

**ENVIRONMENTALLY FRIENDLY
AGRICULTURE.
IN THEORY AND PRACTICE**

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Table of Contents

INTRODUCTION	4
1. DETERMINANTS OF SUSTAINABLE RURAL DEVELOPMENT (Z. Brodziński)	7
2. THE ISSUES OF IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT PRINCIPLES (K. Brodzińska, E. K. Chyłek)	21
2.1. Support for Sustainable Development in the CAP Guidelines	21
2.2. The Level and Structure of Farmers' Activity in Applying for EU Funds	23
2.3. Barriers Reducing the Farmers' Investment Activity.....	30
3. PRO-ENVIRONMENTAL ACTIVITIES IN AGRICULTURE (K. Brodzińska)	36
3.1. Protection of Agricultural Environment under the Common Agricultural Policy ...	36
3.2. Single Area Payment Scheme (SAPS)	37
3.3. Supporting Agricultural Activities on Less-Favoured Areas (LFA).....	41
3.4. Agri-Environment Payments	43
3.5. Afforestation of Agricultural Land and Non-Agricultural Land.....	46
3.6. Other Types of Pro-Environmental Support Under the CAP	48
4. IMPLEMENTATION OF THE AGRI-ENVIRONMENTAL PROGRAMME ON THE REGIONAL LEVEL (W. Gotkiewicz, M. Mickiewicz)	52
4.1. Regional Determinants of Agricultural Production.....	52
4.2. The A-EP Beneficiaries' Socio-Professional Profile	53
4.3. The Characteristics of the Farms Carrying Out the Agri-Environmental Commitments	56
4.4. Factors Determining Implementation of Particular A-EP Packages	57
5. PROSPECTS FOR THE DEVELOPMENT OF ORGANIC FARMING IN POLAND (A. Pawlewicz)	64
5.1. Spatial Diversity of Organic Farming	64
5.2. Problems of Functioning and Development of Organic Farms in their Owners' Opinions	68
5.3. Forecasts of the Development of Organic Production	72
6. PROBLEMS OF FUNCTIONING OF ORGANIC FARMS IN NATURA 2000 AREAS (K. Brodzińska, W. Gotkiewicz, A. Pawlewicz)	82
6.1. Legal Basis and Principles of Establishing the Natura 2000 Network.....	82
6.2. Principles of Management in Natura 2000 Areas	84
6.3. The Management Practice	86
7. THE ROLE OF EDUCATION AND ADVISORY SERVICES IN DEVELOPING PRO-ENVIRONMENTAL ATTITUDES AMONG FARMERS (K. Brodzińska)	93
7.1. Agricultural Impact on Natural Environment	93
7.2. Farmers' Environmental Awareness	97

7.3. Trends and Means for Advisory Supporting for Agricultural Producers in the Field of
Environmental Protection 100

INTRODUCTION

There are interdependencies in the relations between the natural environment and farming practice. On the one hand, the natural conditions (the quality of soils, hydrographic and climatic conditions) substantially determine productivity in the agricultural sector; on the other hand, it is agriculture that affects the state of the natural environment (pollution of underground water, eutrophication of surface waters, soil degradation).

Developing appropriate relations between the environment and the farming practice depends, to a large extent, on the agricultural policy (since 2004, it has been the Common Agricultural Policy, CAP). The successive CAP reforms increasingly integrate the environmental protection into the agricultural policy. Many issues are regulated by EU Directives (such as the Birds Directive, Habitats Directive and Nitrates Directive) which allow the Member States considerable latitude in deciding their activities as regards implementation of legislation aimed at achieving the objective set by a given Directive. Therefore, it is important to contrast the principles of existing legislation with the economic practice being carried out.

The aim of this publication is to analyse the possibilities for the development of environmentally friendly agriculture in Poland. Within the context of the environmental determinants and existing support instruments, the means for improving the efficiency of the financial instruments being applied in reduction of the negative environmental impacts generated by agricultural activities were identified.

The research material included data from System Informacji Zarządczej ARiMR (*Management Information System, Agency for Restructuring and Modernisation of Agriculture (ARMA)*), data from GUS (*Central Statistical Office*) and the results of survey research conducted among farmers and agri-environment advisors from the provinces of the northern Poland. The research carried out in 2008-2009 surveyed: the farmers interested in the implementation of measures under the RDP 2007-2013 (*Rural Development Programme, PROW*) (3261 persons); the farmers-beneficiaries of the Agri-Environmental Programme (750 persons); the farmers who were owners of organic farms (72 persons); farmers running farms in Natura 2000 sites (63 persons); and agri-environment advisors (85 advisors holding the Agri-Environment Advisor Certificate and having practical experience in developing and implementing agri-environmental action plans). The applied methods include comparative analysis: horizontal (within provinces) and vertical (in the years 2004-2010). Moreover, one

of the methods of causal research was applied, namely the deterministic method used to determine the impact of financial support on the decisions taken by farmers on land use.

The first chapter of the publication introduces the concept of sustainable development, which occupies an important place in the European Union policy. It presents definitions and a variety of views on the notion of sustainable development. As regards agriculture, this term has been defined as managing an agricultural ecosystem in such a way as to ensure its biological diversity, productivity, ability to recover and viability, as well as a mode of management which ensures fulfilling the ecological, economic and social functions, both present and future, at the local, national and global level, while eliminating negative impacts on other ecosystems.

The next chapter discusses implementing programmes aimed at the implementation of the notion of sustainable development of rural areas in practice. It covers both the use of resources from the pre-accession programmes (PHARE, SAPARD) and from the programmes carried out after 2004. A detailed analysis covered the measures implemented under the RDP 2004-2006, SPO “Rolnictwo” (*Sectoral Operational Programme – Agriculture*) and the RDP 2007-2013 which were aimed not only at improving the competitiveness of agriculture but also at performing actions towards the environmental protection.

The third chapter reviews pro-environmental measures performed under the CAP. Assessment of the system for support of the agricultural sector with CAP financial resources is hindered due to the lack of appropriate indicators. The most frequently used indicator is the area of agricultural land where particular CAP measures, supposed to protect the natural environment, are being implemented. The area indicator does not provide information on the environmental effectiveness of these measures but it allows us to presume that the obligation to conform to the existing norms brings about positive changes within the environment. Linking direct payments with the cross-compliance instrument is an important component of the environmental sustainability.

The next chapter assesses the implementation of the Agri-Environmental Programme in selected provinces. The assessment of the Programme’s impact on the environment is also hindered due to the lack of agri-environmental indicators which could provide information on the changes (both positive and negative) occurring in the rural areas as a result of the implementation of this instrument. In view of the above, identification of the factors which condition the implementation of particular Agri-Environmental Programme packages, taking into account the regional determinants of agricultural production, provides some interesting knowledge on the operational mechanisms of the instrument in question.

The fifth chapter provides an insight into the possibilities for development of organic farming in Poland. There is an apparent trend towards an increase in the number of farms where organic methods of production are used. The farmers' interest in this production system has increased, especially following Poland's accession to the EU. The direct cause of the increase in the farmers' interest in the organic production was the financially attractive support system under the Agri-Environmental Programme. However, a further development of organic farming requires systemic measures to be taken, related not only to the agricultural and food processing (a high rate of the increase in the number of entities in the agribusiness sector, which process raw materials from organic farms, has been reported) but also to the distribution system and marketing of the products manufactured using organic methods.

The sixth chapter is dedicated to the operation of agricultural farms located in Natura 2000 sites. The legal basis for the Natura 2000 network refers to the notion of sustainable development while indicating the need to manage the natural resources in such a way as not to disturb the balance in the nature. However, the management practice proves that transformation of the production system towards the organic, or integrated, production system (which should be applied in the legally protected areas) does not depend on the inclusion of an area in the Natura 2000 network but is determined by other factors, for example a type of production, organisation of a farm etc.

The final chapter takes up the issue of the role of education and advisory services in developing farmers' pro-environmental attitudes. This is the environmental awareness among farmers, and the rational management principles they apply, that the sustainable development of agriculture in the environmental dimension depends on. Creating the agricultural producers' pro-environmental competences may be facilitated by comprehensive information and training activities; however, the system of educational activity, teaching, advisory services and financial incentives, among which the CAP measures can undoubtedly be counted, is also important.

Zbigniew Brodziński

1. THE DETERMINANTS OF SUSTAINABLE RURAL DEVELOPMENT

The notion of sustainable development¹ took an important place in one of the main strategic EU documents, namely the one adopted on 18 March, 1992 and entitled “*Towards sustainability*”, as well as in the Treaty of Amsterdam of 1997. Moreover, it was an integral part of the Agenda 2000 action programme which indicated the European Union objectives for the 2000-2006 period, and of the Lisbon Strategy. The latter document, adopted by the Council of the European Union in March 2000, presented the new EU approach to the analysis of the factors of competitiveness, which resulted from three main dimensions of the indicated strategy itself, namely its economic and social dimensions as well as the dimension related to the need for protection of the environment.

Under the socially accepted principles of the sustainable development, attention is paid to the supranational dimension of this notion (*Wskaźniki zrównoważonego...*, 2005), while highlighting the need for a local way of approaching the process of modelling the occurring socio-economic changes. It is worth noting that at the Johannesburg Earth Summit in 2002, an unambiguous declaration was made that the sustainable development was the only way which could lead to the improvement of the quality of life for all people, without causing over-exploitation of the Earth’s natural resources (Kośmicki, 2002). The presented view is confirmed in the most frequently quoted definitions of sustainable development which is perceived as:

- meeting the needs of the present generations without compromising the ability of future generations to meet their own needs (*Our Common...*, 1987);
- improving the quality of life for all people within the framework of the existing limits of environmental capacity (a definition approved by, *inter alia*, international institutions such as: UNEP – *United Nations Environment Programme*, IUCN – *International Union for Conservation of Nature*);
- seeking to achieve a higher quality of life for all people, where the economic and social development as well as the environmental protection are interdependent and mutually reinforcing components (Commission ... 1987);

¹ This term, in an increasing number of researchers’ opinions, defines the need to strike a balance between the economic and social objectives and the quality of the environment, including preservation of the natural resources for future generations.

- integration and cohesion of the economic, social and environmental aspects, which is conducive to obtaining the sustainable economic and social development through: ensuring access to the natural resources, both renewable and non-renewable; improvement of the quality of life in a clean and unaffected environment; economic growth taking place due to the more efficient utilisation of raw materials and other natural resources; optimisation of the energy and work consumption; development of the pro-environmental technologies as well as conservation of the natural and cultural heritage (*Polska 2025...*, 2000);
- harmonising and balancing the economic development with the sustainable and non-inflation growth, while respecting the natural environment (*Maastricht Treaty...*, 1992);
- continuation of the economic and social development without prejudice to the environmental resources, the quality of which determines the human activities and their further development (*European Community...*, 1993);
- providing the basic social and economic services as well as the environment to the inhabitants of a given community, without creating risks to the environment and socio-production systems on which these services depend (*International Council*);
- such regularities of the socio-economic development (eco-development) in which the process of integration of political and social measures occurs, while maintaining the natural balance and the stability of the basic natural processes, in order to guarantee the possibility for meeting the basic needs of particular communities and/or citizens, for both the present generation and the future generations².

The concept of *sustainable development* has become a component of the United Nations measures (*the Global Compact Programme*), the OECD Guidelines, European Union, and a topic of the discussion at the World Economic Forum in Davos (Von Weizsacker *et al.*, 1999). In most of known definitions of this concept, common components can be found, such as, *inter alia*:

- rejection of the ‘zero growth’ concept in order to reconcile the environmental and socio-economic problems;
- the necessity for analysing the impact of the results of the decisions being presently taken on the future of coming generations;

² Act of 27 April 2001 – Environmental Protection Law (Dz.U. [*Journal of Laws*] of 2008, No. 25, Item 150) – on the 1 January, 2010, the Act of 20 November, 2009 on the amendment of the Environmental Protection Law and certain other Acts (Dz.U. [*Journal of Laws*] of 18 December, 2009, No. 215, Item 1664) entered into force.

- indication of the interdependencies between the economic, environmental and social components of development;
- giving consideration to the intangible factors shaping the quality of peoples' lives (Florczak, 2008).

In the context of the concept in question, measures in the following fields remain in the sphere of particular interest: economic growth and care of equitable distribution of the benefits resulting thereof, social development of the entire population as well as attention to the protection of natural resources and the environment (Bocian, 2007).

According to Piontek (2005), it is the state of natural resources that forms the basis for the economic interpretation of the persistence of occurring changes. In the process of the use of natural resources, the criteria that seem to be important are the ones related to the compliance with the rules for the user of resources (limits), to the consumption requirements and to the availability of the limited resources – not only at the local, but also at the regional and national level. The socio-economic development, particularly with regard to the rural areas, should be perceived through the paradigm of the sustainable functioning of the natural environment, while at the same time taking into account the possibilities for their multifunctional development. Many authors, for example Duczkowska-Małysz (1998) and Kłodziński (1999, 2008), point to these common dependencies as regards shaping the sustainable development.

The sources of the concept in question reside in the wish to give the development processes such a shape, and to form such an institutional framework, which would be able to eliminate hazards that undermine the development prospects. These hazards – technological, environmental, economic and social ones – have been identified, and contributed to an increase in the interest in the development prospects and the possibilities for assessment of the knowledge potential, and also to obtaining knowledge on the role of science and technology in this field (Sadowski, 2003). Within the social context, a significant role is to be played by the people, their life choices as regards the professions they practise and their behaviour that determines the attitude towards the natural environment. When evaluating the determinants of social sustainability, it should be noted that answers to numerous related (and simply fundamental) questions are missing. These questions concern the scope of responsibilities of both individuals and social groups for the system for protection of land owners' property rights, which they manage; the possibilities for integration of measures; identification of the interaction between the individuals and groups; and the ethical problems related to the responsibility for the entrusted resources (Kłodziński, 2008).

While analysing the notion of *sustainable development* in the environmental context, this needs to be considered as the longest possible use of the natural resources of raw materials, energy and the capacity of the regeneration system, as well as exploiting the potential of rational management of the animal and plant resources. A frequently emphasised fact is that the sustainable development should represent not only the environmental protection but also reducing disparities between the country and the town. Köttler (1992) writes that, from the logical point of view, there are no contradictions between the rural development and the rational use of natural wealth, since development is aimed at enhancing and maintaining the potential, whereas the limits related to making use of the natural environment protect ecosystems while reducing the economic activity.

Conceptualisation of the issue of maintaining the balance between the economic, social and environmental objectives is often presented as the need for maintaining the order which is to ensure specific persistence of the occurring changes. This persistence consists in maximisation of benefits in the economic development whilst maintaining the usefulness and quality of the natural resources over a long period. Therefore, it can be assumed that the prerequisites of the economic development not only include the growth of income per inhabitant but also an improvement of other, non-economic components of the standard of living.

In reference to the presented contents, the notion of sustainable development may be defined as “(...) *a balance between the economic objectives (the economic order), social objectives (social order) and the environmental quality (environmental order), including conservation of the natural resources for future generations along the entire path of the socio-economic development*” (Wiatrak, 2003).

The definition presented above, while drawing attention to the existing interdependence between the economic, social and environmental factors, stresses that all these orders need to be considered within the spatial framework. Hence, the spatial order becomes another dimension of the sustainable development.

The notion of economic order includes a long-term stability within the economic system, the capacity of the system, collection and redistribution of the production value (Sztumski, 2006). As regards the rural development, as opposed to the traditional concepts (for example the sectoral approach), the presented notion is, generally, not limited to considering the specificity of various forms of economic activity, including agriculture or tourism. On the contrary – according to the principles being discussed, the most sought

development options are those being most beneficial to the local communities and making good use of the territorially differentiated conditions.

Social sustainability includes the process of development within different ranges thereof. Regularities are sought which govern the following:

- the relations between the participants of the development process;
- organisation of the institutional structures affecting the process in question;
- social stability of the basic social unit, i.e. the family;
- the process of social changes;
- preservation of the tradition and the development of cultural heritage;
- social perception of the living and safety standards;
- the system of social welfare and health protection.

Literature studies on the definition of social order draw attention to the following components thereof: viability of the system, responsibility, democracy, protection of rights, interaction between individuals and groups, ethical responsibility towards the future generations. Moreover, these studies take into account the issues of impartiality and ethics. The notion of social order refers to the need for satisfying the wide range of conditions in order to maintain the environmental balance.

In practice, the attempts made at presenting the environmental order are limited to indicating the changes which are negative to the environmental persistence. A frequently expressed view is that the environmental sustainability needs to be considered within the context of the analysis of the complex determinants which affect the changes in the stability of structures and functions of an area. According to Parteka (2000), sustaining the development is an evolutionary process in which a bundle of objectives is not static in nature but is subject to the “(...) *variable hierarchisation, depending on the determinants.*”

When referring to the stores of local knowledge, it is difficult not to notice the existence of numerous, and promising from the cognitive perspective, proposals to close the concept of the sustainable development of rural areas. The attempts being made at defining the sustainable development can be synthetically described as:

- conducting business activities in conformity with the nature, so that no irreversible changes to the nature are made; or, in other words, management which is environmentally acceptable, socially desirable and economically reasonable (Sidorczyk, 2001);
- sustained, limited socio-economic development with high regard for the natural assets and making use thereof;

- continuous improvement of the quality of life for the present and future generations, which takes place owing to the forming of the right proportion between the economic, human and natural capitals, and occurs owing to such spheres as: management of the economic and human resources; shaping the awareness and choosing the model of living; management of the natural resources and space; the existing institutional solutions in the moral sphere based on a stable scale of values and on axioms (Piontek, 2002).

The rationality of measures for sustainable development, presented by the authors cited above, requires that decisions be preceded by the “(...) *comprehensive and systemic acquisition, analysis, processing and use of information*” (Bargłowska, 2005) which are useful in the rational management of space. This rationality of management depends on the objectives taken on to be achieved. According to Kołodziejcki (1999), in relation to these objectives the following management models can be distinguished:

- conservationist – allocation of the areas of natural value and placing them under protection;
- technical and economic – the environment is regarded as a set of natural resources and nature values that serve the purpose of profit maximisation;
- social and economic – determining the quality of life for the present generations, and the existence of future ones;
- sustainable development – regarding the environment as a factor that ensures decent survival of the human population under the conditions of ecological systems, while maintaining the environment-forming role of the nature.

Both the inhabitants’ and local governments’ attention is often focused on solving the social and economic problems, with the principles of environmental protection being disregarded. A false assumption is made that care of the natural resources falls within the competence of the government and the regional-level authorities. In many a local leader’s opinion, the existing legal restrictions related to the environmental protection hinder the implementation of economic measures (for example restrictions on making out tourist tracks in the areas under various forms of protection).

Therefore, within the context of the care of keeping the spatial order, the sustainable development comes down to meeting the following conditions:

- an increase in the real income of the inhabitants of a given area;
- improvement of the population’s health status and living conditions;
- fair access to the natural resources for the communities;

- improvement of the overall education level.

According to Panfiluk (2003), the key objective of developing the order in question is balancing and harmonising the structural transformations, which consequently leads to a gradual reduction and elimination of the existing disparities and distortions. The measures in this area, which affect the environmental and social conflicts, should take into account satisfying such criteria as:

- improvement of the quality of life due to shaping the environment of high health, use and aesthetic values;
- rational use of the available resources;
- protection of such values as the natural and cultural environment;
- ensuring the balance of the development objectives as regards the environmental functions;
- achieving high functional performance and efficiency of the structures being shaped.

Spatial differentiation of the development status may have both a positive impact, expressed by the diversification of functions, and a negative impact, an example of which are the differences in the development levels for particular territorial units. In both cases the territorial distribution of potentials determines the viability of the economic, social and environmental systems, and the general conditions of the measures being implemented. The territorial approach enables identification of the differences within the spatial options of development and within the benefits being obtained. However, it is appropriate to ask a question about the range of limitations for the human activity as regards compliance with numerous principles which include, *inter alia*, the need for reasonable exploitation of land resources, more efficient protection of diverse resources including minimisation of the exploitation and use of non-renewable resources, and enabling the local communities to protect their own environment (*Towards sustainable development...*, 1997).

As can be seen, the process of sustainable development cannot represent marginalisation, deterioration, exclusion or backwardness in terms of the quality of life for the local communities, groups and individuals. On the contrary, this process provides chances to the rural inhabitants in order to enable them to take on responsibility for their actions and results thereof in the situations where an appropriate competitive position for a given territorial unit is being sought. This is why the role and involvement of the local communities in the measures aimed at stimulating the development processes become an important factor which affects both the trends and rate of the occurring changes. The presented view stresses

that the natural (environmental), social, economic and spatial orders need to be considered within the institutional framework.

The institutional order consists in identifying the problems related to the development of a specific area where logical and organised institutional structures, following the procedures strengthening the democracy and encouraging the building of partnership, should be functional (Meyer, 1996). Within this context, the features that distinguish the sustainable model of rural development are:

- measures taking into account the territorial, bottom-up and multifunctional approaches;
- concepts (plans) of development which are dynamic;
- following the principles of democracy.

Theoretically, the greatest possibilities for ensuring the sustainability of development are provided by the solution consisting in the integration of the five above-mentioned orders. Limitations on achieving the integrated status of the balance of the system are related to the occurrence of various dynamics and the rate of implementation of various objectives, which in consequence contributes to impairing the socio-economic cohesion of an area and affects the emergence of new problems. It is therefore important to conduct the social dialogue which is favourable for the purposeful exploitation of the local potential, especially in the fields of competitiveness and growth, as well as for reducing the internal disparities between the adjacent areas. All these circumstances are the reason why the objectives serving the purpose of shaping the integrated order include the following:

- uniform and harmonious structural transformations that lead to a gradual reduction and elimination of the existing disparities and distortions;
- shaping the frameworks which minimise the functional, environmental and social conflicts (Panfiluk, 2003);
- forming the frameworks which ensure higher and higher quality of life as well as the competitiveness and effectiveness of management³.

The integrated order should arise from the balancing and harmonising the development of spatial structures, as well as the minimisation of conflicts and disparities through the integration of the social, economic and environmental spheres (Piekarska, 2003). In order to synthesize the deliberations being held, the most important principles of creating the sustainable development on the local scale include the following:

³ The Government Centre for Strategic Studies (*Rządowe Centrum Studiów Strategicznych*), 2005. *Zaktualizowana koncepcja przestrzennego zagospodarowania kraju*. Warszawa (www. FunduszeStrukturalne.gov.pl/informator/npr2)

- the use of the local resources including, in the first place, the renewable resources;
- searching for and selecting solutions which are not destructive to the natural environment;
- protection and the rational use of the available cultural and natural heritage of the area covered by the programme;
- recognising the social ties as a basis for social and economic relations;
- establishing a close partnership of the social authorities' structures with the economic and non-governmental organisations;
- promoting extensive collaboration between the local systems, based on the mutual cooperation with the distant external markets.

As appears from the presented principles, the notion of sustainable and also integrated development can be successfully implemented at the local level; moreover, the measures that are supra-local in nature constitute the “milieu” which is favourable for the introduction of beneficial changes through providing them with specific direction and rate. When applying these observations to the rural areas, it can be concluded that the inhabitants of these areas are charged with particular responsibility, because the concepts of management of the environmental resources are being implemented there. When dedicating some more time to this issue, it needs to be noted that the development understood in such a way is determined by the processes of long-term changes in the applied technologies, economic structures, social attitudes as well as the patterns of conduct and the features of the environment.

Despite the significant interest in, and the cognitive attractiveness of the sustainable development, it continues to appear to be little explored area of research, as it goes beyond offering the final, universally applied packages of advice and recommendations on the “take it or reject it” basis, since the needs of various local rural communities differ significantly. In many cases there is a lack of definitive solutions to the problems encountered by the persons responsible for taking decisions in the field of the appropriate management of resources within the uncertain and constantly changing surroundings. The search for optimum methods for the management of natural resources in a sustainable way constitutes a challenge. This approach, which is based on learning, clearly indicates that the management of natural resources in the “period of the implementation of the sustainable development principles” has its drawback not only in the issue of the lack of developed methods for dealing with the emerging problems, but also in the issue of setting the boundaries that enable implementation of the appropriate type of strategy.

The practical implementation of the sustainable development principles requires determining the sources and means for promoting the relevant information that is as comprehensive as possible. Such an approach is reflected in the local communities seeking to implement a modern model of development, an important element of which will be the broadly conceived cooperation of various rural circles and the local authorities. This model is based on the confidence that information constitutes the key element of knowledge and a significant factor of stimulating changes and social attitudes, which in turn has its reasons in a conviction that there is the natural conflict between a beneficiary and the milieu providing support to them. Therefore, the implementation of the notion of sustainable development regards both the tasks (achieving a real status of sustainable development) and the results of the process (creating the conditions favourable to this development).

As a conclusion it can be stated that for many people the notion in question is an interesting intellectual concept, yet still not pragmatic enough. According to Sadowski (2003), its sources reside in the wish to give the processes of the global economic and social development such a shape, and to form such institutional frameworks, which would be able to eliminate hazards that undermine the development prospects. As stated by the above-mentioned author, these technological, environmental, economic and social hazards have been identified, and contributed to a broad discussion on the development prospects, and to continuing the dispute over the assessment of the knowledge potential and the role of the development, science and technology. This in turns compels us to ask questions on the following issues:

- the socially desirable model of development;
- determination of the components of the system which should develop in the sustainable manner;
- the period in which the development process will be sustainable;
- indication of the manner and range in which the institutions and persons taking decisions should consider the future generations' needs in their measures.

Unquestionably, the concept of sustainable development of rural areas is a basic proposal to shape conditions favourable to the local communities. Piontek (2005) points out that apart from the globalisation process it plays an important role in stimulating the processes of socio-economic development.

Due to the close relation of agriculture with the rural areas, no sustainable development of rural areas is possible without the socially sustainable agriculture. The very

nature of the socially sustainable agriculture is such individuals' activities which do not jeopardise the community's interests over a longer period of time (Woś, Zegar, 2002). The model of socially sustainable agriculture should at the same time take into account the requirements of at least three orders: economic, environmental and social (Zegar, 2005). Within the economic dimension, it means the need to strengthen the viability and competitiveness of the agricultural system. Within the social dimension, it means an improvement of the living standard for the agricultural population and the establishment of the possibility for earning a living in the rural areas. On the other hand, within the environmental dimension it means promoting the environmentally friendly farming practices and taking measures towards conservation of species, biodiversity and the landscape.

