

2.3. Organic agricultural production as a quality standard

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Abstract: Organic agricultural production contributes, on the one hand, to ecological preservation and, on the other, to the sustainable development of agriculture. The main goal of the chapter is the presentation of the organic production from two aspects. The first is the macro level, which will present the available models of organic production at the EU level. The second aspect, the micro level, will show how individual farmers implement an organic production system. This chapter is merely a confirmation that organic farming is a quality standard that is legally regulated in each of EU' countries and, as such, requires certification. In addition, in organic production there is the possibility of issuing individual and group certificates, so the ways of their implementation will be discussed. The fact that organic production is regulated means that it basically has certain principles that must be adhered to by all farmers who are in the organic production system.

Keywords: organic production, quality standard, certification.

1. Introduction

The chapter is organized as follows: in Introduction are presented information on the current state of organic production. Methodology contains the list of methods and data sources used in this chapter. Subsection 3 Importance and reasons for the implementation of organic production standards in agriculture presents importance and rationales for implementing organic certification of organic standards for all stakeholders, producers, processors, traders, etc. As understanding of legal requirements related to organic production is essential for successful organic production special attention to this is given in the subsection 4 Legal framework. The organic market is significantly growing over the last decade and it is subject to analysis in the subsection 5 Organic products market. Subsection 6 contains an analysis of the significance and costs of certification for organic production. Subsection 7 contains concluding remarks.

Standards are documented agreements containing technical specifications and other well-defined norms that producers must constantly and strictly follow so that provided materials, products, processes, or services are generated under the prescribed guidelines (definition of the International Organization for Standardization, ISO).

In order to produce a healthy product, following the internationally accepted standards is required both for the allowed quantities of fertilizers and plant and animal protection products that can be

applied. The essence of organic production is in its contemporary direction of development of agricultural production elevating traditional production with advanced knowledge in the line of genetics, selection, nutrition, protection, and preservation of products. This type of production system forbids the use of synthetic products contributing to the conservation of the environment (Milic & Lukac Bulatovic 2017).

The standards extent of product quality or service delivery, food safety, technical requirements for production activities or packaging rules, specific ethical, environmental and social issues. When products and services are not fitted to the customer's expectations and requirements, it comes to the insufficient attention of the implementation of the standards, actually, customers even are not aware of the role rated to the standard. However, the lack of standards would quickly become apparent in everyday life, from both production and consumption aspects. Accordingly, the safe and sustainable functioning of production systems, materials, equipment, devices and human capital are most often the result of regular implementation of defined requirements within the standards.

There are two types of standards, mandatory and voluntary. Organic production is a voluntary market standard.

Considering the individual and group certificates are available, it makes the process of certification suitable for adjusting both to the individual and the group. While an individual certified manufacturer places products on the market personally, there are two ways for product placement in the situation of the group certification: as self-organized producer groups and as producer groups.

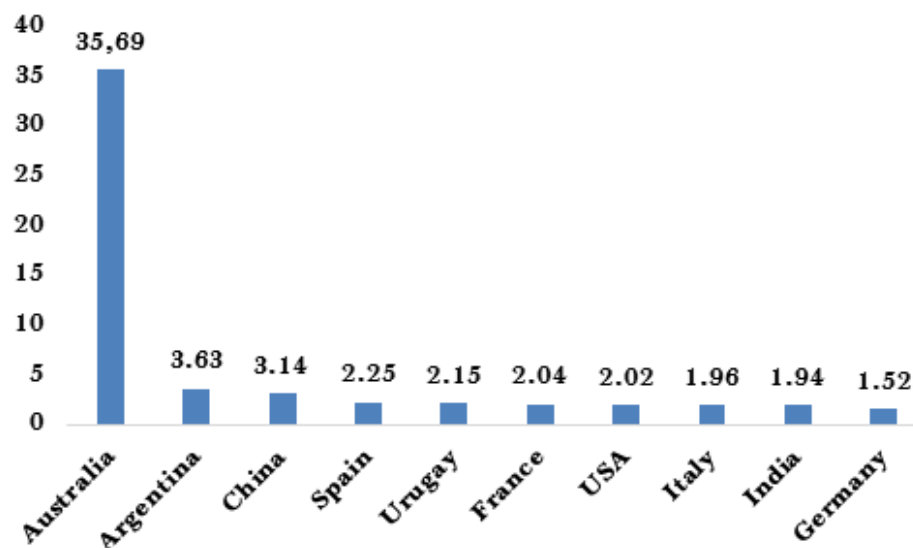
According to (IFOAM, 2008) "*Organic Agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation, and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.*"

Organic agriculture has been increasing significantly all the time since 1999. In 2018, it's been rated that the area under organic production amounts to 11,000,000 hectares from a total of 71,514,580 hectares.

Around 48.2 million hectares of grassland make the most of the organic agricultural land followed by the cropland amounts 13.3 million hectares and permanent crops amounts 4.7 million hectares.

Figure 1 shows countries with the largest organic agricultural land areas.

Figure 1. Countries with the largest organic agricultural land in 2018



Source: Willer et. al., 2020.

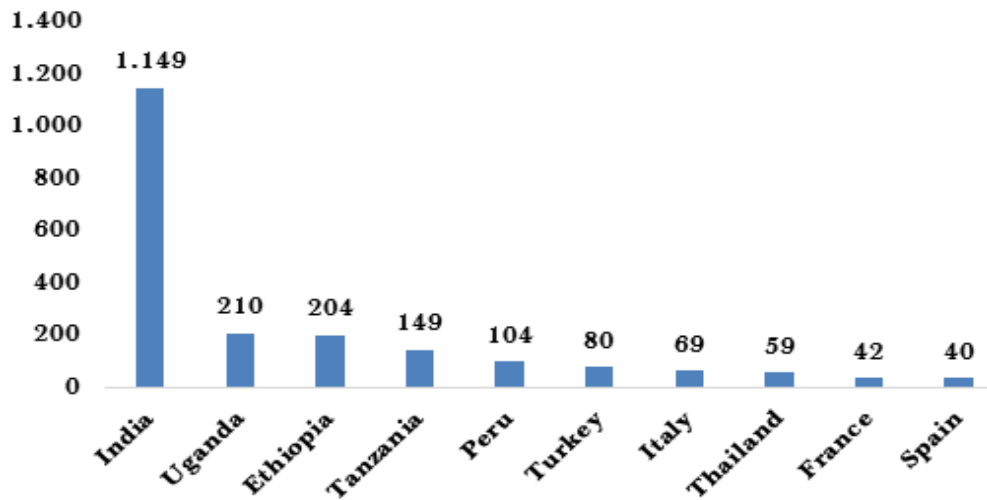
Table 1. World organic agricultural land distribution in 2018 by regions (including land in conversation)

Region	Organic agricultural land	Share of organic agricultural land in total agricultural land (in %)
Africa	2,003,976	0.2
Asia	6,537,226	0.4
Europe	15,635,505	3.1
Latin America	8,008,581	1.1
North America	3,335,002	0.8
Oceania	35,999,373	8.6
Total	71,514,583	1.5

Source: Willer et. al., 2020.

