

**PROPOSAL TO DESIGNATE AREAS PREDESTINED FOR THE
PRODUCTION OF REGIONAL PRODUCTS – CASE STUDY OF
THE MAZOWIECKIE VOIVODESHIP IN POLAND**

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ABSTRACT

Properly promoted traditional and regional food products can help diversify the activities of agritourist farms, increase employment in rural areas, and increase the income of rural communities. Environmentally attractive (in terms of presence of forests, waters, landscape, land use structure) locations of agritourist farms may encourage the use of the local environmental resources, and launching a business in producing e.g. honey, cheese, or meat products.

The study objective was to identify areas predisposed for the production of regional products in the Mazowieckie Voivodeship in Poland. The study employed the author's score assessment taking into account the spatial parameters of farms and plots, share of protected areas, population density, and direction and volume of agricultural production. Because the production of regional products is not directly dependent on the spatial structure of plots and farms or other factors with a significant impact on the development of intensive agriculture, it was assumed that priority areas for the production of regional products would be those where agricultural development is difficult. Given the requirement to document the tradition of production of a particular product over a period of at least 25 years, it can be assumed that the tradition of a particular direction of agricultural production is associated with the tradition of processing a particular raw material. The integration of graphic and descriptive data, necessary spatial analyses, and the visualisation of research results were prepared using the ArcGIS program.

Keywords: rural area, smart development, multifunctional development

INTRODUCTION

The production, protection, and promotion of high quality food products has been of increasing importance in the countries of the European Union [1]. One of the basic methods of implementation of the quality policy is recognition with labels confirming high quality of agricultural food products originating from particular regions, as well as those characterised by a traditional production method [2].

The system of protection and promotion of regional and traditional products is one of the most important factors in the implementation of the concept of sustainable and multifunctional rural development, and implementation of the assumptions of the II pillar of the Common Agricultural Policy [3]. It generates and contributes to the diversification of employment in rural areas through creating non-agricultural sources of income, and increases the income of agricultural producers [4]. It is particularly important in areas

with peripheral location or less favoured areas (LFA), because it contributes to limiting their depopulation. The system of protection and promotion of regional and traditional products also helps protect the cultural heritage of rural areas, largely contributing to an increase in their attractiveness and development of agrotourism and rural tourism [5].

The quality policy implemented in the European Union also ensures consumers that they are purchasing very high quality food manufactured by means of an exceptional traditional method. Due to the high diversity of products introduced to the market, consumers also expect clear and exhaustive information regarding the quality and origin of the agricultural product or food article.

The production and promotion of regional products can be considered as innovative forms of activity in rural areas that allow for employment of the local community and use of the local potential.

It is a chance for producers of local, traditional, and regional food. It corresponds to the global trend of return to natural products, particularly in developed countries. Consumers show increased interest in searching for traditional and regional high quality food products, as opposed to mass production and cheap products of the food industry.

Owners of agritourist farms can take advantage of the growing interest in local food products by creating an offer for tourists based on local resources, contributing to the competitiveness of this form of tourism. This combination is a factor activating the development of agricultural farms and rural areas. It meets the needs of the urban population, creates new work places, counteracts depopulation of rural areas, causes an increase in the income of local communities, elevates their lifestyle and life conditions, and shapes a new model of consumption by the local community, as well as activates economic development. Agritourist objects that produce their own products and food have a greater chance for obtaining a larger group of clients [6].

The study objective was the identification of areas predisposed for the production of regional products in the Mazowieckie Voivodeship in Poland. The study employed the author's score assessment method that considers the spatial parameters of farms and plots, share of protected areas, population density, and direction and volume of agricultural production.

MATERIALS AND METHODS

Study area

The study covered the area of the Mazowieckie Voivodeship in the central part of Poland, with Warsaw as the capital city, also constituting the capital city of Poland. It is a largely diverse area, comprising both areas located in the vicinity of the city and peripheral ones, considerably differing in environmental, spatial, and economic terms (Fig. 1). The research only covered rural communes in the Mazowieckie Voivodeship that struggle with problems other than those in the case of urban areas.



