agriculture Organization (FAO), rural livelihood is defined as the capabilities, assets and activities rural people require to live [79]. One of them is access to capital, which enables actions to improve the rural population's living conditions. Generally, to build and sustain a livelihood, people attempt to gain access to five types of capital assets, namely natural, human, socio-economic, cultural, financial capital and their governance, combining and transforming them in different ways [80,81]. Hence, sustainably improving rural people's livelihoods [82] involves, e.g., generating a favourable environment for rural and agricultural development following the specific conditions in a given area, in order to optimise the use of resources (use of comparative advantages); improve access by the poor (in Poland, such people are often owners of small, economically ineffective farms) to different forms of capital (e.g., financial, including EU funds) to enhance their livelihoods; and ensure that the interventions promote activities supporting the activation of residents and local entrepreneurship. Bernstein [83] identifies different kinds of rural livelihoods (or components of livelihood portfolios): agriculture, agriculturally linked and non-agricultural (including, e.g., industry, handicraft, trade, other services).

The declarations adopted in Cork (Ireland) [84] in 1996 and Salzburg (Austria) in 2003 contributed to strengthening the importance of multifunctionality in rural areas. The influence of multifunctionality on shaping the sustainable development of rural areas was also emphasized. Multifunctionality and sustainability are key concepts in the debate about agricultural policy reforms and rural development [85–91], and a more multifunctional approach in agriculture is a preliminary condition for sustaining agriculture [92–94]. According to the Cork Declaration, sustainable development of rural areas requires stimulating employment and creating equal opportunities. It means promoting economic efficiency while enhancing the environment's ecological integrity and the community's

cultural identity. Therefore, it is related to a multifunctional approach, which means that a wide range of aspects of rural space, such as economic, social and environmental issues, must be considered in development planning. Integration of these two concepts implies a paradigm shift from sectoral policy and agricultural support to a more integrated approach [95], taking into account the need to adapt agriculture to new conditions of development and economic diversification—especially the development of small and medium-sized non-agricultural economic entities—related to the management of natural resources and enhancing environmental functions.

Due to the underdevelopment of non-agricultural forms of management in rural areas in Poland, the economic aspect remains asymmetric in relation to the concept of sustainable development. It is due to the disproportions in agriculture between extensive labour resources and land resources, expressed in the fragmented structure of farms and incomplete use of labour resources. It translates into the fact that farmers (or more broadly, the rural population) belong to the lowest income group. Therefore, they are not able to create the conditions for sustainable rural development on their own. Meanwhile, one of the conditions of sustainable development is self-maintenance (it should be based on the diversification of income sources within farms and households). In Poland, rural areas have been underinvested for a long time; therefore, EU funds play a significant role in stimulating local economic development. They act as an accelerator of development impulses. In light of a post-productivist and multifunctional development paradigm, the diversification strategies were initially designed for small farming enterprises, rural households and their families [96,97]. Their goal was to enhance the income base, generate employment, compensate for decreasing revenues acquired from traditional agriculture and enable the effective utilisation of farm resources [19]. Today, most households follow a livelihood diversification (and combining) strategy using opportunities related to the support through EU subsidies. Modern livelihoods have an economic role and influence rural areas' multifunctionality, while traditional agriculture provides ecological and food security functions [98]. Thus, deepening multifunctionality is a way of implementing the concept of permanent and sustainable development.

The non-farm rural sector has an important role to play not only in Poland but also in other CEECs [32] that entered the path of multifunctional development much later than Western European countries. The share of the population involved in non-farm activities in CEECs varies quite widely. The share of enterprises with supplementary activities is highest in regions with large-scale agriculture (15–20 per cent). In countries with scattered rural structures, the demand for additional employment is exceptionally high (e.g., Bulgaria, Poland, Romania). Creating more opportunities for non-farm work in the CEECs has become a formidable task for policymakers; however, they gained new opportunities when NMS joined the EU. Despite dynamic changes, Poland persists with a fragmented agrarian structure and weak economic standing of many farms. This has led to high employment rates in agriculture (13 people/100 ha), equal to the rates recorded in Western Europe about 30 years ago [99,100]. The share of the agricultural population in Poland is one of the highest in post-socialist countries, similarly to, e.g., Romania or Bulgaria but contrary to, e.g., Czechia, Slovakia and the Baltic States. Integration with the EU was a highly beneficial factor in implementing the multifunctionality policy, mainly on account of a developed set of CAP instruments. The best opportunities for non-agricultural activity stimulation were connected with the two RDP measures mentioned above: 'Diversification into Non-Agricultural Activities' (DNAA) and 'Establishment and Development of Micro-Enterprises' (EDME). On account of divergent assumptions of these measures, slightly different groups of beneficiaries and typology of implemented ventures, they were analysed individually and jointly to assess the general economic activity.

The former measure was used to support farms (farmers, their spouses and other members of the household). It was supposed to diversify farmers' livelihoods through the use of resources (potentially) available on the farm, creating conditions for the development of economically durable farms. As a result, it affected the search for alternative

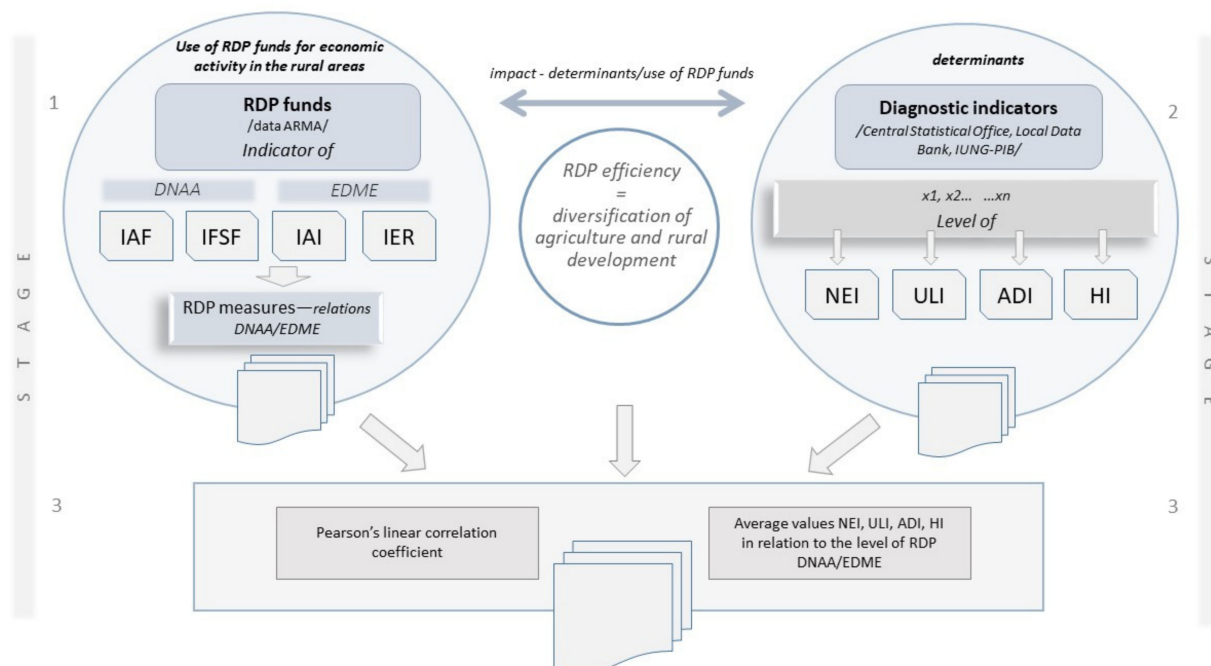


livelihoods in farms. Thereby, it is related to the concept of multifunctional development of farms and agriculture. The second measure was for enterprises registered in a rural area and people taking up business activity—both farmers and others. The support covered the establishment and development of micro-enterprises; thus, it fostered the growth of entrepreneurship and the labour market (higher employment rate in the non-agricultural sector). This kind of aid contributed to the diversification of the rural economy and, consequently, to their multifunctional development.