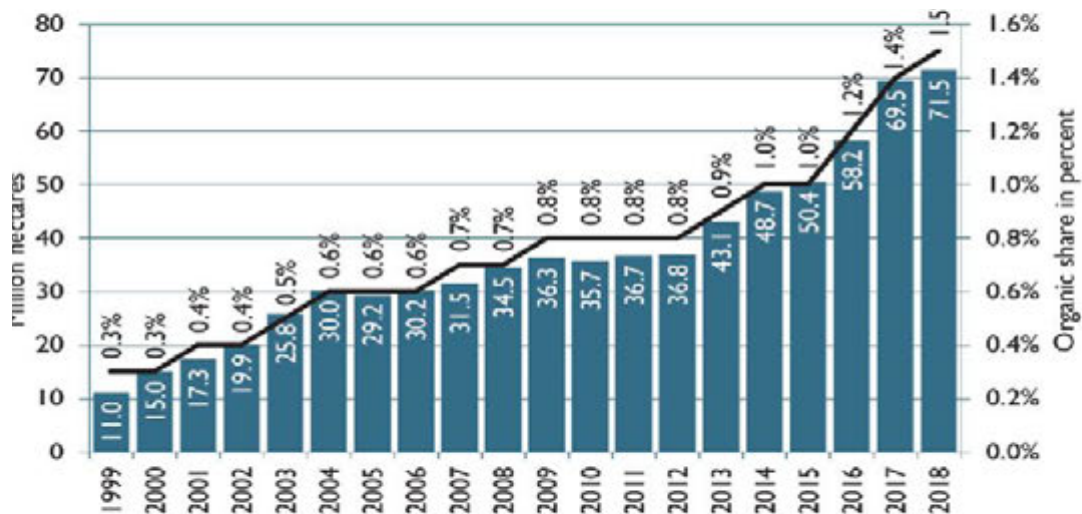
There are around 2,800,000 of producers worldwide and close to 96,000 of processors that has been involved in organic production and processing. Over 90% of the producers are in Asia (India is a country with most organic producers), Africa, and Europe.

Figure 2. Countries with the largest number of organic products (in thousands)



Source: Willer et. al., 2020.

Figure 3. Growth of share of organic agricultural land



Source: Willer et. al., 2020.

Besides the conventional organic production there are fields of organic production besides including wild collection, beekeeping, aquaculture, forestry, grazing area on non-agricultural land. This total area amounts to 35.7 million hectares. More than 2,600,000 beehives are in organic production (2,6% of the total world's beehives) (Willer et. al. 2020).

Considering the developing countries enjoy advantageous conditions such as climatic, geographical, and other conditions suitable for participating in organic production, for their further development the recommendation of the authors (Lee et al., 2012) is greater government assistance, greater involvement of associations linking producers with traders and exporters. In other words, the strengthening of the entire food supply chain is a lot of importance.

Author Smith (2008) believes that collaboration among food producers, traders, non-government organizations (NGO), governmental and agricultural organizations can raise food quality standards in supply chains and enable farmers to adopt more sustainable agricultural practices.

If we know that there is a conventional production that insists on intensive chemicalization on the one hand, on the other hand, we have organic production in which the means applied for the protection of plants and animals are being continually controlled. Also, as much as conventional production emphasizes the quantity of production, so much organic production emphasizes the quality of the product. In addition, organic production is a form of production of health-safe products in each and every sense. Essentially, getting the organic production certificate is at the same time a confirmation of certification of both process and product.

2. Methodology

The list of methods used in this chapter follows: desk research method; scientific literature analyzing of domestic and foreign authors; analyzing the legal framework of organic production in the EU and worldwide. Also, we are consulting relevant experts in the field of certification, production, and trading of organic products and consulting of organic producers and producers in the conversion phase.

For an overview of areas and crops under organic production, both globally and continents, the database of FIBL and IFOAM were used. The same source is quoted when it comes to the presentation of traffic and consumption of organic products.

There are two goals in this chapter. The primary goal involves achieving basic knowledge in the field of organic production which includes understanding the definition, standards, and purpose of organic production implementation. The secondary goal of this chapter also involves understanding the steps in the certification process and understanding about individual and group certification.

3. Importance and reasons for the implementation of organic production standards in agriculture

Organic production provides healthier products and nutritional security. *Organic plant production* strives for land conservation with minimal cultivation, requires suitable crop rotation, and recycling of plant and animal remains. *Organic production in the livestock* sector requires fulfillment of conditions in terms of necessary space according to the need of animals. Fulfillment of those conditions contributes to animal stress reduction and also prevention of disease (Government of Canada 2006).

Organic livestock farming includes the aspect of livestock production within which established balance of lands, plants, and livestock. Such kind of livestock production contributes both to animal stress reduction and better animal health avoiding the use of veterinary medicines and other chemicals substances (Joshi & Khanal 2012).

The term “organic certified” implies that products were grown by organic standards and were certificated by relevant certification company. Products obtained by organic production standards must be of equable quality and an agricultural producer, processor or trader is under the obligation to keep documentation and up to date records (Introduction to organic farming 2009).

There are plenty of reasons to implement organic production standards in agriculture and most often are introduced on the insisting of the target group in the food chain. The reasons for introducing the organic production standards can be observed both from the angle of producer and customer. The group of authors (Jovanovic et. al. 2014) specified the most often reasons for organic production certification and looking from the producer’s angle follows:

- *desire of customers to have high-quality agricultural product,*
- *needs of producers to increase the traffic of organic products certificated,*
- *maintaining customer trust.*

Following the interpretation of what are the most often reasons that motivate customers to buy organic products, the authors Nagy-Percsi and Fogarassy (2019) conducted research in Hungary. That survey research showed the freshness of the product in the first place, then taste and at the third and last place the positive influence on health. They concluded that price isn’t crucial in deciding to buy organic products, but rather the composition and nutritive aspect are crucial.

Table 2 shows SWOT analysis through the matrix of strengths and weaknesses of organic production, as well as opportunities and threats lifting from the environment.

Table 2. SWOT matrix of organic farming

Strengths	Weaknesses
<ul style="list-style-type: none"> ● large areas of agricultural land; ● positive attitude of farmers on organic farming; ● consumer needs for quality food; ● educated assessors in the field of organic agriculture; ● recognizable brand. 	<ul style="list-style-type: none"> ● low purchasing power of individual consumers; ● in some parts of the world, farmers are not educated on organic production; ● insufficient marketing of organic products; ● high production costs.
Opportunities	Threats
<ul style="list-style-type: none"> ● further development of organic production will require the employment of additional labor, which will reduce unemployment; ● economic interstate agreements; ● connection with rural tourism; ● use of financial funds. 	<ul style="list-style-type: none"> ● competition with lower production costs due to the introduction of more modern technology; ● poor institutional support; ● unfavorable age structure in rural areas; ● administrative barriers.

Source: according to the opinion of the author.

4. Legal framework

Organic products are considered as goods with characteristics that are difficult or impossible for consumers to observe even after purchase and use. The difficulties for the credence goods markets functioning is in strong incentives for fraud. Because of the price premium of organic food, producers of conventionally agricultural products could dishonestly claim organic status, enjoying the lower production costs, and still collect the organic price premium (Holland, 2016).

