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Diversification of Rural Development in Poland: Considerations in the Context of Sustainable Development

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Abstract: A change in the understanding of rural policy took place in the 1980s when there was a transition from a sectoral to a territorial perception of rural areas. Rural areas are no longer identified only with agriculture. There has been a recent decentralization of rural policy to the regional and local levels, which requires the recognition of the diversity of rural areas and the changes taking place in them. Therefore, it is important to recognize the state of sustainable development and disparities at the local level so that the targeted support is appropriate. The aim of the research is to measure sustainable development, including spatial diversification. The measurement of sustainable development was carried out using synthetical measures, and measures for economic, social, and environmental domains were constructed. The Jenks method was applied to group entities into classes characterized by similar levels of development. The results of the research proved the significance of the differences in the scope of balanced development for each of the domains. The resulting spatial systems are characterized by the line of the center–periphery. The obtained research results are valuable for central and local authorities in the process of planning local and regional development.

Keywords: sustainable development; rural areas; Jenks method; local development

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1. Introduction

The discussion concerning rural areas is no longer bi-dimensional (rural/urban) because of the changes that have taken place in rural areas over the last decades [1]. First, the primary function of rural areas (agriculture) has lost its importance, expressed both in its contribution to GDP and in its relations with the labor market [2–4]. This triggered subsequent changes which consisted of shifting from a sectoral policy to a territorial orientation of rural development efforts [5,6]. As a natural consequence, a discussion started on the main financing streams for rural development, i.e., on how to switch from a scheme focused only and exclusively on agriculture to the implementation of a regional rural policy. In parallel, it became obvious that focus must be placed on a location rather than on a sector, and therefore, the challenge consists of exploring and assessing local resources of rural areas. At the same time, research findings and a review of the policies in place in OECD members proved the diversity of rural areas at both the regional and local levels [7–9]. This justifies the new requirement for a heterogeneous rural development, which is one of the components of the new development paradigm [6]. What makes the situation even more complicated is the problem of defining (or grading) rural areas, as reflected in numerous typology propositions (including in the OECD and the EU) [10,11]. The shift in approach is accompanied by a change in development management, which requires the coordination of multiple sectoral policies in order to implement investments that match the needs of

the territory concerned [12]. The last dimension of implementing the new paradigm is a partnership approach to initiating and carrying out development tasks; there is noticeable collaboration between the public, private and social (NGOs) sectors [13]. In turn, Leader is the instrument successfully implemented in rural areas [14,15].

The theory of economy does not include a dedicated rural development domain. The relevant considerations are addressed in the context of agricultural development or in that of problems affecting rural areas [16] (pp. 20–21). In Europe, interest in rural areas was sparked by them becoming part of the agricultural policy and by the dissemination of the sustainable development concept [16]. Matuszczak [17] views the current change in the paradigm as a must-do while keeping a holistic approach, which takes account of non-commercial functions of villages and rural areas, mostly those related to the delivery of public goods [17–20]. These goods include rural vitality, a category which is quite complex and difficult to define. It heavily relies on an adequate population density, which is necessary to preserve valuable, location-specific customs, traditions, and heritage [6,17]. This requires maintaining the infrastructure and providing services for the rural community as a fundamental condition for preserving the viability of rural cultures. Poland has also witnessed the empowerment of rural areas, a process particularly boosted by Poland's accession to the European Union. The impact of the integration was by far the strongest in Polish rural areas [16]. However, there still are some areas where the different types of governance are breached, mostly because of profit seeking or as a consequence of human greed. They should be covered by an institutional system that is intended to support them or to adjust the policies in place [17,21]. Of the many definitions of sustainable development, the most frequent use is of that provided in Agenda 21, which sees sustainable development as a "(country, region, urban) development process that unconditionally combines the needs of the current generation with the capacity to address the needs of future generations, and reconciles the needs of some with those of others" [22]. In another part, it defines sustainable development as a "series of changes in which the use of resources does not create a contradiction between current and future needs". Hence, the interests are aligned in both time (in a synchronic and diachronic sense) and space [23]. However, due to the difficulties in implementing it or putting in place, this concept is some-times viewed as a myth built upon wishful thinking [23]. Moreover, the process of making sustainable development a reality is even more difficult because some economists (mainly macroeconomists) consider it as a paradigm imposed from the outside rather than stemming from the economy itself [24]. Sustainable development is a process which can be put in place through the use of integrated governance, defined as a "positive target of an evolution which brings its components together on a coherent and non-contradictory basis" [25] (p. 77). Integrated governance is a benchmarking-based method of expressing the ideal development state or a specific target pattern for sustainable development. In other words, it is a benchmark for development changes which demonstrate sustainability; hence, it is the target state for the development process. Integrated governance means a coherent (non-contradictory), simultaneous creation of social, economic, and environmental governance [25]. Sustainable development is a situation in which we observe harmonious cooperation within the economic, social, and environmental systems. There is an integration of economic, social, and environmental policies within the framework of principles, objectives, and instruments of implementation. Local authorities have a key role in the process of shaping, mobilizing resources, and responding to problems in the process of implementing sustainable development tasks.

In Poland, the economic transformation brought by the fall of the communist regime enabled systemic change and allowed the implementation of free market principles [26]. One of the first changes was the decentralization of power, which resulted in the estab-

lishment of local government units (communes). Today, they perform a number of their own tasks whose efficiency affects the socioeconomic development at the commune, region, and—ultimately—country level [27].

The principle of sustainable development is provided in the constitution of the Republic of Poland, and therefore, the development goals should be set and pursued consistently with it [28]. Poland has 2475 communes, including 2175 rural or urban–rural units. The former are entirely rural areas whereas the latter have a capital town. In Poland, rural areas represent ca. 93% of the national territory and are home to half of the population. In view of the above, the measures put in place should be given special consideration by both urban and rural residents.

However, the potential for rural development in Poland is mostly influenced by the local potential, which, in turn, results from an advantageous location (location rent, geographical rent) [29–32]. Rural areas are impacted by the local development policy and the rural policy. The financial instruments intended to support the socioeconomic development were launched after Poland joined the European Union. The two decades of experience in using EU funds testify to how important it is to explore the needs and existing differentiations for an efficient implementation of funds that takes regional heterogeneity into account [33].

Considering the diversity of rural areas and the multiplicity of conditions and mutual relationships that affect them, an attempt was made to identify the condition of and differences in sustainable development in three domains: the economic domain, the social domain, and the environmental domain of Polish rural areas. Formulated this way, the goal of the study allowed us to ask the following research questions:

1. What are the characteristics of rural areas at high levels of sustainable development for each of the following domain types: economic, social, and environmental?
2. What are the characteristics of rural areas at low levels of sustainable development for each of the following domain types: economic, social, and environmental?
3. What is the geographic distribution of rural areas at high and low levels of sustainable development?
4. Which territorial features affect these distributions?

The paper is composed of four sections: introduction; discussing the research method and the sources of data collected; presenting and discussing the findings from this study; and conclusions.

2. Materials and Methods

This study explores Polish rural areas, with focus on rural and urban–rural communes (NUTS 5). It covers 2170 rural and urban–rural communes or rural areas within their boundaries. Urban-level data (including local finance) were also taken into account in cases where the analysis could not be conducted at the rural level due to substantive grounds or unavailability of statistical data.

In this study, the measurement of sustainable development took place in 2019. The variables and timeframes were selected based on the substantive grounds and availability of source data. Whenever a longer study period was required for substantive reasons, the study used average values for the last 3 years (e.g., demographic or local finance data). The resources of the Central Statistical Office's Local Databank served as the primary source of data.