Figure 1. Location of the study area. Source: Own study based on the Database of Topographic Objects and the State Register of Borders

A characteristic feature of the Mazowieckie Voivodeship is the spatial variability of economic development between the metropolitan centre of the region and its primarily agricultural peripheries. Pursuant to the OECD classification, Mazowsze has been recognised as the most internally diverse region in Europe, second only to London. The voivodeship includes 105 out of 500 poorest communes in Poland. The region therefore shows extreme diversity. The Mazowieckie Voivodeship occupies the first place both in terms of the size of rural areas (94% of the area of the voivodeship) and its population (1.9 M people, accounting for 35.5% of the total population of the region). The population of rural areas in the Mazowieckie Voivodeship constitutes 12.6% of the population of Poland. Arable land constitutes 68.7% of the area of the Mazowieckie Voivodeship [7].

Study materials and methods

The identification of areas predisposed for the production of regional products involved the application of the author's score assessment of the possibility of multifunctional development combined with the possibility of producing regional products. The score assessment used the transformation index T [8] and simplified assessment of agricultural intensification of agricultural production with a division into plant and animal production. The results of the aforementioned score assessment were applied with the following assumptions:

- A. Areas with the highest preference for the production of regional products are those that should be subject to transformation first.
- B. Areas with medium preference for the production of regional products are those that require transformation. They are areas where agriculture is currently developed to a medium degree, and the structure of plots and farms is unsatisfactory.

- C. Areas with the lowest preference for the production of regional products are specified as those that require no transformation. They are areas with the best spatial structure of plots and farms

Because the production of regional products is not directly dependent on the spatial structure of plots and farms or other factors with a considerable effect on the development of intensive agriculture, it was assumed that priority areas for the production of regional products will be those facing difficulties in agriculture development. Moreover, the primary trends in agricultural production and their ranges were considered as indicators of a potential raw material used for the production of the regional product. Considering the requirement of documenting the tradition of manufacturing of a given product for a period of at least 25 years, it can be assumed that the tradition of occurrence of a given trend of agricultural production may be related to the tradition of processing a given raw material. For example in an area with a large stock of milk cattle, a tradition of milk processing and manufacturing of various types of regional products can be expected.

The magnitude of the currently conducted agricultural production was considered, as well as the share of protected areas, pointing to the possibilities of obtaining raw materials for manufacturing regional products. The share of protected areas in the total surface area of the commune was assessed on a simplified point scale ascribing 1 point to a share of 0-40%, 2 points to 41-70%, and 3 points above 70%.

The assessment of agricultural production was based on data from the Common Agricultural Census 2020 [7]. Production below the average in the voivodeship was determined as low, that at an average level as average, and that considerably exceeding average values as high (e.g. cattle stock or sawn area in a poviats in the Mazowieckie Voivodeship).

Plant production was assessed based on data regarding the sawn and crop area obtained from the Local Data Bank, Statistics Poland and data from the land and building register in reference to orchards. The sawn area was assessed on a point scale 1-3, adjusting the assessment to the average sawn area in a poviats in the Mazowieckie Voivodeship. The types of crops, average sawn areas, their assessments, and ascribed points are presented in Table 1.

Table 1. Types of crops, average sawn area, as well as assessment and ascribed points

Type of crop	Average area in a poviats in the Mazowieckie Voivodeship [in thousand ha]	Point assessment / Sawn area in reference to the average in the voivodeship [in thousand ha]		
		low – 1 point	average – 2 points	high – 3 points
total cereals	20.87	up to 20.00	20.01-30.00	30.01 and more
potatoes	0.60	up to 0.50	0.51-1.00	1.01 and more
sugar beets	0.44	up to 0.30	0.31-1.50	1.51 and more
rape and turnip rape	1.25	up to 2.00	2.01-5.00	5.01 and more
root vegetables	0.41	up to 0.40	0.41-1.00	1.01 and more
orchards in [%] share of area of orchards in total area of the commune	2.63%	up to 10.00	10.01- 30.00	30.01 and more

