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«Sustainable Agricultural Trade Network in Black Sea Basin» - AgriTradeNet (eMS BSB 383 № 83545/20.07.2018)

LOCAL PAPER RESEARCH

CONTENT

Introduction. Currently in the agro-industrial complex (hereinafter - AIC) deep ecological, socio-economic transformations are taking place, the consequences of which are multidimensional in nature. Agro-industrial production is focused on the demands of fastidious consumers. Of particular relevance are agricultural products of regional origin, which are in high demand due to their unique and original characteristics. Studying the ongoing processes, identifying real trends in the development of AIC necessitates the expansion and deepening of an inclusive economy, the use of modern technologies and technical means, maximum consideration of the achievements of science and best practice, regional features of production and sale of agricultural products, raw materials and food.

This fact is due to the consequences of the post-industrial economy, namely the increase in consumer choice, the tendency of customization and personalization of products offered to the consumer, the development of marketing and the fierceness of competition, etc.

The purpose of the study is to identify the geographical indication of the origin of agricultural commodities (GIO) as an inclusive method of promoting sustainable development and economic growth of methodological tools, taking into account current requirements, the need for consistent implementation of measures aimed at the formation of GIO, government regulation and information and consultation.

It should be emphasized that regional branding of local traditional products not only benefits the producer, it can also become an indicator of regional development, which affects the socio-economic sphere of the region. The key issue here is to build links between the regional brand, the local community and the region to support its promotion and further development. Certified local products can influence local business development and influence other products - enhancing their value, enhancing rural integration and appreciating local resources.

The local product can serve as a link for the local community - to develop networks and relationships between local producers, rural businesses, diversify employment in the region, open up new opportunities for the migration of unemployed youth, rural retirement populations and marginalized groups.

This is especially relevant at the stage of Ukraine's European integration process, as well as the adoption of legal and subordinate legal acts in the field of agro-industrial complex development. Therefore, an

information campaign and large-scale awareness of producers about legal novelty play a very important role.

Regional branding of the local traditional products not only brings benefits for the producer – it may become the indicator of regional development affecting social and economic sphere of the region. The key issue is to create links between regional brands, local community and the region to support its promotion and further development. Certified local products can influence local business development and affect other products – increase their value, strengthen rural integration and valorise local resources. A local product can play a role of a binder for local community – develop networks and relationships between local producers, non-rural businesses, diversify the employment in the region, open new opportunities for migrating unemployed young people, rural retirement population and marginalized groups.

AgriTradeNet project aims increasing the capacity of the local producers, their opportunities for geographical certification/identification and establishment of links between the business organizations in BSB that on the local level supporting the work of these producers.

Therefore, our project fits in well with the project priority 1.2 which is Increasing capacity of local producers and straightening cooperation between business, producers' organizations and local authorities for regional branding and transnational trading of agricultural products.

The results we expect to obtain from this project are:

- Increased cross-border links for trade and modernisation in the agricultural and connected sectors in Black Sea Basin;
- Increased cross-border trade opportunities for agricultural and agro-industrial products with
- Ensured safety production of important agricultural products
- Ensured IT tools for increasing capacity of local producers – published research reports about the local legislation for safety producing of traditional products, report for the local branding opportunities and study about the international trading links for this type of products.
- Developed local producers' market place for promotion of traditional agricultural products in the rural areas.

These results will be achieved by a group of activities like management. Implementation activities like: better cooperation of organ,zations in BSB, Straitening Capcaity of local interested organizations and Activities for popularization of local products and Communication

activities. The AgriTradeNet project interacts with the European Neighborhood Policy. The policy is aimed at creating more effective partnerships between the EU and its neighbors towards stabilizing the political, socio-economic and security fields. Our project is in line with this policy because in promoting its local products, countries will improve their economies and therefore their socio-economic reputation.

The AgriTradeNet project also interacts with the European Union's 2020 Job Creation and Growth Strategy. It was launched in 2010 to create conditions for smart, sustainable and inclusive growth..

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The key issue here is to create links between regional brands, local community and the region to support its promotion and further development. Certified local products can influence local business development and affect other products – increase their value, strengthen rural integration and valorize local resources.

This is an issue that all the partners within this project face. They have the capacity as a local community but branding is a whole different ball game which the institutions and regions have a problem with. A local product can play a role of a binder for local community – develop networks and relationships between local producers, non-rural businesses, diversify the employment in the region, open new opportunities for migrating unemployed young people, rural retirement population and marginalized groups.

AgriTradeNet project therefore aims at increasing the capacity of the local producers, their opportunities for geographical certification/identification and establishment of links between the business organizations in BSB that on the local level supporting the work of these producers.

The territorial challenge therefore becomes a territorial relevance for all countries/institutions involved and can become a territorial advantage when the project becomes a reality and a necessity for the area and the actors (local producers, institutions etc.) involved.

The AgriTradeNet project contains of 6 partners: Traders Association of Thessaloniki (Greece), Bourgas Chamber of Commerce and Industry (Bulgaria), Gatali Foundation for the promotion of small and medium sized private enterprises (Romania), Asociatia Obsteasca "Central de Consultanta

in Afaceri" (Moldova), Demirkoy Municipality (Turkey) and the Institute of Market Problems and Economic & Ecological Research of the National Academy of Sciences (Ukraine).

1. Analysis and proposals for improving the conceptual categorical apparatus of the geographical indication of origin of agricultural products

The post-industrial economy, which has resulted in an increase in consumer choice, trends in customization and personalization of products offered to the consumer, development of marketing and fierce competition, as well as a number of other factors have led to the complication of consumer search and choice. The modern consumer chooses the feelings and impressions that he will get from using the product, thus allowing the supply to generate demand.

As value migrates from raw materials, goods and services to impressions, every business seeks to include impressions in the supply base to increase value added and avoid value migration. Back in 1996, a well-known American scientist Virginia Postrel wrote: «... We are increasingly surrounded by an intangible economy in which the largest sources of wealth and prosperity do not belong to the world of physical objects. We are not yet accustomed to an economy in which beauty, entertainment, attention, learning, pleasure, and even spiritual saturation are as real and economically valuable as steel or semiconductors»..

The category mentioned by Ms. Postrel should be added to the category "goodwill", as it is now an integral asset of any business and a component of the success of any organization.

Business reputation is a "good name" of the company, taking into account the old time of its foundation, history, image, authority of the founders, quality of management . Reputation is a dynamic characteristic of the behavior of an organization that is formed in society over a long period of time. It is based on a set of information about how and by what methods an organization builds its behavior in the identified situations, that is, it is formed on the basis of reliable knowledge and assessments (for example, a reliable, profitable, convenient partner), and therefore provides a rational, analytical approach . Generally speaking, an organization's business reputation can be defined as a set of stakeholder opinions about the

benefits and disadvantages of an organization that determines its decision-making. And this set of thoughts exists objectively.

There is a lot of classification of goodwill in the scientific literature. For example, depending on qualitative characteristics, goodwill can be both positive and negative. They also distinguish between real and desirable business reputation, that is, one that the management and staff of the organization would like to achieve. It should be noted that the dynamics of changing the reputation status is characterized by asymmetry: the formation of positive business reputation - a long and gradual process, and its loss can happen immediately, with quite significant, if not catastrophic consequences for business. .

In our opinion, the concept of "goodwill" has general and distinct features, the latter of which depend on the scope of the enterprise. In turn, each of the feature groups has basic and additional (ancillary) tools to increase sales.

On the example of an agricultural complex, among the general indicators that influence a positive business reputation, it is possible to distinguish stable quality of the goods, regularity of deliveries and formation of corresponding commodity parties for the purpose of long-term mutually beneficial cooperation.

In our opinion, proper marketing and presentation for the product, registration of the trademark for the goods and services, formation of the company brand and geographical identification of the agricultural products are already additional tools for creating a positive and desirable business reputation (hereinafter - PDBR).

In this context, it is important to emphasize the widespread problem of conceptual-categorical conflict, since there is currently no clear scientific or legal interpretation of the concepts of "trademark", "trademark", "trademark", "brand", "geographical indication", etc. Identifying the differences and clear legal regulation of the above categories is of utmost importance not only for the consumer, but above all for the product manufacturer or service provider.

Practice marketers identify brand with the concept of "brand", claiming that a quality, professionally designed symbol of a product or service determines customer success. However, as we noted above, based on the existing rules of law, such a definition is not correct. Moreover, it limits the parameters of the brand and does not exhaust the nature of the phenomenon. The concept of a brand is broader in scope:

the product or service itself with all the characteristics,

a competitive advantage that allows you to distinguish goods from the total mass;

a set of characteristics, expectations, associations that are perceived by the user and attributed to the product (product image, brand image),

consumer information,

promises of any benefits given by the brand author to consumers.

According to Philip Kotler, author of the well-known books Marketing Basics and Marketing Management, a brand is a name, term, symbol, or design (or a combination of all these concepts) that designates a particular type of product or service for a particular manufacturer (or producer group) and distinguish it from other products and services.

According to a definition developed by the American Marketing Association, a brand is a word, expression, sign, symbol, or design decision, or a combination of them to designate the goods and services of a particular seller or group of sellers to differentiate them from competitors.

A brand is the name, term, symbol, picture or combination of these elements, intended to identify the goods or services of a particular manufacturer and differentiate them from the products of competitors (Karl Bondorff, "Models and Marketing Tools").

Walter Landor, a very significant figure in the advertising industry, identified: “A brand is a promise. By identifying a product or service and confirming its originality, the brand provides a sense of satisfaction and quality ». David Aaker, defined the essence of a brand as "a set of qualities associated with a brand name and a symbol that enhances (or weakens) the value of the product or service offered under that symbol".

Many scholars claim that a brand is not a product or service. Others, on the contrary, claim that the brand is not tangible and exists only in the consumer's mind.

Carl Eric Linn, in order to more clearly divide the concept of "product" and "brand", highlight the special concept of "metaproduct" is what the consumer knows about the product through their feelings and knowledge, not just through direct perception.

Thus, we believe that in the contemporary Ukrainian realities, the concept of "brand" can be defined as a commercial (corporate) name that combines the mutual influence of social, emotional, functional and economic factors of the relationship between the manufacturer / supplier and consumer / buyer.

The geographical indication group is primarily represented by the term "geographical indication of origin (hereinafter - GIO) of the goods".

In our opinion, in the context of the Ukrainian European integration process, it is important to consider the differences between "geographic identification" and "geographical indication" in the regulatory and categorical apparatus. In foreign law and science use the term "Geographical Indications (GI)", which in Ukrainian translation sounds like "geographic indications". In our view, geographical identification is the process that results in the receipt of a good GIO.

As the story goes, GIO is the oldest trade mark that appeared in France in the early 20th century. In common law countries, different national legal traditions and specific economic conditions have contributed to the development of different concepts of protection against unfair competition. French law has recognized the use of GIO as effective in identifying products with characteristics that may be associated with specific territories, taking into account their qualitative (eg agronomic and climatic) or human (eg know-how) characteristics. In the 1990s, this system was extended to the European Union in accordance with EU Regulation, establishing protected geographical indications in addition to existing rules for the protection of wine designations and hard liquor (Council Regulation (EU) No 1493/99 on the common organization of the market in wine and

Council Regulation (EC) No 1576/89 establishing common rules for the definition, description and presentation of alcoholic beverages).

Many scientists believe that GIO in its economic functions coincides with the functions of trademarks. First, they reduce information asymmetry between manufacturers and consumers, providing the latter with "product information", thereby reducing operating costs associated with studying product characteristics. Second, GIOs and brands allow you to differentiate products. This means that manufacturers can invest in product quality and build a reputation around the brand, occupy new market segments and receive "price premiums" up to the standard value of the product.

Generally, both in trademarks and in GIO, there is a content that allows consumers to identify different products, associate different characteristics and qualities with each, attribute different market values. On the other hand, in terms of the manufacturer, the differentiation factor (excellent quality, distinctive image, etc.) makes it possible to seek higher market rewards for selling the product.

2. Essential content and regulatory framework of the principles of geographical indication of origin of agricultural products

The "locality" of GIO products is related to the issue of sustainable development for several reasons. First, because the presence of economic operators in one territory ensures that the socio-economic benefits arising from the GIO are captured locally. This socio-economic dimension has been clearly identified and set out to be the goal of European Union policy in EU Regulation 2081/92.

«Locality "of products may have other implications that imply the sustainability of GIO products. The production and trading conditions of such goods are often determined by this product. For example, as local products are often, though not exclusively, consumed in local markets, their supply chains are more likely to be shorter, with smaller scale production and less intensive production systems.

Moreover, the fact that all or most of the production factors are concentrated in the geographical area implies a significant involvement of local communities in the supply chain, which is contrary to the conditions of mass production of agricultural products, where horizontal and vertical integration tends to differentiate between entities and "farmer" interests. from the region and local interests. In the case of GIO, supply chain actors are also part of the local community, with a higher and more accurate perception of environmental constraints and hazards associated with product manufacturing and development.

However, before defining GIO products as traditional, it should be noted that the existence of a tradition to produce a particular product does not mean that the product is actually manufactured using methods that do not change over time (traditional).

In fact, GIO product manufacturing methods have evolved over the years. This is even recognized by European Union directives, which, for example, allow modification of specifications (rules of production of GIO by legitimate groups, subject to approval by the authorities "in the light of

technical progress"). Thus, there is no requirement in the EU for mandatory GIO protection of a product.

In addition, it should be added that the "authenticity / tradition" of the product does not exclude manifestations of processes that are detrimental to sustainability, such as the intensification of agricultural production.

It is worth pointing out the usefulness of GIO as a factor in the “mobilization” of local communities, as there is a widely recognized idea that mobilization of local communities is an important element in achieving sustainable management of local resources.

In the context of agricultural production, this is important because production can compete in one territory, so the mobilization of locals must to some extent be supported by the state.

Such involvement and mobilization of local communities in support of sustainable agricultural production is increasingly dependent on the globalization of agricultural production and consumption, and the availability of appropriate incentives.

Creating appropriate incentives for a sustainable process is more often seen as a matter of providing public benefits from farming. This leads to a discussion of the environmental benefits of agriculture.

It is worth noting that the GIO is showing itself in the context of discussing the "environmental benefits of agriculture".

In our study, we look at the "multifunctional" nature of agriculture, which emphasizes its ability to provide certain "public" goods, such as public space and convenience, landscape conservation, conservation of ecosystems, and food security and cultural heritage conservation.

The common nature of the provision of primary and public goods leads us to consider the market deficiencies associated with the provision of public goods: markets for this type of goods are either absent or not functioning properly. The provision of public goods is particularly dependent on corrective mechanisms that can be implemented through public administration. There are three interventions:

1. direct support for the primary product, for example, direct support measures under the Common Agricultural Policy of the European Union (agricultural subsidy system and agricultural programs in the European Union);

2. support for joint activities, such as agri-environmental measures;

3. creating markets and market conditions for joint events, such as organic farming labels, that target consumers.

It is worth noting that GIO is a "message" or product quality information that, when properly defined and communicated to the public, can be converted into a "premium" to the value of a product that consumers are prepared to pay in today's market environment. The advantage of creating market conditions for common outcomes is that, contrary to other aforementioned means of intervention, in this case consumers pay for giving positive signs.

Thus, geographical indications can be part of a valorisation strategy that serves as a stimulus to activities that are multifunctional in nature, creating opportunities for rural communities to implement them as a means of subsistence. In addition, in many cases, products that are subject to GIO protection (local products) are at least a priori found to possess certain attributes (locality, authenticity / tradition) that can work for sustainability.