The study intended to present the levels of sustainable rural development at three levels, namely the economic domain, environmental domain, and social domain. A synthetic development metric was used for that purpose, structured as per the methodology proposed by Wysocki and Lira [34]. The selection of simple features was made according

to the formal, substantive, and statistical criteria, which are the determinants of development (Table 1). The first two criteria have a subjective dimension and are based on the assessment of experts. On the other hand, the statistical criterion is based on objective measures and is used to eliminate variables with a low degree of diagnostics. Substantive and formal criteria require that diagnostic variables capture the most important properties of the studied phenomena and be clearly defined and logically related to each other; enable mutual control through knowledge of the statistical and substantive relationships between variables; be characterized by the consistency of proportions between the number of variables representing a given aspect of the studied phenomena and their substantive meaning; and be measurable in terms of the possibility of the numerical expression of the level. The features were complete and easily accessible in terms of information and they were continuous to make it possible to compare objects in time. Statistical criteria place the following requirements on the variables: a high capacity of discrimination of objects and a lack of strong correlation with each other [35].

Table 1. Sustainable development indicators.

Domain	Indicator (Year/Years)
economic	Businesses per 1000 population (2019)
	Unemployed persons per 100 people of working age * (2019)
	Transportation expenditures per capita (2017–2019)
	Share of PIT and CIT taxes in total income (2017–2019)
	Own income per capita (PLN) (2017–2019)
	Investment expenditures in total expenditures (2017–2019)
	Funds obtained from the EU per capita (PLN) (2017–2019)
social	Expenditures on social assistance per capita (PLN) * (2017–2019)
	Expenditures on physical culture and sports per capita (PLN) (2017–2019)
	Expenditures on culture and arts per capita (PLN) (2017–2019)
	Residential area per capita (m^2) (2019)
	Voter turnout in local elections in 2018 (%)
	Share of councilors with secondary and higher education in total councilors (%) (2017–2019)
	Foundations, associations, and social organizations per 1000 residents (2019)
	Number of cultural events per 1000 residents (2017–2019)
	Relationship between children and the elderly (2017–2019)
	Population growth (per 1000 residents) (2017–2019)
	Feminization rate (20–35 years old) (2017–2019)
	Migration balance (per 1000 residents) (2017–2019)
environmental	Share of forests in total area (%) (2019)
	Share of meadows and pastures in agricultural land (%) (2019)
	Tourists using overnight accommodations per 1000 residents (2019)
	Area of wild dumps per 100 km^2 of total area (2019)
	Total household water consumption per 1 resident (m^3) (2019)
	Total waste per 1 resident (kg) (2019)
	Users of water supply system in total population (%) (2019)
	Using sewage treatment plants in total population (%) (2019)
	Share of investment expenses of department 901 in total investment expenses (%) ** (2017–2019)
	Investment expenditures of department 901 per capita (PLN) ** (2017–2019)

Own concept. * Destimulant. The remaining variables were assumed to be stimulants. ** Section 901 includes expenditure on water and sewage infrastructure.

The data were checked for their completeness, measurability, and availability. The variability coefficient and Pearson's correlation coefficient made the basis for the assessment of statistical premises. The former was to enable the elimination of the variables with low information values from the set, whereas the latter was to assess the strength of correlation

between the variables. The analysis also comprised the diagonal elements of the inverse matrix to the correlation matrix R in order to check the correctness of the condition numbers of the matrices.

The next step involved the normalization of the values of simple features (unitization is proposed), which consists of the unification of the character and making the feature values comparable by removing the nominals and unification of the lines of values. The normalization of simple features means converting them according to the following formulae:

For stimulants:

$$z_{ij} = \frac{x_{ij} - \min_i \{x_{ij}\}}{\max_i \{x_{ij}\} - \min_i \{x_{ij}\}}$$

For destiumlants:

$$z_{ij} = \frac{\max_i \{x_{ij}\} - x_{ij}}{\max_i \{x_{ij}\} - \min_i \{x_{ij}\}}$$

where x_{ij} (i = 1, 2, . . ., n; j = 1, 2, . . . m) is the value of the simple characteristic j in the commune i.

The synthetic feature values were determined by means of the non-model method, which boils down to averaging the normalized values of simple features. For each governance area, the delimitation of rural areas was based on the Jenks method [36–38] (Table 2). The results were shown on maps to illustrate the differences in the development levels across the territory. The presented spatial distributions of the obtained measures aimed to illustrate the places of the occurrence of high and low levels of equilibrium, as well as the identification of intermediate areas. The results shown in the figure allow us to see interregional and intra-regional differences. The use of this tool makes it easier to show the heterogeneity of rural areas in Poland. In addition, tables showing the variability of the level of development in individual regions were used.

Table 2. Range of synthetic measures values for sustainable rural development domains (Jenks).

Specification	Class I	Class II	Class III	Class IV
Economic domain	0.31–0.54	0.25–0.30	0.20–0.24	0.06–0.19
Social domain	0.39–0.63	0.34–0.38	0.31–0.33	0.19–0.30
Environmental domain	0.50–0.65	0.44–0.49	0.38–0.43	0.23–0.37

Source: own compilation.

3. Results

3.1. Economic Domain

In conceptualizing the economic sustainability of Polish rural areas, this study referred to prevailing trends, key needs, and areas of interaction or dependency between the economy and other components. The variables used in the study represent the maturity of multi-purpose development processes, the capacity and financial resources to drive local development (including the situation in the labor market), territorial cohesion (in transport expenditure), and the ability (competences) to access European funds. The variables shown in Table 1 were used to measure economic order and delimitate rural areas in Poland. The classification resulted in identifying four classes of sustainability for the phenomenon concerned. The analysis included describing the current condition and showing the differences in sustainability levels across the territory (Table 3, Figure 1). The relationship between the location of rural areas (voivodeships) and their categorization to a specific development class is shown in Figure 1 and Table 4.

Table 3. Average values of indicators characterizing economic domain in 2019.

Specification	Class I	Class II	Class III	Class IV	Total
Businesses per 1000 population *	208.8	147.4	121.5	106.9	133.2
Unemployed persons per 100 people of working age	2.7	3.5	4.4	7.2	4.6
Transportation expenditures per capita	749.2	439.8	355.1	275.2	395.7
Share of PIT and CIT taxes in total income	21.8	16.0	12.1	9.9	10.5
Own income per capita (PLN)	3319.4	1972.5	1542.6	1379.3	1784.3
Investment expenditures in total expenditures	25.9	19.9	15.1	10.5	16.4
Funds obtained from the EU per capita (PLN)	405.7	295.2	191.6	128.3	225.4

* Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

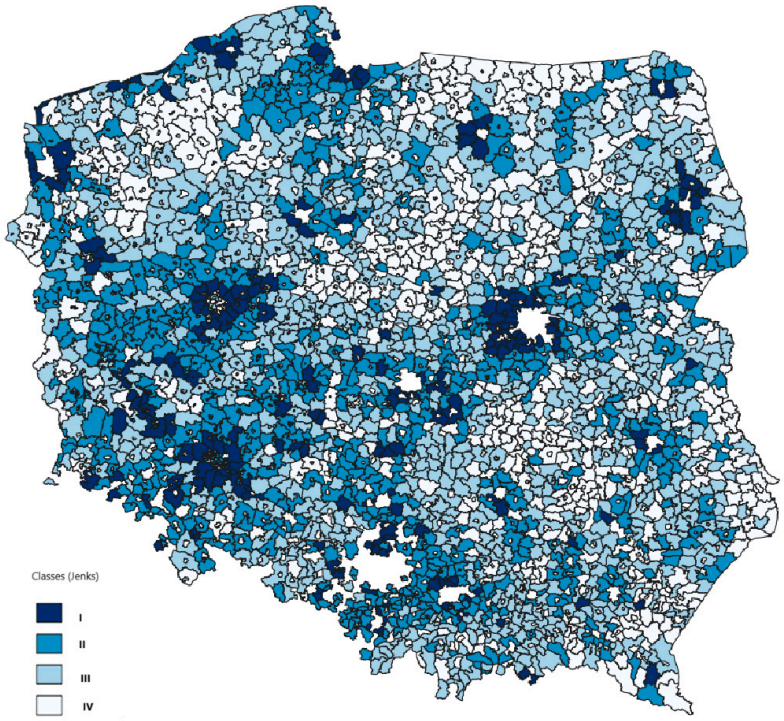

Figure 1. Level of economic domain by class in rural areas of Poland in 2019. Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