### 3. Methods and Data Sources

#### 3.1. Research Design

The focus of this research was the evaluation of activities carried out under the RDP 2007–2013 [101] in Poland in the field of diversification of economic activity in rural areas and diversification of rural life sources. The research covered two measures from Axis 3, Improvement of the quality of life in rural areas and diversification of rural economy—M311, diversification into non-agricultural activities (DNAA); and M312, establishment and development of micro-enterprise (EDME)—which constituted the basis for recognising the strength of the relationship between the different levels of absorption of funds from both measures and the level of conditions. The analysis was carried out from the geographical perspective (spatial differentiation in the allocation of RDP funds), taking into account several environmental, urban, agricultural and historical conditions. The implementation of the set goals and verification of research hypotheses required the development of a multi-stage research procedure (see Figure 1), completion of source materials and use of a comprehensive set of research methods.



**Figure 1.** Research procedure. Source: own elaboration RDP—Rural Development Program; ARMA—Agency for Restructuring and Modernisation of Agriculture; DNAA—Diversification into non-agricultural activities; EDME—establishment and development of micro-enterprise; IAF—the activity of farmers (farm owners); IFSF—impact on the economic situation; IAI activity of inhabitants of rural areas; IER—economic rank; NEI—natural environment quality indicator; ULI—urbanization level indicator; ADI—agricultural development level indicator; HI—historical indicator.

### 3.2. Study Area and Materials

The spatial scope of the research covered the territory of Poland (NUTS0) in the system of voivodeships/regions (16 NUTS2 units) and poviats (314 units; the third-order administrative division of the country; until 2016—according to Local Administrative Units—LAU level 1). The assumptions chosen for this paper make the research comprehensive. This is because (a) the analysis covered all the projects implemented in Poland under the two measures of Axis 3 of the RDP 2007–2013; (b) the study was conducted on two spatial scales, at the regional (NUTS2) and local (LAU1) levels; (c) for all LAU1 units, a set of conditions was prepared, which formed the background for the assessment of the impact the EU funds had on the development of non-agricultural activities.

Researching the above topic was motivated by the need to summarise the effects of the two measures (DNAA/EDME) influencing the activities of rural residents, the diversification of economic activities and the search for additional rural livelihoods. Taken together, they constituted the basis for recognising the strength of the relationship between different absorption levels and natural and non-natural conditions in individual LAU1 units. Data on the implementation of DNAA/EDME were obtained from the Agency for Restructuring and Modernisation of Agriculture (ARMA) in Warsaw (as of 20 April 2020) [102]. The obtained data related to the above two measures, including:

- the number of completed applications—39,113, which constituted 100% of the total number of implemented applications;
- the realised payments—EUR 1.02 billion (total).

The remaining data—obtained from the Local Data Bank of the Central Statistical Office [103,104] and the Institute of Soil Science and Plant Cultivation—National Research Institute (ISSPC-NRI) [105]—concerned a wide range of issues that allowed for the spatial assessment. They included the natural environment quality indicator (NEI), urbanization level indicator (ULI), agricultural development indicator (ADI) and historical indicator (HI; historical maps) (see Table 1). The research assumptions included analysis in two spatial scales:

- macroscale—comprehensive nationwide analysis;
- microscale—enabling identifying specific areas where activities aroused extreme interest and where farmers and rural inhabitants showed passivity in applying for funds for diversification of economic activity.

**Table 1.** The impact of the conditions on the diversification of EU funds absorption level.

Conditions *		Diversification into Non-Agricultural Activities (DNAA)				Establishment and Development of Micro-Enterprises (EDME)				Combined Measures	
Type	Group	Number of Applications (IAF)		EUR (IFSF)		Number of Applications (IAI)		EUR (IER)		Number of Applications per 1000 Inhabit.	EUR Per Capita
		100 Farms	1000 Inhabit.	1 Farm	Per Capita	100 Region Entities	1000 Inhabit.	1 Region Entity	Per Capita		
natural (NEI)	1	1.3	1.2	253.6	23.3	2.2	1.44	720.3	47.6	2.7	70.9
	2	1.6	1.3	297.1	24.1	1.6	1.19	540.7	39.7	2.5	63.8
	3	1.4	1.1	254.4	20.5	1.7	1.14	573.8	37.5	2.3	58.0
urban (ULI)	1	1.3	1.4	234.2	25.3	2.2	1.28	706.3	41.6	2.6	67.0
	2	1.6	1.2	303.4	22.9	1.8	1.24	606.1	41.8	2.4	64.7
	3	1.5	0.7	280.3	14.1	1.3	1.19	408.4	38.5	1.9	52.6
agricultural (ADI)	1	0.7	0.6	121.6	9.5	1.8	1.21	572.9	38.9	1.8	48.4
	2	1.3	1.2	242.4	22.2	1.9	1.31	641.0	43.8	2.5	66.0
	3	2.2	1.9	440.8	36.3	1.8	1.23	593.5	41.3	3.1	77.6
historical (HI)	1	0.7	0.5	115.8	8.5	2.0	1.30	636.8	40.9	1.8	49.4
	2	2.3	1.3	448.3	24.3	1.6	1.22	535.9	41.1	2.5	65.3
	3	1.3	1.5	237.8	28.1	2.0	1.25	662.2	41.7	2.7	69.8

\* see chapter “methodology” Source: own study based on data from Agency for Restructuring and Modernisation of Agriculture (ARMA) and and Local Data Bank of the Central Statistical Office (LDB CSO), Warsaw.

Such an approach is advantageous, as most of the analyses related to the evaluation of the implementation of the EU funds are conducted only on a regional scale, without in-depth analysis at the local level (LAU1 units).

The primary analysis was based on the number of applications completed within the said measures' framework and the volume of funds obtained. Both elements allow assessing the scale of farmers' interest in activities aimed at diversifying the sources of income. The empirical nature of the article, to a large extent, contributes to the development of the cognitive thread in the field of the impact of the EU funds on the diversification of farmers' income sources and the development of entrepreneurship in rural areas.

The research procedure and the conditions adopted for the analysis refer to other authors studying the development of rural areas in Poland [44,73,106,107]. This tool was developed with current Polish conditions in mind. It is justified regarding the scope of the analysis adopted in this study. However, it shows a certain spatial limitation. It also shows a historical specificity (partitions and political divisions). Moreover, it refers to the level of socio-economic development, which shows greater differences, e.g., in relation to highly developed countries, where issues in rural areas are of a different type.

### 3.3. Research Methods and Construction of Diagnostic Indicators

The adopted research procedure was divided into three separate stages, as described below.