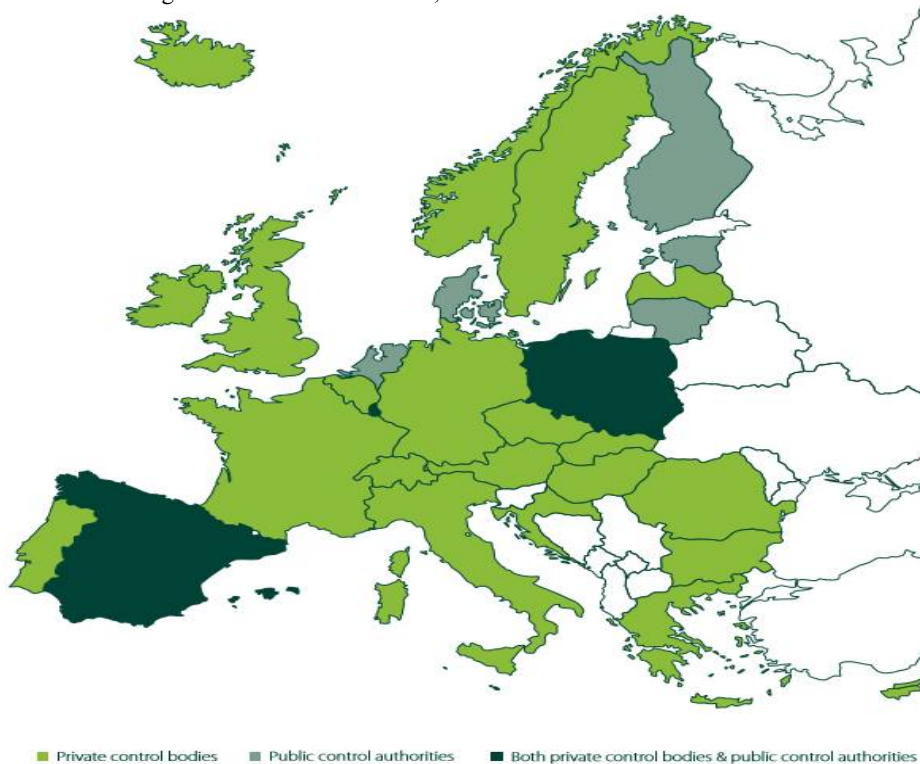
According to Willer et. al. (2020), there were sixty-eight countries with organic regulation while eight countries didn’t fully implement regulations, seventeen countries were in the process of establishing regulations.

The appearance of particular agricultural and food products in the markets opposite to their traditional destination is related to the development of international trade. The state's role regarding

the food quality control and food safety (both in terms of import and export items) has been strengthened, conditioning the development of national accreditation and control institutions. At the same time, the rapid growth in the volume of international exchange has been leading to the development of international organizations (ISO, WTO, UNCTAD, and others) being also protectors of established international standards to adjust the global market and remove market limits. The unification and internationalization of standards and establishing unique tools in world trade consider the international standards as "the international language of trade" currently. Globalization in dealing with organic products increasingly requires the adjustment of regulations in this range including all participants in private control bodies, IFOAM - Organics International, state institutions, United Nations organizations, including FAO, WHO, and the United Nations Conference on Trade and Development (UNCTAD). In aim to adjust the rules controlling the certification of organic production, the UN Codex Alimentarius Commission's (1999) has taken effect since June 1999 and for animal products since July 2001. This UN body has brought out the guidance to governments in developing organic food. The latest version was released in 2013.¹

Through bilateral agreements the governments at the national level are searching to resolve issues of the mutual recognition of national organic production systems. Countries that import organic food such as the USA, EU, Japan seeking to recognize certification systems in exporting countries as compatible with their national standards. The US and EU have a mutual agreement for regular recognition of the standards of other national organic members except for animal products from the EU, which require further verification. The certification system in the EU is firmly influenced by private organic standards that have expanded since 1991. The procedure of the EU in organic production implies that each Member State must establish a qualified institution that regulates and controls in this range. As part of the control system, the designated institution may delegate part of its responsibilities to one or more private control companies or public institutions.

Picture 1. Organic certification in the EU, 2014



Source: Meredith & Willer, 2016.

¹ See more: Guidelines for Organically Produced Food.

Public-private partnership based on the EU model occurs in the European Free Trade Association (EFTA) trading community. Therefore, there are three types of ontological systems in the EU: a system operated by private control bodies, a system controlled by public control bodies, and a combined public-private system.

It is important to emphasize for third countries organic producers that for exports to the EU the product must be certified by a control body approved by the European Commission under regulation 1235/2008, the EU publishes a list of authorized control and non-EU certification bodies.

New EU regulation about organic production was introduced in 2018 and will take effect in 2021 - Regulation (EU) 2018/848. The Secondary legal regulations related to production, labeling, control, and trade rules are in the arrangement procedure.

Changes in the EU regulation related to imports of organic products are:

- Countries outside of the EU must establish new regular trade agreements.
- EU Commission will introduce a list of certification bodies authorized for control and certification in third countries².

Major changes in new EU regulation is that group certification will be allowed for EU and worldwide operators³. Group certification relates to the group of small farmers that can be certified as one entity. It is expected that new EU regulation is going to limit the number of farms pre-certification groups organized as separate legal entities and strict external control practices. Procedures for the internal control of group organic certification entities will be defined in more detail. All those changes according to the IFOAM survey (Willer et. al. 2020) will improve transparency, quality of control and led to confidence in certification.

According to the same FIBL and IFOAM survey, the new EU regulative might have a negative impact on small farms related to group certification which may cause the financial burden for small producers in the matter of registration as a legal entity and may cause expensive additional administrative procedures and external control.

It is estimated that about 80% of the organic producers are small producers. The costs of certification for small organic producers would be expensive and complex for managing. Organizing in group and acquiring organic certificate as one entity would be significant for small producers (Meinshausen et. al. 2019).

Another important innovation is that a mandatory annual inspection will be decreased. Inspection will be based on risk assessment so low-risk operators will be inspected every two years. Decreasing is introduced and will not require certification both for retailers that sell pre-packed organic products and for producers that sell products without packing directly to customers.

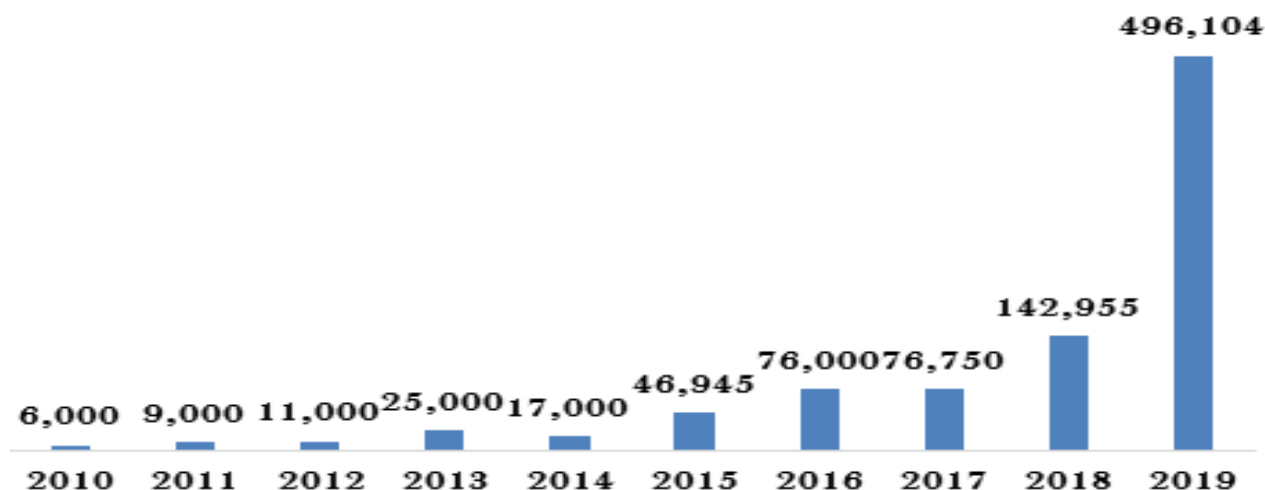
The USA organic control system implies an obligation for organic production inspectors to obtain a license to deal with this work. Control companies are certified by the US Department of Agriculture, and until now, about 90 control companies have obtained a license for certification worldwide and issued certificates valid for the US market.

The EU has set up organic standards 10 years earlier comparing the USA. Currently, the USA and the EU regulatory framework are very similar and tend to converge (Fouilleux and Loconto, 2017)

Development of entity that has expanded a common set of organic production standards - Participatory Guarantee System (PGS) is important for further development of organic production worldwide (involving framers group and individual farmers). Producers under PGS are typically using a common label.

