

## THE PHENOMENON OF LAND ABANDONMENT IN THE OPINIONS OF AGRICULTURAL ADVISERS (EXAMPLE OF PODLASKIE VOIVODESHIP)

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### ABSTRACT

The phenomenon of abandoning agricultural land is the same as discontinuing the agricultural use of certain agricultural land, the causes of which should be sought in environmental, economic and social factors. In the Podlaskie Voivodeship, agriculture plays a key role in economic life due to the significant number of lands classified as agricultural and century-old tradition of agriculture. The research assessed the existence of threats that could cause the problem of abandonment of agricultural land in the region and indicated the complexity of the land abandonment phenomenon. The study is based on opinions of advisers from the regional Agricultural Extension Service Centre. The results indicated that the process of ceasing to use agricultural land is the result of many factors that mutually influence and strengthen each other.

**Keywords:** land abandonment, land use, agriculture, Podlaskie Voivodeship

**JEL codes:** Q12, Q15

### INTRODUCTION

The changes taking place in the contemporary world leave an imprint on the development and functioning of agriculture. Conducting agricultural activity is impossible without using land as a resource, which plays a key role in the process of providing the right amount and quality of food to the public. The renewal and substitutability of a land's resources is very limited, and therefore we should be treated as a crucial factor in agricultural activities. The processes reducing the amount of land available for agriculture are therefore extremely negative, which justifies the importance of research in this area (Inspekcja Ochrony Środowiska Białystok, 2011).

The decrease in use of certain agricultural land and ceasing agricultural production thereon is called the phenomenon of land abandonment. As a result, not only a reduction in the availability of land for agricultural production occurs but, above all, changes in the natural environment and landscape of rural areas take place, resulting in socio-economic changes. The phenomenon of abandonment of agricultural land has only slightly been examined in the context of its impact on the economic environment. The way to more thoroughly understand the phenomenon under consideration, is to analyse the reasons for its occurrence and factors that determine that some areas are abandoned and others are continuously used.

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The Podlaskie Voivodeship is one of the agricultural regions of Poland, and farmlands make up a significant percentage of its area (Urząd Marszałkowski, 2006). Satellite surveys of Central and Eastern Europe have shown that this region of Poland is characterized by the largest share of lands abandoned in relation to the rest of the country (Alcantara et al., 2013). The main aim of the study was an attempt to outline expert opinions concerning the phenomenon of land abandonment in the Podlaskie Voivodeship, which has not yet been researched before.

### **THEORETICAL BACKGROUND**

The phenomenon of land abandonment is a gradual process of discontinuing the agricultural usage of land and it combines economic, natural and social aspects. Understanding the fact of limiting the usage of certain farming lands, it is necessary to make decisions related to future agriculture and trade. In foreign literature, this phenomenon has several mutually complementary definitions (Renwick et al., 2011).

Keenleyside and Tucker (2010) define that land abandonment leads to a significant reduction in the cultivation of agricultural land, which leads to unwanted changes in the ecosystem. The land that was once used in agriculture and remains covered with natural vegetation during the year is abandoned land according to Bühnemann, Schreiber and Billion (1979), with the indication that these lands are currently not alternatively used as forest or urbanized area. MacDonald et al. (2000) add that this phenomenon can begin the moment the financial and material revenues from the land are utilized and, from an economic view, the continuation of agricultural production on it is not profitable at all. Pinto Correia (1993) draws attention to the relativity of the word abandonment and indicates terms of similar meaning as marginalization or extensification. Land abandonment in this approach may mean a modification of the management method to a less intensive one. Russo's land abandonment process (2003) is not immediate and involves a transition from an extensive or traditional cultivation system towards even less intensive use, until a total reduction of human activity (Russo et al., 2006). Morovec and Zemeckis (2007) referred to inconsistent definitions

of land abandonment in law and science. They pointed out that inaccuracies related to the interpretation and measurement of the phenomenon in Europe may contribute to a lack of actual information about its scale.

The Food and Agriculture Organization of the United Nations and the European Commission have differently defined the time that must pass from the cessation of agricultural use to stating that the land was abandoned. FAO defines abandoned land as all land which is not used in agriculture and connected production for a minimum period of five years. The European Commission, among agricultural-environmental measures, distinguished that land can be assessed as abandoned when it is not used for agriculture or when there is no other economic activity for a period of three years (Council Regulation (EEC) 2078/92).

