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THE IMPORTANCE OF ECONOMIC INSTRUMENTS IN THE PROCESS OF IMPLEMENTING ECOLOGICAL INVESTMENTS IN AGRIBUSINESS COMPANIES

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Abstract. The aim of this study is to show the importance of economic instruments in the process of implementing ecological investments in agribusiness companies. An analysis was conducted, based on opinion poll research, using the technique of a questionnaire among 236 intentionally selected agribusiness enterprises from Kujawsko-pomorskie and Pomorskie Provinces of Poland. The research assumes that economic instruments perform one of the fundamental functions in the process of implementing ecological investments in agribusiness enterprises. Economic activity is often in conflict with the needs of the natural environment. The organization of modern production processes in agribusiness enterprises must be directed towards ecology. This arises from the necessity to protect the natural environment and to observe the principles of sustainable development. Economic instruments play an important role in inspiring agribusiness entities to implement ecological investments and modernize existing production and ecological solutions. The research conducted has shown that it is financial incentives (subsidies, concessions, discounts etc.) that are the most popular among the surveyed agribusiness enterprises.

Key words: agribusiness, ecological investments, economic instrument, sustainable development.
JEL code: O13, Q5, Q56, R11

Introduction

Man's intemperate pursuit of improvement in standards of living, especially in the sphere of production and service, has led to a significant deterioration of the quality of the natural environment. There was a rapid depletion of natural resources, including primary energy carriers, progressive degradation of the natural environment, including the irreversible decline of biodiversity and the ability of ecosystems to perform their functions, internationalization of the field of the natural environment, along with the emergence of global problems relevant to the maintenance of human civilization (Michalowski A., 2013).

The lack of harmony between economic and social development leads to a disturbance in the natural balance, which is why it has become necessary to take urgent remedial measures and reflect on the directions of contemporary transformations and the factors stimulating sustainable development, also in the field of agribusiness. Management in contemporary agribusiness enterprises must take into account those aspects of sustainable development which are related to environmental protection.

Sustainable development is defined as socio-economic development in which occurs the process of integration of political, economic and social activities, while preserving the natural balance and continuity of basic natural processes, in order to guarantee the possibility of satisfying the basic needs of individual communities or citizens of both the modern generation and future generations (Environmental Protection Law, 2001). A. Pawlowski (2009) proposes to expand the determinants of sustainable development by such areas as:

- ethical considerations (the question of man's responsibility for nature),
- the ecological aspect (protection of the natural environment and that processed by man, spatial planning is also included in this aspect),
- social consideration (not only the natural environment, but also the social environment can be degraded),
- political aspect (formulation of sustainable development strategy, its implementation and control),

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- technical aspect (new technologies, saving raw materials),
- economic aspect (taxes, subsidies and other economic instruments),
- legal aspect (environmental law).

With the emergence of the broad idea of sustainable development, there was a need for a different approach to the very essence of development, in the ecological (environmental), social and economic spheres. This reorientation, among others, assumes: compliance with the environment or friendliness towards the environment, the necessity to preserve resources, contribution to lowering pollution levels, promotion of the extension of the catalogue of pro-ecological behaviours, reducing the amount and toxicity of waste, promotion the development of modern techniques and new technologies in the field of environmental protection and creation of growth and pro-innovative activities (Sieminski J. L., 2008).

It should be noted that the natural environment is involved in the functions of the enterprise, directly by providing natural resources for the production cycle, as well as a place that must assimilate by-products of manufacture and consumption as well as products whose life cycle is completed.

The aim of the research was to show the importance of economic instruments in the process of implementing ecological investments in agribusiness enterprises. The research was conducted in 2016 among 236 intentionally selected agribusiness enterprises from Kujawsko-pomorskie and Pomorskie Provinces of Poland. The research used a diagnostic survey in which a questionnaire technique was applied. The questionnaire was addressed to the owners or those responsible for environmental protection in the company who agreed to the survey. The paper assumes that economic instruments play an important role in inspiring agribusiness companies to implement ecological investments and modernize their existing production and ecological solutions. The Tschuprov's T association measure was used to test the significance and strength of the correlation. Its significance was examined on the basis of the ch^2 test. The level of significance was assumed at the alpha level of 0.05.

Environmental policy in agribusiness companies

Enterprises are obliged to comply with regulations concerning protection of the natural environment resulting from an environmental policy. This policy is defined as "conscious and intentional activity of the state (or a group of states) based on a rational use of resources and riches of the natural environment, its adequate protection and efficient shaping, on the basis of theoretical and practical knowledge acquired by humanity" (Fiedor B., Graczyk A., 2015).

