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DEVELOPMENT OF ORGANIC AGRICULTURE IN LATVIA

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Abstract. In recent years, "green" lifestyle is becoming more typical. Agriculture is one of the most important sectors which must be sustainable, because it provides basic human needs and can influence all society. Therefore, such concepts as green products, organic food etc. are becoming relevant. Organic agriculture is being practiced in many countries around the world. It is rapidly developed also in Europe in the past years. The aim of the research is to estimate the development of organic agriculture in Latvia. The research is based on literature review as well as secondary statistical data and comparative analysis. The author also compares the development of organic agriculture in Latvia with her own previous research. The results show that Latvia is in the top five countries for organic farming in Europe, the number of organic farms is very high: at the beginning of 2016 there are 3340 farms registered as organic in Latvia. Latvia's organic farms mostly have multi-branch production, and, it depends on the type of farming. It is necessary to develop production systems, which are more environment-friendly and use local resources more efficiently as well as are less dependent on artificial, industrial inputs.

Key words: organic, green, agriculture, farming, Latvia.

JEL code: Q1, Q01, Q13

Introduction

In today's globalised world, every sector of the economy needs to re-orient itself to meet the changing demand. The concept of sustainability, which originally referred to environmental consequences of human activities, has been widely discussed at the global and national levels in any economic sector. The rural sectors are not exceptions. Agriculture is one of the main sectors which should be sustainable, that is, economically profitable, socially responsible and environmentally oriented. Agriculture is a multi-functional sector which is closely related to the environment. It also provides basic human needs, and in many countries is an important source of national income, foreign trade and employment.

The aim of the research is to estimate the development of organic agriculture in Latvia.

In order to achieve the aim, the author has set up the following tasks: 1) to estimate historical development of organic agriculture in Latvia and its structure; 2) to analyse the current situation of organic agriculture in Latvia.

Research methodology is based on literature review as well as secondary statistical data and comparative analysis. The general logical methods of deduction and induction are used. The analysis is also based on summary of the results of earlier studies held by author in 2009 and 2013 (Tambovceva, Geipele, 2009; Tambovceva, Tambovcevs, 2013).

The main sources are the official records and reports of EUROSTAT (Statistical Office of the European Commission), IFOAM (International Federation of Organic Agriculture Movements), the Ministry of Agriculture of Latvia (MA), Agriculture Data Service (ADS), Food and Veterinary Service (FVS) and Farm Accountancy Data Network (FADN).

Research results and discussion

1. Sustainability and sustainable agriculture

Sustainability concept has been popular worldwide over recent years and nowadays it's used for almost every activity in human life. A comprehensive definition of sustainability as the attempt to balance economic, social, and environmental goals may be as follows: *"improving the quality of human life while living within the carrying capacity of the supporting ecosystem".*

The concept of sustainability, which originally referred to environmental consequences of human activities, has been widely discussed not only at the national but at the global level as well as in particular economic sectors. Agriculture is one of the main sectors which many believe should be sustainable, that is, ecologically sound,

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economically viable, and socially responsible. This is so because agriculture provides basic human needs, and in most developing countries it is an important source of national income, foreign trade and employment. Agriculture is also a multi-functional sector which is closely related to the environment. Agriculture is one of the biggest environmental polluters and destroyers. Agricultural production systems pollute soil and water with agro-chemicals, reduce biodiversity, lead to degradation, desertification, erosion of soils and, in many cases result in poorly structured, monotonic agricultural landscapes.

According to the Sustainable Development Strategy of Latvia until 2030: *"Sustainable use of the natural capital may promote the forming of the image of Latvia as green country. It is the possibility to promote the development of export and many sectors of economy and creative activity, for example, in the service industry – environmentally-friendly tourism, leisure, recreation and medical treatment, health oriented catering services; in agriculture – biological agriculture and aquaculture…"* (Sustainable Development Strategy of Latvia until 2030, 2010).

Based on European Commission[1] *"Organic agriculture is an agricultural system that seeks to provide consumers with fresh, tasty and authentic food while respecting natural life-cycle systems"*. It means that organic agriculture is a production system that sustains the health of soils, ecosystems and people.