#### 3.3.1. Stage 1: Indicators of the Use of RDP Funds on Rural Economic Activity

Based on the discussion and literature review [106,108,109], the analysis uses several variables describing the determinants of the development of non-agricultural activities. The study was carried out in several stages. First, on account of a large diversity of agrarian structures and uneven distribution of farms, a number of indicators were used. The main criteria for assessing spatial differentiation were the number of farms, rural population, the number of businesses and the amount of DNAA/EDME payments. These indicators were used to assess the RDP funds' overall use for rural livelihood diversification and development of non-agricultural activities. The DNAA measure accounted for:

- (IAF): the activity of farmers (farm owners) in terms of the number of implemented investments (ratio of the number of implemented applications per 1000 inhabitants ( $\times 1$ ) and 100 agricultural holdings ( $\times 2$ ). (Due to the specificity of Poland and the strong spatial differentiation of the number and size of farms and business entities (which is influenced by, among other things, the historical past), as well as the distribution of the population, the author decided to distinguish two separate indicators (also in the second of the analyzed activities—EDME). The adoption of only one of the indicators (omitting the second) could significantly distort the results of the study and provide incorrect conclusions in the scope of the beneficiaries' activity.); and
- (IFSF): impact on the economic situation of rural areas (ratio of obtained subsidies in EUR per 1 inhabitant ( $\times 3$ ) and 1 farm ( $\times 4$ )).

The EDME measure accounted for:

- (IAI) the activity of rural population in terms of the number of implemented investments (ratio of the number of implemented applications per 1000 rural population ( $\times 5$ ) and 100 businesses in the National Business Registry REGON (includes all entities running business activity;  $\times 6$ )); and
- (IER) economic rank (ratio of obtained EU funds per 1 inhabitant of the rural area ( $\times 7$ ) and 1 business entity ( $\times 8$ )—expressed in EUR) [110,111].

In total, in the first stage, four partial indicators (IAF, IFSF, IAI, IER) were used to assess the spatial level of the use of the RDP funds.



### 3.3.2. Stage 2: Assessment Planes—Determinants of the Multidimensional Evaluation of RDP Measures Supporting Multifunctional Rural Development—Diagnostic Indicators

The aim of the second stage was the spatial delimitation of the selected determinants (NEI, ULI, ADI, HI), which should determine the scale and directions of using the RDP funds. To perform a multidimensional evaluation of RDP measures supporting multifunctional rural development, four groups of conditions were distinguished. They served as a background for the interpretation and an attempt to find and explain the cause-and-effect relationships between the level of absorption of EU funds and local conditions in individual poviats (LAU1). The following groups of conditions were distinguished. (The author realizes that the range of potential factors influencing the activity of multifunctional development and the search for new sources of income is very wide. When selecting the conditions, the author was guided, on the one hand, by the desire to draw the most complete picture (taking into account the broadest possible spectrum of factors) of the current situation, and on the other hand, it was about limiting the number of individual indicators, which are practically impossible to discuss in detail in one article; hence the selection of the methods used and the aggregation of features into four groups of conditions, which, due to their specificity, reflect the situation of Poland relatively well and comprehensively, and outline the background of the analysis. This approach is highly universal and enables its use in analyzes at various spatial scales (local, regional, national).)

(a) The natural environment quality indicator (NEI)—defined using the agricultural production area quality index (APAQI (involves the major elements of the natural environment, i.e., soil quality, agroclimate, landform and hydrographic conditions; the index qualifies the area in terms of agricultural development potential or (in the case of unfavourable conditions) its suitability for development of non-agricultural economy sectors)). The Polish average is 66 points [105]—this indicator covers the main components of the natural environment, i.e., soil quality and its usefulness, the agroclimate, topography and water conditions (soil–water relations). Poviats are divided into groups characterised by (1) unfavourable natural conditions (below 60 points), (2) average natural conditions (60.0—69.9 points) and (3) favourable natural conditions (70.0 points and above); (b) Urbanization level indicator (ULI)—poviats are divided based on the urbanisation index: (1) poorly urbanised (dominance of rural population; >50 per cent), (2) moderately urbanised (predominance of urban population, poviats situated beyond metropolitan areas; 50–60 per cent), (3) strongly urbanised (poviats within metropolitan areas; >60 per cent [112] (according to the division of the Local Data Bank of the Central Statistical Office in Warsaw). Urbanization processes cause multidirectional changes in agriculture and rural areas, both positive and negative. The direction of these changes is usually consistent with Thünen's theory of agriculture's location, according to which the intensity of production decreases with increasing distance from the market—the urban centre. Besides, farms located in the city's impact zones have better access to education and advisory institutions and have better conditions for applying for EU funds.

(c) Agricultural development level indicator (ADI)—calculated as a synthetic index of the following features: average area of a farm (ha), percentage of farms run by high school or university graduates, the ratio of farms investing in fixed assets, number of combine harvesters per 100 ha of plantation, acreage under industrial crops (in percentage of the total plantation area), stocking density (LU—livestock unit, a conventional unit of the number of farm animals in a farm, which equals a cow of 500 kg according to the Polish standards.) per 100 ha of agricultural acreage) [102,110,111]. Variables were standardized and presented in the form of the composite index [113,114] according to the equation:

$$W_i = \frac{1}{n} \sum_{j=1}^n t_{ij} \quad (1)$$

$$t_{ij} = \frac{x_{ij} - \bar{x}_j}{\delta_j} \quad (2)$$

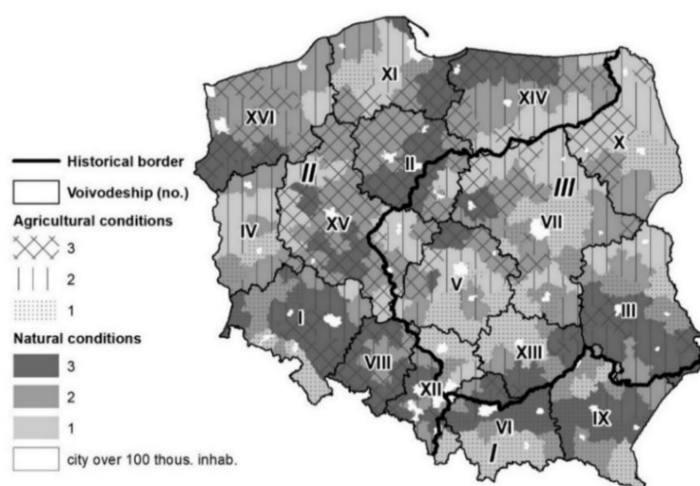
$$\delta_j = \sqrt{\frac{\sum_{i=1}^N (x_{ij} - \bar{x}_{ij})^2}{N}} \quad (3)$$

where:

$t_{ij}$ —normalized value of the diagnostic feature  $j$  in the unit  $i$ ,  
 $x_{ij}$ ,  $t_{ij}$ —the original and standardized value of observation  $j$  in unit  $i$ ,  
 $\bar{x}_j$ —arithmetic mean of the characteristic  $j$ ,  
 $\delta_j$ —standard deviation determined from observation  $j$ ,  
 $W_i$ —mean normalized value,  
 $N$ —number of diagnostic features.

The zero values (national means) of the indicators, assuming a standard deviation threshold of  $\pm 0.5$ , were the basis for distinguishing three classes of the LAU1 units by agricultural development level: low (below  $-0.50\delta$ ), medium (from  $-0.49\delta$  to  $0.49\delta$ ) and high (above  $0.50\delta$ ) level of the phenomenon.

(d) Historical indicator (HI). (This is related to historical events that had a significant impact on the current socio-economic situation in Poland. In the period of 1772–1795, the country was partitioned by Prussia, Russia and Austria. The continuity of the Polish state was broken for as long as until 1918. In the territories under the jurisdiction of other countries, a quite different economic policy was in effect. Consequently, dissimilar economic systems and social structures were solidified, and the results thereof can be seen even today. From an economic perspective, there are noticeable, considerable differences in agrarian structures (agricultural land fragmentation and small farms in the territories that used to belong to the Austrian and Russian Partitions; large agricultural holdings and a high level of agrarian culture in the territories of the historical Prussian Partition) and differences in the socio-economic development level (low in the Russian Partition, high in the Prussian Partition). When it comes to social matters, differences in approaches are reflected, e.g., in culture and mentality: well-developed entrepreneurship in the Prussian and Austrian Partitions against a low level of education and passive attitudes in the Russian Partition.) Poviats were grouped by their historical location in a particular partition [115]: (1) Austrian, (2) Prussian and (3) Russian (Figure 2).



