

Functional Changes of the Rural Areas in Poland. Case Study: Warmińsko-Mazurskie Voivodeship

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ABSTRACT

Rural areas in Poland show a great diversity in terms of both natural and socio-economic conditions. In terms of the characteristics of the natural environment at a regional scale, Poland can be divided into three latitudinal belts: the southern belt (uplands and mountains), the middle belt (lowlands), and the northern belt (lake districts and seaside). At the same time, the formation of the current functional-spatial structure in the rural areas in Poland was greatly influenced by the transformation process began in 1988, as well as as a result of joining the structures of the European Union in 2004. This paper is an attempt to show how the functional-spatial structure in Poland has changed based on an example of rural areas in the Warmińsko-Mazurskie Voivodeship. This *voivodeship* was selected for the analysis due to its particular natural and landscape values at the national scale.

1. INTRODUCTION

The changes taking place in the functional management of rural areas are influenced by a number of factors, including natural values, the level of socio-economic development, geographical location, tradition and historical past, as well as the law on the shaping of space. Such a large number of different factors that affect the functional development of rural areas and their importance depending on local conditions contributed to a growing diversity in rural areas in terms of not only the national, but also of the regional. Systemic transformation was especially important for the development of rural areas in Poland. It contributed to the diversity in rural areas in terms of their economic development, technical and social infrastructure as well as living conditions. At the same time, Poland's accession to the European Union in 2004 was of great

significance for the development of rural areas. Currently, a key factor for sustainable rural development is considered to be the development of various forms of business and their production and non-production functions, especially in the field of environmental protection.

The territories selected for the study were rural areas in the Warmińsko-Mazurskie Voivodeship, whose name is derived from the historical and geographical regions of Warmia and Mazury. It is a distinctive region in Poland in terms of physical geographical features, as well as in terms of socio-demographic and economic conditions. The spatial development of rural areas here was significantly influenced by systemic transformation. Functional and spatial transformation was very diverse and complex, and its pace and scale were dependent on resources and values of the natural environment as well as of the socio-economic potential

of the area. The greatest difficulty in adjusting to the new market rules occurred in the areas with a significant share of state-owned land. This problem concerned particularly the Warmińsko-Mazurskie Voivodship, where socio-economic changes have contributed to a large diversity of communities technical and social infrastructure, social problems associated with high structural unemployment and, as a result, deterioration or stagnation in terms of socio-economic development. The development of non-agricultural functions in the rural areas of the Warmińsko-Mazurskie Voivodship enabled the society to use freed-up labour resources, providing employment opportunities as a source of basic or supplement income for rural population. Therefore, the need for multifunctional development of the rural areas of the Warmińsko-Mazurskie Voivodship was so obvious. This paper shows the changes in the functional structure of the rural areas in the Warmińsko-Mazurskie Voivodship.

2. THEORY AND METHODOLOGY

Rural development is a process of directional changes in the course of which they pass from simpler and less perfect forms or states, to more complex and perfect forms or conditions in some specified way. This triggers quantitative and qualitative changes in the management methods in rural areas and in the working and the living conditions of their population, thereby contributing to their differentiation.

Over the years, rural areas in Poland were identified with agriculture. It was only in the years 1950-1970, under the influence of industrialisation and urbanisation in rural areas, that structural changes in land use, livelihood and employment followed [8]. Socio-economic changes, started after 1989, required the creation of an entirely new philosophy for the development of agriculture and rural areas, which would include the development of non-agricultural functions. This is because the development of non-agricultural functions allows the use of freed labour force in-situ, giving the opportunity to provide basic or supplement employment to support rural population's income. At the same time, the process of functional changes taking place in rural areas in Poland varied regionally. The level of development of the regions is in fact the result of the interaction of multiple factors. The common factors are: resources and values of the natural environment, labour force, capital, technology and organisation of production and services, technical and social infrastructure, domestic and export demand, as well as access to information, goods and capital markets [2]. As a result of the existing differences between the regions in Poland, development very soon got polarised, especially in vulnerable regions of low socio-economic level. Undoubtedly, an important element of economic

development is the development of non-agricultural economic activities which, on the one hand, creates new jobs, while, on the other hand, it leads to an improvement of the inhabitants' financial situation [10]. Therefore, the development of both agricultural and non-agricultural activities is so significant in rural areas. Recognition of the functional changes and their spatial analysis is very important not only in cognitive, but also in practical terms. The analyses of various factors that influence the functional transformation of rural areas allow determining their impact on the development of non-agricultural activities. Moreover, on the basis of research, it is possible to identify trends, directions and dynamics of change in rural development.

The following authors studied the transformation and spatial analyses in Poland: J. Bański [1], M. Duczkowska-Małysz [3], J. Falkowski [4], W. Maik [11], A. Rosner [12], R. Rudnicki [13], W. Stola, [1], [14], and J. Wilkin [15], [16].

