



AGRICULTURAL USE OF RURAL AREAS LOCATED IN ENVIRONMENTALLY VALUABLE TERRAIN

Barbara Mastalska-Cetera, Beata Warczewska
University of Life Sciences in Wrocław

Summary

The primary function of rural areas is their use in agricultural production. Currently, according to the balanced development of rural areas, one needs to tend to make those areas more attractive, create new jobs, create new sources of income for the rural population and to improve rural spatial planning. The agricultural production is extremely important in the areas of outstanding natural beauty. The management on protected areas can contribute to the protection of valuable qualities from excessive investment process. It must be conducted in accordance with legal requirements for environmental protection. The purpose of the research was to analyze the changes in agriculture in the context of rural area development. The communities within the Barycz Valley Landscape Park boundaries were selected for analysis. The study was based on the statistical data, including the data from the agricultural censuses of 1996, 2002, 2010, data concerning planning works and planning documents to lay down the development directions of the analyzed communities.

Keywords: agriculture, landscape park, sustainable development

INTRODUCTION

Ecological areas cover one third of the area of Poland. The definite majority of territories of great natural interest, both protected and subject to non-statutory forms of nature conservation, is situated within rural areas. Therefore, any

changes within these territories can have indirect impact on the condition of the natural environment.

According to Dobrzańska, *'an area of the land or the sea with high biodiversity together with its natural and cultural resources, used in order to secure the biodiversity protection'* should be considered as territory of great natural interest (Dobrzańska, 2005, p. 11). Nature conservation consists both in preserving and also in sustainable use of individual components of the nature (Act, 2004). This is why according to Dubel's assumption, *'territories of great natural interest shall be conserved effectively only if appropriately included in main socio-economical trends'* (Dubel, 2001, page 133). Currently, nature conservation is identified more and more often as active operation. However, the thorough insight into all conditions is a prerequisite for effective conservation. It should be remembered that territories of great natural interest can create to a certain extent development opportunities for regions where they exist. Therefore, the insight into conditions can contribute to the appropriate management of a territory concerned. Due to limitations appearing at the moment when protected areas are created or established, these areas are also defined as areas, where the existing biodiversity can, on one hand, be a dominant business activity factor, or, on the other, even a factor limiting conventional forms of business (Dobrzańska, 2005). Thus, the appropriate choice of development directions seems to be very important. Farming in accordance with nature conservation requirements can be a basis for active conservation and this way it can contribute to the protection of great values against, e.g., excessive investment process.

The purpose of the research was to analyze the changes in agriculture in the context of rural area development. The communities within the Barycz Valley Landscape Park boundaries were selected for analysis. The study was based on the statistical data, including the data from the agricultural censuses of 1996, 2002, 2010, data concerning planning works and planning documents to lay down the development directions of the analyzed communities.

NATURE CONSERVATION SYSTEM IN POLAND

The framework of protected areas within the territory of Poland is created by forms of protection with their statutory tasks and scopes of use. The following acts are the legal grounds for the nature conservation: Nature Conservation Act of 16 April 2004 (Journal of Laws of 2004 No. 92 item 880), and Act of 3 October 2008 on Amendments to the Nature Conservation Act and Certain Other Acts (Journal of Laws of 2008, No. 201 item 1257). According to provisions of the Act of 2004, there shall be the following forms of protection: national parks, natural reserves, landscape parks, protected landscape sites, Natura 2000 areas, natural