Class 1 consists of 192 communes (9%) deemed to be at a high development level of economic order. These levels were observed near the capital and regional capitals. Urban impacts on rural areas differ depending on the human and economic potential, which generates functional links between cities and their rural hinterlands. Class 1 clusters were most frequent in the impact zones of Warsaw, Poznań, Wrocław, and Krakow. Urban–rural networking translates into local labor markets whose resources are used by the cities either directly or through urban functions delivered from the outside. Access to jobs makes these areas an attractive place to live and raise a family, thus contributing to a favorable demographic situation. Also, they demonstrate extremely high levels of entrepreneurship which translate into considerable revenues being derived from personal and corporate income taxes (which represent a large share in commune-level income). To illustrate this, note that class 1 earned one-fifth of their incomes from that source (compared to only one-tenth in class 4). Also, the structure of own incomes has an impact on how funds are spent; in this class, expenditure clearly has a boosting effect on investments. The changes in place are additionally strengthened by external funds, which attain the highest levels

in class 1 units (already being in a generally advantageous financial situation). The above proves the growing heterogeneity of rural areas. The different dimensions of sustainable development are linked together in spaces where its sustainability (or lack thereof) has consequences. This is what makes it so important to invest in the transport infrastructure and maintain it in a good condition. In class 1, the related expenditure was almost twice the national average level. The results reveal that rural development tends to become more and more sustainable in the economic dimension, as reflected by the maturity of multi-purpose local development processes. These areas largely owe their sustainability to the advantages derived from their location (location rent), including territorial cohesion (expressed as spatial availability). The data observed in this study prove that the defined development goals are being pursued and that new opportunities emerge due to the local units' advantageous financial situation.

Table 4. Location of communes in regions and level of economic domain by classes in 2019.

Voivodeship	Class I	Class II	Class III	Class IV	Total
Dolnośląskie	29	55	35	14	133
Kujawsko-pomorskie	4	21	57	45	127
Lubelskie	4	42	89	58	193
Lubuskie	5	28	27	13	73
Łódzkie	16	52	67	24	159
Małopolskie	11	61	78	18	168
Mazowieckie	31	50	98	100	279
Opolskie	2	22	38	6	68
Podkarpackie	5	36	57	45	143
Podlaskie	8	21	49	27	105
Pomorskie	9	39	38	12	98
Śląskie	21	63	32	2	118
Swiętokrzyskie	2	19	45	31	97
Warmińsko-mazurskie	4	14	32	50	100
Wielkopolskie	28	77	93	9	207
Zachodniopomorskie	13	15	32	42	102
Total	192	615	867	496	2170

Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

Class 2 includes one third of units covered by this study (615, 28%), which can be viewed as being at a medium development level of economic governance. These communes are a spatial extension of the upper class and surround smaller regional towns, cities of sub-regional importance, and important access routes (especially in the western part of the country). The way class 2 units are distributed across the national territory proves the importance of the location rent in arranging the local structures of Polish rural areas. Class 2 units were at medium levels of most characteristics covered by the study. Their entrepreneurship levels are much lower, which translates into smaller revenues derived from personal and corporate taxes and smaller own incomes. Also, this is a variable that strongly differs between the classes. Members of this class undertake investments co-financed by the European Union. The good condition of local finance is related to the labor market, which demonstrates a small unemployment ratio.

In class 3, the largest class (867, 40%), the combination of variables translated into a lower average level of sustainable development. This mostly consisted of units located outside the direct impact zone of big cities and key access routes. At the regional level, most of them were found in the Mazowieckie (98), Wielkopolskie (93), and Lubelskie (89) voivodeships.

Although the metrics for this class do not deviate much from countrywide average levels, the numbers always carry either an opportunity for or a limitation to the local potential of sustainable development. As a consequence, the restrictions resulting from a unit's poor financial condition form a feedback loop inside economic governance and are reflected in the number of links to the other two areas of governance. The second dimension of sustainable development is related to the financial situation of local residents (which also translates into the amount of private and corporate income taxes). In this case, it reveals a volatile business environment and a threat to employment.

Class 4, viewed as being at a low level of economic order, mostly consists of remote communes located far away from regional towns and key access routes. These territories are not attractive to businesses, not least since they would require fast access to large outlets. Due to the local population structure, service activities are quite limited, too. Hence, personal and corporate income taxes do not contribute much to the budget. Also, the local unemployment rate is twice the national average level, which has an effect on the number of social assistance users. The condition of local finance makes it impossible to invest. The only investments in place, if any, are very limited in scale or are intended to replace worn-out assets. This is a consequence of the relatively small sizes of local budgets. In view of the above, these territories demonstrate the characteristics of remote areas prone to marginalization. In turn, the combination of unfavorable conditions makes it necessary to launch additional streams of both financial and expert support, so that the funds may be allocated in accordance with what is actually needed rather than depending on whether the financing is available or not. The latter scenario could often lead to a situation where, despite the funds being accessed, no progress is made because of the predefined (often inadequate) allocation patterns.

3.2. Social Domain

The metric of social order was the combined effect of variables related to the demographic situation, local activity, and living conditions. These areas were divided into four classes in order to assess sustainability, resulting in the spatial governance pattern shown in Figure 2. The calculations together with the previous results are presented in Table 5. The relationship between the location of rural areas (voivodeships) and their categorization to a specific development class is shown in Table 6.

Class 1 (37, 2%) is composed of units at high sustainability levels of social order, mostly located near the capital and regional capitals. Compared to other classes, they are in an excellent demographic situation, which is somehow conducive to advantageous levels of other components (while contributing to overall sustainability). These territories are an attractive place to live, as confirmed by a large inflow of new residents. Also, local demographic structures look far better than average levels. The population is provided with many cultural and sports services and can access adequate infrastructure. The activity of the local community fluctuates at above-average levels, which can be due to a specific lifestyle of people commuting between cities and rural suburbs. The features that make these territories an attractive location (in this case, to new residents) are also decisive for the direction and strength of their interrelations with social and environmental governance.

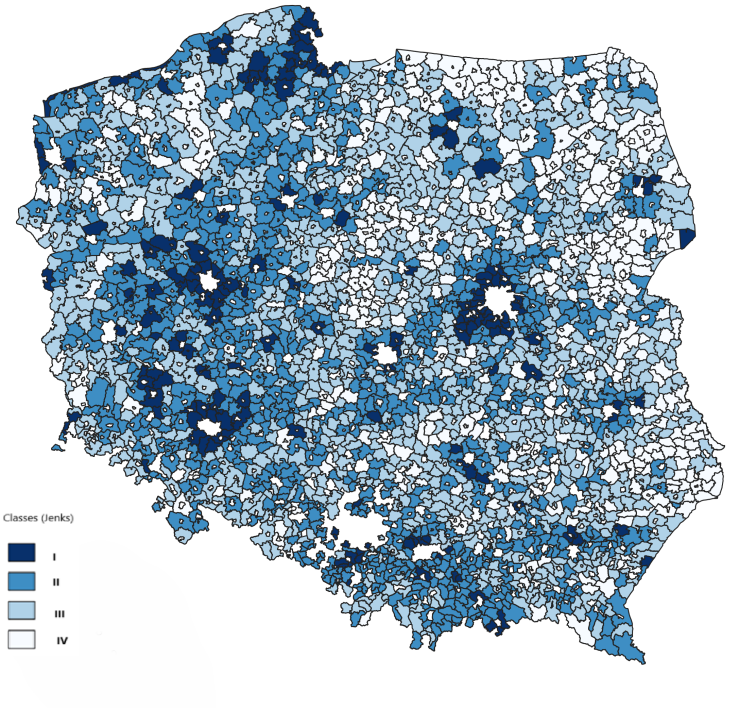

Figure 2. Level of social domain by class in rural areas of Poland in 2019. Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

Table 5. Average values of indicators characterizing social domain in 2019.