Organic farming is a method of production which places the highest emphasis on environmental protection and, with regard to livestock production, on animal welfare considerations. It avoids or largely reduces the use of synthetic chemical inputs such as fertilisers, pesticides, additives and medicinal products. The production of genetically modified organisms (GMOs) and their use in animal feed is forbidden. Based on the Eurostat2: *"organic farming differs from other agricultural production methods in the application of regulated standards (production rule), compulsory control schemes and a specific labelling scheme".*

The International Federation of Organic Agriculture Movements (IFOAM)[3] presents its own definition of organic agriculture: *"Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved".*

The objectives of organic farming are the following:

- to ensure sustainable production of high-quality healthy food (instead of concentrating on maximizing yield), while maintaining crop and livestock diversity and preserving the environment (including plants, animals, soil, water and air);
- to ensure the fulfilment of requirements for livestock welfare (providing the animals with access to daylight, air, clean water, natural pastures and sufficient space etc.);
- to use direct solar energy more efficiently and, as much as possible, to reduce the use of fossil energy.

To achieve this, organic agriculture relies on a number of objectives and principles as well as common practices designed to minimise the human impact on the environment, while ensuring the agricultural system operates as naturally as possible. Sustainable development in agriculture is based on 4 principles IFOAM (http://www.ifoam.bio/sites/default/files/poa_en

[1] http://ec.europa.eu/agriculture/organic/organic-farming/what-is-organic-farming/index_en.htm

[2] http://ec.europa.eu/eurostat/web/agriculture/organic-farming

[3] http://www.ifoam.bio/en/organic-landmarks/definition-organic-agriculture

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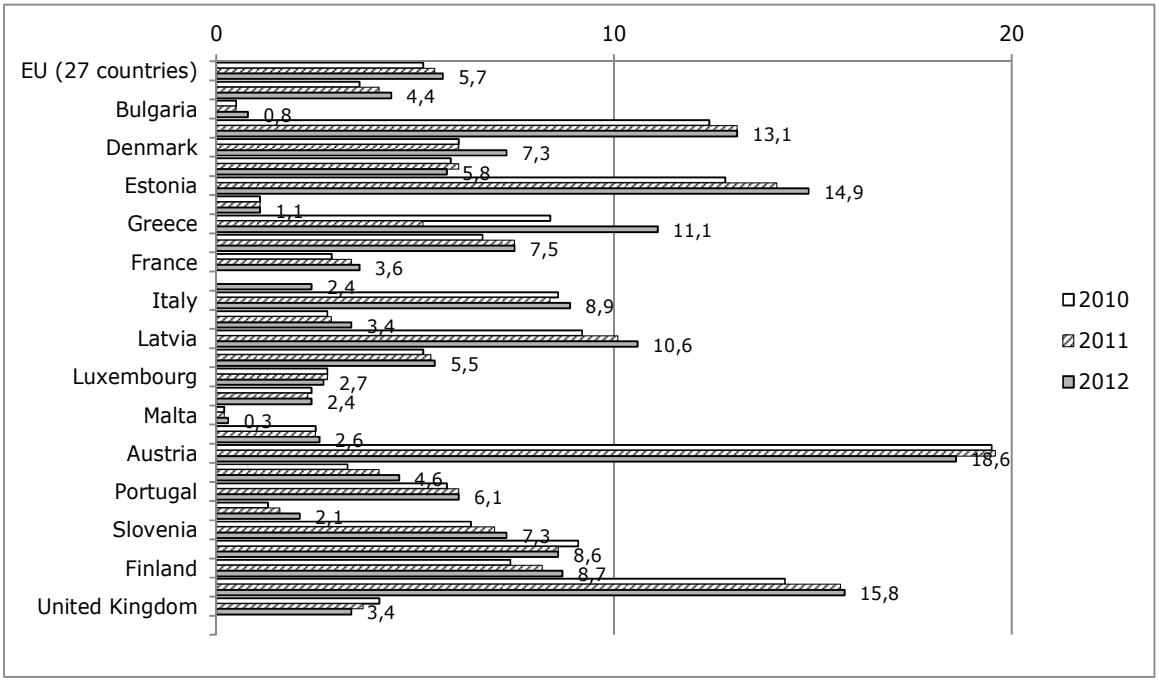
glish_web.pdf): 1 the principle of health; 2) the principle of ecology; 3) the principle of fairness, and 4) the principle of care.

