

Organic Agriculture as a Perspective Branch of Ukrainian Economy

OLENA YU. CHYGRYNⁱ, ALLA AN. TREUSⁱⁱ, ANDRII A. ISKAKOVⁱⁱⁱ

Today Ukrainian farmers have to use modern innovative approaches and technologies to become competitive on the world agricultural market. In this article is substantiated that green agriculture and family farming could not only improve the economic situation in Ukraine and also provide synergetic effect for economy, nature and society. The article analyses the world tendencies in developing organic farming. The problems in agricultural business production in Ukraine and preconditions for developing “green” farming is considered. The authors compare the economic efficiency of growing crops using organic and traditional methods. The synergetic effect of organic agriculture which includes positive results for the economy, environment, Ukrainian society, and political position of the country in the world are shown. Also, the measures which can help to achieve this effect are outlined.

Keywords: agriculture, organic product, demand, organic farms, market, yield, effect.

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Introduction. According to the Food and Agriculture Organization [1], now production of organic food is the most important problem after nuclear disarmament. In today's global agricultural market organic products have significant demand. Organic market in the world is growing rapidly, and this issue is very important for Ukraine as it is defined as an agricultural country which has great potential in the production and consumption of organic food. Ukrainian demand for organic products is growing in the domestic and foreign markets. Therefore, research status and development of organic production in our country determines the relevance of research topic.

Scientists became increasingly interested and aware of organic agriculture in the 1980s, even those who were not supportive of alternative agricultural systems.

Trends which began in the 1970s, and accelerated through the 1980s, continued to flourish during the 1990s and into the new millennium. Demand and production continued to grow exponentially around the world, often at 20–30 % per year.

Production of organic agricultural products in the world in recent years is growing rapidly. At present, 37.2 million hectares worldwide are used for organic production. Australia, New Zealand and Oceania are the regions with the largest area of organic agricultural land – 12,2 million hectares, followed by Europe – 10,6 million hectares in Latin America – 6,8 million ha Asia – 3,7 million hectares North America – 2,8 million hectares and Africa – more than 1 million hectares. Organic farming technology is spreading fast in the European Union. Demand for organic products is formed mainly in countries that have achieved a

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certain level of economic development and where some part of the population that not only believes in the usefulness of such food for the human body, but also able to pay a higher price for its ecological clearness. Accordingly, there are the most developed markets for organic products in North America and Western Europe [2].

Agriculture is one of the most perspective branches of Ukrainian economy. For this reason our farmers have to use modern innovative approaches and technologies to become competitive on the world market. Green agriculture and family farming could not only improve the economic situation in Ukraine and also provide synergetic effect for economy, nature and society.

Analysis of resent research and publications. Conception of organic farming was founded by Japanese philosophe Mokishi Okada [3]. Ukrainian scientists V. Vovk [4], N. Sirenko [5], V. Artysh [6] and others researched the procedure of ecological audit in agriculture, the ways of transition to organic farm.

Goal of the article is to analyse the level of development of agricultural production in Ukraine in comparison with international tendencies and propose the ways of intensifications these processes.

Research results. Agricultural business in our country has many problems. It is lack of investments, degradation of soils, pesticide using, sowing fields only a few plant species, growing of which is the most profitable, bad conditions for small and medium-size agricultural business etc. Organic agriculture and family farming can be the decision of the most of these problems

International Federation of Organic Agricultural Movement (IFOAM) [7] gives such definition of organic agriculture: it 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”

“Consoliated Annual Report of IFOAM – Organics Internetenal 2015” shows rising of organic farming all around the world (Table 1).

