CHOSEN ASPECTS OF SUSTAINABLE DEVELOPMENT IN POLAND WITH PARTICULAR FOCUS ON AGRICULTURE

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Sustainable development results from assuming the principle of integrated order seen as consistent and simultaneous perception of the economic, social and natural order. Agriculture is the sector of the economy in which the most favourable conditions for implementation of the principles of sustainable development exist because, on one hand, the resources of natural environment are used there, and on the other, the farmers, through their activities shape that environment. The aim of the paper is identification of the most important aspects in the area of sustainable development with particular focus on agriculture from the perspective of the subject literature. On the base of critical analysis of literature, the issues related to sustainable development of agriculture (its genesis, concept and development) were systematised. The important position of agriculture in shaping the sustainable development in Poland was presented. Both descriptive and graphic forms of presentation of the subject have been employed.

Key words: agriculture, sustainable development, Integrated Farming System, environment management.

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Introduction

Processes of development are frequently identified with the notion of “globalisation”, which is a permanent phenomenon influencing almost everyone indifferent of the nationality, race, religion, culture or wealth (Piątek, 2006). Globalisation, as every acceleration of economic process internationalisation, accelerates economic growth and, as a consequence, the demand for functions fulfilled in that process by the environment. If the definition of globalisation understood according to the subjective approach is situated within a free market in which profit rate maximisation is the major criterion and free competition meaning competition between rivals is the mechanism of its functioning then it seems obvious that environment protection is not a component of the globalisation process. On the other hand, globalisation also means rationalisation of the economic process, i.e. decreasing the outlays (also the environmental ones) to achieve the defined results. In that sense globalisation may be beneficial for the environment (Budnikowski, 2003).

The idea of sustainable development appeared during the late 1960s and since then its theoretical concept has been developing. On its base the programmes of practical actions are also developed. Initially the need for considering just two dimensions: economic and ecological between which correlation and dependence occurred

1The reader will find the extensive review of the theoretical discussion on the subject in the following works: Pezzey, 1989; Barbier, Markandya 1990; Daly, 1996; Poskrobko, 1997, Fiedor (ed.), 2002.
was promoted. Initially the social dimension was treated marginally. It was found out, however, that the social dimension might not be dismissed because it links to the improvement of human living, access to infrastructure and efficient operation of economic systems. The three-dimensional model of sustainable development is widely spread in literature. Currently the institutional dimension is added frequently while sometimes the spatial, moral and awareness are treated as complementary dimensions (Adamowicz, 2006).

*Sustainable development* in the Polish language is translated in different ways. In most cases it is just sustainable development while some authors expand it to “sustainable and lasting development”, which seems the right approach (Wilkin, 2009).

Local authorities, in managing the economy in rural areas, should consider agriculture as one of the areas of that economy and create conditions to take action for non-agricultural economic functions and creating new jobs outside agriculture as well as provide opportunity for the agricultural community to abandon agriculture as the main source of support (Adamowicz, 2009). Creating jobs in the surrounding of agriculture is important here.

Sustainable development of agriculture as well as rural areas represents an integral component of the strategy of such development for the entire economy and country enacted in the Constitution of the Republic of Poland and the “Environment protection law”, as well as the government “Long-term strategy – Poland 2025”. That last document is the base for and reference to the National Development Plan of Poland, which is the necessary requirement in planning socio-economic and regional development in the European Union. It is also the document required for obtaining aid funds from the European Funds, including funds for rural and agriculture development within the Operational Programmes, Rural Development Programme (RDP) and Agricultural-Environmental Programme (Siekierski, 2010). Implementation of sustainable development at local level depends on the policy at the level of the political unit, which the European Union is, and of which Poland is a member as of 2004, at the level of the country and level of the region.

**The aim** of the research was identification of the most important aspects in the area of sustainable development with particular focus on agriculture from the perspective of the subject literature.

**Methodology of investigation.** This work is monographic in its character. On the base of critical analysis of literature, the issues related to sustainable development of agriculture (its genesis, concept and development) were systematised. Both descriptive and graphic forms of presentation of the subject have been employed.

**Results**

Environment management, the nature of which is to consider the natural environment as an integral part of all areas of enterprise activities and also means aiming at minimising the negative influence on the environment represents a component of sustainable development. In the enterprise we deal with management if the protective processes are integrated with production processes and environment protection management.
is integrated with managing the entire enterprise (Jastrzębska, 2007), which also means the agricultural enterprise.

Production at a farm takes place on the base of the natural resources of the environment encompassing the soil, water, air and landscape with its biodiversity. Degradation of the natural environment as a result of influence of a complex of negative phenomena caused by agriculture manifests through the influence on the: a) soil quality; b) water quality; c) air quality (Domagała-Świątkiewicz).

Balance between the economic, social and natural systems is particularly important in those areas of human activity that have direct contact with the nature while the form and results of that activity are dependent directly on the nature. Agriculture is such an activity (Adamowicz, 2000; Czerewko, 2003).