² Certification process will be identical in EU and third countries, with the exception of allowing pesticides and fertilizers traditionally used in some third countries.

³ Group certification is currently allowed only for small operators in developing countries.

Figure 4. PGS certified producers worldwide

Source: Willer et. al., 2020.

The equivalence in arrangements between countries, proofing that organic regulations are equivalent are very important for international trade with organic products. This arrangement can be recognized unilaterally rarely or bilaterally more often.

Organizations like IFOAM – Organic international, Food and Agricultural Organization (FAO), UN Conference on Trade and Development (UNCTAD) have been promoting the international organic standards adjustment. The Organic Equivalence Tracker is introduced as a result of cooperation providing information on all equivalence arrangements the organic traders, producers, scientific, policymakers, etc.⁴ The Organic Equivalence Tracker is displaying currently 17 entries (16 countries plus EU).

In general, all legal acts and by-laws that contribute to the simplicity of implementation of organic production were accepted. These regulations protect both farmers and final costumers (Home et. al. 2017).

5. Organic products market

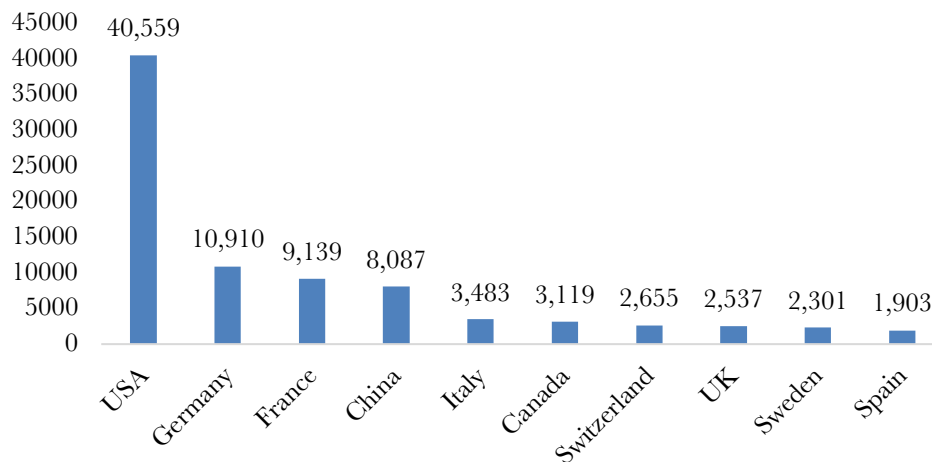
According to (Willer et. al. 2020) total global sale of organic products in 2018 have been reached an amount of 105.5 billion US dollars. Table 3 shows the world market data.

Table 3. World market retail and consumption in 2018

Region	Retail (Million EUR)	Consumption (EUR/capita)
Africa	17	0.1
Asia	10,071	2.4
Europe	40,729	50.3
L. America	810	1.5
N. America	43,677	119.9
Oceania	1,378	33.5
Total	96,682	12.9

Source: Willer et. al., 2020.

⁴ The Organic Equivalence Tracker is available at: <https://www.ifoam.bio/en/organic-equivalence-tracker>.

Figure 5. The largest organic markets worldwide by retail sale (million EUR)

Source: Willer et. al., 2020.

The European Union is recognized as the most important buyer of fresh organic products. Accordingly, it is necessary to research the needs of the market in terms of assortment, quality, and price actually to have a marketing approach to exports. Such a quality product could easily become a recognizable brand which is an increasingly important factor of competition (Milic & Lukac Bulatovic 2017).

A considerable organic market growth worldwide is apparent. The highest market growth was in France in 2018. It was 15,4%, while the highest per capita consumption by continent is in North America – 120 EUR, in EU consumption of 312 EUR is in Switzerland and Denmark, 231 EUR per capita in Sweden and 221 EUR per capita in Luxemburg (Willer et. al. 2020).

Although demand for health-safe products produced by the standards and requirements of organic production is increasing worldwide, the group of authors (Anzaku & Salau 2017) believes that organic products better fit to smaller target markets where demand for these products is very high. The group of authors Shaw Hughner et. al. (2007) believes that the most common consumers of organic food are those who actively spend their time in nature on a daily basis, those who play sports, vegetarians, and those who support alternative medicine. In other words, consumers are those who primarily take care of their health.

In other words, any product that results from the controlled use of chemicals always finds its way to final consumer and demand for health-safe products is rising.

Customers at the most important organic markets are recognized and willing to spend on organic food, also having the tendency to prefer food from economically developed over less developed countries and domestic over imported organic food. (Thogersen et. al. 2019) The commodity exchanges don't include organic products trading as these products with special characteristics are not suitable for standardized commodity exchange markets (Kovacevic & Vasiljevic 2017)

6. Significance and costs of certification for organic production

It is well known that certified products are easier to sell because they are in high demand in the international market, especially in the EU market. Also, the certificate allows to establish cooperation with large retail chains looking for products of controlled quality.

Farmers are often asked whether to certify their production. The answer to this question depends on several factors:

- *where they want to market its product,*
- *what quantities,*

- *at what price.*

Depending on the producer:

- *introducing or not introducing a voluntary standard,*
- *if the farmer chooses to introduce it, it is necessary to carry out important procedures to adjust its production with the requirements and standards of organic production and*
- *apply for certification to the chosen controlling organization (certification body).*

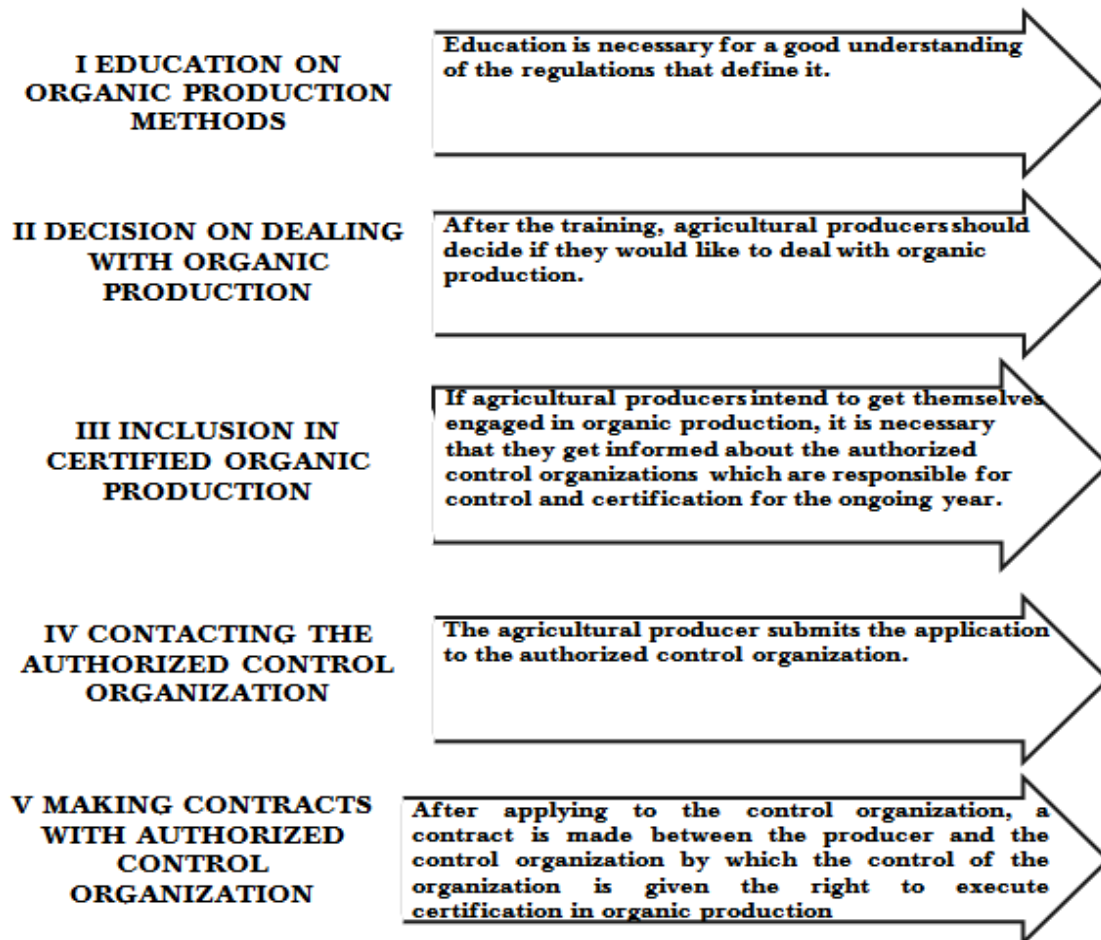
We consider referring to the steps in the certification process is also important which are displayed in figure 6.

