

TRENDS IN THE EVOLUTION OF ORGANIC AGRICULTURE AT THE GLOBAL LEVEL - A BRIEF REVIEW

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Abstract

Organic agriculture is a production system that supports the health of soil, ecosystems and consumers, combining tradition, scientific research and innovation, promoting fair relationships and a better quality of life, in a way that ensures equity at all levels and for all involved in the agri-food chain: farmers, processors, distributors, traders and consumers. Therefore, ecological agriculture means respect for people and for nature. In this context, the objective of this paper was to briefly evaluate the trends of organic agriculture sector at global level, in the context where the development of this system is motivated by the increasing demand of consumers for food quality and safety in consumption. Recent statistics published by the Research Institute of Organic Agriculture (FiBL), show the upward trend of organic agriculture. Thus, at the level of 2020, organically cultivated surfaces were 74.9 million hectares (with an increase of over 4% compared to 2019) and over 3.4 million producers, their number increasing with 7.6% compared to 2019. The organic food market is also continuously growing, exceeding 120 billion euros. From this point of view, USA, Germany and France are the countries with the largest organic market. Europe is the second largest and most developed organic market (52 billion euros), after Northern America 53.7 billion euros). The current decade is an organic decade, in which more and more organic food products are winning over consumers. Taking into account the upward trend of global organic agriculture, taking into account the surfaces, the number of producers and processors but also the number of consumers, it can be concluded that organic agriculture is emerging as a viable alternative for the third millennium, because, eventually, the organic agriculture means respect for people and for nature.

Key words: organic agriculture, trends, surfaces, producers, organic market

INTRODUCTION

Concerns regarding the risks of chemicals in agriculture, both in terms of consumer health and in terms of ecological effects have been manifested since the 1950s. Ensuring the food security of the population is the obligation of each state and for this, conventional agriculture is the one that takes precedence, for now in the vast majority of the world's states [8, 10]. However, this agricultural system seriously pollutes the environment and can affect the health of consumers, if some measures are not quickly taken to transition to a sustainable type of agriculture, in which new biotechnological technologies ensure food security and safety in consumption [7].

In this context, the global research is starting to find the technological options to reduce this negative impact, their results materializing in alternative agricultural systems, such as: organic agriculture, sustainable agriculture,

biodynamic agriculture and permaculture, which eliminate or substantially reduce the consumption of chemical fertilizers and pesticides.

The definition of the concept of organic agriculture cannot be separated from that of agricultural ecology. Organic agriculture is a method of agricultural production with the main purpose of protecting the biosphere and the natural resources of the planet.

The techniques used in organic agriculture are based on specific objectives and principles, which ensure the harmony between the farmer and nature by maintaining and improving the flora and fauna of the soil, its natural fertility, its stability and diversity [10].

The climate changes that characterize the last decades, sometimes modify the natural conditions, and, indirectly, affect the agro-climatic requirements of the crops [18]. In this context, the sustainable management of crops and the rational use of land, the increase in

agricultural productivity, the sustainable protection of crops [5, 6], but also the reduction of food waste [4, 16] become very important in maintaining agricultural potential, respecting the condition of not increasing the impact of agricultural practices on the environment and climate [17].

The alternative agricultural systems aim to maintain the productive potential of the ecosystems for as long as possible and accepting the ecological conditions, but this reduces the amount of products obtained. Currently, there are two large systems applied in agriculture that solve each separately the two variables of the food equation: quantity and permanence, but there is no system that solves both simultaneously. In these systems, the quantity of production is no longer a priority, this position being occupied by maintaining the productive potential for an unlimited duration, a fact for which they can be approached through the broader concept of sustainable agriculture.

Organic agriculture, unlike the conventional one, aims to preserve and even improve the health of consumers along with the unaltered preservation of the environment through the use of friendly technologies, which conserve soil fertility, biodiversity and also minimize global environmental issues [1, 2, 11, 14].

In every region of the globe, the action plans regarding organic agriculture aim to develop this sector by increasing production, demand and sustainability [3, 13, 15, 19].