At agricultural farms (enterprises), as a consequence, application of the clean production strategy as one of the environment management strategy would be welcome. It is defined as continual application of an integrated, preventive strategy in relation to processes, products and services aiming at obtaining environmental, economic and social benefits as well as benefits related to health and safety (Broniewicz et al., 2005). The strategy of clean production, in addition to the preventive approach, is also characterised by systematic and comprehensive approach.

The strategy of clean production implements the principles of sustainable development and, first of all, the principle of prevention. Preventing production of pollutions at source, i.e. preference for solutions that do not allow creating negative effects in the environment of the enterprise related to its operations is the supreme goal of it (Broniewicz et al., 2009).

In agricultural enterprises (farms) that idea has not yet found formal application but it seems the direction for the future in ecologisation of agriculture. Both the economic groups (the European Union within the frameworks of the Common Agricultural Policy) and the consumers pose increasing demands concerning environment protection for the farmers.

Sustainable agriculture development satisfying both the demands formulated by ecology (eco-development) and producing sufficient volumes of food containing no anthropogenous toxic substances could serve the goals of agricultural environment protection and preserving its biodiversity (Gradziuk, 2000).

As highlighted by Runowski (2000), the definition of sustainable agriculture is not straightforward. Sometimes it is limited to just the production-economic and natural aspects of agriculture while in another case it extends beyond that field and encompasses diversified relations of agriculture with widely understood environment. Agriculture defined as sustainable or durable is focused in the use of land resources that does not destroy the natural sources but allows satisfying the needs of consecutive generations of producers and consumers.

According to S. Zawisza and A. Kochanowska (2003) the definition of the notion of “sustainable agriculture” was expressed to the fullest by Woś. It consists of five points: 1) Natural resources should be used in the way that does not disturb self-renovation of them. 2) Food production increase may occur only through resources productivity increase that is by introduction of technologies protecting resources and retaining their high quality for the consecutive generations – ecological farming. 3)
Agriculture shows little susceptibility to fluctuations and shocks. 4) Agricultural systems assume full symbiosis of production and environmental objectives. 5) Natural resources management allows satisfying the needs while maintaining high quality of natural environment protecting its resources.

Sustainable agriculture development offers an opportunity to stop environment degradation. That model of agriculture requires implementing programmes and solutions of comprehensive character extending beyond the field of agricultural production and referring to rural areas. As a consequence, only the agriculture that performs various tasks will have the future. Production tasks are one group of those tasks. They concern production of sufficient volumes of high value food satisfying ecological criteria (Kisiel, 2003).

Protection of the nature and health also deserve attention. Appropriate development of rural landscapes and care for them, recovery and storage of water resources as well as creating attractive locations for rest, recreation, nutrition and treatment are the tasks of agriculture in that field.

The new model of environmentally sustainable agriculture must also perform social tasks aimed at strengthening the ties within the local community and support to development of the regions. This involves creating jobs, development of good living conditions in rural areas coupled with improving the living standards of the population (Kisiel, 2001).

Cultural tasks aiming at nurturing old and creating new values of culture represent another group. Poland is a country with great traditions and diversity of folk culture. Those values should be retained and developed on the base of the potential of local communities and state aid (Marks-Bielska, 2004).

In Poland, despite attempts at embarking on the path of industrial development the critical thresholds have not been exceeded (Woś, 2004). In view of the above we have an exceptional in the European scale opportunity to become an example of modern thinking and farming starting from transforming the present agriculture in the direction of sustainable development. If we want to draw conclusions from historical experiences of other countries, we should take into account the three following elements that should be interlinked: 1) Adjustment of the volume and production growth rate to the end demand. 2) Maintaining the satisfying level of farmer population incomes, which will stop excessive migration of rural population and decrease the pressure in the labour market (its demand for labour is and will remain limited). 3) Stopping degradation of the natural environment, which will improve the biological quality of food produced and at the same time make rural areas an attractive and appreciated place for living for an increasing number of families; environmental values understood in that way will have their high price, which will create an additional stream of incomes flowing into the rural areas (Woś, 2004).

Currently, we can point out three systems of agricultural production functioning in the European agriculture that match the criterion of “environment friendly” to the fullest extent: 1) Integrated production system, promoted as the farming system dominating in the future that will replace the present day conventional, intensive production systems. 2) Precise agriculture that may represent a more technology satu-
rated version of integrated production in a large-area farm. 3) Ecological agriculture (Majewski, 2005).

The Integrated Farming System, the key to which is an attempt at reconciliation of seemingly contradictory economic (assumption of high farming effectiveness), environmental and social goals represents one of the concepts of sustainable agriculture development. The Integrated Farming System is open and dynamic in its nature and is subject to systematic processes of improvement and adjustment to changing farming conditions (Majewski, 1997). Modern conventional agriculture and ecological agriculture as well as two fundamental directions of improvement: management and implementation of developments form the bases for the integrated system. The concept of Integrated Farming System emerged in highly developed countries possessing modern, intensive agriculture. The integrated system can be assumed as the direction of development that will contribute to increase of Polish agriculture competitiveness.