Source: Own elaboration based on data from [7] Common Agricultural Census

Animal production was assessed based on farm animal stock from the Local Data Bank, Statistics Poland. In reference to animal stock, a score assessment at a scale of 1-3 was applied, adjusting the assessment to the average number of animals of a given species in a poviát in the Mazowieckie Voivodeship. Animal species, average stock, and assessment and ascribed points are presented in Table 2.

Table 2. Animal species, average stock, and assessment and ascribed points

Species	Average animal stock in a poviát in the Mazowieckie Voivodeship [in thousand ha]	Point assessment / Farm animal stock in reference to the average in the voivodeship [in thousand ha]		
		low – 1 point	average – 2 points	high – 3 points
Total cattle	27.61	up to 30.00	30.01-70.00	70.01 and more
Total pigs	34.34	up to 30.00	30.00-100.00	100.01 and more
Total poultry	1049.55	up to 1000.00	1000.01-3000.00	3000.01 and more

Source: Own elaboration based on data from the Local Data Bank, Statistics Poland

The following materials were used in the study:

- a) Cadastre – data on the number of registration plots, the area of cadastral precincts in the voivodeship (source: district collective statements from 2021);
- b) Database of land and building records – vector layer of the plot (source: County Geodetic and Cartographic Documentation Centres and Buildings <https://www.geoportal.gov.pl/rejstry>);
- c) State Register of Borders (source: <http://www.gugik.gov.pl/pzgik/dane-bez-oplat/dane-z-panstwowego-reesses-granic-i-powierzchni-jednostek-podzialow-terytorialnych-kraju-prg>);
- d) Statistical data from the Central Statistical Office of Poland (2010; 2020) (source: Local Data Bank);
- e) Database of the National Water Management Authority – ISOK project (https://wody.isok.gov.pl/atom_web/atom/NZ_HY_MRP).

The integration of graphical and descriptive data, necessary spatial analyses, and visualisation of study results was prepared with the application of ArcGIS software.

RESULT AND DISCUSSION

Regional and traditional products

The report of European experts [9] points to a dual direction of development for Polish agriculture. A certain share of agricultural farms has been observed to adopt production methods primarily ensuring high economic efficiency, with consideration of only the basic requirements of environmental protection, and another share of farms selects methods that are more ecosystem-friendly, using the local environmental and socio-cultural resources. The excess of working power in Polish rural areas in combination with fragmented area structure of farms and low level of education of the population results in agrarian overpopulation and increasing unemployment, consequently leading to low agricultural income and improper use of the production potential. Rural areas do offer development opportunities other than agricultural activity. The agricultural policy in Poland currently supports activities aimed at diversification of economic activity of rural population and will continue to do so in the foreseeable future. The development of non-agricultural activities in rural areas can accelerate structural transformations. The development of the local food sector, including production of regional products, strengthens local economies, reduces the carbon footprint of food distribution, contributes

to the food safety of households, provides persons with low income access to quality food and healthy diet, supports small enterprises, improves rentability of small farms, etc. Local, traditional, and regional products also have a positive effect on local communities [10]. The production of food with higher health standards is characterised by high work intensity, lower efficiency, and the resulting high production cost. Traditional food products with particular quality properties constitute part of the cultural heritage that should be maintained and promoted.

Moreover, in Poland, based on the act as of 17 December 2004 on registration and protection of names and labels of agricultural products and food products and on traditional products (i.e. Journal of Laws of 2022, item 2268.) [11], the List of Traditional Products is being developed. The list includes products the quality or exceptional features and properties of which result from the application of traditional production methods, constituting an element of the cultural heritage of the region where they are produced, and an element of the identity of the local community. Production methods considered traditional are those that have been used over a period of at least 25 years. The List of Traditional Products aims at popularisation of information on products manufactured by means of traditional, historically established methods. The Ministry of Agriculture and Rural Development is responsible for accepting, assessment, and submission of applications for registration of the names, origin, geographical description, and guaranteed traditional specialties to the European Commission.