If a farmer decides to certify its production, the notification to the authorized inspection organization in writing which includes the dynamics of production is a must. This is especially underlined in the Law on Organic Production implemented by the Republic of Serbia.

The group of authors Milic & Lukac Bulatovic (2017) highlight the following reasons for introducing organic production certificates:

- *the customer is guaranteed that the land has not been treated with synthetic or chemical agents for at least the previous three years,*
- *it is the confirmation that the producer is controlled at least once a year by an approved inspection body,*
- *confirms that non-toxic and sustainable products have been used in the production process,*
- *equipment in the production process was maintained by non-toxic agents,*
- *during operation, the product wasn't exposed to prohibited chemical substances.*

Figure 6. The steps in the certification process



Source: The author's show

The authors (Roljevic Nikolic & Parausic 2019) believe that certified products are more beneficial and that their producers can reach higher sales prices. In other words, the existence of the certificate is by itself added value to certified or branded products.

It is also important to mention that certification organizations could support both farmers and customers at the same time. Their part is manifested in the following:

- *risk management in each food supply segment,*
- *protecting customers from poor quality products,*
- *assist in clarifying procedure and regulations,*
- *product quality is provided through different supply chains.*

6.1. Types of costs for standards introduction

The costs covered in this section are resulted from the implementation of the organic production certification process and will be divided into two groups. The first group takes into consideration the implementation costs necessary for application standards while the second group considers certificate releasing costs actually its price.

There are numerous costs through the implementation of standards and they aren't always displayed on the same level at agricultural producers. Some of them are the following: educational costs of agricultural producers, costs of land conversion, costs of hiring consultants from the authorized consulted organization, cost of venture investment, and many others.

I Cost of production adjustment to the requirements of a particular standard (*implementation costs, i.e. introduction of standards*). These costs depend on the degree of production adjustment with disposed standards, whether it is in crop or livestock production. Big expenses (significant investments) are needed from time to time.

Before starting of the organic production process there is the educational cost of agricultural producers. This cost isn't imperative but education is recommended for producers before deciding to dedicate truly to the organic production.

We classify the *land conversion period* in this group of costs (usually 3 years) because the production process isn't taking place on this surface. This also leads to the fact that animals bred by the organic production standards (if available on the farm) mustn't receive food from areas that are in conversion⁵. A farmer has the obligation to make the conversional plan from traditional to organic production which needs to be evaluated each year by inspection.

The conversional plan from traditional to organic and healthy production is a very significant and complex task for each agricultural producer that has opted for the organic production. To bring out the conversational plan as soon as possible, the relevant facts have to take into consideration and according to the Jovanovic et. al. (2014) are the following:

- *land history including crops, destroying of pests, fertilization;*
- *analysis of modification of existing conditions at a farm from the regulation and principles of standards;*
- *the conversion plan from traditional to organic agricultural production at the whole farm;*
- *the required elements for implementation throughout the conversional period such as, for examples: crop rotation, fodder, fertilization, the process of pests destroying.*

Also, we may include the costs of hiring a consultant from the authorized consulted organisation in aim to support adjustment of production conditions to the requirements and principles of organic production. *We're emphasizing this cost arises only if the producer doesn't know how to manage the alignment of its production with the organic production standards.*

⁵ The exception to the above paragraphs is in the Republic of Serbia, which allowed products of plant origin from the conversion period containing only one ingredient of agricultural origin to be marked with the product "CONVERSION PERIOD" and the code/logo of the authorized control organization (Article 27, Law on Organic Production).

Considering agricultural producers cover all costs of hiring a consultant, it is very important to ask them certain questions:

- *Does and how the consultant's services help with the implementation of the demanded standard?*
- *What about producer's practice and customers/references until now?*
- *What's the price?*

It's been recommended to the producer to search for and to compare a few offers before choosing the right one.

If *larger investments are required*, the following costs may arise: construction of the facility, renovation of the premises, business improvement, etc.

It is important to note that costs from this group arise if the farmer certifies production for the first time, which will lead to a reduction in costs in the coming years and an increase in earnings.

II Costs of certification. These costs are practically based on the chosen certification body because each has its price list for certificates releasing, but also costs depend on the type of production (vegetable and/or livestock production) for which the certificate is requested. Within the appropriate culture, their types must be monitored and recorded.

The general price of the certificate for organic production depends on many factors, such as the farm's size, the scope of the business, selected certification body, the country to which you belong. The US National Program for the Organic Production with the Ministry of Agriculture (USDA) remarks that the certificate prices range from several hundred to several thousand dollars. Certificate prices are usually around USD 1,200 for the certification of organic processor, while at least USD 700 is needed for a new farm to get organic production certificate (<https://www.thebalancesmb.com/how-much-does-organic-certification-cost-2538018>). In later years, small food processors can pay about USD 950 for certification, while small producers and farms should set aside between USD 375 and USD 575 (California Certified Organic Farmers - CCOF).

In Canada, specifically Ontario, producers that own 10 ha or less of land, can get their production certified for less than USD 1,000, while the average ranges from USD 600 to USD 900 per (<https://www.organiccouncil.ca/whats-the-cost-of-certification/>).

Finally, it should be highlighted that certification organizations are not allowed to be in the role of consultant, as they are there to control them and receive assistance from consulting firms.

The ending of the certification process is when an official confirmation is obtained i.e. Certificate of Conformity to the organic production standards and registration of the certificate holder in the relevant register.

6.2. Individual and group certification

When it comes to certification methods, we could say that there are individual and group methods. In the case of *individual certification*, the producer applies for certification by itself, while in the situation of *group certification* several individual producers join in a group (cooperatives, associations, organizations, etc.) to apply for the certificate. Individual certification is not recommended for farmers with small available land areas because they would not be able to cover the cost of certification from their production capacity. Such farms are often in remote areas, so management and administration on the farm are difficult.

A legal entity as a certification representative is required for group certification. The representative may be the processor, the owner of cold storage, or other legal entity that manages the producers and implements the procedures for achieving the certification. The certification representative, being at the same time the production manager concludes the contract with other producers (subcontractors) with similar sort of production.

The certification representative is responsible to the state and the law and maintains production under control. Also, the certificate representative covers the cost of certificate releasing, and thereby there is no legal obligation to divide costs into members. Hence, there is no legal regulation on how much each member of the group pays but the certification company delivers invoice and expect the realization of costs from the certification representative.

The production control must be performed by the company itself first, then by the state authority and finally by the certification company. If control shows that the producer doesn't follow the standards of organic production, both the control and certification bodies have the legal authority to deliver appropriate corrective measures as well as withdraw the acquired certification.

In the following, greater attention will be given to the group certification, considering that the administration is more complicated than individual certification and that there are requirements that must be accomplished by the group members or producers applying for a group certificate.