Typical organic agriculture practices include (European Commission http://ec.europa.eu/agriculture/organic/organic-farming/what-is-organic-farming/index_en.htm):

- wide crop rotation as a prerequisite for an efficient use of on-site resources;
- very strict limits on chemical synthetic pesticide and synthetic fertiliser use, livestock antibiotics, food additives and processing aids and other inputs;
- absolute prohibition of the use of genetically modified organisms;
- taking advantage of on-site resources, such as livestock manure for fertiliser or feed produced on the farm;
- raising livestock in free-range, open-air systems and providing them with organic feed;
- choosing plant and animal species that are resistant to disease and adapted to local conditions;
- using animal husbandry practices appropriate to different livestock species.

Organic agriculture is practicing in many countries around the world. It is rapidly developed also in Europe in the past years. Figure 1 shows the area under organic farming in Europe.



Source: author's construction based on the Eurostat (http://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tsdpc440)

Fig. 1. **Area under organic farming in Europe, %**

Sustainable agriculture is investigated by many reports (Shaller, 1993; Gafsi et al., 2006; Lockeretz, 2007; European Commission, 2014). Much knowledge has been acquired concerning the processes involved in the conversion from conventional to organic agriculture in various regions of the world. Condition and prospects of development of organic farming in the European Union have been described by Pawlewicz (2014). He forecasts that the area under organic crops in the European Union may increase to as much as 14 million ha by the year 2020. The characteristics of organic farming, their application and perspectives in Lithuania have been analysed by Ciburiene (2014). Dunn, Borawski, and Pawlewic (2014) present the state

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of organic farming development in the USA and evaluate the organic food market development and exports in the USA. Karasova (2014) gives an overview of organic production as an innovative trend in export-oriented development of Ukraine's agriculture. Jahroh (2010) declares that organic farming is based on special regulations, standardization and certification, which is designed to support the quality and management of organic production. Kucinska et al. (2008) conclude that organic farming can be an opportunity for smaller farms with poor soils and challenging economic conditions. A sustainable farm must achieve both economic and environmental goals without losing sight of social aspects (such as family quality of life, human health, relationships with community, farmer's education and skills etc.) (Den Biggelaar and Suvedi, 2000). Nikolova (2013) describes challenges to organic agriculture in Bulgaria. Daniloska (2014) developed the model of knowledge system for organic agriculture in the Republic of Macedonia. Dantsis, Loumou, and Giourga (2009) provide a case study of organic farming in Greece.

Organic farming sector is growing. Overall positive trends in organic farming are (State Ltd "Certifying and Testing Centre", 2015a):

- increasingly growing consumers' demand gives farmers a lot of new opportunities;
- being organic farmers, the producers receive a certificate and obtain the right to market their products under the label "*organic*";
- healthy and natural product enters the market increasing the competitiveness of producers;
- the market price for organic products is higher because the consumer is willing to pay more for high quality food, animal welfare and environmental protection;
- it is possible to get annual state aid for organic products.

Development of organic agriculture in Latvia

Latvia is predominantly rural country and has a rich history in agriculture. Latvia occupies a territory of 64 589 km², of which the inland waters take up 2543 km² and dry land 62 046 km², including agricultural land 24 710 km² (around 39%) and forest 29 503 km² (more than 54 %), 32.3 % of Latvian population lives in rural areas.

Before the beginning of World War II, Latvian farms were in private hands. During the Soviet times the small individual farms were replaced by the much larger state or collective farms. By the end of the 1950s, the consolidation of independent homesteads was almost complete, with over 90 % of the farms turning into the "*kolhozs*" (James, 2009).

The development of organic agriculture in Latvia started in 1990 from three registered organic farms and rapidly grew after 2001. Growth has been triggered by two activities: 1) the implementation of an inspection system according to the EU Regulation No 2092/91 in 2001; 2) the implementation of an action plan in the country in 2003 that stimulated farmers' interest in converting to the organic system. Local organic farming organizations cooperated and established an association in 1995. In 2003, the government accepted the Organic Farming Development Programme. Then, the Latvian Organic Farming Organisation joined the International Federation of Organic Agriculture Movements (IFOAM). After Latvia's accession to the EU in 2004, the number of organic farms has increased more than four times (Melece, Praulins and Popluga, 2009).

