

# Organic farming in Latvia: development and economics

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Organic agriculture plays an important role in the sustainable and environment-friendly agricultural production. The authors paper analyse the development and economic issues of organic farming in Latvia. The primary information on organic farming in Latvia regarding the trends, the number of farms and land use, support payments as well as a short description of the structure of organic farming are provided. The influence of Latvia's accession to the European Union on the organic farming development is assessed. The results of an analysis of the economic performance (net value added) of organic farms and a comparison with conventional farming are presented.

**Key words:** organic farming, Latvia, support, farm economic performance

## INTRODUCTION

The problems of overproduction within the European Union (EU) countries and the environmental impact of agriculture have lead to the introduction of schemes that aim to reduce both. Recently, the EU Common Agricultural Policy (CAP) has been re-evaluated to include supplementary measures that encompass the environmental role of agriculture rather than of production alone (Casey, Holden, 2006), taking into account the growing interest of consumers to natural, healthy and local food. Agri-environment support has increased the environmental awareness of farmers and had a positive impact on farming practices. One of the well-known and wide-spread sustainable agricultural methods under agri-environmental scheme is organic farming, with its emphasis on sustainable agro-ecosystem management and the use of locally derived, renewable resources. It offers potential solutions to some of the key problems faced by the agricultural sectors of industrialized countries (Lampkin, Padel, 1994; Lampkin et al., 2006; Pacini, 2003; Rigby, Cáceres, 2001). This production method, which involves much more than choosing not to use certain pesticides, fertilizers, genetically modified organisms, antibiotics, and growth hormones that are not permitted by organic standards (Hugh, 2006), has particular advantages for small-scale farmers (Rundgren, 2006). According to the FAO / WHO *Codex Alimentarius*<sup>1</sup> guidelines, organic agriculture is “a holistic production management system which promotes and enhances the agro-ecosystem's health, including biodiversity, biological cycles, and soil biological activity. It emphasizes

the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems”. Organic agriculture as an environment-friendly and sustainable production method has been encouraged on international (FAO, 2007) and regional, int. al. European (Commission..., 2004), level. The new EU Regulation<sup>2</sup> defines organic production as an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain consumers for products produced using natural substances and processes. It is stressed that the organic production method thus plays a dual societal role, because, on the one hand, it provides for a specific market responding to a consumer's demand for organic products, and on the other hand delivers public goods contributing to the protection of the environment and animal welfare, as well as to rural development.

Farm economic data are important for decision-making by policy makers (in terms of setting support levels and stimulating responses of farmers to policy changes), by producers (in terms of deciding whether to convert, or whether to modify existing organic systems and improve the performance of farms through benchmarking), and for the market place as costs of production are a contributory factor in transparent price setting (Lampkin et al., 2006). Even though some researchers argue that the comparative analysis introduces some problems related to methodological

<sup>1</sup> *Codex Alimentarius Commission. Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods.* FAO / WHO: Rome, 1999. P. 2–3.

<sup>2</sup> Council of the European Union. Council Regulation (EC) 834 / 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No. 2092 / 91. *Official Journal L 189.* 2007. P. 1–23.

issues (Offermann, Nieberg, 2000), comparison of organic and conventional farms' economic performance is not only helpful in identifying the need for adaptations to existing policies or the introduction of new policy measures, us making policies more targeted and efficient, but it also supports the monitoring and ex-post evaluation of policy impacts on organic farming. Net value added (NVA) is one of the most essential performance ratios of farms, which characterizes the value of an enterprise's output with the use of production resources. NVA is formed by total output (i. e. crops and crop production, livestock and livestock products, other output) and total subsidies (excluding on investment), from which total specific costs and farming overheads, depreciation and production taxes are subtracted.

The aim of the study was to estimate the development and some economic issues of organic farming in Latvia. The study includes the following tasks: 1) to estimate Latvia's development and structure of organic farming; 2) to estimate support measures and subsidies for organic agriculture; and 3) to compare the economic performance of organic and conventional farming.

## METHODS AND CONDITIONS

The principal materials used for the studies are as follows: literature sources, research papers and reports of institutions, published and unpublished of the Central Statistical Bureau of Latvia (CSB) as well as the databases of Farm Accountancy Data Network (FADN), Rural Support Service (RSS) and Food and Veterinary Service (FVS).

To estimate the development issues, suitable qualitative and quantitative research methods were used: analysis and synthesis, logical and abstractive construction, data grouping and comparison, etc.

To evaluate the farms' economic performance, a comparative analysis of conventional and organic farms' NVA and production value added change trends was made, as well as the efficiency of activities in both types of farms grouped by the European Size Unit (ESU), compared with the

average level, was defined. The methods of monographic and comparative ratio analysis, literature studies and inductive-deductive research were used.