At the end of the 1980s, Stola [14] developed functional and spatial classification of rural areas based on measures of features representing different functions. The study covered the rural communities of the country. The main source of information was the material collected by the Central Statistical Office on: 1) spatial structure of rural areas (socio-professional structure and land use), 2) leading functions of rural areas – agriculture, forestry, industry (and construction), tourism and recreation, and residential. This information was the basis for the selection of diagnostic features and the measures for each function. Then, normalisation was carried out and expressed in different values of measures, in order to be able to compare them. Described with the standardised measures, each function in each of the communities presented as a system of variables, formed the basis for their comparison with the system of variables representing the predetermined types – functional models – of communities [1]. In the next step of the procedure, the authors distinguished five large groups of communities, due to the superiority of one or more specific functions:

- a group of predominantly agricultural functions;
- a group of equal participation of various functions;
- a group of predominantly forestry functions;
- a group of predominantly tourism and recreation functions;
- a group of predominantly industrial functions or highly urbanised [14].

The study showed that as many as 48.9% of the communities qualified to the first group of predominantly agricultural functions. Another group, according to the most numerous ones, were urbanised communities and those of predominantly techno-production functions (almost 20% of the communities), followed by the communities with leading forestry

functions (over 10% of the communities), as well as tourism and recreation (6% of the communities). A relatively large group was formed by the communities with no clear advantage of specific features (over 10%), on the contrary – they showed a diversity of functions. Communities functionally transitional or intermediate between the two specified types but generally not like any of the specified types of models accounted for only 5% of the communities [14]. In addition, throughout the entire country, there are communities lying within the influence of larger urban-industrial centres.

Further qualitative and quantitative changes in management in rural areas led to socio-economic changes that took place in Poland in the late 1990s, which contributed to the development of entrepreneurship in rural areas. Based on the research conducted in 2000, according to the classification criteria and methods for the state of 1988, it was found that in rural areas in western Poland, where the development of non-agricultural activities is quicker and at the same time the level of socio-economic development is higher, the complexity of the functional structure of rural areas is higher than in eastern Poland. It should also be noted that the further development of rural areas should not only be based on the enriched diversity of the structure of socio-economic functions, but also on shaping and protecting natural and cultural landscapes [1]. According to Wilkin [16], Poland's membership in the EU brings many opportunities to accelerate modernisation of economic and social structures, as the EU funds are largely directed to agriculture and rural areas. With such support there is a chance that, in the future, rural areas will be attractive as places to live in, with unique natural and cultural values, and where agricultural and non-agricultural activities are carried out with care for the environment.

2.1. Functional-spatial structure of rural areas in the Warmińsko-Mazurskie Voivodeship

The Warmińsko-Mazurskie Voivodeship is located in the north-eastern part of Poland.

In the north it borders the Kaliningrad Oblast of the Russian Federation (now the border of the European Union) and the waters of the Vistula Lagoon, in the west – the Kujawsko-Pomorskie and Pomorskie Voivodships, in the east – the Podlaskie Voivodeship, while in the south – the Mazowieckie Voivodeship. Rural areas in the region occupy 23,448.27 km², which represents approximately 97% of its surface area, and are home to 40% of the voivodeship's population. At the national scale, the area of the Warmińsko-Mazurskie Voivodeship is characterised by high natural values, including varied terrain, numerous lakes, forests, and rich flora and fauna. The natural attractiveness of the Warmińsko-Mazurskie Voivodeship is confirmed by the fact that, as a whole, it is part of a functional area of the

“Green Lungs of Poland”, which are represented by unique natural areas located in the north-eastern part of the country.

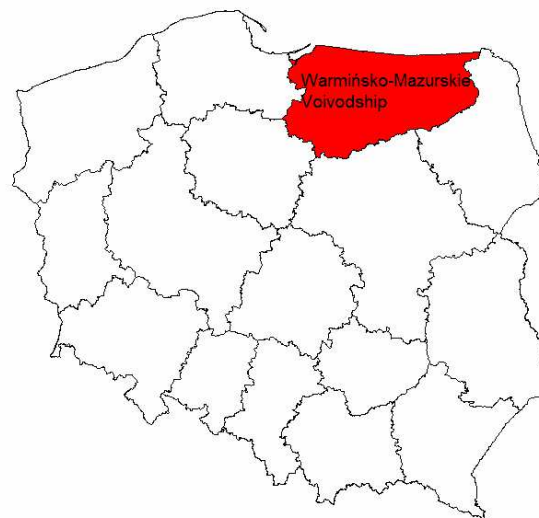


Fig. 1. Location of the Warmińsko-Mazurskie Voivodeship in Poland.