Specification	Class I	Class II	Class III	Class IV	Total
Expenditures on social assistance per capita (PLN) *	466.3	519	580.8	554.9	558.6
Expenditures on physical culture and sports per capita (PLN)	243.4	159.4	90.2	51.7	74.4
Expenditures on culture and arts per capita (PLN)	362.2	200.5	169.5	133	152.8
Residential area per capita (m^2)	49.1	32.2	28.8	30.1	30.2
Voter turnout in local elections in 2018. (%)	60.4	58.9	56.7	55.1	56
Share of councilors with secondary and higher education in total councilors (%)	87.5	86	82.4	72.2	76.5
Foundations, associations, and social organizations per 1000 residents	4	3.7	3.6	3.4	3.5
Number of cultural events per 1000 residents	19.2	9.6	8.8	5.8	7.2
Relationship between children and the elderly	122	96.2	80	63.9	72.1
Population growth (per 1000 residents)	6.1	3.4	0.8	−2.3	−0.8
Feminization rate (20–35 years old)	101.6	97.5	94.6	91.4	92.9
Migration balance (per 1000 residents)	19.6	7.4	0.5	−2.1	−0.2

* Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

Class 2 (158, 7%) is ca. four times larger and consists of units viewed as being at an upper-medium level. As these territories are mostly located in Greater Poland, Lesser Poland, and the Mazowieckie voivodeship, they represent a spatial extension of class 1. Of their distinctive features, focus should be placed on variables related to local activity, which is at a level close to that of the upper class. These territories are, by far, less attractive

to potential residents, as reflected in their population structure and migration balance. In turn, local living conditions are similar to the average levels. Hence, while no considerable expenditure on culture and sports can be expected, the population is provided with services and infrastructure. However, the relevant projects are run on a smaller scale.

Table 6. Location of communes in regions and level of social domain by classes in 2019.

Voivodeship	Class I	Class II	Class III	Class IV	Total
Dolnośląskie	4	14	44	71	133
Kujawsko-pomorskie	1	8	47	71	127
Lubelskie		2	29	162	193
Lubuskie	1	3	41	28	73
Łódzkie	1	2	29	127	159
Małopolskie		27	65	76	168
Mazowieckie	4	22	83	170	279
Opolskie	1		5	62	68
Podkarpackie	1	4	52	86	143
Podlaskie		2	9	94	105
Pomorskie	10	25	41	22	98
Śląskie		1	19	98	118
Świętokrzyskie		5	15	77	97
Warmińsko-mazurskie	2	6	44	48	100
Wielkopolskie	8	29	92	78	207
Zachodniopomorskie	4	8	37	53	102
Total	37	158	652	1323	2170

Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

Class 3 (652, 30%) includes every third commune and is considered to represent a lower-medium level. The resulting picture is that of rural areas not yet affected by adverse social phenomena. The local population is actively involved in the electoral process, organizing themselves in formal ways. The latter aspect could probably be supported by dedicated culture and sports funds, which are, however, definitely insufficient as a consequence of the condition of local finance in class 3 units.

In class 4, some of the phenomena witnessed in class 3 grow to become development barriers or problems that need to be solved. They should be covered by a long-term support scheme, such as a demographic policy. Class 4 (1323, 61%) is affected by adverse social phenomena that are currently witnessed in Polish rural areas. Most of them struggle with the aging of local communities and face a negative migration balance accompanied by a negative birth rate. The existing development anomalies are present in the demographic dimension which, in turn, has an impact on other components. This results in the emergence of a territory affected by negligence or issues that require intervention, whether locally (on a bottom-up basis), regionally, or supra-regionally (in the case of areas bordering territories between regions). Being a consequence of demographic change, the problems identified in this study spill over to other components of governance while also affecting the balance of the economic and environmental orders. The problematic territories—and the resulting changes that give them the aspect of remoteness—cannot be approached on a silo basis; the effects need to be addressed comprehensively in the context of problems at the interface

between social and economic cohesion. This is an imperative commitment to territorial fairness, which can no longer be viewed merely as a challenge.

3.3. Environmental Order

The variables related to environmental values and environmental protection infrastructure provided a basis for measuring the sustainability of the environmental order. The delimitation results, together with the average levels for each of the identified classes, are shown in Table 7. For a spatial distribution of the metric, see Figure 3. The relationship between the location of rural areas (voivodeships) and their categorization to a specific development class is shown in Table 8.

Table 7. Average values of indicators characterizing environmental domain in 2019.

Specification	Class I	Class II	Class III	Class IV	Total
Share of forests in total area (%)	40.4	29.4	22.1	16.3	26.5
Share of meadows and pastures in agricultural land (%)	29.7	22.1	18.8	15.4	21.1
Share of legally protected areas in total area (%)	61.1	36.8	21.8	10.8	31.2
Tourists using overnight accommodations per 1000 resi-dents	957.5	478.1	267.6	282	447.7
Area of wild dumps per 100 km^2 of total area	159.1	412.6	410.1	661.5	411.2
Total household water consumption per 1 resident (m^3)	126.2	29.5	33.8	35.6	31.5
Total waste per 1 resident (kg)	247.3	243.4	244.2	264.1	247.5
Users of water supply system in total population (%)	81.5	85.6	88.3	92.1	86.9
Using sewage treatment plants in total population (%)	47.5	45.3	42.1	45.2	44.5
Share of investment expenses of department 901 in total investment expenses (%)	18.2	17.7	17.1	15.2	17.2
Investment expenditures of department 901 per capita (PLN)	159.6	159.9	157	138.3	155.4

Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

Class 1 (338.16%) consists of communes considered to be at a high level of environmental sustainability. In geographic terms, a lot of them can be found near the southeast border of Poland, in the Świętokrzyskie voivodeship, in Warmia-Masuria, and along the Baltic coastline. These are attractive tourism areas that exhibit high natural values and are densely covered by forests (42%). Also, the share of legally protected areas in the total area of these communes is nearly twice the national average rate. Due to the territory's functional type, there is intense tourism traffic (957 overnights sold per 1000 population). Despite the natural environmental barriers, the water supply network coverage is 81.5%, and the connection rate to wastewater treatment is at the highest level (47%). There is also active investment in environmental protection (18%). In summary, the variables related to the condition of natural assets in these communes were the decisive criteria for them being part of the high class of environmental sustainability.

In comparison, the values recorded in the next class—which includes 725 communes (33%)—are by far lower. In this case, the variables related to natural assets fluctuate around the average level, whereas those corresponding to the connection rates to environmental protection infra-structure are similar to what was found in class 1. These communes are less attractive to tourists and form a territorial extension of class 1. Also, they can be found in river valleys and in the Lubuskie and Pomorskie voivodeships.