In relation to the presented concept of the operation of agriculture, the following characteristic features can be mentioned, according to Woś (1998):

- the natural resources should be used in such a way as to render their self-renewal possible;
- an increase in food production can take place only through the growth of the productivity of resources, that is through the introduction of technologies which at the same time protect the resources and preserve their high quality for the future generations;
- low susceptibility to fluctuations and disruptions;
- sustainable agricultural systems imply the complete symbiosis of the production and environmental objectives;
- management of the natural resources enables fulfilling the changing needs while maintaining at the same time a high quality of the natural environment and protection of its resources.

According to, *inter alia*, Michna (2000), striking an environmental balance over a long period of time is not possible without the social and economic balance. Environmental protection of agriculture and its agricultural raw materials and food materials ceases to be the issue of a noble idea and becomes an attribute of the quality-based competition with the Western European farmers. Many authors stress the fact that the sustainable farming is oriented towards such a use of the Earth's resources which does not destroy its natural sources but enables fulfilling the basic needs of the subsequent generations of producers and consumers (Smagacz, 2000; Majewski, 2008).

Within the context of the presented deliberations it can be stated that the trends of measures related to the sustainable development of agriculture, which are important from the Poland's point of view, should include:

- development of the strategy for improvement of the water balance in the rural areas, together with the introduction of rational allocation of the resources of surface and underground waters;
- supporting the development of the “energy” farming;
- establishment of the agroecosystems which enable preventing the soil erosion and degradation, as well as storage of water, water supply and the rational water management within the area of an agricultural farm;
- promotion of the management trends consisting in linking the organic animal production with the plant production.

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2. THE ISSUES OF IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT PRINCIPLES

2.1. Support for the Sustainable Development in the CAP Guidelines

The sustainable development of rural areas depends on numerous factors, yet one of the basic ones is the precise identification of the objectives and provision of resources for their implementation, i.e. the form of the policy being implemented towards agriculture and the rural areas. In the case of Poland, the declaration on the accession to EU structures itself provided both the new possibilities and an impetus for introducing changes. The first support programme was the PHARE programme. The financial resources earmarked for this programme were insignificant and amounted to several million EUR which were mainly allocated to co-funding of small projects (Rowiński, 2008). In most cases these resources were directed to the government administration bodies and territorial self-government units for the institutional arrangements and improving the efficiency of their activity (Kowalczyk, 2007). In the late 1990's Poland, together with other Central and Eastern European countries, benefited from the pre-accession programme SAPARD. This programme, co-funded from the European Union budget, was launched in the mid-2002. The financial resources earmarked for the implementation thereof amounted to 1,084 million EUR, including the EU funds in the amount of 708.2 million EUR and 235.8 million EUR from the national co-financing sources, as well as 140 million EUR redirected, with the agreement of the European Commission, from the budget of the Rural Development Plan (Rowiński, 2008). Under the SAPARD programme, the following were principally supported:

- processing and marketing of the agricultural and fisheries products;
- investments in agricultural farms;
- development and improvement of the rural infrastructure;
- diversification of economic activities in the rural areas;
- vocational training;
- technical assistance.

After the integration with the EU in 2004 the direct payments were launched, as well as the first expenditures of the Union funds for intervention in the agricultural markets and the first payments of the structural fund resources. Altogether, 2.23 billion PLN of the Union funds were expended in 2004 (45.2 % of which were payments under the SAPARD programme). The subsequent years brought a significant increase in the expenditure of funds

(Kowalczyk, 2007). In the years 2004-2006 Polish agriculture was covered by two aid schemes: the Rural Development Plan (RDP 2004-2006) and the Sectoral Operational Programme (*Sektorowy Program Operacyjny*, SOP 2004-2006) – Restructuring and Modernisation of the Food Sector and Rural Development. Public funds totalling 5,379 million EUR were allocated for implementation of these programmes, 4,058 million EUR of which were the EU funds. By way of comparison, in the years 2004-2006 an amount of 680 million EUR was available under the SAPARD programme, of which 515 million EUR was the envelope of resources from the EU budget.

As Banecki *et al.* (2008) note, the process of the SPO implementation was successfully completed, since approx. 2 billion EUR (including private resources) were allocated to the Polish agriculture and rural areas. The major part of these resources was earmarked for investments in agricultural farms and improvement of the rural inhabitants' standard of living.

The years 2007-2013 are the next budget period of the European Union, and the Rural Development Programme (RDP 2007-2013) is the key CAP programme under which measures for sustainable development of rural areas are supported, including:

- restructuring and modernisation of agricultural farms and the agricultural and food processing sector;
- improvement of the natural environment (agri-environment measures which protect the natural environment and promote the organic and regional products);
- improvement of the quality of life for the population of rural areas;
- advisory support for farmers and rural inhabitants;
- activation of the rural inhabitants (LEADER).

Investing financial resources within the framework of the aid schemes under consideration should, in a longer term, improve the living standard of farmers and inhabitants of the Polish rural areas, and contribute to the preservation of the natural environmental values. According to Poczta (2010), almost 70 % of the resources obtained by agricultural farms under the CAP are spent by farmers on production and modernisation in the farms, less than 20 % is spent on achieving the farmers' families social objectives, and just over 10 % is directed for the objectives related to the protection and management of the natural environment.

In view of the above, a question needs to be asked about the CAP's impact on the Polish agriculture. The distinctive feature thereof is the dominant share of small, family-run

agricultural farms, and this situation will not basically change over the next several years despite the progressive restructuring. A scenario which cannot be ruled out is that the share of subsistence farms may continue increasing with the further trade liberalisation and an increase in external competition. A majority of family-run agricultural farms may have, in the future, problems with achieving the economic scale which ensures a sufficient income based on the agricultural production, even in the case of clear improvement of the economy situation on the agricultural markets. At the same time, these farms may still play an important role in fulfilling many new public functions. The indicated trends prove that income support under the CAP should, similarly as now, be favourable for the processes of modernisation of the agricultural sector. On the other, the number of non-agricultural work places should also be increased under the CAP. Zawalińska (2009) claims that it can be achieved, to a certain extent, through strengthening the multiplier effects of this policy, which have been obtained due to a greater diversity of measures. Beneficiaries spend the obtained funds on goods and services from outside the agricultural sector (usually from the construction and education sectors), which in turn, after having benefited from the services of other sectors, create the multiplier effect in the economy. In the author's opinion, the measures can be designed in such a way that their indirect effects manifest themselves even more in sectors where the rural inhabitants traditionally find more employment. However, in order to render it possible, it is the pro-efficiency, and not the pro-equality, investment measures that need to be supported to a greater degree.

2.2. The Level and Structure of Farmers' Activity in Applying for EU Funds

The implementation of the CAP guidelines, including those subject to the analysis of the measures for sustainable development of rural areas, obviously depends on the farmers' activity in applying for these resources. It is the number of submitted applications that reflects the degree of interest in the implementation of particular measures. Yet another issue is the degree of financing the projects, resulting largely from the availability of financial resources.

In the years 2004-2006, Polish farmers benefited from financial support under two programmes: the SOP (Sectoral Operational Programme) Agriculture and the RDP 2004-2006. Under the first one, the following measures were subjected to the analysis: 1.1. Investments in agricultural holdings; 1.2. Setting up of young farmers; 2.4. Diversification of agricultural activities and activities close to agriculture to provide multiple activities or

alternative incomes; 2.6. Development and improvement of infrastructure connected with the development of agriculture⁴.

These measures were aimed not only at the improvement of competitiveness of Polish agriculture but also on the implementation of the measures for protection of the natural environment. The precondition for obtaining financial assistance, especially under measures 1.1 and 1.2, was the obligation to respect the standards related to the environmental protection. The beneficiaries applying for a non-payable grant for the farm establishment (measure 1.1) were obliged, within 5 years following the commencement of running a farm, to respect the standards related to hygiene, protection of the natural environment and keeping of animals. This meant that irrespective of the objective on which they obtained the grant for the farm establishment, they were obliged to take measures for the protection of the natural environment. Even stricter were the requirements related to the conditions for obtaining financial assistance for the investments in agricultural holdings (measure 1.2). Under this measure, the beneficiaries should respect the standards related to hygiene, environmental protection and keeping of animals already at the time of applying for financial assistance, or respect them immediately after the implementation of the project. In practice it meant that if the required standards were not respected at a farm, the resources from these measures could be allocated exclusively on the implementation thereof. The ARiMR data (2007) show that, already at the time of submitting the application, both the farms of young farmers' and of the farmers applying under measure 1.1. met the standards related to: hygiene of production in, respectively, 58.9 % and 93.6 %; animal welfare in 39 % and 82.8 %; and the environmental protection in 50.5 % and 71.0 %.

By provinces, in the years 2004-2006 the most active farmers in terms of applying for funds on investments in agricultural holdings were those from Kujawsko-Pomorskie province (2.7 %), Podlaskie province (2.4 %), Wielkopolskie province (2.4 %) and Warmińsko-Mazurskie province (2.3 %). Moreover, young farmers from these provinces most frequently benefited from the support for the farm establishment (measure 1.2). A practice frequently applied by the beneficiaries was simply to combine both the measures. The projects to which financial assistance was allocated were in particular aimed at the improvement of the management of agricultural production, and mainly related to the purchase of machines.

Under measure 2.6 farmers could apply for an external funding of 50 % for the expansion and improvement of infrastructure related to agriculture, *inter alia* wastewater

⁴ Numbering of the measures is in accordance with the provisions in the relevant operational documents (Rural Development... 2004; Sectoral Operational... 2004)

treatment plants and construction or modernisation of the energy and water supply facilities. Under the measure “Agricultural water resources management” farmers could obtain external funding of 80 % for farmland drainage facilities on condition that these be used to adjust water conditions in the soil, facilitate its cultivation and protect the agricultural land from flooding. Under this measure, on the average 0.2 % of agricultural farms benefited from support in the years 2004-2006 at the national level, whereas the highest activity in this respect was demonstrated by farmers from the following provinces: Opolskie (0.6 %), Podlaskie (0.5 %) and Lubelskie (0.4 %). As regards the cost structure by type, the predominant costs were those related to construction and rehabilitation of internal roads, which accounted for 88.0 %. However, not many projects were completed which were related to construction or renovation of water supply systems (5.5 %), wastewater disposal and treatment facilities (4.5 %) and water supply facilities (2.0 %) (ARiMR..., 2007).

The percentage of the agricultural farms interested in the implementation of measure 2.4 in the field of diversification of agricultural activities and activities close to agriculture to provide multiple activities or alternative incomes in all provinces maintained at a similar level of approx. 0.3 % of agricultural farms (Table 2.1), whereas the most applications were supplied by the farmers from Lubelskie province. Under this measure, as regards the investment cost structure by type, the predominant costs were those incurred for the purchase of machines, facilities, tools and equipment (42 %) and for the purchase of means of transport for providing transport services (23.8 %). The costs of extension, vertical enlargement, remodelling or repairs of existing residential buildings in order to adjust them to the agritourism activities, and for their furnishing (guest rooms, shared rooms for guests, bathrooms and kitchens) also constituted a significant percentage (14.7 %).

The analysis covered also the measures implemented under the RDP 2004-2006 towards the sustainable development of agriculture, including *inter alia* measure 2: Support for semi-subsistence farms; measure 4: Support for agri-environmental schemes; measure 5: Afforestation of agricultural land; measure 6: Adjustment of agricultural holdings to the EU standards.

The most active farmers in terms of obtaining funds under the measure “Support for semi-subsistence farms” (measure 2) were those from the central and south-eastern Poland provinces (Świętokrzyskie 21.3 %; Lubelskie 15.3 %; Mazowieckie 11.6 %; and Małopolskie 10.4 %). This obviously results from fragmentation of farms in this region as well as domination of the economically weak farms (up to 4 ESU) which were beneficiaries of this

measure. The resources under this measure were most often allocated on the purchase of agricultural machines, purchase of livestock or lease of agricultural land.

At the same time, it is the farmers from the north-western Poland area most often who undertook to implement the Agri-Environmental Programme at their farms (measure 4). In Zachodniopomorskie province, 14.8 % of the farm owners who obtained direct payments implemented, at the same time, the agri-environmental commitments, while in Pomorskie and Lubelskie provinces they amounted to, respectively, 13.8 % and 12.8 %.

The interest in the implementation of financial projects under measure 6 was also significant. The province that clearly stood out in this respect was Kujawsko-Pomorskie, where 20.3 % of the farmers obtaining the SAPS payments submitted applications for implementation of this measures. Generally, the predominant farmers amongst the beneficiaries were the ones from the areas with predominant occurrence of intensively managed, highly productive commercial farms; apart from the above-mentioned province, active farmers also came from Wielkopolskie province (12.5 %); Pomorskie province (12.2 %); and Warmińsko-Mazurskie province (11.0 %). The predominant applications were those under the scheme 1 within the range of equipping agricultural holdings with devices for natural fertilizer storage.

Table 1. The level and structure of the agricultural farms' activity in obtaining resources within the framework of the selected measures under the RDP and SOP Agriculture in the years 2004-2006.

Province	Number of farms in 2005	SOP Agriculture [% of farms]				RDP [% of farms]			
		meas. 1.1*	meas. 1.2*	meas. 2.4*	meas. 2.6*	meas. 2*	meas. 4*	meas. 5*	meas. 6*
Dolnośląskie	63195	1.2	1.0	0.2	0.1	4.8	4.6	0.5	1.2
Kujawsko-pomorskie	70190	2.7	1.6	0.3	0.3	8.8	5.9	0.7	20.3
Lubelskie	186035	1.7	0.9	0.4	0.4	15.3	6.6	0.4	2.0
Lubuskie	21516	1.2	1.0	0.2	0.2	5.4	12.8	1.1	3.0
Łódzkie	134567	1.8	1.0	0.2	0.2	15.0	3.6	0.5	5.4
Małopolskie	142869	0.9	0.4	0.3	0.1	10.4	3.5	0.2	1.0
Mazowieckie	223438	1.9	1.1	0.2	0.2	11.6	3.4	0.6	7.8
Opolskie	30551	2.1	1.3	0.3	0.6	5.5	8.6	0.4	2.4
Podkarpackie	131511	0.4	0.3	0.2	0.1	8.1	4.1	1.0	0.8
Podlaskie	84691	2.4	1.4	0.3	0.5	9.3	5.0	0.8	7.5
Pomorskie	40668	2.1	1.4	0.3	0.3	9.2	13.8	1.0	12.2
Śląskie	56702	1.0	0.6	0.3	0.1	4.9	2.2	0.3	1.6

Świętokrzyskie	97212	1.8	0.7	0.4	0.3	21.3	7.1	0.7	2.1
Warmińsko-mazurskie	44093	2.3	1.6	0.3	0.1	5.8	6.5	2.3	11.0
Wielkopolskie	126042	2.4	1.5	0.3	0.2	7.7	5.3	0.4	12.5
Zachodniopomorskie	30348	2.0	1.5	0.2	0.2	5.8	14.8	0.7	5.0
Poland	1483628	1.7	1.0	0.3	0.2	10.9	5.4	0.6	5.7

Source: Own calculations based on the data from the System Informacji Zarządczej ARiMR (*Management Information System, Agency for Restructuring and Modernisation of Agriculture (ARMA)*).

*measure 1.1: Investments in agricultural farms; measure 1.2: Setting up of young farmers; measure 2.4: Diversification of agricultural activities and activities close to agriculture; measure 2.6: Development and improvement of infrastructure connected with the development of agriculture; measure 2: Support for semi-subsistence farms; measure 4: Support for semi-subsistence farms; measure 5: Afforestation of agricultural land; measure 6. Adjustment of agricultural holdings to the EU standards.

The involvement of agricultural farms in the implementation of measure 5 was significantly lower; on the average at the national level, 0.6 % of agricultural farms decided for the implementation thereof. Moreover, the agricultural land with a low potential for agriculture were most frequently afforested by farmers from Warmińsko-Mazurskie province (2.3 %); Lubuskie province (1.1 %); Podkarpackie province (1.0 %); and Pomorskie province (1.0 %) (Table 1).

During the second programming period 2007-2013, the farmers' activity in applying for assistance resources under the RDP was definitely higher as regards the resources for modernisation of farms and the non-agricultural activities.

The farmers entitled to benefiting from the support under measure 121 were the owners of agricultural farms of the economic size of at least 4 ESU. The financial assistance under this measure is granted for the tasks which will contribute to the gross value added (GVA) growth in a farm or to an improvement within the range of the environmental protection, the conditions of keeping the animals, hygiene and production safety). Applications for implementation of this measure could be submitted during two application windows, 2007 and 2009. In total, 43 200 applications were submitted, and until the end of November 2010 proposals for the implementation of 78.8 % of the submitted applications were signed. The highest activity in applying was demonstrated by the farmers from Wielkopolskie province (6.4 %), Zachodniopomorskie province (6.1 %), Kujawsko-Pomorskie province (5.4 %) and Lubelskie province (5.1 %). The resources granted under this measure are most frequently earmarked for the purchase of agricultural machines and equipment. As early as during the first application window in 2007, 16 700 farmers out of 18 300 beneficiaries applied for the reimbursement of costs for the purchase of agricultural machines and equipment. Farmers allotted PLN 4.9 billion for this purpose. Owing to this

financial assistance, several thousand agricultural machines and tractors were purchased, which contributed to the recovery of the economic situation on the agricultural machines and equipment market. As seen from the preliminary analysis, during the 2009 application window more than half of the farmers intended to purchase agricultural machines and equipment for a total sum of approx. PLN 5 billion⁵.

The implementation of measure 311 (Diversification into non-agricultural activities) aims at establishing conditions for the sustainable socio-economic development of rural areas. The main objective is to provide financial assistance for the commencement or development of non-agricultural activities carried out by the farmers, household members or farmers' spouses, which, as a consequence, is to contribute to generating non-agricultural sources of income and to creating workplaces outside the agriculture in the rural areas. The aid is granted for the activities within the range of services for agricultural farms or for the forestry, miscellaneous services, wholesale and retail sale, craft or handicraft, construction and utility/rough in works and services, tourist services and services related to sport, recreation and leisure, transport services, public utility services, processing of agricultural products or edible forest products, storage or warehousing of goods, production of energy products out of biomass, accounting, advisory services or IT services (RDP 2007).

During three application windows (2008, 2009 and 2010), almost 15 000 applications were submitted. Altogether, agreements were signed for implementation of 55.4 % of the applications submitted during the first two years. During the new programming period, the farmers' activity in applying for resources under this measure was definitely higher than in the years 2004-2006, and averaged 1.0 %, whereas the most active farmers were those from the economically strong provinces, *inter alia* from Wielkopolskie province (2.2 %) (Table 2.2).

On the other hand, measure 312 concerning the support for the creation and development of micro-enterprises aims at creating conditions for the expansion of agricultural activities while contributing to the development of entrepreneurship, and thus to creating new workplaces in the rural areas. The range of the granted aid is the same as under measure 311, and the applications can be submitted by natural persons, legal persons, partners in private partnerships and commercial companies and partnerships with no corporate status.

Two application windows were launched, and approx. 15 500 applications were submitted in total for this measure. As the ARiMR data show, the applications submitted

⁵ <http://www.arimr.gov.pl/index.php?id=1&zaj=1&kol=909>, [available 13 November, 2010].

during the 2009 application window were implemented in 43.4 %, while under the 2010 application window only 3 agreements were signed. The beneficiaries who benefited from this measure applied principally for financial resources for construction investments.

By provinces, the activity of the entities applying for resources under this measure was similar to the activity of farmers under measure 311. The majority of applications were submitted in Wielkopolskie, Mazowieckie i Śląskie provinces (Table 2.2).

As regards the other measures, young farmers' interest in measure 112 was slightly lower (by 0.3 %) than in the previous programming period, mainly due to the changes in the access criteria (the defined requirements for the acreage of farms). The farmers' interest in the implementation of the Agri-Environmental Programme (measure 214) was also slightly lower. A decrease in the amount of aid under certain packages was also relevant to this fact. Similarly to the situation during the first programming period, the most active farmers were those from Zachodniopomorskie province (11.8 %) and Pomorskie province (10 %), yet the farmers from Warmińsko-Mazurskie also demonstrated higher activity (10.4 %). However, the estimates of the MRiRW (*Ministry of Agriculture and Rural Development*) indicate that in the years 2008-2013 approx. 200 000 beneficiaries will participate in the new Agri-Environmental Programme on the area of approx. 10 % of the agricultural land in Poland (i.e. 1.5-1.8 million ha). Moreover, within the framework of financial support for the protection of biodiversity from the envelope granted under the Health Check/EERP, additional resources in the amount of 10 million EUR were directed for the implementation of the package "Protection of endangered bird species and natural habitats in Natura 2000 areas" (Kucharska, 2010). The farmers' interest in measure 223 "Afforestation of agricultural land and non-agricultural land" is maintained at a similar level (0.7 %) (Table 2).

Table 2. The level and structure of the agricultural farms' activity in obtaining resources within the framework of the RDP 2007-2013.

Province	Number of farms in 2008	RDP [% of farms]					
		meas. 112*	meas. 121*	meas. 214*	meas. 223*	meas. 311*	meas. 312*
Dolnośląskie	59141	1.1	2.3	4.0	0.6	0.7	1.1
Kujawsko-pomorskie	67524	2.8	5.4	8.7	0.7	1.4	1.1
Lubelskie	181563	1.3	1.9	4.3	0.5	0.7	0.5
Lubuskie	20607	1.5	5.1	8.4	0.9	1.6	1.8
Łódzkie	129098	1.4	2.4	2.0	0.7	0.7	0.6
Małopolskie	132840	0.3	1.1	3.0	0.2	0.6	1.0

Mazowieckie	214463	1.7	2.3	2.9	0.9	1.0	0.8
Opolskie	28644	1.8	2.8	4.1	0.4	1.6	1.4
Podkarpackie	124444	0.4	0.8	4.0	0.8	0.6	1.0
Podlaskie	82644	2.1	3.4	6.3	0.7	1.4	0.6
Pomorskie	39152	2.1	4.8	10.0	0.8	1.7	2.1
Śląskie	52231	0.8	1.4	1.5	0.3	0.8	2.2
Świętokrzyskie	92397	0.9	2.4	4.9	1.0	0.8	0.7
Warmińsko-mazurskie	43101	2.2	4.9	10.4	1.8	1.7	1.8
Wielkopolskie	122894	2.3	6.4	4.5	0.5	2.2	2.3
Zachodniopomorskie	28643	1.9	6.1	11.8	0.7	1.4	2.0
Poland	1419465	1.4	3.0	4.5	0.7	1.0	1.1

Source: Own calculations based on the data from the System Informacji Zarządczej ARiMR (*Management Information System, Agency for Restructuring and Modernisation of Agriculture (ARMA)*).

*measure 112: Setting up of young farmers; measure 121: Modernisation of agricultural holdings; measure 214: Agri-Environmental Programme; measure 223: Afforestation of agricultural land and non-agricultural land; measure 311: Diversification into non-agricultural activities; measure 312: Creation and development of micro-enterprises

2.3. Barriers Reducing the Farmers' Investment Activity

The performed analysis of the level and structure of the agricultural farm owners' activity in applying for the EU funds showed varied farmers' interest in the implementation of particular measures and programmes. In order to increase the rural community's interest in the possibilities for obtaining financial resources from the European Union, it is necessary to identify the barriers which cause farmers to demonstrate conservative attitudes in this respect. For that purpose, the results were used of the research conducted in 2009 among 3261 farmers participating in the training organised by the Agricultural Advisory Centres in the field of the functioning of RDP 2007-2013. The researched group included both the farmers who had previously benefited from the EU financial resources, and the farmers who intended to benefit from such a form of support for the first time.

As the research results show, the most difficult barrier reducing the potential beneficiaries' investment activity is the lack of financial resources (32.5 % mentions). The other frequently indicated barriers included the lack of stable economic situation in Poland (almost 20 %) as well as the limited demand for agricultural products (15.5 %) (Fig. 1). These factors depend on the economic situation in the agricultural sector; when production is profitable and the conditions stable, farmers take the investment decisions more easily. When the situation in the market is unstable, farmers usually reduce their activities exclusively to

undertaking the necessary investments. Apart from the uncertain economic situation, farmers indicated the issue of the existing bureaucracy. Moreover, the lack of clarity of the legislation was indicated, as well as the provisions of the ordinations regulating in detail the access criteria and the conditions of financing particular measures, which are rather controversial in practice. Respondents indicated the provisions of the ordinations as regards the implementation of measure 312 (Creation and development of micro-enterprises), in which the amount of financial assistance does not take into account the specific nature of the activities but only the scale of the increase in employment.

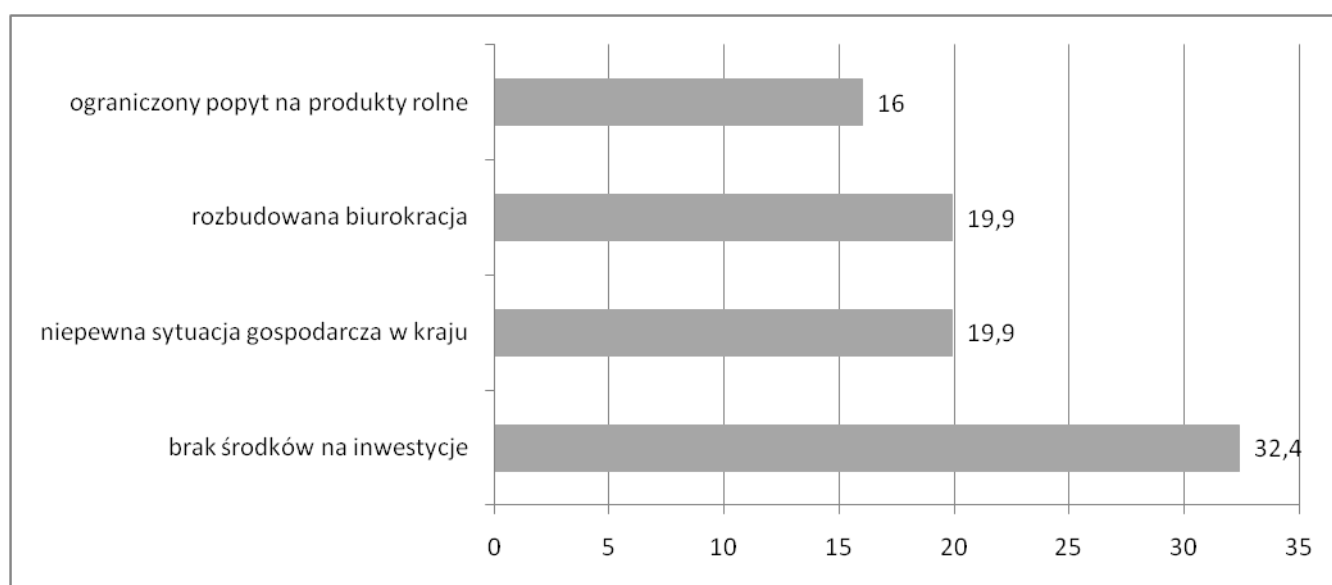


Fig. 1. Investment barriers (% of respondents)

Source: Own research

Excessive bureaucracy being the factor that reduces the possibilities for obtaining support from the EU funds was also most frequently indicated by respondents who had previously applied for such support. In this regard, farmers indicated the incompetence of the officials who sometimes were not even able to inform them on the appropriate annexes necessary to submit an application. In farmers' opinions, an additional difficulty was gathering extracts from the Land and Mortgage Registers, since in several cases it was necessary to wait for such a document for a couple of weeks, which in the case of time limits constituted a significant problem. Another problem was the above-mentioned short deadlines

for the preparation of necessary documentation⁶ as well as the relatively high costs of preparing the application and business plan. Respondents also indicated the need to make one's own contribution, and the limited access to information on the RDP measures (Fig. 2).