**Figure 2.** Spatial scope of studies and selected conditions of the development of non-agricultural activities in Poland. Sources: own study. Numbers ascribed according to the alphabetical order of voivodeships (voiv.; I–XVI): I—Dolnośląskie, II—Kujawsko-Pomorskie, III—Lubelskie, IV—Lubuskie, V—Łódzkie, VI—Małopolskie, VII—Mazowieckie, VIII—Opolskie, IX—Podkarpackie, X—Podlaskie, XI—Pomorskie, XII—Śląskie, XIII—Świętokrzyskie, XIV—Warmińsko-Mazurskie, XV—Wielkopolskie, XVI—Zachodniopomorskie. Agricultural conditions (ADI): (1) low; (2) average; (3) high. Natural conditions (NEI): (1) unfavourable; (2) average; (3) favourable. Historical Indicator (HI): I—Austrian Partition; II—Prussian Partition; III—Russian Partition.

The historical factor influences the diversification of rural areas' development, particularly the level of agricultural culture, which determines the profitability of farms. Historical conditions include the partitioners' economic policy and the delay in urbanisation caused by the two world wars. In the Polish territories incorporated into the partitioning states of Prussia, Russia and Austria-Hungary, different economic and social policies were pursued, the consequences of which are visible today, e.g., in the agrarian structure, the ability of agriculture to absorb innovation and the development of settlement and industry. The historical context also translates into several other elements, including the diversity of political views, demographic structure, social structure of the population, economic and social activity, and the generally understood level of economic development. Large land farms dominated the Prussian Partition, and a modern way of farming was introduced, which increased productivity, labour efficiency and agricultural commodity. After World War II, large-scale state farms and large individual farms were established, and after 1989, this area showed a fast pace of privatisation in agriculture. In the Russian Partition, small farms had a surplus of labour and a low level of agricultural culture, which resulted from the general economic backwardness of this tsarist state. Similarly, in the Austrian Partition, there was agrarian overpopulation resulting from the excessive fragmentation of farms. Such a strong influence of historical conditions is a specific feature of Polish agriculture and rural areas, critical from the point of view of the activity of farms in applying for EU funds. These conditions are so deep that neither the economic policy of the interwar period trying to level these differences, nor the post-war processes, nor even the changes to the economic system after 1989 (including the cohesion policy in the territorial dimension for a decade) introduced significant modifications to the discussed phenomena.

### 3.3.3. Stage 3: Assessment of RDP Measures in the Context of Conditions

The last stage was a comparative analysis of both planes, which allowed us to assess the role of individual determinants in the level of use of RDP funds, and the rank of both activities (DNAA/EDME) and their mutual relationship. In the analysis aimed at determining the strength and direction of the relationship between the RDP funds absorption indicators and the distinguished groups of conditions, the linear Pearson correlation coefficient (according to the product-moment) was used [116,117] according to the equation:

$$r = \frac{\sum_i (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_i (x_i - \bar{x})^2} \sqrt{\sum_i (y_i - \bar{y})^2}} \quad (4)$$

where:

- $x$  and  $y$ —random variables with continuous distributions,
- values of random samples of the variables  $x_i$  and  $y_i$  ( $i = 1, 2, \dots, n$ ),

Mean values from the samples, that is:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i, \bar{y} = \frac{1}{n} \sum_{i=1}^n y_i \quad (5)$$

The correlation coefficient is in the range from  $(-1)$  to  $(+1)$ , where zero indicates no statistical relationship. This measure is symmetrical, which means that its value informs about the strength and direction of the feature  $x$ 's dependence on  $y$  and  $y$  on  $x$  [118]:

- positive correlation (0 to 1) means that an increase/decrease in the average values of one feature is accompanied by an increase/decrease in the average values of the other feature;
- negative correlation  $(-1$  to 0) means that an increase/decrease in the average values of one feature is accompanied by an increase/decrease in the average values of the other feature.

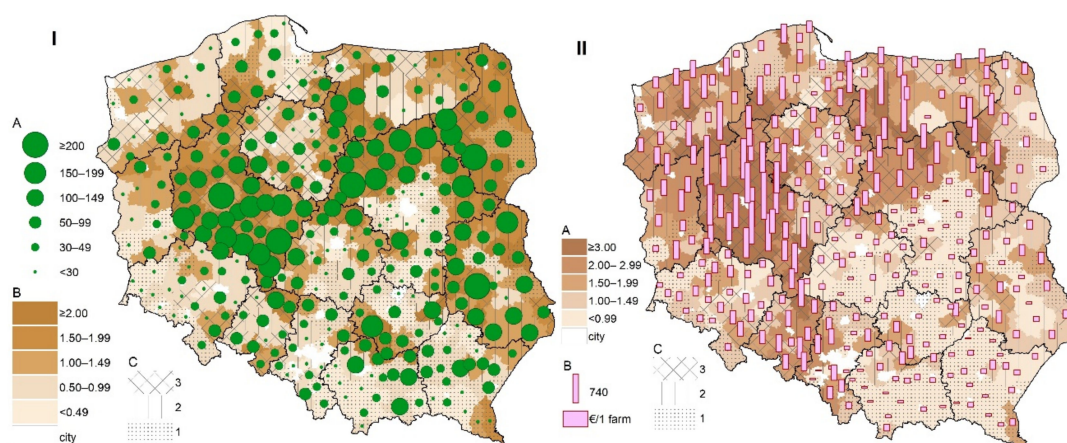
Identification of determinants paved the way for studying the impact (and its strength) of the above elements on the patterns of activity in applying for external support. It was

assumed that the less favourable the conditions (unfavourable natural conditions, low level of agricultural development and urbanisation, historical location in the Russian Partition), the more farmers should be inclined towards an active attitude in searching for additional sources of income. Therefore, the analysis includes bivariate correlations between the level of absorption of the EU funds and particular determinants.

#### 4. Results and Discussion

##### 4.1. Diversification of Activities as a Determinant of Multifunctional Development of Farms

The DNAA measure provided support to a total of 19.2 thousand farms. The projects connected to the diversification of business activities gained the funding of EUR 361.2 million in total (average EUR 18.8 thousand per project). Most of the implemented projects (77 per cent) were for launching a new non-agricultural activities, while the other 23 per cent were for the development of the existing businesses. Such a pattern of activity favours the multifunctionality of farms (and rural areas) because it leads to an increase in the number of entities offering non-agricultural services. The attractiveness of the measure turned out to be spatially diversified. The highest activity was recorded among beneficiaries from regions characterised by an essential role of agriculture (Wielkopolskie) (Figure 3), although they had different traditions (agricultural culture), agrarian conditions, and historical and economic past. Moreover, higher activity was observed in the areas with high natural assets and those already developed for tourism. Nevertheless, huge interest in developing activities based on the resources available in a farm is confirmed by the fact that it is multifunctional, which is the most important element creating new paths for rural development [52–54,119,120]. Although the multifunctional paradigm approaches are diverse, it should be emphasized that in Poland, agriculture is still the main factor in rural development.



**Figure 3.** Measure of “Diversification into non-agricultural activities”. (I) Number of applications: total (A), per 1000 inhabitants (B); (II) per 100 farms (A) and amount from 1 farm (B); C—agricultural conditions: (1) low; (2) average; (3) high; Source: own study based on data from ARMA and LDB CSO, Warsaw.