Environmental protection ought to include undertaking or neglecting activities that enable conservation or restoration of natural balance, particularly through rational shaping of the environment and management of its resources in accordance with the principle of sustainable development as well as prevention of pollution (Lipinski A., 2005).

The issue of environmental protection is one of the most important challenges of our time, which affects every human being to a greater or lesser extent. If the human population should effectively overcome environmental threats and wants to survive, it is necessary and even desirable to shape the right attitude towards environmental protection, and, all the more, to pursue such a policy.

In Poland, these regulations result from several normative acts, primarily from the Environmental Protection Law (2001). These are such aspects as:

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- reasonable management of environmental resources;
- counterbalancing the negative impact on the environment;
- obtaining any permits required by law and compliance with the established standards for the use of the environment;
- application of technologies well adapted to the requirements of environmental protection;
- ensuring ecological safety of products;
- establishing claims (being the postulate of a competent security authority) for damages that may arise in the environment;
- preparing reports on the impact of a particular undertaking on the environment;
- submission of an ecological review at the request of an appropriate administrative authority;
- paying fees for using the environment (Burchard-Dziubinska M., 2011).

In conclusion, one of the main assumptions of the directions of environmental policy has become a departure from the traditional, narrowly understood environmental protection for sustainable development, i.e. subordination of the needs and aspirations of the society and the state to the opportunities that we have at our disposal (Alberski R., Lisicka H. & Sommer J., 2002). A similar point of view is presented by B. Hopwood, M. Mellor, G. Brien (2005) and W. Sobczyk (2014).

Activities for environmental protection cover the entirety of instruments used to implement it through legal, economic and educational measures.

Selected issues of investment outlays in agribusiness enterprises

The restraint of the progressing degradation of the environment and the restoration of its degraded components requires its users to apply various protection methods. In this respect, the most important is the pursuit of appropriate pro-ecological investments. According to I. Wielewska (2015), the necessary condition for an investment to be considered ecological is its management towards environmental protection.

Investments are considered to be expenditures that are incurred in order to create new or expand existing estate, which will result in an increased stream of goods and services in the future. They can be described as increasing or maintaining the current level of the capital stock in the form of machinery, equipment, buildings and technical infrastructure or the investment of economic funds in an economic enterprise aimed at multiplying the owner's estate by giving the owner a certain income (Burzynska D., 2012).

Subject literature distinguishes the following types of investments undertaken in enterprises:

- investments being accumulated resources and economic savings (income or products) intended for further development of production or services,
- investments constituting economic outlays that are incurred for reproduction of various resources in the enterprise,
- investments constituting investment and multiplication of capital by conducting transactions on the capital market or the real estate market, etc.,
- investments as creation, recreation and increase of assets (including fixed assets) in the enterprise (Towarnicka H., 2004).

The contemporary approach to investment indicates that the pursuit of investment results not only in the increase in assets, but also other resources or other types of benefits (Burzynska D., 2012).

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The implementation of pro-ecological investments is, therefore, connected not only with the search for appropriate technological solutions, but also with the involvement of significant financial resources. In practice, the most common situation occurs when technical problems are solved but capital is lacking. The concept of financing protective undertakings includes financing current expenditures on the functioning of devices and environmental protection services as well as financing pro-ecological investments. Therefore, there is a distinction between current costs and investment expenditures for environmental protection are distinguished.

Investment expenditures "are borne on an ongoing basis to ensure the growth of fixed assets in the future" (Lojewski S., 1997).

On the other hand, investment expenditures on environmental protection "cover financing of methods, technologies, processes, equipment or parts thereof, the primary objective of which is reduction, monitoring, collection, disposal, prevention or elimination of pollution or environmental losses resulting from the investment activity of the company" (Broniewicz E., Poskrobko B., 2003).

In Poland in 2016, total expenditure on environmental protection investments amounted to PLN 6.517.035.4 thousand. In turn, the expenditures of enterprises in this respect amounted to PLN 465.813.8 thousand. This accounted for 71.5 % of the total outlays. The highest expenditures were incurred by enterprises in Śląskie Province, where they amounted to PLN 906355.1 thousand and Mazowieckie – 761.752.8 thousand. On the other hand, the lowest expenditures on pro-ecological investments were incurred in Warmińsko-mazurskie Province and amounted to PLN 51.256.4 thousand. In Kujawsko-pomorskie Province, the total expenditure on environmental protection investments was by 84.346.7 lower than in Pomorskie Province and amounted to PLN 317.955.2 thousand. On the other hand, the expenditures of enterprises were at the level of PLN 259.369 thousand in Kujawsko-pomorskie Province and were by PLN 78.851.1 thousand lower than in Pomorskie Province (Ochrona..., 2017).