Table 1
 Organic agriculture development 1999–2015 (According [8])

Organic producers	Organic farmland	Organic retail sales
1000 % growth since 1999	300 % growth since 1999	Organic food market 5x from 15,2 bn usd (1999) to 80 bn usd (2014)
Between 2013 and 2014 there has been an increase in the number of producers of by almost 270000, or over 13 %	In 2014, almost +500000 hectares were reported compared with 2013	The countries where organic has the highest share of the total market are Denmark (7,6 %), followed by Switzerland, Austria, Sweden, USA and Germany

Organic farms produce organic products. We can call organic “only those products that are produced according to the approved rules (standards), and production has been the procedure of certification in the prescribed manner” [7]. The problem of Ukraine in this sphere is that on our market we have great quantity of “eco”, “bio”, “organic”, “green” products that are not certificated. It is just marketing course that doesn’t mean these products meet the criteria of organic production. In 2014 Law of Ukraine № 425-VII “About the production and circulation of organic agricultural products and raw materials” was accepted. This Law prohibites “in the

labeling of products which don't meet the requirements of this law, to use the designation with the words "organic", "biodynamic", "biological", "ecological", words with the prefix "bio" and so on" [9]. However, many Ukrainian providers continue to use such words and nobody control them.

Nevertheless, area of organic agricultural lands is increasing year after year (look at Table 2) It is almost 1 % of rural lands of our country now. "According to scientists, "in Ukraine there are about 8 million ha of clean black earth" [4]. It should be noted that "the total area of land used for organic production in the European Union is 3.8 million hectares" [10]. So, our country has great potential to develop this branch.

Table 2

The total area of organic agricultural land and amount of organic farms in Ukraine, 2002–2015 (According to [11])

	2002	2004	2006	2008	2010	2012	2014	2015
Total area, ha	164449	240000	242034	269984	270226	272850	400764	410550
Amount of farms	31	70	80	118	142	164	182	210

Certainly there are potential to the development of agricultural sector, but "to compete globally, fertile land is not enough. Ukrainian farmers harvested in 2 times less wheat from one hectare than their colleagues in France and Germany" [12]. In such case our farmers should pay attention to organic agriculture. It can give much more economic benefits than traditional farming. For example, prices of organic products "in Europe are higher by 150 %, in the US – in 8–12 times" [5]. Now Ukraine has significant potential of growth green agricultural production. Namely with favourable climatic conditions, fertile soils and an efficient agricultural sector, Ukraine's agricultural output exceeds the demand of the domestic market. Given this surplus, Ukraine can be a competitive producer and exporter of organic goods. The EU could be in this case an excellent export destination for many of Ukraine's organic products, including cereals, oilseeds, dried pulses, fruits, berries, nuts, herbs and honey.

In 2014, Ukraine signed the "Deep and Comprehensive Free Trade Agreements (DCFTAs)" with the EU, which will facilitate the export of agricultural produce by lowering tariffs and EU import duties. The agreements also aim to promote trade and foreign investment into eco-labelled and environmental products, services and technologies – thereby promoting overall modernisation and improvement of labour conditions in Ukraine's organic agriculture sector.

Today Ukraine is ranked sixth in global acreage of organic oilseeds and eighth in global acreage of organic wheat. It means that it has the necessary capacity and expertise to further develop as an organic producer (Figures 1, 2).

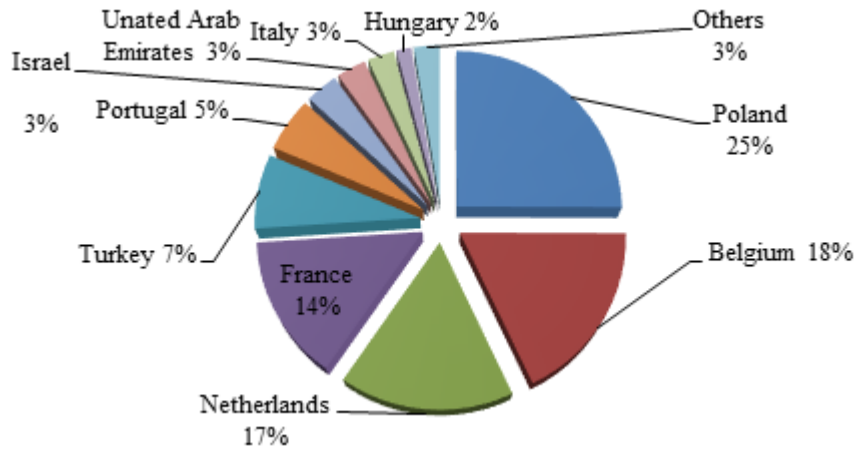


Figure 1. Rapeseed: export destinations from Ukraine as % of total exports (organic and non-organic) (According to [13])