In the structure of activities undertaken, agriculture and forestry services were most numerous; they represented almost half (ca. 47 per cent) of all investments. These kinds of activities were the most popular in regions with well-developed agriculture and forestry and a favourable agrarian structure (Kujawsko-Pomorskie, Lubuskie), while insignificant interest was observed in areas with a largely fragmented farm structure (Małopolskie, Śląskie, Podkarpackie). Another group of ventures popular with farmers (ca. 20 per cent) comprised services for individuals and retail trade. This business activity was most popular with beneficiaries from central and southern parts of Poland (Łódzkie, Podkarpackie), including more urbanised areas (Śląskie, Mazowieckie), where services were the mainstream business activity. The third group of projects was related to the tourism industry

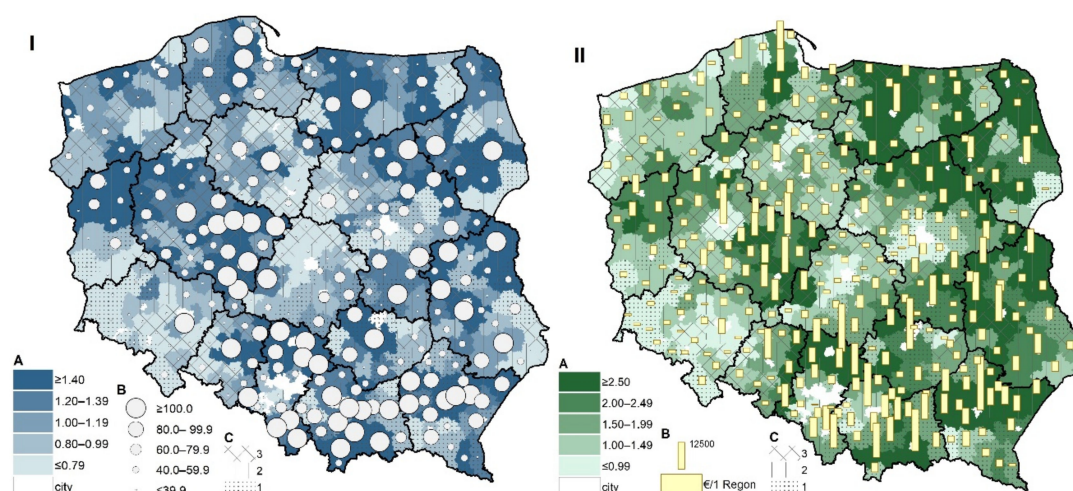
(ca. 15 per cent). These activities were most popular in the traditional leisure areas, mostly owing to their exceptional natural assets, i.e., in the Pomorskie and Zachodniopomorskie (seaside areas), Warmińsko-Mazurskie (numerous lakes), Małopolskie (mountains) and Podlaskie (Białowieża Forest). Therefore, this is confirmed by the fact that there is a strong relationship between the areas of outstanding natural beauty and the development of tourism activity [121]. The analysis demonstrated that the interest in particular kinds of business activity strongly correlated to the endogenous resources and specifics of particular regions [122]. This is an advantageous situation, as it allows for local control over the development process [123], while the spread of non-agricultural activities over rural areas proves positive perspectives for endogenous development [124,125].

What is unfavourable is the structure of the beneficiaries of the RDP funds obtained from both analyzed measures. In the majority of cases (above 80 per cent), farm owners are male. They are mostly over 40 years old with medium or low education levels. Farmers' spouses make about 15 per cent, while other household members represent 4 per cent. In addition, Poland has a low level of education among farmers. This factor is a substantial constraint to labour mobility and creates concerns about the competitiveness and viability of rural Poland within the EU [126]. Meanwhile, when discussing factors stimulating multifunctional development of agriculture and rural areas, authors most often point to the importance of the socio-demographic characteristics of farm managers: sex (the higher the percentage of women, the more diversified the non-agricultural activities) [127]; age (the younger the farm manager, the more new and innovative solutions) [128]; education (the more comprehensive the education, the more creative ventures) [129] and knowledge [130]. Moreover, other factors are also important, namely social climate and attitude to entrepreneurship [131], encouraging children to settle down in rural areas and finding workplaces on the farm for them, farm characteristics (size, equipment, agricultural production) and holding's geographical location (diverse natural environment, cultural and economic conditions). Farmers active in the regions valued for their natural assets, in the vicinity of urbanised zones and with a well-established infrastructure, enjoy greater chances of success in multifunctional development [72].

#### *4.2. Development of Micro-Enterprises as a Determinant of Multifunctional Rural Development*

Other measures affecting diversification of economic functions (EDME) are related to the existing or new micro-entrepreneurs employing fewer than 10 people and having a turnover of no more than EUR 2 mln. Development of companies in rural areas is a huge challenge for farmers themselves, particularly when it comes to changing qualifications and acquiring business skills [132]. Despite the real difficulties, 19.9 thousand beneficiaries took advantage of EU funds (Figure 4). In this measure, the total value of implemented projects was almost twice higher (EUR 659.1 million), which translated into a remarkably higher average value of subsidies to investments (EUR 33.1 thousand).





**Figure 4.** Measure of “Establishment and development of micro-enterprises”. (I) Number of applications (See Table 1): inhabitants (A), total (A); (II) per 100 Region entities (A) and amount from 1 Region entity (B); C—agricultural conditions: (1) low; (2) average; (3) high; Source: own study based on data from ARMA and LDB CSO, Warsaw.

In terms of the activity undertaken, two-thirds of the implemented projects concerned services for individuals, construction or installation works and services, and services for agriculture and forestry. A detailed analysis allowed for the identification of the most popular activities undertaken: 12 per cent of the projects were dedicated to preparing for construction works, 8 per cent for services supporting plant production, 6 per cent for services connected with running a restaurant and other places from the catering industry and 5 per cent were for car fixing services. Moreover, among other attractive activities, there were also hotels and tourist accommodation, construction works, commerce, sawmilling and landscape service activities. The study results indicate that the structure of additional rural livelihoods in Poland is more diversified and differs from other CEECs. This is due to, among other things, the country’s size and a more diverse economy. For example, in Hungary, farmers most often undertake activities in broadly understood trade (nearly 50 per cent); in Czechia, construction (26 per cent) prevails; in Slovenia, services for agriculture get over 40 per cent; and in Romania and Latvia, other types of activity prevail [31,32,133].

Nearly half (45 per cent) of the EDM beneficiaries created 1–2 workplaces, while 37 per cent created at least three workplaces. The above data show that diversification of agricultural farm activities is an essential source of employment, especially in processing, services and agritourism [134]. This especially applies to small, economically ineffective farms (less than 10 ha of UAA; Utilised Agricultural Area), affecting the livelihoods of the farm owner and his/her family. A similar situation is also found in other NMS, especially those more developed [135].

There was a higher level of entrepreneurship in eastern Poland (Podlaskie, Lubelskie) and Wielkopolskie voiv. (agriculturally the strongest region in Poland). It is worth noticing that the so-called “eastern wall” is the least economically developed part of Poland. Such a pattern of beneficiaries’ activity in developing micro-enterprises is conducive to the process of convergence [136]. It is an advantageous and desirable phenomenon, partly reducing huge differences in development between the eastern and western (more developed) parts of the country.

