ISSN 1644-0757
www.acta.media.pl

ACTA *Acta Sci. Pol. Oeconomia 14 (3) 2015, 157–166*

AREAS OF BUSINESS ACTIVITY IN THE DEVELOPMENT OF ENVIRONMENTALLY VALUABLE ECO-PRODUCTS – AS EXEMPLIFIED BY THE LUBLIN VOIVODESHIP

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Abstract. The purpose of this study is to classify the activity of entrepreneurs in the field of the integration of environmental concerns into the various phases of the life cycle of a product/service and the evaluation of the potential of the selected elements of the organizations important from the perspective of expanding this activity. This paper includes an assessment of the significance of some selected factors in the implementation of business support solutions in the adoption of pro-environmental ideas, and outlines the importance of the location as regards a natural, valuable area for the formation of eco-products. The study revealed no formal basis for the implementation of an eco-product policy and the pro-ecology motivation of half of the entities, resulting mainly from the need for compliance with environmental regulations. Activity in the shaping of eco-products requires a strengthening of the case study group and a more comprehensive approach. Its limitations are financial and information barriers. Most respondents see opportunities for creating organic products as a result of their location.

Key words: product life-cycle, ecological marketing, Lublin Voivodeship

INTRODUCTION

Nowadays, there are more and more market opportunities for companies and products contributing to environmental marketing widely understood as planning, coordination, implementation and control activities undertaken by companies on the markets, taking into account environmental issues [Sommer and Brauweiler 2013]. Eco-marketing is part of the new marketing approaches which do not just refocus, adjust or enhance the existing marketing thinking and practice, but seek to challenge those approaches and provide a substantially different perspective. It belongs to the group of approaches which seek to reorient marketing strategies based on the ecological and social realities of the wider

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marketing environment [Mishra and Sharma 2012]. Instruments of the ecological marketing-mix are to implement and push through proactive, pro-ecological marketing strategies in the operating range. Their effectiveness requires a comprehensive approach based on environmental management and the support of other features of companies [Rheinländer 2005].

Eco-products are the basic tool of environmental marketing, they are a benchmark for other tools. The concept of eco-products spans various approaches to determining environmentally friendly products. In the narrower sense, organic products are those that meet the requirements of the environment through the processing of raw materials into the finished product, for example organic food. In the broader sense, authors write about how ecological products, which include those products in which substances harmful to health and the environment have been restricted, and new technologies were used in their production, thereby protecting the environment [Kokoszka 2008].

According to one of the most universal definitions of eco-products by K. Peattie, as was adopted as a starting point for this study, it is such a product, the production and use of which, as well as the disposal of waste are, in terms of environmental and social requirements, significantly improved, as compared with conventional or competing products [Zaremba-Warnke 2009]. It should be emphasized that environmental requirements should be taken into account in the case of eco-products, comprehensively in all stages of its life-cycle, i.e. in the design phase, the acquisition of the necessary raw materials, production, distribution, use by the consumer and the postconsumer phase [Kokoszka 2008].

The objectives of ecological product policy include: minimizing environmental pollution by the product and its packaging as a result of the improvement in the environmental impact of a product throughout the supply chain, as well as in all activities related to the creation of added value in the enterprise [Sommer and Brauweiler 2013]. In the case of services, ecological characteristics relate to the design and delivery of services, which usually coincides with the phase of use by the consumer. However, attention should be paid to the fact that the products supporting the process of providing the service must also meet the requirements in all phases of the life-cycle [Zaremba-Warnke 2009].

Among the many established criteria for evaluating the environmental performance of the products indicated in the literature, the 12 universally accepted include [Lye et al. 2001]:

- minimize the use of materials that significantly impact on the environment;
- minimize the diversity of materials used;
- ease of manufacture;
- minimize the use of manufacturing processes that impact significantly on the environment;
- ease of assembly;
- minimize the use of modes of transportation that impact significantly on the environment;
- high product reliability;
- ease of servicing (including disassembly and re-assembly);
- minimize the use of resources that impact significantly on the environment;
- ease of disassembly;

- ease of recyclability;
- low environmental impact of the decommissioned product.

Activities in the areas of natural value force entrepreneurs to pay special attention to environmental issues. According to L. Białoń [2011], the ecological functioning of companies should be preferred in such areas, adhering to the principles of sustainable development, and pro-environmental projects within the business should ensure the minimizing of the negative impact on the individual components of natural valuable sites.