On a global level, but especially in Europe, a strong demand has emerged for obtaining agro-food products through non-polluting technologies. The ecological sector began to develop rapidly in the world, with consumers showing a real interest in reducing the risks that agricultural practices could cause to human health and the environment [9].

Farmers from organic agriculture have as their main objective that, through agricultural friendly to the environment practices, they produce food of superior quality, with a special nutritional value and, above all, free from any danger to the health of consumers [8, 10]. However, sometime, the high distribution costs cause organic farmers to look for new strategies to maintain their

economic viability. Therefore, the direct contact between the consumer and the producer, through sales at the farm gate, represents a considerable advantage for both parties, in terms of the price and the improvement of the cultural level. The creation of this perspective can contribute to the development of organic agriculture as an innovative system and model of sustainability. According to the regulations on the packaging, labelling and free movement of organic products, the packaging of an ecological product must have a minimal adverse impact on the product itself or on the environment. The packaging of ecological products is made of biodegradable materials, which do not contaminate either the products or the environment [9].

Organic farming standards require that organic produce is not packaged in reusable bags or containers that have been in contact with any substance suspected of compromising the ecological integrity of the product or ingredient contained in those containers [8, 9, 10].

MATERIALS AND METHODS

The objective of this study was to evaluate the evolution trends of the organic agriculture sector at global level, in the context where the development of this system is motivated by the increasing demand of consumers for food quality and safety in consumption.

The topics followed were: numbers of globally countries with organic activities; organic surfaces, number of organic producers and organic market, with examples presented in graphics.

The used methods included searching of the main databases: Web of Science and Google Scholar as well as Fibl (*Research Institute of Organic Agriculture*) FAO (*Food and Agriculture Organization of the United Nations*) and IFOAM (*The International Federation of Organic Agriculture Movements*). The relevant data was transposed in graphs.

RESULTS AND DISCUSSIONS

Against the background of the some crisis regarding the contamination of food with dioxins, the mad-cow disease, the avian and swine flu, the infection of some vegetables with the enterohemorrhagic strain of the bacterium *E. coli*, as well as the fears regarding the use of genetically modified organisms, the request of agricultural products and ecological food has increased constantly.

Even if organic agriculture is currently present in most countries, the greatest demand for organic products is in Europe and North America [12].

According to FiBL data from 2022, with reference to the situation of organic agriculture in 2020, the largest areas for organic agriculture worldwide are found in Oceania, Europe, Latin America, Asia, North America and Africa, totalling 74.9 million hectares (Figure 1).

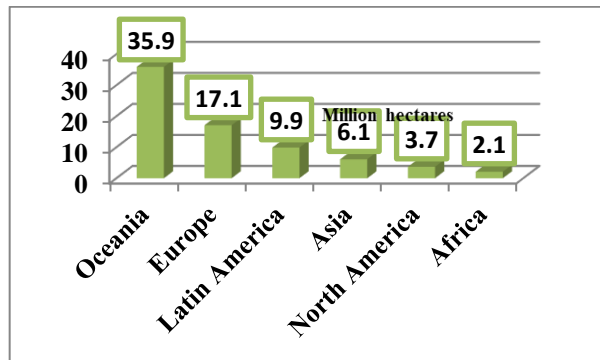


Fig. 1. The worldwide situation of organic agriculture
 Source: Own design based on [9, 10].

This healthy farming system is practiced in 190 countries globally. The largest organically cultivated areas are owned by the following countries: Australia, Argentina, Uruguay, India, France, Spain, China, USA, Italy and Germany (Figure 2).

The increase in organically cultivated areas in 2020 was +4.1%, the highest values from this point of view being held by Uruguay (+28%), Argentina (+21%) and India (+16%) (Figure 3).

The number of organic producers increased by 7.6%, reaching a total of 3.4 million worldwide. The largest number of producers is in India, Ethiopia and Tanzania (Figure 4).