The terms regional product and traditional product emphasise the specific character of the products, referring to products themselves as well as to the place of their production (in the case of regional products). It should be emphasised, however, that tradition does not exist without a region. It is often associated with a specific ethnic group, hence there are no global traditional products [12]. Traditional products are therefore characterised by a traditional manufacturing method using traditional raw materials, native animal breeds, based on information handed down from generation to generation. The term regional product refers to its association with the natural environment of a given area (land relief, climate, type of soil). Its high quality and reputation are related to the region where it is produced, whereas the region does not have to be a region in geographic sense, but can denote the area to which the production of the product is related.

Regional and traditional products in agrotourism development

Promotion and development of production of regional products are also of key importance in the scope of provision of agritourist activity. Agrotourism and perspectives of its development constitute an important element of the rural development programme. The term agrotourism appeared in Polish and global literature at the end of the 20th century. It is defined as provision of tourist services by owners of agricultural farms combined with observation of agricultural production, hospitality, gastronomic services, and retail. Rural tourism is not synonymous with agrotourism. In addition to presenting agricultural production, it covers familiarisation with the rural lifestyle, culture, religion, traditions, etc. Separating agrotourism and rural tourism is therefore artificial. In areas with strongly fragmented agricultural production and strong rural community, it is recommended to use the term “rural tourism” [13].

Agrotourism is an example of non-agricultural development of agricultural farms and rural areas that fulfils three basic functions:

- economic (it concerns stimulation of the development of the agricultural farm, creation of additional sources of income, etc.);

- environmental (related to the protection and maintenance of the natural environment of rural areas);
- socio-psychological and social (related to the confluence of cultures, contact with the traditional way of life, etc.).

The organisation of agritourist space refers to the area of the agricultural farm, and covers land relief and architecture in the vicinity, landscape resulting from the production activity, as well as water cleanliness, noise levels, etc.

Interest in recreation in rural areas has been systematically increasing over the recent years in Poland. Particularly areas predestined for the provision of recreation and agritourism take into consideration the needs of the urban population, and contribute to an increase in the income of agricultural farms. Areas surrounding cities, including places attractive in tourist terms (water bodies, large forest complexes, historical sites, protected areas) are particularly predestined for such purposes (Fig. 2).