Financial instruments in the process of implementing ecological investments

Financing can take place both through the budget system and the financial system of enterprises and the banking system, as well as through other specialized institutions (Sosnowska A., 2003).

The forms of financing of ecological investments currently available on the market can be divided (Table 1) into financial liabilities (credits, loans, bonds, leasing), equity (stocks and shares in companies), etc. These are more widely mentioned by J. Lunarski (2002) who argues that in order to finance various pro-ecological undertakings, financial aid (subsidies) is granted to enterprises, institutions and natural persons.

The following forms of financial aid are distinguished:

- subsidies that are non-returnable, one-time financial support;
- preferred loans (with an interest rate below the market interest rate, the subsidy is a difference in interest rate);
- tax breaks;
- proper subsidies, known as fixed (within a specified time) support for specific pro-protection activities (Wyrebek H., 2010).

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Table 1

Methods of financing ecological investments depending on the adopted criterion

Criterion	Division	Examples of financing methods
Ownership	Public	Bailout
	Private	Credits, loans, venture capital
Involvement	Direct	Credit, surety, equity
	Indirect	Entrepreneurship Incubators, technology parks
Sources of financing	Own capital	Shares of owners, reinvested profits, venture capital
	Foreign capital	Credit, loan, commercial vouchers, bonds, factoring, forfaiting, franchises

Source: Sosnowska 2003, p. 84

Loans come from financial resources accumulated by banks, and the funds provide subsidies up to the level of the interest rate, thus lowering the cost of the loan for those undertaking ecological investments. Preferential crediting of investments that protect the environment can contribute, among others, to increasing the efficiency of sewage treatment plants and increasing the capacity of landfills.

Also, leasing institutions offer a form of financing ecological investments through leasing, which means putting an item into the possession of a user, who uses this item for a certain period against a payment; the item is (usually) subject to return. This form is one of the fastest growing forms of financing ecological investments in Poland. Several factors contribute to this process. First of all, thanks to leasing, one has an opportunity to easily access the latest technology without having to engage one's own funds, and thanks to the use of external capital support, the investor's financial liquidity increases. The savings on procedural actions related to the selection and purchase of particular equipment are also significant as well as the terms of the leasing contract, which are more lenient than those in the event of applying for a loan (Lipinski A., 2005).

The system of financing environmental protection in Poland consists mainly of extra-budgetary special-purpose funds, Bank Ochrony Środowiska (Bank of Environmental Protection), the Ekofundusz foundation, other ecological foundations administering mainly foreign funds, the central budget as well as municipal budgets and own funds of enterprises (Gorka K., 1998). The organizational structure of environmental protection funds (so-called *special-purpose funds*) consists of:

- National Fund for Environmental Protection and Water Management,
- provincial funds for environmental protection and water management,
- county *(powiat)* funds for environmental protection and water management,
- community or borough funds for environmental protection and water management (Lipinski, 2005).

The National Fund and provincial funds have a legal personality, which results from the Public Finance Act (2013) and conducts independent financial management to cover expenditures on resources and to finance statutory objectives. However, county funds are deprived of the legal personality. An important role in the environmental protection financing system is played by off-budget environmental protection funds. Their goal is to collect funds for financing environmental protection and water management in accordance with the principle of sustainable development (Lipinski A., 2005).

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From the moment of Poland's accession to the European Union, it has been possible to use the aid funds (at first they were pre-accession funds, currently they are European Union funds in particular programming periods).

Research results and discussion

To implement the assumptions of an ecological policy, an appropriate set of instruments is used, thanks to which it is possible to influence the behaviour and decisions of economic entities. The primary purpose of their application is to encourage business entities to make decisions consistent with the principle of sustainable development (Szadziewska 2011). Their role is presented in Table 2.