Sustainable development requires valuable natural areas to ensure their viability, but within the limits, the priority of which is to protect their natural resources and values. It is important to seek innovative ways to enhance the economic competitiveness of these areas, while being consistent with the principles of sustainable development, with the use of the opportunities created by the natural environment. One such tool is ecological marketing.

The purpose of this study[1] is to classify the activity of entrepreneurs in the field of integration of environmental concerns in the various phases of the life-cycle of a product/ /service and to evaluate the potential of some selected elements of the organizations, seen as important from the perspective of expanding this activity. The paper includes an assessment of the significance of the support of some factors in encouraging businesses to implement innovative solutions to environmental problems, and outlines the importance of the location of the area for the formation of a valuable natural eco-products. The issues investigated in this paper are part of the problem of environmental management and – more broadly – the theory of sustainable development.

The study included the following formulated research questions:

1. What are the actions taken by the surveyed entrepreneurs in order to mainstream environmental requirements during the life-cycle of a product/service?
2. Which internal conditions, resulting from the potential of the organization, and external, arising from the environment, are seen as factors motivating entrepreneurs into mainstreaming environmental requirements during the life cycle of a product/service?

The study hypothesized: within the group of companies studied, the highest level of activity as regards the environmental requirements during the product life cycle applies to areas that may pose a direct threat to the environment and the organization itself; expanding the scope of activities for the development of eco-products requires above all an increase in the availability of financial support, as well as a broadening of the knowledge of environmental marketing.

MATERIAL AND METHODS

The study area consisted of 30 municipalities[2] from the group with the highest environmental value in the Lublin Voivodeship, as designated by the index developed by D.

[1]The report was prepared as part of the research project 2011/01/D/HS4/03,927 entitled "Environmental conditions and factors of development of the economic functions of valuable natural areas of the Lublin province", funded by the National Science Centre.

[2]Janów Podlaski, Konstantynów, Józefów, Łukowa, Obsza, Dzwola, Janów Lubelski, Modliborzyce, Janowiec, Kazimierz Dolny, Wąwolnica, Kraśniczyn, Wilków, Dębowa Kłoda, Sosnowica, Stężyca, Lubycza Królewska, Susiec, Tarnawatka, Tomaszów Lubelski, Rossosz, Sławatycze, Urszulin, Włodawa, Adamów (zamojski), Krasnobród, Łabunie, Skierbieszów, Stary Zamość, Zwierzyniec.

Guzal-Dec in the study of the natural value of ecological rural and urban-rural areas of the Lublin Voivodeship[3]. In each of the municipalities, on the basis of the REGON registry, five companies were selected for testing, those located in rural areas, attempting to reflect the sectorial structure of business entities in the municipality and nominating test subjects with the highest level of employment. A diagnostic survey was applied in the clinical study, using a questionnaire interview. Interviews with owners (or managers) of businesses were held during the period November–December 2013.

From the group of 150 surveyed companies 53 firms were selected whose representatives pledged to take action in relation to the processes that affect the state of the environment in order to minimize their impact on the environment. The presented results of the study refer to this group.

A study of the business involvement in the development of eco-products in the five phases of the life-cycle of a product/service included a detailed description of the elements of each of the phases presented by K. Kokoszka [2008]. On this basis, the author of this paper has adopted by Ryszko [2007], for the purpose of this analysis, 18 indicators describing the actions/environmental activities undertaken by entrepreneurs within individual phases of the life-cycle of a product within individual phases in the form of tables. Results are presented in a descriptive and graphic form in tables.

GENERAL CHARACTERISTICS OF THE SURVEYED COMPANIES

More than half of the companies, whose representatives agreed to take action in relation to the processes that affect the state of the environment in order to minimize their impact on the environment (66.0%), were micro-entities – total employment does not exceed nine persons; small entities accounted for 24.6% and average entities – 9.4%. The dominant organizational and legal form was their individual economic activity (54.7%) and a limited liability company (24.5%). Less than half of the subjects (44.2%) had the status of a family business.

The separate group was dominated by manufacturing companies, including 28.3% – manufacturing companies and 26.4% – the first production sector, including agriculture, forestry, hunting and fishing. The sample was marked with activities related to the accommodation and food services (13.2%) or wholesale and retail trade and repair (7.5%). It should also be noted that the sample was dominated (74%) by business entities based on the use of natural resources.