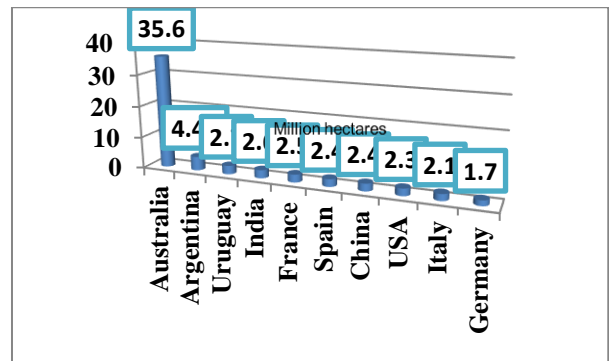


Fig. 2. Trends in the evolution of organic farmland areas at the global level
 Source: Own design based on [8, 9].

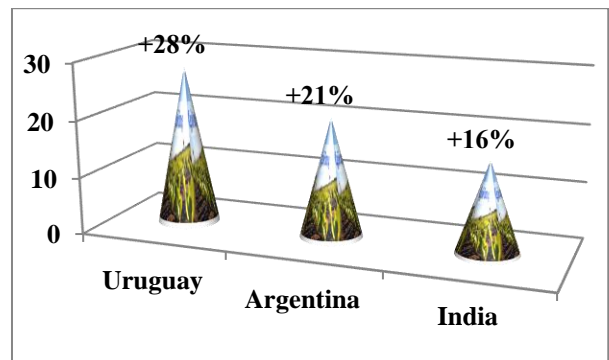


Fig. 3. Increase of organic agricultural land (2019/2020) at the global level
 Source: Own design based on [9].

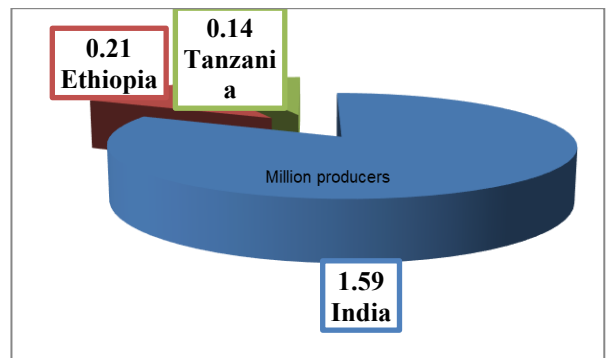


Fig. 4. The largest number of organic producers at the global level
 Source: Own design based on [9].

Organic agriculture, concerned with both environmental protection and consumer health becomes more than an option; it is even a necessity, becoming a contributor to sustainable development. The area of manifestation of the consumer of organic products is represented by the contour of their specific market. The consumption needs for organic agricultural products evolve along with the economic and social development.

The worldwide organic food market is continuously growing, exceeding 120 billion euros. From this point of view, USA, Germany and France are the countries with the largest organic market (Figure 5). This trend suggests the excellent relationship of European consumers with the organic food market. Actually, Europe is the second largest and most developed organic market (52 billion euros), after Northern America 53.7 billion euros).

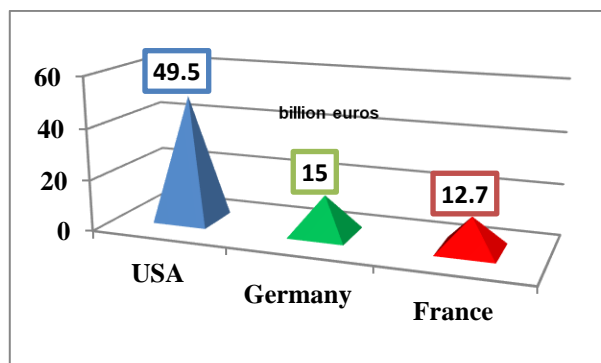


Fig. 5. Top 3 countries with the largest organic markets at the global level
 Source: Own design based on [9, 10].

However, the most significant increase in the organic market was in Canada, China and Germany with percentages ranging from 22 to 26.1% (Figure 6).