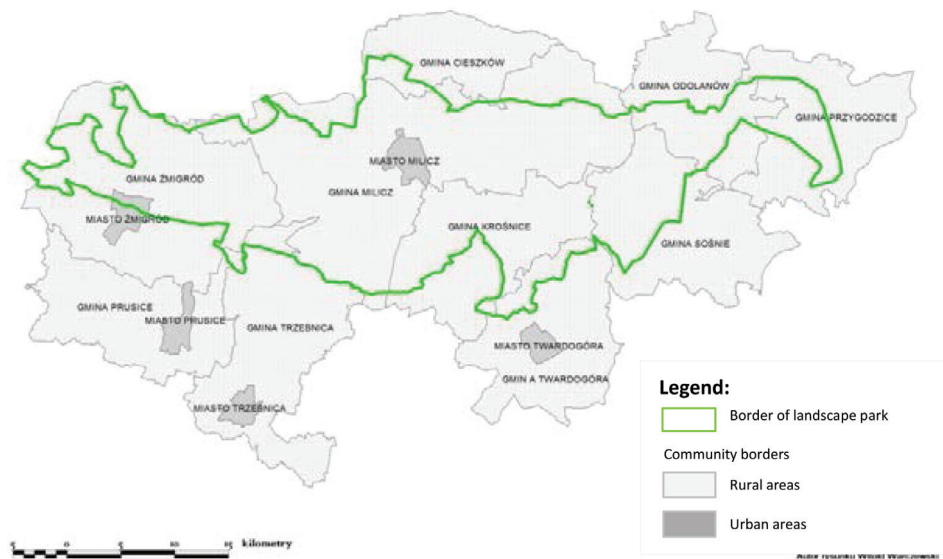
monuments, documentation sites, ecologically utilized areas, landscape-nature protected complexes, protection of plant, animal and mushroom species. Rules of use of protected areas and admitted forms of business are regulated in the Act of 2004. The strictest rules were laid down as regards the created national parks and natural reserves.

Pursuant to data of 2011, 32.3 per cent of Poland is covered with various forms of nature protection, of which the largest part, i.e., 22.3 per cent, takes protected landscape areas, while landscape parks cover a bit less, i.e., 8 per cent. The remaining nature protection forms take less than one per cent. This breakdown does not cover the Natura 2000 areas, as they coincide many times with the remaining area protection forms. Natura 2000 framework covers almost 20 per cent of the country area.

Landscape parks cover areas protected because of their natural, historical and cultural values, as well as of their landscape qualities. They are established to conserve and promote these values in sustainable development conditions. There is a demand that the many centuries old manners of environment management and management in the environment themselves be protected within landscape park areas, as they were having had impact on preservation of natural values (Poskrobko, 2008). There are about 120 landscape parks in Poland. Currently, they are areas of many functions. Apart from their protective function, landscape parks can contribute to the financial activation of their local communities. It should be emphasized that farmland, forest land and other properties within park boundaries may remain for agricultural use. It is however needed that the agricultural management process be conducted in accordance with the sustainable development principle, and in case of agricultural production – with good agricultural practice requirements. The intensity of agricultural use, particularly of agricultural chemicals, litterless animal breeding and single-crop farming, should be limited within landscape park boundaries. Both farming and forestry in a landscape park should not interfere with the structure of natural elements and the landscape harmony and esthetics. Particular meaning in a landscape park should be attached to the role of spatial development. It is important that all decisions, including draft studies of spatial development conditions and directions, as well as draft master plans in the part concerning the landscape park and its buffer zone, be agreed with a voivode (*wojewoda*). Environmental plans required by law should be an important tool of landscape park administration, however in fact, many parks have no such documents, what means lacking detailed guidance, among other things, to make planning decisions. Protected areas, including landscape parks, very often go beyond their administrative boundaries, therefore, great importance is mentioned in respect of the socio-economic development regional strategy in active protection (Dobrzańska, 2005).

BARYCZ VALLEY LANDSCAPE PARK DESCRIPTION

The Barycz Valley Landscape Park with 87,040 ha is the largest protected area of this type in Poland. The major part of the Park area – 70,040 ha – is situated in the Province of Lower Silesia (*dolnośląskie*), in the communities of Cieszków, Krośnice, Milicz, Prusice, Twardogóra, Trzebnica and Żmigród (Figure 1). The other 17,000 ha of the Park are situated within the boundaries of the communities of Odolanów, Sośnice and Przygodzice, administratively belonging to the Province of Greater Poland (*wielkopolskie*). The protected area within these communities' territory is diversified. The community of Milicz distinguishes definitively, with more than 70 per cent of its area situated within the Park boundaries.