Three European Union schemes of geographical indications and traditional specialties, known as protected designation of origin (PDO), protected geographical indication (PGI), and traditional specialities guaranteed (TSG), promote and protect names of quality agricultural products and foodstuffs. Products registered under one of the three schemes may be marked with the logo for that scheme to help identify those products (Figure 1).

Figure 1. The most common geographical indications of the European Union

PDO, PGI and TSG are the indicators and means of identifying products on the market, symbolizing the quality and variety of agricultural and food products. These indications guarantee fair remuneration for manufacturers, provide a high level of protection in the EU, at the international level and reinforce respect for intellectual property rights. It is worth noting that GIO enhances the tools to protect cultural, historical and gastronomic heritage.

Farming in the outermost regions of the EU faces difficulties due to its isolation, including complex geographical and meteorological conditions. A special logo has been created to raise awareness of agricultural products from the outermost regions of the EU (overseas departments of France - Guadeloupe, French Guiana, Reunion and Martinique, Azores, Madeira and Canary Islands).

Figure 2. Product of the EU external regions

Thus, in the process of globalization and European integration, the agricultural product, which is endowed with unique properties that may be conditioned by the peculiarities of the locality of its production, may be of interest.

GIO has been developing intensively since the late 19th and early 20th centuries, with the adoption of a number of international agreements: the Paris Convention for the Protection of Industrial Property (1883), Madrid Agreement on the Suspension of False or Misleading Indications of Origin (1891), Lisbon Agreement on the Designation of Origin and Their International Registration (1958), the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement - 1994), etc.

The first category of GIO protection is to protect manufacturers and traders from unauthorized use of GIO by third parties who engage in commercial acts that are considered to be contrary to fair dealing practices, including through repression or unfair competition.

Paris Convention for the Protection of Industrial Property. It requires the citizens of the Paris Union countries to have effective protection against unfair competition, which is defined as “any act of competition contrary to fair practices in industrial or commercial matters”, and requires that national law provide for (vague) remedies.

The Madrid Agreement on the International Registration of Marks extends protection against the use of false evidence to the use of misleading instructions. However, with the exception of the Regions for Grapes for which the protection is absolute, the courts of each State Party may decide that the GIO is common and goes beyond protection (Article 4).

The TRIPS 1994 Agreement, which is binding on all WTO members, establishes common standards of protection for GIO against fraudulent use and unfair competition, but leaves it up to the States to resolve the remedies. However, it is generally accepted that commercial practices that mislead or mislead the public about an enterprise or its activities, in particular, the geographical origin of the products it offers, are an act of unfair competition.

Like the Madrid Agreement, the TRIPS 1994 Agreement provides additional protection for wines and spirits. The TRIPS 1994 Agreement differs in the field of enforcement by ensuring centralized compliance,

monitoring and contractual dispute settlement procedures and setting common standards for enforcement under national law.

3. Research Methodology for Agricultural Products in the Beneficiary Countries of the AgriTradeNet eMS BSB 383 project

IMPEER had developed the criteria table for simplied local products selection, thanks to which beneficiaries could simply spesify the product for research .

Traders Association of Thessaloniki (Greece) has choosen Extra virgin olive oil from extra virgin olive oil from cultivar «Chondrolia Chalkidikis», a high-quality local product (with low acidity and exceptional taste) of Chalkidiki, produced by a local genotype. Chondrolia Chalkidikis is basically cultivated for its high-quality table olives. However, a significant percentage (approximately 20%) of its total cultivated area is dedicated for extra virgin olive oil production.

History of the Chondrolia Chalkidikis is cultivated in this area from ancient years. There are many centenarian olives trees. Olive oil production is an important economic task for the local farmers, at least for the last 400 years.

Olive groves originated for extra virgin olive oil production may be basically found in the mountainous and semi-mountainous areas of Chalkidiki.It is also sporadically cultivated in other areas of central Macedonia, northern Greece, due to its relatively high tolerance to low temperatures.

It may be co-cultivated with legumes (N-fixingplant species), with mutual benefits for olive trees and soil fertility, although it is not practiced by the local farmers.

An integrated management plan, with certification Agro 2.1-2.2 (in approximately 50% of the local olive groves) is practiced by the local farmers. Only an approximately 10% of the olive growers adopt biological practices.

Water Olive tree culture for olive oil production is a non-irrigated culture. Thus, irrigated water consumption is not a problem in these agricultural zones.

No soil tillage systems are adopted by the farmers; thus, soil erosion, compaction and its structure deterioration is not a case due to adoption of unsustainable management practices. Landscape deterioration is not a case in the non- irrigated olive groves (for olive oil production) of Chalkidiki.Biodiversity Due to the low input of fungicides and insecticides, biodiversity is of high interest.

The non-irrigated olive orchards, originated for extra virgin olive oil production, are a low cost and energy consumption tree culture. In addition, in many cases, sustainable management practices (such as pruning material recycling) are adopted by the farmers. Microclimate is not influenced due to low density plantation of trees.

Extra virgin olive oil production from Chondrolia Chalkidikis is highly important for the local economy (exports), as well as for the national agricultural economy. Marketing Channels Industrial olive mills, packaging centers, exports (basically in Italy, but unfortunately without protected designation of origin).

Prices are 5 euros/kg. There are subsidies and sponsorships-national agricultural subsidy for the producers. The main stakeholders are agricultural cooperatives, 43 industrial olive mills.

Bourgas Chamber of Commerce and Industry (Bulgaria) has choosen white brined cheese, which varies according to the type of milk:

- sheep
- cow
- goat
- a mixture of milks.

There is evidence of the existence and production of white brined cheese from ancient times. White brined cheese is one of the characteristic Bulgarian foods and an indispensable part of our table of old times. In Slavic languages, the oldest word for cheese means “raw”, and the possible reason for this is that raw milk was used in the past to make cheese. In Bulgarian land, cheese has been made since ancient times when sheep began to develop. The ancient Thracians processed the extracted milk into a variety of products. In Bulgaria “cheese”; means white brined cheese.

The production process takes the following steps: milk intake and grading, cooling, pasteurization of milk, squeezing, slicing, baking, draining, pressing, cutting of fresh cheese, salting, packing, sealing, ripening and storage. The end product has a shelf life of up to one year from the date of manufacture, the more matured the cheese, the greater its nutritional value. The ripening time is according to the type of milk: at least 45 days - for cow`s milk and at least 60 days for sheep. In maturation, the most important changes occur in proteins and, to a lesser extent, in fat. As a result of many physicochemical and biochemical changes, the specific taste and smell is reached. The combination of taste and aroma is called “bouquet of cheese”.

Production Area - Burgas Region. Manufactured under BDS 15:2010. White brined cheese contains raw milk, starter, calcium chloride, cheese yeast, sea salt, cooking and stone salt, citric or lactic acid. The cultures of Lactobacillus lactis and Lactobacillus casei are the secret of Bulgarian brine cheese.

Monitoring is done by The Bulgarian Food Safety Agency (BSAF), Food Control Directorate.

Legal instruments related to the product (subsidies, environmental protection, ect.) are:

1. Regulation for introduction of the monitoring system of produced milk and dairy products sold on the market (EU Regulation No 1788/2003);

2. Ordinance amending Ordinance No. 30 of 20November 2000 for animal health and veterinaryhygienic requirements for crude production of milk, construction and exploitation of dairy processing plants, its production and trade in heat-treated milk and dairy products;

3. Ordinance № 4 of 19 February 2008 on the specific requirements for the production, storage and transport of raw cow`s milk and the requirements for the marketing of milk and dairy products;

4. Structure Rules of the Bulgarian Food Safety Agency, adopted by Decree of the Council of Ministers No 35 of 14.02.2011, prom. 15 of 18.02.2011, in force from 18.02.2011.

The production of white brined cheese is important for the Bourgas region and especially for the Strandzha-Sakar Region, which is a recognized ecological region in Bulgaria. The geographical location of the Bourgas region has opportunities for successful growth of cows, sheep and goats. This is due to the favorable climate, which is formed under the influence of two climatic areas: Black Sea and Southern Transitional Mediterranean. This implies a relatively warm and humid autumn, higher air humidity and lesser snowfall.

The marketing channels are varied, the most important being:

- direct contact with the user / own store network /,
- distributors,
- wholesale merchants,
- retail chains in the region and Bulgaria,
- others.

The prices of white brined cheese are comparable from the Bourgas region to those of Bulgarian producers from other regions of the country. Episodically, unplanned production is produced at promotional prices, which are different for each product during the year. The profitability of white brined cheese is not high compared to other products, as it requires a technological maturation time for the product and the use of working capital for this period of time /45, 60 days or more to reach higher quality of cheese/.

There is no public data on subsidizing these products from the European Union and Bulgarian state subsidies. In February 2018, the requirement of farmers to receive subsidies for dairy products is not satisfied and there is a need to amend Ordinance No 3 of Ministry of Agriculture, Food and Forestry.

Supply Chain Management and rent Distribution is through direct supply contracts. Hiring of distributors, through their own marketing studies.

Marketing is through surveys, promotions, presentations at agricultural exhibitions and markets, as well as through direct contacts with consumers /legal and physical entities.

Stakeholders are producers, users, government authorities and companies making distribution of the products/ domestic and international.

Gatali Foundation for the promotion of small and medium sized private enterprises (Romania) has chosen tomato. Tomato cultivation is the second largest in the vegetable sector, producing over 400,000 tonnes /year. Potential areas in Romania are Galati, Giurgiu, Damovita, Olt, Cluj counties. However, due to the massive imports, at much lower prices, the interest of the tomato producers in Romania has decreased markedly (figure 1). The explanation would be doubled by the very high production costs (5000 euro/ha), and the recovery price (0.8 euros / kg) does not allow a profitable activity. The market of capitalization is dominated by the intermediaries who come to dominate the producers, who have to sell at the price of 0.21 euro/kg in the local markets.

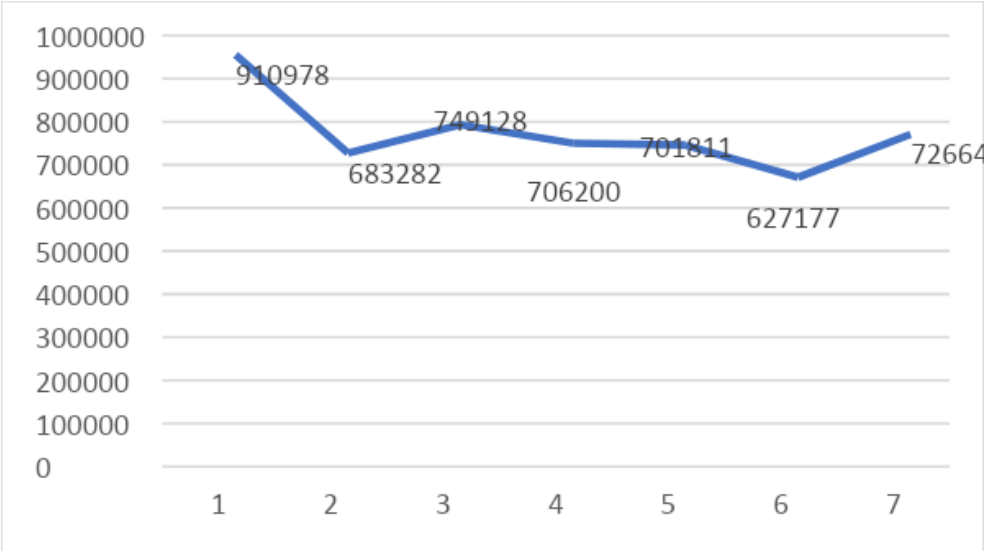

Figure 3. Evolution of tomato production in the field in Romania

In protected areas, tomato producers say that the production costs are quite high reaching 8500 euro/ha due to the purchase costs of the seed material 5000 euro/ha, heating the lot 2000 euro/ha, foil, treatments 1000

euro/ha.Therefore, the orientation would be towards the processing of products and due to the perishability of products. But here too, producers face imports from China at much lower prices. The main types of products preserved in the Romanian industry are:

1. canned tomatoes sterilized in brine, oil, broth,vinegar;
2. tomato paste of different concentrations;
3. spicy sauces;
4. dehydrated vegetables products;
5. concentrated tomato juice.

In Romania there has been, for centuries, a strong tradition of growing tomatoes on family farms. The continuity of this tradition was interrupted by the process of nationalization and collectivization of the communist period. During this period, traditional farms were replaced, in most areas, by state- controlled administrative structures, and the population of rural areas gradually transformed into state employees, being paid in money, or in money and in agricultural products. After the fall of communism, the return of the nationalized lands to the former owners began, through a succession of badly designed laws, whose repercussions were deeply felt on the production systems, after harvesting, on the infrastructure, research and agricultural consultancy. This resulted in dramatic decreases in the levels of production of local products and transformed Romania from a predominantly exporting country into an importing country of vegetables, including tomatoes.

In Romania, the situation of the areas occupied with tomatoes shows a decrease, from 50,000 ha in 1990, to 47,410 ha in 2018, strongly affected by the following considerations:

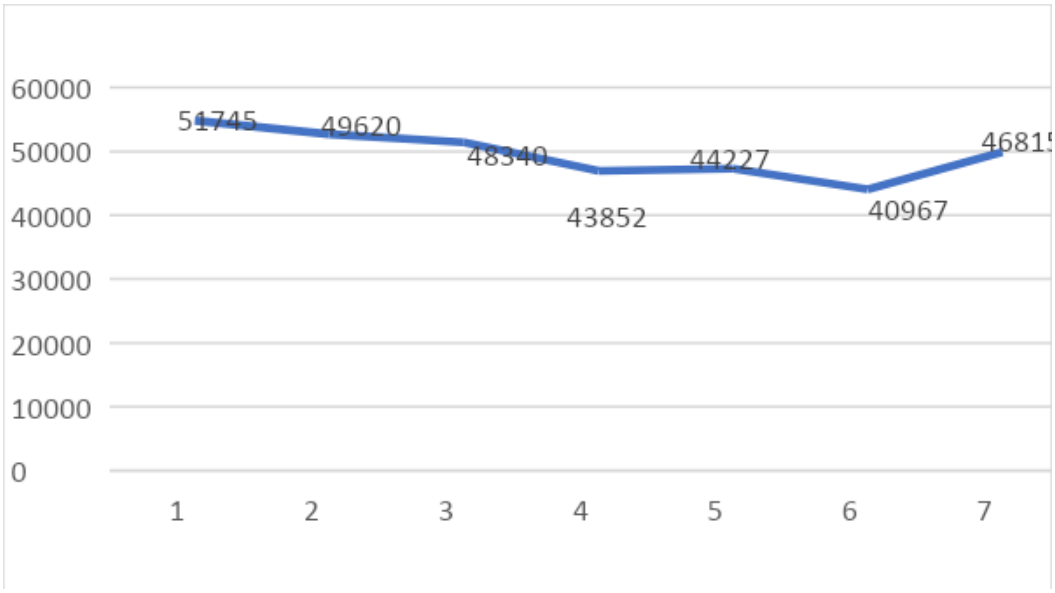

Figure 4. Surface grown with tomatoes in Romania

- low degree of endowment of the farms with modern technical means of production and harvesting;
- large number of small farms;
- the high degree of fragmentation of the vegetable surfaces and the lack of a coherent strategy for land consolidation;
- large surfaces of protected spaces abandoned and / or built on the basis of obsolete techniques;
- increasing the frequency of extreme climatic phenomena with effects on production;
- low yields per hectare.
- At the same time, the production potential of the Romanian tomato sector is noted by:
- large assortment of tomato species and varieties;
- numerous farms suitable for organic farming;
- favorable pedo-climatic conditions for tomato cultivation;
- growing the cultivated areas with competitive varieties of tomatoes;
- increasing the cultivated areas with vegetables in modern protected areas;

- modernization of processing units.

