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IMPROVING THE MANAGEMENT OF NEW AGRICULTURAL FUNCTIONS AS A CONDITION FOR SUSTAINABLE RURAL DEVELOPMENT

1. Introduction

Raw materials and food are not the only goods produced by contemporary agriculture. As many authors stress, since it produces environmental goods and services, it also is a major determinant of the ecological balance. Although the importance of agriculture in its strictest meaning is decreasing, other roles of agriculture are becoming more and more important. The Common Agricultural Policy (CAP) also accepts such a model with respect to agriculture and rural areas in Poland. Therefore, the implementation of CAP instruments should lead to a growth of interest among farm holders in new productive functions of agriculture.

This multitude of agricultural activities, which thanks to the CAP instruments have gained access to new sources of income, constitutes a basis for a new classification of their functions in post-transformation Poland. For instance, the following types of farms/holdings are present in the agricultural sector [Michna, 2005, 8–10]:

– commercial farms,
– non-commercial farms that provide an additional source of income for households,
– self-sufficient holdings that provide food and agricultural goods just for the households (they do not create any agricultural production for the market, but have value as property),
– farms constituting a part of a network that produces biomass for manufacturing renewable bio-fuels,
– farms as a home, which supply additional income by afforesting marginal land,

– farms that earn their living from protection of the environment and landscape,
– farms as recreational and leisure facilities,
– ecological farms,
– farms as workshops of outside-agricultural activities.

This vision of multi-functional agriculture requires a new range of skills (management). Can such a range of skills develop simply through the agricultural sector, or alternatively through the newly emerging markets for goods and environmental services, or are new institutional and organisational solutions needed to improve the management of farms? The aim of this article is to provide some answer to this question, based on the results of research conducted among the managers of commercial farms in representative communities of the Opole province [Sokołowska, 1994; Sokołowska et al., 2002; Sokołowska et al., 2006]. The research has been carried out at the background of the following hypotheses:

1. The emergence of commercial farms, which occurred during the system transformation, will continue and lead to the concentration of land in the hands of these farms.
2. This phenomenon will appear in all Polish regions, but with various degrees of intensity. The intensity in the Opole province is likely to be high.
3. The growth in the productivity of farms will lead to the vacation of significant areas of rural land and will enable its exploitation for other purposes.
4. Many farms will face the necessity of acquiring the skill of managing land as a common good. On a macro scale „managing the fall" [Hunek, 2005] of agriculture requires the development of new management skills for the new functions of farms.
5. In order to enable such management, the process of atomisation of farms, triggered off by the system transformation, has to be counteracted by the building of local social networks. Environmental groups, local society and the as yet untapped knowledge and skills of inhabitants will play a significant role in the creation of such networks.

2. Evolution of the Common Agricultural Policy

The founding countries of the Common Market set themselves the ambitious task of constructing an agricultural sector that is strong, efficient, able to compete, and whose main goal is to assure self-sufficiency. In its first version, the CAP limited itself only to one sector, favouring the development of intensive agriculture, organized in vertical trade structures, that protected producers by means of guaranteed prices. As Maurel remarks, this „productivist" model allowed the European Community to modernize agriculture into

a sector dominated by commercial farms and satisfied internal demand for food [Maurel, 2005, 29].

Thanks to the CAP, the Community became a world agricultural power. However, this direction of development became a threat to the environment, crises due to overproduction lead to ever increasing costs of market regulation, the lack of balance between regions became deeper and the rural exodus became an even more serious problem. Hence, the fall of the productivist model seems to have been inevitable [Maurel, 2005, 29]. The transformation to the current agricultural model began at the beginning of the last decade of the XX century.

Approved by the European Commission in 1991, the project of the Agriculture Commissioner Mac Sharry aimed to change the „productivist" orientation of the CAP and solve such problems as:

– increasing production surpluses and the necessity of storing reserves,

– the stagnation of the income of agricultural workers, in spite of the increasing investment in production and decrease in agricultural employment,

– issues of environmental protection connected with intensive agriculture,

– the constant growth of the budget assigned to agriculture.