## RESULTS AND DISCUSSION

### Development of organic farming

The history of Latvia's organic agriculture originated in 1990 when there were only three organic farmers in the country, but a rapid development of organic farming began after 2001 when in the Law on Agriculture organic farming and state assign subsidies for this farming method were defined. After Latvia's accession to the EU in 2004, the number of organic farms has increased more than four times. The number of farms dealing with biological agriculture continued to grow in 2007, although the growth pace has diminished. In 2007, as compared to the year before, the total number of organic farms did not increase significantly – only by 0.4% (Fig. 1).

At the end of 2007, in Latvia there were 4112 farms engaged in organic farming; of them, 63 farms have started organic production, 1215 farms have already entered the transition period to organic production, and there were 2833 certified organic farms. The number of organic farms and the area of certified agricultural land in 2007, as compared to 1998, grew 106 times, but the share of utilized agricultural area (UAA) under organic farming from 2000 through 2007 increased three times.

A huge increase of certified farms (2.8 times) was observed through 2006 to 2007 (Fig. 2).

As one can see, the growth of the number of farms that started the transition period was most intensive in 2004 after accession to the EU. The growth rates of organic area (fully converted area and area in conversion<sup>3</sup>) in some countries are very high. The share of UAA in 2007 was 9.8% and ranked the third in Europe and the 23rd in the world

<sup>3</sup> 'In conversion' means the transition from non-organic to organic farming within a given period of time, during which the provisions concerning organic production have been applied.

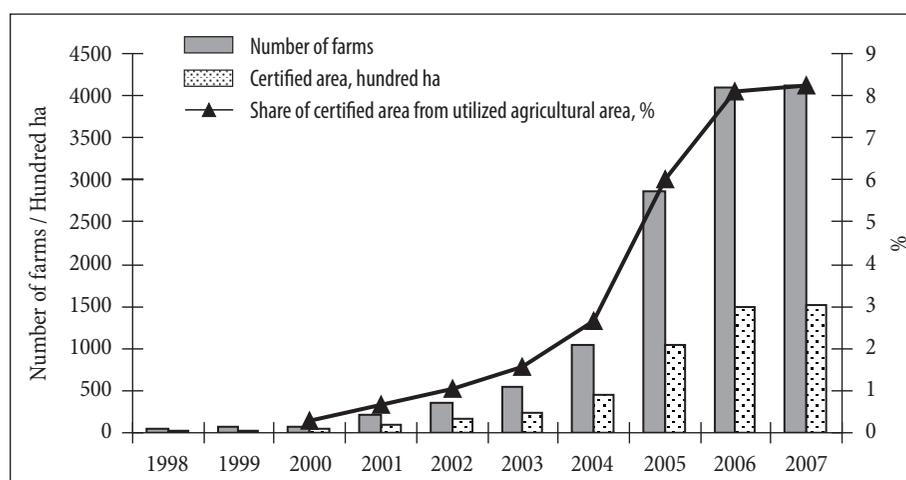


Fig. 1. Number of organic farms, certified area under organic farming (ha) and share of certified area in UAA (%) in Latvia, 1998–2007

Source: authors' calculations based on data of Ministry of Agriculture.

(Willer, Klicher, 2009). The popularity and rapid growth of Latvia's organic farming can be explained by the following reasons:

- 1) support from the national government and the EU. This trend is similar to the all-European trend where a strong organic movement, a strong market and government support have a positive influence on the development of the organic sector (Lampkin et al., 1999; Willer et al., 2008);
- 2) the conclusion of H. Willer (2005) who stressed that many farmers in Central and Eastern European countries, *inter alia* Latvia, are using far more extensive farming

methods, so conversion to organic farming is much easier for them and the producers can offer organic products at comparably low prices.

One of the features of Latvia's organic farming is multi-branch production, where farms produce mixed production and organic farms by the type of farming have not changed much during the last few years (Fig. 3).

Organic farms mainly deal with crop cultivation (34%), dairy farming (16%) and vegetable growing (15%) (Fig. 4).

