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**Green farming development opportunities: the case of
Lithuania**

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Green Farming Development Opportunities: the Case of Lithuania

Rita Remeikienė¹, Ligita Gasparėnienė²

Abstract

Research background: The increase in the demand for organic products prompts the establishment of green farms. In spite of the large global interest in green farming, scientific literature is not rich in the studies that cover the issues of green farming development. Although previous studies examine different aspects of green business, the factors that facilitate or impede the development of green farming, especially at the national level, are hardly considered. In order to fill this gap in the scientific literature, we formulate the following problem of the research: what opportunities of green farming development can be envisaged in Lithuania?

Purpose of the article: To explore the opportunities of green farming development in Lithuania on the basis of the general features of green business development.

Methodology/methods: Comparative and systematic analysis of the scientific literature, graphic and comparative data analyses, and expert evaluation.

Findings & Value added: The researched has enabled to identify the factors that facilitate and impede green farming development in Lithuania. On the basis of the results of the expert evaluation, the recommendations for green farming development in Lithuania were provided. It was found that the main barriers that disturb smooth development of green farming in Lithuania mainly include economic and social obstacles. Frequently changing regulations on organic farming, complicated procedures of green farming certification and lack of information about the support and subsidies call for the development of a consistent green farming monitoring system and conduct of the efficient green market research. Extensive networking systems would provide the opportunities for green farmers to share their experience and observe all the economic changes: new market niches, demand-supply indicators, new channels of product delivery, etc. Non-financial green farming support measures (e.g. consultations, training, provision of information, etc.) could substantially contribute to the development of green farming in Lithuania.

JEL Classification: *Q13*

Keywords: *green business, green farming, organic foods, Lithuania.*

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Introduction

Topicality of the problem. An important role in the area of protection of environment is played by the development of national economies, in particular, the development of green businesses. Usage of eco fuels, recycling, consumption of organic foods or introduction of eco-innovations are the measures that promote creation of sustainable environment. The increase in the demand for organic products prompts the establishment of green farms. In spite of the large global interest in green farming, scientific literature is not rich in the studies that cover the issues of green farming development. Although previous studies examine different issues of green business (for instance, the concept of green business and peculiarities of green business funding were addressed by Hall (2013, pp. 4-52), Miryala and Mennakanti (2016, pp. 5-198), Berle (1991, pp. 5-200), Polonsky *et al.* (1998, pp. 22-43), Rouf (2012, pp. 148-161) and others; the determinants of green business development were analysed by Padel (2002, pp. 1-210) and Skulskis (2010, pp. 158-165); the features and models of green business were studied by Mishra and Sharma (2010, pp. 9-14), Chen and Chai (2010, pp. 27-39), Glebavičiūtė *et al.* (2011, pp. 5-300), Abuzeinab *et al.* (2016, pp. 478-490) and others; the main aims of green production were defined by Shrivastava and Hart (2007, pp. 607-635); the barriers of green business development were researched by Maskoliūnaitė (2004, pp. 5-98); the processes of green business certification and the main principles of green farming were analysed by the public institution 'Ekoagros' (2014, pp. 1-22), the factors that facilitate or impede the development of green farming are hardly considered. In order to fill this gap in the scientific literature, we formulate the following **problem of the research**: what opportunities of green farming development can be envisaged in Lithuania?

The subjects that want to start-up green farming in Lithuania face numerous problems, which, first of all, are related to strict requirements of organic product certification, eco-labelling, product realization, etc. The findings of this research will provide a deeper insight in the factors that facilitate and impede the development of green farming in Lithuania.

The main **aim of this research** is to explore the opportunities of green farming development in Lithuania on the basis of the general features of green business development.

The object of the research is green farming development. In order to fulfil the main aim of the research, the following **objectives** were raised:

- 1) to analyse the theoretical aspects of green business development;
- 2) to prepare the methodology that would allow to assess the opportunities of green farming development;

- 3) to conduct the empirical research in green farming development opportunities in Lithuania.

Research Methodology

The area of green farming shows the trends of expansion, although it is hardly researched and remains a relatively new issue in economic studies.

The direction of green farming was selected for the following reasons:

- 1) this area of green business earns considerable governmental attention: green farmers are provided with governmental support, subsidies, different exemptions;
- 2) green farming may cover a variety of industries: crop, livestock, fishery, horticulture or mixed agricultural activities; the above-mentioned industries share the common goals – production of organic foods and promotion of healthy lifestyles;

Expert survey and evaluation were conducted in the following *stages*:

- 1) the experts with high competence were selected;
- 2) the questionnaire for the experts, who were able to assess the opportunities of green farming development in Lithuania, was developed;
- 3) the questionnaire survey was conducted;
- 4) the results of the expert survey were processed;
- 5) compatibility of the experts' opinions was verified, the results of the survey were summarised, and the recommendations for green farming development in Lithuania were provided.