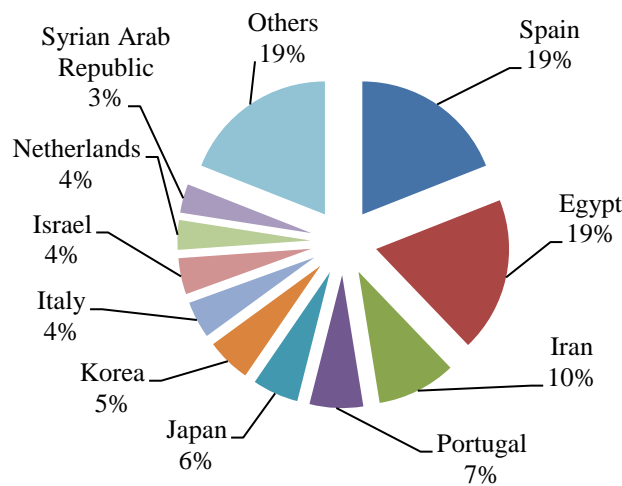


Figure 2. Corn: export destinations from Ukraine as % of total exports (organic and non-organic) (According to [13])

Skeptics argue that the yield of organic crops is low. It is not true, it all depends on the type of plant. Some cultures give higher yield when they are grown by organic technology (look at Table 3).

In 2005, Organic Federation of Ukraine (OFU) was established. Their “objectives are primarily to promote environmental conservation, creation of the legal framework for organic production, the formation of a certification organizations” [14]. Research of OFU shows that income from selling organic products in our country increased from “400 000 euros in 2006 to 17 million euros in 2015” [11].

Table 3

Comparison of economic efficiency of cultivation winter wheat and spring barley through organic and traditional methods (According to [10])

Indicators	Deviation, %			
	Winter wheat		Spring barley	
	Traditional method	Orgnic method	Traditional method	Orgnic method
Yield, centners per 1 ha	100	64,3	100	111,23
The cost of 1 ha	100	77,8	100	63,3
Income per 1 ha	100	109,4	100	186,29

If Ukraine uses 8 million hectares of land that are suitable for organic farming, it will be possible to get income at least in 20 times more, which is 340 million euros annually.

Of course, conversion to organic farming is not easy. First of all, farmer have to audit land and assess the possibility of organic farming on given territory. Secondly, land should be conserved for a period of 3 to 5 years. Then owner have to certify his land. “There are 15 certification centers in Ukraine – five of them are German, three Italian, two Austrian, one from Switzerland, from Turkey – 1, one from the Netherlands, one from France and one from Ukraine”. Price for certification services in our country starts from 6 000 грн. It is low price. For example, “in biggest certificational company of Germany AbCer royalty of inspector range from 640 euros per day” [15].

There are examples of successful organic farming in Ukraine. Agrarian firm “Agroekologia” in Poltava region works in this field almost 40 years. Head of enterprise “Agroekologia” Semen Antonets told about new methods of land sertification: “Previously, for the land certification, they took soil for the analysis. Now, foreigners have found the easiest way to determine the quality of the land. They don’t need equipment, they look at the plants, and even weeds. If among the wheat is plant that lives only in clean soil – the land become certified” [16]. Those who are new in organic business can follow the example of “Agroekologia”.

For greater effect from conversion to organic agriculture it should be implemented on family farms. Such implementations will solve many economic and social problems in Ukraine. For example, in such way we can solve unempoyment problem and problem of poverty through the self-employment of people on their own land. It is possible because many Ukrainians have land. Beside this, legislative base gives chance to obtain land those who haven’t it yet.