The Entrepreneurs Organization (EO) indicates that the phenomenon of land abandonment should be rather approached in the way of land management rather than in the vegetation growing on a given area. It is consistent with the position that a change in vegetation is a consequence of changes in the way agriculture is managed (Saukup, Brodsky and Vobora, 2009).

Depending on the extent to which the use of agricultural land has been discontinued, three main types of abandonment of agricultural land can be distinguished (Pointereau et al., 2008). Lack of any form of farming on a given land is also understood as actual abandonment. It is accompanied by a process of overgrowing with natural plant cover, i.e. weeds, shrubs and trees adapted to the climate zone and soil type (Lasanta-Martinez, Vicente-Serrano and Cuadrat-Prats, 2005). Semi-abandonment can be distinguished in the case of a minimal level of farming on agricultural lands. Officially, such lands are not qualified as abandoned, because small-scale agrotechnical activities are carried out on them. Often such a kind of land abandonment is called hidden abandonment as the agrotechnical works there are often insufficient to maintain good conditions of soil environment. The purpose of such management is to meet the requirements of the cross-compliance mechanism, which are mandatory in order to obtain EU subsidies (Verburg and Overmars, 2005). It also happens that a farm with land of marginal importance is later put to normal agricultural use in

the future. Occasional or very extensive use can also be classified as semi-abandonment (European Union, 2004). The effect of complying with old regulations on the obligatory setting-aside of agricultural land was the appearance of the phenomenon of traditional abandonment (Keenleyside and Tucker, 2010).

The phenomenon of abandonment of agricultural land is a consequence of many interrelated causes, which in the majority of cases intensify each other (Moravec and Zemeckis, 2007). Cited by many authors, including Baudry (1991), Gellrich and Zimmermann (2007), Pointereau (2008) and others, the reasons for the abandonment of agricultural use of some lands are present in many areas of science, which indicates the need for a multi-directional analysis. In literature devoted to the study of the described phenomenon, references are made to such reasons as environmental, economic, social, political, legal, historical or agronomic (Pointereau et al., 2008). Due to the specificity of agricultural production, as work with living organisms using a natural environment, in many cases natural causes play a dominant role (Cieśliński et al., 1987). The diversity of regions and the different specificity of conditions of agriculture characteristic for them, multiply the difficulties with the unequivocal determination of the causes of land abandonment (Terres, Nisini and Anguiano, 2013).

One of groups that cause the phenomenon of land abandonment include economic reasons. A decrease in income stemming from cultivation, the inability to cover expenses related to it and the risk of conducting agricultural activities are the main reasons for abandoning land use. This of course is directly related to the economic environment in a given region. Agricultural and macroeconomic indices are also highly significant. An important element is also the functioning of the agricultural land market and legal conditions for land acquisition (FAO, 2006).

## **MATERIALS AND METHODS**

In the theoretical part of the paper, source material from foreign literature devoted to the study of the land abandonment phenomenon was used. In the practical part of the paper, qualitative research was carried out in the form of expert interviews with 13 agricultural advi-

sors from the Podlasie Agricultural Advisory Centre in Szepietowo. Interviews were conducted with advisers related to such departments as: the Department of Economics and Management of Agricultural Farms, the Department of Organic Agriculture and Environmental Protection, the Rural Development Department and the Department of Plant Production Technology and Experimentation. After an evaluation of main characteristics of conducting agricultural activity in the Podlaskie Voivodeship, they were compared to reasons of land abandonment mentioned in the theoretical part of the paper. Basing on this, a questionnaire for extended interviews was created. The answers were evaluated according to the Likert scale. The purpose of the interviews was to obtain information about the scale and assess the reasons for abandoning agricultural land in the Podlaskie Voivodeship.

## **RESULTS AND DISCUSSION**

Advisors agreed that the problem mainly concerns agricultural land located within the eastern border of Poland, the so-called Eastern wall. The main adviser dealing with issues of rural development classified the Poviats of the studied region in accordance with the prospects for the existence of abandoned land there. According to expert opinions, Poviats exposed to a greater extent to the abandonment of agricultural land use are eastern Poviats (Łomżyński, Grajewski, Moniecki, Suwalski, and Sejneński) and the Kolneński Powiat.