Source: (Cetera, Warczewska 2011)

Figure 1. Location of the Barycz Valley Landscape Park within the territories of ten communities

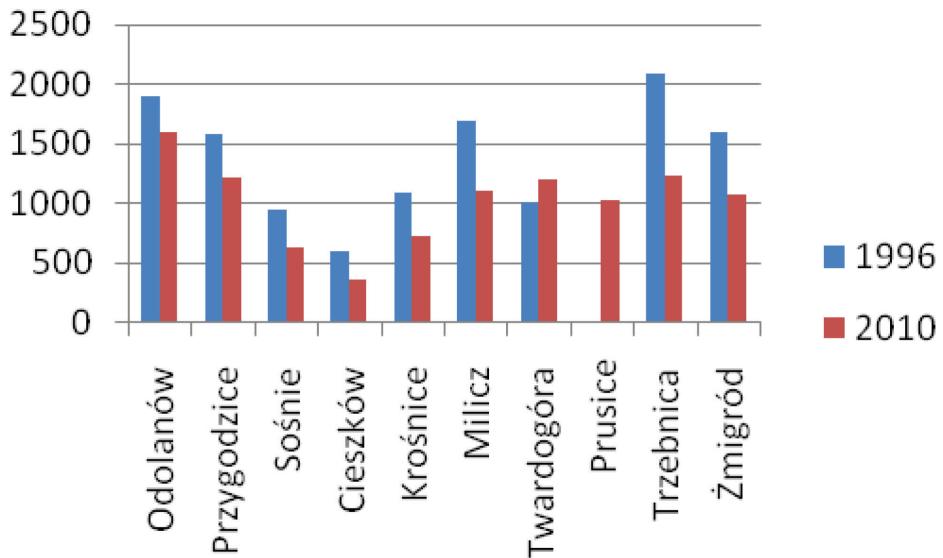
The Park was created on the grounds of the common Regulation of the Voivodes of Kalisz and Wrocław of 3 June 1996. It was established to conserve the Barycz valley together with meadows, old river beds and marshy land of slightly changed water, mud and forest ecosystems and their valuable ornithofauna, to prevent pond ecosystems against division and privatization of ponds, and to cause the gradual reduction of water and soil contamination and air pollution. From among other landscape parks, the Barycz Valley Landscape Park is distin-

guished with its diversity of the created forms of nature conservation. There are five natural reserves within the Park boundaries: “Stawy Milickie” (5324.31 ha), “Olszyny Niezgodzkie” (74.28 ha), “Wydymacz” (45.93 ha), “Wzgórze Joanny” (24.28 ha), “Radziądz” (8.6 ha). Numerous areas of ecological utilization were also established, and the material part of the Park area (90 per cent) was moreover included in the Natura 2000 European framework. Both the special protection areas for birds (Barycz Valley, Oder Riparian Forests, Oak Woods of Krotoszyn), and the special protection areas for habitats (Barycz Sanctuary, Oak Woods of Krotoszyn, Artificial Refrigerating Basement in Cieszków, Łacha Valley, Oder Riparian Forests) were established within the scope of Natura 2000. Due to the large area of the Park, no buffer zone was demarcated around it.

DESCRIPTION OF AGRICULTURE AND RURAL AREAS

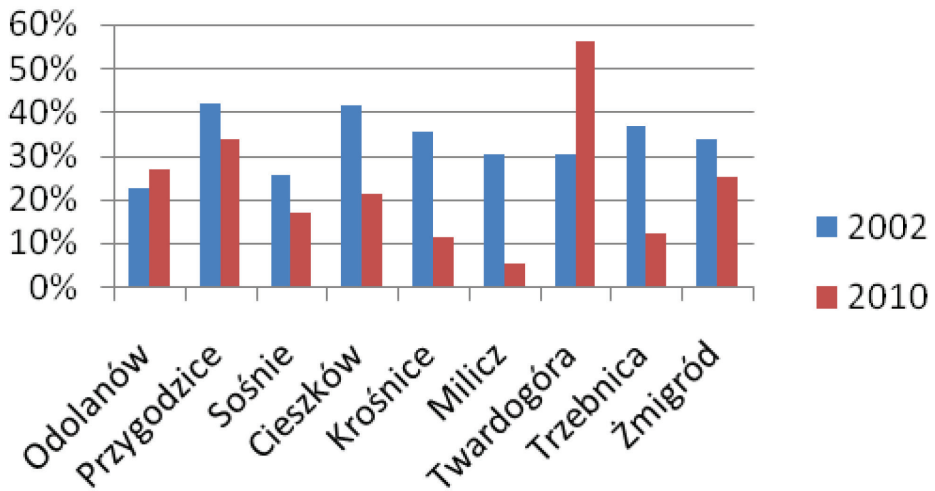
According to the data of 2011, forests take 41 per cent of the area of the Barycz Valley Landscape Park, farmland – 37 per cent, and waters – 9 per cent. The communities within the Park boundaries are still of the farming nature. Approximately 47 per cent of the professionally active population of the analyzed communities is agriculture-oriented (Spychała, 2010). This, however, is much diversified; the lowest rate of employment in agriculture (15 per cent) takes place in the community of Twardogóra. Also the difference between the Lower Silesia and the Greater Poland communities located within the Park boundaries can be observed, as definitely more farmers live within the territories of the Greater Poland communities (Spychała, 2010). The communities within the Park boundaries are rural (Cieszków, Krośnice, Przygodzice, Odolanów, Sośnie) and town and rural ones (Milicz, Prusice, Trzebnica, Twardogóra, Żmigród). Most of the communities declare among their aims of development to change their present function to be the touristic, recreational or farming and recreational one (Mastalska-Cetera, 2007).