The studied group of companies was characterized by an established market position determined mainly by supra-local coverage of the markets served, the positive assessment of the economic and financial situation and declared development plans. The vast majority (69.8%) of the companies operated on supra-local markets, of these 13.2% operated on the regional market, 35.8% on the national market, and 20.8% of the entities served international markets in addition to the national market. More than half of the respondents

[3]The procedure is described in detail in the publication: D. Guzal-Dec, 2013. Operationalizing the pressure-state-response model in the study of ecological values of rural communities on the example of the Lublin voivodeship. Annual Set of the Environment Protection, Vol. 15, No 3, 2925–2941.

assessed the economic and financial situation of the company as good (51.9%) and very good (5.8%), 38.5% – average, and only 3.8% – bad.

Positive assessments of the current economic and financial situation were accompanied by the opinions of the companies developing their business activity during the period 2010–2012 (64.1%). In addition, it should be noted that the vast majority of entrepreneurs (86.9%) planned to further develop their companies, including 38.1% of those who planned to create new jobs.

In most cases (69.2%), owners were responsible for decisions in the company. More than half of those making decisions had received a higher education or incomplete higher education (56.6%), secondary (general and vocational) education – 35.8%, basic and incomplete secondary education – 7.5 and 16.2% of them graduated from natural science training.

ACTIVITY IN SHAPING ECO-PRODUCTS

Self-evaluation of the surveyed businesses with respect to participation in eco-friendly activities indicates that only 30.6% of the subjects analyzed exhibited a high level of sophistication in the field of environmental protection against competitors. Moreover, none of the parties declared implementation of a certified environmental management system or a certification system, including e.g. ISO 14001 – Environmental Management System, EMAS – Eco-Management and Audit System, or FSC – System of Custody Certification and Forest Management.

Analysis of business activities in the integration of environmental requirements in relation to the product-life cycle in the group indicates that it was focused on production/ /providing services and their effect on the natural environment. The overwhelming majority of companies declared measures aimed at reducing consumption of resources and energy, and the waste and pollution associated with the introduction of modern techniques and technologies. Equally frequently, eliminating unwanted and problematic chemicals from the production process/service providing was declared, along with paying attention to the safety of transport and storage of hazardous substances and waste. Somewhat less frequently was the use of recycling declared, due to the need to invest in specialized technologies.

In the use and postconsumer phase, over half of respondents inform customers on how to use and dispose of products to minimize their impact on the environment.

In the design phase, the highest percentage of respondents declared taking into account the reduction of the impact on the environment during the production process/service providing. At this stage, taking into account the impact of use and maintenance, repair and decommissioning or disposal after consumption was clearly claimed to a lesser extent.

Quite a significant proportion (over 70%) of respondents indicated that, during the acquisition of raw materials, attention is paid to the criterion of reducing the negative impact on the natural environment. Moreover, more than half of the respondents declared that their choice of suppliers was influenced by their advancement in the field of environmental protection and the ecological characteristics of the offered products.

The surveyed businesses rarely undertook activities in relation to the choice of means of transport and distribution channels taking into account the consideration of environmental requirements. Re-use or recycling of products after consumption was taken into account less frequently (Table 1).

Table 1. Percentage of enterprises in which efforts are directed to take into account the environmental requirements in the various stages of the life cycle of a product/service

Phase of the product life cycle	Types of pro-ecological activities[a]	Percentage
Design	reducing the environmental impact of the production of a process/service is included	82.9
	considered limitation of the environmental impact within the use and maintenance/repair	77.1
	considered limitation of the environmental impact within removal/disposal after consumption	65.7
Acquisition of raw materials	eliminated use of undesirable and problematic chemicals	100.0
	materials are replaced by more environmentally friendly ones	73.5
	where it is possible, non-renewable resources are replenished or replaced with renewable	71.0
	selection of suppliers is influenced by their level of advancement in the field of environmental protection	57.1
	selection of suppliers is influenced by the ecological characteristics of the offered products	52.9
Production	limited consumption of raw materials and energy and the generation of pollutants in the process of production/providing services	91.9
	polluting technologies are replaced with safe	90.6
	preventing waste generation in the enterprise	90.0
	implemented methods to improve the efficiency of resource use	85.4
	recycling is used	66.7
Distribution	hazardous substances and wastes are transported and stored in a safe manner	100.0
	choice of means of transport and distribution channels takes into account ecological criteria	44.4
The use by a consumer and post-consumer phase	size of packages and their impact on the environment is limited	73.8
	customers are informed about how to use and dispose of products to minimize their impact on the environment	63.6
	re-use or recycling after consumption are made easier	25.0

[a]Types of pro-ecological activities based on Ryszko [2007].
Source: Own development on the basis of own study.