Class 3 is composed of territories with a well-developed agricultural function and is the largest one, with 767 communes (33%), mostly located in the Lubelskie and Kujawsko-

Pomorskie regions. They demonstrate a low share of permanent pasture in total agricultural land and a forest coverage ratio well below the average level (just as the share of protected areas in total land area). The low ratio of overnights sold testifies to their poor value as tourism destinations (and, as a consequence, to a poorly developed tourism function). Also, they have quite a large number of illegal landfill sites. Conversely, the connection rates to water supply and wastewater treatment are high. A greater consumption of water and the amount of waste can, however, be seen as worrying signs.

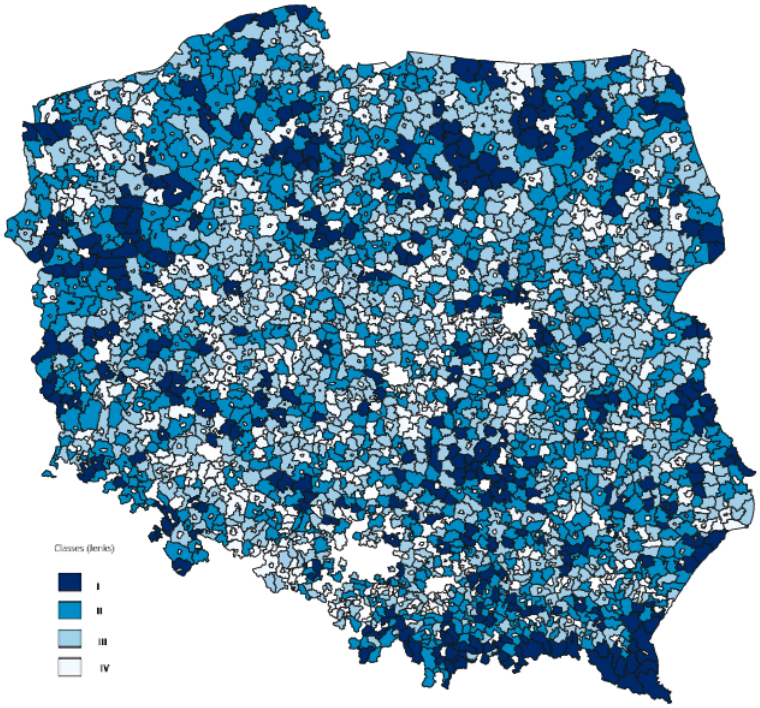

Figure 3. Level of environmental domain by class in rural areas of Poland in 2019. Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

Table 8. Location of communes in regions and level of environmental domain by classes in 2019.

Voivodeship	Class I	Class II	Class III	Class IV	Total
Dolnośląskie	22	48	40	23	133
Kujawsko-pomorskie	16	44	51	16	127
Lubelskie	26	69	72	26	193
Lubuskie	21	25	22	5	73
Łódzkie	11	39	68	41	159
Małopolskie	40	63	39	26	168
Mazowieckie	23	87	115	54	279
Opolskie	6	21	21	20	68
Podkarpackie	30	51	47	15	143
Podlaskie	12	34	41	18	105
Pomorskie	12	38	35	13	98
Śląskie	13	38	41	26	118
Świętokrzyskie	27	38	24	8	97
Warmińsko-mazurskie	27	32	32	9	100
Wielkopolskie	14	60	82	51	207

Table 8. *Cont.*

Voivodeship	Class I	Class II	Class III	Class IV	Total
Zachodniopomorskie	13	40	29	20	102
Total	313	727	759	371	2170

Source: own compilation based on https://bdl.stat.gov.pl/bdl/start, accessed on 1 September 2023.

The last class (340 communes, 16%) consists of units at low levels of environmental sustainability. They demonstrate low natural values, which are expressed in the absence of potential for developing the tourism function. Both now and in the future, large areas under quite numerous illegal landfill sites can pose a major threat to the environment. On the other hand, the availability of environmental protection infrastructure is good (remarkably, these communes have the highest coverage rate of water supply). In turn, infrastructural investments are at an average level. In the pursuit of environmental sustainability, the communes need to be approached on a case-by-case basis. Also, there are some challenges involved in raising environmental awareness in the following areas: waste management; water use; and sustainable consumption with a view to reduce waste generation. This class includes quite a large group of communes with very limited access to wastewater treatment services. The challenge consists of strengthening these territories in order to provide them with more capital to invest in environmental protection or in searching for alternative solutions.

4. Discussion and Conclusions

The purpose of this study was to measure and determine the condition of, and differences in, the sustainable development levels of Polish rural areas at the local level. This topic has not yet been addressed by other researchers. At a local scale, research projects were restricted to selected regions: such as the Green Lungs of Poland [39] and Lubelskie and Mazowieckie voivodeships [7,11,12]. Other studies were carried out at a regional level [40–43]. In turn, public statistical resources refer to the regional and local (district) modules (Central Statistical Office 2023). A review of the available metrics can be found in a paper by Borys [24], and a review of the evolution of metrics around the globe was presented [7,21,42–44]. When carrying out a study at a local level, the researchers struggle with the limited availability of (or gaps in) data, which becomes a major barrier [30,33]. The context of this study is consistent with the requirements for structuring development metrics [7,21,42,44] and with projects related to discovering and consistently monitoring change (e.g., Rural Development Monitoring [3]), Refs. [41,42,45–47] or discussing rural functional [33,48], problem [49–52], and economic success areas [53,54].

The limitations of public statistical resources also has an effect on this study (e.g., demographic data on migration is outdated because residence registration is not required in Poland). In another section, the author relied on indirect metrics. For instance, due to availability issues, councilors' education data were used instead of residents' data, which may give rise to doubts.

Another potential controversy is that the author did not attempt to structure an aggregate indicator of sustainable development. This decision was based on the author's previous research [55,56], experience, and knowledge of the topic. Also, this is consistent with expert recommendations [39,57], stating that governance types should be addressed separately for the sake of methodological validity and in order to obtain correct distributions.

Sustainable development levels differ strongly across Polish rural areas. The units differ in socioeconomic terms and can be ordered in this dimension (to a reasonable degree) by the location rent [29]. Being close to cities and access routes is of particular importance for them [58]. Therefore, the group at low levels of sustainability is composed of remote

areas located far away from the capital and regional capitals, at national borders, or at regional borders (internal remote areas). At the other end of the spectrum, there are units which demonstrate high sustainability levels, located within the impact zones of the capital and regional capitals [58]. Urban impacts on rural areas differ depending on the human and economic potential, which generates functional links between cities and their rural hinterlands. Urban–rural networking translates into the situation in local labor markets whose resources are used by the cities either directly or through urban functions delivered from outside [59]. Access to jobs makes these areas an attractive place to live and raise a family, thus contributing to a favorable demographic situation. Local entrepreneurship is at an extremely high level and translates into large amounts of own income (which clearly has a boosting effect on investments). The changes in place are additionally strengthened by external funds which attain the highest levels in this class; the above proves the growing heterogeneity of rural areas.

The different dimensions of sustainable development are linked together in spaces where its sustainability (or lack thereof) has consequences. In this context, territorial cohesion takes on new importance as a sine qua non condition for rural development. The above shows the importance of investing in transport infrastructure (and maintaining it in a good condition) and of a new (yet "old") service: public transport (defined as a brake on development [29]). Remote areas are in particular need for support. The results reveal that rural development tends to become more and more sustainable, as reflected by the maturity of multipurpose local development processes. These areas largely owe their sustainability to the advantages derived from their location, including territorial cohesion. The data observed in this study prove that the defined development goals are being pursued and that new opportunities emerge due to the local units' advantageous financial situation (which is confirmed by research results [30]).