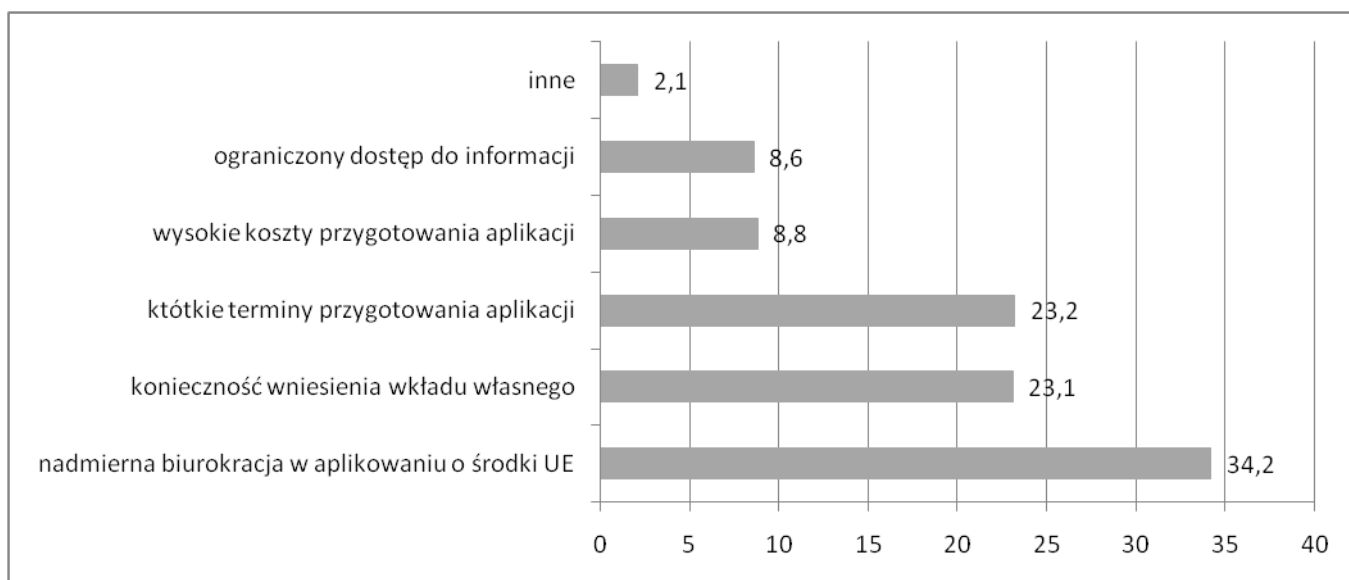


Fig. 2. The factors which restrict obtaining the EU funds in the respondents' opinions (% of respondents)

Source: Own research.

It follows from the provisions of the Ordinance that the aid is paid after the investment has been implemented. In such a case, in order to be granted a financial assistance it is necessary to spend one's own financial resources that often come from bank loans, which significantly affects the household budgets. In relation to this situation, Poland requested the European Commission for pre-financing of the investments. In December 2009, a positive decision was issued on this matter, therefore during the next application windows, which will be held from 2010, there will be a possibility for obtaining a pre-payment towards the future investment.

In conclusion, the factors which restrict the possibilities for applying for the EU funds can be classified as financial, resulting from the farmers' limited financial resources, and procedural, related to the preparation of applications in accordance with the deadline

⁶ The Ordinance provides that for most measures the application window begins after 14 calendar days following the day on which the Chairman of ARiMR announces the date of the receipt of applications. For many beneficiaries this period is too short for collecting all necessary documents. In order to meet farmers' expectations, the Ministry of Agriculture and Rural Development revised the Ordinance in which it provided that the information on the commencement of the application window not later than 14 days before the deadline for submitting applications for assistance.

requirements. Czubak (2000) also claims that one can possibly distinguish a few barriers which restrict using the European Union's agricultural funds. In the author's opinion, a strong barrier which restricts using the EU funds is filling in the application form itself, as well as the need to complete the required documents during the period between the announcement of an application window and its implementation. In this respect, assistance from the Agricultural Advisory Centres and private consulting firms which undertake to prepare the required documentation is invaluable. On the other hand, Zawalińska (2009) argues that the most effective measures are at the same time the most difficult to obtain and implement, while the least effective ones are the most easily accessible to the beneficiaries. In the author's opinion, it is necessary to change these principles and seek to replace the direct transfers and area-based subsidies with more efficient instruments, such as investment subsidies. Moreover, the accessibility to the highly efficient measures should be facilitated through simplifying the formalities and requirements for the beneficiaries, and diversification of the degree of difficulty with obtaining thereof depending on the degree of their efficiency and the amount of the granted aid (the bigger the investment, the stricter control of the proper manner of the use of the resources). On the other hand, Marcysiak (2006) draws attention to the institutional, i.e. legal and organisational, barriers. Barriers such as instability and ambiguity of legislation discourage the beneficiaries from long-term investing. Błażejowska (2006) is of opinion that apart from complicated procedures for preparing applications, a significant barrier to the use of resources is the lack of beneficiaries' capital as well as the lack of ideas for development. In the author's view, farmers frequently have no idea of what they could spend the EU funds for. Therefore, one of the principal barriers is the human and their intellectual preparation. The relatively high level of education coincides with a high rate of approval for new things and phenomena, openness of the mind and proneness to innovative solutions, and constitutes a basis for the better understanding of the surrounding reality. Moreover, it improves the knowledge and is favourable for the emergence of new ideas, thus reducing both the sense of danger and the fear of changes (Chyłek, 2009). The literature on the subject often stresses that farmers with higher education run their farms more efficiently, are more eager to introduce innovations, more quickly adapt to changes and are able to use these changes for their benefit to treat them as chances and not as a danger (Klepacki, Gołębiowska, 2004; Olaniyan, Okemakinde, 2008; Kołoszko-Chomętowska, 2009).

It appears from the performed analyses that farmers are more and more effective in applying for the EU funds. Own experience gained during the implementation of the RDP 2004-2006 measures, and in many cases also the example of neighbours who benefited

from such a form of support, obviously affect the farmers' investment activity. This allows us to look in the future with optimism; however, it is necessary to remember that in the coming financial years Polish agriculture will be affected by the CAP reform taking place due to the globalisation process (Chyłek, 2007). In view of the above, Polish farmers will certainly have to stand up to the new challenges.

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Katarzyna Brodzińska

3. PRO-ENVIRONMENTAL ACTIVITIES IN AGRICULTURE

3.1. Protection of Agricultural Environment under the Common Agricultural Policy

The objectives and principles of the currently implemented EU Common Agricultural Policy (CAP) differ significantly from those defined in the Treaty of Rome. According to Article 9 of this Treaty, the main objectives of the CAP included: increasing agricultural productivity, ensuring a fair standard of living for the agricultural community, stabilising markets and ensuring that supplies reach consumers at reasonable prices. It has to be borne in mind that the European Court of Justice judged them to be potentially conflicting and different, and thus impossible to be achieved at the same time. It is for the European Communities institutions to decide which of the tasks should be given temporal priority (Jurcewicz *et al.*, 1995). In view of the above, the CAP objectives have been reoriented over the years. The changes were due to, *inter alia*, the accession of new countries to the EU structures, the economic development of the Member States, the climate change and, above all, the society's new requirements towards agriculture and the rural areas. These requirements have evolved towards the need to ensure the assets whose value is continuously increasing, i.e. healthy and safe food as well as unpolluted natural environment and the beautiful rural landscape. However, until the 1990's the CAP measures focused primarily on supporting the agricultural production, and for the first ten years (that is, until 1968) the priority was to stimulate the increase in food production with a view to obtaining the food self-sufficiency. In the 1970's and 80's measures were taken towards limiting the scale and level of production with a view to introduce structural mechanisms, and at the end of the 80's the focus was placed on searching for the balance between the need to improve the competitiveness of the European agriculture and the environmental protection. During this period measures were also taken towards the development of the regions where the conditions of farming were more difficult. The process of the CAP evolution – from the aid policy intended exclusively for the agricultural sector to the policy supporting the sustainable and multi-functional development of rural areas – intensified at the turn of the 20th and the 21st centuries. The economic importance of agriculture as the economic sector began to diminish, while the multi-functional rural development was more and more noticeable. In principle, a new dimension of the policy towards agriculture and rural areas can be observed (Baborska, 2004; Chylek, 2007). Promoting the notion of multi-functional rural development not only means the diversification of the rural inhabitants' sources of income, but also the process of

balancing the relations between the productive function and the socio-environmental function of agriculture. Moreover, introduction of new regulations concerning environmental protection, as well as taking measures towards increasing the safety and quality of food results in the environmental protection being the specific priority under the EU CAP. The tangible result of the reorientation of the CAP objectives is the reform of 2003, which brought about introduction of the procedure of decoupling (i.e. separation of direct payments from the type and level of production), the single payment scheme (SPS)⁷ and the cross-compliance instrument. This reform is aimed at taking agri-environmental measures which are conducive to the sustainable development of agriculture; however, the social dimension of the reforms is also of importance, primarily the European societies' acceptance of the financial resources directed to agriculture (Bołtromiuk, 2006; Łuczka-Bakuła, 2006; Duer, 2007). In view of the above, it is important to verify the CAP guidelines in practice.

Poland is a relatively new EU Member State (since 2004), and is in the process of the second programming period under the CAP. The first period spanned the years 2004-2006 and permitted obtaining experience and improving the efficiency of certain measures, including those towards the environmental protection, during the second programming period 2007-2013. However, this does not mean that an efficient and effective system for implementation of the set objectives has been developed, yet measures were taken towards the improvement of efficiency also within the range of implementation of the environmental objectives, which is of great importance in the context of the next programming period.

3.2. Single Area Payment Scheme (SAPS)

As a result of the integration with the EU, Polish farmers have been covered by the Single Area Payment Scheme (SAPS). This system includes two types of payments: Single Area Payments (SAPs) and Complementary Area Payment (CAPs). All the agricultural land maintained in good agricultural condition is entitled to the SAPs. The complementary payments are applied for the area of specified arable crops⁸. One of the conditions for farmers to be granted the area payments is meeting the requirements of maintaining land in good agricultural condition (GAC). This is due to the GAC-related requirements that the direct payment scheme is becoming the most efficient tool for implementation of environmental

⁷ Since 1 January, 2005, the SPS has only been introduced in seven EU 15 countries, while the other countries did so at least a year later (Adamowicz, 2008). As stated by Drygas (2008), Poland should introduce the SPS starting from the 2011 direct payment campaigns; however the possibility to continue the existing SAPS system until 2013 inclusive should be allowed.

⁸ The list of crops entitled to the complementary payments is annually compiled by the Council of Ministers.

objectives within the agricultural sector, mainly for its range of impact. The utilised agricultural area (UAA) in Poland amounts to approx. 19 million ha, that is approx. 60 % of the total area of Poland⁹, while the utilised agricultural area subject to the support under the single area payments (SAPs) is at the level of approx. 14 million ha, that is almost 75 % of the UAA and almost 45 % of the total area of Poland. This means that combining the area payments with the obligation to comply with the regulations concerning the environmental protection brings about an efficient instrument which affects almost half the area of Poland.

By province, the largest utilised agricultural area subject to the Single Area Payments is found in the following provinces: Wielkopolskie (88.7 %), Kujawsko-Pomorskie (87.5 %), Podlaskie (83.5 %) and Opolskie (83.3 %). On the contrary, the smallest one is found in the south provinces: Śląskie (53.2 %), Małopolskie (55.0 %) and Podkarpackie (56.1 %) (Fig. 3).

POLAND 74.9

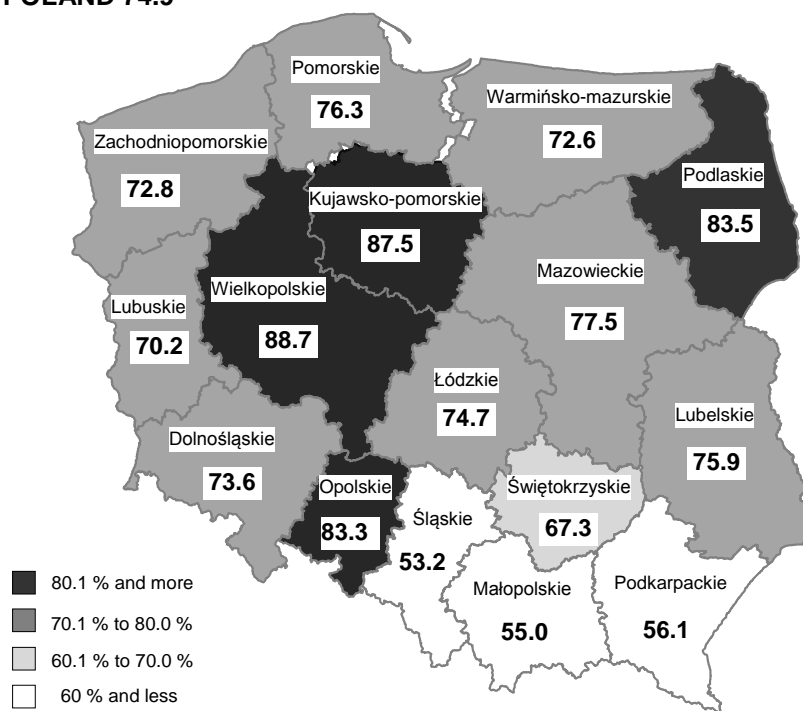


Fig. 3. Utilised agricultural areas for which the SAP payments were granted in 2009 (% of UAA)

Source: Own work based on the data from the GUS and ARiMR.

⁹ The percentage of the utilised agricultural area in the structure of land use was on the increase until 2003 (61.5 %), while since 2004, following the accession of Poland to the EU, a slight decline of the utilised agricultural area has been recorded (60.7 % in 2009).

Within the context of implementation of environmental objectives, the range of requirements defined under the GAC is particularly important. Over the years 2004-2010, the standards established under the GAC were subject to changes. However, from the beginning, i.e. as from 2004, they defined the principles for farming the arable land located on the slopes with a gradient of more than 20, but the requirement that in the areas particularly threatened with erosion¹⁰ at least 40 % of the arable land shall be kept under the plant cover during winter was introduced as late as in 2010. Introduction of this standard is aimed at improved protection of the soils against erosion and leaching of nitrates from soils through increasing the area under cultivation of winter crops, perennial plants and intercrops.

The existing standards concerning the GAC set out many requirements which the farmers must meet in order to obtain the SAP payment. An indication should be in this place made of, for example, the prohibition of carrying out cultivation operations using heavy agricultural machinery during the water saturation of the soil profile. Heavy machines and tractors moving around the field bring about excessive compaction of the deeper layers of soil, and the traditional ploughing system of cultivation contributes to the formation of the so-called plough pan¹¹. Under the GAC a requirement was also introduced to reduce the time of cultivation of the same plant (cereal) species to up to three years through the obligatory performance of ploughing in the straw, manure and intercrops, and in the case of continuing the monoculture, through the obligatory repetition of the treatment and performing soil analyses. These measures should contribute to increasing the humus content in the soil¹².

As from 2009, farmers also have the obligation to meet the cross-compliance requirements. The requirements encompassed within this instrument were applicable to farmers even before the integration with the EU; however, these were largely “dead”, i.e. inoperative regulations that no average farmer ever heard of, and practically no mechanisms of their enforcement existed. In principle, a part of relevant legislation became effective only with the Poland’s accession to the EU and the financial support under the CAP. Similarly as in the EU countries, the list of detailed cross-compliance requirements took the form of an extensive brochure. The cross-compliance requirements were set out at the minimum level resulting from Annexes III and IV to the Council Regulation (EC) No 1782/2003. Therefore,

¹⁰ These areas cover approx. 9 % of the surface area of the country and are primarily located within the belt of the southern provinces (Podkarpackie, Małopolskie, Śląskie, Dolnośląskie, Świętokrzyskie, Lubelskie) and northern provinces (Pomorskie, Zachodniopomorskie, Warmińsko-Mazurskie).

¹¹ In Poland, the total area of soils highly susceptible to compaction due to inappropriate cultivation techniques using equipment with too much of a load under the conditions of excessive moisture content amounts to approx. 15 % of the UAA (Stuczyński *et al.*, 2007).

¹² In Poland, the soils with a low humus content amount to approx. 6 %, while the soils with an average humus content amount to as much as 50 %.

having regard to the Community law and the existing national provisions, and according to the legal situation as in December, 2007, four areas of requirements were distinguished:

- area A, in force as from January 2009, which included identification and registration of animals, and the issues of environmental protection;
- area B, which shall be in force as from 2011, including the issues of public health, animal health and the obligation to notify of certain diseases, as well as the general health of plants;
- area C which also shall be in force at a later date, concerning the requirements related to animal welfare;
- requirements concerning the Good Agricultural Conditions (GAC) in accordance with the environmental protection (controlled by the ARiMR since 2004) (Krzyżanowska *et al.*, 2007).

The checks on compliance with the cross-compliance requirements within the area of environmental protection, which are applicable as from 2009, concern the storage of hazardous substances, the use of sewage sludge, the use of natural fertilizers (exclusively in the particularly vulnerable areas) as well as the protection of birds and natural habitats. These checks consist in making an assessment with regard to the severity, range, persistency and possible repeatability of the non-compliances found in agricultural farms. When a detected non-compliance results from a farmer's negligence, the payments are reduced by 3 % of the total amount of direct payments (with the fluctuations of 1-5 %), whereas in justified cases there is even a possibility of refraining from imposing financial sanctions. However, in cases when inspectors detect repeated non-compliances, the sanction imposed is three times as high, yet it shall not exceed the 15 % of the total amount of direct payments. If a deliberate non-compliance with the existing standards is detected, the sanction imposed may reduce the amount of the area payment due by 20 % or, in severe cases, even completely take the subsidies away from the farmer¹³.

A detailed analysis of the list of control points as regards the compliance with the Habitats Directive proves that the check is of a declaratory nature (is mainly based on an interview with a farmer) and does not provide basis for imposing penal law sanctions. The European Court of Auditors also calls into question both the range and the objectives of the cross-compliance, which are poorly defined, and files objections to the system of checks and sanctions. As a result of 11 633 checks as regards the compliance with the Birds Directive,

¹³ Developed on the basis of the information provided on the ARiMR website [www.arimr.gov.pl]

and 114 896 checks as regards the compliance with the Habitats Directive, which were performed for two years in four EU Member States, not even a single breach of compliance was detected (*Czy zasada...*, 2008). Therefore a question arises whether the mechanism of checks is legitimate.

3.3. Supporting Agricultural Activities on Less-Favoured Areas (LFA)

In the EU Member States, compensation payments for farmers on account of farming in the mountainous and upland areas and in the specific less favoured areas were introduced in 1975 through adoption of the Council Directive (EEC) 75/268. Introduction of these payments is aimed at ensuring the continuity of agricultural land use, which is intended to prevent depopulation of the rural areas, and enable maintaining the viability of rural landscape (Klepacka-Kołodziejska, 2009).

In Poland, three types of rural less favoured areas (LFA) were determined. The first one includes the mountainous areas (1.2 % of the UAA), where almost half the UAA is located at a height of at least 500 m above sea level. The second one includes the lowland areas (48.2 %) divided into the lowland zone I (softer production-restricting measures) and zone II (with bigger disruptions in the agricultural production). When outlining these areas, the following were taken into account: indexation rate for the agricultural production environment, the population density and the percentage of population associated with agriculture. The third zone includes the areas with specific handicaps (3.2 %), i.e. mainly communes and geodesic precincts in the mountainous and submontane areas, where at least 50 % of the land is located at a height exceeding 350 m above sea level.

In total, in the years 2004-2006 the area of the LFA in Poland amounted to 52.6 %, and during the new funding period their area increased by more than 3 % and amounts to 56.5 %. The payment, however, remains unchanged and from the beginning of funding it amounts to: in the mountainous area: PLN 320,- per ha; in the lowland zone I: PLN 179,- per ha; in the lowland zone II and in the areas with specific handicaps: PLN 264, per ha. Moreover, in order to avoid overcompensation, modulation of measures was applied¹⁴.

In total, 39.8 % of the UAA was subject to the support for agricultural activities in the LFAs in 2009, which means that the range of impact for this tool is smaller by about a half than for the area payments. The biggest percentage of the UAA subject to the LFA payments is found in Podlaskie province and amounts to 75.5 % of the UAA, while the smallest one is

¹⁴ Farms of the area up to 50 ha – 100 % of the payments; for further 50 ha – 50 %, and for further 200 ha – 25 %. The support is granted to the maximum area of 300 ha of UAA.

found in the provinces of southern Poland (Opolskie province – 12.3 %, Śląskie province – 17.8 %) (Fig. 4).

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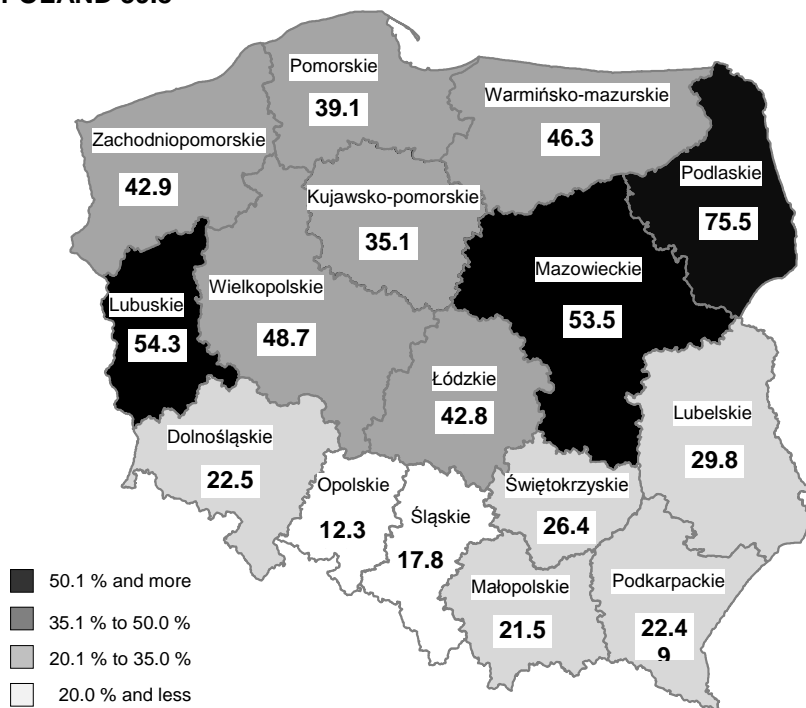


Fig. 4. Utilised agricultural areas for which the LFA payments were granted in 2009 (% of UAA)

Source: Own work based on the data from the GUS and ARiMR.

The main objective of this measure is to increase the incomes in agriculture and to prevent the depopulation. However, the precondition for being granted the LFA support during the first programming period 2004-2006 was the requirement to comply with the improved standards concerning the environmental protection, i.e. the Usual Good Farming Practice (UGFP) principles. This meant the need to appropriately use and store fertilizers and plant protection products, proper farming practices on the grasslands, maintaining order and cleanliness in a farm and the protection of natural habitats, soils and water resources. Admittedly, the so-called transitional period applied to the compliance with the principles (for example, the deadline of 25 October, 2008, for producing manure pads and liquid manure tanks), yet in reality some of them were never in force since the requirements under the existing standards were amended. During the present programming period 2007-2013, beneficiaries of this measure are obliged to meet the same standards concerning the

environmental protection, just like all the farmers who obtain direct payments. Therefore this measure, within the context of implementation of environmental protection objectives, decreased in importance. Klepacka-Kołodziejaska (2009) also indicates the overcompensation existing in the LFAs which are less disadvantaged, and the undercompensation in the mountainous areas. The author recommends verifying both the range and the objectives, and the level of payments, in order to improve the effectiveness of this measure in the context of the sustainable development objectives. At the same time, however, she draws attention to the fact that the agri-environment measures are better suited for the environmental protection and maintaining the rural landscape.

3.4. Agri-Environment Payments

The Agri-Environmental Programme (A-EP) is an instrument for the active environmental protection, which discourages farmers to reduce the negative impact of the too intensively managed agricultural production on the environment. However, its objectives should appropriately reflect the priorities resulting from the determinants of the development of agriculture in a given Member State, its nature values and the indications associated with the environmental protection (Niewęglowska, 2006). Putting it briefly, Polish A-EP is aimed at the protection of valuable natural habitats, conservation of the genetic resources of plants and animals, and supporting the environmentally friendly agricultural production (sustainable and organic farming). However, Duer (2010) draws attention to the overlapping of certain practices that are binding under the A-EP and the cross-compliance standards (especially as regards reducing the pollution with nitrates of agricultural origin). In this author's view, the A-EP should be focused to a greater extent on the protection of specific habitats and the environmentally sensitive species/areas, as opposed to the more general standards resulting from the cross-compliance instrument, which are more related to the protection of the basic environmental resources.