Similarly as in other country regions, transformations of rural areas take place in the analyzed communities. According to the Agricultural Census of 2010, there are 2,668 farms within the territory of the analyzed communities, of which 99 per cent belong to the private sector. The material decline of the number of farms in 2010 in relation to the status as of 1996 should be mentioned (Figure 2). This is a trend for the entire Province of Lower Silesia, where the number of farms falls systematically. The growth in the number of private farms took place in the compared period. According to Census data, the share of private farms in 1996 was between 56 per cent (community of Krośnice) and 69 percent (community of Odolanów). Nearly 90 per cent of farms within the analyzed territory run farming business. The community of Twardogóra with only 40 per cent of farms doing so is an exception.



Source: own study on the basis of government statistical database www.stat.gov.pl

Figure 2. Number of private farms



Source: own study on the basis of government statistical database www.stat.gov.pl

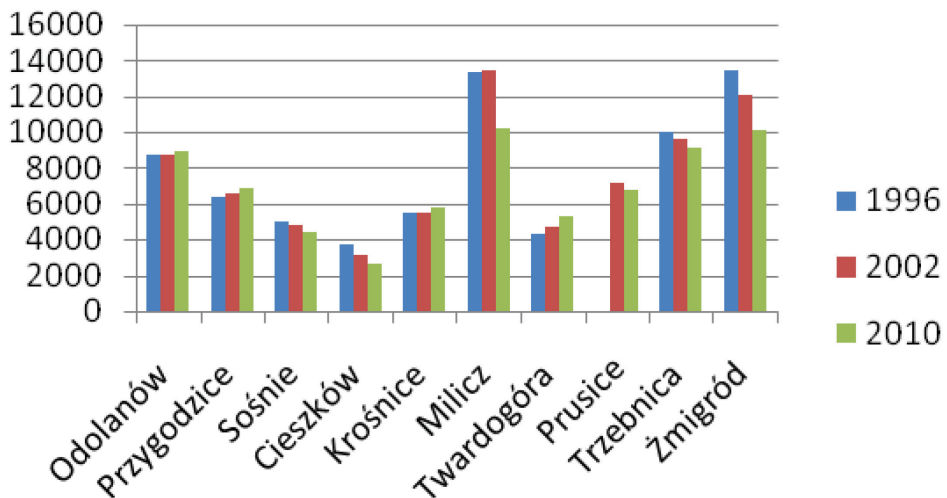
Figure 3. Share of farms with the area up to 1 ha

Table 1. Number of farms in detailed area groups

Community	Private farm				
	Farm total				
	up to 1 ha	1 – 5 ha	5 – 10 ha	10 – 15 ha	15 ha or more
Odolanów	431	638	276	130	125
Przygodzice	406	480	137	89	92
Sośnie	106	272	133	45	61
Cieszków	76	146	53	34	43
Krośnice	82	361	132	66	70
Milicz	60	518	205	124	180
Twardogóra	673	317	110	31	69
Trzebnica	150	613	281	88	93
Żmigród	269	316	208	108	161

Source: own study on the basis of government statistical database www.stat.gov.pl

Comparing to 1996, 2010 witnessed also changes in the area of private farms. According to the Agriculture Census of 2010, there are over 2000 private farms with the area of less than 1 ha, 14% less than in year 2002. The decrease is heterogeneous in communities, exception are the community of Twardogóra and Odolanów, where the number of small farms increased (Figure 3).