The group at a high level of social sustainability is mostly composed of units located near the capital and regional capitals. Compared to other classes, they are in an excellent demographic situation, which is somehow conducive to advantageous levels of other components (while contributing to overall sustainability). These territories are an attractive place to live, as confirmed by a large inflow of new residents [58,60]. Also, local demographic structures look better than average levels. The population is provided with cultural and sports services or can access adequate infra-structure. The activity of the local community fluctuates around average levels, which can be due to a specific lifestyle of people commuting between cities and rural suburbs. The features that make these territories an attractive location (in this case, to new residents) are also decisive for the direction and strength of their interrelations with social and environmental domains.

At the other end of the spectrum, there are communes which have been found to be at low sustainability levels. The existing development anomalies are present in the demographic dimension which, in turn, has an impact on other components. This results in the emergence of a territory affected by negligence or issues that require intervention, whether locally (on a bottom-up basis), regionally, or supra-regionally (in the case of areas bordering territories between regions) [51,60]. Being a consequence of demographic change, the problems identified in this study spill over to other components of governance while also affecting the balance of economic and environmental governance. The problematic territories—and the resulting changes that give them the aspect of remoteness—cannot be approached on a silo basis; the effects need to be addressed comprehensively in the context of problems at the interface between social and economic cohesion. This is an imperative commitment to territorial fairness which can no longer be viewed merely as a challenge [61].

The variables related to environmental values and environmental protection infrastructure provided a basis for measuring the sustainability of environmental governance. Communes viewed as being at a high level of environmental sustainability can be found near the southeast border of Poland, in the Świętokrzyskie voivodeship, in Warmia-Masuria, and along the Baltic coastline. These are attractive tourism areas that exhibit high natural values and are densely covered by forests. Also, the share of legally protected areas in the total area of these communes is nearly twice the national average rate. Due to the territory's functional type, there is intense tourism traffic. Despite the natural environmental barriers, members of this class enjoy access to environmental protection infrastructure. Also, they undertake environmental investments. Due to the environmental protection measures and because of a large share of protected natural areas in the total land area, consideration should be given to the possible ways of supporting these communes in maintaining, strengthening, or expanding their existing infrastructure. Another issue is how to support the units (communes) which are restricted in managing their territory because of protection requirements.

Communes at low levels of environmental sustainability demonstrate low natural values, which is expressed in the absence of potential for developing the tourism function. Both now and in the future, large areas under quite numerous illegal landfill sites can pose a major threat to the environment. On the other hand, the availability of environmental protection infrastructure is good (remarkably, these communes have the highest coverage rate of water supply). In turn, infrastructural investments are at an average level. In the pursuit of environmental sustainability, the communes need to be approached on a case-by-case basis. Also, there are some challenges involved in raising environmental awareness in the following areas: waste management; water use; sustainable consumption; and reducing waste generation.

The level of sustainable development of Polish's rural areas is still strongly rooted in history. In the spatial distributions obtained, the most visible influences are the period of partitions, i.e., 123 years, when Poland was under the influence of the superpowers Prussia, Russia, and Austria-Hungary. As a result, we can still observe the system of division into Poland A (western) and B (eastern), despite the fact that these borders are blurring and new systems are being created. First of all, this trace is present in the level of saturation with infrastructure, settlement network, as well as agrarian structure, or also in people's attitude, e.g., work ethos. At the same time, the order of the center and peripheries is observed, according to which well-developed rural areas remain within the area of influence of the capital and regional cities and, on the other hand, spatially remote or marginalized areas. Spatial systems of the distribution of rural development present in Europe and in the world, for which the level of development is a function of proximity to cities or easy spatial accessibility, are also read in the obtained distribution of research results. Despite the fact that Poland joined the EU 20 years ago and the political transformation began 35 years ago, rural areas were very quickly subjected to the processes of deruralization and de-agrarianization. As a result, we are observing the progressive depopulation of peripheral or marginalized areas, which create specific areas of low sustainability (often cumulative development processes).

Poland is one of the countries undergoing political transformation; the course of the development process and its disruptions is similar in the economies of Central and Eastern Europe. The challenge to low-sustainability areas is the measures implemented through the territorial targeting of tasks and objectives at the local level (regional and rural policy). In the case of areas with low potential (low level of sustainability), the areas of impact focus on activities in the following areas: infrastructure investments (mainly transport), investments in human capital and changes in the labor market, support for

small and medium-sized enterprises (mainly the diversification of agricultural activities and the creation of non-agricultural jobs), incentives for investors, the preservation of natural and cultural heritage, the animation of local communities, and counteracting social exclusion [62]. The above-mentioned activities are among the leading ones. On the other side of the distribution, there are areas of high sustainability, which can successfully create conditions for creating areas of growth (economic success). Actions of this type are closer to the American policy towards development. The processes taking place in rural areas, in Western, Central, and Eastern Europe, as well as in developed countries, including the USA, are connected by the processes of the depopulation of rural areas (especially by young people) and the natural consequences of demographic disturbances. As a result, the obtained order of the spatial distribution of the population is a reflection of population processes, which in turn are the results of the connections with a regional city or a unique potential. The results obtained for the Polish population confirm the classification proposed by Li [63]. Therefore, it will be important for local communities to have adaptability and the ability to respond innovatively to external changes [64]. The complexity of rural areas is further reinforced by the claim that there is no single "model" for sustainable rural development [65]. A reinforcement for sustainable development activities in rural areas in Europe is Leader, which evolved from the EC initiative to the concept of Community-Led Local Development. Due to its methodological assumptions, this is a dedicated instrument for strengthening rural areas.

This study could contribute to the process of development programming at local, regional, and national levels. The comprehensive nature of the study allows us to benchmark the situation of each unit considered against other units.

Future directions of research on the sustainable development of rural areas should take into account the dynamics of change. This will allow for the assessment of changes over time, as well as the determination of the directions of policy impact or programming sustainable development. An important direction for future research on sustainable development is the study of spatial effects, e.g., using spatial autocorrelation methods. This can allow for a better understanding of intra-regional and inter-regional links. As a result, this allows for the better programming of tasks in the field of rural policy. In order to support the process of programming sustainable development, as well as to understand the relationships between individual components (orders), it is worth attempting to build an integrated model in the future. At the same time, it should be remembered that during the integration of components, a complex picture can be simplified and a highly balanced order, e.g., an economic one, can blur the strong environmental pressure present in the environmental order.

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References

1. Cattivelli, V. Where Is the City? Where Is the Countryside? Assessing the Methods for the Classification of Urban, Rural, and Intermediate Areas in Europe. *J. Rural Stud.* **2024**, *109*, 103288. [CrossRef]