The reforms of Agenda 2000 were a continuation of the MacSharry reforms, that outlined a new direction in the development of agriculture and rural areas in Europe. The most significant result of this reform was the division of the CAP into two pillars. The principles and instruments of the two pillars are illustrated in Table 1.

On June 26th, 2003, in Luxembourg the EU Council accepted a document that included details of the changes that will be introduced into the Common Agricultural Policy in 2004–2013. They concern four areas:

– direct lump sum payments will correspond to current direct payments and will not be changed even if the current production programme is changed. Hence, farmers' decisions on production will be based on signals from the market;

– supporting farmers' incomes using market procedures. The emergency purchase of certain agricultural resources was continued. However, the community set prices for these goods were reduced;

– basing income support on adherence to the rules of environmental protection, the interest of animals and good farming practice;[1]

– the individual treatment of farms. Direct lump sum payments depend directly on the value of production. The first 5 thousand euros are not liable to decrease, beginning in 2005 (in Poland in 2010), payments of more than

[1] The introduction of so-called second legal control in farms was suggested. However, the so-called total audit of farms was suspended until 2010.

Table 1. The principles and instruments of the Common Agricultural Policy according to Agenda 2000

Pillar I Support for the Market	Pillar II The Policy for Developing Rural Areas
The principles	
– a unified market (free transfer of farm goods between member countries, common prices), – preferences for members of the Community (agricultural goods from member countries have priority in the market, high duties on imports), – financial solidarity (costs of realising policy are jointly financed by all country members from the EAGGF budget, irrespective of their national interests).	– the member states are obliged to present their National Agendas for the development of Rural Regions, aimed at strengthening the farming and forestry sectors, improving the competitiveness of rural regions (creating new sources of profit for rural populations), preserving the natural environment and heritage of rural areas in Europe (programmes co-financed from the Community's budget).
The Instruments	
– joint management of the market and price guarantees (intervention prices, import duties, export surcharges, refunds), – direct income support (direct payments some directly based on production and some partly independent of production), – limits on production: (upper limits on production, financial punishments for exceeding these limits); Maximum Guaranteed Areas; leaving land fallow.	– agricultural-environmental support for farmers producing in an environmentally-friendly way, – compensation payments and the LFA: supporting areas with unfavourable agricultural and environmental conditions, – afforesting and expert help in managing and improving the ecological stability of woodlands, – programme of early retirement for agricultural workers, – system of preferential treatment for young farmers, – training courses, investments in farms, marketing and the processing of agricultural goods.

Source: based on: *Working Papers on Agriculture...*, www.europarl.eu.int.

5 thousand euros may be lowered, ultimately there will be reductions of 5%. The financial resources gained in this way will be transferred to the second pillar of the CAP.

The division of the CAP into two pillars shows a new relation between agriculture and the local area. According to Maurel, such a relation shows on the one hand the role of agriculture in managing the local area and on the other hand the role of the local area in forming the identity of agricultural products and their value [Maurel, 2005, 27]. In justifying the second relation, she stresses that so called quality farming, producing food of high quality, applies to a very specific definition of quality. It means concentrating on the process

of producing agricultural products, being in full control of this process and is connected with the geographical origin of the products.

However, farming based on regions of specific qualities may well lead to interregional competition. Further development of such a model for farming might result in 2013 in the retraction of the UE principles currently applied in the CAP and radical changes in this area. Such a possibility is supported by the current discussion on the shape of regional policy.

After implementing fundamental reform of the first pillar of the CAP, the main goal of the reform of this policy in the new financial term (2007–2013) is to support the development of rural areas from the European Agricultural Fund for Rural Development. The role of this fund is to promote the sustainable development of rural areas in the whole Community in conjunction with market mechanisms and provide income support within the framework of the CAP. The following were assigned to be the main goals of this new policy for the development of rural areas:

– **Goal 1.** Improving the competitiveness of farms through restructuring,

– **Goal 2.** Improving the condition of the natural environment and landscape by the rational management of land,

– **Goal 3.** Improving the living conditions of the rural population and promoting the diversification of economic activity.

As a result of these changes, new markets may appear for goods and environmental services, as well as organic food and agricultural energy resources, that will create possibilities for the development of small and medium-sized farms in accordance with the typology of their functions presented in the introduction. These environmental functions also have to be realised by high productivity farms. They can also improve their financial situation by participating in new markets.