The concept of group certification was introduced in 1980. Certification bodies were certified products in accordance with organic production by some organic associations. For the first time, a specific focus was on coffee and cocoa cooperatives (Meinshausen et. al. 2019). Picture 2 shows the total of associated producers that produce according to the organic production standards.

There is a requirement for adjustment of organic group certification procedures worldwide. The first effort was conducted in 1994 by IFOAM. Firstly, the group certification was published including a series of principles, following by Smallholders Group Certification: Compilation of results in 2003. IFOAM published training materials for smallholders' organic producers (IFOAM, 2012).

Picture 2. Estimated organic group certification worldwide



Source: Willer et. al., 2020.

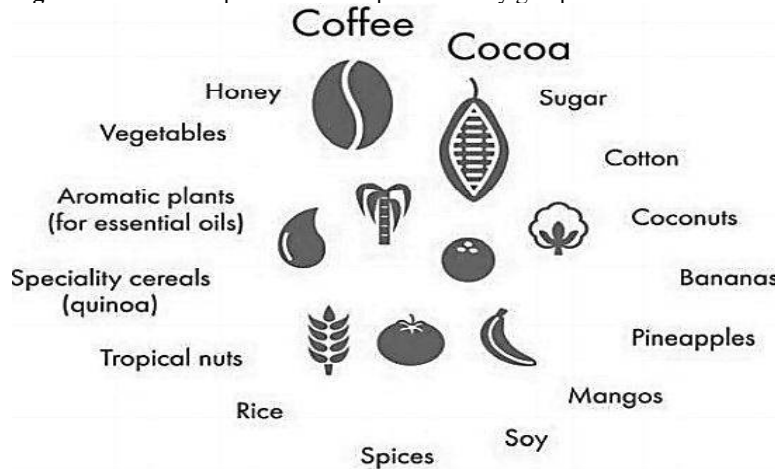
The European Commission published: Guidance Document for the Evaluation of the Equivalence of Organic Producers Group Certification Schemes applied in developing countries. The EU allowed group certification only for third developing countries at that period.

United States Department of Agriculture (USDA) coordinates to the organic production under the National Organic Program. Organic products from the USA or third countries must be certified according to National Organic Program regulation, by USDA approved certification body. Group certification is allowed and there is no specific regulation that determines group certification. Figure 7. shows the most representative crops covered by group certification.

The scope of groups is different between regions and between countries. The biggest groups are in Africa with more than 10,000 farmers and each farm disposed of 1-4 ha at least (Meinshausen et. al. 2019).

As a turning point for organic sector development is considered a future development of organic group certification meaning to improve both cooperatives and group organic certification including all cooperative members (Petkovic et. al. 2016).

Figure 7. The most representative crops covered by group certification



Source: Meinshausen et. al., 2019.

6.3. Types of producer's groups

In this section, it will be discussed the types of production groups that appear in the system of organic production.

In regards to product placement, organized groups of farmers can be further divided into two categories (Meinshausen et. al. 2019):

I self-organized producer groups that organize agricultural producers to place their products at the market because they are members and co-owners of the group at the same time. Cooperatives also operate on this basis. These types of producer groups dominate in Latin America.

In the northern part of Paraguay, agricultural producers are most often self-organized and joined into cooperatives. In these areas, there are 5 to 70 farmers in cooperatives, both male and female. This type of production groups is most often dominated by producers engaged in livestock with a maximum of 50 units of livestock, but also those who grow corn, soybean, wheat, sugar beet, banana, pineapple, tobacco, cotton, and other. This type of self-organized producers also has certain disadvantages. Primarily, a considerable lack of knowledge and experience for business and organization management. In addition, they are not financially empowered enough to have access to bank loans and expect the government's assistance (Roman 2013).

II producer groups that are linked with a trader or exporter that buys products from a defined group list. This form of organizing producer groups is dominant in Asia, and to some extent in Africa.

This type of association was named by the authors Vinayak et. al. (2019) as Farmer Producer Organizations (FPO). In Vietnam, this type of association is legalized as an activity that creates economic benefits. In South Africa, producer groups most often form agricultural trade unions to put together a list of products they offer. However, in Bolivia, FPOs are registered as non-profit organizations that have certain social goals as well. They usually consist of household members who buy, sell and advertise their products together.

According to Shepherd (2007), the advantages of connecting agricultural producers with traders are reflected in the fact that there does not have to be a formal type of organization, on the one hand, while on the other hand, the farmer wants to ensure a long-term sustainability for themselves. The

disadvantage of this form of association of producers implies limited access to high-value markets, and also the fact that they have to accept deferred payment in the short term.

According to the same author (Shepherd 2007), an agricultural producer in Thailand, who specializes in the production of lettuce, cabbage and cucumber, picks up vegetables from another 40 farmers and delivers them to customers in Bangkok. These vegetables are not treated with chemicals, which fully meets the rules and principles of organic production. Mango and watermelon growers drive the fruit at a distance of 300 km to the Myanmar-China border, to the city of Muse. When drivers arrive in the city, the fruit is delivered to intermediaries who contact Chinese buyers to negotiate the price.

It's difficult to obtain data on the number of producers that market their products within production groups. The producers who are in the system of group certification and sell their products through traders, aren't recognized in the database and their exact number can't be known. When it comes to organized groups in the form of cooperatives, they are more recognizable because of their name (Meinshausen et. al. 2019).

The following is the table overview of the total of Internal Control System (ICS) groups in the world in the organic production area, as well as the approximate number of certified producers being members of the group (table 4).

Table 4. Estimated group certification in world

	Number of Groups with ICS	Producers Certified in Groups
Organic	almost 5,900 groups	almost 2,600,000 producers

Source: Meinshausen et. al., 2019.

The table below shows that the world is dominated by a very large number of manufacturing groups that have introduced ICS, as well as the number of certified manufacturers that are members of the groups.

6.4. Prices and cost-effectiveness of certification for organic production

The interpretation of many researchers from different states about the production based on the standards of organic agriculture is that it gives lower crop yields than traditional, but lower yields from organic production could be refunded with various benefits. Authors Roljevic Nikolic et. al. (2017) show benefits of organic production from the angle of: agriculture (high-quality food), environment (conservation of agro-ecosystems) and economy (profit security as a result of strengthening local communities).

As mentioned earlier, organic production excludes using of synthetic origin agents. This type of production has a limit refers to the reduced production quantity and hence the economic result will record lower values.

The question is how this type of production can be attractive for producers and therefore for implementation. One of the elements that could involve farmers in organic production is the ability to sell organic products at significantly higher selling prices.

Placement of organic products at higher selling prices empowers farmers to cover the following types of costs: *investment in production (raw materials)*, *lower yields*, and *certification*. Costs lifted from lower yields are especially essential of the conversion period (the transition from traditional to organic production), as well as in the early years of participating in organic production.

Agricultural products that were produced according to the organic production standards are more expensive particularly because the price increased by a certain percentage due to cover the certification costs actually the price of releasing certification. We consider the significance of emphasizing the certification price doesn't depend on the land area under a culture but on the number

of cultures and the number of locations that certifier must visit. Beside keeping record of certain cultures, the documentation for each type of culture is needed.

Considering the period of time, the person-in-charge on-site needed to provide certification, it will depend on the price of certification including the person-in-charge on-site daily payment. Unless certifier need two or more days to visit every parcel, it must be also considering the cost of overnights stay at a certain place. Exactly, the price of a certain culture isn't fixed but there is a price list of each certification company whereby price variation isn't high.

It's important to notice that all agricultural producers being in the certification process or they already have certificated production are in obligation to keep documentation up to date since one of the duties of the person-in-charge on-site covers the control of all needed documentation.