2. Poczta, W. Przemiany w rolnictwie polskim w okresie transformacji ustrojowej i akcesji Polski do UE [Changes in Polish Agriculture in the Period of Political Transformation and Accession of Poland to the EU]. *Wieś Rol.* **2020**, *187*, 57–77. [CrossRef]
3. Stanny, M.; Rosner, A.; Komorowski, Ł. *Monitoring Rozwoju Obszarów Wiejskich*; Etap III; Fundacja Europejski Fundusz Rozwoju Wsi Polskiej: Miedziana, Poland, 2018.
4. Aslund, A.; Orlowski, W.M. The Polish Transition in a Comparative Perspective (Polska Transformacja Ustrojowa w Perspektywie Porównawczej). In *Proceedings of the mBank–CASE Seminar Proceedings*; CASE: Tokyo, Japan, 2014.
5. *Territorial Cohesion in Rural Europe: The Relational Turn in Rural Development*; Copus, A., de Lima, P., Eds.; Routledge: London, UK, 2014; ISBN 978-0-203-70500-1.
6. Dax, T. Shaping Rural Development Research in Europe: Acknowledging the Interrelationships between Agriculture, Regional and Ecological Development. *Stud. Agric. Econ.* **2014**, *116*, 1–8. [CrossRef]
7. OECD. *The New Rural Paradigm: Policies and Governance*; Organisation for Economic Co-operation and Development: Paris, France, 2006.
8. Ward, N.; Brown, D.L. Placing the Rural in Regional Development. *Reg. Stud.* **2009**, *43*, 1237–1244. [CrossRef]
9. Bryden, J. Rural Development Indicators and Diversity in the European Union. In Proceedings of the Conference on "Measuring Rural Diversity", Washington, DC, USA, 21–22 November 2002. Available online: https://www.semanticscholar.org/paper/Rural-Development-Indicators-and-Diversity-in-the-Bryden/68f40b9e4e0746637b32da361be81fc8fc11fe0c (accessed on 10 January 2023).
10. Stanny, M. Wieś, obszar wiejski, ludność wiejska—O problemach z ich definiowaniem. Wielowymiarowe spojrzenie. *Wieś Rol.* **2014**, *162*, 123–138. [CrossRef]
11. Nelson, K.S.; Nguyen, T.D.; Brownstein, N.A.; Garcia, D.; Walker, H.C.; Watson, J.T.; Xin, A. Definitions, Measures, and Uses of Rurality: A Systematic Review of the Empirical and Quantitative Literature. *J. Rural Stud.* **2021**, *82*, 351–365. [CrossRef]
12. van Eupen, M.; Metzger, M.J.; Pérez-Soba, M.; Verburg, P.H.; van Doorn, A.; Bunce, R.G.H. A Rural Typology for Strategic European Policies. *Land Use Policy* **2012**, *29*, 473–482. [CrossRef]
13. Cloke, P.; Marsden, T.; Mooney, P.; Ray, C. *Neo-Endogenous Rural Development in the EU*; SAGE Publications Ltd.: London, UK, 2006; pp. 278–291.
14. Biczkowski, M. LEADER as a Mechanism of Neo-Endogenous Development of Rural Areas: The Case of Poland. *Misc. Geogr. Reg. Stud. Dev.* **2020**, *24*, 232–244. [CrossRef]
15. Fałkowski, J. Political Accountability and Governance in Rural Areas: Some Evidence from the Pilot Programme LEADER+ in Poland. *J. Rural Stud.* **2013**, *32*, 70–79. [CrossRef]
16. Wilkin, J. Wielofunkcyjność Rolnictwa i Obszarów Wiejskich. In *Wyzwania Przed Obszarami Wiejskimi i Rolnictwem w Perspektywie lat 2014–2020*; Kłodziński, M., Ed.; IRWiR PAN: Warsaw, Poland, 2008; pp. 9–20.
17. Matuszczak, A. *Ewolucja Kwestii Agrarnej a Środowiskowe Dobra Publiczne*; Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej-Państwowy Instytut Badawczy: Warsaw, Poland, 2020.
18. Zegar, J.S. Przesłanki Nowej Ekonomiki Rolnictwa. *Zagadnienia Ekon. Rolnej* **2007**, *4*, 5–27.
19. Czyżewski, A.; Kułyk, P. Dobra Publiczne w Koncepcji Wielofunkcyjnego Rozwoju Rolnictwa; Ujęcie Teoretyczne i Praktyczne. *Probl. World Agric. Rol. Świat.* **2011**, *11*, 16–25. [CrossRef]
20. Baum, R.; Sleszynski, J. Nowe Funkcje Rolnictwa-Dostarczanie Dóbr Publicznych. *Rocz. Nauk. Stowarzyszenia Ekon. Rol. Agrobiznesu* **2009**, *11*, 19–23.
21. Wang, D.; Chen, C.; Findlay, C. A Review of Rural Transformation Studies: Definition, Measurement, and Indicators. *J. Integr. Agric.* **2023**, *22*, 3568–3581. [CrossRef]
22. International Development Research Centre. *The Local Agenda 21 Planning Guide: An Introduction to Sustainable Development*; IDRC: Ottawa, ON, Canada, 1996; ISBN 978-0-88936-801-9.
23. Sztumski, W. Idea Zrównoważonego Rozwoju a Możliwości Jej Urzeczywistnienia. *Probl. Ekorozwoju* **2006**, *1*, 73–76.
24. Borys, T. *Wskaźniki Zrównoważonego Rozwoju*; Ekonomia i Środowisko: Warsaw, Poland, 2005.
25. Borys, T. Zrównoważony Rozwój–Jak Rozpoznać Ład Zintegrowany. *Probl. Ekorozwoju* **2011**, *6*, 75–81.
26. Sachs, J. The Economic Transformation of Eastern Europe: The Case of Poland. *Econ. Plan.* **1992**, *25*, 5–19. [CrossRef]
27. Gorzelak, G. *Regional and Local Potential for Transformation in Poland*; Regional and Local Studies; European Institute for Regional and Local Development: Warsaw, Poland, 1998; ISBN 978-83-87722-01-2.
28. Konstytucja Rzeczypospolitej Polskiej z dnia 2 Kwietnia 1997 r. (Dz. U. Nr 78, poz. 483 z późn. zm.). Available online: https://sip.lex.pl/akty-prawne/dzu-dziennik-ustaw/konstytucja-rzeczypospolitej-polskiej-16798613 (accessed on 29 October 2024).
29. Stanny, M. *Przestrzenne Zróżnicowanie Rozwoju Obszarów Wiejskich w Polsce*; Instytut Rozwoju Wsi i Rolnictwa Polskiej Akademii Nauk: Warsaw, Poland, 2013.
30. Stanny, M.; Komorowski, Ł.; Rosner, A. The Socio-Economic Heterogeneity of Rural Areas: Towards a Rural Typology of Poland. *Energies* **2021**, *14*, 5030. [CrossRef]
31. Kopczewska, K. *Renta Geograficzna a Rozwój Społeczno-Gospodarczy*; CeDeWu: Warsaw, Poland, 2008.