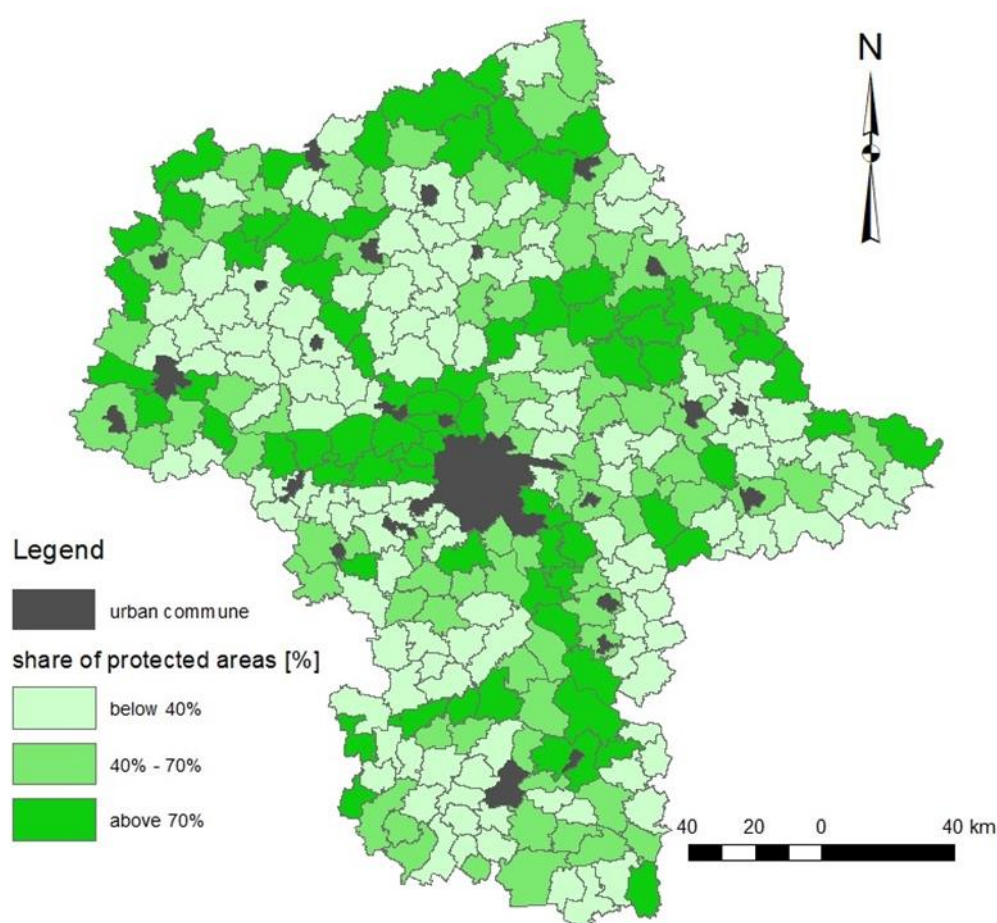


Figure 2. The share of protected areas in the total surface area of the commune
Source: Own study

Finally, it should be emphasised that many regional and traditional products are manufactured in the conditions of agricultural farms, attracting tourists and offering a chance for development of agritourism [14]. Research conducted among consumers of traditional food products shows that the place of purchase is of high importance for them, and can be used to increase its popularity. In one of the studies “Competitiveness of traditional and regional products” [15], when asked on what occasions regional and

traditional products are consumed, most respondents (75% of respondents) pointed to the stay in the region of manufacturing of a given product. Only a small share of respondents could list more than five regional products, indicating the need of their popularisation [16].

The conducted research indicated areas predestined for manufacturing of regional products particularly in direct vicinity of Warsaw and other large cities, where intensive agriculture is not developed. With the assumption of possibilities of subsidising the process related to the production of the regional product, it is recommended to prioritise subsidising rural areas, and to search for the possibilities of diversification of income in such areas. Further areas considered priority are those with unfavourable spatial structure of farms and plots, e.g. in the southern part of the Mazowieckie Voivodeship, where profits from the sale of regional products could substantially contribute to the budget of households (Fig. 3).