More than half of the respondents (55.8%) declared that they take actions aimed at strengthening the ecological corporate image and their promotional activities emphasize the company's commitment to environmental protection. In addition, the promotional activities regarding products/services emphasize their ecological characteristics (54.2%). Quite a significant proportion of respondents (45.7%) indicated that they direct products/services to the so-called eco-consumers.

Obtaining an ecological trademark is an important expression of enterprise communication with the buyer, as part of environmental marketing. In the study group, three organizations, respectively, declared to have ecological trademarks with regard to their product and packaging, and five – with regard to food. The group of entities that do not have ecological trademarks includes 1/5 of those who admit that they do not know much about the definition of eco-labeled products.

Factors of activity in the field of environmental protection. Expanding business activity in the field of environmental mainstreaming depends on many factors inherent in both the enterprise and its environment. Among the elements creating the potential in most organizations, respondents had an unusually high appreciation of the level of environmental and ecological awareness in their company and the employees that enable the creation of environmental solutions. Self-evaluation of potential indicates a high knowledge of the relationship between the organization and its natural environment. At the same time, significantly lower mean scores related to the knowledge resources concerning pro-ecology opportunities and knowledge of the supply and demand for green products.

The respondents assessed the material resources of their organization as high enough in terms of their ability to meet the requirements of environmental protection and modern equipment and installations for the protection of the environment. The chance to gain ecological trademarks and the introduction of an environmental management system were rated as average, while the lowest assessment regarded the ability to finance and/or co-finance environmental investments from own resources (Table 2).

Table 2. Assessment of the selected elements of the company's potential, significant in the field of environmental protection[a] (evaluation on a scale of 1–5, where 1 is very poor and 5 – very high)

Elements of the company's potential	$\bar{x}$	S
Degree of the identification of the impact on the environment	3.91	.694
Environmental knowledge of the possibilities and limitations of the company's development in valuable natural areas	3.82	.691
Knowledge of the management in the field of environmental protection and environmental technologies	3.76	.692
Environmental awareness of management and their willingness to take up pro-ecological actions	3.66	.656
Technical capacity of the existing infrastructure to meet the requirements of environmental protection	3.55	.876
Human resources capable of introducing pro-environmental solutions	3.44	.660
Modernity of equipment and systems for the protection of the environment	3.39	.728
Knowledge on how to support pro-ecological actions	3.33	.869
Knowledge of the market supply with respect to green products	3.18	.917
Knowledge of the market demand for green products	3.15	.906
Chances to gain ecological trademarks	3.14	.705
Chances of introducing a system of environmental management	3.00	.672
Ability to finance own research on clean production, product	2.91	.777
Ability to finance/co-finance environmental investments from own resources	2.82	1.121

[a]List of factors based on M. Witkowska-Dąbrowska cf. M. Burchard-Dziubińska [2010].
Source: Own development on the basis of own research.

Among the most important external factors supporting the implementation of environmental solutions by entrepreneurs those of a financial nature should be highlighted, including tax preferences, preferential loans, as well as the possibility of direct support for environmental investments. Others, assessed as important support factors included: support in the form of free-of-charge promotion, the introduction of subsidies for environmentally friendly products, the ability to train staff free of charge and access to technical and organizational support (Table 3).

Table 3. Assessment of the significance of some support factors in attracting entrepreneurs to implement innovative environmental solutions, assessment made on a scale of 0–5, where 0 is a non-significant and 5 – very important

Factors	$\overline{x}$	S
Introduction of tax preferences for local or national levels	4.06	.810
Introduction of preferential loans	4.04	.651
Opportunity to obtain direct financial support for investments	4.02	.785
Possibility of free-of-charge promotion of ecologically-oriented enterprises	3.96	.824
Subsidies for environmentally friendly products used by the company	3.88	.890
Possibility of free-of-charge training for employees	3.81	.915
Substantive and organizational support	3.67	.834
Exchange of experiences with other companies	3.25	.978
Cooperation with institutions and scientific research sector	3.08	1.269

Source: Own development on the basis of own research.