In Romania the area cultivated in the greenhouse and the solarium is 1700 ha with a production of 105 thousand tons souce:(https://ec.europa.eu/eurostat).

Alternative land use and possible substitutes are:

- Hydroponic culture
- Enriching the soil where tomatoes are grown with a mixture of peat, humus, sawdust, potassium sulfate and superphosphates.

Speakin about protection status/labels and certificates, Although the range of products is diversified, the added value of the products is small, mainly because of:

- the lack of marketing knowledge that involves methods of preparation of production for marketing (sorting, classification) and presentation (packaging and labeling) meant to ensure the product attractiveness and safety in front of the consumer;
- the lack of the technical means of washing, sorting, packing, labeling, keeping and transporting the production to the market;
- the lack of a production planning system and its articulation according to market requirements.

A small added value of the products leads to instability and differentiation of the producers' incomes. In Romania, tomatoes are not protected at European level with PGI and PDO quality marks.

Specifications are:

- tomatoes grown in protected areas, where pollination is done with bumble-bees;
- tomatoes grown in fileld
- organic or classic tomatoes.

The phytosanitary service monitors tomatoes by taking samples before they are marketed.

Taking into consideration the small number of farmers who conclude policies to ensure the production of fruit or vegetables, we can say that the negative effects caused to the vegetable crops and the fruit plantations by

the climatic phenomena and the attack of the diseases and pests are fully supported by the producers (source: www. .madr.ro).

Exceptions are the damages caused by the diseases and the quarantine pests for which the affected farmers can obtain financial support. The number of farms that provide their harvest is quite small and under these conditions for the fruit and vegetable sector we cannot speak of a harvest insurance system.

The causes are multiple, but the most important deficiencies are:

- lack of interest from producers;
- the absence of an attractive / flexible offer from the insurance companies;
- lack of collective action.
- the lack of a guarantee fund in which the administration, insurance companies and manufacturers participate.

Speakin about ecological effects resulting from the production of local goods water can be polluted. Crop rotation is required to prevent soil depletion of certain substances. Biodiversity is ensured by attracting insects, birds and animals, which favors the environment and ensures the food chain.

Energy consumption is due to the fact that the protected areas where tomatoes are grown are heated with sawdust, coal and diesel. The resulting wastes are those from the boxes in which substances, plastic foil, etc. have been stored. These are taken over by the specialized public services. There are also organic waste from broken vegetables, leaves, etc. from which compost can be made which is later used as fertilizer.

Romania is facing increased imports of vegetables and fruits, whose main effect was felt at the price level and implicitly at the producers' income level. The solution could come through a concentration of supply, especially of the producer organizations in the Galati area, which will allow the practice of increasing the production and its distribution. Among the generating factors to eliminate the crisis in the tomato market are:

- the planned production according to the market requirements;

• applying good practices of organic farming to combat the effects of extreme climate change and various diseases and pests;

• limiting imports from the EU and third countries, which mainly affect the market for vegetables and fruits;

• a good promotion of the local tomatoes among the consumers as well as the role and importance of the consumption of fruits and vegetables for the health of the population;

• the various media articles that transmit incomplete and incorrect information about the fruit and vegetables sector.

In the period 2007 - 2017, the average consumption of vegetables reached a maximum in 2011 of 162.9 kg / inhabitant and a minimum of 148.7 kg / inhabitant in 2009. During the period 2007 - 2017, the average consumption of fruits reached a maximum in 2015 of 87.8 kg / place and a minimum of 65.7 kg / place, in 2009. As a general trend, there is an increase in consumption for fruits and vegetables, which indicates that the population eats healthy.

In Romania, the average production per ha was in 2018 of 19t / ha, when the European average is 69t / ha.

Farmers can benefit of "Minimis aid for the protection of tomatoes in protected areas", for the year 2019. The beneficiaries can receive 3,000 euros (in national currency) per year. The money is given in one installment. The application is submitted to the County Directorates for Agriculture, until March 20, for the production used during the period January-May; September 15, for tomatoes recovered during November-December 20.

To be eligible, the bidders will have an area cultivated with tomatoes in protected spaces of at least 1,000 sqm; obtain a production of at least 2 kg tomatoes / sqm; be registered in the Agricultural Register from the Territorial administrative Units in whose territorial area are the areas cultivated with tomatoes. The supporting documents, respectively, the fiscal receipt / invoice / tab / tabs from the marketing book, attesting the commercialization of the production of tomatoes obtained from the

protected areas, are submitted to the County Agriculture Directorates, until December 27, 2019, including.

Capitalization is the most difficult problem because the bases of specific markets for the production of vegetable production are not laid. Those who produce vegetables in small quantities greatly lower the price, which disadvantages those who practice vegetable farming as their main activity and live from the commercialization of the production. The capitalization is done either directly from the farm gate, or directly on the market or through intermediaries.

Vegetables and fruit growers are threatened by large hypermarkets but also by massive imports. On the one hand, large chain stores refuse to buy the goods at a fair price, and on the other hand, imports compete with domestic production. About 50 - 60% of the Romanian tomatoes production is marketed in peasant markets organized in urban centers and at the farm gate. Although prices have a rising trend, even when farmers have entered into commercial contracts, the beneficiaries do not come to pick up the goods until the prices have dropped.

The emergence of large chains of stores, the change of consumers' preferences to the sorted, packaged and labeled products that comply with the principles of quality and food safety continue to reduce the proportion of the marketed production to the farm gate in favor of organized markets. However, this percentage is decreasing as a result of the intensification of trade through intermediaries.

Synergies with other programs:

1. Measures aimed at production planning, including estimation and monitoring of production and consumption;

2.Measures aimed at improving the quality of the products, whether they are fresh or processed; 3.Measures aimed at increasing the commercial value of the products;

4. Actions on experimental research and production;

5. Measures of vocational training and promotion of fresh or processed products;

6. Crisis prevention and management measures.

Table of economic characteristics
for the Local Products Research prepared by IMPEER (Ukraine)
ROMANIA - Tomato

Average price for 1 kg	0.63 euro/ kg
Volume of production (for the last 3 years)	2017 - 1808 ha - 46248 tons 2018 - 1919 ha - 50989 tons 2019 - 1726 ha - 69701 tons
Export Experience/Delivery Schedule by Month	1750 tons/month
Place of sale	Poland, Ukraine, Moldavia

Figure 5.Source: Own development in framework AgriTradeNet eMS BSB 383 project

List of legal acts regulating the production of tomatoes are presented in Table 1.

Table 1

№	Title of the act	Number/ Acceptance Date	Summary (what is this act about?)
ROMANIAN LEGISLATION			
1.	**GOVERNMENT EMERGENCY ORDINANCE**	**44/2008**	Ordinance No. 44/2008 on the conduct of economic activities by authorized natural persons, individual enterprises and family enterprises
2.	**LAW**	**182/2016**	Law No. 182/2016 for the approval of Government Emergency Ordinance No. 44/2008 on the conduct of economic activities by authorized natural persons, individual enterprises and family enterprises
3.	**LAW**	**145 / 2014**	Law no. 145/2014 for establishing measures to regulate the market of agricultural products.

4.	**LAW**	**166/2019**	Law No. 166/2019 on the modification and completion of Law no. 145/2014 for establishing measures to regulate the market of agricultural products.
5.	**LAW**	**84/1998**	Law no. 84 of April 15, 1998 (*republished*) on trademarks and geographical indications
6.	**DECISION**	**1134/2010**	Decision no. 1.134 of November 10, 2010 for the approval of the Regulation implementing the Law no. 84/1998 regarding trademarks and geographical indications
7.	**ORDER**	**464/2019**	Order no. 464/2019 for the approval of the national rules regarding the import of ecological products from third countries on the Romanian territory
8.	**GOVERNMENT EMERGENCY ORDINANCE**	**34/2000**	Emergency Order no. 34 of April 17, 2000 on organic food products
9.	**GOVERNMENT ORDINANCE**	**29/2014**	Ordinance no. 29/2014 for the modification of art. 6 paragraph (2) of the Government Emergency Ordinance no. 34/2000 regarding organic food products, as well as for establishing measures in the field of organic food products
10.	**DECISION**	**131/2013**	Decision no. 131/2013 for establishing the necessary measures and sanctions in order to comply with the provisions of Regulation (EC) no. 834/2007 of the Council of 28 June 2007 on organic production and labeling of organic products, as well as repealing Regulation (EEC) no. 2092 / 91
11.	**ORDER**	**986/2016**	Order no. 986/2016 regarding the approval of the tax amount for the approval of the inspection and certification bodies in organic farming;
12.	**ORDER**	**895/2016**	Order no. 895/2016 for the approval of the rules regarding the organization of the

			inspection and certification system, of the approval of the inspection and certification bodies / the control and supervision bodies of the activity of the control bodies, in organic farming;
13.	**ORDER**	**1253 /2013**	ORDER no. 1253/2013 for the approval of the rules regarding the registration of operators in organic farming;
14.	**Government Decision**	**759/2010**	Government Decision no. 759/2010 of July 21, 2010 on the awarding of specific aids for the improvement of the quality of organic agricultural goods
15.	**Government Decision**	**418/2013**	Government Decision no. 418/2013 completing of the Government Decision no. 759/2010 on the awarding of specific aids for the improvement of the quality of organic agricultural goods
16.	**ORDER**	**900/2013**	ORDER no. 900/2013 regarding the functioning of the database for seeds or vegetative material propagating in the organic farming sector;
17.	**ORDER**	**417/2002**	ORDER no. 417 of September 13, 2002 for the approval of the Specific Rules regarding the labeling of organic food products.
EU LEGISLATION			
1.	**Regulation (EU)**	**1305/2013**	Regulation (EU) No 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No 1698/2005 *(https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013R1305)*
2.	**Regulation (EU)**	**1151/2012**	Regulation (EU) No 1151/2012 of the European Parliament and of the Council of

			21 November 2012 on quality schemes for agricultural products and foodstuffs *(https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32012R1151)*
3.	**Regulation (EU)**	**848/2018**	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 *(https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R0848)*
4.	**Regulation (EC)**	**834/2007**	Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91 *(https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32007R0834)*
5.	**Regulation (EC)**	**889/2008**	Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control *(https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008R0889)*
6.	**Regulation (EC)**	**882/2004**	Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules *(https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32004R088*

			2)
7.	**Commission Regulation (EC)**	**1235/2008**	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 *(https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32008R1235)*
8.	**Regulation (EC)**	**178/2002**	Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety *(https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32002R0178)*
9.	**Regulation (EC)**	**1829/2003**	Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed *(https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32003R1829)*
10.	**Regulation (EC)**	**710/2009**	Commission Regulation (EC) No 710/2009 of 5 August 2009 amending Regulation (EC) No 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007, as regards laying down detailed rules on organic aquaculture animal and seaweed production *(https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009R0710)*

Asociatia Obsteasca "Central de Consultanta in Afaceri" (Moldova) has chosen berries and products from berries.

Average price for 1 kg	1.60 euro		
Volume of production (for the last 3 years)	2015	2016	2017
	145,00 t	120,00 t	126,00 t
Export Experience / Delivery Schedule by Month	According to the National Agency for Food Safety, in 2018 Moldova exported nearly three thousand tons of berries to Germany, France, the United Kingdom, Russia and Belgium.		

Figure 6.Source: Table of economic characteristics of black and red currant.Own development in framework AgriTradeNet eMS BSB 383 project.

Average price for 1 kg	1.30 euro		
Volume of production (for the last 3 years)	2015	2016	2017
	1.284,00 t	1.621.00 t	832,00 t
Export Experience / Delivery Schedule by Month	According to the National Agency for Food Safety, in 2018 Moldova exported nearly three thousand tons of berries to Germany, France, the United Kingdom, Russia and Belgium.		
Place of sale	local markets and agro markets		

Figure 7.Source: Table of economic characteristics of raspberry.Own development in framework AgriTradeNet eMS BSB 383 project.

Average price for 1 kg	2.00 euro		
Volume of production (for the last 3 years)	2015	2016	2017
Export Experience / Delivery	According to the National Agency for		

Schedule by Month	Food Safety, in 2018 Moldova exported nearly three thousand tons of berries to Germany, France, the United Kingdom, Russia and Belgium.
Place of sale	local markets and agro markets

Figure 8.Source: Table of economic characteristics of blueberry.Own development in framework AgriTradeNet eMS BSB 383 project

Average price for 1 kg	1.50 euro		
Volume of production (for the last 3 years)	2015	2016	2017
	14,00 t	5,00 t	44,00 t
Export Experience / Delivery Schedule by Month	According to the National Agency for Food Safety, in 2018 Moldova exported nearly three thousand tons of berries to Germany, France, the United Kingdom, Russia and Belgium.		
Place of sale	local markets and agro markets		

Figure 9.Source: Table of economic characteristics of gooseberry.Own development in framework AgriTradeNet eMS BSB 383 project

Average price for 1 kg	1.20 euro		
Volume of production (for the last 3 years)	2016	2017	2018
Export Experience / Delivery Schedule by Month	According to the National Agency for Food Safety, in 2018 Moldova exported nearly three thousand tons of berries to Germany, France, the United Kingdom, Russia and Belgium.		
Place of sale	local markets and agro markets		

Figure 10.Source: Table of economic characteristics of rose hip.Own development in framework AgriTradeNet eMS BSB 383 project

Average price for 1 kg	1.50 euro		
Volume of production (for the last 3 years)	2016	2017	2018
Export Experience / Delivery Schedule by Month	According to the National Agency for Food Safety, in 2018 Moldova exported nearly three thousand tons of berries to Germany, France, the United Kingdom, Russia and Belgium.		
Place of sale	local markets and agro markets		

Figure 10.Source: Table of economic characteristics of black rowan.Own development in framework AgriTradeNet eMS BSB 383 project

List of legal acts regulating the production of the berries and products from berries are presented in Table 2.