Considering the economic efficiency of production on a farm dominated by the organic production standards is the most often reduced, the authors of Milic & Lukac Bulatovic (2017) point out some of the reasons:

- *reducing the amount of crop production because of the considerable reduction of mineral fertilizers applied;*
- *reduction in the volume of meet production due to reduction in the volume of fodder produced;*
- *increase in production costs refers to the significantly higher labor costs and use of machinery in crop and livestock production on the farm.*

Often, there's a wonder if the group certification is more payable than individual certification. Theoretically speaking, the group certification should be advantageous considering the costs of releasing certification can be divided between group members but that's the unwritten rule. The grand producers, processors, the owner of cold storage and many other often starts from the expectation that certification is profitable, they believe their business will be economically sustainable hence they don't consider the possibility of splitting the costs between group members.

Also, there is no exact answer does group certification is more payable than individual certification because the costs of certification primarily depend on the internal rules of certification company.

If we start from the acceptance that is useful for an agricultural producer to get the education about organic production in the first place, before the implementation of organic production standards, then this acceptance increases the certification costs. However, there are certification companies offering free education so an agricultural producer easily decides to hire them. Additionally, there are certification companies offering producers free production inputs under conditions to conclude the contract. In the end, an agricultural producer should choose the certification company to conclude the contract depending on the benefits the producer receives.

In other words, it isn't possible exactly determine the savings in group certification relative to individual certification.

Group of authors Roljevic et. al. (2012) consider that developing countries still haven't reached a significant level of industrialization have particularly large benefits in the practice of organic production. Accordingly, developed countries require more organic products that they import from developing countries, thus contributing to their socio-economic progress.

It is concluded that the implementation of organic production can bring economic benefits if establish properly. The benefit of participating in organic production comes primarily from the higher selling price that can be achieved in comparison to traditional agricultural products.

7. Conclusion

Organic production is a high potential area, both in terms of extension of the land under organically grown products and in terms of added value, which these products achieve. Improving this type of production, both vegetable and livestock, create beneficial conditions to raise the profit of exports

and positioning in the international market. Regarding each country has certain natural conditions, it is recommended to take advantage of it and to participate more intensively in organic production.

Organic production is law regulated and in accordance with organic production standards and such products are traded. Although the European Union market is the most significant customer of organic products, demand is uprising worldwide. Organic market research authors believe that it is always possible to find a way to place organic products at targeted markets, depending on whether final consumers are athletes or people who follow the healthy nutrition postulates.

The possibility to apply whether for a single or group certification further make easier the certification process as it shapes to the requirements of the producer. The individual certification isn't recommended for producers placed in the isolated areas of a certain country because they usually have small agricultural land. It can't be claimed that group certification is more payable than individual certification because the division of costs between group members wasn't specified by legal norms but recognize only the certification representative as responsible for covers the costs to both the certification company and state.

Organic production certification is preferable from the angle of protecting the health of customers, but the most important thing is to keep in mind that there is no need to enter into the certification process unless there is a stable placement of such products. In other words, the certification is implemented at the request of the customer (third parties) because only in this way it can be taken into consideration, justified, and cost-effective.

References

1. Anzaku, T.A.K. & Salau, E.S. 2017. Niche Marketing Potentials for Farm Entrepreneurs in Nigeria, *Journal of Agricultural Extension*, Vol. 21, No. 3, pp. 136-142.
2. California Certified Organic Farmers (CCOF). *Organic certification fees*. (<https://www.ccof.org/certification/how/organic-certification-fees>). Last entry: 06.05.2020.
3. Codex Alimentarius. 1999. *Guidelines for Organically Produced Food*, GL 32-1999, Rome, Italy. (http://www.codexalimentarius.org/download/standards/360/cxg_032e.pdf). Last entry: 02.03.2020.
4. Commission Regulation (EC) No 1235/2008 of 8 December 2008 laying down detailed rules for implementation of Council Regulation (EC) No 834/2007 as regards the arrangements for imports of organic products from third countries.
5. Fouilleux, E. & Loconto, A. 2017. Voluntary standards, certification, and accreditation in the global organic agriculture field: a tripartite model of techno-politics. *Journal Agriculture and Human Values*, Vol. 34, no. 1, pp. 1–14. <https://doi.org/10.1007/s10460-016-9686-3>.
6. Government of Canada. 2006. Organic Production system – General principles and management standards, Gatineau, Canada (https://ota.com/sites/default/files/indexed_files/COTA_OrganicProductionSystemsPrinciplesMgmt.pdf). Last entry: 10.04.2020.
7. Holland, S. 2016. Lending credence: Motivation, trust, and organic certification. *Agricultural and Food Economics*, Vol. 4, no. 1, <https://doi.org/10.1186/s40100-016-0058-5>.
8. Home, R., Bouagnimbeck, H., Ugas, R., Arbenz, M. & Stolze, M. 2017. Participatory guarantee systems: organic certification to empower farmers and strengthen communities, *Journal Agroecology and Sustainable Food System*, Vol. 41, Issue 5, Taylor and Francis Ltd, pp. 526-545, DOI: 10.1080/21683565.2017.1279702. (<https://www.tandfonline.com/doi/abs/10.1080/21683565.2017.1279702>). Last entry: 04.03.2020.
9. How Much Does Organic Certification Cost? 2019. The balance small business. (<https://www.thebalancesmb.com/how-much-does-organic-certification-cost-2538018>). Last

entry: 06.05.2020.

10. IFOAM Organics International. 2008. Definition of Organic Agriculture. (<https://www.ifoam.bio/en/organic-landmarks/definition-organic-agriculture>). Last entry: 06.04.2020.
11. IFOAM. 2012. Historical Background on Internal Control Systems for Group Certification. ISO Standards (<https://www.iso.org/standards.html>). Last entry: 15.02.2020.
12. Introduction to organic farming. 2009. Ministry of agriculture, food and rural affairs, Ontario, Canada (<http://www.omafra.gov.on.ca/english/crops/facts/09-077.htm>). Last entry: 10.04.2020.
13. ISO, <https://www.iso.org/services.html>.
14. Joshi, B. & Khanal, D. R. 2012. Organic livestock production: standards, procedure and approaches for Nepalese farmers, Proceedings on 10th National Veterinary Conference of Nepal veterinary association (VETCON'12), 28-30 March, 2012, Kathmandu, Nepal veterinary association, pp. 19-24.
15. Jovanovic, Lj., Pavlovic, M., Pankovic, D., Penezic, N., Radovic, V., Pucarevic, M., Dugalic, G., Bokan, N. & Petrovic, M. 2014. Production and management in organic agriculture, University Educons, Sremska Kamenica, Serbia.
16. Kovacevic, V. & Vasiljevic, Z. 2017. Development of Commodity Exchanges in Function of Agribusiness in Serbia, Thematic Proceedings *Sustainable agriculture and rural development in terms of the Republic of Serbia strategic goals realization within the Danube region – development and application of clean technologies in agriculture*, December 15-16th 2016, Belgrade, Serbia, Institute of Agricultural Economics Belgrade, p. 430-445.
17. Law on Organic Production, *Official Gazette of the Republic of Serbia*, no. 30/2010 and 17/2019.
18. Lee, J., Gereffi, G. & Beauvais, J. 2012. Global value chains and agrifood standards: Challenges and possibilities for smallholders in developing countries. Proceedings of the *National Academy of Sciences of the United States of America*, vol. 109, no. 31, DOI: 10.1073/pnas.0913714108, pp. 12326-12331.
19. Meinshausen, F., Richter, T., Blockeel, J. & Huber, B. 2019. *Group Certification - Internal Control Systems in Organic Agriculture: Significance, Opportunities and Challenges*, Research Institute of Organic Agriculture (FiBL), Frick, Switzerland.
20. Meredith, S. & Willer, H. 2016. *IFOAM Organic in Europe, Prospects and developments 2016*, Brussels, Belgium (https://www.ifoameu.org/sites/default/files/ifoameuorganic_in_europe_2016.pdf). Last entry: 10.04.2020.
21. Milic, D. & Lukac Bulatovic, M. 2017. *Management of fruit and wine production*, Faculty of agriculture, Novi Sad – Serbia.
22. Nagy-Percsi, K. & Fogarassy, C. 2019. Important Influencing and Decision Factors in Organic Food Purchasing in Hungary, *Sustainability*, 11, 6075; doi:10.3390/su11216075
23. Petkovic, G., Chroneos Krasavac, B. & Kovacevic, V. 2016. A critical review of legal framework as a factor of coops development - case of Serbia, *Journal Economics of Agriculture*, No 1. Vol. 63, Institute of Agricultural Economics, Belgrade, pp. 261-279.
24. Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007.
25. Roljevic Nikolic, S. & Parausic, V. 2019. Diversification of the Rural Economy: Institutional Framework and National Incentives in the Agricultural Processing Sector in Serbia, Chapter in the Monograph *Improving Knowledge Transfer to Obtain Safe and Competitive Agricultural Products Received from Smallholder Farms in the Milk, Meat, Fruit and Vegetable Sectors*, Institute of agricultural economics, Beolgrade, pp. 7-22.
26. Roljevic Nikolic, S., Vukovic, P. & Grujic, B. 2017. *Measures to support the development of organic farming in the EU and Serbia*, *Journal Economics of Agriculture*, No. 1, Vol. 64, Institute of Agricultural Economics Belgrade, pp. 323-337.
27. Roljevic, S., Grujic, B. & Saric, R. 2012. *Organic agriculture in terms of sustainable development and rural areas' development*, Rural areas and development, vol. 9, Institute of Agricultural and Food Economics-National Research Institute, Warsaw, pp. 155-172.