During the first programming period, the farmers' interest in the implementation of the A-EP increased with each successive year of implementation thereof. In 2004, 3 550 farmers began carrying out their agri-environmental commitments, in the next year their number increased to 20 040, and in 2007 up to 26777 farmers¹⁵. In essence, in the period 2004-2006 more than 70 000 farmers joined the A-EP, which means that, on the national level, every twentieth farm applying for the direct payments implemented it, and the area under the

¹⁵ In 2007 applications were still submitted under the RDP 2004-2006, only from 2008 under the A-EP with RDP 2007-2013.

implementation amounted to 6.32 % of the UAA. By provinces, the highest percentage of the UAA in which the agri-environmental commitments were carried out was located in Zachodniopomorskie province (16.2 %) and Lubuskie province (15.4 %). On the other hand, in three provinces, namely in Łódzkie, Mazowieckie and Podlaskie provinces, the percentage of the area under the implementation of A-EP was two times lower than the average in Poland (Fig. 5).

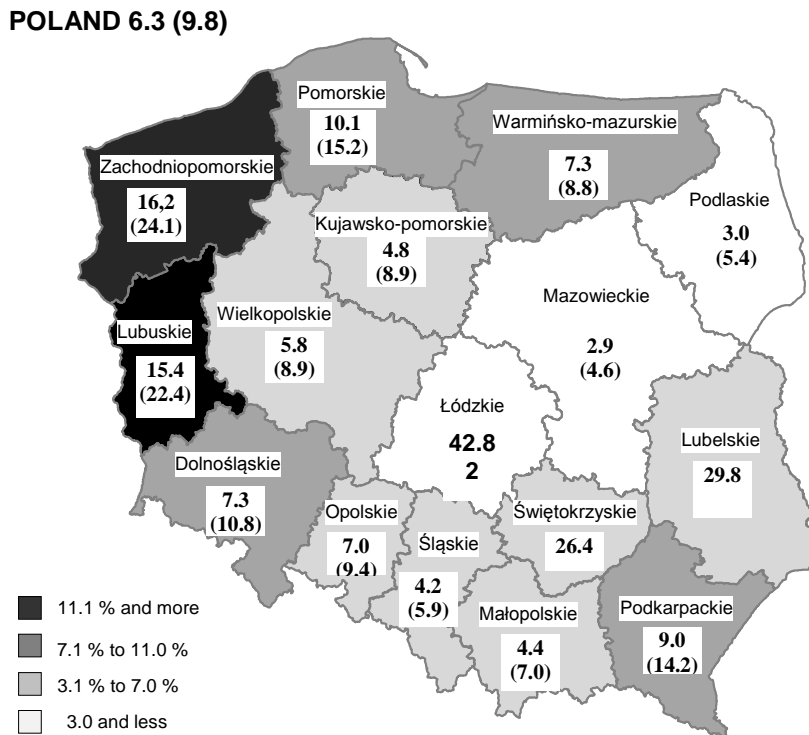


Fig. 5. Utilised agricultural areas in which the Agri-Environmental Programme was implemented in 2006, and the estimates for 2010 (% of UAA)

Source: Own work based on the data from the GUS and ARiMR.

As the ARiMR data show, in the years 2004-2006 farmers were most interested in the package “Soil and water protection” for which 51 496 applications were submitted. This package was implemented in more than 60 % of the entire area under the Agri-Environmental Programme. Another rather popular package was the “Organic farming” package implemented in 23 % of the utilised agricultural area under the Agri-Environmental Programme (11 988 applications). On the other hand, the farmers were rather little interested in the package “Sustainable farming” (2 085 applications) and the package “Buffer zones” (105 applications) (ARiMR, 2007). According to Liro (2010), during this programming

period these were the farmers from the eastern provinces that reacted most strongly to the environmental packages. However, as for the existing needs and expectations, this interest was significantly lower. According to the ex-post assessment for the RDP 2004-2006, the area under the implementation of packages in Natura 2000 areas amounted to 214 196 ha (4.54 % of UAA), and outside these areas it amounted to 1.13 %. These packages focused on the appropriate use of valuable meadows and pastures, but with no clear preferences for the extensive farming systems involving livestock. Similarly to the situation with other A-EP packages, the most popular were the variants with the higher payment rates (Liro, 2010).

Due to the difficulties with obtaining the data on the area under the currently implemented A-EP, estimates¹⁶ were accepted which in Fig. 3.3 were indicated in brackets.

As the ARiMR data show, in 2008 the new agri-environment commitments were taken on by 21 697 farmers, in 2009 by 15 649 farmers, and in 2010 by 27 171 farmers, most of them in Lubelskie and Mazowieckie provinces. Obviously this does not translate to the increase in the UAA in which the A-EP is being implemented. According to the estimates, the largest utilised agricultural area is in Zachodniopomorskie province (24.1 %) and Lubuskie province (22.4 %). It also significantly increased in Podkarpackie province (by 5.2 percentage points) and Pomorskie province (by 5.1 percentage points. It is just the percentage of the farmers who took on the agri-environmental commitments, as well as the utilised agricultural area subject to these commitments, that are the indicators most frequently used for assessment of the agri-environmental programmes effectiveness. However, there is no data available to enable the assessment of the quality of the provided services. As regards this issue, a lot depends on the farmers' environmental awareness and the farming practices they apply. The lack of full access to the data hinders the detailed analysis of both packages and the variants within the framework thereof, which restricts efficient monitoring of the distribution of resources and the possibility for their effective modulation (Duer, 2007; Brodzińska, 2007). Other authors also draw attention to the lack of evidence to confirm the effectiveness of the agri-environmental programmes (Klein, Sutherland, 2003; Key Speakers..., 2008; Whittingham, 2007). In this case it is often assumed that an increase in the area subject to the agri-environmental support, and the compliance with the relevant requirements, have a positive impact on the environment, since this is essentially the only instrument of this kind (Toczyński *et al.*, 2007; Duer, 2007).

¹⁶ The average area of the farms implementing the A-EP by provinces was calculated, and the estimated percentage of the surface of the UAA was calculated, in which the A-EP is implemented in 2010, taking into account the number of beneficiaries under the new A-EP.

3.5 Afforestation of Agricultural Land and Non-Agricultural Land

The measures important to the improvement of the environment and financed under the CAP include afforestation of agricultural land and non-agricultural land. In Poland under the RDP 2004-2006, more than 10 000 applications in total were submitted for implementation of this measure on the area of almost 53 500 ha, and 42 800 ha were afforested (twice as much as planned). The largest area was afforested by the beneficiaries who obtain at least 20 % of the income from agriculture (approx. 90 %) and afforest up to 10 ha (93 %), that is the farmers who could apply for a higher afforestation premium (PLN 1 400,- per ha) (ARiMR..., 2007).

Afforestation of agricultural land is particularly important given the fact that from 2005 the area of the land afforested by the *Lasy Państwowe (State Forests National Forest Holding)* has been on the decrease. In 2005, 6 100 ha were afforested, while in 2006 only 4 400 ha, and in 2007 as little as 2 900 ha were afforested. According to Płotkowski (2008), a significant problem of implementation of afforestation plans on the State-owned land is a significant decrease in the area of the former farmland and wasteland being made over to the *Lasy Państwowe*. Within this context, afforestation of almost 43 000 ha of agricultural area under the RDP 2004-2006 is of significance.

Under the RDP 2007-2013 two schemes are being implemented: continuation of the measure “Afforestation of agricultural land” with the afforestation premium of PLN 1560,00 per ha, and the financial support for afforestation of non-agricultural land, including afforestation using the natural succession. Under the second scheme, farmers are only entitled to the reimbursement of costs related to the establishment of a plantation, and a maintenance premium. In total, under these measures 14,306.5 ha of land was afforested (13,141.4 ha of agricultural land and 1,165.1 ha of non-agricultural land). Within the framework of the afforestation of agricultural land, the highest percentage of the UAA was afforested in Warmińsko-Mazurskie province (0.79) and Lubuskie province (0.43), while the lowest percentage of agricultural land was afforested in Małopolskie province (0.06) (Fig. 6).

The most frequently indicated reasons for the slow-down of afforestation activities are: the exclusion of the land located within Natura 2000 areas from afforestation; the exclusion of permanent meadows and pasture lands from afforestation; and, first of all, the systems of agricultural grants, which are competitive towards the afforestation premium (Zajączkowski *et al*, 2009). Under the CAP being implemented, however, remedial activities¹⁷ are taken,

¹⁷ As from 1st June, 2010, the Ordinance of the Minister of Agriculture and Rural Development of 31 May, 2010 amending Ordinance on the detailed conditions and procedure for granting of financial aid under the measure

which provide for the afforestation of the Natura 2000 areas, if not incompatible with the plans of protection or plans included in the conservation objectives for these areas.

POLAND 0.29

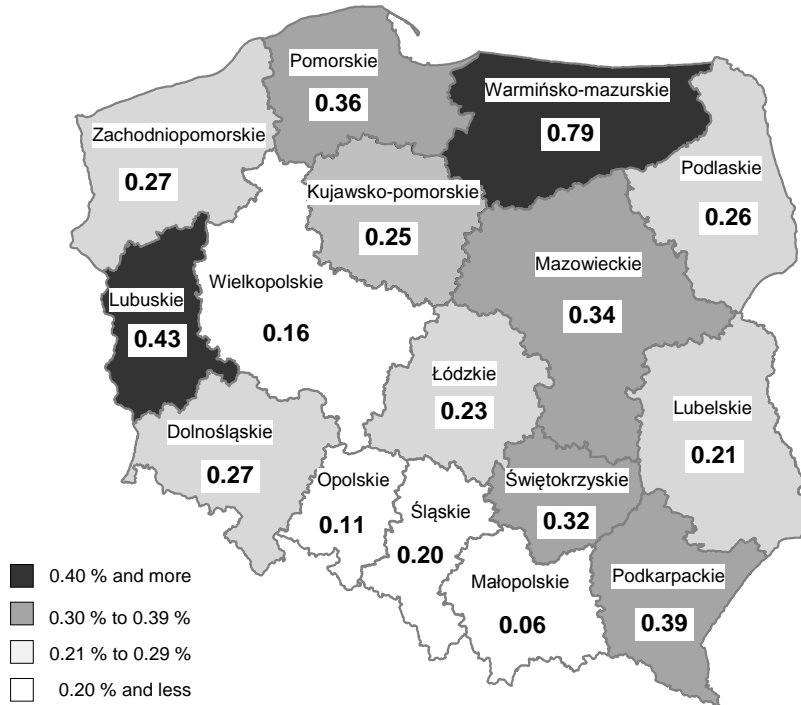


Fig. 6. Agricultural areas afforested in the years 2004-2009 under the CAP (% of UAA)

Source: Own work based on the data from the GUS and ARiMR.

However, during the new programming period a new system of support needs to be developed, which will enable the efficient stimulation of the afforestation process. It is particularly important to set out such access criteria and an amount of support which will enable reaching the set objective (an increase in afforestation) and not lead to the wide-scale and chaotic afforestation, which is especially significant in view of the landscape values of rural areas. Skodul (2010) also draws attention to the need for modification of the multi-annual afforestation programme in Poland towards limiting the downward trends in afforestation, simplifying procedures and eliminating the procedural and institutional barriers.

“Afforestation of agricultural land, and afforestation of non-agricultural land” covered by the Rural Development Programme for the years 2007-2013 (Dz.U. [Journal of Laws] No. 94, Item 608) entered into force.

3.6. Other Types of Pro-Environmental Support Under the CAP

Upon the coming into force of the Council Regulation (EC) No 73/2009, which in Article 68 provides for the so-called specific support to be granted to farmers in the Member States, in the years 2010-2012 the following forms of assistance have been implemented in Poland: specific support for the farmers keeping cows and sheep in the provinces of southern and south-eastern Poland, and specific area payment for the acreage of leguminous and small-seed papilionaceous crops.

The farmers, who meet the conditions for granting the SAP and own no more than 10 cows, are entitled to the specific support for the farmers keeping cows, i.e. the so-called payment on cows. This support is aimed at maintaining both the dairy production and production of beef and veal in small farms located in the economically sensitive areas (a high fragmentation of farms) and environmentally sensitive areas (mountainous areas), and is being implemented in Lubelskie, Małopolskie, Podkarpackie, Śląskie and Świętokrzyskie provinces. As it was raised in justification, the region subject to the support is characterised by a particularly rapid decrease in the number of farms involved in the production of milk and the cow population. However, it is difficult to expect the introduction of this payment to dramatically improve the situation, mainly in view of the costs of phytosanitary adaptation of animal farms. In Klepacka-Kołodziejaska's (2009) opinion, it is just the farmers – owners of farms with a small acreage of UAA (at whom this type of support is primarily aimed) – who most frequently have given up the animal production.

Specific support for the farmers keeping sheep is also aimed at small farms (up to 10 females) in the regions where sheep rearing has for centuries had significant economic and environmental implications. It is expected that introduction of this type of support will contribute to maintaining the traditional production of highland cheeses, and the conservation of the landscape. Many authors stress the economic and environmental advantages stemming from sheep-grazing, particularly in the mountainous and environmentally valuable areas (Musiał, 2005; Klepacki, Rokicki, 2006).

The next type of payment, that is the specific area payment for the area of leguminous and small-seed papilionaceous crops, can be applied for by the farmers who cultivate, as a main crop, small-seed or leguminous crops for which the SAP was granted. Cultivation of the leguminous crops leads to nitrogen being obtained from the atmosphere through the biological fixation thereof, while using natural fertilizers minimizes losses of nitrogen. These measures, for environmental reasons, are extremely significant, and also have their economic dimension (an increase in the crop yields, lower costs of fertilisation).

To sum it up, it needs to be stated that the CAP is able to support, in a tangible way, the measures geared towards the environmental protection. The most important step towards the environmental sustainability is certainly the combining area payments with the need to fulfil the cross-compliance requirements.

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4. IMPLEMENTATION OF THE AGRI-ENVIRONMENTAL PROGRAMME ON THE REGIONAL LEVEL

4.1. Regional Determinants of Agricultural Production

The organisational and economic determinants (which provide explanation for approx. 70 % of the regional disparities in the crop production) determine the level of regional disparities in agriculture in Poland to a greater extent than the natural and agronomical determinants do (Krasowicz, Filipiak, 1999; Fotyma, Krasowicz, 2001). One of the factors that determine the development of regions is the ability to adapt the agricultural production to the European Union's requirements and standards, as well as the agricultural farms' activity aimed at obtaining financial resources. In this context, implementation of the Agri-Environmental Programme (A-EP) is a significant organisational and economic factor.

The research covered two provinces of northern Poland (Zachodniopomorskie and Warmińsko-Mazurskie), both with similar natural conditions and the agricultural production potential. These provinces are characterised by moderately favourite conditions for the agricultural production¹⁸; the more favourable conditions, especially in terms of agriculture climate and relief, occur in Zachodniopomorskie province. As regards the agricultural farms' size structure in Zachodniopomorskie province in 2008, the smallest farms of 1 to 5 ha predominated (34.7 %), while in Warmińsko-Mazurskie province the farms within the size group of 5 to 20 ha were predominant (42.9 %). However, as compared to other provinces, these are actually the provinces which are characterised by a high percentage of farms with a larger area. In Warmińsko-Mazurskie province, farms of 20 to 50 ha in area accounted for 17.7 %, farms with area of 50 to 100 ha accounted for 4.3 %, and farms with area exceeding 100 ha accounted for 1.8 %. In Zachodniopomorskie province the relevant values accounted for, respectively, 11.4 %, 6.8 % and 3.2 %. According to the ARiMR data, an average area of farms in the provinces included in the research has been on the increase; in 2010, it amounted to 30.3 ha in Zachodniopomorskie province and to 22.95 ha in Warmińsko-Mazurskie province, as compared to the national average area of 10.23 ha. As for the production structure of these provinces, the crop production (mainly grains and rape) was predominant, while the production of animals (in particular bovine) was limited. In the latest case, the situation may result in a failure to ensure the minimum organic fertilization, which entails a

¹⁸ The indexation rate for the agricultural production environment in Warmińsko-Mazurskie province amounts to 66.0, and in Zachodniopomorskie province to 67.5. An averaged indexation rate for Poland amounts to 66.6.

decreasing content of humus in the soils and their increased degradability. The consumption of mineral fertilizers in Warmińsko-Mazurskie province was of the order of 90.3 kg NPK per ha, and in Zachodniopomorskie province it amounted to 112.1 kg NPK per ha (with an average national value of 102.4 kg NPK per ha). As is evident from the researches conducted by Mazur *et al.* (2004) as well as by Igras and Lipski (2005), at such a fertilization level the agricultural production has no negative effects on the state of the natural environment. The degree of the use for agricultural production environment¹⁹ in the provinces under analysis was relatively high, being of the order of 75.4 % in Warmińsko-Mazurskie province and of 72.1 % in Zachodniopomorskie province (Krasowicz, Kuś, 2006). A fact which deserves consideration is that despite similar natural conditions and production potential, the processes of implementation of the A-EP in these provinces were diverse. In the years 2004-2006, in Zachodniopomorskie province the agri-environmental commitments were taken on by almost 4 500 farmers (14.8 %) on the area of 16.2 % of agricultural land. In Warmińsko-Mazurskie province the agri-environmental commitments were taken on by 2 800 farmers (6.5 %), and the area under the Programme accounted for 7.3 % of the entire agricultural land. In this context it was important to recognise the factors which affect the diverse farmers' interest in the implementation of the A-EP. In consideration of the above, at the end of 2007 / beginning of 2008 a research was carried out which covered 750 A-EP beneficiaries (375 in each province). In view of the organisation of the research, the farmers chosen to the research sample were primarily the ones who participated in the training in implementation of the A-EP and/or benefited from relevant individual advisory services. The chosen research population was recognised as representative. The basic research tool, namely a survey questionnaire, was used to collect factual data. Methodology of interview and participant observation was additionally used. This allows the problem to be more fully recognized, and enables acquisition of additional data being supplementary to the information obtained during the statistical research. In order to determine the correlation of variable features, the following statistical methods were used: analysis of variance (ANOVA); Kruskal-Wallis one-way analysis of variance by ranks; the gamma rank correlation; and the chi-square test.

4.2. The A-EP Beneficiaries' Socio-Professional Profile

The basic parameters identified in the socio-economic researches are the respondents' age and level of education. This is particularly important in case of agriculture since these two

¹⁹ The relation of the actual crop production expressed in cereal units to the production actually possible to obtain.

indices determine, to a large extent, the decisions related to the activities pursued by the owners of agricultural farms.

As is evident from the researches carried out, on the average the respondents were 42 years of age, within the range of 20 – 65 years.

However, the note-worthy fact is that more than 40 % of respondents in Warmińsko-Mazurskie province were agricultural farms' owners of the age of up to 40. In Zachodniopomorskie province, the age structure was definitely less favourable. Researches indicate that the respondents were relatively highly educated. Similarly, as in the case of age, the structure of education level among the A-EP beneficiaries was more favourable in Warmińsko-Mazurskie province. In this area, farmers with a secondary and higher education level accounted for almost 65.3 %, while in Zachodniopomorskie province they did for slightly above 50 %. Having regard to the generally low education level among the population in rural areas, particular attention should be paid to the relatively low percentage of respondents with primary education level (approx. 24-25 %) as well as a high percentage of respondents with higher education level (9-11 %). The education level constitutes one of the most significant factors as regards the development of rural areas. The low level of education among the rural population is one of the considerable barriers to the development of agriculture and, more broadly, of the rural areas; it has a negative impact on the development of entrepreneurship, limits the investment capacity and hinders the process of agricultural farms modernisation. Low farmers' qualifications impede the use of state-of-the-art technologies and biological progress, and reduce the capacity for adaptation to the changing farming conditions (Nowak, 2003). However, it should be borne in mind that the level of formal education is only one of the components of professional competences. Indeed, the qualifications and skills (procedural knowledge) are also of essence. The A-EP beneficiaries were characterised by a wide spectrum of obtained professional qualifications. This primarily regarded the respondents with a higher education level, significant percentage of whom graduated from technical colleges. In the group included in the research, professions rarely found among the owners of agricultural farms were also present, such as: lawyers, teachers, economists and foresters, and even, as in the case of Zachodniopomorskie province, a

graduate from a Maritime University. As regards the respondents with a basic vocational and secondary education levels, graduates from schools of mechanical engineering predominated.

The results obtained may indicate that persons who often decided to run agricultural farms and implement the agri-environment measures had no agricultural education. In many cases it resulted from, for instance, the necessity to take over a farm inherited from parents following their death. However, there also was a group of persons among the respondents who had decided to run an agricultural farm even if they had no previous contact with this profession. It must be stated, however, that completion of an agricultural school is not the only ticket to the efficient management of an agricultural farm anymore. The necessity to adapt to the Common Agricultural Policy principles (new standards and technologies, the Union requirements and the possibility for benefiting from numerous European grants) is the reason why the farmers who intend to run their farms at a high level should continuously supplement their knowledge (Krasowicz, 2006).

The conducted researches show that only few respondents have participated in supplementary courses and trainings. The most frequently selected ones included those related to the basics of organic farming (6.8 %). This resulted from the considerable farmers' interest in the implementation of the package "Organic farming", which in turn involves supplementation of the possessed knowledge or even acquiring the knowledge on this agricultural production method from the basics. Subsequently, the respondents mentioned the chemicalisation courses, training in conducting agritourism activities, and in the Good Farming Practice (GFP) requirements. The latter subject matter is of particular importance in the case of the Agri-Environmental Programme, since the relevant requirements (commonly called the "zero package") in the years 2004-2006 were mandatory for all the A-EP beneficiaries. The GFP was intended to help with introducing the environmentally-friendly practices to agricultural production in order to ensure safety and convenience for an agricultural producer and their family, as well as for a consumer, and also the protection of agricultural environment, whilst ensuring the profitability of production (Golinowska, 2004; Filimoniuk, Maksimczuk, Sidorowicz, 2001).

The conducted researches indicate that the respondents in Zachodniopomorskie province were more interested in elevating the level of knowledge in the area of organic farming than farmers in Warmińsko-Mazurskie province. On the other hand, in the north-eastern Poland area the respondents more frequently benefited from training concerning the principles of conducting agritourism activities and the Usual Good Farming Practice.

A definitely positive occurrence is a fact that an exceptionally large group of respondents (in spite of completed courses and received training) continues to deepen their knowledge. This trend was observed in both provinces; however, the number of farmers continuing their education was higher in Warmińsko-Mazurskie province.

4.3. The Characteristics of the Farms Carrying Out the Agri-Environmental Commitments

One of the most significant determinants of the economic situation of agricultural farms, as well as of the competitiveness of agriculture at international level, is the area structure of farms (Poczta, Wysocki, 2001). An inappropriate structure contributes, to a large extent, to the emergence of problems related to the profitability of production and the revenues of agricultural farms. As regards the farms included in the research, the predominant ones were those with an area exceeding 50 ha, which in Warmińsko-Mazurskie province accounted for almost 49 %, while in Zachodniopomorskie province for only 11.5 %. The rank variance analysis indicated a significant interdependence between the respondents' age and the area of their farms. It was found that the largest farms were owned by the respondents in the youngest age group, while the smallest ones by the owners older than 50, and from the age range of 35-39 years. It is a striking fact that the largest farms are owned by the youngest farmers. One may assume that this partly results from transferring farms by the older generations of farmers to their successors as well as from the fact that the still young but already well-to-do inhabitants of big cities invest in the land (which is particularly evident in the region of Warmia and Mazury).

Another rank variance analysis indicated a significant interdependence between the respondents' education level and the area of their own farms. It was found that the farms of the largest size were owned by respondents having the diametrically opposed levels of education, i.e. higher and vocational.

The average area of the farms included in the research amounted to 68.1 ha, with the range from 2.3 ha to over 1 400 ha. In both regions the conventional agriculture predominated (77 %), although the percentage of organic farms was relatively high (20.7 %). The rank variance analysis indicated a significant interdependence between the respondents' age and the production method they use. Most frequently, the organic farms were run by respondents in the age range from 25 to 29 years, and of above 59 years of age. An increase in the older farmers' interest in organic farming proves that the rural area inhabitants (conservative, by the rule of thumb) are more and more open to new experiences. The researches carried out a

decade earlier indicate that the farmers in the older age groups less frequently changed the traditional methods of agricultural production, while their successors – having more theoretical knowledge, better business sense as well as a greater tendency to bear a risk – more frequently searched for new solutions (Gotkiewicz, 1999). Another significant interdependence observed was the one between the respondents' level of education and the production method they use. The owners of agricultural farms with a higher education level were most interested in organic farming, while those with a primary education level showed the least interest. This trend (as contrary to the case of age category) has not changed over the years. According to Łuczka-Bakuła (1997), the adaptation processes in farms where owners undertake organic production methods are rather complicated. These require being adapted to the environmental requirements (the use of appropriate machines, fertilizers and plant protection methods) as well as economic ones (for example, establishment of, and participation in, new distribution channels), which involves numerous hazards and a high level of risk. As can be observed from the above, the possessed knowledge and skills are among the most significant factors which stimulate the introduction of changes in a farm.

4.4. The Factors Determining Implementation of Particular A-EP Packages

The Agri-Environmental Programme in the years 2004-2006 was implemented within the framework of the Rural Development Plan and consisted of 7 packages:

- sustainable farming,
- organic farming,
- maintenance of extensive meadows,
- maintenance of extensive pastures,
- soil and water protection,
- buffer zones,
- protection of native breeds of farm animals (Dobrzyńska *et al.*, 2004).

During the second period, in the years 2007-2013, it was included in the Rural Development Programme, and the number of packages was increased to nine. The modifications consisted in combining two packages (“Maintenance of extensive meadows” and “Maintenance of extensive pastures”) into one, known as “Extensive permanent pastures”. Moreover, new packages were added: “Preservation of local crop varieties”, and “Protection of endangered bird species and natural habitats in Natura 2000 areas” and “Protection of endangered bird species and natural habitats outside of Natura 2000 areas”.

However, the majority of farmers included in the research were the beneficiaries of the A-EP 2004-2006, whose farms were located within the priority zones (79.6 %) ²⁰. This means that within these zones farmers were able to implement all available packages. In the areas situated outside of the zones, the following packages could not be implemented:

- sustainable farming,
- maintenance of extensive meadows,
- maintenance of extensive pastures.