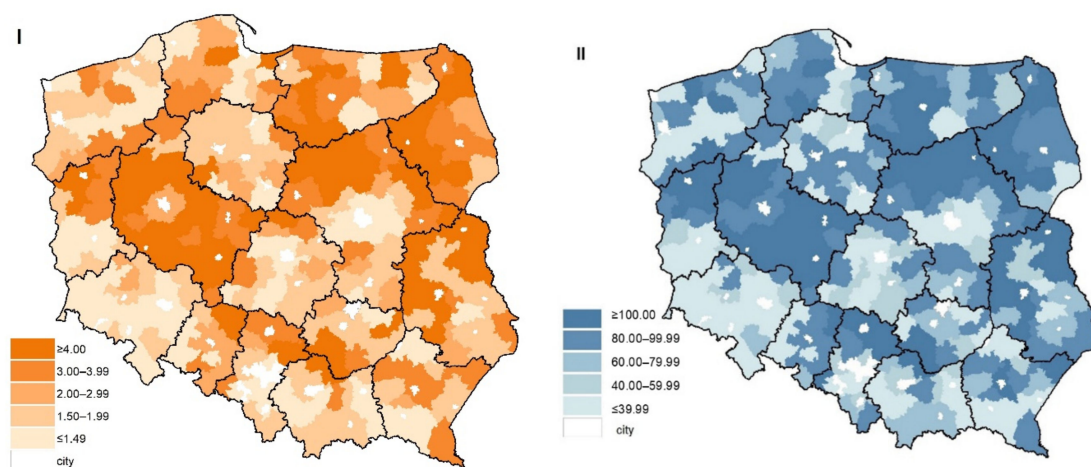
#### 4.3. Assessment of EU Measures Dedicated to the Development of Non-Agricultural Activities

Depending on the farm characteristics and geographical location, agricultural farms adopt different trajectories for diversifying their livelihoods. The European Commission Report informs that about 36 per cent of farm owners in the EU have income from additional gainful employment [74]. The percentage is higher (44 per cent) in very small farms (below 1 ESU) and quite low (10–14 per cent) in large farms (above 40 ESU). In Poland, 55 per cent

of farms have an additional source of income. However, this applies mainly to small farms (up to 1 ha of UAA), where nearly 80 per cent of farm owners get paid work. Of farms over 1 ha of UAA, 39 per cent have income from gainful employment. Similar livelihood diversification patterns are observed in the Baltic States, where a mixed strategy combining wage income and farm activities was widely used [37]. Another form of raising income of a farm is diversification. Income from a business activity is obtained by 16.4 per cent of farms. As opposed to pluriactivity, farm diversification is undertaken predominantly in larger agricultural holdings, because these entities have gathered large production resources that cannot be fully utilised for agricultural activity only. In the EU, about 12 per cent of farms diversified their activities, whereby the highest percentage was in Finland (29 per cent), France (25 per cent) and the UK (24 per cent). The most common forms of non-agricultural activities include processing of agricultural products (Portugal, Italy, Romania, Hungary), tourist services (the UK, Austria, Belgium), production and contracted services (Bulgaria, Finland, Greece) [97,137].

The analysis of the kind of activity undertaken shows that projects devoted to agriculture and forestry services prevailed. In large agricultural holdings (above 20 ha of UAA), this kind of activity was taken up by almost 70 per cent of beneficiaries, whereas, on small farms, it was 35 per cent. It is different, though, regarding commercial activity, which turned out to be the most attractive activity among small farm owners, contrary to large farms, where interest in such projects was low. Thus, the characteristics of a farm (size, ownership) and the existing agricultural production affect the trends and activity opportunities [89].

The comprehensive impact assessment of the EU fund measures focusing on the multifunctional development of rural areas and agriculture was based on both instruments' total value. Together, they enabled the implementation of over 39.1 thousand projects exceeding EUR 1 billion (Figure 5). Such a big pool of funds is unprecedented in the history of Polish rural development policymaking. On the one hand, they defined economic activation conditions; on the other hand, they acted as an accelerator in the rural development policy. Thanks to the EU funds, activation and entrepreneurship of the rural population are growing steadily. What deserves emphasis is the fact that this development is most often based on the endogenous (local) potential. Thus, the EU funds constitute a kind of neo-endogenous instrument for rural development [138,139] in Poland, facilitating the utilisation of the endogenous resources and establishment of local development strategies [140,141].



**Figure 5.** Number of applications implemented under both measures per 1000 inhabitants (I) and amount (EUR) from both activities per 1 inhabitant (II). Source: own study based on data from ARMA and LDB CSO, Warsaw.

The relation between the number of ventures and the amount of funds obtained from both measures points to important differences in their territorial distribution. The ratio of the number of implemented projects devoted to diversification of activities in farms per project devoted to the development of micro-enterprises (national average = 0.96) was 1.83 in Podlaskie voiv., 1.53 in Wielkopolskie voiv. and 1.25 in Kujawsko-Pomorskie voiv. (see Appendix A). In the process of multifunctional development, the trend towards diversification of farmers' income sources was more important, as it turns out, in the traditionally agricultural regions, i.e., with the well-developed agricultural sector, far-reaching traditions and developed agrarian conditions. Thus, it is conducive to the multifunctional development of agriculture.

The opposite trend, i.e., to a larger extent devoted to the establishment of micro-enterprises, was noticed in southern regions: in Śląskie voiv., where the ratio of the number of projects dedicated to the diversification to the number of projects dedicated to micro-enterprises, it was 0.40; in Małopolskie voiv., it was 0.46; and in Podkarpackie voiv., it was 0.47 (see Appendix A). These are the regions with economically poor farms, large agrarian fragmentation and structure, and a high ratio of the agricultural population. Having no opportunity to find extra rural livelihoods based on the resources available on their farm, these people more often decide to set up a separate business. Thus, they contribute to the development of new functions in rural areas and the creation of workplaces outside of agriculture.

The level of interest in and relations between these two measures clearly reflect socio-economic structures in particular regions. In the areas where agriculture is deeply rooted and constitutes a strong sector of the economy, beneficiaries are more willing to engage in ventures tapping into the resources available in their farms. Thus, they create additional sources of income and workplaces for household members. In turn, beneficiaries from the areas where farms are smaller and economically weaker more often undertake activities related to running their own business (outside the farm). However, both of these trends play a significant role in diversifying economic functions and seeking additional livelihoods. The results of other studies confirm that the spatial location of rural households determines the type and number of income sources, combinations of livelihoods and diversification strategies [96].

#### 4.4. Development of Non-Agricultural Activities against Conditions

The development of multifunctionality on a farm is highly affected by its location and geographical, environmental, social, institutional, cultural and economic conditions. Farmers active in the regions valued for their natural assets, in the vicinity of urbanised zones and with a well-established institutional infrastructure, enjoy a greater chance of success in multifunctional development [72,88,89]. Therefore, for assessment purposes, it was important to analyse the impact that specific conditions exert on the level of EU funds absorption (Table 1).