If speak about world practice “with more than 570 million farms in 93 countries, more than 500 million is family farms”. On family farms produced at least 56 % of agricultural products. “Such enterprises process most of the agricultural land in the world: 83 % – in North and Central America, 68 % – in Europe, 85 % – in Asia, 62 % – in Africa. Only in South America this share is 18 %” [17].

Now, large agricultural holdings are renting lands of most land owners in Ukraine and paying them just few percent from their income. Holdings often violate the rights of landowners. In this case, the beginning of family farm business can decide problems of landowners.

It is difficult to start new business in Ukraine now, but there are some ways to help farmers to start organic business, for example it is goverment subsidies. In developed countries “the

level of state subsidies as a percentage of the value of agricultural production in recent years amounted to: in Switzerland – 73 %, Norway – 70 %, Japan – 63 %, EU – 45 % (for comparison: in Ukraine is only 4.3 %) [17]. So, it is important to increase the level of subsidies for agricultural business in Ukraine.

These dotations will help not only farmers, for example “in the EU, 25 % of subsidies can be directed to implementation of the latest technologies, guaranteeing food safety, social development of rural areas”. Except subsidies to all farmers, European countries provide subsidies to specific organic agribusinesses. In Germany, the organic farms get “from 350 to 1 thousand euros of subsidies per hectare” [15].

One more thing that can help development of family farms can be tax benefits. The example for Ukraine can be “Western countries with domination of a progressive tax system in which the majority of farmers belonging to the privileged taxpayers. Therefore, the share of taxes paid by farmers in their total expenditures is negligible (ranging from 2.5 to 6 %)” [17]. Instead of this, Ukrainian government is planning to increase taxes for almost all groups of entrepreneurs.

Low credits and cooperation among small-size farms in buying technics can help to get start-up capital and machinery. In this case, decentralization reform can help farmers. Thus, the garage of cooperative agricultural machinery for family farms could be organized on the basis of united communities.

All the facts that were presented helped us to create a scheme that demonstrates the synergistic effect of the widespread introduction of organic family farms in Ukraine (Figure 3). This scheme shows positive effects for the economy, environment, Ukrainian society, and political position of our country in the world.

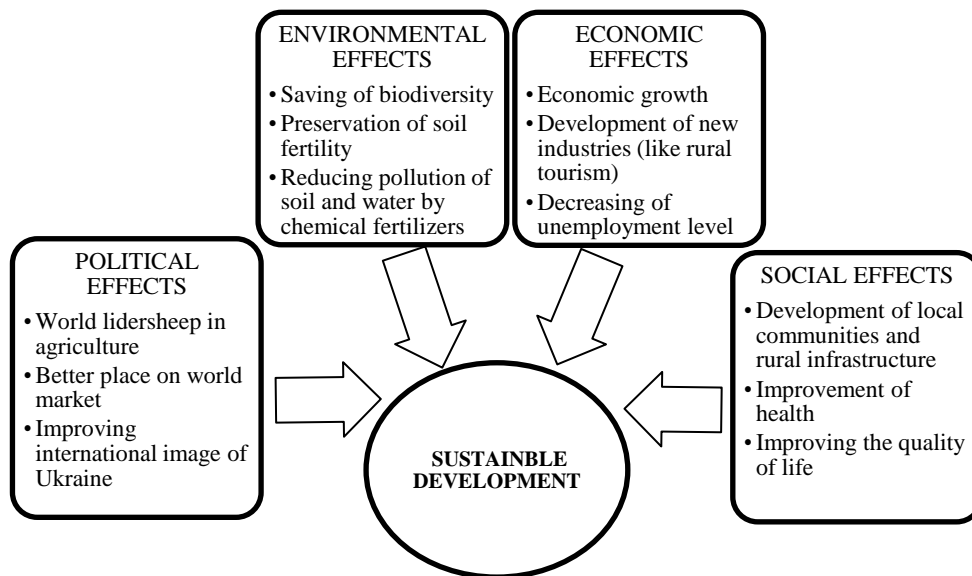


Figure 3. Synergetic effect of organic family farming

Our country has great rural potential and enough of clean soils (in 2 times more, than in EU). Implementation organic family farming in Ukraine will make synergetic effect on the

economy, environment, Ukrainian society, and political image of our country. We proposed some measures for development of organic agriculture. Public interest and political will are necessary to implement these measures. It is also necessary to outline measures that can help to achieve these effects.