The primary determinants of development in the rural areas of the Warmińsko-Mazurskie Voivodeship have been the natural conditions. Due to the considerable resources of agricultural potential, in the 1980s, it was accepted that the basic function in the rural areas of the region was agriculture. The communities where the dominant functional group was represented by agricultural functions made up as much as 50% of the rural communities in the Warmińsko-Mazurskie Voivodeship. They concentrated in the northern, eastern, and western parts of the voivodeship. In the communities in the central part of the voivodeship, which have very high natural and landscape values and are in the vicinity of the capital of the region, were dominated by non-agricultural functions: industrial, residential, and service (16% of the communities) and the tourism and recreation functions (13% of the communities). The functional group of the predominantly forest function dominated only in 9% of the communities located mostly in the southern part of the voivodeship where there were large forests. The share of rural communities in the voivodeship where the share of the various functions was similar accounted for 12%.

Change in government policy for villages and rural areas after 1989 led to changes in the spatial-functional structure in the voivodeship. In order to compare the changes in the spatial structure of communities of the Warmińsko-Mazurskie Voivodeship with their functions to the state of 1988, the corresponding features that would characterise the different functions were selected on the basis of Stola [14], Falkowski [3], Bański [1], Gwiaździńska [5], Jezierska, and Kluba [9]. Numerical data for individual diagnostic features were summarised in the matrix, where the rows correspond to the communities, and the

columns to the individual characteristics. Next, the features were normalised through their standardisation. For the functions for which more than one diagnostic feature was selected, multivariate classification using a synthetic Perkal index was used to get one defining value for each function.

This method applies a linear ordinal function expressing arithmetic means of standardised diagnostic features of a given community. Figures for individual functions were summarised in the matrix. Then, by comparing the numerical values for each function, its importance in each municipality was determined.

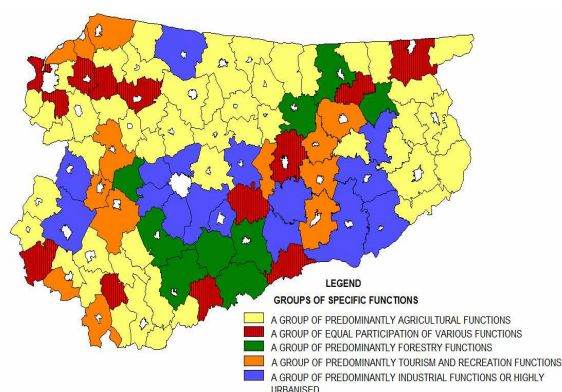


Fig. 2. Functional classification of rural areas in the Warmińsko-Mazurskie Voivodship in 1988[14].

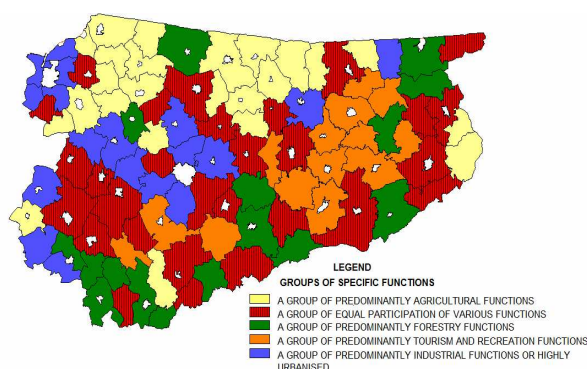


Fig. 3. Functional classification of rural areas in the Warmińsko-Mazurskie Voivodship in 2009 [7].

Based on the results of the classifications carried out in 1988 and 2009, the changes in the functional structure of the rural areas in the Warmińsko-Mazurskie Voivodship are presented.

The number of communities where the predominant features are represented by agricultural function decreased to 24% in favour of other functional groups, although their importance is still high in comparison to other functional groups. A positive change of the functional structure is the fact that the number of communities with predominant forestry functions increased. Moreover, the number of communities, which are dominated by tourism and recreational features, as well as by non-agricultural, industrial, residential, and service functions increased.

The highest increase, more than doubled to 29%, was recorded for the number of communities where the share of the various functions is balanced, which is in line with the general trend and reflects the growing diversity of communities.

3. RESULTS AND DISCUSSION

3.1. Development trends in the rural areas of the Warmińsko-Mazurskie Voivodship

Although rural areas in the Warmińsko-Mazurskie Voivodship are more and more varied due to their transformation from mono-functional into multi-functional, on the basis of the existing natural and socio-economic conditions, it is possible to determine the areas which are dominated by the following directions of development: agriculture, agro-processing, tourism, tourist-agricultural, forest, and suburban.