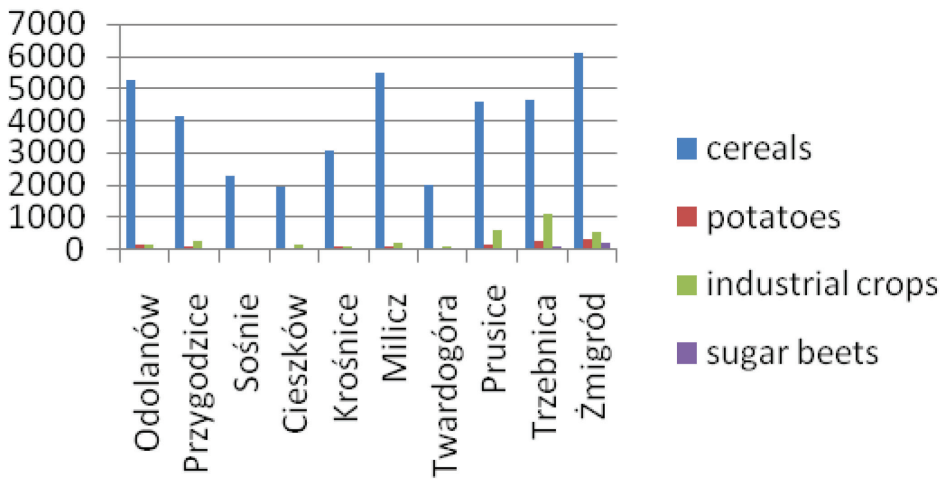


Source: own study on the basis of government statistical database www.stat.gov.pl

Figure 4. Change of area of agricultural terrain in selected communities (ha)

Comparing the outcomes of the Agricultural Censuses of 2010 and 1996 in respect of land use, the decrease in the area of farmland in the Lower Silesia communities should be mentioned. This is very often caused by change in farmland functions to be different than the agricultural ones; this is often equal to excluding such land from agricultural production. At the same time, this is a feature of the entire agriculture of Poland. In case of the Greater Poland communities of Odolanów and Przygodzice, there is a growing trend (Figure 4). From 82 to 93 per cent of the total area of land in the analyzed communities is covered by farmland, and it should be emphasized that this is farmland of good culture. The dominant crops on the arable lands are cereal plants (Figure 5).

Plant production is dominant among farms with agricultural production. Private farms with animal production are mainly oriented to pig breeding.



Source: own study on the basis of government statistical database www.stat.gov.pl

Figure 5. Area of farming (ha)

SPATIAL CHANGES ON RURAL AREAS

According to the guidelines of the *Agriculture and rural areas development strategy for the Lower Silesia Province*, the communities of Cieszków, Krośnice, Milicz, Prusice, Twardogóra, Trzebnica and Żmigród are within the scope of impact of the farming and recreational functional region (Kutkowska, 2010). This is an area of poor and average development conditions and of low and average level of socio-economic development. According to rural areas development aims laid down for this region, development of tourism and recreation as well as intensive development of organic farming and fishery should take

place there. When describing the agricultural production area in the analyzed communities, it should be emphasized that the studied communities in the Lower Silesia Province were also accounted into less-favoured areas, for which it is possible to obtain agricultural financial subsidies from European Union funds. The rules of subsidizing farms were specified in the Rural Development Programme for 2007-2013. Making use of available supporting financial tools and rural and agrotourism-related investment undertakings, it would be possible, as Kutkowska suggests, to develop alternative agricultural systems: organic, protecting, quality and precision farming (Kutkowska, 2010). Agricultural production on the analyzed area seems necessary to *'keep on the continuity of the farming and forestry use of land and landscape conservation, to preserve the touristic attractiveness of rural areas'* (Strategia, 2000).