A relatively large number of farms specializes in beef cattle breeding, vegetable and pig breeding, as well as

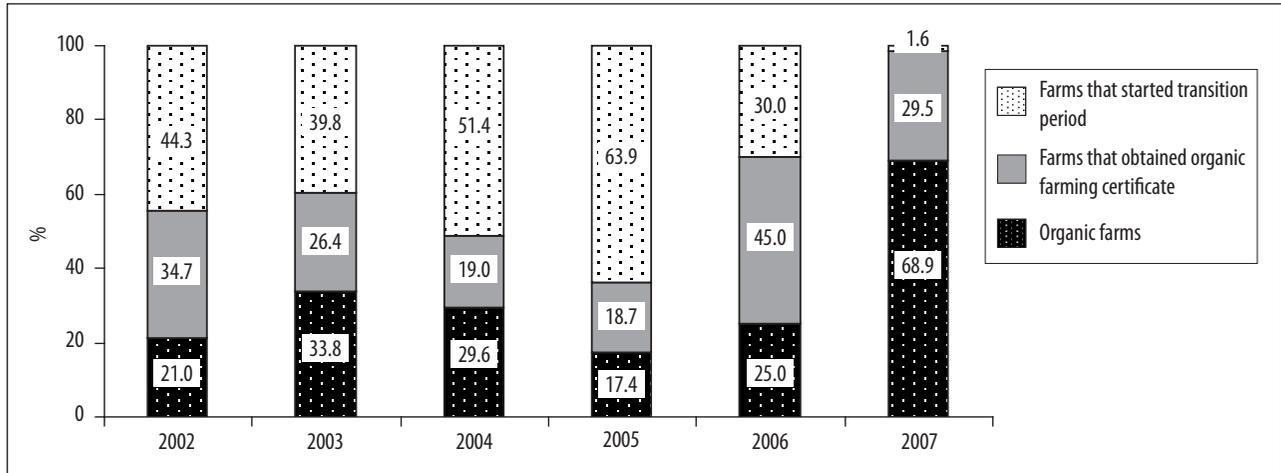


Fig. 2. Structure of organic farms in Latvia, 2002–2007

Source: authors' calculations based on data of Ministry of Agriculture.

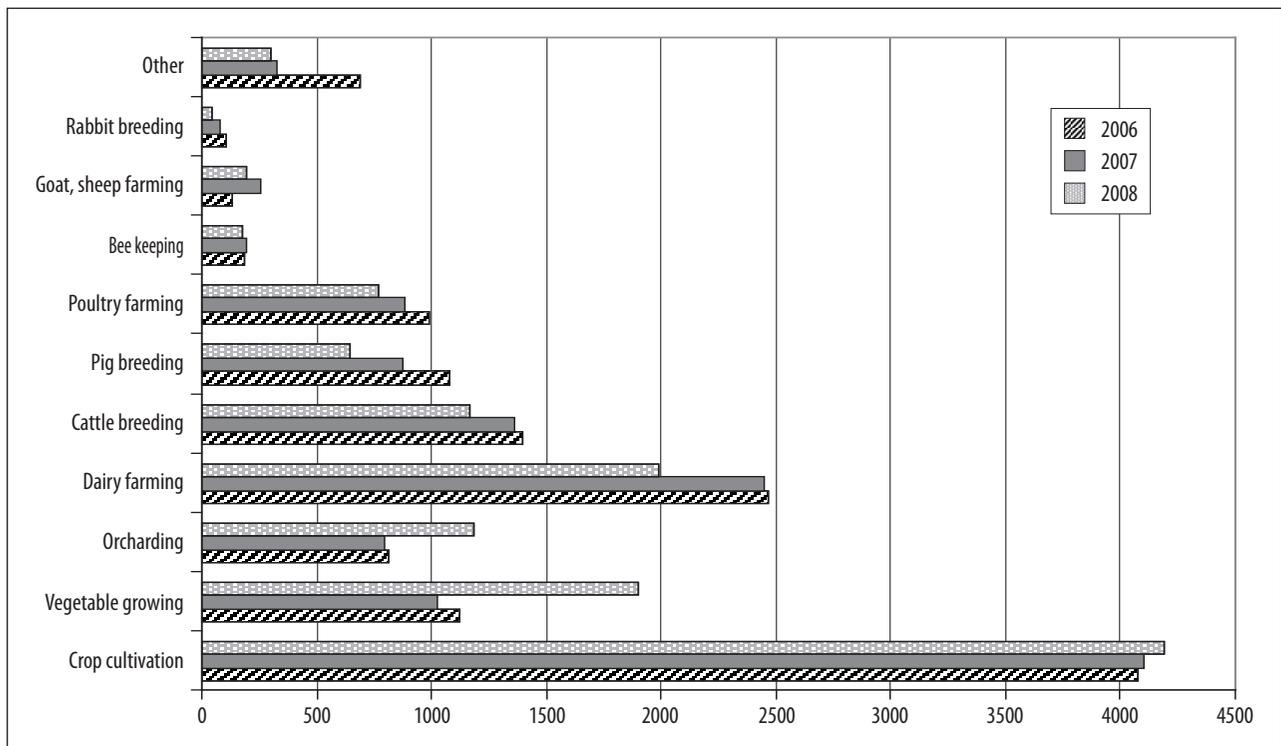


Fig. 3. Trends of organic farms by type of farming in Latvia, 2006–2008

Source: authors' calculations based on data of the Food and Veterinary Service.