Nowadays, agriculture is one of the most important economic sectors in Latvia, because the agricultural land occupies around 39% of Latvia's territory. Agriculture, forestry and fishery sector employed 66.3 thousands people in 2014, it is by 7.8% less than in 2013. Employment in the plant, livestock and hunting decreased by 4.3 thousand people (46.4 thou.), or 8.5%, and together make up 5.2% of the country's employment (Ministry of Agriculture, 2015).

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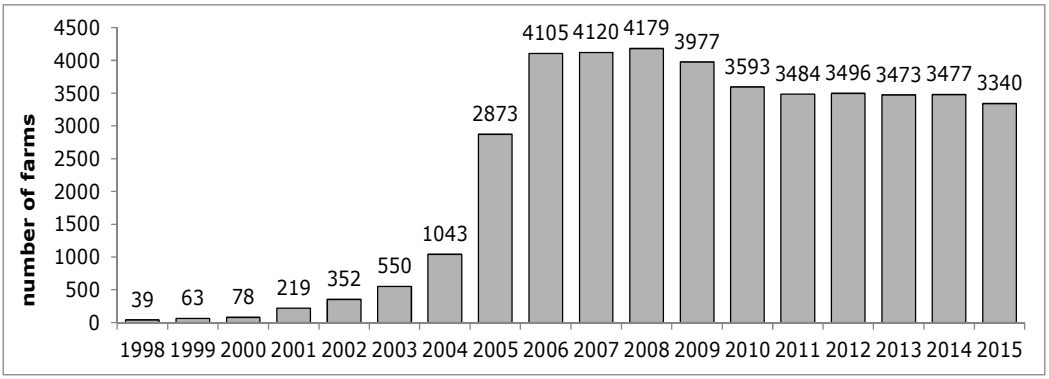
Agricultural sector is a place of life and work for a large part of society, which produces food and raw materials and has always been one of the important sectors in Latvia's economy. It constitutes 1.7% of the Gross Domestic Product (EUR 235.8 million in 2014) on average.

The European Union (EU) demand for organically grown and produced food is growing steadily, therefore the organic farming sector and the market is developing. According to the European Commission (2013) information the top 5 countries for organic farming are: Austria - 19%, Sweden - 15.7%, Estonia - 14%, Czech Republic- 13%, and Latvia - 10%. The number of organic producers worldwide as well as in Europe has sharply increased in the last decade. At the end of 2014, the number of organic farms in Latvia reached 3477, which is a slight increase, compared to the previous year but in general during the last five years the number of certified organic farms is stable. Total number of organic farms in Latvia in period from 1998 to 2015 is shown in Figure 2.



Source: author's construction based on: the Ministry of Agriculture, 2015; Agriculture Data Service, 2015; FVS, 2016

Fig. 2. **Number of organic farms in Latvia**

There were 3475 agricultural producers and 2 aquaculture animal breeders certified in 2014 in Latvia as well as 63 refineries, 6 importers, 1 exporter, and 60 other operators. Totally in 2014 there were 3607 certified organic operators in Latvia. At the beginning of 2016, there are two different values possible to find in the web pages. The Food and Veterinary Service (FVS) has 3183 organic farms registered in control bodies but the State Ltd *„Certifying and Testing Centre"* (2015b) database provides information about 3340 organic farms.

Despite the fact that the number of farms is large enough, however, these are small companies and their number is not sufficient. The largest number of organic farms is located in districts of Daugavpils (179 farms), Madona (137 farms), and Gulbene (104 farms). Currently largest total amount of organic farms is in Latgale, i.e. 994 farms, which is almost 30 % (Agriculture Data Service, 2015).

Top 5 countries with the largest area for organic farming are: Spain - 1.8 million ha, Italy - 1.1 million ha, Germany - 1 million ha, France - 0.97 million ha, and the United Kingdom - 0.63 million ha. Together these countries account for 57 % of the total organic area of the European Union (European Commission, 2013). Figure 3 depicts organically certified agricultural land in Latvia for period from 2000 to 2014.