32. Kachniarz, M. Bogactwo Gmin–Efekt Gospodarności Czy Renty Geograficznej? *Ekonomia* **2011**, *17*, 81–94.
33. Bański, J.; Mazur, M. Classification of Rural Areas in Poland as an Instrument of Territorial Policy. *Land Use Policy* **2016**, *54*, 1–17. [CrossRef]
34. Wysocki, F.; Lira, J. *Statystyka Opisowa*; Wydawnictwo Akademii Rolniczej im; Augusta Cieszkowskiego: Poznań, Poland, 2005.
35. Opial-Gałuszka, U. Zastosowanie Wielowymiarowej Analizy Porównawczej (WAP) Do Klasyfikacji Obiektów Przestrzennych Pod Kątem Wpływu Działalności Człowieka Na Środowisko Wodne. In *Antropogeniczne Oddziaływania i ich Wpływ na Środowisko Wodne*; Instytut Meteorologii i Gospodarki Wodnej: Warsaw, Poland, 2009.
36. Jenks, G.F. The Data Model Concept in Statistical Mapping. *Int. Yearb. Cartogr.* **1967**, *7*, 186–190.
37. North, M.A. A Method for Implementing a Statistically Significant Number of Data Classes in the Jenks Algorithm. In Proceedings of the 2009 Sixth International Conference on Fuzzy Systems and Knowledge Discovery, Tianjin, China, 14–16 August 2009; IEEE: Piscataway, NJ, USA, 2009; Volume 1, pp. 35–38.
38. Chen, J.; Yang, S.T.; Li, H.W.; Zhang, B.; Lv, J.R. Research on Geographical Environment Unit Division Based on the Method of Natural Breaks (Jenks). *Int. Arch. Photogramm. Remote Sens. Spat. Inf. Sci.* **2013**, *40*, 47–50. [CrossRef]
39. Stanny, M.; Czarnecki, A. *Zrównoważony Rozwój Obszarów Wiejskich Zielonych Płuc Polski: Próba Analizy Empirycznej*; Instytut Rozwoju Wsi i Rolnictwa Polskiej Akademii Nauk: Warsaw, Poland, 2011.
40. Adamowicz, M.; Dresler, E. Zrównoważony Rozwój Obszarów Wiejskich Na Przykładzie Wybranych Gmin Województwa Lubelskiego (Sustainable Development of Rural Areas the Case of Selected Communes of Lublin Voivodeship–in Polish). *Zesz. Nauk. Akad. Rol. We Wrocławiu* **2006**, *540*, 17–24.
41. Adamowicz, M.; Smarzewska, A. Model Oraz Mierniki Trwałego i Zrównoważonego Rozwoju Obszarów Wiejskich w Ujęciu Lokalnym. *Zesz. Nauk. SGGW Polityki Eur. Finans. Mark.* **2009**, *1*, 251–269. [CrossRef]
42. Kaufmann, P.; Stagl, S.; Zawalinska, K.; Michalek, J. Measuring Quality of Life in Rural Europe. A Review of Conceptual Foundations. *East. Eur. Countrys.* **2007**, *13*, 5–27.
43. Michalek, J.; Zarnekow, N. Application of the Rural Development Index to Analysis of Rural Regions in Poland and Slovakia. *Soc. Indic. Res.* **2012**, *105*, 1–37. [CrossRef]
44. Zawalińska, K. *Rozwój Obszarów Wiejskich: Doświadczenia Krajów Europejskich*; Instytut Rozwoju Wsi i Rolnictwa Polskiej Akademii Nauk: Warsaw, Poland, 2005.
45. Berger-Schmitt, R.; Noll, H.-H. *Conceptual Framework and Structure of a European System of Socialindicators*; ZUMA: Kamakura, Japan, 2000; Volume 9.
46. Schultink, G. Critical Environmental Indicators: Performance Indices and Assessment Models for Sustainable Rural Development Planning. *Ecol. Model.* **2000**, *130*, 47–58. [CrossRef]
47. Adamowicz, M.; Zwolińska-Ligaj, M. Koncepcja Wielofunkcyjności Jako Element Zrównoważonego Rozwoju Obszarów Wiejskich. *Zesz. Nauk. SGGW Polityki Eur. Finanse Mark.* **2009**, *2*, 11–38. [CrossRef]
48. Bański, J.; Stola, W. *Przemiany Struktury Przestrzennej i Funkcjonalnej Obszarów Wiejskich w Polsce, Studia Obszarów Wiejskich*; PAN Instytut Geografii Zagospodarowania Przestrzennego: Warsaw, Poland, 2002.
49. Stanny, M. Typologia Wiejskich Obszarów Peryferyjnych Pod Względem Anatomii Struktury Społeczno-Gospodarczej. *Wieś Rol.* **2011**, *151*, 59–75. [CrossRef] [PubMed]
50. Churski, P. *Obszary Problemowe w Polsce z Perspektywy Celów Polityki Regionalnej Unii Europejskiej*; Wyższa Szkoła Humanistyczno-Ekonomiczna we Włocławku: Warsaw, Poland, 2004.
51. Bański, J. Typy Ludnościowych Obszarów Problemowych. *Stud. Obsz. Wiej.* **2002**, *2*, 41–52.
52. Banski, J. *Obszary Problemowe w Polsce*; Biuletyn/PAN Komitet Przestrzennego Zagospodarowania Kraju: Warsaw, Poland, 2004.
53. Bański, J.; Czapiewski, K. *Identyfikacja i Ocena Czynników Sukcesu Społeczno-Gospodarczego Na Obszarach Wiejskich*; Zespół Badań Obszarów Wielskich IGiPZ PAN: Warszawa, Poland, 2009.
54. Czapiewski, K. Koncepcja Wiejskich Obszarów Sukcesu Społeczno-Gospodarczego i Ich Rozpoznanie w Województwie Mazowieckim. Studia Obszarów Wiejskich; IGiPZ PAN, Warszawa, Polska, 2010. Available online: https://rcin.org.pl/igipz/Content/647/PDF/Wa51_3554_r2010-t22_SOW.pdf (accessed on 10 January 2023).
55. Bartkowiak-Bakun, N. *Instytucjonalny Wymiar Zrównoważonego Rozwoju Obszarów Wiejskich w Polsce*; Wydanie, I., Ed.; CeDeWu: Warszawa, Poland; Krajowa Sieć Obszarów Wiejskich: Warszawa, Poland; Uniwersytet Przyrodniczy w Poznaniu: Poznań, Poland, 2023; ISBN 978-83-8102-769-4.
56. Bartkowiak-Bakun, N. *Ocena Oddziaływania Wybranych Działań PROW 2014–2020 na Zrównoważony Rozwój Obszarów Wiejskich Polski: Analiza Regionalna—II Etap Badań*; Wydanie, I., Ed.; CeDeWu: Warszawa, Poland, 2021; ISBN 978-83-8102-524-9.
57. Sadowski, A. *Zrównoważony Rozwój Gospodarstw Rolnych z Uwzgędnieniem Wpływu Wspólnej Polityki Rolnej Unii Europejskiej*; Wydawnictwo Uniwersytetu Przyrodniczego Poznań: Poznań, Poland, 2012.
58. Czapiewski, K. Location Matters–Analiza Zależności Pomiędzy Dostępnością Przestrzenną a Sukcesem Społeczno-Gospodarczym Obszarów Wiejskich Mazowsza. *Red M Wesołowska Stud. Obsz. Wiej.* **2011**, *26*, 57–73.

59. Czapiewski, K. Wyposażenie Infrastrukturalne i Potencjał Gospodarczy Obszarów Wiejskich a Pozarolnicze Funkcje Gmin.[W:] E. *Pałka Red Pozar. Dział. Gospod. Obsz. Wiej. Stud. Obsz. Wiej.* **2004**, *5*, 57–73.
60. Churski, P.; Dubownik, A.; Szyda, B.; Adamiak, C.; Pietrzykowski, M. Wewnętrzne Peryferie w Świetle Wybranych Typologii Obszarów Wiejskich. *Rozw. Reg. Polityka Reg.* **2024**, *69*, 185–214. [CrossRef]
61. Wilkin, J. Sprawiedliwość–Najważniejsza Cnota Społecznych Instytucji. *Wieś Rol.* **2023**, *198*, 23–38. [CrossRef]
62. Śleszyński, P.; Bański, J.; Degórski, M.; Komornicki, T. *Delimitacja Obszarów Strategicznej Interwencji Państwa: Obszarów Wzrostu i Obszarów Problemowych: Delimitation of the State Intervention Strategic Areas: Growth Areas and Problem Areas*; IGiPZ PAN: Warsaw, Poland, 2017; Volume 260.
63. Li, Y.; Westlund, H.; Liu, Y. Why Some Rural Areas Decline While Some Others Not: An Overview of Rural Evolution in the World. *J. Rural Stud.* **2019**, *68*, 135–143. [CrossRef]
64. Vidich, A.J.; Bensman, J. *Small Town in Mass Society: Class, Power, and Religion in a Rural Community*; Princeton University Press: Princeton, NJ, USA, 1958.
65. *The Sustainability of Rural Systems: Geographical Interpretations*; Kluwer Academic Publishers: Dordrecht, The Netherlands; Boston, MA, USA, 2002; ISBN 978-1-4020-0513-8.

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