28. Roman, M. 2013. *Assesment of producer organizations and constraints in the Nothern zone report*, U.S. Agency for International Development (USAID). Asuncion, Paraguay (https://www.usaid.gov/sites/default/files/documents/1862/iznassessment_of_producer_organizations_and_constraints_in_the_northern_zone_report.pdf). Last entry: 07.05.2020.
29. Shaw Hughner, R., McDonagh, P., Prothero, A., Shultz, C. & Stanton, J. 2007. Who are organic food consumers? A compilation and review of why people purchase organic food, *Journal of Consumer behaviour*, Vol. 6, no. 2-3, Published online in Wiley InterScience, DOI: 10.1002/cb.210, pp. 94-110.
30. Shepherd, A. 2007. *Approaches to linking producers to markets*. Food and agricultural organization of the United Nations (FAO), Rome, Italy.
31. Smith, B. G. 2008. Developing sustainable food supply chains. *Philosophical transactions of the Royal Society B: Biological Sciences*, Vol. 363, No. 1492, pp. 849- 861.
32. The Organic Equivalence Tracker (<https://www.ifoam.bio/en/organic-equivalence-tracker>). Last entry: 18.02.2020.
33. Thogersen, J., Pedersen, S. & Aschemann-Witzel, J. 2019. The impact of organic certification and country of origin on consumer food choice in developed and emerging economies, *Journal Food Quality and Preference*, vol. 72, pp. 10-30.
34. The organic council of Ontario (OCO). 2018. What's the cost of organic certification? (<https://www.organiccouncil.ca/whats-the-cost-of-certification/>). Last entry: 06.05.2020.
35. Vinayak, N., Premlata, S., Arathy, A. & Shiv, K. 2019. Farmer producer organisations: innovative institutions for upliftment of small farmers, *Indian Journal of Agricultural Sciences*, vol. 89, no. 9, Indian Journal of Fisheries for the Indian Council of Agricultural Research, pp. 1383-1392.
36. Willer, H., Schllater, B., Travnicek, J., Kemper, L. & Lernoud, J. 2020. *The world of organic agriculture – Staistics and emerging trends 2020*, Research Institute of Organic Production (FiBL), Frick and IFOAM Organic Inetrnational. Bonn, Rheinbreitbach, Germany (https://agriculture.wallonie.be/documents/20182/38307/The+world+of+organic+agriculture_2020.pdf/8ab59538-7f68-4169-b46a-681ed255393a). Last entry: 10.04.2020.

Appendix – Definitions of key terms

organic plant production is a system that integrates cultural, biological, and mechanical practices that encourage the cycling of resources, promote ecological balance, and conserve biodiversity.

organic livestock farming includes the aspect of livestock production connecting lands, plants, and livestock. Such an enclosed system contributes both to animal stress reduction and better health conditions which is achieved without using of veterinary medicines and other chemicals substances.

conversion period that refers to organic agricultural production is a period of time demanded for the transition from traditional to organic production throughout producer implement the organic production method at that land.

individual certification indicates that agricultural producers submit the application (apply) by themselves. Depending on a plant species, certification could last 2-3 years.

group certification indicates that several agricultural producers are joined in cooperatives, associations, and some other organizations and their representative is responsible for the observance of prescribed legal norms and covering the costs of certificate releasing.

self-organized producer groups manage agricultural producers to place their products at the market because they are members and co-owners of the group at the same time.

producer groups are linked with a trader or processor that buys products from a defined group list.

Ch. 2.3

ORGANIC AGRICULTURAL PRODUCTION AS A QUALITY STANDARD

OBJECTIVES:

It can be said this chapter consists of two parts. The first part gives an overview of legal norms within which the organic production standards describe, following an overview of all areas worldwide being in the organic production system, as well as the total of agricultural producers intensively participating in health-safe food production. These facts are very important showing constantly increasing both lands and the number of agricultural producers deciding to transfer from traditional to organic production systems. In support of that, it's been a recorded increase in trade and organic products turnover worldwide, both in total value and per capita. The second part of the chapter provides the expertise from the range of organic production certification. Specifically, an insight is given into the importance of certification, costs, procedure, and types of certification, as well as the economic viability of dealing with organic production. These insights emphasize the benefits of certified products in regard to find the easier way to the final customer considering the added value of the product.

SKILLS:

The aim of this test is acquiring basic knowledge on the process of organic production certification, some examples for prices to obtain certification, types of certification, and finally cost-effectiveness of certified products.

QUESTION 1 (PLEASE CHECK THE CORRECT ANSWER)

What's the type of the standard matched with organic production?

- mandatory
- voluntary
- scientific

QUESTION 2 (PLEASE CHECK THE CORRECT ANSWER)

Organic production is a system that integrates:

- special cultivation practices
- biological
- mechanical
- all above

QUESTION 3 (PLEASE CHECK THE CORRECT ANSWER)

List two basic costs groups appearing throughout the implementation of organic production standards?

- the cost of adjustment with the requirements of standards and the certification costs
- the educational costs and investments.
- the costs of consulting and certificate releasing

QUESTION 4 (PLEASE CHECK THE CORRECT ANSWER)

Which is the aspect the price depends on?

- depends on the necessary period of time to visit one or more parcels
- depends on culture and type of culture.
- depends on land area, culture, type of culture, and risk assessment of organic producer.
- all above

QUESTION 5 (PLEASE WRITE THE CORRECT ANSWER)

LIST THREE REASONS WHICH IMPACT ON REDUCING THE ECONOMIC EFFICIENCY OF ORGANIC PRODUCTION.

USING THE SWOT MATRIX LIST AT LEAST TWO CRITERIA ON EACH WHICH DESCRIBE YOUR STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS IN DEALING WITH ORGANIC PRODUCTION

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