Table 2

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
1.	LOW Nr. 728 of 06.02.1996 on fruit growing*	14.04.2010	The present law regulates the general and special conditions for the production and marketing of fruit and berries and fruit propagating material and is oriented towards preserving, developing and enhancing the productive potential of fruit and berry plantations, irrespective of the type of property and the organizational and legal form of the household.
2.	ORDER No. 198 of 22.08.2005 on the approval of the Regulation	22.08.2005	This Regulation represents the set of mandatory rules and conditions governing the production, virological testing, certification of the quality and marketing of fruit and bassy

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
	on the production, testing, certification and marketing of propagating material, fruit-bearing and bacifer seedlings		propagating material in accordance with the Law on Fruit Growing No.728-XIII of February 6, 1996
3.	DECISION NO. 610 from 05.07.2010 submission, examination and registration of indications geographical indications, designations of origin and specialties traditionally guaranteed	05.07.2010	REGULATIONS on the procedure for submission, examination and registration of geographical indications, designations of origin and specialties traditionally guaranteed
Legislation of the Republic of Moldova in the field of IG, DO and STG			

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
	Law on the Protection of Geographical Indications, Names of Origin and Specialized Traditional Specialties No.66-XVI.	25.10.2008	(1) This Law establishes rules concerning the registration, legal protection and use of geographical indications, names of origin and traditional specialties guaranteed. (2) Legal relations apeared from the registration, of legal protection and use of geographical indications, designations of origin and traditional specialties guaranteed are governed by the Constitution of the Republic of Moldova, the Civil Code of the Republic of Moldova, the Code of Science and Innovation of the Republic of Moldova, the Customs Code of the Republic of Moldova, the international treaties to which the Republic of Moldova is a party, the present law and other normative acts, etc.
	To approve the national symbols associated with the protected geographical indications, protected names of	12.06.2014	The competent authorities responsible for the conformity control considered the best of the moment and of the products bearing the designation names of origin or geographical indications and traditional specialties guaranteed, designated by the Government under the conditions of Art. 33 and 34 of Law no. 66-XVI of 27 March 2008 looking on

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
	origin and traditional specialties guaranteed		the protection of geographical indications, designations of origin and traditional specialties guaranteed that will monitor the use of national symbols associated with protected geographical indications, protected designations of origin and traditional specialties guaranteed.
	The Regulation on the procedure for submission, examination and registration of geographical indications, designations of origin and traditional specialties guaranteed	05.07.2010	
	Government decision on the designation of competent authorities	19.07.2010	1. Designate the competent authorities with responsibilities with regard to products with designations of origin and geographical indications and traditional specialties guaranteed and the competent authorities responsible for

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
	with attributions and responsibilities for products with designations of original geographical indications and traditional specialties guaranteed and of the competent authorities responsible for official controls on the conformity of these products.		official controls on the conformity of these products, as set out in the Annex, etc.
Related legal acts, as well as those related to the protection of some IG			
	Law of vine and wine *	10.03.2006	Subject, purposes and scope of the law (1) The present law establishes the legal, economic and social bases in the field of viticulture, viticulture and winemaking, regulates the relations

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
			that occur in the production, processing and marketing of the propagating material and the vineyard propagation, table grapes for table and wine, wines and other products based on grapes juice and wine, by-products of winemaking and products obtained from the capitalization of secondary wine products, etc.
	Decision on approval of the Technical Regulation "Organization of the wine market"	11.06.2015	1. The Technical Regulation "Organization of the Wine Market" is approved, according to Annex no. 1. 2. Wine stocks in which technological processes have been used rectified ethyl alcohol other than wine origin are to be declared by the wine producing enterprises to the Ministry of Agriculture and Food Industry within 30 days from the date of publication of this Decision in the Official Gazette of the Republic of Moldova, and subsequently sold until exhaustion.
	ORDER on the approval of the demarcation of wine - growing areas for the	04.04.2012	1. The delimitation of the wine-growing geographical areas for the production of wines with a protected designation of origin is approved, at the initiative of the Scientific and Practical Institute of Horticulture and Food Technologies, according to the map and the list of the

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
	production of wines with a protected designation of origin		wine-growing centers attached. 2. The names of the defined areas are conventional, etc.
	ORDER on the delimitation of wine-growing areas for the production of wines with a protected geographical indication	28.01.2016	1. The delimitation of wine-growing geographical areas for the production of wines with protected geographical indication "Traian's Wave", "Ştefan-Voda" and "Codru", according to the attached map. 2. The National Vine and Wine Office will assist the Viticulture Association of the Geographical Region "CODRU" in order to operate the necessary modifications in the acts of its establishment etc.
	LAW regarding the declaration of the complex "The Winery "Cricova" - S.A. "as object of the cultural patrimony at a national level for the Republic of	18.07.2003	The present law regulates the relations that occur in the process of state protection, the preservation, use and popularization of the "Cricova" SA complex, hereinafter referred to as the "Cricova" complex, as well as the particularities of the property right over this cultural-landscape complex as an object of the cultural-national heritage.

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
	Moldova		
	LAW on granting the status of the cultural and national heritage of the Republic of Moldova to the goods of the State Enterprise "The Winery of Quality" Milestii Mici "	28.07.2005	This law regulates the relations that occur in the process of state protection, preservation, valorization and utilization of the assets of the State Enterprise "The Winery of Quality" Milestii Mici "(hereinafter referred to as the" Milestii Mici "), unique national value, as and the peculiarities of ownership of this cultural-landscape complex as an objective of the cultural-national heritage.

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
	LAW on the establishment of the Cultural-Natural Reservation "Orheiul Vechi"	04.12.2008	The present law regulates the creation of the Cultural-Natural Reservation "Orheiul Vechi", hereinafter referred to as the reservation, having the status of a legal person, under the authority of the central public administration responsible for the protection of cultural and historical heritage. This law regulates the legal relations that occur in the process of protection by the state, preservation, conservation, use and capitalization of the "Orheiul Vechi" cultural-natural reserve.
	RESOLUTION on the creation of the Cultural-Natural Reserve "Orheiul Vechi	23.03.2009	The cultural-natural reserve "Orheiul Vechi" (hereinafter referred to as the "Reservation") represents an ensemble of historical and cultural monuments, national and international, of national and international interest in the river Raut - the micro-zone of Trebujeni, Butuceni and Morovaia (Orhei) of neighboring localities.

Demirkoy Municipality (Turkey) has chosen strawberry. Strawberry production in Kirklareli was funded especially Provincial Directorate of Agriculture in Kirklareli District supported by Special Provincial Administration of Kırklareli. Production Area is Demirkoy Municipality . The production is made on the field.

The main normative legal act is Agricultural Law 18/4/2006 / No. 5488. Monitoring of the production is making by the Provincial Directorate of Agriculture. There were developed many support projects for production of the strawberry in Kirklareli region: from 2014 till now there is supported many producers for sow and production of the strawberry.

Speaking about ecological effects resulting from the production of local goods, there is no any negative effect on the water resources from the production of strawberry in Demirkoy. No any negative effect to soil. No any negative effect to landscape – the strawberry fields are very suitable for the production of this fruit in Demirkoy. No any negative effect on the biodiversity in Demirkoy. The production didn't use any energy – only fuel for the machines used for the preparation of the soil for sowing of strawberry. There is no any detrimental waste. No any negative effect on the air and climate.

This region is not certified as GI region for strawberry, but the possible certification will improve the current economic and social situation in Demirkoy. Demirkoy is a forestry region with limited possibilities for sowing of wide fields. That's way certification of the strawberry produced in Demirkoy will add added value to the region. Salaries are making directly from the fields or in open air market areas in Demirkoy. Each producer is responsible for marketing of its products. Price is 10 TL / kg, 1.57 EUR / kg

There were implemented many support project for production of strawberry in Kirklareli Region, including in Demirkoy Municipality. The main place for supply of strawberry is Istanbul market. The producers are marketing its strawberry by own selves. The consumer is prefer also the local products from strawberry as jam. Local stakeholders are mainly from: Provincial Directorate of Agriculture in Kirklareli – with branch in Demirkoy, Special provincial administration in Kirklareli and local government administration in Demirkoy.

Economic characteristics are presented in Table 3.

Table 3

Average price for 1 kg	10 TL / 1.57 EUR
Volume of production (for the last 3 years)	In Kirklareli region: nearly 30 producers producing 57 tons annually – nearly 170 tons for three years
Export Experience / Delivery Schedule by Month	There is no export experience
Place of sale	Demirkoy open market places Directly from the fields

List of legal acts regulating the production of the product is presented in Table 4.

Table 4

№	Title of the act	Acceptance Date / Number	Summary (what is this act about?)
1.	Agricultural Law	18/4/2006 / No. 5488	The purpose of this Law is; to determine the necessary policies and regulations for the development and support of the agricultural sector and rural areas in line with the development plans and strategies.
2.	Organic Agricultural Law	1/12/2004 / No. 5262	The purpose of this Law is; organic products and inputs to provide reliable, quality products to consumers to determine the principles and procedures for taking necessary measures to ensure the improvement of production.
3.	Law of Agricultural Producers' Unions	29/6/2004 / No. 5200	The purpose of this law is: planning production by demand, improving product quality, own property on the national and international scale

			In order to take measures to increase marketing power, agricultural producers come together on a product or product group basis. to establish agricultural producers unions
4.	REGULATION ON VEGETABLE AND FRUIT PRODUCTION ORGANIZATIONS		

Institute of Market Problems and Economic & Ecological Research of the National Academy of Sciences (Ukraine) has chosen honey.

Honey is a sweet, viscous product produced by bees and related insects. Bee honey is a nectar partially digested in the goiter of a honey bee (Apis mellifera) or sugary secretions of some plants or some insects that feed on plant juices Honey contains 13-22% of water, 75-80% of carbohydrates (glucose, fructose, sucrose), as well as in small quantities vitamins B1, B2, B6, E, K, C, carotene (provitamin vitamin A), folic acid.

The history of honey goes back thousands of years. It is reliably known that wild honey was mined 15 thousand years ago, in the early Stone Age. It is precisely this age that dates the drawing discovered in the Aran Cave, not far from the Spanish city of Valencia. It depicts people climbing ropes to a hole on a high rock. One of them took a honeycomb from there and put it in a basket, and bees were flying around people at that time. The history of the origin of honey, recorded in written sources, begins 5 thousand years ago. We are talking about ancient Egyptian papyri, which tells about the nomadic beekeeping of local residents. In the upper reaches of the Nile, the period of honey collection began earlier, so at first the bees were transported to the sources of this river, the hives were set on rafts, which slowly rafted down the Nile. Bees collected nectar from plants along the banks of the river, and then returned to the rafts. Probably beekeeping in ancient Egypt was a highly respected occupation. Suffice it to say that from 3200 BC there were always bees on the emblem of the pharaohs. The history of the origin of hives, reminiscent of modern design, appeared about 7-8 centuries BC in ancient Greece. The Greeks first began to make partitions in them and effectively regulate the selection of excess honey. At

the same time, a special law was adopted in Athens, regulating that apiaries should not be placed closer than 275 meters from each other. The first in the history of honey scientific work on bees can be considered a multi-volume work "Anabasis" by the Greek scientist Xenophon. Even 2.4 thousand years ago, he first described the life of a bee hive, and also described the healing properties of honey. These studies were continued by the famous philosopher and scientist Aristotle, who himself was engaged in beekeeping. In ancient Rome, beekeeping was a very profitable occupation, many scientific and practical monographs were devoted to it. In particular, in the 1st century BC, the famous writer and scientist Varron published a work in which he examined in detail the aspects of making hives and treating with honey. Beekeeping in ancient Rome was so popular that it even found its place in the famous Roman law, according to which, bees that are not in the hive were considered as orphaned wild animals. The history of the origin of bees in Ukraine most likely has very ancient roots. However, the first written mention dates back to 945. According to the Lavrentievsky Chronicle, this year Princess Olga ordered the Drevlyans to boil as much as possible hop honey for the commemoration of the murdered Prince Igor, which was part of her insidious plan for revenge on this tribe. With the invention of a method for producing refined sugar from sugar beets and cane, honey has lost its monopoly among sweet foods. Today, honey is a great therapeutic tool and delicacy rather than an everyday food product.

Speaking about production area, most bee colonies are in Odesa, Vinnitsa, Donetsk, Ivano-Frankivsk, Zaporizhzhya, Nikolaev, Khmelnitsky, Zhytomyr regions (at least 100 thousand in each).

In Ukraine, beekeeping is one of the sectors that allows to increase the employment of the population and start small and medium-sized businesses in rural areas.

Honey is a product used in cooking, confectionery, cosmetology and pharmaceuticals.

Currently, in Ukraine the issues of production, marking and sale of honey are regulated by the provisions of the national standard of Ukraine DSTU № 4497: 2005 "Honey natural", the implementation of which is voluntary and which has a number of inconsistencies with the provisions of Directive 2001/110 / EC, which creates significant obstacles to successful export of this product. Adoption of the draft order of the Ministry of Agrarian Policy and Food of Ukraine "On approval of honey requirements"

will promote harmonization of Ukrainian legislation with the legislation of the European Union in terms of requirements for identification and labeling of honey, improvement of regulatory regulation of issues related to the collection and packing of honey will create transparent mechanisms for the domestic market and significantly expand Ukraine's export opportunities. In August, the Law of Ukraine "On Basic Principles and Requirements for Organic Production, Handling and Marking of Organic Products" was adopted, which establishes new requirements for the production and / or circulation of organic products, as well as increases the liability for violation of the requirements of the Law. Since it will come into force only for a year - August 2, 2019 - producers and sellers of organic products have time to prepare

The EU-Ukraine Association Agreement (Annex XXII-C) includes 826 GIs of agricultural and food products, of which 388 concern meat and dairy groups from 21 countries. Pursuant to (p. 2, Article 201) of the Agreement, geographical indication of one party shall be protected by the other party, and Ukraine shall be governed by the Law of Ukraine “On Protection of the Rights to Indicate the Origin of Goods” on its territory (paragraphs 1-3, Article 202). Also, if products with a name specified in the Agreement are released in Ukraine from the moment of entry into force of the Agreement, production should be discontinued, the enterprise, in turn, can only engage in the sale of balances in the warehouses.

The legislative base of Ukraine on GI goods includes a number of legislative acts, namely: Civil Code of Ukraine dated 16.01.2003 № 435-IV (Chapter 45. Intellectual Property Rights to Geographical Indications), Laws of Ukraine “On Protection of Rights to Marks for Goods and Services ”Dated 15.12.1993 No. 3689-XII,“ On Protection of the Rights to Indicate the Origin of Goods ”of 16.06.1999 No. 752-XIV (hereinafter the Law).

On the basis of the last Law, the Rules of drawing up, submission and examination of the application for registration of the qualified indication of origin of the goods and / or the right to use the registered qualified indication of origin of the goods were issued, approved by the order of the Ministry of Education and Science of Ukraine No. 598 of 17.08.01 and registered with the Ministry of Ukraine 31 August 2001 under No. 772/5963 (hereinafter - the Rules), which set out the requirements for the application documents and the procedure for conducting its examination.

REGULATION OF THE CABINET OF MINISTERS OF UKRAINE On Approval of the Concept of Development of Farmers and Agricultural Cooperatives for

2018-2020 from September 13, 2017 No. 664-p. The purpose of the Concept is to create the necessary organizational, legal and financial prerequisites for the development of farms and agricultural cooperatives, improving the financial and financial situation of the rural population by:

-providing support to farms;

-creation of new jobs in the countryside, in particular through stimulation of agricultural co-operation;

-diversification of the activity of farms;

-creating prerequisites for lending to farms at affordable lending rates;

-increase the level of real incomes of rural population from the transfer of agricultural land lease;

-implementation of the Concept will allow shifting the focus of the state's agrarian policy in support of farms and agricultural cooperatives to create a middle class in the countryside

Visiting 80% of cross-pollinated plants, both wild and agricultural, bees thereby contribute to the seeding of forest, shrub, field, garden, meadow entomophilous vegetation, which, when intensively pollinated, stably renews itself, serves as a shelter and source of food for many insects, birds and animals, strengthens the soil and so on. Bee families are closely associated with the environment in which they are located. Demonstrating complete independence in maintaining the necessary conditions of existence throughout the entire annual cycle, bees are constantly dependent on the plant and animal world, air purity and weather factors. Their changes primarily affect the viability of bees. At the same time, according to the state of bee colonies, their survival, the quantity and quality of honey collected by bees, pollen, one can judge the ecological situation in which they are located.Bees contribute to seed production of the most important perennial fodder crops - red clover and alfalfa, the cultivation of which not only creates a good forage base for animal husbandry, but also, which is just as important, improves soil fertility, reduces the qualitative and quantitative level of weeds, and supports the livelihoods of the local fauna. All this substantially preserves or stabilizes the ecology of agriculture both in this area and in the region as a whole.Beekeeping carries a culture of work, an aesthetic and moral perception of wildlife, has an educational effect, brings satisfaction and pleasure. Working with bees helps to stabilize the human psyche, relieves stress, improves the functioning of all body systems. Not for nothing that

beekeepers are distinguished by longevity, physical and sexual health. Bees are also of particular importance in scientific research in the field of biology, genetics, and other sciences. Among living objects, bees were one of the first to visit space in American research. Featuring a perfect structure of a social lifestyle that has been forming for about 50 million years, the bee family is a symbol for many religious and philosophical movements trying to create a society of people in the pattern and likeness of the bee community.