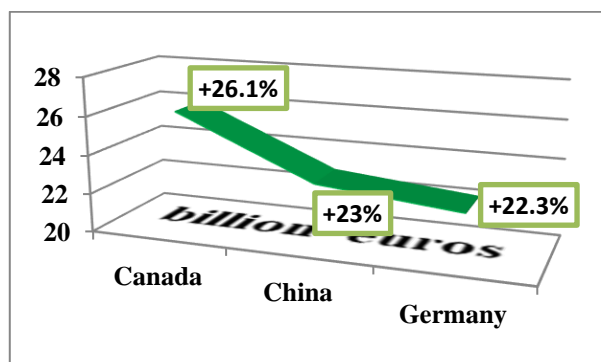


Fig. 6. The countries with the largest organic market growth at the global level
 Source: Own design based on [9].

Globally, sales of organic products are concentrated in industrialized areas, due to the support received from the governments of the respective countries. At the same time, the population of many developing countries is below the poverty line, making it difficult to develop organic markets.

As of June 1, 2012, organic products certified in the EU or the US can be marketed as organic in either of these two regions. The agreement between the EU and the US means reduced taxes and red tape for companies that market the respective products. Romanian producers can export ecological products to the United States of America only with the certification obtained in Romania, which is also recognized overseas. Until this date, a Romanian producer who wanted to sell ecological products in the USA also needed the certification of an organization on the American market, i.e. a supplementary certification in addition to the one obtained in Romania.

From the point of view of the main ecological agricultural crops, the cereal crop worldwide has registered an upward trend in the last 10 years. Thus, if in 2005 1.4 million hectares were cultivated with organic cereals, in 2010 the area almost doubled (2.4 million hectares), while, at the level of 2020, the area increased to 5.1 million hectares (Figure 7).

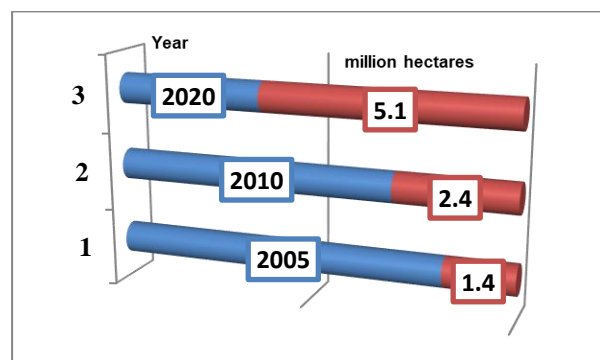


Fig. 7. Global organic grain area upward trend 2005 - 2010 - 2020
 Source: Own design and calculation based on [9].

The top 10 countries with the largest areas cultivated with organic cereals are China, Germany, France, Italy, USA, Canada, Spain, Russia, Ukraine and Poland.

As far as consumers are concerned, health-related issues seem to assume greater importance than environmental protection concerns and are related to ensuring healthy nutrition, motivated by ecological and hygienic-sanitary arguments, imposed by the radical change in consumer demand and the increasingly insistent concerns for food biosecurity.

CONCLUSIONS

Organic agriculture at global level has experienced a rapid expansion, thanks to some favorable economic factors: the choice of consumers for the most natural and healthy food, the care for the environment and for the unaltered preservation of biodiversity, etc., along with economic benefits for farmers. The preference for organic food reflects an increase in the interest of consumers all over the world both for personal health and for the protection of the environment.

The largest areas for organic agriculture worldwide are found in Oceania, Europe, and Latin America. In developed countries, the organic share is quite high and growing at a double-digit rate, with demand exceeding supply.

The number of organic producers steadily increased worldwide; the largest number of producers is in India, Ethiopia and Tanzania USA, Germany and France are the countries with the largest organic market. Europe is the second largest and most developed organic market, after Northern America.

The growth of the ecological sector also involves the concept of sustainable development, the only way to solve environmental issues that require urgent solutions.

Organic food must satisfy both quantitatively and qualitatively. Currently, although the quantity is very important, the basis is increasingly placed on the quality; consumers are oriented towards foods that contribute to the increase of the standard of living through a healthy diet, made in an ecological system. Taking into account the trends, lately the producers are moving more and more towards the practice of the organic farming system, which meets the requirements of the consumers.

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