3. System transformation and improving farm management

As a result of the system transformation in Poland, the standing of a farm is now perceived according to its position in the market. The scale of commercial production has become a measure for the level of adaptation of individual farms to market mechanisms and at the same time it has gained significance in defining the possibility of their restructurisation and modernisation, since:

– only units that produce on a large enough scale have a chance to accumulate the capital essential to finance investment activity,

– it is also a condition for the absorption of technological progress, not only for financial but also technical reasons.

The emergence of large commercial farms resulted partly from the skill of their managers. However, the accessibility of land in the local area was also

important.[2] Such a thesis is also confirmed by analysis of the development of farms in the Opole province. In the middle of the 1990s, the biggest relative growth of farms was observed in farms of size 10–15 ha UR and at the beginning of this century in the group of farms of size 30–50 ha UR [Sokołowska et al., 2006, 35–38]. However, without the appropriate decisions on production made by the managers of these farms, this phenomenon would not have occurred.

According to Sokołowska, although „the methodology and procedures of making decisions are universal, therefore identical for all economic systems, every system still has its own uniqueness that results from its specific features, characteristic to this system" [Sokołowska, 1998]. In simplified terms, the management decisions of agriculturists may be divided into the following types:

- choice of type and scale of production,
- allocation of resources and costs,
- decisions that result from uncertainty and risk.

In the first case, the theoretical basis of choice may be described within the framework of curves of production alternatives, also called curves of production transformation. Such curves illustrate the effects of switching between specific directions of production.

The second area of decision making concerns the issue of allocating financial resources, labour and skills to reach a given level and structure of production.

The economic problem of risk management is associated with the relation between the effectiveness of production, determined subjectively by the producer, and its profitability. Profitability results from effectiveness and objective economical parameters, which are independent of the producer, above all prices, changes in price and relative prices. Price changes mean that an indicator of production effectiveness of value greater than 1 (measured as the ratio of the value of production to expenditure – according to constant prices) does not always ensure an indicator of profitability greater than 1 under market conditions (measured as the ratio of the value of production to expenditure – according to current market prices). Depending on changes in the relative prices of products (price differentials), profitability may be higher or lower than the effectiveness of production and not always greater than one. On the basis of the cited research in the Opole province, according to the subjective evaluations of commercial farmers, the growth of production of farms resulted from their decisions on the type and size of production and also allocation of resources and costs. The dynamics of changes in the types of production decisions are illustrated in Table 2.

[2] On the influence of the local supply of land on the size of a farm see Hanusik [2001].

Table 2. Reasons for the changes in decisions on production made by commercial farmers in the Opole province

	1992	2000	2004
	(answers in%)		
Purchase of land	80	74	55
Enlargement of herd	43	70	65
Change in direction of production	2	37	17
Purchase of agricultural machinery	36	21	26

Source: Sokołowska et al., 2006, 140.

These changes in farm management indicate the constant aspiration of farmers to improve their economic effectiveness by enlarging the area of the farm and intensifying production, as well as the significantly lower frequency with which production profiles are changed. However, there is an even more important change in this field. It concerns the type of knowledge that is today indispensable for farmers to improve economical effectiveness by raising the quality of their commercial products and improve economical effectiveness in this way.

The respondents of questionnaire research (Sokołowska et al., 2006, 95) most often stated the need for knowledge about new technologies in agriculture and how to sell farming produce (69%). It appears that financial knowledge, including accountancy, was assessed to be essential (63% of farmers). In spite of the increased importance of agricultural law, knowledge in this area is stated to be necessary by only 26% of the respondents. This also true of knowledge on the situation of farmers in the UE and understanding the rules of the CAP (25% of respondents in both cases).

All respondents were asked: „What factors may lead to a higher sense of security in farm management." Most managers acknowledged that their sense of security would be increased by: guaranteed prices (91% of respondents), cheap loans (48% of respondents) and contractual systems (47% of respondents). Specialization had a very small impact on the sense of security (23% of respondents), as well as participation in producer groups (13% of respondents).