The aim of the expert evaluation was to assess the opportunities of green farming development in Lithuania. For the accomplishment of this aim, the following **objectives** were raised: 1) to identify the factors that facilitate and impede green farming development in Lithuania; 2) to provide the recommendations for green farming development in the country.

Compatibility of the experts' opinions was verified by employing coefficients of concordance.

Expert evaluations were ranked by Kendall's coefficient of concordance. Let us suppose that the group composed of m (the numerical value) experts evaluated k (the numerical value) alternatives. At first, the values in each of the columns were converted to ranks; after that, it was verified whether the expert evaluations are compatible; finally, the following hypotheses were formulated:

H_0 : expert evaluations are opposing (i.e. coefficient of concordance is equal to zero);

H_A : expert evaluations are compatible (i.e. coefficient of concordance is not equal to zero).

Coefficient of concordance W varies in the interval from 0 to 1 ($0 < W < 1$); value 0 refers to complete incompatibility, while value 1 means complete compatibility of the expert evaluations.

While presenting the results of the empirical research, possible interpretations of the values of *Cronbach alpha* coefficient should be considered. *Cronbach alpha* coefficient helps to measure credibility of the test, but the value of this coefficient much depends on variance of the respondents' answers to the same questions: high variance shows that the results of the test are not credible, and vice versa.

Theoretical Concept of Green Business

Green business comprises two main categories of green companies: 1) the ones that use only renewable energy resources; 2) the ones that sell eco-friendly and organic products or provide eco-services (e.g. eco-tourism services) (United Nations and World Tourism Organisation, 2005, pp. 7-210).

'Not any business that leaves the world worse than it was for future generations can be treated as green; on the contrary, it should be treated as an imposter business because the main aim of green business is generation of the ideas which may help improve the current state of the Earth and maintain the vitality of ecosystems' (Hall, 2013, p. 27). The above-presented quotation proposes that green business incorporates different methods and techniques which help to turn our unsustainable economy into a sustainable one. Improvement of the situation calls for the assessment and elimination of the disadvantages of traditional business.

The analysis of the scientific literature has revealed that different scientists propose different interpretations of green business. Contribution to sustainable environment and balance of ecosystems, as well as refusal of harmful substances in the processes of production are considered the main aims of green business. The concepts of green business, proposed in the scientific literature, have been systematised in Table 1.

Table 1. The concepts of green business proposed in the studies of Lithuanian and foreign authors

Author(s), year	Concept
Miryala, Mennakanti, 2016, p. 7	<i>Green business</i> follows the same principles as traditional business, but all the activities are directed towards minimisation of the negative industrial impacts made on local environment, society, community or state economy
Hall, 2013, p. 27	'Not any business that leaves the world worse than it was for future generations can be treated as green; on the contrary, it should be treated as an imposter business because the main aim of green busi-

	ness is generation of the ideas which may help improve the current state of the Earth and maintain the vitality of ecosystems’.
Berle, 1991, p. 8	<i>Green entrepreneurship</i> refers to the opportunities of business to save the world and earn money
Hinterberger <i>et al.</i> , 2002, p. 114	<i>Green business</i> is a drive of the contemporary economics
Polonsky <i>et al.</i> , 1998, p. 23	<i>Green companies</i> not only diminish the destructive industrial effects, but also gain a substantial competitive advantage

Note: the concepts that may correspond to the concept of ‘green business’ are green entrepreneurship, green industry and sustainable business.

Source: compiled by the authors

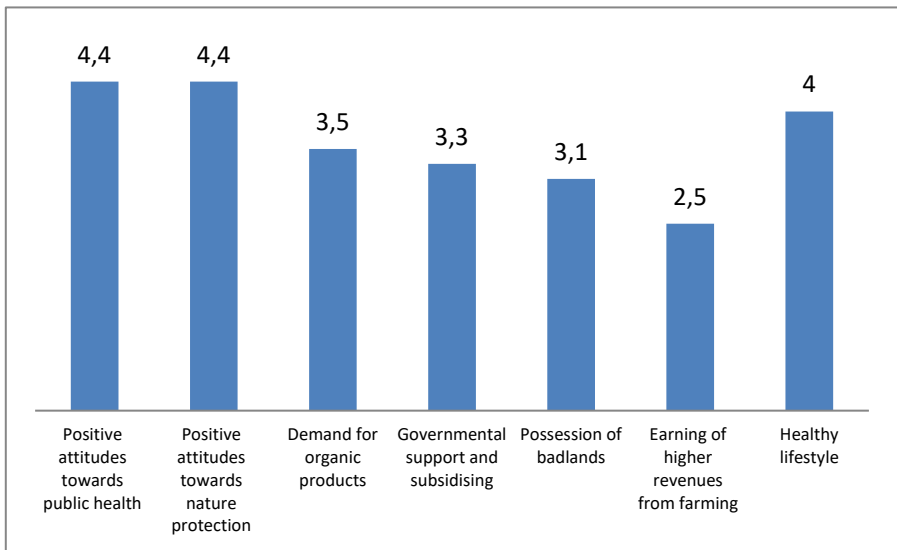
It can be concluded that the main difference between green and traditional business is that green business focuses on sustainability of economic and social resources over the entire product’s life cycle, which, in turn, determines positive effects of the business on environment, society and state economy. Nevertheless, green business incorporates longer production processes, difficult legal regulation and certification. What is more, it requires special conditions for product storage.