Two factors have been identified as those having a rather large impact on the occurrence of land abandonment. The first of these two is the most common reason for the abandonment of agricultural land, not only in the studied region, but also in global research (Kuemmerle et al., 2008). Experts pointed out that natural conditions and their quality in the Podlaskie Voivodeship contribute the most to the occurrence of land abandonment. At the same time, they confirm that despite the constant development of agricultural production techniques and technologies, certain conditions cannot be eliminated without suffering disproportionate costs. For example, with the modern development of science, farmers are able to grow corn on a plot located near a forest, but the economic

legitimacy of this activity is in many cases negligible (Bórawski, 2007; Babuchowska and Marks-Bielska, 2012; Kisiel and Babuchowska, 2013; Inspekcja Ochrony Środowiska Białystok, 2016).

The second factor, which according to experts has a large impact on the occurrence of land abandoning, is socially based, such as generational changes

and how young people perceive working in agriculture. In the opinion of one of the advisers, most often young people do not want to work in agriculture. The adviser assumed that it is associated with hard physical work, especially on small farms, with a lower level of production process modernization (compared to large, modern farms). The adviser admitted

**Table 1.** Assessment of the impact of factors favouring the presence of disused agricultural land in agriculture in the Podlaskie Voivodeship (scale: 1 – not at all; 7 – absolutely yes)

No	Factors favouring the abandonment of agricultural land	Average rating by experts
1	Poor environmental conditions to conduct agricultural production (e.g. poor soil, unfavourable terrain, wetlands, stoney etc.)	<b>3.67</b>
2	Unfavourable farm locations – a lot of small plots distant from each other	2.83
3	Legal protection, which limits the possibilities of use for agricultural activities (e.g. areas of a National Park, protected landscape areas, Nature 2000, etc.)	2.58
4	Lower profitability of agriculture in the Podlaskie Voivodeship	2.67
5	Insufficient investment in agriculture	2.50
6	Problems with land inheritance and the transfer of land to the younger generation (no successors)	2.25
7	Legal restrictions on the purchase/sale of agricultural land	<b>3.08</b>
8	High prices of agricultural land and permanent grassland limiting the number of transactions with plots of low agricultural potential	2.83
9	Keeping agricultural land by farmers as an investment good	2.83
10	High costs of land use, e.g. agricultural inputs (e.g. fertilizers, fuels, work)	2.92
11	Lower consumption of NPK and calcium fertilizers per 1 ha in the Podlaskie Voivodeship than the average in Poland	2.58
12	Noticeable strong specialization of agriculture in Podlasie towards milk production	2.67
13	Low yields of cereal and potatoes obtained from 1 ha of agricultural land	2.50
14	Lower labour resources available for agriculture compared to the national average	2.83
15	Aging of people managing a farm / problems with succession	3.00
16	A low level of urbanization in the Podlaskie Voivodeship. which results in weaker access to the technical and service infrastructure of the population	2.42
17	Generational changes regarding the perception of work in agriculture (young people do not want to work in agriculture)	<b>3.50</b>
18	Insufficient level of agricultural education of people managing farms	2.42
19	Farmers' reluctance to receive support from EU funds	1.67
20	Insufficient knowledge of farmers regarding programmes supporting agriculture from EU and national funds	2.00
21	Migration of people from villages to cities	3.00

Source: own study based on expert interviews.

though that upon an exchange of views with young people, they often present their devotion to working in agriculture and want to run their own farms. Another reason for agricultural land abandonment in the Podlaskie Voivodeship, in the opinion of the expert group, could be changes in law and resulting restrictions in land purchase/sale transactions. Other issues causing the phenomenon under investigation, which are worth highlighting, are problems with the indication of a successor and problems with inheritance as well as the migration of the rural population.

All answers given in the above described part of the interviews confirm the complexity of abandonment of agricultural land. Experts disagreed with each other in all points. Often, besides reasons of land abandonment coinciding with the opinion of other experts, different and new justifications were given. Research has shown that despite the experts' different views on the problem of abandonment of agricultural land, some reasons are the same in the advisors' answers. After thoroughly analysing the answers of experts, it can be concluded that the abandoning of agricultural land is a complex phenomenon. The research confirmed that it is not possible to indicate only one factor responsible for the occurrence of land abandonment, because it is most often associated with several causes.