The products and production to be protected through geographical identifications have inherent characteristics that make them an ideal target for the sustainable development of the region / countryside.

GI is a means of protecting and promoting such products and industries.

The "locality" of GI products is related to the issue of sustainable development for several reasons. First, because the presence of economic agents in one territory ensures that the socio-economic benefits arising from GIs will be captured locally. This socio-economic aspect has been clearly identified and set as the goal of European Union policy in EU Regulation 2081/92.

The "locality" of products may have other consequences that imply the sustainability of the production of GI products. The production and trading conditions of such goods are often determined by this product. For example, because local products are often, though not exclusively, consumed in local markets, their supply chains are more likely to be shorter, with smaller scale production and less intensive production systems.

In addition, the fact that all or most of the factors of production are concentrated in a geographical area implies a significant involvement of local communities in the supply chain, which is contrary to the conditions of mass production of agricultural products, where horizontal and vertical integration tends to differentiate between entities and "farmer" interests. from the region and local interests. In the case of GI, supply chain actors are also part of the local community, with a higher and more accurate perception of the environmental constraints and hazards associated with product manufacturing and development.

Creation of an advertising text for published newspapers and magazines, distribution of advertising material in printed publications (advertising spread). The choice of media (radio, television). Create a

quality video. Distribution of advertising messages using the "Direct mail". The use of outdoor advertising (crowded places).

The Prices are nearby 80 UAH per litter

Determining the goals and objectives of marketing activities: 1) The union of all beekeepers in Ukraine, 2) Geographic identification, local branding of honey; 3) Taking a leading position 4) Entering the international market – Attracting investors 5) Formation of a Culture of honey consumption.

The main stakeholders are:

- MINISTRY OF AGRICULTURAL POLICY AND FOOD OF UKRAINE, STATE SERVICE;
- MARKET OPERATORS (MANUFACTURERS OF HONEY ENTERPRISES), HONEY EXPORTERS;
- HOUSEHOLD MANUFACTURERS;
- ASSOCIATIONS;
- CONSUMERS.

Table of economic characteristics is presented in Table 5.

Table 5

Average price for 1 kg	2 EUR
Volume of production (for the last 3 years)	More than 400 thousand beekeepers work in Ukraine, who produce in private apiaries about 70-90 thousand tons of honey annually. Small private passics produce 97-98% of the total honey production in the country.
Export Experience / Delivery Schedule by Month	In 2018, 49.4 thousand tons of honey worth $ 98 million were exported from Ukraine. In 2017, 67.7 thousand tons were exported at $ 133.6 million. Export decreased by $ 35.6 million. 38.5 were exported to the EU thousand tons for $ 78.3 million. In 2016 - 67.8 thousand tons for $ 133.9 million.
Place of sale	Markets, shops, supermarkets, Internet

List of legal acts regulating the production of the honey is presented in Table 6.

Table 6

№	Title of the act	Acceptance	Summary (what is this act

		Date / Number	about?)
1.	Resolution of the Cabinet of Ministers of Ukraine	11-11-2015 / 930	“On Approval of the Procedure for Issuance of an Operating Permit, Forms of Operating Permit and Recognition of Some Decisions of the Cabinet of Ministers of Ukraine”
2.	Law of Ukraine	02-03-2015/ 222-VIII	"On licensing of economic activities"
3.	Order of the Ministry of Agrarian Policy and Food of Ukraine	01-08-2014/288	"On approval of the Rules for filling, storage, writing off of veterinary documents and requirements for their accounting"
4.	Resolution of the Cabinet of Ministers of Ukraine	21-11-2013/857	“On Approval of the Procedure for Issuance of Veterinary Documents”
5.	Order of the Ministry of Agrarian Policy and Food of Ukraine	20-08-2013/507	"On approval of a uniform form of the act consisting of the results of inspections of economic entities regarding compliance with veterinary and sanitary requirements for facilities (facilities) for the production of bee products"
6.	Order of the Ministry of Agrarian Policy and Food of Ukraine	13-02-2013/96	"On approval of the amount of payment for services in the field of veterinary medicine, plant protection, protection of rights to plant varieties provided by bodies and institutions that are within the scope of the State Veterinary and Phytosanitary Service"

7.	Order of the Ministry of Agrarian Policy and Food of Ukraine	08-08-2012/491	“On approval of Veterinary and sanitary requirements for facilities (facilities) for production of bee products”
8.	Customs Code of Ukraine	13-03-2012/ 4495-VI	
9.	Law of Ukraine	07-12-2011 /4091-VI	“On Ratification of the Free Trade Agreement between Ukraine and the EFTA States, the Agreement on Agriculture between Ukraine and the Kingdom of Norway, the Agreement on Agriculture between Ukraine and Iceland and the Agreement on Agriculture between Ukraine and the Swiss Confederation”
10.	Order of the Ministry of Ecology and Natural Resources of Ukraine	26-09-2011/337	"On approval of the Rules of use of wild animals for the purpose of obtaining products of their vital activity"
11.	Decree of the Cabinet of Ministers of Ukraine	09-06-2011/641	“On Approving the List of Paid Administrative Services Provided by the State Veterinary and Phytosanitary Service, Bodies and Institutions Related to Its Management and the Amount of Payment for their Provision
12.	Law of Ukraine	19-05-2011 /3392-VI	“On the List of Documents of a Permissive Character in the Field of Economic Activity”
13.	Tax Code of Ukraine	02-12-	

		2010/2755-VI	
14.	Order of the State Committee of Ukraine for Technical Regulation and Consumer Policy	28-10-2010/487	"On approval of the Technical Regulation on rules for food labeling"
15	Resolution of the Cabinet of Ministers of Ukraine	05-11-2008/978	“On Approval of the Procedure for Issuance of Operating Permit”
16.	Law of Ukraine	06-09-2005/2806-IV	“On the Permitting System in the Field of Economic Activity”
17.	Law of Ukraine "On State Support for Agriculture of Ukraine"	24-06-2004/1877-IV	"On State Support for Agriculture of Ukraine"
18	Order of the State Department of Veterinary Medicine	14-06-2004/71	"On approval of Veterinary requirements for the import of objects of state veterinary-sanitary control and supervision" to Ukraine
19	Order of the Ministry of Economy and European Integration of Ukraine	11-07-2003/185	"On Approval of the Rules of Retail Trade in Food Products"
20.	Law of Ukraine	10-07-2003/1087-IV	"On Cooperation"
21.	Animal Law of Ukraine	13-12-2001/2894-III	
22.	Resolution of the Cabinet of Ministers of Ukraine	24-01-2001/50	“On Approving General Requirements for the Recycling, Disposal, Destruction or Subsequent Use of Disposed of Substandard and Dangerous Products”
23.	Order of the National Academy of Agrarian Sciences, Ministry of Agrarian Policy of Ukraine	20-09-2000/184/82	“Rules for importation and export of bees and bee products outside Ukraine”

24	Order of the National Academy of Agrarian Sciences, Ministry of Agrarian Policy of Ukraine	20-09-2000/184/82	"Procedure for Registration of Apiaries"
25	Order of the National Academy of Agrarian Sciences, Ministry of Agrarian Policy of Ukraine	20-09-2000/184/82	"On approval of regulatory acts on beekeeping development"
26.	Law of Ukraine	22-02-2000/1492-III	"On Beekeeping"
27	The Law of Ukraine	14-01-2000/1393-XIV	“On Disposal, Recycling, Disposal, Destruction or Subsequent Use of Substandard and Dangerous Products”
28”	Order of the Ministry of Environmental Protection and Nuclear Safety of Ukraine granting permits for special use of wild animals and other objects of wildlife classified as natural resources of national importance”	26-05-1999/115	“On approval of the Rules for granting permits for special use of wild animals and other objects of wildlife classified as natural resources of national importance”
29	Law of Ukraine	14-10-1998/180-XIV	“On Plant Protection”
30	Law of Ukraine	23-12-1997/771/97-BP	“On Basic Principles and Requirements for Food Safety and Quality”
31	Order of the Ministry of Transport of Ukraine	14-10-1997/363	"On Approval of the Rules for the Carriage of Goods by Road in Ukraine"
32	Law of Ukraine	17-07-1997/469/97-	"On agricultural cooperation"

		BP	
33	Order of the Ministry of Agroindustrial Complex of Ukraine, Chief State Inspector of Veterinary Medicine of Ukraine	04-06-1996/34	“On Approval of Veterinary and Sanitary Rules for Markets”
34	Order of the Ministry of Finance of Ukraine, Ministry of Environment and Nuclear Safety of Ukraine	09-04-1996/37/68	"On approval of the Instruction on payment procedure for special use of wild animals"
35	Resolution of the Cabinet of Ministers of Ukraine	25-01-1996/123	“On Approving the Provisional Procedure for Paying for the Special Use of Wild Animals”
36	Law of Ukraine	19-12-1995/481/95-BP	"On State Regulation of Ethanol, Cognac and Fruity, Alcoholic Beverages and Tobacco Alcohol Production and Treatment"
37	Law of Ukraine	15-12-1993/3691-XII	"On breeding business in animal husbandry"
38	Law of Ukraine	30-06-1993/3348-XII	“On Plant Quarantine”
39	Resolution of the Cabinet of Ministers of Ukraine	10-08-1992/459	“On the Procedure of Issuing Permits for Special Use of Natural Resources within the Territories and Objects of the Nature Reserve Fund and Setting Limits on the Use of Resources of National Value”
40	Law of Ukraine	25-06-1992/2498-XII	"On Veterinary Medicine"
41	Law of Ukraine	12-05-1991/1023-XII	"On Consumer Protection"
42	Decree of the Cabinet of	23-03-	“On Approval of Detailed

	Ministers of Ukraine	2016/208	Rules for Organic Production of Beekeeping”
43	Order of the Ministry of Agrarian Policy and Food of Ukraine	10-02-2016/38	"On Approval of the Procedure for Approval of Export Capacity, Entry and Exclusion from the Register of Approved Export Capacity"

4. Analysis of the international economic impact of geographical indications of origin of agricultural commodities and its implementation in the context of the Ukrainian European integration process

In the study, "Strengthening sustainable food systems through geographical indication (GIO)", the Food and Agriculture Organization of the United Nations (FAO) and the European Bank for Reconstruction and Development The impact of geographical indications of agricultural origin on the economy is analyzed in nine case studies: Colombian coffee, Darjeeling tea (India), Futog cabbage (Serbia), Kona coffee (USA), Manchego cheese (Spain), pepper (Cameroon), Talioin saffron (Morocco), Tet de Muan cheese (Switzerland) and Valais du Vinhedos (Brazil). In all nine cases, there was an increase in the price of the final product from 20 to 50 percent.

Based on this research, we can conclude that GIO influences price, production volumes, market access and competitiveness, sustainability and regional development.

There are various mechanisms for the positive impact of the GIO process on price. First and foremost, it is the ability of GIO to reduce the asymmetric nature of the link between producers and consumers in providing information about the origin of goods and, therefore, increasing the willingness of consumers to pay higher prices. This fact is conditioned in situations where the official logo is systematically used, the product is certified and there is a system of forced use to prevent the misappropriation of the name.

The reduction in information asymmetry that the logo should provide depends on consumer awareness, and there is often a gap. As noted in a previous section, a massive information campaign like our AgriTradeNet project is able to counteract this fact.

The second mechanism concerns the ability of producers, through their collective organization, to change the market organization and to interfere with prices or through supply control (limiting volumes while

reducing demand and thus maintaining price levels at the highest level) or through an agreement between participants in the value chain, to pay the minimum price to manufacturers.

For example, in the case of Colombian coffee, the share of prices passed to producers has increased since GIO registration: previously, producers received 68% of every dollar paid to Fedecafé in the international market, and then increased to 85%.

The difference between Colombian GIO coffee and non-GIO hypothetical coffee is an average of $ 0.38 per pound in favor of GIO coffee.

Prices for imported coffee are combined with prices paid by producers in Colombia before and after GIO registration (2007), indicating that GIO did not allow Colombian coffee to be demodified.

With regard to the impact on production volumes, it should be noted that GIO increases production in the long run as a consequence of market success and increased demand. For example, in the case of Kona coffee (USA), production increased 250% between 1995 and 2015 and 36% increased the number of producers between 1991 and 2012, production of Manchego cheese (Spain) increased by 83% between 2001 and 2013 and Tet de Muan cheese (Switzerland) by 300% between 1986 and 2014.

It should be noted that, in the short term (immediately after registration), GIO may provoke an initial decline in production due to specifications that directly affect production (specific requirements and demarcation of production space). This is the case with Vale dos Vinhedos with a 78% reduction in production between 2012 and 2014 after GIO registration. This may also be the result of a decrease in the number of manufacturers using GIO as a result of the name being reserved for a "genuine" GIO product, as in the case of Futog cabbage, where the GIO production decreased by 76% between 2010 and 2014. However, in some cases, GIO can lead to an immediate increase in production, as in the case of Cameroon pepper by 328% between 2010 and 2015, as a result of specifications that allow for increased productivity.

Reducing supply in the short run through improved quality is the result of adopting new production technology focused on quality rather than cost reduction. This entails a period of adaptation to adopting new practices and full compliance with specifications (for example, the requirement to plant new coffee bushes or vines that take time to produce). Short-term supply cuts may also be explained by poor compliance, as some farmers do not participate in the GIO process, although they are located in demarcated areas but are not eligible or unwilling to participate in the GIO strategy. In addition, farmers outside the demarcated areas can no longer supply the product. Thus, production decline is observed after the GIO process is implemented, as in the case of Futog cabbage.

Improved market access was observed in five cases (Kona coffee (USA), Talioin saffron (Morocco), Manchego cheese (Spain), Tet de Muan cheese (Switzerland) and Darjeeling tea (India). In these cases, the process GIO had a positive effect on the number of destinations (large effect) as well as on export value (intensive effect). For example, the number of Darjeeling tea destinations increased from 35 in 2004 to 45 in 2015. In terms of wide-ranging effect, the analysis shows that the positive impact of GIO on Manchego cheese is mainly due to the increase in market share from 50% in 2001 to 55% in 2013 with access to such new markets as the US and Germany. In other cases, such as Cameroon pepper, GIO has allowed consolidating the product position in previously existing markets.

Impact on sustainability: preliminary findings. In Western economic literature, sustainability refers to three basic capabilities: rapid “recovery” from external shock, exposure to the effects of shock, or general avoidance of shock. GIO can be a useful tool for building a sustainable supply chain. This can be explained by the expansion of the market, the diversification of the commodity, and then by reducing the dependence on the commodity market and the associated price volatility.