The Results of the Empirical Research

The empirical research ‘Green farming development opportunities in Lithuania’ was aimed at identification of green farming development determinants and definition green farming development directions in Lithuania. According to Augustinaitis *et al.* (2009, pp. 1-352), accuracy and credibility of an expert evaluation is ensured when the group of the experts consists of at least 5 people. Our research involved 10 selected experts. The value of *Cronbach alpha* coefficient, estimated for all question groups in the questionnaire, is equal to 0.630, which confirms the appropriate composition of the questionnaire and compatibility of the questions. The general value of Kendall’s coefficient of concordance (W(a)) is equal to 0.288, and value p is equal to $0,001 < 0,05$, which proposes that the experts’ opinions are compatible, although the degree of compatibility of relatively low.

The most important part of the questionnaire helped to identify the determinants of successful and unsuccessful green farming development. Question No. 4 revealed the motives which prompted the experts to develop green farming. *Cronbach alpha* coefficient is equal to 0.750; Kendall’s coefficient of concordance (W(a)) is equal to 0.444, and value p is equal to $0,001 < 0,05$, which proposes that the expert evaluations are compatible (see Fig. 1).

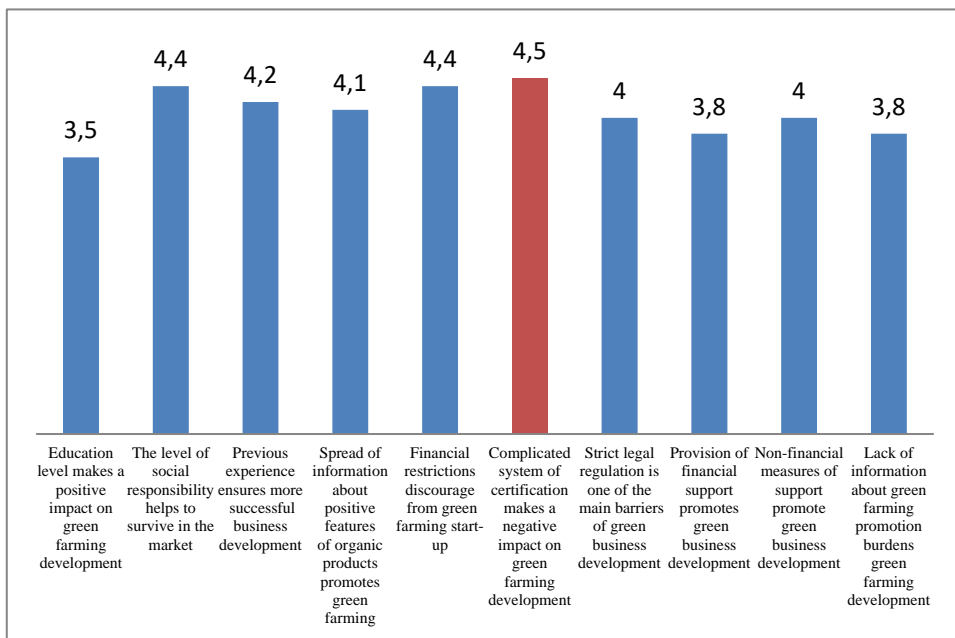
Figure 1. The motives of green business development, average ranks



Source: compiled by the authors with reference to the results of the empirical survey.

The data in Figure 1 show that the main motives of green business development in Lithuania are positive attitudes towards public health and nature protection, the demand for organic, governmental support and subsidising and possession of badlands. Earning of higher revenues from farming was indicated as a completely unimportant motive. The question No. 5 helped to identify the determinants which have the greatest impact on the system of green farming in Lithuania (8 proposed determinants were provided for the experts' consideration) (see Fig. 2).