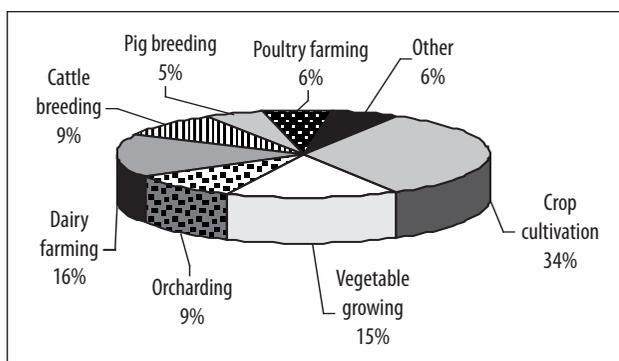


Fig. 4. Latvia's organic farms by type of farming, 2008

Source: authors' calculations based on data of the Food and Veterinary Service.

poultry farming. Other, less popular, specialization forms of organic farms are beekeeping, goat and sheep farming, and rabbit breeding. In 2007, there were no mushroom growing and aquaculture farms, but in 2006 there were one aquaculture and two mushroom growing farms.

### Support for organic farming

State support for Latvia's organic farming was launched in 2001 when farmers engaged in organic farming could apply for subsidies for organic farming area and organic animal farming. This support for certified areas and certified farm animals was provided from 2001 to 2003. However, with accession to the EU in 2004, farmers of Latvia, for the first time, had a chance to apply for the EU direct support payments. Thus, since 2004, the development of organic farming in Latvia is supported from EU structural and state subsidy funds.

In order to ensure the availability of the EU funds to promote agricultural and rural development in Latvia, the Rural Development Plan (RDP) for 2004–2006 was prepared and implemented. According to the support provided under the "Agri-environment" measure ("Development of organic farming" sub-measure) within the RDP farms with organic farming certificate received support in the amount of 82 EUR for each hectare of land, but farms that had obtained the transitional period certificate and had started

transition to organic farming received support in the amount of 139 EUR/ha (Ministry of Agriculture of the Republic of Latvia, 2007a). For the promotion of organic farming in 2004 to 2006, state support was provided for the following actions: 1) to enterprises engaged in the production of organic farming products, first-stage processing, processing and marketing; 2) support to the development of seed farming; 3) to the evaluation of cultivated plant sorts in organic farming. Table 1 shows the total support received by Latvia's organic sector in the period 2004–2007. In these years, Latvia's organic farmers received support in the total amount of more than 14 million LVL from EU structural funds, while from the state subsidy fund they received only 632.2 thous. LVL, or 4% of the total support received by the Latvia's organic farming sector. Like in the other new EU members (Łuczka-Bakuła, 2005), Latvia's accession to the EU brought about positive tendencies in the development of organic farming through implementation of the CAP's environmental instruments. The subsidy payments were decoupled from production, and additional support for organic farms was intended to compensate for lower yields and higher labour costs, and the decoupling of subsidies was commended because it allocated more money for environmental and rural development programs, thus expressing the cultural value that healthy rural areas hold in the European context (Nilsson, 2000).

The Rural Development Plan 2007–2013 has been developed, in which the measure of "Agri-environment payments" is a priority of axis 2 (improving the environment and the countryside), and more than 40% of the total financing under the axis has been granted to this measure to support the development of organic farming and integrated horticulture. The "Development of organic farming" sub-measure ensures support for holdings that are in the process of managing the utilized agricultural land: 1) produce organic farming products; 2) are in the transition period to organic farming production. The area support payment shall be allocated with respect to the cultivated plant areas registered by the beneficiary, where divisions of the cultivated plants are shown in Table 2.

Table 1. The dynamics of support from EU structural and state (national) subsidy funds (thous. LVL) for organic farming in Latvia, 2004–2007

	2004	2005	2006	2007
Support from state subsidy funds:	175.5	243.0	213.7	198.3
– production of organic farming products, first-stage processing, processing and marketing	170.2	212.6	168.5	138.6
– organic seed production	5.3	5.3	6.8	9.8
– evaluation of plant sorts for organic farming	–	25.1	38.4	34.9
– development vegetative reproductive material data base	–	–	–	15.0
Support from EU structural funds	3 405.8	4 160.1	6 434.4	10 062.9
Total received support	3 756.8	4 646.1	6 861.8	10 459.5

Source: data of the Rural Support Service.