The next issue discussed in the interviews concerned the assessment of the phenomenon of ceas-

ing to use agricultural land as positive or negative in the opinion of experts. In most cases, advisors shared the opinion that this is a negative phenomenon considering the functioning and development of agriculture. The arguments for justifying such opinions were different. The opinion of the adviser from the Development Department was that despite obstacles and difficulties, agricultural land should be used, not only for the economic viability of this activity, but also to preserve the landscape potential of agricultural areas. This adviser believed that the land is able to yield the right level of outlays incurred in the process of its use. Another expert added that abandonment of agricultural land leads to a decline in agricultural production, which is a manifestation of negative phenomena in the functioning of agriculture in the Podlaskie Voivodeship. Another expert from the Development Department stated that abandoning of agricultural land is a waste of potential and a threat in the process of agricultural development.

The last issue addressed in the interviews concerned the evaluation of the proposed activities, which could contribute to reducing the abandoning of agricultural production on some land. Experts assessed each proposition of action on a seven-point scale (1 – not at all; 2 – no; 3 = rather not; 4 – neutral; 5 – rather yes; 6 – yes; 7 – absolutely yes). Table 2 contains the average results of the evaluation of individual activities.

**Table 2.** Average assessment in the area of activities aimed at reducing the practice of abandoning agricultural production (scale: 1 – not at all; 7 – absolutely yes)

No	Measures reducing the occurrence of abandonment of agricultural land	Average rating by experts
1	Development and support of organic farming that also uses areas valuable from the point of view of nature conservation	6.17
2	Increased number of inspections and fines for lack of agricultural use of agricultural land	3.17
3	Training and educational programmes on the consequences of not using certain agricultural lands in agricultural production	5.25
4	Increased support and education of farmers in the field of receiving assistance from the EU and national funds	5.75
5	Programmes for consolidation of small soils	6.33
6	Subsidies for farming on less-favoured land (LFA)	6.08
7	The obligation to grow the land when the holding applies for EU subsidies	6.00

Source: own study based on expert interviews.

The idea of supporting and developing organic farming as an opportunity for using the environmental potential of the Voivodeship was assessed highly by experts. Promotion of regional products and the value derived from the consumption of healthy food is nowadays a popular activity that gathers the sympathy of the society and co-financing institutions. The greatest interest among the ideas to decrease land abandonment was aroused by the proposal of actions aimed at the consolidation of fragmented land and improvement of the agrarian situation. One of the proposals, which according to experts would not decrease abandonment, concerned an increased number of controls and financial penalties for the lack of agricultural land use. According to advisers, this type of action would trigger negative reactions among the farming community, as farmers already have to be wary of the many penalties that could potentially be imposed on them.

## CONCLUSIONS

The phenomenon of abandonment of agricultural land is found in regions burdened with harsh enough natural conditions to impede agricultural production, but also in regions with a poorer economic situation, which are struggling with social problems. Podlasie, being such a region in Poland, was examined for the presence of factors increasing the risk of abandoning agricultural land. Within the studied region, there are a number of reasons that have an influence on the occurrence of the land abandonment phenomenon. As a result, the lands located in Podlasie are exposed to abandonment, which is associated with degradation, decline in agricultural production and the weakening role of agriculture in the social and economic structure.

Qualitative research in the form of expert interviews with agricultural advisors associated with the Agricultural Advisory Centre of Podlasie confirmed that the phenomenon of abandoning agricultural land in the Podlaskie Voivodeship could be caused by many factors that connect and intensify their influence. Factors affecting the occurrence of agricultural land abandonment overlap and it is impossible to indicate just one reason for the occurrence of this

phenomenon. Experts from various departments dealing with agriculture paid greatest attention to the significance of environmental causes and limited profitability of agricultural production associated with it. As a reason for abandoning the whole or part of the land, difficulties in using land with poor natural conditions in a way that would bring financial benefits for farmers were pointed out. Due to the limited production potential of certain agricultural lands, activities there are often gradually discontinued. Advisors assessed the importance of financial support for farmers using such lands as compensation for expenses related to agro-technical work, etc., in exchange for maintaining land in good agricultural condition and protecting the countryside's landscape.

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