The delimitation of various directions of development of rural areas in the Warmińsko-Mazurskie Voivodship was based on a detailed analysis of natural and non-natural conditions taking into account opportunities for non-agricultural activities. To evaluate the extant natural potential, particular attention was paid to natural factors, such as soil, topography, climate and water, as well as to flora. To do this, the following features were taken into account:

- quality and productivity of soils;
- agro-climate;
- participation of forests and wooded and shrub land in the general area of the community as a percentage (%);
- participation of standing water in the general area of the community as a percentage (%);
- participation of the surface covered by various forms of nature in the total area of the community as a percentage (%);
- participation of the agricultural area in the total area of the community as a percentage (%).

To evaluate the extant non-natural potential, the following features were taken into account:

- number of hotel beds per 1,000 inhabitants;
- number of economic entities per 1,000 inhabitants of working age population;
- average farm size;
- acquisition of merchantable timber in m^3/km^2 ;
- number of dwellings per 1,000 inhabitants;
- number of commercial and service entities in relation to the total number of economic entities;
- number of industrial and construction entities in relation to the total number of economic entities.

On the basis of these analyses, we determined the areas with the highest potential for the development of the agricultural, the industrial, the tourism, the forestry and of the suburban function. For the areas for

which the importance of two functions was comparable, both were taken into account.

The most favourable areas for agricultural development are the communities located in the north-west and north-central parts of the voivodeship, which are characterised by favourable conditions in terms of the quality of agricultural production area, a high proportion of agricultural land in the total area and a relatively low sensitivity to human pressure.

The area located in the south-western part of the voivodeship is the best for the development of agriculture and processing. Despite average conditions in terms of the quality of agricultural production areas, it is characterised by a long lasting growing season, a high proportion of agricultural land in the total area, a high share of sown area in arable land, and high numbers of pigs per 100 acres of farmland.

The area with the best conditions for the development of agro-tourism is located in the eastern part of the voivodeship. It is characterised by average conditions in terms of the quality of agricultural production space, which is mainly due to adverse weather conditions.

However, the high proportion of grassland in the total area and the high density of cattle in SD per 100 ha of agricultural land make the area attractive for the development of animal husbandry. At the same time, this area is characterised by high natural and landscape values which means that tourism should have an equivalent position in terms of further development.

The area with the most favourable conditions for tourism development is located in the Mazury Lake District, the central part of the voivodeship. It is characterised by very high natural and landscape values including a wealth of lakes, forests and diverse terrain. On the other hand, this area shows average conditions in terms of the quality of agricultural production areas, but this does not preclude the pursuit of agro-tourism farms on the basis of existing operating farms.

Due to large forest cover, the southern part of the voivodeship is preferred for the development of forestry. This area is characterised by the least favourable conditions for the development of agriculture because of the low quality and suitability of soils, as well as because of non-insulated aquifers, which creates additional constraints due to the need to protect them from contamination. The area is also developing a production function from extant resources, however, according to a balance of forest ecosystems.

A separate group is made up of rural communities located near the major cities of the voivodeship, namely Olsztyn and Elblag. Because of the impact of urban areas, they are suburban in nature. They contain the largest amount of non-agricultural activities in the voivodeship. In these communities are located services for the cities; they are also "bedrooms" for the people working in these cities.

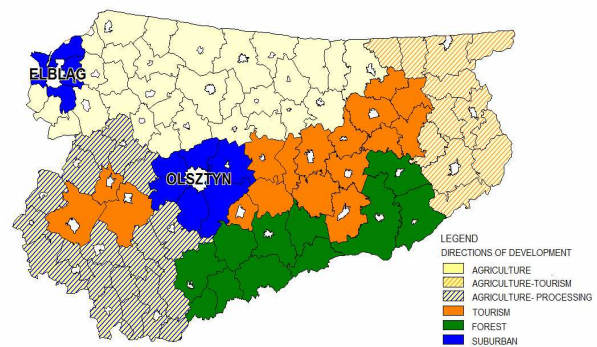


Fig. 4. Directions of development in the Warmińsko-Mazurskie Voivodeship in 2012.

4. CONCLUSION

Based on this analysis, we may conclude that in 2009, compared to 1988, there was a greater diversification of rural areas in the Warmińsko-Mazurskie Voivodeship in terms of their functional structure. This is because with socio-economic development, the functional diversity of communities increases. The development of non-agricultural activities is mainly concentrated in the communities adjacent to the major cities of the region, Olsztyn and Elblag, characterised by high tourist values and situated in the central and eastern parts of the region [6], [7].

However, further development of rural areas should take into account the formation and protection of cultural and natural landscape. Beautiful rural landscape and traditional buildings are advantages increasingly seen as a unique and unrepeatable. Rural areas in the Warmińsko-Mazurskie Voivodeship, due to high natural values and a rich historical past can become more attractive not only as places to relax, but also to live in. Therefore, further development of the rural areas of the Warmińsko-Mazurskie Voivodeship should be based on the following functions: agriculture, agro-processing, tourism and forestry, as well as, in the vicinity of Olsztyn and Elblag, suburban in accordance with the respect for natural and cultural values.

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