Table 2. Support for organic farming in Latvia from EU structural funds, 2007–2013

Groups of crop's payment	EUR / ha
Permanent meadows and pastures, nectar plants	138
Field crops ( <i>inter alia</i> industrial crops), other crops in arable land, perennial grassland and grassland in arable land for seed production, fallow	108
Vegetables (incl. herbs) and household gardens	357
Potatoes, starch potatoes	318
Fruit crops and bush fruits	419

Source: Ministry of Agriculture of the Republic of Latvia, 2007b.

### Farm's economic performance

There are different approaches to comparative analysis. Some authors (Nieberg, Offermann, 2003; Offermann, 2004) suggest a comparison among farms before and after conversion, as well as with conventional farms. Others (Lee, Fowler, 2002) divide a comparison into farm surveys, field studies and case studies. Our estimation is based on data concerning Latvia's farms for 2003–2007, included in the FADN selection, where all farms are divided into three groups: organic, conventional and in conversion.

There are various criteria of assessing the economic performance of farms. Some researchers (Offermann, Nieberg, 2000) suggest using profit as generally one of the most common and accepted indicators for the success of an economic activity, expressing it in relation to UAA and family labour (family work unit). At the same time, important factors that determine profitability (yield levels, price realized and support payments received) should also be evaluated. In some studies (Hrabalová, Zander, 2006), "the remuneration of family labour", equal to the sum of profit and expenses for wages per annual work units (AWU), was used.

A comparison of labour use (AWU per ha UAA) among different types of farming (organic, conventional and in conversion) shows that in Latvia's organic farms the contribution of total and unpaid labour was similar to the contribution in other types of farming. In conversion farms, the contribution of unpaid (family) labour was by 7 to 18% larger than in total agriculture, and by 8 to 15% larger than in organic farms. In the transition period, with aggregate labour contribution remaining almost unchanged, the largest part of

work is done by using the inner labour resources – family members of a farm owner rather than paid labour from outside. A similar situation was observed in other countries (Darnhofer et al., 2005). The labour intensity per ha UAA is highest in conversion farms (Fig. 5), where labour contribution exceeded the average by 20 to 33%, and in 2006 to 2007 by 40–43% the labour use in organic farms where it was the lowest in Latvia (only 80–95% of the total). This complies with the findings of other researchers (Niemeyer, Lombard, 2003) who defined an increased workload in conversion farms as an important problem for several countries. It shows that changes in agricultural production type are one of the crucial moments in the development of all upcoming organic farms, which requires an increased labour contribution, yield and intensification of the production process.

When assessing the short-term economic performance of organic farms, the minimum requirement would be that organic farming is economically viable, i. e. the monetary return covers all expenses incurred, including consumption by the farm household. In the long run, though, some agricultural economists (Nieberg, Offermann, 2003) believe that relative profit ratios and the criteria of profit maximization are becoming more important and need to be compared to the (hypothetical) performance under conventional management.

Several authors (Nakamoto, 1996; Hrabalová, Zander, 2006) recommend using net value added, which shows the newly created value in an enterprise, in evaluating the efficiency of the production process in agriculture. NVA per AWU can be regarded as a relevant and important

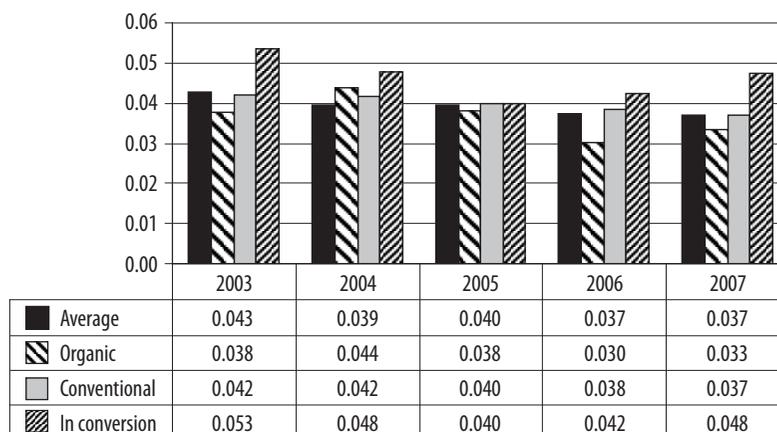


Fig. 5. Labour use (AWU per ha UAA) on Latvian farms, 2003–2007

Source: authors' calculations based on data of the FADN.

indicator of farm income, particularly for family farms. NVA usage in the economic analysis of farms is supported also by the FADN methodology<sup>4</sup>. However, NVA fails to show the portion of the newly created value formed by national and EU support of agriculture. Therefore, in this paper we use a modified indicator – production NVA, which is equal to the difference between NVA and production subsidies received. It shows NVA by a farm, if the farm is not supported by production subsidies. NVA proportion in Latvian farms' total revenue, formed by total output and production subsidies, was fluctuating (Fig. 6).