In the area included in the research, the A-EP beneficiaries were selecting 6 out of 7 available packages (in both provinces a total lack of the package “Buffer zones” was noted). The most popular package with beneficiaries was the “Soil and water protection”, selected by almost half of the respondents (49.2 %). Other popular packages included “Maintenance of extensive meadows” (38 %), “Organic farming” (32 %) and “Sustainable farming” (11.7 %). Farmers were significantly less interested in the implementation of the following packages: “Maintenance of extensive pastures” and “Protection of native breeds of farm animals” (Table 3). As the χ^2 analysis indicates, the most frequently chosen option within the territory of Zachodniopomorskie province was the “Organic farming” and, to a small extent, “Protection of native breeds of farm animals”. In the Warmia and Mazury region the other packages were predominant.

Table 3. The structure of packages implemented in particular research regions

Specification	Zachodniopomorskie province		Warmińsko-Mazurskie province		TOTAL	
	n	%	n	%	n	%
SUSTAINABLE FARMING	34	9.1	54	14.4	88	11.7
ORGANIC FARMING	170	45.3	70	18.7	240	32.0
Non certified arable crops	81	21.6	42	11.2	123	16.4
Certified arable crops	65	17.3	22	5.9	87	11.6
Non certified permanent pastures	78	20.8	45	12.0	123	16.4
Certified permanent pastures	58	15.5	28	7.5	86	11.5
Non certified vegetable crops	2	0.5	3	0.8	5	0.7
Certified vegetable crops	7	1.9	5	1.3	12	1.6
Non certified fruit crops and berry plantations	51	13.6	9	2.4	60	8.0
Certified fruit crops and berry plantations	25	6.7	2	0.5	27	3.6
MAINTENANCE OF EXTENSIVE MEADOWS	105	28.0	180	48.0	285	38.0
Once mown (semi natural)	7	1.9	9	2.4	16	2.1

²⁰ The area of priority zones in Warmia and Mazury amounts to 53 700 ha (3 zones), whereas in Zachodniopomorskie province it is the area of 45 900 ha. Under the A-EP 2007-2013 all the packages could be implemented all over the country.

grasslands – manually mown						
Once mown (semi-natural) grasslands – mechanical mown	6	1.6	40	10.7	46	6.1
Twice mown (semi-natural) grasslands	94	25.1	147	39.2	241	32.1
MAINTENANCE OF EXTENSIVE PASTURES	9	2.4	43	11.5	52	6.9
Pastures on xerothermic grasslands	3	0.8	4	1.1	7	0.9
Lowland pastures with traditional grazing	10	2.7	36	9.6	46	6.1
SOIL AND WATER PROTECTION	177	47.2	192	51.2	369	49.2
Catch crop undergrown	5	1.3	12	3.2	17	2.3
Winter catch crop	78	20.8	148	39.5	226	30.1
Stubble catch crop	168	44.8	144	38.4	312	41.6
BUFFER ZONES	0	0.0	0	0.0	0	0.0
PROTECTION OF NATIVE BREEDS OF FARM ANIMALS	16	4.3	15	4.0	31	4.1

Source: Own research

An important issue was to learn the motives that induced farmers to undertake the agri-environmental commitments. The largest group, consisting of 73 % A-EP beneficiaries, mentioned the desire to obtain additional financial resources as the most important motive. Only 9.5 % of respondents indicated the environmental protection as a motive for joining the Programme; 8.9 % of respondents joined the A-EP at an advisor's prompting, and further 5.5 % did so as prompted by the people from their close environment. The χ^2 analysis indicated significant differences between particular provinces. In Zachodniopomorskie province, advisors' persuasion affected the respondents' decisions much more frequently (more than 4-fold) than in Warmińsko-Mazurskie province. Other significant motives included the location of a farm as well as a positive example of people from the close environment.

Moreover, the economic motives played a decisive role in choosing the packages: as shown from the researches conducted, for 32.3 % of respondents the favourable financial conditions were the reasons to join the Programme. Subsequently, the nature of the agricultural land owned was mentioned (20 %) as well as a relatively low level of difficulties with meeting the requirements set out for the specific packages (13 %). On the other hand, the respondents implementing the package related to the protection of native breeds of farm animals most frequently combined breeding of these animals with the agritourism activities, particularly in the farms located in the north-eastern part of the country. Therefore, the researches confirm that a satisfactory system of financial gratification is the most efficient

method to induce the communities in rural areas, including the owners of agricultural farms, to take measures aimed at the environmental protection.

For most respondents (54.8 %), the first steps in the Agri-Environmental Programme lacked any serious trouble. However, almost 36.7 % of respondents qualified it as “difficult”. The options “very difficult” and “with no serious trouble” were only mentioned by a small group of farmers. The most frequently mentioned difficulties were the formalities (preparation of the agri-environment plan, etc.), especially in the initial phase. Not only does this problem concern the Agri-Environmental Programme but, generally, also most of the Union’s programmes. The need to simplify the documentation is indicated by, *inter alia*, Piechowicz (2006). In the author’s opinion, the number of signed financing agreements, and primarily the amount of the resources paid, is far lower than it could be considering the applicants’ activity. Due to the need to maintain the required procedures, the submitted applications are subject to the processes of formal verification as well as substantive and economic and technical assessment. As a result, the applications which fail to meet the requirements are rejected. Even though the final number of applications that qualified for concluding agreements is lower than the number of rejected ones, it does not change the fact that the status of implementation of the actions being assessed is, for most of them, rather poor.

The rank variance analysis indicated that the respondents’ age had an impact on the assessment of the first steps in the Programme. As could be foreseen, the respondents in the oldest age group, i.e. over 50 years old, assessed their beginning most negatively. The factor which had a significant impact on the assessment of the beginning was the respondents’ level of education. In this case, the farmers with primary education level had most difficulties in the initial phase, while the graduates from vocational schools and higher education facilities managed the situation best.

The A-EP beneficiaries indicated numerous factors which helped them overcome the difficulties during the initial stages of its implementation. The highly assessed factors included the help from agricultural advisory centres (42.4 %), the experience gained during offsite training and the knowledge gained before having joined the A-EP. Therefore, an important issue was to learn what kind of information/skills was, in the respondents’ opinions, necessary to properly implement the A-EP requirements. As is shown from the researches conducted, help with the preparation of the necessary documentation as well as development of the agri-environment plan is most important, which is obvious and, in principle, mandatory. Subsequently the farmers mentioned: knowledge of the existing regulations concerning implementation of the A-EP (10.4 %); information on the modifications to the A-EP (8.4 %);

and information related to the production technology in, for example, organic farms and the farms specialising in breeding of native breeds of farm animals (7.6 %).

As is shown from the researches conducted, the beneficiaries were satisfied with having joined the implementation of the A-EP (97.5 %). The gamma rank correlation analysis showed a highly significant, positive dependence between the satisfaction with participation in the A-EP and the assessment of the initial period of its implementation. As could be expected, positive assessments of the new measures were primarily made by those farmers who classified their beginning in the programme as “Relatively easy”.

Among the few beneficiaries in whose opinions the A-EP failed to meet their expectations, the predominant opinions were that the procedures related to joining the A-EP were too complicated (too many documents to be obligatory prepared). The subsequently mentioned factors included the unpunctual inflows of funds as well as insignificant material benefits. There are many signs that the most important issue is to appropriately determine the amount of payments for implementation of particular packages. As early as during the observations made at the time of the pilot implementation of the Programme in Wigry National Park, Biebrza National Park and Narew National Park as well as in Brodnica Landscape Park, the following problems was detected: in the opinion of the parties concerned, the amount of the subsidies was insufficient, and there were difficulties with conforming to the recommendations (Tederko *et al.*, 2000).

To sum up, the A-EP is currently one of the most important and, as shown by the conducted research, efficient instruments of the European Union’s environmental policy to protect the natural environment on the agricultural land. Apart from the effects directly related to the improvement of the state of environment, the agri-environmental programmes fulfil a significant educational function as well. Implementation of these programmes contributes to, *inter alia*, dissemination of the Good Farming Practice principles and raising the environmental awareness among the rural community. The analysis of the A-EP functioning in Zachodniopomorskie and Warmińsko-Mazurskie provinces showed that, in view of the still low level of environmental awareness among the rural population, the most efficient incentive to take pro-environmental measures in rural areas are the financial instruments and mechanisms aimed directly at the owners of agricultural farms. Moreover, the packages most frequently chosen by farmers from among all the packages making up the Agri-Environmental Programme are those which do not involve bearing additional financial expenditures or introducing restrictions in the activities pursued. In the respondents’ opinions, the entire Agri-Environmental Programme is burdened with too strict requirements. These

include, first of all, the necessity for preparing numerous, frequently extensive and complicated documents, and meeting difficult, as in the case of certain packages, formal requirements. This fact provides a significant barrier, especially for the senior and less-educated owners of agricultural farms. It is therefore appropriate to reduce the above-mentioned formalities or significantly increase the aid from the relevant institutions, for example through an increase in the employment of agri-environment advisors. From the environmental point of view, it is necessary to consider extending the Polish Agri-Environmental Programme with additional packages, such as protection of woodlots, and environmental packages, as well as extending the list of animal breeds in the package "Protection of native breeds of animals". Fulfilling the above-presented requirements will provide a chance for a more complete, sustainable development of rural areas in Poland.

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Adam Pawlewicz

5. PROSPECTS FOR THE DEVELOPMENT OF ORGANIC FARMING IN POLAND

5.1. Spatial Diversity of Organic Farming

Poland's growing interest in the environmentally-friendly activities is favourable for the dissemination of the notion of "organic production". This is a result of a number of negative phenomena, including a very significant issue of the increasing negative impact of agriculture on the natural environment, leading to the pollution of underground and surface waters (mainly with nitrogen and phosphorus compounds), as well as a decrease in biodiversity and unfavourable changes within the agricultural landscape. The additional factors include: a decrease in the consumers' trust in the quality of foodstuffs produced using intensive methods (for example the BSE threat); contamination of foodstuffs with hazardous substances (for example dioxins) or genetically modified organisms (Stalenga, Kuś, 2007). In view of such challenges, the development of alternative systems of agricultural production, including the organic one (Komorowska, 2006) which constitutes a part of the concept of sustainable development, seems more and more appropriate. In the midst of the food safety crisis which has recently been recorded in certain European Union states, the organic farming, and hence organic food, becomes a very important source of food which is safe and free of hazardous and dangerous impurities and contaminants, that is food with guaranteed quality (Action Plan on Organic Food..., 2007).

The above-mentioned, changing consumers' expectations towards food enhance the need to restrict the intensive agricultural production. The society, being more and more environmentally aware, knows what they want to eat, which in turn translates into an increase in the interest in food produced from raw materials that originate from organic farms, and processed in organic processing plants. However, the aim of the organic production is not the maximisation of production or crop yield, but manufacturing products in harmony with the environment, obtaining a product with the highest health values in compliance with the needs of natural environment and maintaining the purity of waters and soils, care of the maintenance of fauna and flora diversity within own measure. According to Rutkowska (2006), within the meaning of organic farming a farm constitutes a closed system to which the input of means of production should be limited, and the nutrients should be released from the soils continuously and in the right proportions. The author further states that: "the strategic objective of organic farming is supporting the life in soils through improving the supply of micro-organisms with the matter and energy, and creating the optimum conditions for their transformations in soils."

The FAO/WHO Codex Alimentarius Commission defines organic farming as a comprehensive system for management of production which promotes and supports the biodiversity, biological cycles and the biological activity of soils. Its characteristic features include: low external inputs; replacing the synthetic resources with biological, agro-technical and mechanical methods; and an assumption that the local determinants require systems which are adapted to them (Organic Agriculture..., 1999). On the other hand, according to Jończyk and Stalenga (2010), the organic system is “a mode of farming with a possibly sustainable plant and animal production, based on natural resources which have not been technologically processed. This system excludes using the synthetic mineral fertilizers, pesticides, growth hormones and synthetic feed additives. The organic system is a mode of farming based on taking advantage of the natural processes occurring within the agroecosystem.”

Favourable environmental conditions for the development of organic farming do exist in Poland. Moreover, the increasing significance of both the cultural heritage and landscape in the Union’s policy provides the possibility for making a good use of the natural conditions with the aim of developing organic production. The literature on the subject also stresses the role of the financial support systems in the development of organic farming (Duer, 2007; Stankiewicz, 2009; Żakowska-Biemas, 2010). According to Matysiak-Pejas (2008), the factor which has up to now been considered the problem and weakness of Polish agriculture, namely the use of fertilizers and plant protection products, now can appear to be the chief asset. This is why the environmental quality of the production environment in agriculture, and the wealth of biological diversity, are among the best in Europe.

As the Chief Agricultural and Food Quality Inspectorate (GIJHARS) data show, in Poland, as of 31 December, 2009, there were 17 091 farms that produced using organic methods, which amounts to only 0.7 % of the total number of farms. Analysis of the spatial distribution of these farms showed that most of them were situated in the following provinces: Małopolskie (2197), Podkarpackie (2014), Lubelskie (1710), Zachodniopomorskie (1696) and Mazowieckie (1673). On the other hand, the least number of farms was found in Opolskie (63) and Śląskie (199) provinces. As compared to the total number of farms in a given province, the highest percentage of farms was found in Zachodniopomorskie province (2.84 %) and Warmińsko-Mazurskie province (2.30 %), while the lowest was found in Opolskie and Śląskie provinces (0.1 %) (Fig. 7). It should be noted that in provinces with the highest number of organic farms, they are relatively sparse (Małopolskie province – 0.7 %; Podkarpackie province – 0.7 %; Lubelskie province – 0.6 %). This is related mainly to the significant fragmentation of agriculture in these regions of Poland.

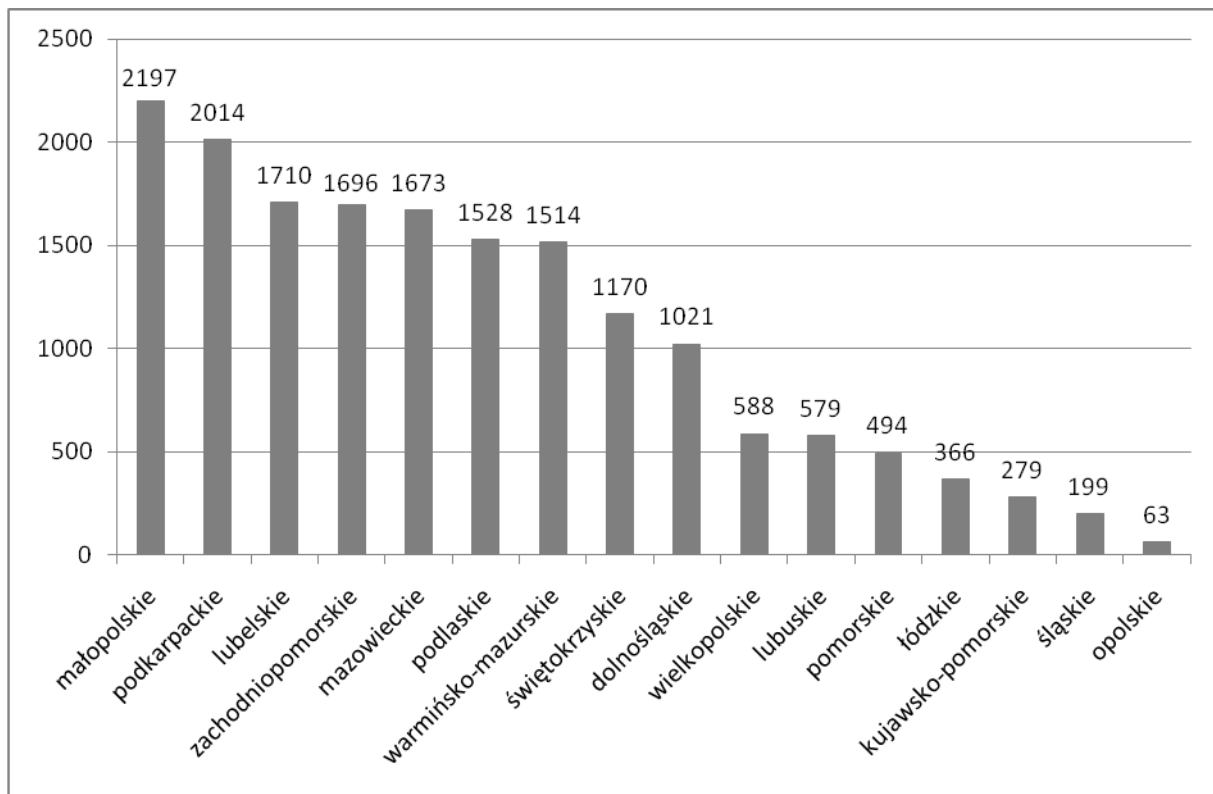


Fig. 7. The number of farms keeping production using organic methods, by provinces, in 2009.

Source: Own work based on the GIJHARS materials (Producenci ekologiczni w 2009 r. GIJHARS, <http://www.ijhar-s.gov.pl/pliki/Rolnictwo%20ekologiczne/raporty%20i%20analizy/Producenci%20ekologiczni%20w%202009%20r.doc> [dostęp: 10.10.2010], msp.).

When investigating the spatial diversification of the organic farms in Poland, one may observe their concentration in the provinces located in the south and east of the country (60.2 % of the total number of organic farms in Poland). In this context, the only exception is Zachodniopomorskie province where, during the period under analysis, 1 700 farms producing organic foodstuffs were situated, which amounted to 9.7 % of the total number of organic farms. Moreover, the largest area of organic crops was found in this province (68,976.6 ha), which amounted to almost a fifth part of the total area of this type of land in Poland. Additionally, the highest values are for both the percentage of organically managed land as compared to the total utilised agricultural area (Fig. 8), and the average area of the organically managed agricultural land (40.7 ha). In another province, i.e. Warmińsko-Mazurskie, the area of the organically managed agricultural lands amounted to 49,616.59, which represents 13.5 % of the total area of this type of agricultural land in Poland, as well as 3.7 % of the total utilised agricultural area in this province. The average area of the

organically managed agricultural land in this region amounted to almost 33 ha, and the horizontal vertical analysis reveals that this province took the fourth position in the list, since in both Wielkopolskie and Lubuskie provinces higher average values of, respectively, 40.4 ha and 39.6 ha were recorded. On the other hand, similarly to the case of the number of organic farms, the smallest area of organically managed agricultural land was recorded in Opolskie province and amounted to 1 879 ha (only 0.3 % of the total utilised agricultural area in the province). What is more, the smallest average area of organically managed agricultural land was recorded in 2009 in Małopolskie province (7.5 ha) and Świętokrzyskie province (9.1 ha).

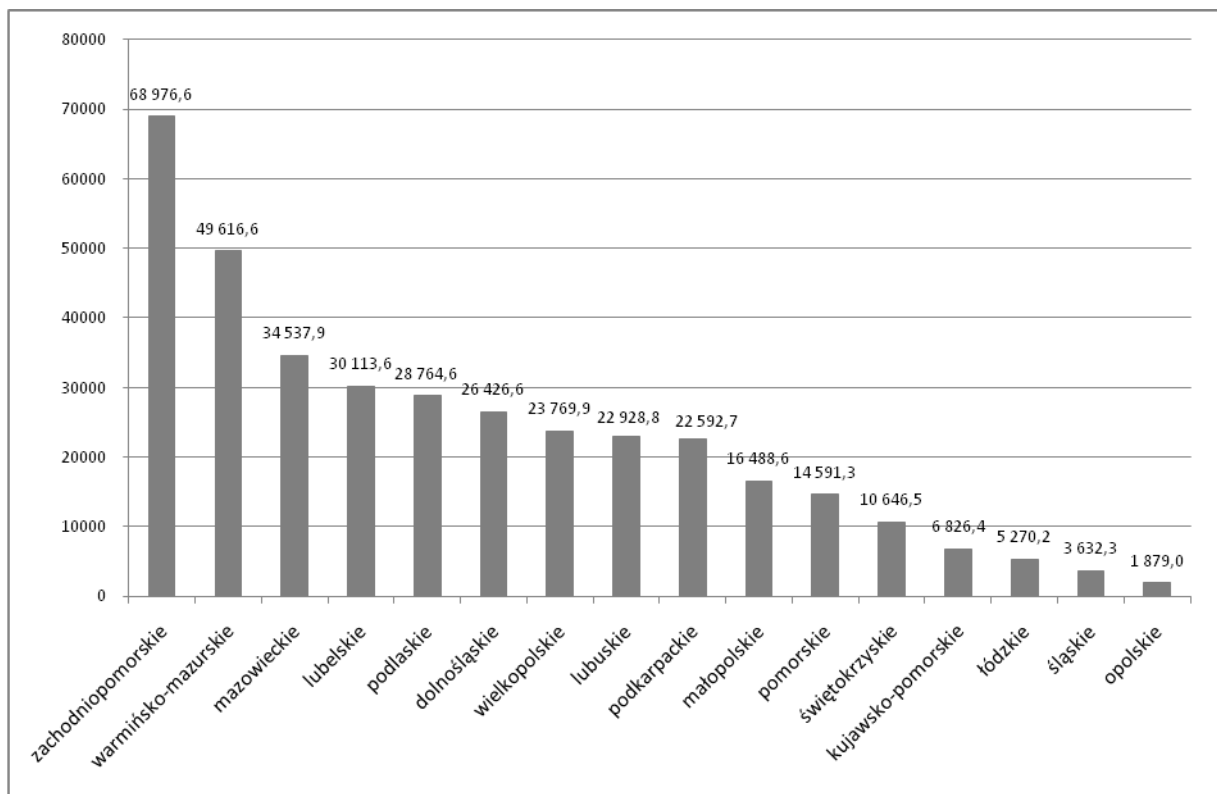


Fig. 8. The area of the organically managed agricultural farmland, by provinces, in 2009 (ha).

Source: Own work Based on the GIJHARS materials (Producenci ekologiczni w 2009 r. GIJHARS,

<http://www.ijhar->

[s.gov.pl/pliki/Rolnictwo%20ekologiczne/raporty%20i%20analizy/Producenci%20ekologiczni%20w%202009%20r.doc](http://www.ijhar-s.gov.pl/pliki/Rolnictwo%20ekologiczne/raporty%20i%20analizy/Producenci%20ekologiczni%20w%202009%20r.doc) [dostęp: 10.10.2010], msp.).

The spatial diversification for production of the organic foodstuffs results mainly from the variability of environmental determinants, which affects the quality of the agricultural production environment. As the above-presented statistical information reveals, it is possible to identify two regions of the country where a form of this type of production has been

developing. This is the north-eastern region of Poland, including the following provinces: Warmińsko-Mazurskie, Podlaskie (“The Green Lungs of Poland”), Lubelskie as well as Podkarpackie. Another region covers the north-western provinces, namely Zachodniopomorskie, Lubuskie, Wielkopolskie and Dolnośląskie. The correctness of this analysis seems confirmed by similar results obtained by Stuczyński *et al.* (2009), owing to the method for indexation of agricultural environment for the needs of organic production. According to these authors, organic farming in Poland not only functions based on the use of environmental values, but also depends, to a significantly higher degree, on the economic and organisational factors (the main one being the vicinity of the protected areas).

Over the last couple of years, a continuous increase has been recorded in the number of business entities involved in the processing of foodstuffs produced in farms which manufacture using organic methods. As the GIJHARS data reveal, 277 processing plants operating on the market for organic products were recorded at the end of 2009. As compared to 2001 (15 processing plants), this increase is almost 20-fold. Therefore, similarly to the case of organic farming, the element of agri-business involved in the processing of raw materials originating from organic farms is characterised by a high rate of growth. The highest number of processing plants was located in the following provinces: Mazowieckie (46 plants), Wielkopolskie (37 plants), Lubelskie (35 plants), Zachodniopomorskie (25 plants) and Podkarpackie (21 plants). On the other hand, the lowest number of business entities involved in the processing of organically produced foodstuffs were located in the following provinces: Opolskie (2 plants), Lubuskie (4 plants), Podlaskie (5 plants), Świętokrzyskie (8 plants) and Warmińsko-Mazurskie (10 plants). According to Komorowska (2009), the demand for organic food has been developing at a pace faster than its supply, which provides possibilities for the further development of the scale of organic farming and other elements of agri-business. Leszczyńska (2006) also points out that: “significant pollution of the environment, and the supply of cereals which exceeds the demand in Europe, indicate the need to use pro-environmental technologies of plant production, including reduction of the use of chemical plant protection products and mineral fertilizers.” This is particularly evident in the “old” European Union countries, therefore organic food is being imported from the outside, which may provide a chance for Polish business entities that produce using organic methods.

5.2. Problems of Functioning and Development of Organic Farms in their Owners’ Opinions

The main problem for a business entity in the rapidly changing market is the ability to persist and develop. Therefore, it is important to both identify the situation both in the surrounding of the business entity, and to analyse the external determinants, in particular to identify the strong and weak points. This in turn enables us to determine the strategic position of entities in the market and indicate the possible directions of the development.

In order to obtain knowledge on the determinants of the functioning and development of organic farms, field research was carried out among their owners from the area of the Ostróda and Olsztyn districts in Warmińsko-Mazurskie province. The research was carried out in November and December 2009, and included 72 owners of organic farms. The choice of entities to be included in the research was based on the list of agricultural producers in the organic agricultural sector in 2008 in Warmińsko-Mazurskie province²¹, provided by the GIJHARS. During the research, the methodology of interview with a standardised questionnaire was used. From the total of 72 farmers interviewed, data was obtained from 25 farmers from the Olsztyn district and from 12 farmers from the Ostróda district, which represented over 51 % of the population (41.7 % of the “Olsztyn” population and 100 % of the “Ostróda” population, according the GIJHARS list).

One of the main elements of the assessment of effectiveness of business activity is the analysis of profitability. According to the opinions of over 35 % of the interviewed owners of organic farms, production of organic foodstuffs is not very profitable. In the view of over a third of the respondents, the financial effectiveness of the functioning of their farms was only sufficient for covering the costs of performing the activity. Almost a fifth of the farmers stated during the interview that carrying out production using organic methods, and selling organic foodstuffs, is profitable. Less than 8 % of respondents stated that this activity was completely unprofitable (Fig. 9).

Considering the specificity of the organic production, one is able to comprehend the farmers' dissatisfaction with the profitability, or lack thereof, of such activity. However, as follows from the research by Komorowska (2010), even though the economic performance results in organic farms were found at a lower level than the conventional ones, taking account of the subsidies to production operations leads to higher economic performance results both in organic and conventional farms, which should therefore satisfy the owners.