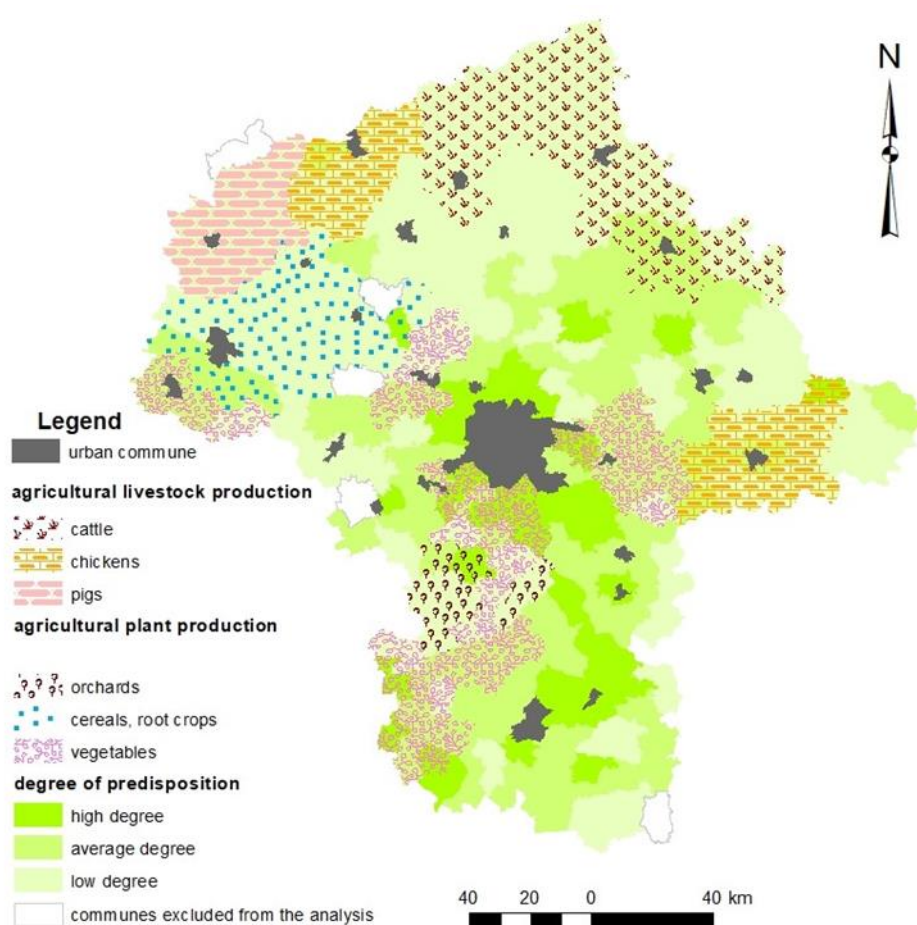


Figure 3. Areas predisposed to produce a regional products in connection with the existing agricultural production
Source: Own study

CONCLUSION

Promotion, manufacturing, and distribution of traditional and regional food products can become an important factor contributing to the development and attractiveness of agritourism farms. Agritourist activity can alleviate the negative economic effects of tourism seasonality, and attract tourists searching for culinary experiences.

Such activity offers farmers the possibility of direct sale of their agricultural and food products. It is an effective way of increasing the income from the farm, contributing to the multifunctional development of the rural area. Appropriately promoted traditional and regional food products can help diversify the activity of agritourist farms, improve the level of employment in rural areas, and increase the income of rural communities. The location of agritourist farms attractive in environmental terms (forests, water bodies, landscape, land use structure) can encourage the use of the local environmental resources to start business activity in production of e.g. honey, cheese, or meat products.

Good cooperation between neighbours, including sharing knowledge and good practices, can become a stimulus for changes towards the development of production of regional products, associated with already existing places of occurrence of regional production. The educational factor in neighbourly relations (incidental and planned meetings, conversations), but also the application of e-technology (e.g. smartphone applications, creation of thematic websites, and traditional advertisement in the form of leaflets, articles, etc.) appears to be the most appropriate way to promote production of regional products, although the obligation of documenting 25 years of experience in manufacturing the product may be discouraging in the case of new producers. It would be of key importance to provide administrative and technical support in the scope e.g. at the commune level.

To sum up, areas predestined for production of regional products should be the following types of areas:

- where such production already takes place, and modern digital technologies can be helpful in obtaining information by persons searching for alternative sources of income,
- where agritourist farms operate with a potential to increase their attractiveness through regional products, where new agritourist activity can be developed, i.e. places attractive in environmental and landscape terms.
- Where the development of intensive agriculture is difficult due to the spatial conditions, ownership structure, or environmental factor, and other sources of income are sought for.