The GIO strategy enhances product diversification, thereby limiting country-specific dependency and increasing the potential for resilience to any shock that occurs in that country. The international market seems to be of great importance in overcoming crises, as in the case of Manchego

cheese, which has quickly regained its share of the market, developing the US market after the 2008 crisis, which had a strong impact on Spain. Territorial differentiation based on a niche limits the dependence of GIO prices on international markets and therefore makes them more resilient against any fluctuations in commodity prices. GIO is clearly used as a means of enhancing differentiation and protecting a growing reputation in the global market, with GIO not aimed at "disconnecting" from international prices.

The impact of the GIO at the territorial level is traced to employment that goes beyond the severe economic impact through social aspects, although it still reflects a significant impact on the regional economy and rural development. The GIO specification is clearly linked to a large number of local jobs, as skilled workers are required to use traditional manual practices.

Product reputation can be the basis for tourism development: the case of Colombian coffee illustrates the synergy between value chain strategy and territorial strategy based on heritage recognition (UNESCO World Heritage Site) and tourism development (coffee park). Likewise, the typical Darjeeling tea plantation landscape is an important treasure trove of tourism, as large numbers of local and foreign tourists come to visit the area with a special train. There are no special attractions in the Kona coffee, but visiting a coffee plantation and buying some Kona coffee at a boutique farm is a must for Hawaii tourists.

Through food we learn about the local culture and way of life in new territories. Therefore, local gastronomy can be considered as a resource for rural areas to open new destinations for tourist destinations. Regional initiatives to provide green and gastronomic tourism services will increase demand for national produce, fill local budgets, create new jobs and develop rural areas.

In Ukraine, agro-recreational, agro-ecological clusters are starting to emerge (for example, "GorboGory", "Frumushika Nova"). However, their number is not significant, in the first place, due to the lack of substantive

and procedural normative-legal regulation, which is the subject of future research.

Based on international experience, we can conclude that the development of GIO has a number of advantages for different areas: for the social sphere - creating new jobs, preserving and restoring the historical and cultural heritage; for economic - development of small and medium business, attraction of tourist flow, additional income from tourist services, increase of budget revenues

5. Intensification of cross-border ties in the production and trade of goods of the agricultural and related sectors in the Black Sea Basin

5.1. Status and prospects of cross-border trade in agricultural products in the Black Sea Basin

Foreign trade in agricultural products between the countries of the Black Sea Basin, which are beneficiaries of the AgriTradeNet eMS BSB 383 project - Greece, Bulgaria, Romania, Moldova, Turkey and Ukraine - is a position of active cooperation between them.

In 2019, agricultural products remained the basis of Ukraine's foreign trade. The share of agricultural products and food (groups 1-24 UKTZED) in total Ukrainian exports amounted to 44.3%, or 22.2 billion dollars. USA. Compared to 2018, the volume of agricultural exports increased by 19%, while total exports of goods from Ukraine during this period increased by 6%.

The volume of imports of agricultural products to Ukraine was almost four times smaller than the volume of its exports and amounted to 5.7 billion dollars. USA. The share of imports of agricultural products and food in 2019 amounted to 9.4% of total imports and increased compared to 2018 by 13%.

The balance of foreign trade in agricultural products also maintained its long-term positive stability and amounted to 16.4 billion dollars at the end of the year. USA. At the same time, the total balance of foreign trade in goods in 2019 was negative ("minus" 10.3 billion US dollars).

The leading role in domestic agricultural exports is played by products of plant origin, whose share in the structure is 58%. Typical representatives of this subgroup are cereals, primarily wheat, corn and barley, the total share of which in the group is 74%, as well as oilseeds, mainly soybeans and rapeseed, with a share of 20%. Vegetable fats and oils, primarily sunflower oil, account for 21% of agricultural exports. Another 14% of exports are ready-made food products (flour, sugar, alcohol, tobacco products, etc.). The share of products of animal origin is the smallest and is about 6%. The most typical representative of Ukrainian exports in this segment are meat and poultry offal, the share of which here is more than 46%.

The value structure of imports is dominated by the group of "ready-made food products" (45%), among which the highest shares are alcoholic and soft drinks (22%), as well as tobacco raw materials (21%). On the second position of agricultural imports are products of plant origin, with a share of

32%. The most prominent representatives of imported goods from this subgroup are citrus fruits, bananas, coffee, corn and sunflower seeds. Of the products of animal origin, the share of which in the structure of imports is about 19%, the most imported are fish and seafood, the share of which in this segment reaches almost 60%. Imports of cheese, pork and meat and poultry offal to Ukraine are also active (Economic Discussion Club: http://edclub.com.ua/analityka/zovnishnya-torgivlya-agrarnoyu-produkciyeyu-rezultaty-2019-roku).

The analysis of Ukraine's foreign trade in agricultural products with the main countries of the Black Sea basin - Greece, Bulgaria, Romania, Moldova, Turkey - is given below.

The commodity structure of exports and imports of agricultural products of Ukraine with the analyzed countries of the Black Sea basin in 2019 is presented in Fig. 5.1 and Fig. 5.2, and in detail in Annex A.

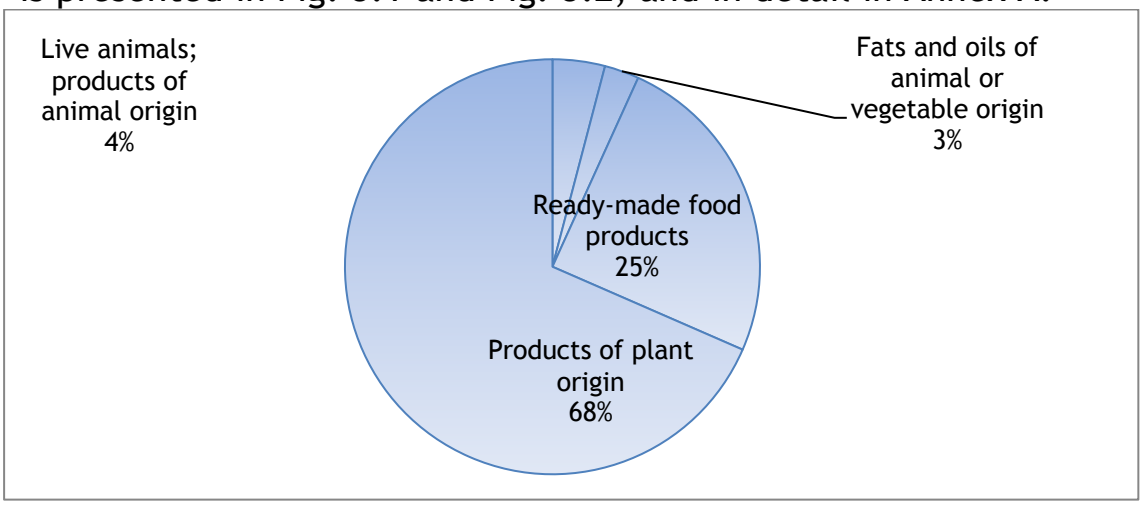

Fig. 5.1. Commodity structure of exports of agricultural products of Ukraine with some countries of the Black Sea basin (Greece, Bulgaria, Romania, Moldova, Turkey) in 2019

Compiled by source: (Countries by commodity structure of foreign trade 2019 State Statistics Committee of Ukraine.
URL: http://ukrstat.gov.ua/operativ/operativ2019/zd/kr_tstr/arh_kr_2019.htm)

As can be seen from Figure 5.1, the largest share of exports of agricultural products of Ukraine to the analyzed countries is accounted for by plant products - 68% and finished foods - 25%. The share of exports of live animals, products of animal origin and fats and oils of animal and vegetable origin is small - 4% and 3%, respectively.

The commodity structure of imports (Fig. 5.2) is similar: products of plant origin - 74%, finished food products - 21%, live animals, products of animal origin - 3%, fats and oils of animal and vegetable origin - 2%.

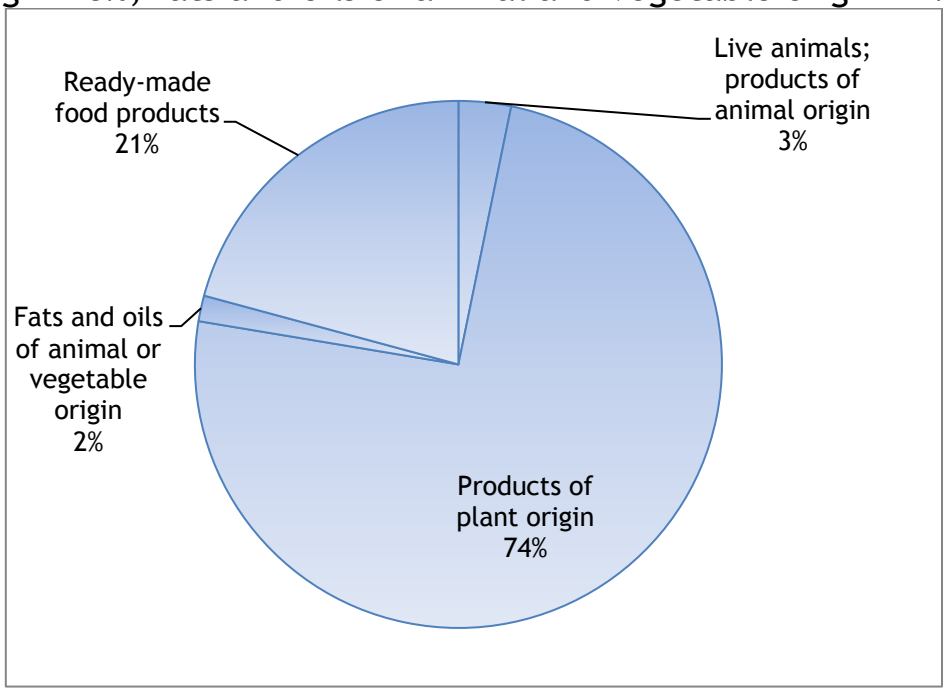

Fig. 5.2. Commodity structure of imports of agricultural products of Ukraine with some countries of the Black Sea basin (Greece, Bulgaria, Romania, Moldova, Turkey) in 2019

Compiled by source: (Countries by commodity structure of foreign trade 2019 State Statistics Committee of Ukraine.
URL: http://ukrstat.gov.ua/operativ/operativ2019/zd/kr_tstr/arh_kr_2019.htm)

Commodity specialization of foreign trade in agricultural products of Ukraine with some countries of the Black Sea basin in 2019 is presented in table. 5.1.

Table 5.1
Commodity specialization of foreign trade in agricultural products of Ukraine with some countries of the Black Sea basin in 2019

Country	Export	Imports
Greece	seeds and fruits of oilseeds	edible fruits and nuts
Bulgaria	fats and oils of animal or vegetable origin	finished grain products
Romania	finished grain products	grain crops

Moldova	milk and dairy products, poultry eggs; natural honey *	alcoholic and soft drinks and vinegar
Turkey	grain crops	edible fruits and nuts

* after the export of tobacco and industrial tobacco substitutes, which ranks first in the export of agricultural products of Ukraine to Moldova

A comparative analysis of the commodity structure of exports and imports of agricultural products between Ukraine and the analyzed countries of the Black Sea Basin in 2019 compared to 2015 (Table 5.2) revealed the following trends:

- Greece. Exports: the largest growth - finished food products (323.7%), a decrease in exports by many analyzed product groups, the largest reduction in exports - milk and dairy products, poultry eggs, natural honey (- 83.9%); Imports: growth of imports by all analyzed product groups, the largest growth - fats and oils of animal or vegetable origin (+ 497.66%);

- Bulgaria. Exports: the largest increase - finished food products (362.4%), a decrease in exports by the vast majority of analyzed product groups, the largest decrease - products of plant origin (-86.1%); Imports: the largest increase - fats and oils of animal or vegetable origin (+ 821.70%) and vegetables (+ 450.8%), the largest decrease - edible fruits and nuts (-91.2%);

- Romania. Exports: the largest increase - vegetables (+ 814.8%), the largest reduction - milk and dairy products, poultry eggs; natural honey (-68.2%); Imports: for some product groups, imports appeared for the first time in the last 5 years, including imports of live animals; products of animal origin, milk and dairy products, poultry eggs, natural honey, vegetables; Imports of finished food products increased significantly (+ 104.2%), a slight decrease was observed only in imports of fats and oils of animal or vegetable origin (-6.06%);

- Moldova. Exports: the largest increase - vegetables (+ 283.3%), the largest decrease - edible fruits and nuts (-58.5%); Imports: a significant increase in imports of plant products (+ 114.5%), the largest reduction - finished food products (-35.4%);

- Turkey. Exports: the largest increase - vegetables (+ 1032.7%), the largest decrease - fats and oils of animal or vegetable origin (-83.4%); Imports: growth in all analyzed product groups, except for imports of milk and dairy products, poultry eggs, natural honey (-99.1%).

Table 5.2

Comparative analysis of the commodity structure of exports and imports of agricultural products between Ukraine and the analyzed countries of the Black Sea basin in 2019 compared to 2015

Cargo group	Greece		Bulgaria		Romania		Moldova		Turkey	
	export	import	export	import	export	import	export	import	export	import
I. Live animals; products of animal origin, including:	-82,2	0,9	-36,0	-5,3	-13,0	13830	66,1	8,9	314,5	109,1
Milk and dairy products, poultry eggs; natural honey	-83,9	0,3	-18,4	-5,5	-68,2	12190	75,0	-1,8	51,2	-99,1
II. Products of plant origin, including:	53,9	124,4	-86,1	-75,2	-15,1	13,5	2,2	114,5	173,6	76,5
Vegetables	-36,5	98,2	-84,5	450,8	814,8	10000	283,3	127,9	1032,7	167,0
Edible fruits and nuts	153,4	124,3	-17,2	-91,2	9,4	57,1	-58,5	146,2	475,0	54,1
III. Fats and oils of animal or vegetable origin	-15,5	497,66	67,6	821,70	-69,4	-6,06	-1,4	84,31	-83,4	16,75
IV. Ready-made food products	323,7	45,3	362,4	80,4	136,9	104,2	10,0	-35,4	43,3	130,6

Calculated by source: (Countries by commodity structure of foreign trade 2019 State Statistics Committee of Ukraine.
URL: http://ukrstat.gov.ua/operativ/operativ2019/zd/kr_tstr/arh_kr_2019.htm)

During the analyzed 5-year period, the Free Trade Agreement between Ukraine and the EU entered into force, which caused some changes in Ukraine's foreign trade in agricultural products with EU countries. In general, it should be noted the growth of both exports and imports of finished food products between Ukraine and the analyzed countries, which is evidence of the growing share of domestic goods with

higher added value, which is, of course, a positive shift. Instead, there is a reduction in exports of live animals, animal products to the analyzed EU countries (Greece, Bulgaria, Romania).