²¹ The provided list included data on the producers, submitted to the Chief Agricultural and Food Quality Inspectorate by the authorised certification bodies in accordance with Article 9 (1) (2) of the Act of 20 April, 2004, on organic farming (Dz.U. [*Journal of Laws*] No 93, Item 898, as amended).

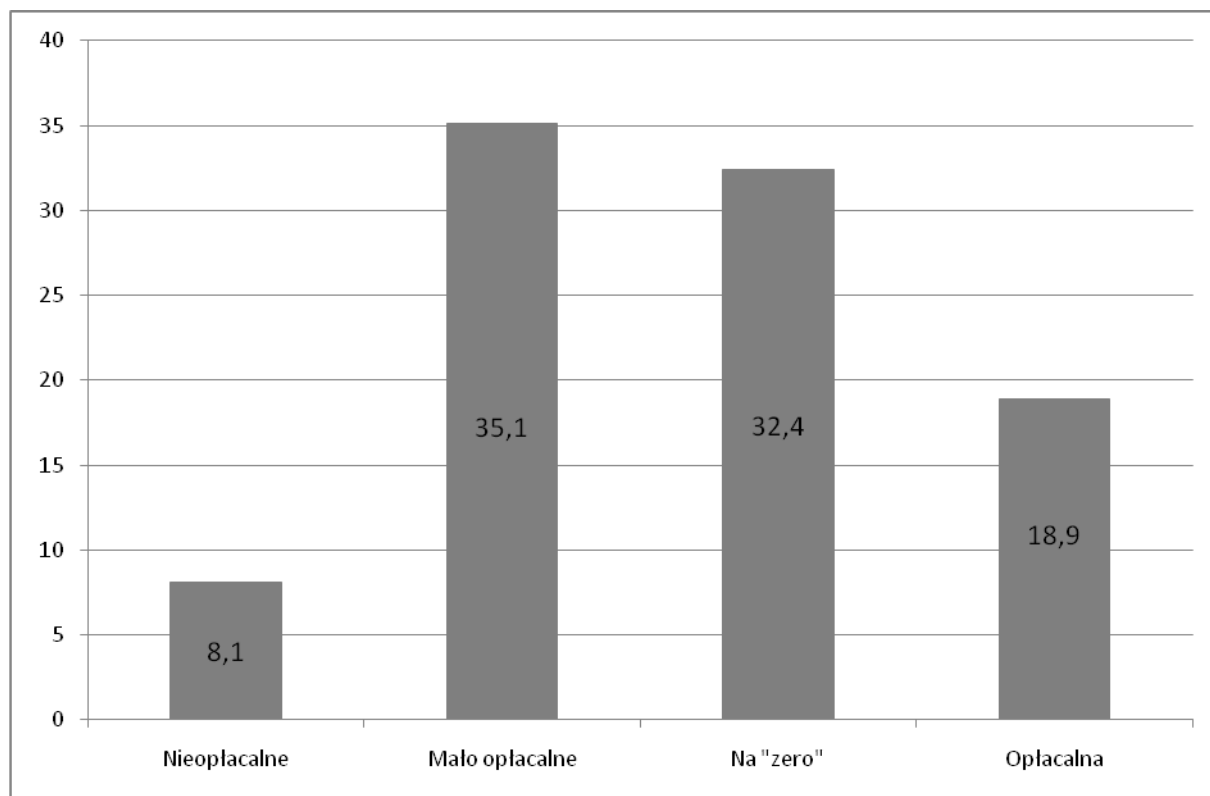


Fig. 9. The profitability level for organic production in the respondents' opinions (% of respondents).

Source: own research

As follows from the carried out research, the key motive which induced farmers to transform their conventional farms into organic ones is the financial profit resulting from higher subsidies to this type of production (43.2 %). More than 40 % of the organic farm owners participating in the interview adopted their farm to the organic system because they were convinced of the value of such a production method. Other motives which induced respondents to take a decision of changing the production trends include, *inter alia*, the intention to produce health food, concern for the natural environment, and noticing the possible future prospects for the development of this type of production in Poland (Fig. 10).

Such arguments may provide encouragement for the development of organic production in Poland, especially after Polish agriculture having been included in the Common Agricultural Policy, and thus for supporting the organic farming during implementation of the Agri-Environmental Programme. Supporting organic farming contributes to an increase in the number of organic farms and the development of the organic food market. However, a question must be asked – is this form of foodstuffs production able, without an institutional intervention, to stand up to difficult requirements of the very competitive market?

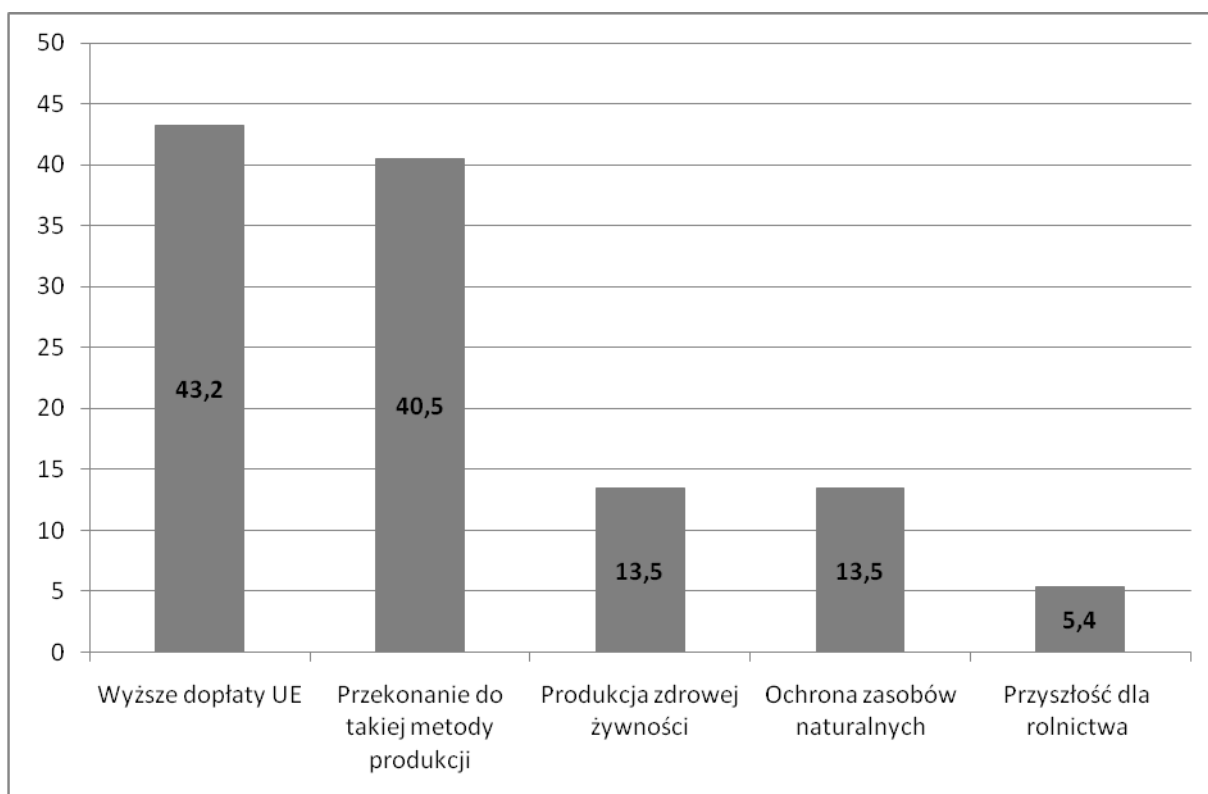


Fig. 10. The motives determining the transformation of production system from conventional to organic in the respondents' opinions (% of respondents) (the respondents could choose more than one answer)

Source: own research

As for the key prospects for the development of organic farming in Poland, the farmers participating in the interview indicated primarily the growing demand for the “health food”²² (27 %), which in their opinions may result from the process of the raising environmental awareness of the society (21.6 %). According to more than a fifth of the respondents, this should enable an extension of the activity and production. Subsidies to organic farming provide an important chance of the development (21.6 %). As from 2004, the organic farming was supported under the RDP 2004-2006 and the RDP 2007-2013. During both programming periods the amount of this support fluctuated from PLN 260,- per ha to PLN 1 800,- per ha, depending on the type of crops and its phase; a higher amount of support for producers during the shifting the farm towards the organic production (production losses are entailed at this time), and a lower amount of support for the certified farms. It must be

²² It should be noted that the consumers very often mistakenly associate the food produced from organic raw materials with the marketing slogan „health food” which cannot be applied anymore to describing products, since it implies that the generally available foodstuffs are unhealthy.

noted that the amount of subsidies depends on the area subject to the support, gets reduced with the area of more than 100 ha, and amounts to: 50 % of the basic rate for the area of 100.1 to 200.0 ha, and 10 % of the basic rate for the area exceeding 200 ha (RDP 2007-2013, 2007).

As for the main barriers to the development of organic farming in Poland, the respondents primarily mentioned the obligation to meet specific requirements, which in turn implies frequent checks and related bureaucracy (more than 35 % mentions). Concerns were also raised with regard to the increasing production costs and low profitability of this type of activity (18.9 %). Moreover, some respondents were afraid of completion of the programme of subsidies to organic production (16.2 %) and the price competition from the conventional products (13,5 %). Especially the latter threat may be very significant, since it results from the limited buying power of the domestic consumers, for whom the key determinant of consumption is the price.

In view of the above, some thought should be given to the question of how to enhance the chances of, and reduce the threats to the development of organic farming in Poland. It seems that it is necessary to take advantage of the strong points of this type of activity. In the opinions of farmers participating in the interview, the main advantage of the organic farming is the elimination of chemical agents from the production process (almost 25 % of opinions), which results in, *inter alia*, the reduction of negative impact on the natural environment (21.6 %). Owing to such a type of production, one can find in the market raw materials which are used for production of high quality foodstuffs (21.6 %).

On the other hand, it is necessary to keep observing the weak points and dangers, and strive to eliminate them. As for deficiencies, more than a third of respondents reported obtaining lower crop yields, and the restrictions related to animal production as compared to the conventional production (the livestock density should follow from the possibility for maintaining the feedstuff and fertilizer balance, and should not exceed 2 LU per 1 ha, which annually generates 170 kg of nitrogen contained in animal excreta). On the other hand, 27 % of organic farm owners participating in the interview indicated higher labour input (higher by 10 to 20 %) as well as the resulting higher production costs. However, the material and pecuniary expenditures for the agricultural production (purchase of fertilizers, plant protection products and feedstuff) are significantly lower as compared to the conventional production. An important internal element which restrains the development of organic farms is, according to the respondents, a low level of determination (10.8 %).

5.3. Forecasts of the Development of Organic Production

There are numerous prerequisites for the possibilities for development of organic production in Poland. The most frequently indicated ones are the fragmented agrarian structure as well as the large, unused resources of labour force in rural areas. Moreover, the relatively low degree of environmental pollution, as compared to other European Union countries, is stressed. Another important question is an increase in the demand for organic products, and the possibilities for export of organic foodstuffs.

According to the GIJHARS data, during the initial phase of systemic transformation in Poland the organic farming developed at a relatively slow rate, which primarily resulted from the low internal demand on this type of products. In 1990, only 27 farms which carried out production using organic methods were recorded in the statistics. Until 1999 the increase in the number of farms was rather slow – only 555 farms were recorded in that year. However, an increase in the number of farms by almost 200 % was recorded as early as in 2001, which should be associated with announcements about the introduction of the Act on organic agriculture, and the resulting possibilities for obtaining financial support for this type of production from the government budget. However, a significant increase in the interest in production of foodstuffs using organic methods took place as late as after 2004, which was a result of the introduction of financial support schemes for, among others, organic production under the Agri-Environmental Programme, and Poland's accession to the European Union.

The “opening” of the European Union's markets also contributed to the increase in the number of organic farms. Therefore, in 2004 there were 3 760 organic farms (certified and in the phase of transformation), in the next year there were as many as 7 182 farms, and in 2006 a total of 9 194 organic farms was recorded. At the end of 2009, more than 17 000 organic farms and farms under conversion were recorded in the GIJHARS list. The predictions of the Ministry of Agriculture and Rural Development indicate further increase in the number of farms (Fig. 11).

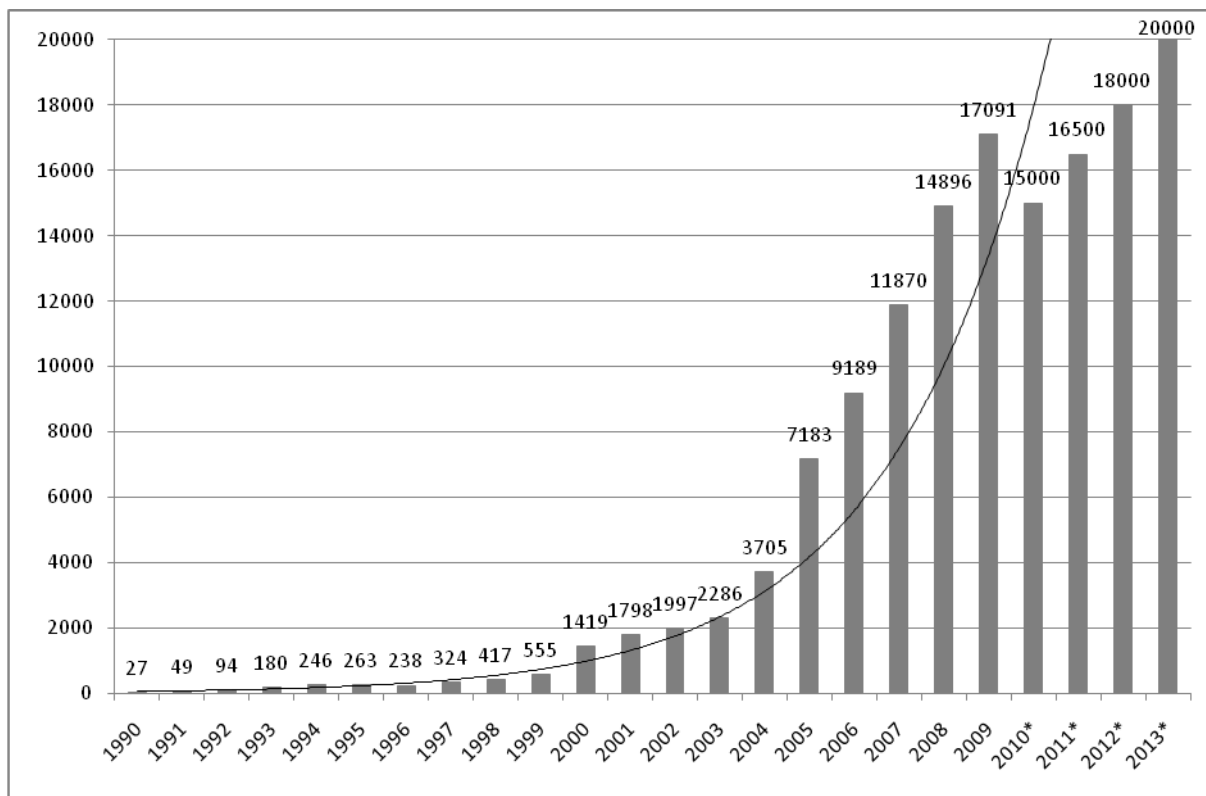


Fig. 11. A change in the number of organic farms in Poland in the years 1990-2013*

Source: Own work based on the GIJHARS materials (Producenci ekologiczni w 2009 r. GIJHARS, <http://www.ijhar->

[s.gov.pl/pliki/Rolnictwo%20ekologiczne/raporty%20i%20analizy/Producenci%20ekologiczni%20w%202009%20r.doc](http://www.ijhar-s.gov.pl/pliki/Rolnictwo%20ekologiczne/raporty%20i%20analizy/Producenci%20ekologiczni%20w%202009%20r.doc) [dostęp: 10.10.2010], msp; Raport o stanie rolnictwa ekologicznego w Polsce w latach 2005-2006.

2007. Wyd. GIJHARS. Warszawa; Rolnictwo Ekologiczne w Polsce. Raport 2007–2008. 2009. Wyd. GIJHARS. Warszawa; Stan i tendencje rozwoju rolnictwa ekologicznego w Polsce (as of 30 June, 2007). GIJHARS, Warszawa, 2007; Stan i tendencje rozwoju rolnictwa ekologicznego w Polsce (as of 31 December, 2005). GIJHARS, Warszawa, 2006.); *a forecast based on: the Action Plan for Organic Food and Agriculture in Poland for the years 2007-2013. Biuletyn Informacyjny, Ministry of Agriculture and Rural Development, Warszawa, 2007, 4:10.

On the other hand, an increased movement in the market of organic foodstuffs can be observed, and export is of particular importance. However, one must admit that the reason for the poor, so far, development of export is the small number of organic farms in Poland and their dispersion, a small area of organic crops and the lack of horizontal and vertical integration. Moreover, the domestic demand is still being limited by the relatively high prices. Admittedly, an increase in the number of processing plants is being observed (in 2003 – 22 plants; in 2004 – 55 plants; in 2005 – 99 plants; in 2006 – 163 plants; in 2009 – 277 plants)

and retail outlets (in 2009 approx. 500, with 30-40 in Warszawa itself, though no detailed data is available²³), yet the scale of this phenomenon is relatively small.

The forecasts of the Ministry of Agriculture and Rural Development indicate a very dynamic development of organic farming in the future. It is estimated that 20 000 organic farms will be present in 2013. However, the projected values are not very high as compared to the statistics of other European Union countries, especially those most developed ones. As early as in 2003, in Italy there were 44 043 organic farms, in Austria there were 19 056 of them, in Spain there were 17 028, and in Germany 16 476.

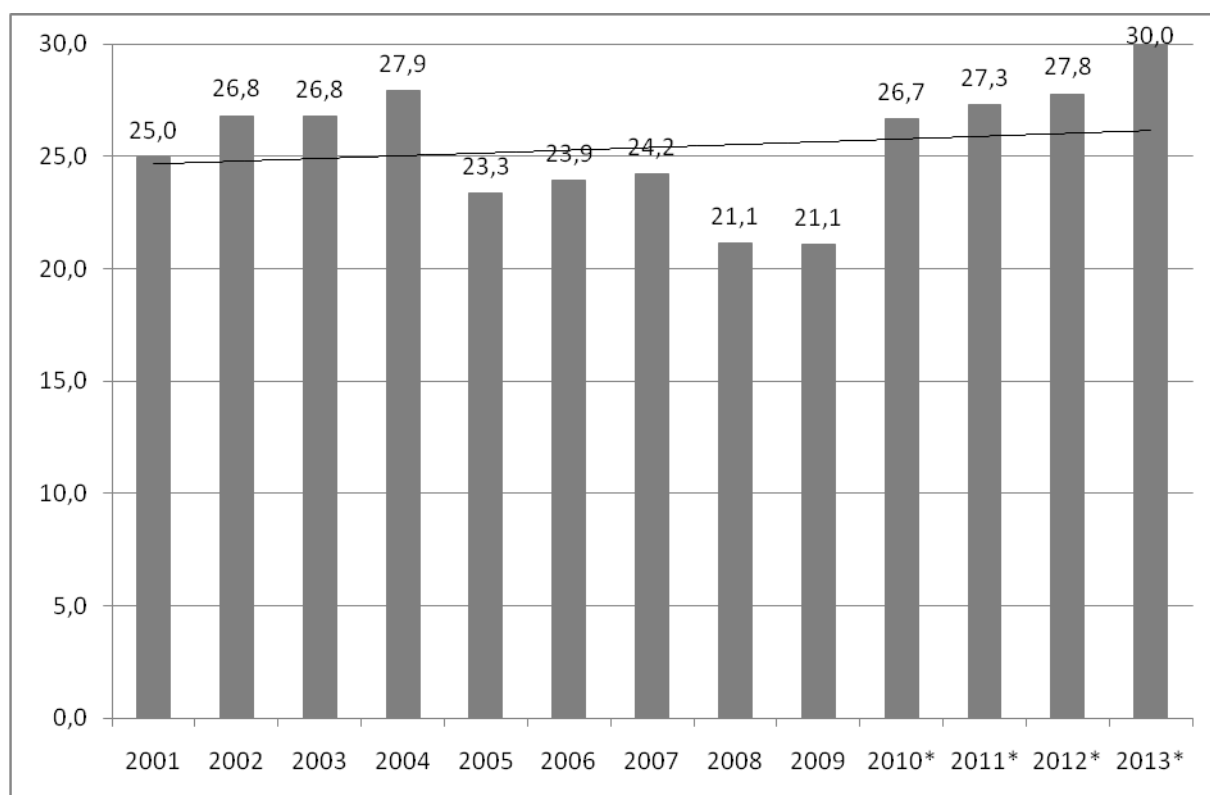


Fig. 12. An average area of organic farms in Poland in the years 2001-2013* (ha)

Source: Own work based on the GIJHARS materials ((Producenci ekologiczni w 2009 r. GIJHARS, <http://www.ijhar->

[s.gov.pl/pliki/Rolnictwo%20ekologiczne/raporty%20i%20analizy/Producenci%20ekologiczni%20w%202009%20r.doc](http://www.ijhar-s.gov.pl/pliki/Rolnictwo%20ekologiczne/raporty%20i%20analizy/Producenci%20ekologiczni%20w%202009%20r.doc) [dostęp: 10.10.2010], msp; Raport o stanie rolnictwa ekologicznego w Polsce w latach 2005-2006.

2007. Wyd. GIJHARS. Warszawa; Rolnictwo Ekologiczne w Polsce. Raport 2007–2008. 2009. Wyd. GIJHARS. Warszawa; Stan i tendencje rozwoju rolnictwa ekologicznego w Polsce (as of 30 June, 2007). GIJHARS, Warszawa, 2007; Stan i tendencje rozwoju rolnictwa ekologicznego w Polsce (as of 31 December, 2005). GIJHARS, Warszawa, 2006.); *a forecast based on: the Action Plan for Organic Food and Agriculture in

²³ Ekorynek w Polsce – w stronę rozwoju. fresh & cool market. February 2009, p. 20.

Poland for the years 2007-2013. Biuletyn Informacyjny, Ministry of Agriculture and Rural Development, Warszawa, 2007, 4:11.

An average area of organic farms carrying out production using organic methods in 2001 in Poland amounted to almost 25 ha, and in 2004 this value increased to more than 27 ha. As from 2005, an average area of an organic farm has been consistently decreasing –in 2006 it dropped to 23.9 ha and in 2009 to 21.07 ha. On the other hand, the Ministry of Agriculture and Rural Development forecasts predict an increase in the average area of organic farms in Poland as from 2010. It will be on the increase: in 2011 it will reach the level of 27 ha, and in 2013 it will amount to 30 ha (Fig. 12). As regards the average area of agricultural land in an organic farm in Poland (which according to the ARiMR amounts to 10.15 ha²⁴ in 2009), even currently organic farms are distinguished by an average value which is higher by approx. 2.5 times. Quoting after Gotkiewicz and Szafranek (2000), it must be stated that “the presented information deny the generally accepted opinions that the organic agricultural production is only applied in the farms which are small in terms of the area and mainly make use of their own labour resources”.

²⁴ A notice from the President of the Agency for Restructuring and Modernisation of Agriculture of 29 September 2010 on the average area of farmland in an agricultural farm in particular provinces, and the average area of farmland in an agricultural farm in Poland in 2010 (*Ogłoszenie prezesa agencji restrukturyzacji i modernizacji rolnictwa z dnia 29 września 2010 r. w sprawie wielkości średniej powierzchni gruntów rolnych w gospodarstwie rolnym w poszczególnych województwach oraz średniej powierzchni gruntów rolnych w gospodarstwie rolnym w kraju w 2010 roku*). <http://www.arimr.gov.pl/dla-beneficjenta/srednia-powierzchnia-gospodarstwa.html> [access from: 6.12.2010]

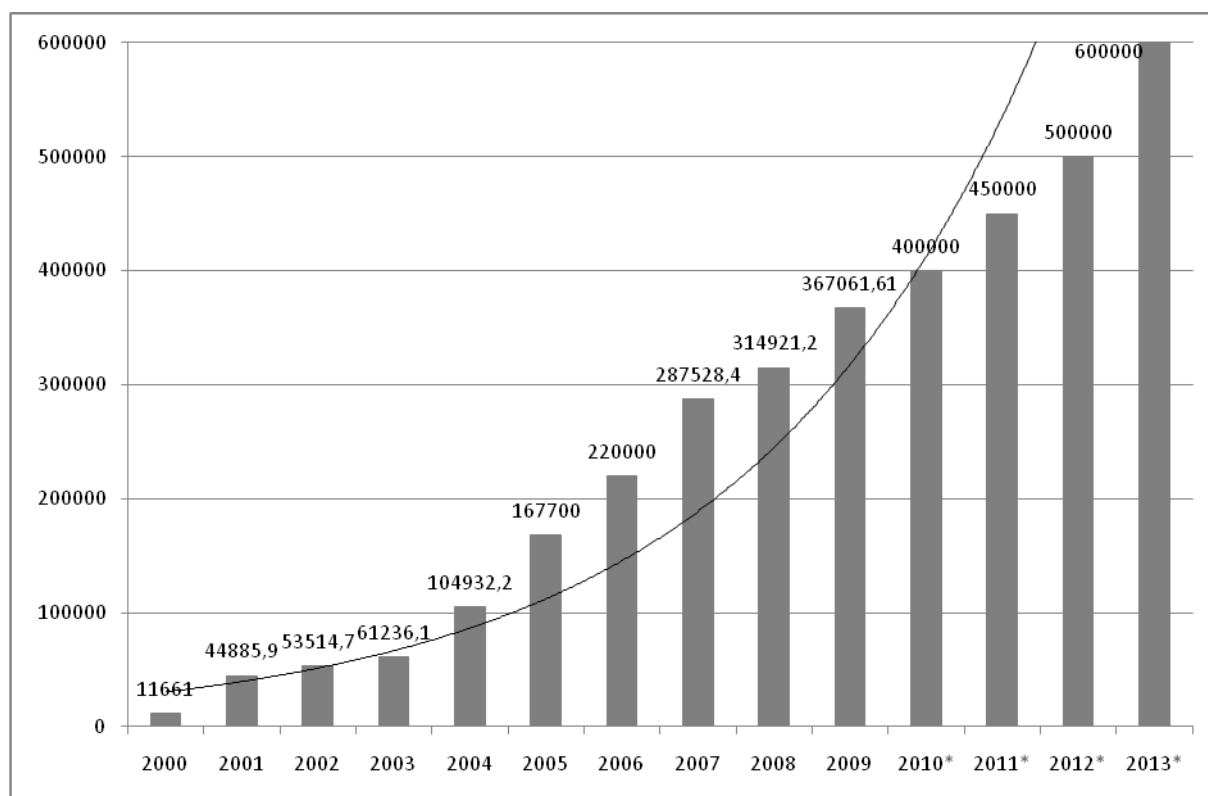


Fig. 13. The area of organic agricultural crops in Poland in the years 2000-2013* (ha)

Source: Own work based on the GIJHARS materials ((Producenci ekologiczni w 2009 r. GIJHARS, <http://www.ijhar-s.gov.pl/pliki/Rolnictwo%20ekologiczne/raporty%20i%20analizy/Producenci%20ekologiczni%20w%202009%20r.doc> [dostęp: 10.10.2010], msp; Raport o stanie rolnictwa ekologicznego w Polsce w latach 2005-2006. 2007. Wyd. GIJHARS. Warszawa; Rolnictwo Ekologiczne w Polsce. Raport 2007–2008. 2009. Wyd. GIJHARS. Warszawa; Stan i tendencje rozwoju rolnictwa ekologicznego w Polsce (as of 30 June, 2007). GIJHARS, Warszawa, 2007; Stan i tendencje rozwoju rolnictwa ekologicznego w Polsce (as of 31 December, 2005). GIJHARS, Warszawa, 2006.); *a forecast based on: the Action Plan for Organic Food and Agriculture in Poland for the years 2007-2013. Biuletyn Informacyjny, Ministry of Agriculture and Rural Development, Warszawa, 2007, 4:11.