During the period under analysis it showed a tendency to diminish in farms of all types. It can be especially clearly seen in the example of organic farms and farms in conversion: if in 2004 the NVA proportion was 46% and 49%, respectively, in 2007 it was only 39% and 35%, respectively, although, in comparison with other types of agricultural production, organic farms showed the largest NVA per labour unit, and it was achieved thanks to a significant support of production.

It is suggested (Darnhofer et al., 2005) to distinguish between “committed organic” (farm for the environment) and “pragmatic organic” farmers (who do it for money). At the same time, it was concluded that for many farmers the perceived economic viability may be a necessary condition for conversion, but not a sufficient one. In Poland, the main motive for farmers to join the agri-environmental programme (*inter alia* organic farming), was its financial benefits and improving the profitability of farms (Brodzińska, 2008). A summary of the previous studies (Rigby, Cáceres, 2001) shows that the Canadian organic farmers had defined profitability as their primary reason for adopting

organic farming. It confirms the other findings (Nieberg, Offermann, 2003) that, in addition to the wish to actively contribute to the environmental goals, financial motives have become one of the most important aspects in the decision to convert, which is reflected by the rapid growth in the adoption of organic management practices following the introduction of financial support for organic farming in most countries.

Even though it cannot be concluded from the above that the profitability is the decisive factor in farmers' choosing to convert to organic farming, it is unambiguously clear that analysis of organic farms' performance and profitability in comparison with conventional farming is extremely important not only for academic purposes, but also for farmers.

It is argued (Hrabalová, Zander, 2006; Jánký et al., 2004; Jánký, Živělová, 2007) that subsidies play an important role in organic farms, despite the fact that in some cases they do not compensate the high costs. The average proportion of subsidies in Latvia's organic farming NVA is 80%. The production NVA of organic farms and those in conversion was 1.5 to 2 times less than the average Latvian agriculture. The tendencies of NVA and net income (Table 3) are mostly similar in all types of farming.

NVA per ha UAA on organic farms was larger than in conventional farms, except in 2006. A dissimilar tendency can be seen in farms in conversion. In 2007, the production efficiency in the transition period from conventional to organic farming comprised only 89% of the conventional farming level.

Analogous changes affected also the net income per ha UAA of farms in conversion as compared to conventional farms. In the literature (Niemeyer, Lombard, 2003), these differences in performance are explained by a lower financial output in the first years of conversion than before because of increasing fixed costs, costs of establishment of the organic system, costs of training and advice, or the lack of access to premium prices. Meanwhile, in organic farming the net

<sup>4</sup> European Commission. *Community Committee for the Farm Accountancy Data Network (FADN): Definitions of Variables Used in FADN Standard Results, RI / CC 882 Rev. 8.1.* Brussels, 2007.