In the case of the natural and urban conditions, it was confirmed that the more favourable the conditions, the higher activity in applying for EU funds. This was confirmed by the correlation index between the number of implemented ventures and I. (a) a low ( $r = 0.402$ ) and (b) high ( $r = 0.711$ ) level of natural conditions (NEI); II. (a) a low ( $r = 0.271$ ) and (b) high ( $r = 0.838$ ) level of urban determinant (ULI; Table 2). Higher also were the average amounts of the EU funds acquired in areas with more favourable conditions. However, in the case of EDME, the indicators used (applications per 1000 inhabitants ( $\times 5$ ) and per 100 economic entities ( $\times 6$ )) showed a tendency to increase the activity defined in this way in terms of obtaining EU support in the areas with unfavourable natural conditions (Table 1). This should be considered a positive phenomenon, which contributes to improving the economic situation of the rural population in the conditions of limited chances for the development of highly productive agriculture. The dependencies related to the strong impact of the urbanisation determinant on the level of RDP fund absorption indicate a not too unfavourable tendency, according to which the role of the EU

funds as a factor reducing territorial disproportions in the socio-economic development of rural areas is limited. From the point of multifunctional development of rural areas and reducing disparities in the level of their economic development (especially peripheral areas located far from large urban centres), this is a negative phenomenon. In poorly urbanised areas, additionally characterised by unfavourable natural conditions, the development of non-agricultural activities and an increase in the number of micro-enterprises could constitute an alternative to low-income agricultural production and the alleviate distance from civilisation resulting from the peripheral location of these areas in relation to large urban centers. The agricultural determinant and its role is similar. The research results indicate that the higher the level of agricultural development (ADI) in a particular area, the higher the population involvement in developing non-agricultural activities and the higher the EU grants (cf. Table 1). This is confirmed by correlation between the number of implemented ventures and (a) a low ( $r = 0.318$ ) and (b) high ( $r = 0.627$ ) level of agricultural development. The situation may be interpreted in two ways. On the one hand, this kind of growth in entrepreneurship allows for independence from agricultural production and favours diversification of farmers' income sources. On the other hand, people from areas with underdeveloped agriculture are more passive, although their situation should be an extra incentive to grasp various development opportunities. However, no such steps on their part were observed. It is therefore visible that the high level of use of DNAA/EDME funds should be associated with the areas of low natural suitability for agricultural production (NEI), as well as with a relatively well-developed agricultural sector (ADI). Thus, this trend is a strong element of the concept of sustainable development and benefits both the environment and society.

**Table 2.** Dependencies between the selected conditions and the level of use of RDP funds.

Conditions/Coefficient	Natural (NEI)			Urban (ULI)			Agricultural (ADI)			Historical (HI)		
	Group											
	1	2	3	1	2	3	1	2	3	1	2	3
number of implemented applications	0.402	0.625	0.711	0.271	0.462	0.838	0.318	0.491	0.627	0.453	0.625	0.713
the amount of obtained subsidies	0.483	0.549	0.645	0.411	0.438	0.743	0.518	0.456	0.584	0.461	0.667	0.526

Source: own elaboration.

A separate analysis is required as far as the historical condition (HI) is concerned. The conducted analysis showed that the spatial distribution of RDP funds' utilisation was strongly influenced by the historical factor, which predominantly shapes the territorial variability of the agrarian structure in Poland, including the number and size of farms. This is indicated by the relatively high values of the correlation index in the areas formerly belonging to Prussia, which historically showed a higher level of agricultural culture. The research results indicate that the former Prussian Partition areas, which show a greater economic potential of agriculture and a more favourable agrarian structure, benefit to a greater extent from EU aid than regions from the former Russian Partition with economically weaker agriculture and a fragmented farm structure. The necessity to operate in totally different political and socio-economic systems has deeply affected the current level of regional development. It is reflected, e.g., in social attitudes, as mental barriers in the population of the historical Russian Partition are still a huge challenge for the development of entrepreneurship. All the more favourable is the fact that high involvement in undertaking non-agricultural activities was exhibited by the population of these particular areas (central and eastern Poland), but at the same time, these were less expensive projects than those from the Prussian Partition. This provides an opportunity for undermining the present divisions and for reducing the huge disparities in progress of civilisation noted in individual regions in Poland [142]. The spatial differentiation of interest in non-agricultural activities indicates a correlation between the historical factor and the implementation of individual RDP measures. This translates into slightly different directions of rural develop-



ment in individual regions in Poland. This is of particular importance in implementing the current RDP program, whose activities are much more territorially oriented than before. Thus, it more strongly refers to local conditions and development opportunities, which positively translates into RDP measures' effectiveness.

#### *4.5. Development of Non-Agricultural Activities against Theoretical Background*

In Western Europe, due to the evolutionary social and economic changes taking place, rural areas are no longer identified predominantly with agriculture. They went into many non-agricultural functions, which allowed their inhabitants to find employment in other, more effective sectors of the national economy. Meanwhile, Central and Eastern European countries (CEECs), due to the system in force in the past, did not participate in the natural process of transformations in agriculture and rural areas. Most countries in the region experienced collectivisation, rural–urban migration, and often depopulation. In still other CEECs—as exemplified by Poland—such changes did not take place, but the structure from the beginning of the 20th century was consolidated. The latter is at a great crossroads regarding how to develop the rural areas today. From the Polish point of view, while observing the trends that are similar to the processes taking place in Western European countries, special attention should be paid to the concepts of multifunctional and sustainable development that constitute the foundation of EU policy. The first concept relates to the need to create new (non-agricultural) workplaces in rural areas, which results in an increase in entrepreneurship and new sources of income for rural residents (rural livelihoods). The consequence of these changes will be increasing rural areas' attractiveness as a place to work and live. EU policies—and accompanying financial tools—provide significant support in the search for additional sources of income (rural livelihoods) and the diversification of agriculture and rural areas.

The conducted analysis and the obtained results were used to identify some policy implications. Firstly, two main directions for the allocation of DNAA funds are clearly noticeable: the majority of funds (77 per cent) concerned the start of new non-agricultural activities, while the remaining 23 per cent were directed to the development of existing enterprises. This creates a stable foundation for the development of rural entrepreneurship, and also increases the possibilities of additional sources of income for the agricultural population, which is in line with the concept of multi-functionality of rural areas. In the structure of activities, it is noted that in the areas with a favourable agrarian structure (pre-dominance of large-scale farms), activities for the economic diversification of agriculture and forestry (47 per cent) dominated. This trend strongly relates to the sector specificity and is in line with the concept of multifunctional agriculture. In areas with high urbanisation rates, services to individuals and retail were the most popular. Areas with exceptional natural values were characterised by a high share of projects related to the tourism industry. Such a business model is conducive to the diversification of agricultural income sources and refers to the concept of multifunctionality of farms.

Secondly, the diversification of farm activities is an important source of employment, especially in the field of processing, services and agritourism, mainly for small farms (less than 10 ha) with poor economic conditions. From the funds obtained from the EDME measure, 45 per cent of the beneficiaries created one or two work places, and 37 per cent of the beneficiaries created at least three. Thus, it improves the living conditions of the farm owner and his family.

Thirdly, the activity of rural residents in obtaining EU funds showed a strong spatial differentiation. The beneficiaries from large farms (mainly men over 40 with secondary or primary education) showed the highest activity. The spouses of farmers account for a small share (15 per cent), and the remaining members of the household only 4 per cent. Thus, the common rule that socio-demographic features (sex, age, education) clearly stimulate the multifunctional development of agriculture and rural areas was only partially confirmed.

The comprehensive impact assessment of the EU fund measures focusing on multifunctional development of rural areas and agriculture showed that farms adopt different



trajectories for diversifying their livelihoods, depending on the agrotechnical characteristics of farms and their geographic location. In the process of multifunctional development, the trend towards diversification of farms was more important in traditionally agricultural regions with a high level of economic development and good natural conditions in the area of the former Prussian Partition. On the other hand, in the former Austrian Partition, to a larger extent, the funds were devoted to the establishment of micro-enterprises, as these were the regions with economically poor farms, large agrarian fragmentation and structure, and a high ratio of the agricultural population. The implementation of the principles of multifunctional development of rural areas changes the Polish countryside, because it stimulates economic activity and limits the phenomenon of depopulation of rural areas.