The economic calculus must consider not only the costs of production resources consumed but also other social costs (Runowski, 2000). Assuming maximisation of profit or revenues for the target, the producers aim at applying the level of production intensity allowing achievement of the largest economic effect. That point occurs with appearance of the situation where the value of the last unit of outlay equals the value of production increase obtained thanks to its application. That situation is illustrated in Figure 1 (Runowski, 2007 citing Reisch, Zeddies, 1995) showing that with the increase of production intensity the profit marginal (revenue) decreases to the point in which it equals to zero (point N₃) while the volume of the total mass of profit (the field marked with vertical lines between the marginal profit curve and the X-axis).

![Fig. 1. The formation of the social and private-economic optimum in the process of intensification agricultural production](image)

Simultaneously, as of point N₁ specific costs of social nature appear. They may represent an increase in environment pollution, product quality, animal health or welfare deterioration. The intersection of the final effect (profit, revenue) curve with the social costs curve determines the social optimum. It is represented by point N₂. As a
consequence, from the social perspective (considering also the environmental and ethical targets) point N₂ defines the optimal level of production intensity. On the other hand, from the perspective of the individual producer, the optimal production intensity level is determined by point N₃ as it is in the economic interest of the producer to achieve the maximum mass of profit. Narrowing the distance between the points determining optimal intensity levels from the social and private-economic perspective may be achieved as a result of diversified actions and application of instruments of legal, economic or environmental nature or reference to the principles of ethics (Runowski, 2007).

The concept of sustainable agriculture fits the concept of sustainable development (fig. 2). This type of agriculture may allow achievement of all goals – economic, social and environmental (including maintaining the appropriate environment quality for the future generations). The positive or negative influence of globalisation on the development of sustainable agriculture will be determined, to a significant extent, by social and political factors (including the solutions within the frameworks of the national agricultural policy and Common Agricultural Policy). Between the presented goals and conditions correlations exist and interactions take place.

Fig. 2. Conditions and aims of sustainable development in focus on sustainable agriculture
The concept described meets the issues of environmental risks and public concerns, particularly in highly developed countries. Numerous facts indicate that this will be the concept influencing strongly the global policy and economy in the longer time perspective (Klepacki, 2000). Sustainable development of agriculture must result mainly from a change in the treatment of the nature. Its aim is to transform outdated exploitation attitude into the collaborative attitude involving integrating approach according to which the aim is to mitigate the disparities between agriculture development and the environment (Kisiel, 2003; 2007).

Van den Brand (2002) considered managing the rural sector as an integrated and environmentally as well as socially sustainable system the challenge of the future. The quoted author believes that combination of food production with managing the landscape and environment, including also the resources of water extremely tight in Poland, will expand the economic bases of farms increasing their durability and resistance to influence of negative external factors. According to that concept, farmers would become managers of a significant part of the nature and landscape resources and next to agricultural production they would provide the „green services” (Woźniak, 2003) (inter alia: production of biomass for generation of renewable energy, care for natural environment and biodiversity protection, enrichment of landscape values, managing the resources of greenery, creating conditions for wild plants and animals, protection of animal welfare).

**Conclusion**

Sustainable development represents one of the concepts of the modern theory of global economy development and it represents the response to the necessity of preventing natural environment degradation. Sustainable development is a result in adopting the principle of integrated order, perceived as a coherent and simultaneous perception of the economic, social and natural order. Agriculture is the sector of the economy in which the most favourable conditions for implementation of the principles of sustainable development exist because, on one hand, the resources of natural environment are used there, and on the other, the farmers, through their activities shape that environment.

The Integrated Farming System, the key to which is an attempt at reconciliation of seemingly contradictory economic (assumption of high farming effectiveness), environmental and social goals represents one of the concepts of sustainable agriculture development.

Sustainable development of agriculture as well as rural areas represents an integral component of the strategy of such development for the entire economy and country enacted in the strategy documents (the Constitution of the Republic of Poland and the “Environment protection law”, as well as the government “Long-term strategy – Poland 2025”).

Poland possesses favourable conditions for development of the modern agriculture model. The real opportunity exists to avoid the path of excessive food production intensification. Financing natural character of farming and methods of production consistent with the assumptions of sustainable development, which would probably be more beneficial in long-term perspective for the individual regions and the entire
country seems to be more rational. It should be remembered, however, that in taking economic decisions not only the economic but also environmental and social criteria should be considered.

**Literature**


DARNAUS VYSTYMOSI ĮGYVENDINIMO PASIRINKIMO ASPEKTAI LENKIJOSE ŽEMĖS ŪKYJE

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Santrauka

Žemės ūkis yra viena iš sričių, kurios dėka galima įgyvendinti darnaus vystymosi strategiją. Straipsnio tikslas – identifikuoti svarbiausius darnaus vystymosi įgyvendinimo aspektus, ypatinę dėmesį skiriant žemės ūkio pletėjį. Tyrimo tikslas pasiektas panaudojant kritinės analizės ir sisteminimo metodus.

Raktiniai žodžiai: žemės ūkis, darnaus vystymasis, integruoto ūkininkavimo sistema, aplinkos vadyba.
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