As the GIJHARS data reveal, the area of farms keeping the organic production (both the certified and under conversion) has been on a continuous increase. In 2000 this area amounted to only 11 700 ha; in 2001 it increased to 44 900 ha, and in 2004 to 104 900 ha. Moreover, at the end of 2009 the area of organic agricultural crops amounted to 367 000 ha, which accounted for an increase by only 16.6 % as compared to the previous year. Clearly, the rate of growth of the area is slower and slower (Fig. 13). The MRiRW forecasts indicate that until 2013 this rate will continue to be on an increase from 12.5 % in 2011 (as compared to the previous year) and 11.1 % in 2012 to as much as 20 % in 2013.

As compared to organic farming in the European Union, the organic farming area in Poland is relatively small and amounts to almost 2 % of the total utilised agricultural area. On the other hand, the area of certified organic crops in Spain in 2008 amounted to 1 129 000 ha (approx. 4 % of the total utilised agricultural area), in Italy to 1 002 000 ha (more than 7 %), in Germany to 907 000 ha (approx. 5 %), in Great Britain to 737 600 ha (approx. 4 %) (The World of..., 2010). However, the relatively largest area in the structure of agricultural land in total is found in Austria (16 %). However, quoting after Krasowicz (2009) it must be stated that organic farming in Poland may provide an alternative to a certain group of farms, especially in the areas which are naturally valuable, have an attractive landscape and significant labour resources. The author is convinced that the organic system will establish a permanent position in Polish agriculture; however, its percentage in the worst-case scenario will not exceed 2-3 % of the agricultural land on a national level, while in the best-case scenario it will reach the level of 5-7 %. On the other hand, according to Jończyk and Stalenga (2010) it can be assumed that over the next couple of years the percentage of the utilised agricultural area used by organic farms may exceed 4-5 %, i.e. reach the level currently found to be average within the EU.

The prospects for the development of organic farming in Poland provide a chance for solving problems related to the food safety and quality, environmental protection, animal welfare and the rural development. Establishing and financing appropriate measures aimed at the systemic solution of the problems related to the environmental protection and landscaping in rural areas should be based on the analysis of the needs and the expected environmental, economic and social effects. To sum up, the prospects for the development of organic farming are primarily related to the changes taking place both within the structure of entire agribusiness and, maybe first of all, in the social, economic and environmental dimensions; therefore, this system correlates positively with the notion of sustainable development. Owing to the farming which limits the use of chemical agents, and to the non-stop control of the production process, this form of foodstuffs production guarantees a high quality of products as well as reducing the negative impact on the natural environment; therefore, this should be a socially desirable form of agricultural production which may be able to increase the level of wealth and prosperity. Unfortunately, without positive changes within the entire economy, manifesting themselves in a higher consumers' income and raising their environmental awareness, the organic farming will have no significant chances for the development. Another internal problem is that for the last couple of years the dynamic growth of organic farms has not been accompanied by the growth of commodity production and the above-mentioned

process results primarily from the possibility for obtaining significant financial benefits from the support schemes.

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6. PROBLEMS OF FUNCTIONING OF ORGANIC FARMS IN NATURA 2000 AREAS

6.1. Legal Basis and Principles of Establishing the Natura 2000 Network

One of the basic tasks for the contemporary environmental protection is the maintenance of naturally valuable areas under the conditions of their economic utilisation. In order to fulfil this task, the Natura 2000 network was established in the European Union countries, which provides harmonious coexistence of humans and the nature.

The legal basis for the establishment of the Natura 2000 network refers to the notion of sustainable development and indicates the need to manage the natural resources in such a way as not to disturb the balance in the nature. Currently this notion seems to be the most rational concept of the development of civilisation. It stems from the conviction that, in the longer term, the current means for the environmental protection, consisting in the isolation of naturally valuable areas and introduction of active protection, fail to fulfil their role (Makomaska-Juchniewicz, Perzanowska, Tworek, 2003). The Natura 2000 network continues the international objectives of the environmental protection, initiated in 1971 with the adoption of the Ramsar Convention on wetlands, and the Bonn and Bern Conventions. Moreover, it fulfils the obligations imposed on the European Union by the Convention on Biological Diversity (Grelewska, 2005).

According to the legal provisions of the European Community, Natura 2000 is a coherent European ecological network whose aim is maintaining the natural habitats and species important to the Community. The types of natural habitats and the species subject to protection are listed in the relevant Annexes to the Habitats Directive and Birds Directive²⁵. As a consequence, two types of areas were designated. The first type includes special areas of conservation (SAC), established on the basis of the Habitats Directive for conservation of natural habitat types and the plant and animals species' habitats. The second type includes the special protection areas for birds (SPA), established on the basis of the Birds Directive for conservation of birds' habitats. According to the provisions of the Habitats Directive, these areas are to be linked, as far as possible, using fragments of landscape managed in a way as to

²⁵ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, adopted on 21 May 1992 and amended by Directive 92/62/EEC, known as the Habitats Directive. Council Directive 79/409/EEC on the conservation of wild birds, known as the Birds Directive, adopted on 2 April 1979 and subsequently amended by Directives 81/854/EEC, 85/411/EEC, 86/122/EEC, 91/244/EEC and 94/24/EEC (Simonides E., 2003).

allow migration, expansion and genetic exchange between species (Pawlaczyk *et al.* 2004). The SAC and SPA areas are independent of each other – their boundaries can, to a large extent, overlap or even be identical. What is more, they can cover a part of, or entire, areas and structures subject to other forms of conservation provided by national legislation. In Poland these include: national parks, nature reserves, landscape parks, landscape protection areas, documentation sites, ecological land, and nature and landscape protected complexes (Kowalczyk *et al.*, 2009).

In accordance with the EU Directives (Birds and Habitats), Poland was required to establish within its territory the European Ecological Network Natura 2000, in order to provide protection to 76 types of natural habitats, 267 birds species, 46 plant species and 88 species of animals other than birds (RDP 2007-2013, 2007). Originally, the areas qualifying for inclusion in the Natura 2000 network were designated on the basis of the review of distribution across Poland of species and habitats listed in the relevant Annexes to both Directives, and the available data, which enabled the assessment of the significance of particular sites for their protection on the national level. Finally, the project included 180 Special Protection Areas (SPAs) identified on the basis of the Birds Directive, and 181 Special Areas of Conservation (SACs), chosen based on the Habitats Directive. The percentage of proposed Natura 2000 areas, in terms of their area, was highest in the following provinces: Podlaskie, Podkarpackie, Zachodniopomorskie, Warmińsko-Mazurskie and Lubuskie (Baranowski, 2003). This list was criticised by numerous independent naturalists from non-governmental organisations, who developed the so-called “Shadow List”, i.e. a list of the areas which should be also included in the Natura 2000 network in Poland. The developed list met with the approval of the European Commission, and further areas listed therein were included in the official government proposal (Będkowska, 2009).

In order to regulate potential conflicts between the institutions able to worsen the state of the environment and the protected areas, in 2008 the Sejm (Polish Parliament) adopted an Act being in accordance with the EU legislation²⁶. At the same time, an amendment to the Environmental Protection Act was developed, which introduced the provisions compatible with the Birds Directive and Habitats Directive to the Polish legal system²⁷.

²⁶ The Act of 3 October, 2008 on making available the information about environment and its protection, participation of society in the protection of environment and assessments of the impact on environment (Dz.U. [Journal of Laws] No. 199, Item 1227).

²⁷ Resolution of the Sejm of the Republic of Poland of 22 May, 2009 on the adoption of the document “The National Environmental Policy in the Years 2009-2012 and in the 2016 Perspective”, Monitor Polski (*Official Journal of the Republic of Poland*) No 34, Item 501.

As a consequence of these actions, 453 new habitat sites were designated and 78 areas already accepted by the European Commission within the framework of the European network Natura 2000 were extended. In this way, the designation of areas subject to this form of protection, which in total cover 21 % of Poland, was completed. Thus Poland fulfilled its obligation to establish the Natura 2000 network.

6.2. Principles of Management in Natura 2000 Areas

The biological diversity of Poland is among the highest in Europe. This is due to both favourable natural conditions and the different character as compared to the other European countries. This mainly concerns the range of anthropogenic impact (non-uniform industrialisation and urbanisation of the country; traditional, extensive agriculture maintained in significant areas; and extensive and long-lasting forests). However, this situation is highly diversified in particular regions, with the well-preserved natural environment in the eastern and south-eastern regions of Poland. The traditional type of agriculture which has been maintained in these areas made it possible to preserve valuable agricultural landscapes with high biological diversity, and genetic resources of the primitive varieties of usable plants and breeds of farm animals. Within Poland, 485 types of plant associations are found, which include 56 forest communities (17 were categorised as the EU priority habitats), and almost half of them is connected to the agricultural areas. At the same time, it must be noted that the threats to the naturally valuable areas are posed by both the intensification of agricultural production and the abandonment of grasslands of low feeding value when limiting the animal population. This particularly concerns marsh and peat habitats, extensive meadows and pastures located in natural river valleys, field shrubs, and mountain and xerothermic grasslands with numerous endemic species (RDP 2007-2013, 2007).

Natura 2000 areas are not closed sites. Contrary to the opinions of numerous people, not only bans and restrictions are in force there. In most of the areas standard economic activities are being carried out, while only certain projects likely to significantly affect an area's values must be restricted. Restrictions do not apply to the activities involving the maintenance of the equipment and facilities used for the purposes of flood safety and the economic, agricultural, forestry, hunting and fisheries activities as well as amateur fishing, provided that they do not significantly affect the objectives of the conservation of the Natura 2000 area²⁸. However, farmers have to take into account that certain projects they

²⁸ These issues are regulated by the Environmental Protection Act of 16 April 2004 (Dz.U. [Journal of Laws] of 2004, No 92, Item 880) and the Act – Environmental Protection Law of 27 April 2001 (Dz.U. [Journal of Laws]

implement, for instance: drainage and irrigation; maintenance of agricultural drainage ditches; construction of facilities ponding water back; afforestation; settlement development; construction of boarding houses and agritourism farms; extension or repairs of a farm; and removal of trees and shrubs may require an assessment of the impact on a Natura 2000 area to be performed (Kaługa, 2009). Each planned project likely to directly or indirectly affect the state of a Natura 2000 area is subject to an assessment taking into account its potential effects on the protected habitats or species. In case of a negative assessment, an approval may be granted provided that environmental compensation will be implemented. If, for example, a new road that is indispensable for the rural population can only be built across a bog within the boundaries of a Natura 2000 area, another bog within the closest proximity, and having similar nature values, has to be included in the network of these areas as compensation. When, however, a priority habitat or species is present in this area, an appropriate authorisation shall only be granted for the purposes of either the protection of human health and life, ensuring the public safety or achieving favourable effects of primary importance for the natural environment, or, in case of the overriding public interest, after the opinion from the European Commission has been obtained (Symonides, 2007).

However, the Natura 2000 areas are most frequently perceived as problematic due to the difficulties with reconciling the environmental, social and economic functions being performed. Boltromiuk (2009) draws the attention to the problems faced by small investors in rural communes, for instance farmers who have problems with the construction of new farm buildings, or the Commune Offices whose areas are avoided by potential investors being aware that they may lose their time, bear certain costs and finally not be granted appropriate authorisations. Therefore, numerous conflicts take place in these areas, which result from the contradictory interests of various economic entities. However, the protected areas should not be regarded as areas of particular impediments but rather as regions providing a chance of harmonious functioning of rural areas under the conditions of high environmental and economic standards (Chmielewski, Harabin, 1993). There are instruments present in Natura 2000 areas, which allow contentious issues to be solved. The authority entitled to conclude agreements with the owners of the areas where restrictions have to be imposed is the Province Governor. Such agreements should contain a list of necessary measures and the means and deadlines for performing thereof, the terms of the statement of the amounts due for

of 2008, No 25, Item 150). On the 1 January 2010, the Act of 20 November 2009 amending the Act – Environmental Protection Law and certain other Acts (Dz.U. [*Journal of Laws*] of 18 December 2009, No 215, Item 1664) entered into force.

their completion and the amount of compensation for the foregone income resulting from the imposed restrictions. Thus, if for example an owner of private meadows stopped mowing the green growth, which is unfavourable for the protection of the habitats these meadows represent, the Province Governor can conclude an agreement with this owner on the regular mowing of meadows for an appropriate payment. Concluding such agreements shall not be possible in case of the areas owned by the State Treasury (Symonides, 2007).

However, the theoretical assumptions frequently differ from the practices applied. In view of the above, a field research was carried out which included 63 farmers running agricultural farms in Natura 2000 areas. These were two separate research areas: the first included the valley of the lower Narew river²⁹ in Podlaskie province, while the second included the Olsztyn district³⁰ in Warmińsko-Mazurskie province. The main objective of the research was to identify the problems of the functioning of organic farms in Natura 2000 areas.

6.3. The Management Practice

The results of the carried out researches clearly indicate numerous errors committed as early as during the phase of designating Natura 2000 areas. Firstly, there was no relevant public consultation with the most interested parties, i.e. farmers and other inhabitants of these areas. The social acceptance is necessary for the protected areas to be established. In practice, comprehensive information should be provided in a clear and comprehensible manner to all the rural inhabitants in the very beginning. This information can be provided during, for example, the Commune Council sessions, the Management Board meetings, the Local Government Council meetings and the rural inhabitants' meetings. However, as the own researches reveal, farmers feel they were totally ignored as regards the establishment of the Natura 2000 areas. None of the respondents running an agricultural farm within the area of the valley of the lower Narew river participated in consultations regarding the designation of new protected areas. The vast majority of survey participants (91 %) were not even informed

²⁹ The valley of the lower Narew river constitutes a part of the areas included in the Natura 2000 network (special protection areas for birds PLB140014), situated in Podlaskie province. At least 35 bird species listed in the Annex I to the Birds Directive were found to occur there (occurrence of 4 species satisfies the criteria for designation of an international bird sanctuary), and 19 of them were included in the list of endangered bird species in the Polish Red Data Book of Animals. The valley is one of the key Polish sanctuaries of the common tern, little tern and black tern. Great snipe and European roller hatch there. Until recently, one of the last domestic breeding grounds of the Eurasian stone-curler was found within the sanctuary.

³⁰ In the Olsztyn district 10 Natura 2000 areas are situated, and these include both the SOCs (Jonkowo-Warkały, Ostoja Napiwodzko-Ramucka, Swajnie, Warmińskie Buczyny, Ostoja Piska, Rzeka Pasłęka, Dolina Drwęcy) and the SPAs (Dolina Pasłek, Puszcza Napiwodzko-Ramucka and Puszcza Piska).

of the consultations, and as few as 3 % of the respondents admitted having shown no interest in the participation in such meetings. Moreover, 97 % of the respondents from the Olsztyn district stated that no institution or non-governmental organisation had contacted them as regards the establishment of the Natura 2000 areas. Therefore, they did not participate in the public consultations concerning the designation of the Natura 2000 areas and had no opportunity to express their opinion on the subject. Gotkiewicz (2005) also states that, based on the researches carried out in national parks, the information flow as regards the relations between farmers and the employees of the national parks leaves a lot to be desired. According to this author, the subject matter of the meetings, concerning principally the compensation for the damage caused by game, agricultural production and the general issues related to the environmental protection, only facilitates solving the current problems and fails to provide the farmers with the chances and possibilities for the development of farms situated in such areas (organic farming and eco-tourism were subjects too rarely mentioned at the meetings). Moreover, there are many indications that this is the main reason for the lack of knowledge on the functioning of Natura 2000 areas. The key source of relevant information for more than 60 % of the farmers included in the research is the mass media, first of all radio, television, Internet and press. Much more rarely this information came from employees of Agricultural Advisory Centres, the ARiMR and the Commune Offices. There were even situations where farmers learnt of the restrictions and benefits arising from running an agricultural farm in Natura 2000 areas as late as during the interview. At the same time, farmers found it problematic to indicate which entities should grant them assistance in running an agricultural farm. Most frequently the employees of Agricultural Advisory Centres (26.7 %) and the Commune Offices were mentioned. In the respondents' opinions, the range of this assistance should include advisory services and a smoothly functioning information system. Farmers are perfectly aware that under the conditions of market economy information is a commodity, and that after the integration with the EU its significance has increased. This mainly concerns the possibility for financial support under the existing programmes. As regards the Natura 2000 areas, this is obviously a support under the Agri-Environmental Programme. In order to stress the significance of the conservation of the rural areas' biodiversity, for the years 2007-2013 the amount of subsidies to be potentially granted to the farmers running farms within Natura 2000 areas and outside of them was differentiated. The implementation of the majority of variants of the environmental packages being implemented in Natura 2000 areas, as compared to the same variants for the farms situated outside of these areas, is granted a higher financial support, i.e. 120 % of the basic rate (Kaługa, 2009).

As the researches indicate, in most respondents' opinions, irrespective of the regional disparities, inclusion of their farms in Natura 2000 network has had no effect on their functioning. These were the opinions from 72.7 % of farmers from Podlaskie province and 66.7 % of farmers from Warmińsko-Mazurskie province. On the other hand, 20-25 % of farmers were aware of a negative impact, mainly due to the restrictions on agricultural production, and the limitations of investments. The positive aspects of a farm being situated within a Natura 2000 area were indicated by a decidedly higher number of farmers from Warmińsko-Mazurskie province as compared to farmers from Podlaskie province (Fig. 14). The indicated benefits arise mainly from the possibilities for implementation of the package "Protection of endangered bird species and natural habitats in Natura 2000 areas".

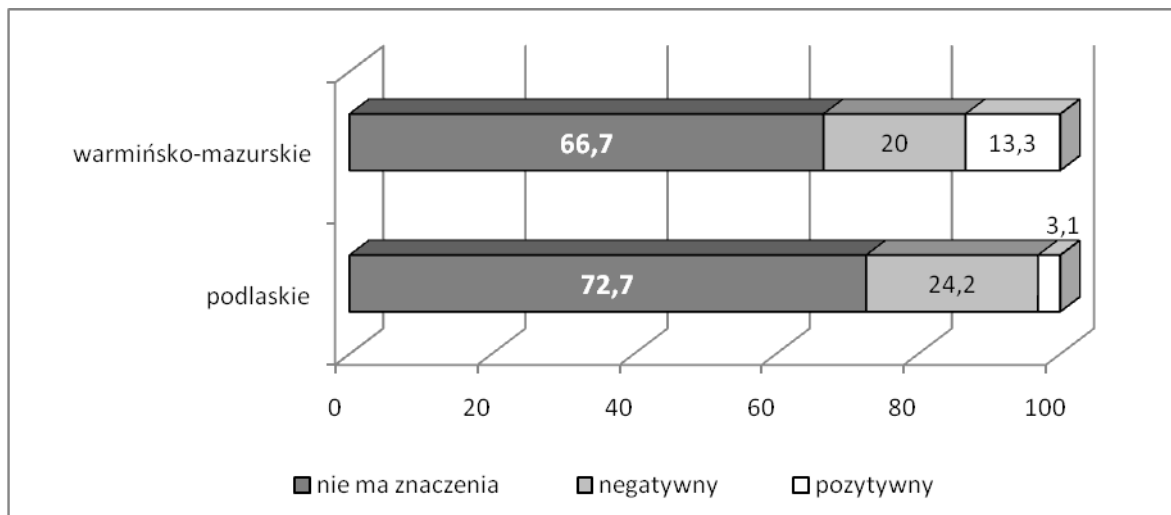


Fig. 14. The respondents' opinions on the Natura 2000 area impact on the agricultural activities being carried out (% of respondents).

Source: Own research

Almost a half of the farmers included in the research (46.7 % in Warmińsko-Mazurskie province and 45.5 % in Podlaskie province) implemented the Agri-Environmental Programme.

Moreover, one can observe a clear diversification of the interest in implementation of particular packages within the research areas. In Warmińsko-Mazurskie province, the packages "Organic farming" (33.3 %) and "Extensive permanent pastures" (20.0 %) were most popular with farmers. On the other hand, in Podlaskie province farmers implemented mainly the package "Soil and water protection" (21.2 %). Few farmers have undertaken to implement the package "Protection of endangered bird species and natural habitats in

Natura 2000 areas”, which can result from the fact that in order to implement this package it is necessary to perform an environmental evaluation, which takes time (Fig. 15).

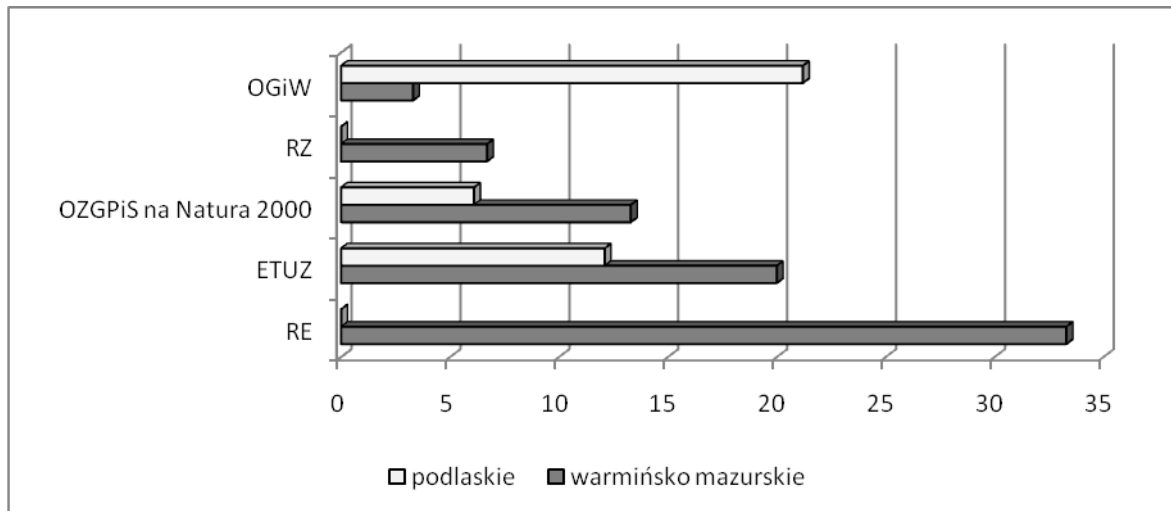


Fig. 15. The Agri-Environmental Programme packages being implemented in the respondents' farms (% of respondents)

OGiW – Soil and water protection; RZ – Sustainable farming; OZGPiS – Protection of endangered bird species and natural habitats; ETUZ – Extensive permanent pastures; RE – Organic farming

Source: Own research

The implementation of the Agri-Environmental Programme packages has an obvious connection with the production systems used in farms. In both the literature on the subject and the practice the agricultural systems are divided into three categories: conventional, organic and integrated agriculture (Filimoniuk *et al.*, 2001), often supplemented with two more categories which are particularly significant in the protected areas:

- agriculture protecting the biodiversity, the essence of which is adaptation of the technique of crop production to the protected species' needs, in order to preserve the wild flora and fauna present in the agricultural land. Therefore, two equivalent products are obtained: field crops and the environmental protection;
- naturalised agriculture, which consists in combining the principles of organic production with the biodiversity protection requirements.

In Podlaskie province, the conventional system was decidedly predominant and applied by as many as 93.9 % of the farmers, while only 6.1 % of them ran their farms within the framework of the integrated system. A fact deserving particular attention is that none of the respondents carried out the agricultural production under the organic system. What is more, the majority of respondents (84.8 %) were completely disinterested in the organic system of agricultural production. The farmers included in the research mentioned a number

of deficiencies and barriers that diminish the attractiveness of this production system, for example: time and labour requirements (48.5 %), low profitability of production (21.2 %), the need to extensify the activities (15.2 %), and the difficulties with a market for the produced goods (6.1 %). The situation in Warmińsko-Mazurskie province was totally different. Even though the conventional system of production was predominant there, the interest in the organic system was high, as it was used by more than 45 % of the respondents (Fig. 16). In the farms of respondents from this research area, the animal production trend was predominant (52.6 %), while the percentage of farms specialising in plant production amounted to 23.7 %. The other farms were multidirectional. The situation was different in Podlaskie province, where the vast majority of the owners of the farms included in the research (60.6 %) did not specialise in any trend of production. Animal breeding was predominant in 36.4 % of farms. Most of them were specialising in milk production and located in the proximity to large milk processing plants (Piątnica, Grajewo). A small percentage of farms specialising in plant production (3 %) is a result of both a low quality of soils in this area and the restrictions arising from a large number of legally protected areas.