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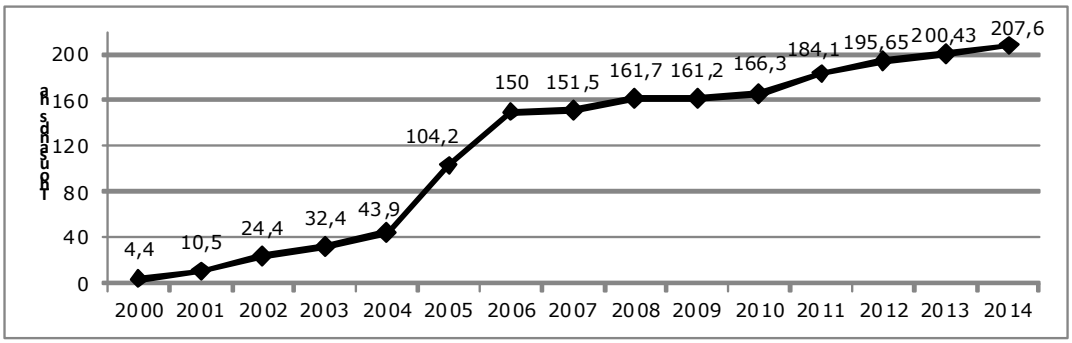
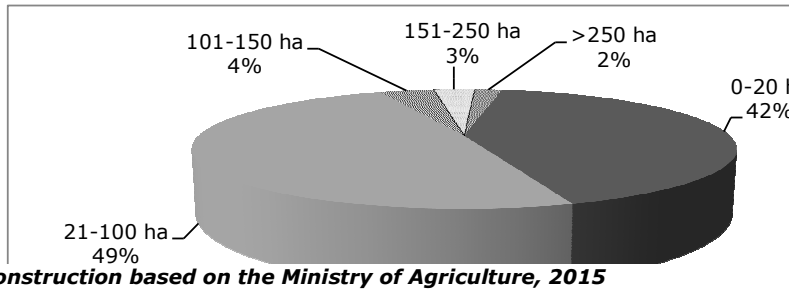


Source: author's construction based on the Ministry of Agriculture, 2015

Fig. 3. **Organically certified agricultural land in Latvia, thousands ha**

Organic farming sector is growing. Overall positive trend in organic farming is increasingly growing consumers' demand, which gives farmers a lot of new opportunities. Being organic farmers, the producers receive a certificate and obtain the right to market their products under the label "*organic*". As a result, healthy and natural product enters the market increasing the competitiveness of producers. The market price for organic products is higher because the consumer is willing to pay more for qualitative food, animal welfare and environmental protection. It is possible to get annual state aid for organic products.

In Figure 4 the author collected information about the size of organic farms in Latvia. The results show that the vast majority (91 %) belongs to small farms with the total area not more than 100 hectares.



Source: author's construction based on the Ministry of Agriculture, 2015

Fig. 4. **Size of organic farms in Latvia, ha**

Organic production and labelling are subject to certification process. State Ltd *„Certifying and Testing Centre*" (2015a): assesses conformity of the enterprise in the following areas: crop cultivation, livestock breeding, beekeeping, rearing of aquaculture animals, wild animal breeding, mollusc growing, earthworm farming, product processing, fertilizer producing. The main production areas are crop production, including cereals and vegetables, and dairy farming.

Cereal farms specialize in rye and wheat for bread baking, while oats and barley are produced for fodder, thus, securing the domestic demand for organic feedstuffs. Consumer demand is the highest for vegetables and fruit. The main crops are potatoes, onions, carrots and beet and, in terms of early vegetables from greenhouses, cucumbers, tomatoes and sweet peppers. In the past years, there has also been a strong increase in the demand for medicinal and aromatic plants. The main types of livestock are dairy cows, beef, pigs and poultry. Different types of honey, pollen and beeswax products are also popular. Figure 6 presents development of organic production in Latvia from 2007 to 2014.