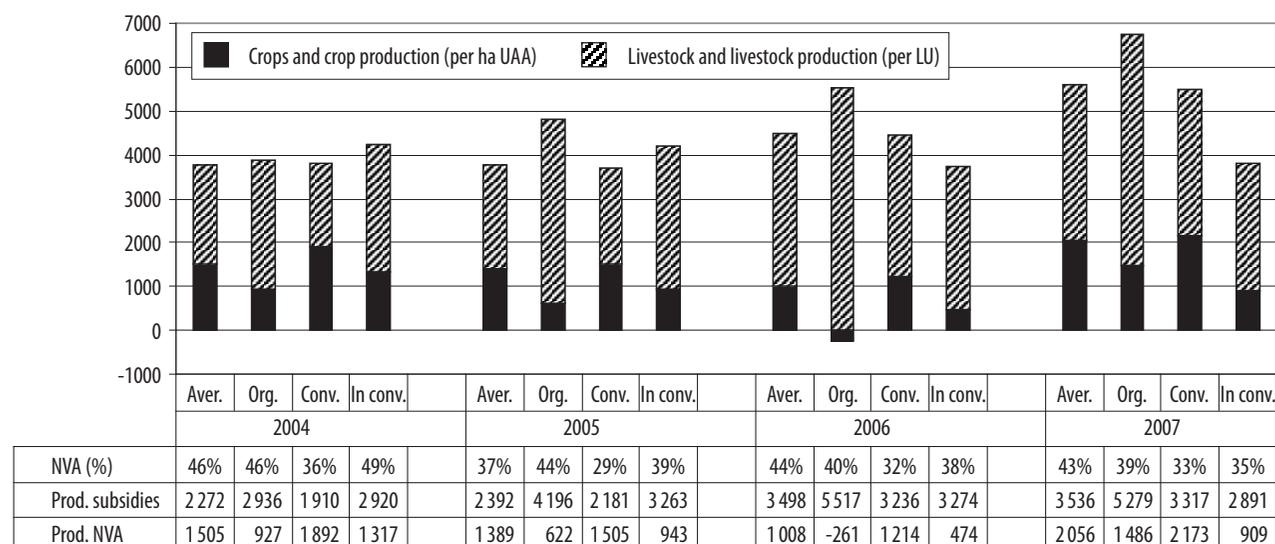


Fig. 6. Net value added per AWU, its components and proportion in the total revenue of Latvian farms (LVL and %), 2004–2007

Source: authors' calculations based on FADN data.

income per ha UAA in 2005 exceeded the level of conventional farming. A greatly similar situation is observed in Europe: the profits of organic farms on average are similar to those of comparable conventional farms, nearly all observations being in the range of  $\pm 20\%$  of the profits of respective conventional reference groups (Nieberg, Offermann, 2003), and often the profits of organic farms are higher than those of conventional farms (Offermann, Nieberg, 2000).

Gross margin is the value of crops and crop production or livestock and livestock production output less the cost of variable inputs required to produce that output. Compared to Latvia's conventional farming, the gross margin of organic crop farming and livestock farming products was lower (Fig. 7).

The year 2007 was the first when livestock and livestock production output in organic farms was larger than in conventional farms. In the latter, output and expenses remained on the level of 2006, while in organic farms the growth reached 86% and 63%, respectively, causing gross margin growth by 70%. The main reason for such leap was a much faster boost of organic farming production, especially the increase of pig farming production (6 times), eggs (3 times), milk (by 83%) and beef production (by 65%). The tendency was a similar in organic crop farming production: the output growth by 86% and increase of expenses by 91% allowed raising gross margin by 80% in 2007 (the growth in conventional farms was 58%).

Table 3. NVA and net income (LVL per ha UAA) on Latvian farms, 2004–2007

		Average	Organic	Conventional	In conversion
2004	NVA / UAA	149	170	159	202
	Net income / UAA	127	143	133	181
2005	NVA / UAA	150	183	147	168
	Net income / UAA	156	169	127	158
2006	NVA / UAA	168	159	170	159
	Net income / UAA	147	164	144	181
2007	NVA / UAA	206	225	204	181
	Net income / UAA	171	194	167	190

Source: authors' calculations based on FADN data.