REFERENCES

- [1] Matthews A. Implications of the European Green Deal for agri-food trade with developing countries, 96th Annual Conference, April 4-6, 2022, K U Leuven, Belgium 321162, Agricultural Economics Society – AES 2022;
- [2] Palková, Z.; Okenková, M.; Harničárová, M.; Valíček, J.; Gombár, M.; Dvorský, J.; Behanovská, M.; Slaninová, M.; Reiskupová, M.; Vnučko, P. Implementation of the EU Quality Policy: Case Study, Slovakia. *Sustainability* 2021, 13, 7073. <https://doi.org/10.3390/su13137073>;
- [3] Etxano, I.; Barinaga-Rementeria, I.; Garcia, O. Conflicting Values in Rural Planning: A Multifunctionality Approach through Social Multi-Criteria Evaluation. *Sustainability* 2018, 10, 1431. <https://doi.org/10.3390/su10051431>;
- [4] Biczkowski, M.; Jezierska-Thöle, A.; Rudnicki, R. The Impact of RDP Measures on the Diversification of Agriculture and Rural Development—Seeking Additional Livelihoods: The Case of Poland. *Agriculture* 2021, 11, 253. <https://doi.org/10.3390/agriculture11030253>;
- [5] Roman, M.; Roman, M.; Prus, P. Innovations in Agritourism: Evidence from a Region in Poland. *Sustainability* 2020, 12, 4858. <https://doi.org/10.3390/su12124858>;

- [6] Jęczmyk A., Tradycyjne i regionalne produkty żywnościowe jako element rozwoju gospodarstw agroturystycznych, Uniwersytet Przyrodniczy w Poznaniu, 2015, Nr 163, pp. 143-154;
- [7] Statistics Poland. Statistical Yearbook of Agriculture, Poland, p. 449, 2021 <https://stat.gov.pl/obszary-tematyczne/roczniki-statystyczne/roczniki-statystyczne/rocznik-statystyczny-rolnictwa-2021,6,15.html>;
- [8] Bielska A., Sajnog N., Sobolewska-Mikulska K., The Use of the Concept of Smart Villages in the Multifunctional Development of Rural Areas on the Example of the Mazowieckie Voivodeship (11595), FIG Congress 2022 Volunteering for the future - Geospatial excellence for a better living Warsaw, Poland, https://fig.net/resources/proceedings/fig_proceedings/fig2022/papers/ts03c/TS03C_bielska_sajnog_et_al_11595.pdf;
- [9] Report of European experts. A vision of sustainable rural development policy in an enlarged Europe, Rural and Agriculture, No. 3(124). PAN, IRWiR, Poland, 2004;
- [10] Duczkowska-Małysz K. Budowa rynku produktów regionalnych, Agro-Smak, Poland, Nr 4, 2007,
- [11] Ustawa, 2004. Ustawa z dnia 17 grudnia 2004 r. o rejestracji i ochronie nazw i oznaczeń produktów rolnych i środków spożywczych oraz o produktach tradycyjnych (t.j. Dz. U. z 2021 r. poz. 224); <https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20210000224/O/D20210224.pdf>
- [12] Newerli-Guz J., Rybowska A. Produkt tradycyjny i regionalny – luksus od święta czy na co dzień?, Handel Wewnętrzny, Poland, Nr 2 (355), pp. 286-295, 2015;
- [13] Sznajder M., Przezbórska L. Agroturystyka, Polskie Wydawnictwa Ekonomiczne, Poland, p. 257, 2006;
- [14] Świstak E., Bilka B., Stępień A., Tul-Krzyszczuk A. Produkty regionalne jako element budowania konkurencyjności obszarów wiejskich. W: K. Krzyżanowska (red.), Budowanie konkurencyjności obszarów wiejskich, Wyd. SGGW, Poland, pp. 139-148, 2013;
- [15] Bilka B. Competitiveness of Regional and Traditional Products. in: K. Krzyżanowska (red.), Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu, Poland, vol. 10/4, pp. 20-25, 2008;
- [16] Grębowiec M. Produkty regionalne i tradycyjne jako element budowania konkurencyjnej oferty produktów żywnościowych w Polsce i innych krajach Europy, Zeszyty Naukowe Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie Problemy Rolnictwa Światowego Poland, vol. 17 (XXXII), 2, pp. 65–80, 2017, DOI:10.22630/PRS.2017.17.2.27.