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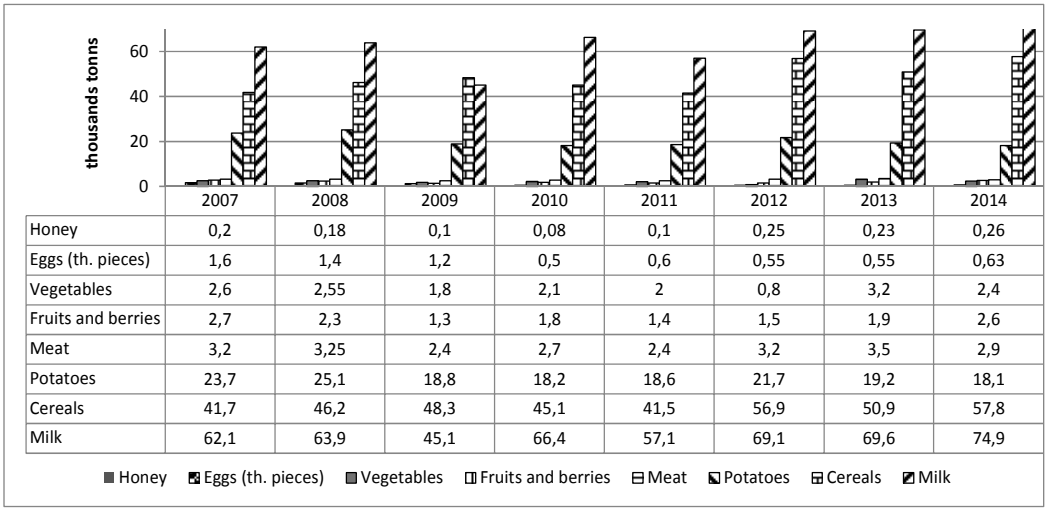

	2007	2008	2009	2010	2011	2012	2013	2014
Honey	0,2	0,18	0,1	0,08	0,1	0,25	0,23	0,26
Eggs (th. pieces)	1,6	1,4	1,2	0,5	0,6	0,55	0,55	0,63
Vegetables	2,6	2,55	1,8	2,1	2	0,8	3,2	2,4
Fruits and berries	2,7	2,3	1,3	1,8	1,4	1,5	1,9	2,6
Meat	3,2	3,25	2,4	2,7	2,4	3,2	3,5	2,9
Potatoes	23,7	25,1	18,8	18,2	18,6	21,7	19,2	18,1
Cereals	41,7	46,2	48,3	45,1	41,5	56,9	50,9	57,8
Milk	62,1	63,9	45,1	66,4	57,1	69,1	69,6	74,9

Source: author's construction based on the Ministry of Agriculture, 2007- 2014

Fig. 6. **Organic production in Latvia in period from 2007 to 2014**

The import of all types of food and agricultural products increased year over year. A considerable part of the green products in Latvia is exported. The largest part of goods was exported and imported from/ to the European Union countries. The most important export partners for Latvia are Lithuania and Estonia, while Germany and Lithuania were the most important import partners.

During recent years, the popularity of food products produced in Latvia's organic farms has grown. The customers have also become more interested in visiting farms that offer an insight into organic farming and a unique opportunity to strengthen one's health and get some rest. *"Spend a weekend at the organic farm, feed animals, taste herbal teas, enjoy a bathhouse, learn to bake bread and do various other wonderful activities,"* encourages the Association of Latvian Organic Agriculture. Latvian farms are surrounded by picturesque scenery, encouraging guests to make use of the opportunity and observe wild animals and hike on the most beautiful forest trails.

Conclusions, proposals, recommendations

Organic agriculture is a model for rural development and it demonstrates with real-life examples how to enhance economic, environmental and social sustainability at the regional, national, and global levels. The development of organic farming in Latvia is one of the priorities of the Ministry of Agriculture and it works on increasing the number of organic farmers, the cultivating land and the range of offered organic products.

The research results show that the growth rate of the GDP is approximately 2 % annually, while crop and animal production, hunting and related service activities remains at the same level.

During the last five years, there have been no significant changes in the number of organic farms in Latvia but area of organically certified agricultural land in Latvia slowly growing by approx. 5-6% annually.

The interest in organic farming in Latvia is growing all the time and it is based on the global increase of demand for such products as well as on the favourable market conditions. A considerable part of the green products is exported and is very well accepted on both the local and European market.

The development of organic agriculture in Latvia should be based on the government's focused effort in: improving the regulatory

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framework and harmonizing it with international standards, subsidies for organic farmers, promoting the development of production and sales infrastructure for organic agriculture's products, shortening of food chains, any other support for organic farming market participants. Changes for the whole farming system are necessary which show the multifunctional role of agriculture.

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