These measures are:

1. To form a complete legal framework for organic and family farming. Create regulatory authorities in the field of organic agriculture.
2. To implement state support for organic farming through subsidies, tax breaks etc.
3. To create small agricultural cooperatives, to unite communities.
4. To organize retailers specializing in organic products.
5. Not only to grow but also to process organic products.
6. To carry out information and education programs on organic and family agriculture.

Now Ukraine has a chance to improve economic situation through the changes in agricultural industry. One of the ways to positive changes in Ukrainian agriculture is wide the implementation of organic family farming.

Conclusions. Organic production should be a priority direction of development domestic agriculture. It will allow implementing the concept of sustainable development of agrosphere and is aimed to provide society safety, high quality food, the preservation and improvement of the environment.

The expansion of organic agriculture in Ukraine will contribute to: reproduction of soil fertility and preservation of the environment; rural development and enhancement of living standards among the rural population; improving the efficiency and profitability of agricultural production; securing healthy consumer market with quality products; strengthening export potential; improving the image of Ukraine as a manufacturer and exporter of high quality healthy organic products; ensuring food security in Ukraine; improving the general welfare of the citizens of the state.

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Органическое земледелие как перспективная отрасль украинской экономики

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Сегодня украинским фермерам приходится использовать современные инновационные подходы и технологии, чтобы стать конкурентоспособными на мировом рынке

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Органічне землеробство як перспективна галузь української економіки

сельскохозяйственной продукции. В статье обосновано, что «зеленое» сельское хозяйство и фермерство могут не только улучшить экономическую ситуацию в Украине, но и обеспечить синергетический эффект для экономики, окружающей среды и общества. В статье анализируются мировые тенденции развития органического земледелия. Рассмотрены проблемы производства сельскохозяйственной продукции в Украине и предпосылки развития "зеленого" сельского хозяйства. Автор сравнивает экономическую эффективность выращивания сельскохозяйственных культур с помощью органических и традиционных методов. Рассмотрен синергетический эффект органического сельского хозяйства, который включает положительные результаты для экономики, окружающей среды, украинского общества и политического положения страны в мире. Также намечены меры, которые могут помочь в достижении этого эффекта.

Ключевые слова: сельское хозяйство, органическая продукция, спрос, органическое хозяйство, рынок, урожайность, эффект.

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**Органічне землеробство як перспективна галузь
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Сьогодні українським фермерам доводиться використовувати сучасні інноваційні підходи та технології, щоб стати конкурентоспроможними на світовому ринку сільськогосподарської продукції. У статті обґрунтовано, що «зелене» сільське господарство та фермерство можуть не тільки покращити економічну ситуацію в Україні, але й забезпечити синергетичний ефект для економіки, природи та суспільства. У статті аналізуються світові тенденції розвитку органічного землеробства. Розглянуто проблеми виробництва сільськогосподарської продукції в Україні та передумови розвитку «зеленого» сільського господарства. Автор порівнює економічну ефективність вирощування сільськогосподарських культур за допомогою органічних та традиційних методів. Показаний синергетичний ефект органічного сільського господарства, який включає позитивні результати для економіки, навколишнього середовища, українського суспільства та політичного становища країни у світі. Окреслено також заходи, які можуть допомогти досягти цього ефекту.

Ключові слова: сільське господарство, органічна продукція, попит, органічні господарства, ринок, врожайність, ефект.

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