In order to intensify foreign trade in agricultural products with the analyzed countries of the Black Sea basin, we consider it appropriate to introduce the following measures in the field of agro-industrial complex:

- accelerating the process of implementation of European and international standards of food safety and quality (HACCP, ISO, EN, Codex Alimentarius) in the field of agro-industrial production;
- increase in agricultural exports of products with higher value added, finished food products and semi-finished products, which will contribute to the loading of domestic processing enterprises and increase jobs in Ukraine;
- promoting the development of small-scale agricultural production, including legal regulation of personal farms and developing a mechanism for their transformation into farms, which will ensure the integration of private farms into market mechanisms of the agricultural sector and value chains;
- Encouraging the cooperative movement in rural areas, aimed at joint economic activity by individual economic entities, which will reduce costs for production and sale of agricultural products (Kovalchuk SY European landmarks of the agricultural sector of Ukraine: prospects and opportunities. Economy and society. 2016 . №2. Pp. 54-60);
- introduction of innovative mechanisms to intensify cross-border cooperation in the agricultural and related sectors, including clusters and innovation platforms.

5.2 Increasing opportunities for agri-food production in the context of participation in European smart specialization

Many regions and countries have recognized the importance of enhancing their agri-food production performance and strengthening their position in global value chains. These ongoing efforts aim at accelerating the transition to agri-food production that is more knowledge- and technology-intensive.

This is particularly evident in EU countries and regions that have strong interests in agri-food and have identified it as one of their smart specialisation priorities, defined within national and regional Research and Innovation Strategies for Smart Specialization (RIS3 Strategies) – an

initiative, which started in 2012 in European Union (EU) and further spread to other, non-EU countries and regions. Smart specialization priorities are a limited number of priorities, that build competitive advantage of countries and regions by developing and matching strengths in research and innovation with business needs to address emerging market opportunities, whilst avoiding duplication and fragmentation of efforts.

As of 2016, a total of 85 EU regions indicated agri-food as one of their key investment areas under smart specialisation and a total of over 270 agri-food related RIS3 priorities had been encoded in the Eye@RIS3 database[1]. The most prominent priorities were new agri-food technologies (53 countries and regions) followed by agri-food and tourism (49 countries and regions) and food with higher added value (34 countries and regions. By selecting agri-food for strategic investments, the regions indicated the importance of the agri-food sector for their local economy and growth.

In 2016, the European Commission services established the **Thematic Smart Specialisation Platform on Agri-food (S3P Agri-food)** with the goal of accelerating the development of joint investment projects at the EU level in the smart specialisation areas linked to agriculture and food.

S3P Agri-Food aims to accelerate the development of joint investment projects in the EU by encouraging and supporting interregional cooperation in thematic areas based on smart specialisation priorities defined by regional and national government linked to agriculture and food. Through the S3P Agri-Food, EU regions and member states are able to implement more efficiently their smart specialisation strategies, and regional stakeholders benefit from the new cooperation opportunities with partners from other regions.

The key objective of the S3P Agri-Food is to orchestrate and support the efforts of EU regions committed to work together for developing a pipeline of investment projects connected to specific thematic areas of smart specialisation priorities through interregional cooperation. The S3P Agri-Food is co-developed and co-led by the regions themselves ensuring an active participation and commitment of industry and related business organisations and clusters as well as research institutions, academia and civil society.

[1] http://s3platform.jrc.ec.europa.eu/map

The S3P Agri-Food focuses on RIS3 priority areas related to agriculture and food and further proposed by the regions which are keen to act as coordinating/leading region(s).

The investment opportunities generated by the S3P Agri-Food contribute to development of a more competitive and sustainable EU food supply chain, more resilient food systems, and to a more effective targeting of the EU regional funds on growth and jobs, especially through the numerous SMEs and micro-companies that make up this chain. The Platform will also promote the complementarity of funding instruments in the support of an investment project pipeline.

Facts and information about the S3P Agri-Food platform (as of 31.01.2020) (URL: https://s3platform.jrc.ec.europa.eu/agri-food):

* Members of the thematic platform are 59 national and subnational organizations from 23 countries (Fig. 5.3.) (19 EU countries and 4 non-EU countries, including 3 Black Sea countries - Turkey, Bulgaria, Romania).

* Most organizations represent Italy (11), Spain (8), the Netherlands (6), Finland (4), France (4), and Hungary (4).

* Five partnerships created:

• involvement of consumers in agricultural innovations (4 regions of the EU; 0 regions of the Black Sea basin),

• high-tech agriculture (34 EU regions; 1 Black Sea region - North-East, Romania),

• food ingredients (10 EU regions; 0 Black Sea region),

• smart sensors for agricultural products (16 EU regions; 0 BSB regions)

• traceability and big data (22 EU regions; 2 regions of the Black Sea basin countries - Pazardzhik, Bulgaria; Samsun, Tokat, Korum, Amasua - Turkey).

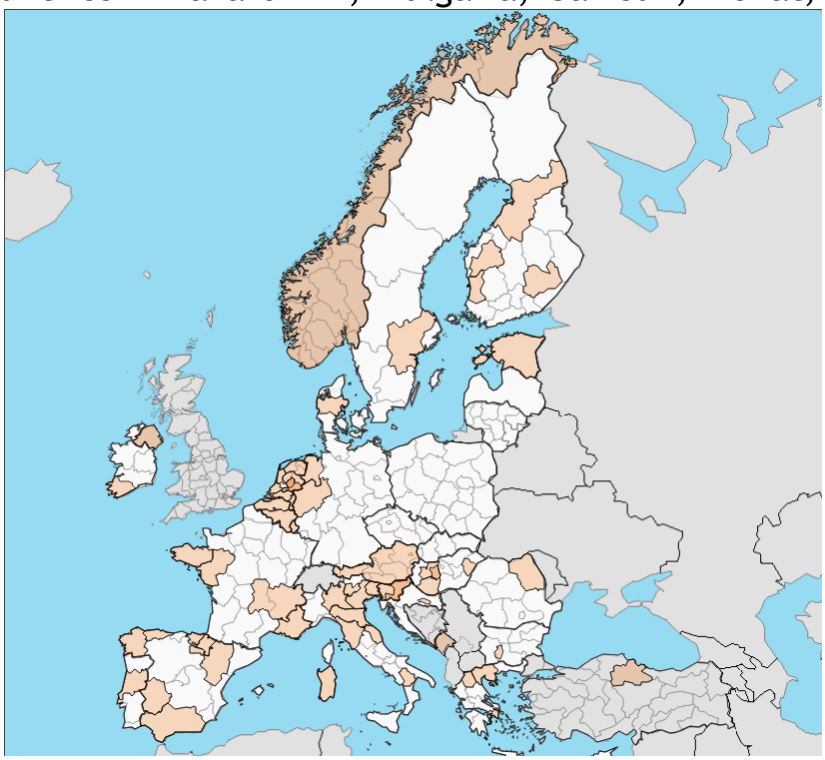

Fig. 5.3. Map of the regions participating in the S3P Agri-Food thematic platform

Source: (URL: http://s3platform.jrc.ec.europa.eu/map)

* The structure of agricultural priorities is as follows (Fig. 5.4)

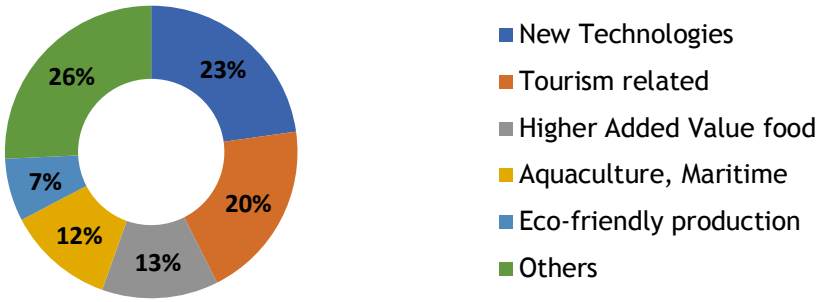

Fig. 5.4. Priorities of the Agri-Food S3P thematic platform

Source: (URL: https://s3platform.jrc.ec.europa.eu/agri-food)

Participating in 5 S3P Agri-Food thematic partnerships opens following opportunities for increasing agricultural production in BSB countries:

Thematic Area 1. "Consumer Involvement in Agrifood Innovation"

The overarching vision of this partnership is to involve consumers and end-users in agrifood innovation, as an innovative approach to both regional growth and as part of the solutions to the global food challenges. Partnership aims to develop methods for enhancing and channeling consumer involvement in Agri-Food innovation. It stimulates (investments in) pilot-projects to validate various methods, by exploring the paths among which this can be achieved.

Partnership is based on three pillars, addressing the following topics:

1. Joint Research and innovation – refers to research and innovation activities where the consumer or end user is involved as a partner instead of just being a subject of research.

2. Awareness and public debate – refers to activities that are aimed at encouraging a direct dialogue with consumers and end users throughout the entire food value chain.

3. Future business models – refers to development of new business models anticipating and responding to the changing relationship between actors in the Agrifood value chain; addresses the necessary innovative ecosystem for economic clustering, where new business models can flourish.

Thematic Area 2. "High Tech Farming"

The main objective of the partnership is the development of joint activities for accelerating the adoption of high and new technologies that can improve the performance of farming practices and farm management (Robotics, ICT, Big Data, Earth Observation, etc.). Specific objectives are: adoption of advanced agri-technologies in small and family farms; new solutions for early detection of pests and diseases; improvement of livestock health and wellbeing.

The focus areas relates to 4 Value Chains (VC): arables; horticulture; protected cultivations and livestock. They are segmented in the following technology areas: EYES & TOUCH to monitor what is happening (Meteo sensors, Soil sensors, Canopy sensors, Product sensors; On-board/proximal sensors), MIND to elaborate data and provide instructions (Data acquisition, Data analysis, Layers/images, DSS), INTELLIGENT ARMS to do precise and timely activities (Machineries, Programming/Automation, Robotic), technology oriented SERVICES (Installing, Maintenance, Repairing), and educational oriented SERVICES (Training, Demo farms and sites).

Thematic Area 3. "Nutritional Ingredients"

According to experts, by 2050, the agri-food sector will have to feed 2.3 billion more people, leading to an increase in world-food needs and food producers will be challenged to continue to improve food quality and productivity in a sustainable way. It is expected that people will become more aware of a range of issues including food safety, health benefits, corporate social responsibility, production systems and innovations, sustainability and food origins. Farmers, food companies, retailers, will have to adapt to consumers' demand, by suggesting differentiated products (food quality and functionality, safety, and environmental and social attributes).

Based on their RIS3 Smart Specialisation strategy, the S3 Nutritional Ingredient Partners will develop an interregional partnership between agri-food actors (industry, academics, cluster organisations and relevant research and technology organisations (RTO's)), to respond to agri-food challenges. Regarding priorities, they will facilitate the uptake and crossover of innovation in the field of nutritional ingredients, stimulate cross-sectoral collaboration and accelerate the development and commercialisation of novel and/or improved nutritional ingredients.

Thematic Area 4. "Smart sensors for agri-food"

The agri-food industry is taking its first steps towards Industry 4.0. Some frontrunner, often larger enterprises, with a broad network are up-to-date and aware of the most recent technological developments and its opportunities. However, all over Europe, the agri-food industry is typically a small and medium-sized enterprises (SMEs) driven sector. Many agri-food companies don't have smart sensor installed in their production environment and still rely on manually registered data and data interpretation is done by a few personnel members with specific expertise.

Removing these bottlenecks involves the investment in smart sensor systems, ICT solutions as well as in data analysts that have an understanding of food-related issues e.g. food quality. The agri-food system also becomes more interconnected between different stakeholders. The need for more and improved tracking and tracing, higher quality standards, prevention of food losses and so on, increase the demand for smart sensor systems, data management systems, etc.

The aim of Partnership is to set-up a platform and supportive business ecosystem between agri-food clusters and clusters representing technology and/or digital solution providers, relevant RTOs and other stakeholders, to lower the barriers for agri-food companies to access and implement the

newest smart sensor systems, make them acquainted with and train them in data management and mining, etc. and thus facilitate the Industry 4.0 transition of the agri-food industry.

Thematic Area 5. "Traceability & Big Data"

The thematic partnership aims at encouraging, motivating and facilitating the incorporation of necessary digital technologies and data application in agri-food sector value chains.

To focus and to foster a rich debate in which the proposals of the interested regions can be integrated in the project a work programme will be built around a following topics:

- ✓ More complete and trusted information available to consumers.
- ✓ Smart information systems for companies and the public administration.
- ✓ Territorial cooperation as basis for the transfer of technology and research outcomes, experiences, research staff and between companies.
- ✓ The shared value that will generate added value in all stages of the chain that will have an impact on the rest of phases and in society and the territories at large.
- ✓ Improvement of business competitiveness, resilience and sustainability and creation of new businesses.

6. Assessment of current trends in the development of local markets for agricultural products in the context of increasing cross-border opportunities (production, exports, imports, security, logistics in the domestic market, quotas)

6.1. Olive oil market analysis (Greece)

Despite the fact that the share of olive oil in the structure of the world market of edible vegetable oils is only about 3%, its production is of growing interest from new countries, especially due to research confirming the positive characteristics of this product and its fundamental place in the diet. . This interest is reflected in the transformation of the structure of production and increased competition between the main producing countries, primarily Spain, Italy and Greece, as well as new producing countries of the latest generation. The evolution of chain links also reflects profound changes in the structure of the global olive oil market.

Founded in 1959 under the auspices of the United Nations to protect and promote the production of olives, the International Olive Council plays a crucial role in collecting, analyzing and disseminating information and statistics on the world oil market. The 17 members of this intergovernmental body (Albania, Algeria, Argentina, Egypt, Iraq, Iran, Israel, Jordan, Lebanon, Libya, Morocco, Montenegro, Syria, Tunisia, Turkey, the European Union and Uruguay) account for 98% of world production, corresponding to 3 % of the world market of edible vegetable oils. Today, olive oil production is dominated by Spain, which produces an average of more than 45% of world production, mainly in Andalusia. Over the past twenty years, the country has made huge investments in the modernization and development of this sector of the economy, especially in processing plants. Behind this giant are three types of producing countries:

- producer countries with a strong tradition of olive growing, such as Greece, where the production system remains largely traditional, either due to structural reasons (terrain, climate, etc.) or due to the lack of investment that would allow the use of larger areas;
- countries with a strong tradition of olive growing, in which, in addition to the traditional system, models with more intensive production are used (Italy);
- countries that have recently started production of olive oil and whose producers strive for maximum profitability and use more aggressive marketing to enter the market (Tunisia, Turkey, USA).

Investment in the sector is common to many, including traditional countries. This gives them the advantage of using the most advanced achievements:

- adapted varieties (today, producers conduct many field studies and primarily use varieties with improved characteristics);
- intensive and superintensive farms that allows to reduce production costs and first of all to mechanize all agronomic operations, from pruning to harvesting;
- modern irrigation systems, which allows to increase the average yield per hectare and total production. Olive groves are becoming more and more integrated with modern oil production plants or factories for the production of table olives with packaging shops, laboratories, etc. These are new generation producers who have little in common with the traditional farming method. These trends are increasingly intensifying competition between producer countries as well as between different producers within a single country.

Despite its absence in several regions, the olive industry in Greece is the backbone of agriculture, geographically fundamental (800,000 hectares), economically (the world's fourth largest producer of olive oil) and cultural (the world's first per capita consumer). Growing olives is the main part of domestic agricultural production and is the most exported commodity (olives and olive oil together). The olive oil industry's contribution to national GDP is around € 750 million, and it is estimated that the large-scale development of packaged olive oil products could bring in another € 350 million, reaching a total of more than € 1 billion, which means a possible increase in GDP 0.4% to 0.6% with a stable GDP of 170 billion euros. However, the Greek olive production sector is still largely traditional and faces many challenges, including the competitiveness of olive oil in international markets.