## 5. Conclusions

Access to the EU funds has considerably enlarged the possibilities of accelerating the processes of modernisation towards multifunctional development of rural areas and agriculture. Before Poland's integration with the European Community, it was significantly limited due to low capacities to accumulate resources. The integration generated the opportunity to apply CAP policy, resulting in the elimination of the financial barrier and removal of some excessive workforce in agriculture. This has been reflected in the interest taken by beneficiaries in the measures dedicated to economic and livelihood diversification. The results of the study are in line with the theory of multifunctional rural development and rural livelihood diversification.

The attractiveness of the two studied measures varied widely across regions. This was due to diverse conditions and the endogenous potential of particular regions. When making decisions, beneficiaries are guided by local potential (resources) and the culture and tradition of the region where they run their activity. Another factor to be taken into account is the size and potential of the very farm where a new activity is to be started. Agricultural multifunctionality is particularly conspicuous in small and medium family-run farms, where social and cultural influences are remarkably visible.

The analysis demonstrated that interest in particular kinds of business activity strongly correlated with endogenous resources and specifics of a particular territorial unit. This is an advantageous situation, as it allows for local control over the development process, while the spread of non-agricultural activities over rural areas proves that there are positive perspectives for endogenous development. The conclusion from these results is that the EU funds facilitate convergence. Such a trend is not only beneficial from the perspective of national and regional development, but also in accordance with the aims and objectives of EU policy lines.

In spite of the large impact of the analysed measures, amendments to the policy of non-agricultural activity development in Poland should be considered. As demonstrated in the study, the measure "Diversification into non-agricultural activities" plays a small role in the vocational stimulation of farmers' family members since it is farmers themselves who constitute the vast majority of beneficiaries. Therefore, it would be crucial to introduce mechanisms aiming at better activation of farm owners' cohabitants. Furthermore, there is an issue of broader access to funds for large agricultural holdings. In fact, previous guidelines favored regions with numerous farms of a small production capacity (2–4 ESU). However, having examined the problem, it emerges that it is large agricultural holdings that make a considerable group of beneficiaries. This means that reserves of the workforce are still to be found in these agricultural holdings, and there is a need for diversification of their activities.

It is easier for farmers to take up an extra activity in a field they know. This result in the large popularity of investment in agricultural services, e.g., purchase of machinery and equipment. Farmers undertaking activities within the scope of agricultural services further equip their farms with the necessary equipment and enhance the degree to which buildings and machinery are utilised by providing services for external business entities. This kind of activity is treated by some farmers as a means to modernise and upgrade the

machinery park on their farm. From the perspective of multifunctional development, it should be limited.

Regarding the concept of multifunctional development and division proposed by van Huylenbroeck [69], it should be emphasised that Polish agriculture has a large potential to develop “white” functions. This predominantly applies to the growth in the sector of healthy, organic food (a dynamic increase in the number of organic farms is noticeable). Moreover, exceptional natural values provide big opportunities to develop “green” functions, while the historical past of “yellow” functions taps into the cultural traditions and identity of Polish rural areas. Some regions should be particularly interested in the further development of rural tourism and agritourism, which naturally combine the above-mentioned groups of functions.

The long-term accumulation of unfavourable socio-economic factors in the Polish countryside necessitates the search for solutions aiming at the establishment of non-agricultural livelihoods of income. However, supporting the development of entrepreneurship and the establishment of workplaces outside agriculture requires careful selection of aid instruments. In Poland, it is currently difficult to implement programmes of economic stimulation without public help, both from the state and within the CAP. Therefore, EU funds play an important role in developing rural livelihood and entrepreneurship, and by the same token, largely contribute to the implementation of the policy of multifunctional rural development.

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## Appendix A

Table A1. Activities directed at the development of non-agricultural business activity \*.

Voivodeship (Region)	Activities Directed at the Development of Non-Agricultural Business Activity														Relation (DNAA/EDME)	
	Total		of Which													
			(a) Diversification into Non-Agricultural Activities (DNAA)						(b) Establishment and Development of Micro-Enterprises (EDME)							
	Number of Appli- cations	Amount (EUR Million)	Number of Appli- cations	Amount (EUR Million)	Number of Appli- cations per 100 Farms	Number of Appli- cations per 1000 Inhabi- tants	Amount per 1 Farm (EUR)	Amount per Capita (EUR)	Number of Appli- cations	Amount (EUR Million)	Number of Appli- cations per 100 Region Entities	Number of Appli- cations per 1000 Inhabi- tants	Amount (€) for 1 Region Entity	Amount per Capita (EUR)	Number of Appli- cations	Amount (EUR Million)
Dolnośląskie (1)	1377	36.1	654	12.9	1.19	0.69	234.3	13.7	723	23.2	0.96	0.76	309.2	24.6	0.90	0.56
Kujawsko- pomorskie (2)	1876	48.2	1043	20.1	1.62	1.17	312.8	22.7	833	28.1	1.41	0.94	474.9	31.6	1.25	0.72
Lubelskie (3)	3420	86.0	1852	33.0	1.09	1.53	195.0	27.3	1568	53.0	2.54	1.30	858.4	43.8	1.18	0.62
Lubuskie (4)	940	26.1	396	7.5	2.05	0.92	386.5	17.4	544	18.6	1.67	1.26	572.2	43.2	0.73	0.40
Łódzkie (5)	1928	47.9	1072	20.3	0.86	1.12	163.8	21.2	856	27.6	1.44	0.89	463.6	28.9	1.25	0.74
Małopolskie (6)	3037	83.3	957	15.9	0.76	0.55	125.2	9.1	2080	67.4	1.73	1.20	560.2	38.8	0.46	0.24
Mazowieckie (7)	4930	128.2	2771	55.3	1.38	1.43	275	28.5	2159	72.9	1.52	1.11	513.7	37.6	1.28	0.76
Opolskie (8)	1214	29.4	621	10.8	2.21	1.19	382.2	20.7	593	18.6	1.70	1.14	534.0	35.8	1.05	0.58
Podkarpackie (9)	2747	69.6	872	13.4	0.73	0.68	112.3	10.4	1875	56.2	2.77	1.45	831.5	43.6	0.47	0.24
Podlaskie (10)	2070	50.2	1339	26.2	1.79	2.54	349.1	49.7	731	24.0	2.71	1.39	888.4	45.5	1.83	1.09
Pomorskie (11)	1820	51.9	679	12.6	1.85	0.85	343.5	15.9	1141	39.3	1.75	1.43	603.8	49.4	0.60	0.32
Śląskie (12)	2327	67.7	667	11.3	1.49	0.63	252.6	10.7	1660	56.4	1.97	1.57	668.0	53.2	0.40	0.20
Świętokrzyskie (13)	1764	42.3	847	14.8	0.94	1.14	164.3	19.9	917	27.5	2.15	1.24	644.9	37.2	0.92	0.54
Warmińsko- mazurskie (14)	1964	52.4	989	18.6	2.39	1.54	450.0	29.0	975	33.8	2.67	1.52	924.1	52.6	1.01	0.55
Wielkopolskie (15)	6422	166.7	3882	77.9	3.27	2.35	657.1	47.1	2540	88.8	1.96	1.54	683.9	53.7	1.53	0.88
Zachodnio- pomorskie (16)	1277	34.4	559	10.7	2.11	0.90	403.7	17.1	718	23.7	1.27	1.15	417.7	37.9	0.78	0.45
Poland total	39,113	1020.3	19,200	361.2	1.43	1.20	269.5	22.6	19,913	659.1	1.82	1.25	601.9	41.3	0.96	0.55

\* Detailed indices for local scale (LAU1) are shown on the cartograms, and the table presents general aggregated data to the region level (NUTS 2) Source: own study based on data from ARMA and LDB CSO, Warsaw.

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