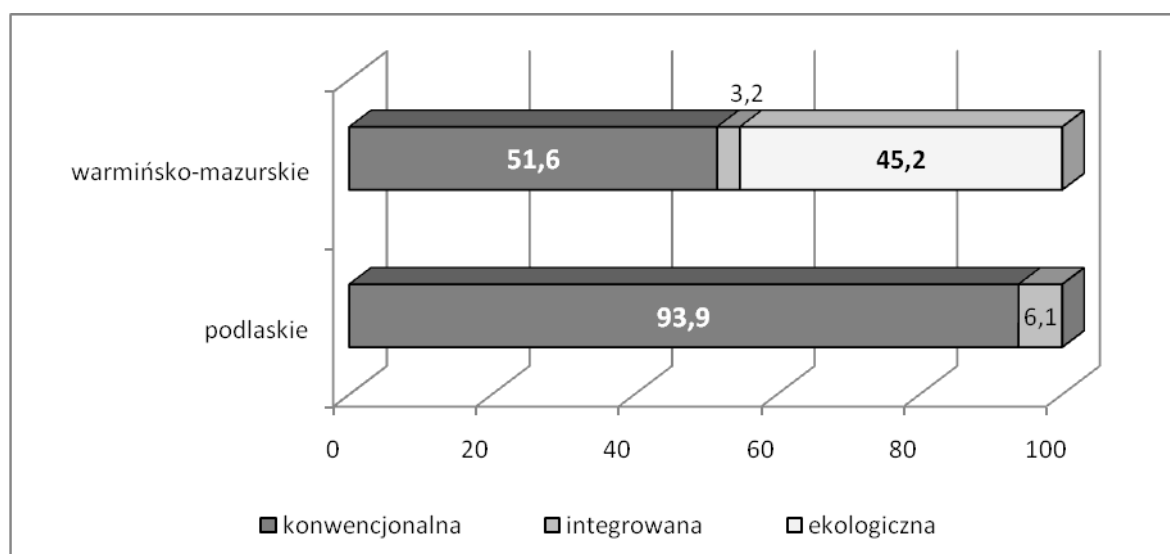


Fig. 16. Production methods applied in the respondents' farms (% of respondents)

Source: Own research

The information and publicity material show³¹ that the status of a Natura 2000 area should provide a chance for new trends in rural development. This can be used in many ways:

³¹ *Żyjąca Natura 2000 1-9, 2008-2009. Supplement to the „Gazeta Soleccka”*. The project „*Żyjąca natura*” was financed using the funds from the National Fund for Environmental Protection and Water Management (NFOŚiGW). It provided for conducting an information and promotion campaign aimed at developing the

promotion of regional products and services; development of tourism; performing the educational and scientific functions; it may also be an inspiration for the pro-environmental practice in agricultural farms, for example introduction of the forms of agriculture which are closer to the nature, and the development of environmentally-friendly tourism. However, the conducted researches show that farmers are not able to take advantage of these chances. It needs to be noted, however, that respondents made such attempts from time to time. It is therefore difficult to assess to what extent this arises from the lack of farmers' entrepreneurial skills and creativity or their limited financial resources, and to what extent the indicated chances for the development of these areas are able to be applied in practice.

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Katarzyna Brodzińska

7. THE ROLE OF EDUCATION AND ADVISORY SERVICES IN DEVELOPING PRO-ENVIRONMENTAL ATTITUDES AMONG FARMERS

7.1. Impact of Agriculture on Natural Environment

A close link between the agricultural production and the natural environment results in the interdependencies within the relations between agriculture and the environment, which are two-directional effects of various intensity. Obviously, the conventional, extensive agriculture applying extremely simplified production systems and applying high doses of chemical means of production, with the reduced role of natural biological processes, has a negative impact on the environment (Majewski, 2008). On the other hand, there are numerous examples of environmentally-friendly agricultural activities. Mention should be made here of, for example, the advantages arising from the extensive management of the high-mountain areas or the valley of Biebrza river (Klepacki, Rokicki, 2006; Bołtromiuk, 2010). What is more, agriculture has at its disposal significant possibilities for reducing the negative effects of agricultural production on the natural environment, and these are not only the CAP instruments or making an appropriate use of technical, biological or organisational progress, but also developing the environmental awareness among the agricultural producers, which translates into the agricultural practices applied in a farm.

The model of policy for the development of rural areas and agriculture, currently being shaped in the European Union, is accompanied by the animated discussion on searching for its patterns, and the efficiency of programming the changes making this development environmentally-friendly. The direct representation of the pro-environmental direction of the Union's policy towards agriculture and rural areas is supporting the environmentally friendly agricultural practices, and, primarily, fulfilling the obligations of the Agri-Environmental Programme (Wilkin, 2002; Wawrzyniak, Wojtasik, 2007). However, it needs to be stressed that the substantial difference between the Polish Agri-Environmental Programme and the equivalent programmes in most EU countries is that in Poland the attention is paid primarily to the maintenance of the current state of the environment, while in the countries of the former EU-15 to the reconstruction of its lost values (Marcysiak, 2005). The factors which decide of the high values of agricultural landscape in Poland are as follows:

- occurrence of numerous agriculturally unproductive (marginal) environments, for example boundary strips and field paths, moist land depressions, swamps, water holes, streams, little rivers, separate bushes and trees, woodlots, forests and fallows;

- diversity of crops on the adjacent farmland plots (heterogeneity of the agricultural landscape);
- small area of fields – large areas contiguous with other crops, meadows etc., and the relatively small monocultural areas inside (Błaszowska *et al.*, 2008).

In view of the above, Polish farmers find it difficult to get used to the fact that they have to introduce volume limits on the production and high technological regimes to the same extent as farmers from other EU countries, and particularly from the countries with a high level of intensification of the agricultural production (EU-15). It must be borne in mind, however, that in order to maintain the environmental resources existing in the agricultural areas, significantly lower financial expenditures are required as compared to those borne on the re-enrichment of the landscape with its previously eliminated constituents. In this situation it is necessary to both preserve the existing traditions and the farmers' skills of cooperation with the nature, and enrich them with a new quality. In this regard, developing the environmental awareness among the agricultural producers has a significant role to play. In order to identify the measures which may be favourable for raising the environmental awareness among the rural population, results were used of the survey research carried out in 2008 year among both the farmers interested in the implementation of the RDP 2007-2013 measures (3261 persons) and farmers – beneficiaries of the Agri-Environmental Programme (750 persons), and agri-environment advisors (85 advisors holding a certificate of agri-environment advisor, with practical experience in developing and implementing agri-environmental activity plans). The obtained opinions can be considered as an important source of information concerning the assessment of the state of natural environment, and the possibilities for its protection in rural areas of northern Poland, both under the RDP 2007-2013 measures being implemented, especially the Agri-Environmental Programme, and within the context of the post-2013 RDP measures.

As regards this issue, particularly valuable are the opinions from agri-environment advisors, that is people who work every day out of office, know well their clients' agricultural farms and have appropriate qualifications to assess the agricultural practices applied by farmers. According to the opinions of 52.4 % advisors included in the research, Polish agriculture contributes to the environmental deterioration. The most frequently indicated negative agricultural practices are as follows:

- unreasonable use of mineral fertilisation by farmers;

- failure to comply with the rules for handling chemical agents and the use of optimum doses of plant protection products;
- introduction of monoculture crops, including mainly cereals;
- inappropriate warehousing and storage of natural fertilisers;
- introducing household sewage to the fields under cultivation.

As it can be noticed, the most frequently occurring examples of the negative agricultural impact on the environment, identified by the advisors, should not take place in practice. Most of them are, or were, regulated by the environmental protection standards (requirements of the Good Agricultural Conditions, Usual Good Farming Practice, or the cross-compliance). However, these practices are difficult to be controlled; therefore they depend primarily on the farmers' conduct. It can be assumed that these largely result from the habit (things have been done this way for years), convenience (quicker, easier), sometimes the lack of knowledge (farmers are not aware that this way they harm the natural environment), and first of all the desire to save money (since transport of the liquid from a septic tank to the sewage treatment plant is costly). Therefore, these do not arise from the external determinants, but generally from the low level of environmental awareness among the agricultural producers. However, according to the advisors' opinions, the responsibility for the current state of affairs is also had by the local authorities which put off investments in the infrastructure protecting the natural environment (for example: the construction of sanitary drainage networks, organisation of waste sorting and collection systems, etc. It must be stressed, however, that a significant part of the respondents (47.6 %) did not notice their clients' reprehensible practices, yet this fails to imply that the problem does not exist. It is indeed more and more frequently noticed by the rural area inhabitants themselves, including the farm owners implementing the agri-environmental commitments. According to the research results, 66 % of the respondents recognise the hazards deriving from the intensive agricultural economy. The farmers' included in the research, similarly to the agri-environment advisors, pay their special attention to such issues as:

- the use of too high doses of mineral fertilisers and plant protection products;
- pollution of the underground and surface waters;
- too extreme intensification of production;
- soil pollution;
- missing manure pads and liquid manure tanks;
- no sewage system;

– monoculture crops.

Other hazards indicated by farmers included, *inter alia*, too big a density of livestock and the lack of organic fertilisation. These results show that farmers recognise the potential threats to the environment, yet they rarely associate them with their own conduct. What is more, a research by Kłoczko-Gajewska (2000) reveals that farmers recognise the need to protect the environment, but rather in the commune and the surroundings and not in their own farms.

The performed analyses show that the farmers' age is a factor significantly affecting the respondents' opinions and views on the issue of the agricultural impact on the environment. The alarming fact is that the respondents in both the youngest and the oldest (older than 59) age groups failed to recognise the negative impact of agriculture on the environment. As could be expected, the views on this issue are dependent on the respondents' level of education. The higher education level of the agricultural farms' owner, the more often they recognised the negative agricultural impact on the environment. The influence of the education level on the perception of the environment is confirmed by, among others, Poskrobko (1990), and Jaworska and Luty (2007). In their opinions, a higher level of formal education contributes to the better understanding of the issues related to the environment. On the other hand, Moskal's researches (1995) reveal that the agricultural education clearly influences the level of environmental awareness, since the graduates from agricultural vocational schools not only surpass the total population with the analogous education level but even the total group of graduates from secondary schools. The author also indicates the positive influence of the active performance of agricultural activities, for example work on the family farm or an allotment, on the level of environmental awareness. Moreover, the results of own researches confirmed the dependence between the expressed views and the applied method of agricultural production. As could be expected, the owners of organic farms recognised, to a much greater extent, the unfavourable impact of agriculture on the natural environment, and were therefore interested in alternative forms of agricultural production.

Within the context of the opinions and views presented by advisors and farmers, it may be concluded that the scale and range of the agricultural impact on the natural environment depends on both the volume and type of production and its percentage in the farmer's income, and the natural and soil conditions (light soils present more difficulties in terms of sustaining farms), and the location of a farm in relation to the market. In general, large and intensive farms were viewed as a threat to the natural environment, while small, extensive farms as the environmentally friendly agriculture. This is also confirmed by the comparative analysis of

farms with various production trends, which reveals that none of the types of specialist farms fully implements the principles of sustainable development. On the other hand, as regards the environmental indices, each type of a farm poses specific (individual) threats to the natural environment (Harasim, 2010).

7.2. The Farmers' Environmental Awareness

Environmental awareness, similarly to each of the basic notions, is difficult to be unambiguously defined. According to one of the concepts, this is this part of the social awareness which accepts, as its point of reference, the natural surroundings of humans, whereas its components include specific contents, attitudes and emotions towards the natural environment, interconnected and interpenetrating with other forms of social awareness (Szewczak, 2007). The state of the environmental awareness of the society, understood as the knowledge, attitudes, opinions, habits and the resulting conduct, is extraordinarily important within the context of environmental protection. However, one needs to be aware that there are two forms of awareness: declared and implemented. Although the former predisposes an individual towards specific behaviour, it does not determine it completely. Consistency between the declared contents and implemented contents depends, to a large extent, on the significance attached to a given matter by the social environment of an individual (Moskal, 1995). Mydlak *et al.* (1994) also draw the attention to the difficulties related to the assessment of the environmental awareness of the society, since the internally consistent set of judgements and attitudes is not always present. Therefore, one must realise that there are differences between the statements and the actual behaviour. In view of the above, it is extraordinarily important to learn the advisors' opinions on the assessment of their clients' level of environmental awareness. It should be stressed that none of the obtained responses, within the traditional five-point scale, got the maximum "very high" note. Only two out of 85 advisors acknowledged that farmers were characterised by a high level of environmental awareness, 40 % acknowledged that the farmers' level of environmental awareness was averaged, another 40 % stated that this level was low, and 10.6 % that it was very low. The relatively low notes given to the agricultural producers by advisors certainly should be a matter of concern. According to Kobyłecki (2007), in order to be able to take appropriate decisions concerning the protection and management of environmental resources, not only is it necessary for possibly wide social circles to have the knowledge on the environment, but also to carry out permanent measures promoting the pro-environmental behaviour among the inhabitants. The economic practice and the presented advisors' opinions provide evidence that

the drawback of the profession of a farmer, i.e. a person who manages a significant part of the natural space, is a drastically low level of knowledge concerning the environmental protection.

While accepting the fact of the farmers' low level of environmental awareness, at the same time it is necessary to search for the methods for improving the situation in question. Taking account of the above, the advisors were asked a question concerning the possibilities they noticed for taking measures which could contribute to raising the environmental awareness among the rural population. In the opinions of 56.5 % of respondents, the development of environmental awareness is favoured by, first of all, comprehensive information and training activities. Another one was a proposal to implement special educational programmes for the agricultural community (opinions from 23.5 % of respondents), and to support professional advisory services in the field of environmental and landscape protection (10.6 %). Additionally, a few statements were recorded which revealed that the currently implemented and available tasks and measures aimed at the environmental protection were fully satisfactory.

In principle, the opinions from the advisors included in the research, concerning the choice of priorities of the rural development policy, which could contribute in a decisive way to the environmental protection, are consistent with the earlier mentions and include such proposals as:

- advancing a comprehensive training offer addressed to the agricultural community, which includes the basic knowledge on the needs and principles for the environmental protection and the possibilities for obtaining support for the pro-environmental initiatives being undertaken (opinions from 31.7 % of the survey participants);
- implementation by the local governments of, first of all, the investments related to the construction of sewage treatment plants, sanitary drainage networks, waste sorting etc. (24,4 %);
- increasing the level of support for the pro-environmental investments in agricultural farms (19.5 %);
- tightening the requirements for the compliance with environmental protection principles (13.4 %);
- continuing the support for the LFAs, which is connected with the obligation for farmers to comply with the specific standards in the sphere of environmental protection (13.4 %);

The Agri-Environmental Programme being implemented supplements the proposals in question as an important tool for supporting the environmental protection. According to the opinions of the survey participants, increasing the capacity for the Programme's affecting the natural environment depends as much on the total financial appropriation for particular agri-environmental projects, as on the level of farmers' environmental awareness.

However, it must be borne in mind that in the process of developing the environmental awareness in the macro-scale (large populations), the environmental education is less effective than in the micro-scale, i.e. among families or small local communities. According to Papuziński (2006), the environmental education refers to values, and the social values do not play the same role in particular social groups. In case of large social groups, the values are regulated by the motivation to perform activities. It can be therefore considered that the motivation to perform pro-environmental activities is a primal and fundamental form of environmental awareness. The environmental awareness contains the entire sphere of the motivation to engage in pro-environmental behaviour, which can be both formal and informal in nature (Wódz, Wódz, 2001). Within this context, it is appropriate to learn the farmers' motives to take on the agri-environmental commitments. In principle, the advisors included in the research were unanimous on this issue, and indicated the possibility for being granted a relatively high financial support that improves the farmers' financial situation as the key motive for farmers to participate in the A-EP. The most popular among farmers were those variants of measures within the framework of particular packages of the Programme, in which the calculated compensation guaranteed obtaining a possibly high level of assistance with the relatively low expenditure on the necessary efforts related to implementation of packages.

As follows from the experiences related to implementation of agri-environmental programmes in other EU countries, these measures bring about positive environmental effects. The direct embodiment thereof is the decrease in the use of mineral fertilisers, maintaining natural habitats and the dissemination of the principles of Good Farming Practice. In view of the relatively short period for implementation of the measure in question in Poland, it is difficult to assess its environmental effects. As follows from the advisors' statements, the farmers who decided to implement the packages of the Programme not so much obtain compensation on grounds of the foregone income as a bonus for "the ability to cope with the life's challenges". A significant group of farmers participating in implementation of the agri-environmental packages decided to take part in the Programme owing to the relatively small changes to the current mode of farming. However, the presented opinions do not, in any way, disparage the Programme itself. It is favourable for selecting a group of farms, significant at

the national level and interested in maintaining the conditions of environmentally friendly production. Beneficiaries accept the obligations to meet the agri-environmental commitments relevant to a given package. In view of the nature of the interviews conducted, it is difficult to identify in a reliable manner all the motives which inspire farmers while joining the implementation of the A-EP. The problem of the lack of optimum methods for analysis of the financial effects of implementation of agri-environmental packages is also evident in the literature on the subject (Gruda, 2006). However, it appears that the issue of the future model of agriculture needs to be settled first. Its influence on the environment depends primarily on the farmers themselves, since they own significant environmental resources. Therefore, an urgent challenge is to take, within the agricultural policy, measures aimed at developing the competences of this professional group as regards the pro-environmental methods of farming, supported by a range of instruments which guarantee maintaining the profitability of production.

7.3. Trends and Means for Advisory Supporting for Agricultural Producers in the Field of Environmental Protection

The job of an adviser primarily consists in providing educational support to a farmer in his efforts to develop their own farm, while its objective in relation to the current situation of Polish agriculture should be enabling farmers to take and practically implement independent, rational decisions as regards the development of an agricultural farm (Kujawiński, 2007). Poland's membership in the European Union and including farmers in the CAP mechanisms gives rise to the need for adapting farms to the existing relevant requirements on the one hand, while on the other hand it provides possibilities resulting from new markets and obtaining additional funds for the modernisation of agricultural farms. In view of the above, one can notice an increased activity of rural inhabitants as regards obtaining information, and an increased interest in the participation in various trainings, courses and seminars. Advisory services have become indispensable in almost every sphere of economic and social activities of the current developed societies (Zawisza, 2003). This is confirmed by the results of survey researches conducted among farmers. They are most frequently interested in obtaining information on the possibilities for being granted funds from the assistance programmes, including the currently implemented RDP 2007-2013 (27.2 %). Farmers are aware that the financial resources earmarked for the implementation of this programme are limited and will not suffice for all applicants. At the same time, they know examples in their nearest environment (the neighbours) of investments co-funded with the EU funds under the

programmes implemented in the years 2004-2006. Therefore, they eagerly participate in trainings in the existing legislation and the criteria of access to the individual measures. The participation in these trainings is also considered as a chance for obtaining practical advice on how to successfully apply for the EU funds (Fig. 17).

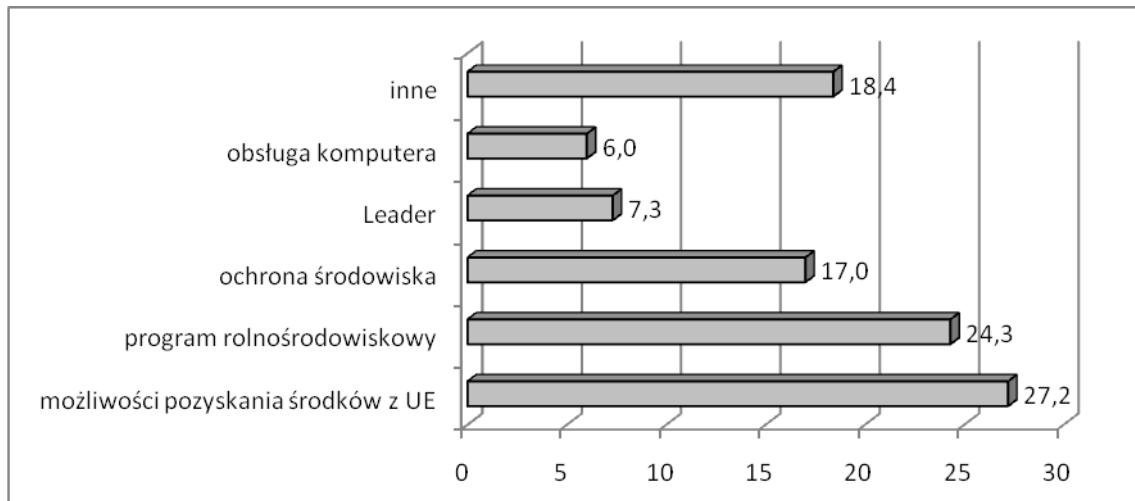


Fig. 17. The topical range of the trainings that farmers would most eagerly participate in

Source: Own research

The fact of great importance is that the farmers included in the research expressed their interest in trainings in the environmental protection. This is obviously related to the obligation to comply with the specific environmental protection standards. Beneficiaries of numerous financial measures under both the previous programming period (2004-2006) and the present one, have to comply with the existing environmental protection standards (this particularly applies to the farmers implementing the A-EP). What is more, the farmers included in the research expressed their interest in trainings in the Leader programme under which they could submit applications for the so-called “small projects” which do not satisfy the conditions for obtaining assistance under the 3 axis of the RDP 2007-2013 but contribute to reaching the objectives of this axis. Another observation worthy of note is the fact that farmers still require trainings in basic computer skills, while it is beneficial that 74.7 % of the farmers included in the research can use a computer and have access to the Internet. In the 21st century, when the world is getting more and more computerised, more and more matters can be dealt with in this manner (for example notifying the changes in animal stocks under the system for identification and registration of animals – more than 6 000 farmers take advantage of this solution). Computers are also more frequently used for the farm management, for example programs which assist in managing a farm or cost planning, or operating cow milking parlours, feeding units or fertilisation plans.

It should be stressed that the most important source of information for the farmers and rural inhabitants are the public entities' employees. Indeed, the Agricultural Advisory Centres employees are very much popular in this regard, mainly due to their accessibility (well-developed structures) and the farmers' habit of using the services of this institution. Farmers very frequently request information directly from the ARiMR offices (which are responsible for implementation of the RDP 2007-2013) and other institutions whose range of activities includes the issues under analysis. It must be noted that the employees of these public institutions provide the information free of charge. The least popular source of information, even if more and more available, are the advisors from consulting firms. It should be stressed that in the respondents' opinions the private consultancy is highly valued but due to the commercial nature of the rendered services its accessibility for the farmers at large is limited. As the researches by Zawisza and Niedbalski (2007) reveal, the emergence of private consulting firms in the market can make the time of waiting for advice shorter. As for the other sources of information, farmers indicated people from the closest environment (16.8 %), which confirms the still important role of the personal information sources. Such socialising provides the possibility for exchange of experiences and is a good opportunity to obtain practical hints (Fig. 18).

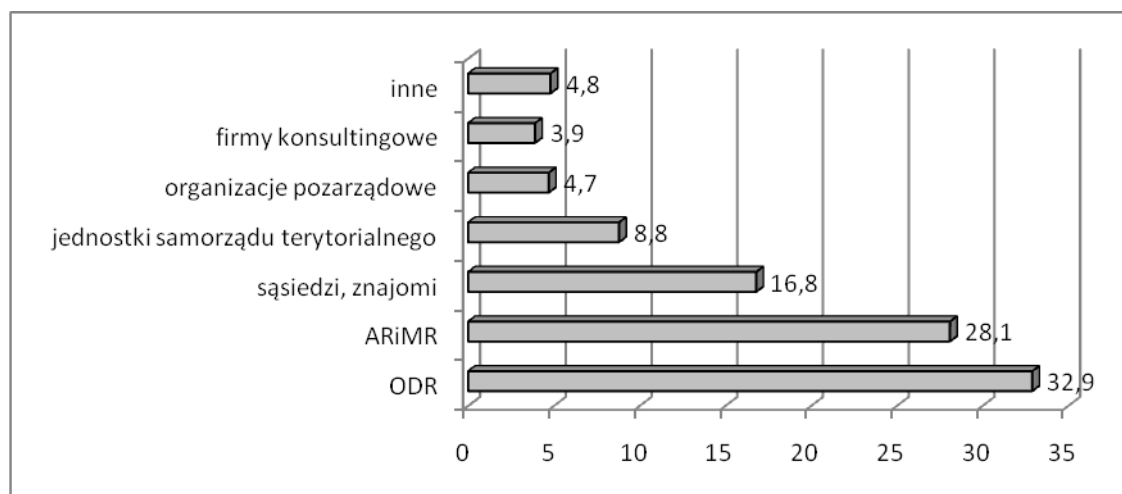


Fig. 18. Sources of information

Source: Own research

Developing the pro-environmental competences among the agricultural producers is certainly supported by a broad range information and training activities regarding the principles for the production which is friendly towards the environmental protection and shaping the agricultural landscape, including the rural inhabitants at large as well as professional advisory services. The demand for training in the existing environmental

protection standards and the possibilities for implementation of pro-environmental investments, declared by farmers, arises from the changing CAP requirements, and in particular the implementation of cross-compliance. Within this context, the information activities are of great importance, because besides the advisory, educational and innovative activities they have a significant place within the offer of the non-material support to the farmers. The Agricultural Advisory Centre employees are the source of information on the necessity (the cross-compliance requirements) or possibilities (the Agri-Environmental Programme) for taking measures for environmental protection, which is most frequently mentioned by the farmers included in the research. However, the role of the Agricultural Advisory Centres in promoting programmes related to the environmental protection is not uniformly assessed. Bednarski (2000) draws the attention to: good advisory staff (permanently improving through participation in a variety of educational forms); well-equipped educational and training facilities; well-developed methods of cooperation with the scientific community; the advisory forms and methods accepted by farmers; and, primarily, the non-commercial nature of the activities. Moreover, Zawisza and Kentzer (2004) state that advisors actively implement educational programmes that enrich the farmers' environmental knowledge and stimulate them to take measures for environmental protection. On the other hand, other authors (Marcysiak, 2004; Dembek *et al.*, 2004) indicate the insufficient advisors' knowledge in the field of environmental issues, which makes it difficult to expect that it will be transferred to the farmers.

The considerations above are a proof that farmers have been changing their attitude towards the world of nature, landscape and production processes. However, these changes arise not so much from the farmers' inner conviction of the need to take pro-environmental measures, as from the need to meet the CAP requirements. However, there is a strong probability that certain agricultural practices applied under the influence of the financial incentives (A-EP) or the liability to penalty (cross-compliance checks) will become over time standard measures and a permanent part of agricultural practices.

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