Table 2. Change of areas designation in the communities in 2010

Specification	change of designation; from agricultural into non-agricultural		change of designation; from forest into non-forest	
	provided for in the Study (ha)	provided for in the local master plan (ha)	provided for in the Study (ha)	provided for in the local master plan (ha)
Odolanów	0	212	5	3
Przygodzice	1200	21	20	0
Sośnie	no data available	0	no data available	11
Cieszków	165	59	1	1
Krośnice	300	982	0	0
Milicz	no data available	0	no data available	1
Twardogóra	no data available	0	no data available	0
Prusice	0	223	0	1
Trzebnica	1710	402	14	0
Żmigród	0	0	0	0

Source: own study on the basis of government statistical database www.stat.gov.pl

Changes in the area of agricultural production both within the analyzed area and throughout Poland are affected by various socio-economic and natural factors. In case of the communities within the boundaries of the said Park, the reasons should be found also in the existing spatial policy. Data about planning works show the continuous process of excluding farmland and forest land from their present use. This process takes place both on the level of guidelines to Studies of Spatial Development Conditions and Directions, provisions of local master plans, and also by means of issued decisions on land development and

management conditions (Table 2). On the basis of available statistical data it was stated that the total area of arable land in the communities of Przygodzice, Cieszków, Krośnice and Trzebnica, which designation was changed in the Study to be different than agricultural, was 1,710 ha in 2011. Studies provisions are exercised in local master plans, with the effect of excluding 1,899 ha from agricultural production on the basis of decisions included in local master plans.

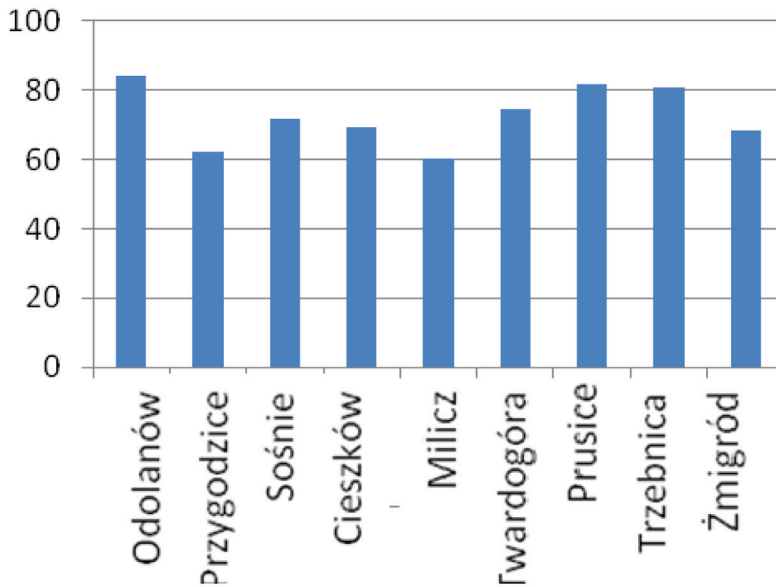
Table 3. Number of decisions on land development and management conditions in each community in 2009 – 2011.

Community	2009	2010	2011
Odolanów	114	121	109
Przygodzice	180	207	203
Sośnie	72	59	60
Cieszków	23	31	26
Milicz	64	38	63
Twardogóra	134	141	94
Prusice	211	142	117
Trzebnica	344	339	254
Żmigród	153	129	95

Source: own study on the basis of government statistical database www.stat.gov.pl

The analyzed communities report material growth in the area of territories for development, including mainly single-family housing development (Figure 6). As the area is not fully covered by master plans in force, this takes place very often also by means of decisions on land development and management conditions (Table 3). In case of landscape parks, this is particularly adverse situation, because it can cause e.g. that development is dispersed excessively.

All the decisions made within the framework of planning works in progress are of great importance, they can affect rural areas positively, including individual cases of areas within valuable territories. For example, controlled continuity of development in existing rows, development of technical infrastructure contributing to limiting risks for the environment, growth in the attractiveness of rural areas could be positive actions. However, more often we have to do with disadvantageous decisions, such as introducing new development creating barriers and preventing fauna from migration within territories under no investment to date, growth in biologically non-active areas, introducing too dense development or removing trees and destroying low greenery areas (Cetera, Warczewska, 2011).



Source: own study on the basis of government statistical database www.stat.gov.pl

Figure 6. Number of decisions for single-family housing comparing to all decisions (%)

CONCLUSIONS

According to the assumptions of the rural areas sustainable development, making these areas more attractive, creating new jobs, new sources of income for their population and also improving rural spatial development should be striven. Wrong interpretation of this provision often results in conflicts. In the case of the Barycz Valley Landscape Park, the most often mentioned issues are as follows: growing deficit of water due to poor water management, degradation of meadows due to drainage works, giving up traditional forms of green areas management due to abandoning them to get overgrown, and due to transforming them into arable land or land for cottage development (Krukowski, Drabiński, 2009).