Analysing these results, it may be noticed, that market methods of risk management are not yet well known to the managers of commercial farms in the Opole province. If any actions are made in this area, they mainly involve enlarging their own storage facilities. In 2004 only 27% of the farms questioned had crop silos. According to Kowalski and Rembisz [2005], limiting the level of risk resulting from price changes (management of price risk) is one of the key problems in the majority of commercial farms. This has resulted from changes in the policy on intervention and subsidies, mainly in the crop market, but also

in other markets. The reform of the CAP, which has accomplished the main goal of making subsidies independent of the value of production, has lead to an increase in the level of price risk faced by participants in agricultural markets. They suggest that methods for managing price risk are presently available on the Polish market. On the crop market, the Agricultural Market Agency (AMA) offers some methods of limiting price risk that are based on modern derivative instruments as part of its programme of intervention. According to the authors, the AMA should educate farmers on such methods.

4. Changes in farm management evoked by the new form of the Common Agricultural Policy. The level of acceptance for ecological development

By the time Polish agriculture became a subject of the instruments of the CAP, the problem of environmental protection in rural areas mainly concerned farming households and was connected with the costs of participation in local plans of sustainable development (*e.g.* costs of developing infrastructure, waste disposal). As Kociszewski [2005] suggests, environmental protection was treated as a necessary cost and not as a stimulus to speed up economic development. The implementation of CAP instruments, together with new forms of the direct transfer of income from taxpayers to farmers conditioned on their observance of good farming practice, resulted in the fact that agriculture also came under the principles of ecological development.

At the same time ecological consciousness, as often mentioned in research concerning the transformation period [*e.g.* Jakubczyk et al., 2002; Słodczyk, 2005], started to lose its character of „sheer consciousness" (sensitivity) and formed a dimension of „practical reason." In the year of EU accession, this new type of knowledge held by commercial farm managers in the Opole province was tested using the question: *what type of control from the supporting programmes of the EU, are you afraid of on your farm?* (see Table 3).

About 40% of the respondents left this question unanswered. 31.3% of respondents are afraid of control of product quality. Of these, only 29.8% of those examined are afraid of control of product quality associated with other factors, mainly due to the amount of the plant protection products applied (78.6%). Often people taking part in the research were afraid of the possibility of control of the chemical composition of soil (10.7%), not to mention other factors influencing this composition.

On the basis of this research it may be assumed that a lack of knowledge of the environmental consequences of agricultural activity in a given territory is a fundamental problem. The ecological education of farmers and the rural population, which is now very often suggested, should start by showing the

Table 3. Types of control resulting from the supporting programmes of the EU that evoked farmers' anxiety

Specification	Number of positive answers	% of answers
Type of control:		
– chemical composition of soil	16	10.7%
– type of plants cultivated	4	2.7%
– amount and type of fertilizers applied	15	10.0%
– amount and type of plant protection products applied	36	24.0%
– quality of products	47	31.3%
I am not afraid of any control	2	1.33%
No answer	60	40.0%

Source: Sokołowska et al., 2006,150.

impact of agriculture on the environment and, consequently, on our health and quality of life.

The standards for agricultural production, introduced within the framework of adapting Polish law to EU regulations, require additional undertakings from Polish producers. Since they do not, in general, have their own investment capital, it is necessary to financially support farms. The post-accession programmes addressed to farms in the field of the development of rural areas, are still concentrated on welfare payments rather than supporting activities aimed at adapting to EU norms. That is why the practical development of the attitudes of farmers to the environment may be slow and the new types of control, planned to take place under the reformed CAP, may come as a surprise.

5. The environmental functions of commercial farms in the Opole province and spatial management

The level of interest among commercial farmers in converting farms into ecological farms is not high in the Opole province. Only 7% of the respondents are interested in switching to ecological farming. More respondents are ready to participate in the realization of agricultural-environmental programmes (9%). In provinces, where there are soils of V and VI class, financial incentives have resulted in a growing interest in afforestation (20% of respondents) [Sokołowska et al, 2006, 153].