Figure 2. The determinants affecting the system of green farming in Lithuania, average ranks



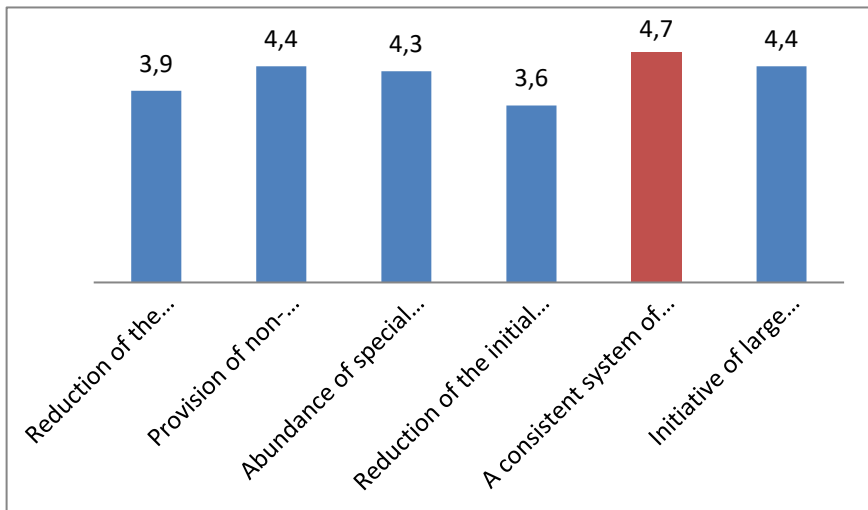
Source: compiled by the authors with reference to the results of the empirical survey.

The value of *Cronbach alpha* coefficient estimated for the answers to this questions is equal to 0.680; *W(a)* is equal to 0.121, and value *p* is equal to 0.0283 > 0.05. Nevertheless, distribution of the answers shows that complicated procedures of green farming certification (the average rank is equal to 4.5.) pose serious problems to Lithuanian farmers, who would prefer clearer and simplified certification, as well as consideration of the nature and scopes of farming operations. The following determinants (with the average ranks equal to 4.4) were also recognised as influential in the system of green farming in Lithuania: the level of public awareness, personal and social responsibility (high level of awareness and responsibility helps to stay in business); financial restrictions (e.g. unfavourable crediting policies, high interest rates, lack of savings, etc.) (large financial restrictions discourage farmers from starting-up green farming). To promote the smooth development of green farming in the country, the government should introduce different incentives, grant tax exemptions and provide subsidies for current and potential farmers.

In order to identify the determinants of green farming development in Lithuania the experts were asked to provide the evaluations (on a scale from 1 to 5) of particular governmental actions that could serve as major contributors to green farming development in the country. The value of

Cronbach alpha coefficient equal to 0.529 showed that the question is reasonable, but the experts found it difficult to indicate the determinants with highest values. The value $W(a)$ equal to 0.153, and value $p=0.0176<0.05$ showed that the researched dimension is significant, but the opinions of the experts were incompatible, i.e. not any most significant determinant of green farming development in Lithuania could be identified (see Fig. 3).

Figure 3. Governmental actions that could serve as contributors to green farming development in Lithuania, average ranks



Source: compiled by the authors with reference to the results of the empirical survey.

The data in Figure 3 show that the government should create a consistent green farming monitoring system (the average rank is equal to 4.7) and conduct the efficient green market research (the average rank is equal to 4.3), which would ensure smooth and gradual green farming development in the country. Purposeful research would provide more information about the current market state and would make potential farmers more confident. Extensive networking systems would provide the opportunities for green farmers to share their experience and observe all the economic changes: new market niches, demand-supply indicators, new channels of product delivery, etc.

Green farming development would also be facilitated by provision of non-financial support (e.g. provision of information about green farming certification procedures, eco-labelling, etc.) and promotion of the motivation of large supermarkets to expand their sections of organic products (the

average ranks estimated for the above-mentioned determinants are equal to 4.4.).

Conclusions

Frequently changing regulations on organic farming, complicated procedures of green farming certification and lack of information about the support and subsidies for green farming call for the development of a consistent green farming monitoring system and conduct of the efficient green market research, which would ensure smooth and gradual progress of this industry. Extensive networking systems would provide the opportunities for green farmers to share their experience and observe all the economic changes: new market niches, demand-supply indicators, new channels of product delivery, etc.

Large supermarkets must be prompted to increase the sales of organic foods. For instance, they could be motivated to announce price promotions or attract consumers' attention by highlighting peculiarities, specific value and quality of organic products. For this reason, large supermarkets, for example, could host weekly farmers' meetings and let green farmers sell their certified organic products.

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