To sum up, it should be emphasized that the valuable natural qualities of the analyzed region, conserved both within the framework of the landscape park and Natura 2000 are threatened. Establishing the forms of protection does not resolve appearing conflicts. Great importance in solving these problems should be attached to the ecological awareness of the society and also to actions of state administrative authorities. Pursuant to Bałtromiuk's research, the awareness of links between agriculture and the natural environment is growing among farmers (Bałtromiuk, 2010). However, there still is a common opinion that introduction

of new forms of protection is to cause loss of income due to limits in relation to agricultural production as such. On the other hand, however, payments by virtue of location on less-favoured areas and of joining agricultural and environmental programmes do not compensate these losses; this is why such payments are not fully used.

The changes taking place in agriculture in the communities within the analyzed Park territory do not substantially diverge from changes taking place in Poland. Excluding agricultural land from production is one of the main problems of Polish rural areas. Issues of excessive development of the settlement and recreational function concern many Polish landscape parks, particularly those located in close vicinity to big cities. Landscape parks have become an attractive location for residence, both temporary and permanent. The Bystrzyca Valley Landscape Park and the Ślęza Landscape Park, both within the range of impact of Wrocław are examples of the strong investment pressure. The Barycz Valley Landscape Park is situated within the distance of 50 km from Wrocław, Kalisz and Leszno, and 100 km from Poznań; this also causes the growth of interest in this Park, also as a region for investments (Mastalska-Cetera, Warczewska, 2011). It seems that making full use of available financial and legal tools could affect the condition of agricultural production, having influence on the social and environmental situation, striving in this manner for more sustainable development of rural areas.

REFERENCES

- Bałtromiuk A., Perepeczko B., (2010), *Wpływ obszarów Natura 2000 na rozwój gmin wiejskich – impuls czy hamulec?*, (w:) Bałtromiuk red. *Europejska sieć ekologiczna Natura 2000 jako nowy element otoczenia polskiej wsi i rolnictwa*, Instytut Rozwoju Wsi i Rolnictwa Polskiej Akademii Nauk, Warszawa
- Dubel K., (2001), *Ochrona i kształtowanie środowiska*, Fundacja Centrum Edukacji Ekologicznej Wsi, Krosno
- Krukowski M., Drabiński A., (2009), *Ochrona przyrody w Parku Krajobrazowym Dolina Baryczy*, Wrocław
- Mastalska-Cetera B., (2007), *Obszary chronione, szansa i zagrożenie dla rozwoju obszarów wiejskich*, (w:) *Studia obszarów wiejskich* t.12, W-wa;
- Mastalska-Cetera B., Warczewska B., (2012), *Rola planowania przestrzennego w zrównoważonym zagospodarowywaniu przestrzeni Parku Krajobrazowego Dolina Baryczy*”, *Studia KPZK* t. CXLII, Warszawa.
- Poskrobko B.,(2008), *Zarys charakterystyki systemu zarządzania ochrona przyrody w Polsce* (w:) Zimniewicz K., red. *Bariery w zarządzaniu parkami krajobrazowymi w Polsce*, Polskie Wydawnictwo Ekonomiczne, Warszawa
- Spychała A.,(2010),*Funkcja turystyczna Parku Krajobrazowego Dolina Baryczy*, Bogucki Wydawnictwo Naukowe, Poznań.

Warczevska B., Mastalska-Cetera B., (2011), *Wyzwania zrównoważonego rozwoju turystyki w Parku Krajobrazowym Dolina Baryczy*, Prace naukowe Uniwersytetu Ekonomicznego we Wrocławiu, nr 157, Gospodarka turystyczna w regionie. Przedsiębiorstwo. Samorząd. Współpraca.

Strategia rozwoju rolnictwa i obszarów wiejskich województwa dolnośląskiego .

Ustawa z dnia 16 kwietnia 2004 r. o ochronie przyrody (Nature Conservation Act of 16 April 2004 (Journal of Laws of 2004 No. 92 item 880).

This research paper was financed from the science funds for the years 2010-2013 as a research project NN 114 168938

Dr inż. Barbara Mastalska-Cetera, dr inż. Beata Warcevska
University of Life Sciences in Wrocław, Poland
Tel. 71-3205671, Barbara.mastalska-cetera@up.wroc.pl
Beata.warczevska@up.wroc.pl