One condition for development is the preservation of environmental capital and preventing any negative changes in the quantity and quality of environmental goods and services [Borys, 2005]. Multi-functional agriculture can play

a significant role in this domain. According to EU policy, renewable sources of energy are to play a significant role. Appropriate regulations in this field have also been passed in Poland.[3] Specialization in the production of sources of energy constitutes a big opportunity for commercial farms. It appears that farmers in the Opole province are more interested in this kind of activity than in participation in agricultural-environmental programmes (25%).

Spatial management in rural areas is a difficult task that requires a structure which is comprehensive and takes into account all the elements of the landscape, including social, economic and environmental factors. Defining the agrarian structure belongs to the competencies of regional authorities. However, there are no regulations that oblige these institutions to carry out such actions. In the Lower Silesia and Opole provinces, the regional government offices directed the realization of operations aimed at intensifying the consolidation of farmlands and activities connected with the transformation of rural areas, especially in the first of these provinces [Akińcza and Dzikowska, 2005]. In the case of the Opole province, a document entitled „A prognosis for organizational-agricultural activities with particular attention paid to the merging of farmlands", is used mainly to give opinions on proposals submitted within the framework of the programme for the development of rural areas. Due to the high level of interest from the farmers questioned in developing their farms by buying or leasing extra land, it could become a significant instrument of land management, according to the principles of sustained development.

6. Globalisation, virtualisation and agricultural management

In Poland, a clear process of the atomization of social, economic and cultural life began in 1989. This process included farms as well. According to Poczta and Hardt [2005]: *„Not only solidarity among farmers is vanishing, but also their society is decomposing and its members are losing their sense of common roots, problems and interests."*

The phenomenon of the virtualisation of farms has been visible since the middle of the 1990s. The role of integrator firms is played by hypermarkets,

[3] In September 2001, a directive was published on the production of electrical energy from renewable resources in the unified market ("the Green Directive"). Its direct purpose is the growth of the share of electrical energy produced from renewable resources in the general balance of electrical energy produced by the EU to 22% by 2010 (Directive no. 2001/77/WE of the European Parliament and the Council from September 27th, 2001). In August 2001 the Polish parliament accepted the Strategy of Development of Renewable Energy. The amended act on *Energy law*, continued the obligation to buy "green energy" (the Act of March 4th, 2005 on the amendment of the *Act on Energy Law* and of the *Act on environmental protection*, government records 2005 no. 62, par. 552).

which were then emerging on a large scale, and major food concerns, which began to locate their companies in Poland. Growth in food industry production followed. According to Kapusta [2004], when analysing the technical-economical relations between agriculture and the food processing industry during the transformation, two opposing tendencies can be seen:

– price competition will force food processing firms to lower the costs of resources and lead to the amount of final product gained from a unit of an agricultural resource will increase,

– competition on the basis of quality will lead to heavy competition for high quality agricultural resources.

The first is an effect of the globalisation of agriculture, the second – a result of the CAP instruments that have helped to develop high-quality agriculture in the EU, as an alternative to the cheap food, that may appear in Europe after the removal of trade barriers, negotiated within the framework of the WTO.

The accomplishment of both strategies requires the transfer of knowledge from integrator companies to farms. Contracts already often include additional options concerned with making new breeds of plants and animals available, consultation in the field of agricultural production and the monitoring of cultivation and breeding. As a result, due to appropriate marketing, agricultural products and services have became a sign of quality and more precisely of not-commonly held knowledge – local recipes, the quality of local land/products – which is transmitted by companies, which play the main role in economic networks.

According to Perechuda [2005], the classical instruments for optimizing economic activities, traditionally accomplished in two dimensions, are coming to an end: achieving sales (growth of market share) and minimising costs. They will be replaced by contemporary instruments of modelling economic activity: globalization and virtualisation. The processes of globalisation and virtualisation are not instruments as such, but they enable optimising the functioning of a company by means of a third dimension, *i.e.* knowledge. The author stresses that the main creators of tacit knowledge are big economic organizations, that possess the appropriate research and development potential, especially in the domains of finance, technology and corporation links.

This phenomenon also appears in the sphere of agribusiness. This occurs not only in the traditional agricultural markets, but also in emerging markets *e.g.* energy resources. Factories that process biomass not only build networks of suppliers, but also organize planting, *e.g.* BOT Power Station Opole S.A. intends to provide farmers with willow saplings for energy production and provides them with specialist consultation on farming methods, even though some farmer organizations already exist for producers of this plant.