Location of companies in natural valuable areas creates opportunities to shape eco-products, especially in the case of businesses based on the use of local natural resources, most of the cases in the analyzed sample. Research suggests that the opportunities arising from the location in areas with valuable natural assets were recognized by the analyzed entities. The majority (65%) of respondents felt that their location offers the possibility of creating environmentally friendly corporate images. With regard to the products/services, the vast majority of them (74%) agreed that, through the use of local resources, their products/services are of high quality and attract the greatest interest due to their place of origin (52%).

CONCLUSIONS

Generally, the activities of the surveyed entrepreneurs regarding the commencement of activities in relation to the processes that affect the condition of the environment, aimed at minimizing their environmental impact, should be assessed as low – only 35.3% of the respondents declared such initiatives. In this group, actions taken up by entrepreneurs in various phases of the life-cycle of eco-products/services were, however, in most areas quite numerous.

The study group of companies was characterized by the lack of a formal basis for eco-product policy implementation in the form of the implementation of a certified environmental management system or a certification system. Few businesses have introduced

ecological trademarks, and many of them did not possess the knowledge about how to implement them or what potential benefits can be derived from them.

The study conducted enables us to accept the formulated hypothesis of the research process. Taking into account environmental requirements, as declared by the test group, within a companies' activities, in relation to the life-cycle of a product/service focused on the production/service delivery and eliminating disturbance to the natural environment. This was also reflected in the design phase. One should note that, in the case of half of the businesses, pro-ecological activities resulted primarily from a desire to meet the environmental regulations, which represents the initial stage of the journey towards the implementation of environmental management in the company to create a framework for effective and comprehensive action within environmental marketing.

A large group of respondents declared that they undertook activities aimed at strengthening their ecological corporate image and their promotional activities emphasize the company's commitment to environmental protection and the ecological characteristics of the products/services. Location within natural valuable areas was not without significance for the respondents in relation to the development of eco-products, as it was connected with the possibility of creating a pro-ecological corporate image based on the high quality of a product using local resources and the green image of its place of origin.

It seems that activities in shaping eco-products need a more systematic, comprehensive approach in the case of the surveyed businesses. They require dissemination of access to expertise and organizational knowledge and the support opportunities within ecology among entrepreneurs, knowledge of the supply and demand for green products, of the principles, benefits and opportunities associated with ecological trademarks. From the perspective of sustainable development of valuable natural areas, it should be emphasized that education is a prerequisite for sustainable development [Kałuża 2009].

However, financial constraints are the primary barrier to ecological activity, as reported by the surveyed companies. The reformed Common Agricultural Policy will be connected with the emphasis on environmental protection and balanced management of natural resources [Sadłowski 2012], which may create opportunities for ecological activity in rural areas.

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AKTYWNOŚĆ PRZEDSIĘBIORCÓW OBSZARÓW PRZYRODNICZO CENNYCH W KSZTAŁTOWANIU EKOPRODUKTU – PRZYKŁAD WOJEWÓDZTWA LUBELSKIEGO

Streszczenie. Celem opracowania jest charakterystyka aktywności przedsiębiorców w zakresie uwzględniania wymogów środowiskowych w ramach poszczególnych faz cyklu życia produktu/usługi oraz ocena wybranych elementów potencjału badanych organizacji istotnych z perspektywy zwiększenia tej aktywności. W pracy dokonano także oceny istotności wybranych czynników wsparcia przedsiębiorców we wdrażaniu rozwiązań proekologicznych oraz zarysowano problem znaczenia lokalizacji na obszarze przyrodniczo cennym dla kształtowania ekoproduktu. Badania ujawniły brak formalnych podstaw wdrażania polityki ekoproduktu oraz motywację działań proekologicznych połowy podmiotów wynikającą głównie z potrzeby spełniania regulacji środowiskowych. Aktywność w kształtowaniu ekoproduktu wymaga w przypadku badanej grupy wzmocnienia i bardziej kompleksowego podejścia. Jej ograniczenie stanowią bariery finansowe i informacyjne. Większość badanych dostrzega możliwości w zakresie kreowania produktu ekologicznego wynikające z lokalizacji.

Słowa kluczowe: cykl życia produktu, marketing ekologiczny, województwo lubelskie

Accepted for print: 29.07.2015

For citation: Zwolińska-Ligaj M. (2015). Area of business activity in the development of environmentally valuable eco-products – as exemplified by the Lublin Voivodeship. Acta Sci. Pol., Oeconomia, 14 (3), 157–166.