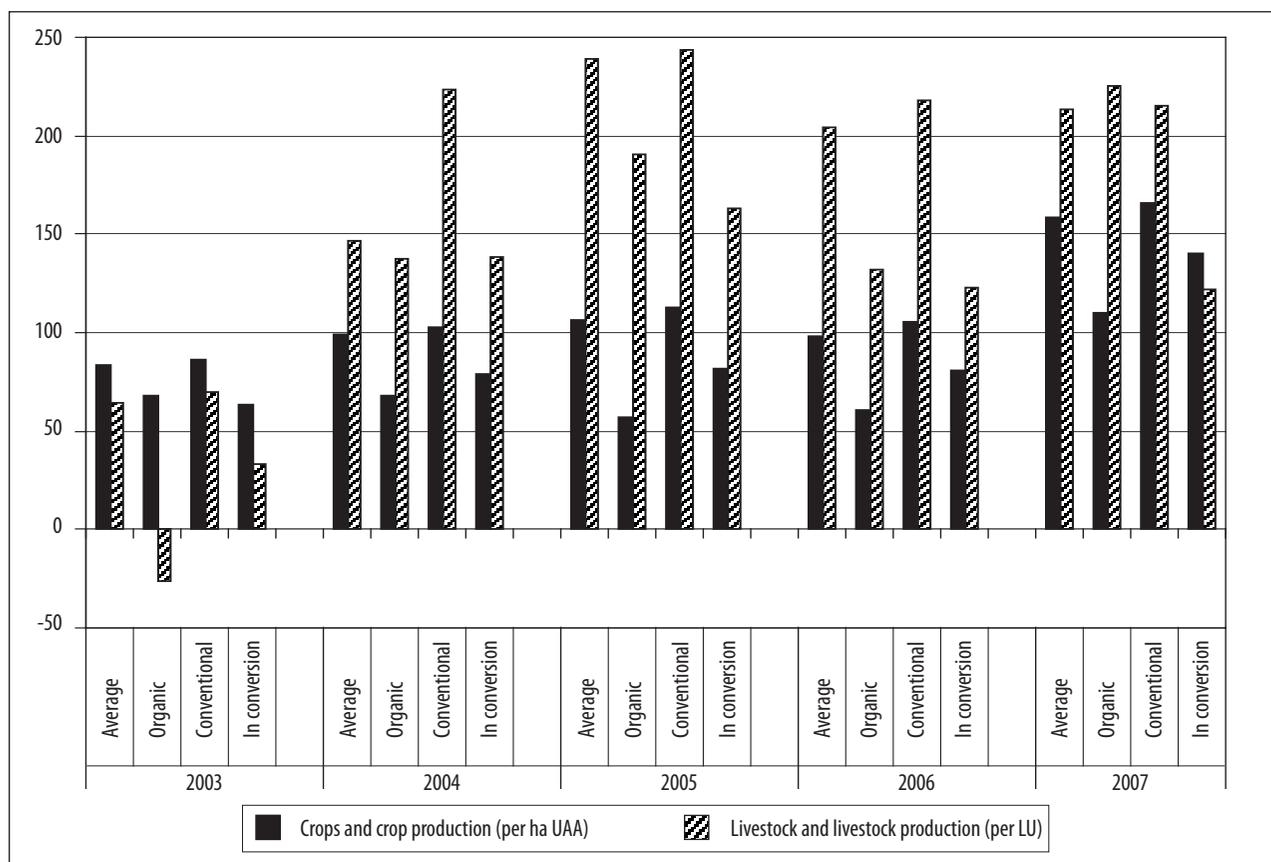


Fig. 7. Gross margin of crop and livestock products (LVL) on Latvian farms, 2003–2007

Source: authors' calculations based on FADN data.

## CONCLUSIONS

The growth rates of organic area and of the number of organic farms are very high in Latvia and are among the top of the European level. The reasons for the popularity and rapid growth of Latvia's organic farming can be explained by support from the national government and the EU, as well as by more extensive methods of farming.

One of the peculiarities of Latvia's organic farming is multi-branch production, i. e. farms produce mixed production, and, as regards the type of farming, organic farms have not changed much during the last few years. Organic farms mainly deal with crop cultivation (34%), dairy farming (16%) and vegetable growing (15%).

Latvia's Rural Development Plan 2007–2013 provides for additional support of organic farms under the measure of "Agri-environment payments" (a priority of axis 2), and more than 40% of the total financing under the axis has been granted to the development of organic farming and integrated horticulture.

In Latvia's organic farms, the contribution of total and unpaid labour was similar to the contribution in other types of farming. In conversion farms, the contribution of unpaid labour was larger than the average. It shows that changes of production type are one of the crucial moments in the development of organic farms, which requires increased labour use, where the largest part of work is done by unpaid labour resources, i. e. family members.

The NVA proportion in the total revenue of Latvia's farms showed a tendency to decrease. Although, in comparison with other types of agricultural production, organic farms showed the largest NVA per labour unit, it was achieved thanks to a significant support of production. Meanwhile, production NVA of organic farms and those in conversion was 1.5 to 2 times less than on average in Latvia's agriculture.

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## ĒKOLOGINIS ŪKINĪKAVĪMAS LATVIJĒ: PLĒTRA IR PERSPEKTĪVOS

### Santrauka

Ēkoloģinis ūkinīkavīmas vaidīna svarbū vaidmenī darnīos ir aplīnkai draugiškos žemēs ūkīo produkcījos gamybojē. Straipsnyjē nagrinējama ēkoloģinio ūkinīkavīmo plētra Latvijojē ir atītinīkami ēkonomīnīai klausīmai, pateīkīama pagrīndīnē īnīformacīja apie ēkoloģīnī ūkinīkavīmā Latvijojē, ūkī ūskaičīaus kītīmo tendencījas ir žemēs panaudojīmā, paramos īšmokas bei trūmpas ēkoloģinio ūkinīkavīmo struktūros aprašīmas. Įvertīntas ir Latvījos narīstēs Europos Sājungojē poveīkis ēkoloģīnīam ūkinīkavīmū. Pateīkīami ēkoloģīnī ūkī ūkonomīnēs veiklos rezultātai (grynoji pridētīnē vērtē) ir palygīnīmas su tradīcīnēmīs ūkinīkavīmo formomīs.

**Raktažodžīai:** ēkoloģinis ūkinīkavīmas, Latvīja, parama, ēkonomīnē ūkīo veikla