In the case of the European Union, due to the new CAP priorities, the integration of farms described above will not be sufficient. The awareness

of this fact is higher in countries where rural areas have already lost their traditional character to a considerable degree. Also, a wider range of research has been undertaken in these countries to develop socio-engineering concepts for constructing social networks in rural areas. Among these concepts, the theory of actor networks is becoming more and more popular [Murdoch, 2000]. According to this theory, the possibilities for social action depend on material resources. Such action cannot be realised and relationships cannot become permanent in time and space when only human resources are used, as their interactions are too often unpredictable. Building a network depends above all on the abilities of actors to manage „mediation factors", such as: traits of the local environment and culture identified and described by means of written texts, new technologies, materials and financial resources. The possibilities for long term action depend much more on the mobilisation of these resources than on gaining new members of the network. Such an approach is especially important when accomplishing various programmes for the development of rural areas *i.e.* agricultural-environmental, or tending the landscape. The accomplishment of such programmes requires efficient management within the framework of heterogeneous socio-engineering, which is expressed through interaction between individuals and other factors (*i.e.* animals, machines, technology). This theory accepts a rule of general symmetry that requires natural, environmental and social factors to be treated as one whole. The power and influence of natural and physical factors should be recognized and not left hidden [Burgess et al., 2000].

Social networks, set up as networks of actors, constitute an efficient basis for developing new agricultural functions and the skills to manage these functions. Moreover, research on the creation of networks within various programmes, such as agricultural-environmental, or village renewal programmes, may facilitate the management of local economic systems. Hence, this is a new area of interest for economics and the sociology of rural areas.

In the Polish literature, it is increasingly often stated that in the near future the economic transformation of rural areas will depend on the rate of development and the quality of social networks in villages. According to Adamowicz [2005], networks of dispersed farms, households and other rural institutions together with scientific centres, technology parks, food processing factories, consulting centres, will become more and more important. Local production systems – trade and functional networks – will emerge from such cooperation.

6. Conclusion

Classical economic theory has never been fully applicable to agriculture. Therefore, no political attempts to transform farms into agricultural firms

have brought satisfactory results. The low level of profitability, or even permanent income inefficiency, and resulting lack of financial resources has resulted in the fact that the market cannot be the only instrument for developing management skills. However, a group of clearly commercial farms began to appear during the transformation thanks to market processes. In some regions (including the Opole province) there was an even faster rate of development. This resulted from appropriate decisions by farm managers on the level and type of production, as well as the allocation of resources. In the Opole province, farms of varying types are increasingly well matched to their soil and environmental conditions, as well as their labour resources.

The CAP reforms realized the major goal of separating the level of subsidies from the value of production. However, this has lead to increased exposure of participants in agricultural markets to price risk and the need for risk management. The knowledge of modern derivative instruments should be transferred to farmers. However, this knowledge will be more accessible to groups of agricultural producers than to individual farmers.

Making available the information on the market stored in the Integrated Computer System of Management and Control will not overcome the asymmetry of information in this market, due to the low level of farm computerization. Also, farmers do not possess the ability to transform this information into the necessary knowledge.

Distribution centres and food processing companies should play a major role in improving management skills. However, such activities will result in the further intensification of farming. Among atypical markets, markets for renewable energy sources and organic food are developing the most rapidly. In these cases, apart from integrator companies, other institutional factors are important, such as: legal norms, certification procedures, new technologies, materials, making scientific research available, financial support granted by financial agencies to applicants.

Rural land which is no longer used for agricultural purposes will still require care, or other agricultural-environmental services. This is due to the fact that these resources form part of the wealth of communities. Networks of actors will form around these resources, in order to manage them. The members of these networks will acquire the ability to manage new agricultural functions. The ambivalence of farmers, and also of the inhabitants of the Opole province, to agricultural-environmental programmes does not result from their low level of awareness of environmental issues, as is sometimes claimed. It is not the farmers but scientific centers that should indicate the resources that are to be protected in a given region. Farmers should be equipped with the instruments necessary to manage these resources.

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