Table 2

The role of economic instruments

Role	Characteristics
Stimulative	consisting in encouraging economic entities to economically use the values and resources of the natural environment; they motivate to use such production techniques and technologies that reduce the pressure on the natural environment, and thus reduce the strain in this respect
Redistributive (transfer)	consisting in collecting and then transferring the collected funds for financing projects aimed at protecting the natural environment
Informational	consisting in the transmission of signals about significant environmental threats and the need for appropriate behaviours of business entities

Source: Szadziewska 2011, pp. 384-385

Environmental protection instruments can be called economic if they influence the estimates of benefits and costs of alternative business ventures undertaken by specific entities and affect their decisions and behaviour in such a way that the selected variants will lead to more desirable environmental effects. These are measures to exert influence on business entities in order to ensure the application of the principles of sustainable development in current and future production and service activities. The distinguishing feature of economic instruments is that they affect the financial results of enterprises through imposing financial liabilities on polluters, or using specific financial incentives in the case of protective enterprises (Podolak M., 2004).

T. Poskrobko (2007) proposes a division of economic instruments in environmental protection into:

- public levy instruments,
- instruments based on market transactions,
- administrative fines,
- ecological financial security,
- financial incentives.

The respondents were asked what they thought the meaning of economic instruments in the process of implementing ecological investments in agribusiness enterprises was (Table 3).

Public levy instruments are tools in the form of a price that companies must pay for using assets and resources of the natural environment. All kinds of taxes and fees were not particularly appreciated by the surveyed companies. 16.5 % of respondents considered taxes and fees as definitely necessary, and 30.1 % as necessary. The research showed that the correlation between the environmental investments being implemented in enterprises and public levy instruments is statistically significant, and the strength of the relationship is very weak (Tschuprov's T = 0.155).

In turn, instruments based on market transactions (tradable emission rights) in the process of implementing ecological investments in agribusiness enterprises, the respondents (55.5 %)

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deemed rather unnecessary. The research showed that the correlation between the environmental investments being implemented in enterprises and market transaction-based instruments is statistically significant, and the strength of the relationship is weak (Tschuprov's T = 0.313).

Table 3

The meaning of economic instruments in the process of implementing ecological investments in agribusiness companies

Specification	Instruments									
	public levy instruments		based on market transactions		administrative fines		in the form of ecological financial security		financial incentives	
	N=236	%	N=236	%	N=236	%	N=236	%	N=236	%
Definitely necessary	39	16.5	15	6.4	92	39.0	56	23.7	134	56.8
Rather necessary	71	30.1	34	14.4	112	47.5	47	19.9	67	28.4
Unnecessary	56	23.7	131	55.5	7	3.0	99	42.0	15	6.4
Difficult to say	70	29.7	56	23.7	25	10.6	34	14.4	20	8.4

Source: author's own study based on research conducted

Ecological fines and penalties are sanctions for destroying elements of the natural environment or for exceeding admissible limits (violation of the conditions of using the environment). Their existence was deemed definitely necessary 39 % of the respondents, and 47.5 % as rather necessary. The research showed that the correlation between the environmental investments being implemented in enterprises and instruments of administrative financial penalties is statistically significant, and the strength of the relationship is weak (Tschuprov's T = 0.314).

The functioning of instruments in the form of ecological financial security in the process of implementing ecological investments in agribusiness enterprises was considered necessary by slightly over 44 % of the respondents. The research showed that the correlation between the environmental investments being implemented in enterprises and instruments of ecological financial security is statistically significant, and the strength of the relationship is very weak (Tschuprov's T = 0.176).

The financial incentives are the most important in the process of implementing ecological investments in agribusiness enterprises. They take the form of subsidies, concessions and discounts, by means of which business entities tend to implement various types of pro-ecological investments, thanks to which their negative environmental impact will be reduced. The research showed that the correlation between the environmental investments being implemented in enterprises and instruments of financial incentive is statistically significant, and the strength of the relationship is weak (Tschuprov's T = 0.304).

Conclusion

Economic instruments have a significant impact on the effective management of the natural resources of the environment. Through the instruments, the state has the ability to influence or enforce appropriate behaviour of economic entities for the benefit of the environment.

The following conclusions emerge from the analysis of literature and research on the significance of economic instruments in the process of implementing ecological investments in agribusiness enterprises:

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1) The use of economic instruments requires agribusiness enterprises to create complementary production infrastructure and pro-ecological activities in accordance with the principles of sustainable development, which should result in benefits in the field of environmental protection.

2) Environmental benefits are an important, but not the most important goal of enterprises' operations. It is the economic benefits that count in the first place.

3) Among the surveyed agribusiness enterprises, financial incentives (subsidies, concessions, discounts etc.) enjoy the greatest recognition among financial instruments.

4) The correlation relationship between the ecological investments being introduced by enterprises, and the ecological instruments used is statistically significant, and the strength of the relationship is weak or very weak.

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