Olive production sector

Olive production is one of the most important agricultural sectors in Greece, accounting for 20 percent of agricultural land and 60 percent of the total number of farms. Olive farms, most of which are small, number about 531,000. Most olive groves are set aside for the production of olives for oil production, although the table olive sector is also important in Greece. Some Greek varieties of olives, such as Kalamata, are used for both oil production and table use, so it is difficult to divide the total area under

olives based on their use. However, in general, the proportions of production of table and oil olives are 1:10.

In general, the climate and soil of Greece are very well suited for growing olives, and olive oil is produced throughout the country. Most of the production is extra virgin olive oil (EVOO), mostly of high quality, due to the favorable climate and soil, as well as the use of olive varieties, which usually give high quality extra virgin olive oil, as well as timely collection and pressing. olives. Crete and the Peloponnese are the most concentrated growing regions, accounting for 65 percent of olive oil production. Most new, intensive farms are located in these regions. Greece relies more on one variety of olives than Spain or Italy, with the Crown variety accounting for about 80 percent of production. It is used to produce high-quality oil, which is in great demand. Crowns are the main variety of olives grown in Greece. It originates from the Crown region in Messinia (Peloponnese) and is grown on the island of Crete. Crown olives have a very small size, fruity taste and give high quality olive oil with a unique mild taste and golden green color. Other common varieties are Manaki and Afinolia, which are grown mainly in the Peloponnese. Olive trees grow slowly: four to five years to bear their first fruit, and another 10 to 15 to give maximum yield. Olives are harvested from October to January "depending on autumn rainfall" and can even last until February. Farmers regularly look after small groves of trees in remote areas; olives are harvested by hand, and the crop is processed on the day of harvest. Product quality is usually very high: in a good year, the percentage of olive oil with low acidity and excellent organoleptic characteristics can reach 80 percent. In middle years, it ranges from 65 to 70 percent.

The average farm size in Greece is only 1.6 hectares, which is slightly larger than in Italy. About 70 percent of Greece's olive groves are considered "unfavorable," meaning they either have a steep slope or other geographical features that make farming difficult. Olive trees are often the only crop that can be grown on land. Because many farms are small and located in difficult terrain, most olives are harvested by hand, and very few Greek farmers use modern production methods, such as farmers in Spain or Italy. The low efficiency of the sector is reflected in the fact that Greece accounts for 22 percent of olive areas in the European Union, but only 14 percent of olive oil production. The number of small olive farms in Greece is declining due to land neglect and competing land use priorities. Small traditional olive farms, many located on the Greek islands, face

"competition from developers, real estate and tourism. Fragmentation of the structure of the raw materials sector is facilitated by low profitability and unprofessional nature of small farms. This status significantly reduces the market power of producers when they agree on the selling price of their product. The second problem is land issues and the difficulty of keeping olive groves in a large number of agricultural areas facing urban and tourist competition: Alternative and more lucrative activities have forced many olive grove owners to abandon them. This trend has intensified since the recent reform of agricultural policy in the European Union. Many of these very small olive farms do not make a profit even after receiving subsidies, so alternatives to growing olives are attractive. The number of farms using intensive methods has been increasing in recent years. These new plantings are mainly in Crete and the Peloponnese and are mainly olive trees of the Crown variety, which is well suited for intensive production. While intensive plantings have increased over the past five years, most of the land suitable for intensive production has already been converted.

Olive trees in Greece grow mainly in mountainous areas, where the soils are mostly clay and limestone. The country's historic olive groves are located on the Halkidiki peninsula, in Crete, in the western part of mainland Greece, as well as in the Ionian and Aegean islands.

Geographically, almost 80% of olive oil production is concentrated in three regions: the Peloponnese (37%), Crete (30%) and the Ionian Islands (12%), where the main olive growing areas are Messinia and Elijah (Peloponnese), Heraklion and Chania (Crete) and Corfu (Ionian Islands).

While other orchards cover just over 20,000 hectares, olive groves cover an area of about 800,000 hectares (ie about 17% of European olive areas) (source: National Statistical Office) has expanded significantly in recent years (500,000 hectares in 1940, 712,000 hectares in 1992). According to statistics, the area rose to a record level in Europe of 20% between 1980 and 1998 (representing about 6,700 hectares of growth per year; for comparison, from 12,200 hectares in Spain). The increase is particularly noticeable in Crete, with an increase in area by a quarter between 1980 and 2008, ie almost 2,000 hectares planted annually. Thus, in 2000 there were already 117 million trees, distributed mainly on compact plantations, while in 1960 there were 79 million olive trees and 46 million in 1950. The distribution of olive groves is uneven and has a pronounced geographical differentiation. Olive trees cover more than a third of the area, in agricultural areas on many islands and in the Peloponnese.

Recently, there has been a slight expansion of gardens in the north of the country, and their predominance in the Central and Southern parts. We can note the concentration of plantations in Crete and the Peloponnese (having 25% and 22% of Greek territory, respectively, they produce 12% of European olive production).

Olive trees have the appearance of compact gardens (less than a quarter are in the area of irrigated agriculture) are mainly focused on supplies for processing into oil (about 100 million trees), table olives (17 million trees). The increase in plantation areas mainly concerns those plantations that supply olives for oil processing (+12500 ha on average for the period 1998-2008), and the area under table olives, on the contrary, tends to decrease (-5100 ha per year for the same period).

In the national statistics there are no annual data on the areas allocated for olive groves; therefore, the only available source of information is a survey of the structure of farms by Eurostat, which is conducted every 3 years. According to these data, the area of olive groves has recently increased, albeit at a slower pace - from 738,000 hectares in 2007 to 767,000 hectares in 2020.

Traditional olive growing in Greece is combined with cereals and grapes. Yields in the sector remain low: low planting density, old trees, little interference in cultivation. Yields have dropped significantly, reaching 351 kg of oil / hectare in 2020. Thus, the production of olive oil also tends to decrease from 310,000 tons in 2011 to 270,000 tons in 2020. The climate in Greece is ideal for growing olives, which make up most of the agricultural land compared to other European regions. Greece has the largest share, 14 percent of agricultural land covered by olive groves, followed by Cyprus, Italy and Spain - about 10 percent (compared to less than 1 percent for other European countries). Producers in Greece have achieved higher land productivity, reaching 3 tons of olives per hectare of sown area (compared to 2.5 tons in Spain). In addition, the national landscape (mountainous and semi-mountainous terrain), as well as low humidity are key factors that ensure the high quality of olive oil (low acidity and high taste). Approximately the first cold-pressed olive oil (of the highest quality) accounts for about 80% of production in Greece, compared to 65 percent in Italy and 30 percent in Spain. Greece devotes 60 percent of its arable land to growing olives. About 520,000 olive growers, of which 50.5% are professional farmers. The large number of olive producers in relation to arable land (800,000 ha) indicates the absence of large-scale

industrial production of olives. This means that the cultivation of olives, although systematic and significantly improved through the application of the latest technological advances and scientific progress, remains a "family affair." Thus, the small and scattered structure of Greek farms limits potential profits and increases dependence on subsidies and the use of their own labor to obtain satisfactory compensation for their owners. The cost of olive production in Greece is relatively high (about 1 euro / kg of olives compared to 0.6 euro / kg in Spain), mainly due to the small size and low productivity of olive farms.

The Greek landscape, with its positive impact on product quality, is far from conducive to more efficient agriculture, as in Spain (although there are several pilot intensive farms in the Elijah and Laconia regions). The planting density of olive trees is a key factor in determining the productivity of an olive grove, as it affects the amount of olives and olive oil produced per hectare, as well as the method of harvesting olives. Planting density can range from 50 to more than 1000 trees per hectare. In traditional Greek groves, some of which were planted more than 100 years ago, the distance between the trees is large, often 30 to 60 feet. As a result, the yield may be less than 1 ton of olives per hectare compared to 13 tons in SHD Super High Density.

A flatter landscape in Spain is less advantageous in terms of organic and nutritional characteristics, but allows mechanization of olive growing, which leads to lower production costs. Along with large holdings (more than 50% of production in Spain is made from olive groves with an area of more than 20 hectares compared to 10 percent in Greece) Spain has higher productivity, reaching 45 tons of olives per employee compared to 19 tons in Greece. In addition, the harvesting methods used in Spain lead to less loss of olives (as opposed to beating or harvesting olives from the ground), as well as fast delivery to processing plants with minimal loss of quality. The main difference between the production process in Spain is that olive trees are planted with a high planting density (about 200-400 short trees per hectare compared to 50-100 large trees in Greece), which allows you to collect olives through mechanical shakers instead of traditional methods of manual collecting or beating fruit with long poles in a grid. Thus, for the Greek economy, it is still a "farming" business (450,000 families, 75% of olive growers have plots of less than 2 hectares and only half are employed), whose gardens provide basic or additional income for their

families. In Greece, the average size of olive groves (about 1.6 hectares for 531,000 farms) is one of the smallest in Europe.

Oil production

The next link in the production and logistics chain after harvesting olives is the oil production sector. We will consider the characteristics and efficiency of this link, based on two important parameters: 1) the technology used; 2) organization and status of ownership in the sector.

Greece is the third largest producer of olive oil in the world (11 percent of total production) after Spain (40 percent) and Italy (14 percent). Indeed, Greek olive oil is of the highest quality, as 80% of the products produced are extra virgin olive oil (compared to 65% in Italy and 30% in Spain).

Olive oil production is one of the leading areas of the Greek agro-industrial complex, accounting for 9 percent of the total value of gross agricultural output (compared to 1 percent in Europe). Greece ranks third in the world in olive oil production (after Spain and Italy) with an average annual production of about 0.3 million tons, or about 0.4 percent of GDP (or 750 million euros) per year, on average over the last 5 years. years compared to 0.3% in Spain and 0.1% in Italy.

Olive oil production has tripled in the last 60 years, reaching 3373,000 tons in the 2017/18 marketing year. Preliminary production data in 2019/20 MY indicate a decrease of 5%, resulting in production of 3,051,000 tons. Greece is the third largest producer of olive oil in the world (11 percent of total production) after Spain (40 percent) and Italy (14 percent), the share of these three countries accounts for about 2/3 of world production (Table 6.1)

Table 6.1

Greece's share in world and European production olive oil, thousand tons

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20*
World	2402	3252	2458	3177	2562	3373	3219	3051
European Union	1462	2483	1435	2324	1752	2188	2264	1918
Others	936	769	1024	853	810	1185	955	1133
Greece	358	132	300	320	195	320	185	275
The share of Greece in the world production	14,9	4,0	12,2	10,0	7,6	9,5	5,7	9,0

In the EU (%)	24,5	5,3	20,9	13,8	11,1	14,6	8,2	14,3

Source: International Olive Council, MS declarations. Note: excl. pomace oil.

* forecast for the 2019/20 marketing year

Spain is the undisputed leader in the industry (about 40% of world production), which largely leads to changes in world production. In particular, due to the introduction of new methods of growing olives, Spain managed to double the production of olive oil from 0.6 million tons in 1990 to 1.2 million tons in 2014 (which is half the growth of world production during this period).

Italy and Greece have reduced production over the past 5 years compared to the previous decade (a decrease of 17% for Greece and 37% for Italy). As a result, both countries lost market share in world production (from 23% to 14% for Italy and from 14% to 11% for Greece). Other producers, such as Turkey, Tunisia, Morocco and Syria, almost doubled production between 1990 and 2014, increasing their market share in world production from 25% to 35%.

In addition to this long-term upward trend, world production has significant instability depending on the season, mainly due to weather conditions. Indeed, olive oil production showed a significant decline in 2013 due to a severe drought. In addition, Greek olive oil production fell well below the 25-year average in 2014 (0.13 million tonnes compared to 0.35 million tonnes in 1990-2013) due to extreme weather conditions in Greece in 2013 year.

In the short term, Greece is expected to continue to lose market share in real terms. Greece's share of olive oil production among the three largest producers has been declining for more than a decade: from 25 percent in 1995 to 21 percent in 2000 and an average of 14 percent in 2013-2020. The analysis shows that this percentage is mainly determined by relative position Greek producers in comparison with their main competitors in Spain and Italy in terms of: 1) production costs; and 2) production subsidies. In particular, a 10 percent increase in the relative cost of oil production causes the Greek market share to fall by 5.4%, while the same increase in agricultural subsidies increases the Greek market share by 12 percent.

Greece produced 185,000 tons of olive oil in 2018/19 MY compared to 320,000 tons in 2015/16 MY (Table 6.2). Until recently, the level of production in Greece depended on the alternative fruiting cycle of olive trees, but the difference between the years of harvest is now smaller,

primarily due to the wider use of irrigation and pruning methods, which reduce the impact of this cycle. According to industry representatives, olive oil production in Greece in 2019/20 will increase by 48 percent compared to the previous campaign, which recorded one of the lowest levels in eight years, due to severe drought in the summer.

Table 6.2

Production and trade in olive oil for 2015 / 16-2019 / 20 MY

	2015/16	2016/17	2017/18	2018/19	2019/2020*
Production	320	195	346	185	275
Imports					
Total	3,4	0,6	2,5	2,4	3,3
From the EU	3,4	0,6	2,5	2,4	2,6
Others	0	0	0	0	0,7
Export					
Total	161,9	113,8	157,3	112,5	126,2
In the EU	141,1	93,5	137	90,3	109
Others	20,8	20,3	20,3	22,2	17,2

*2019/20 MY (November 1, 2019 - October 30, 2020) - forecast

Growing olives is the main part of domestic agricultural production and is the most profitable export item (table olives and olive oil). At the national level, all Greek companies are grouped into 83 Producer Organizations, which are mainly involved in administration, grouping, assistance, and other marketing activities.

The existing 3,000 companies (of which no more than 2,300 operate) in most cases do not take an active part in oil marketing, and usually only provide toll services for olive processing. For these services, the standard compensation is about 6.5% of the output. Operating plants are scattered throughout the country, but almost 60% are located in the Peloponnese and Crete. There is also a wide range depending on the size of the enterprise, from traditional to modern, while 39% have an annual capacity of less than 100 tons, 55% between 100-500, 5% between 500-1000 and less than 1% have a capacity of more than 1000 tons. The average daily capacity is about 3,000 kg, and they usually work about 60-80 days a year.

Thus, the production sector of the market is very weakly consolidated (more than 2,000 production units, including about 40 large companies that control exports). Almost 60% of enterprises are located in the Peloponnese and Crete, with a share of cooperatives (20%), often organized into unions at the departmental level in order to structure both collection, processing

and, above all, marketing. For example, the Union of Sfakia in Crete, established in 1949, combines 49 public cooperatives with more than 8,000 producers with a real marketing strategy (website, "organic" approach, etc.). In general, despite this fragmentation, in recent years the sector has modernized equipment (storage, processing), which improves the quality of products.

In the niche of labeled / standardized olive oil products, despite the large number of operating firms, three companies occupy 57-62% of the market, and the others belong to a large number of small, mostly cooperative firms operating locally. Alice is the dominant firm, occupying 31-33% of the market, and Minerva - another 14-16%. The third firm, Elaiourgiki, is a cooperative firm and has a market share of about 11-12%. It should be emphasized that there is a clear structure of market power concentration, given that these three leading companies accounted for about 40-45% of the market in 1998/99. As for labeled olive oil, the two brands make up more than 70% of the market, namely Elanti (Elais) and Horio (Minerva). 70% of labeled olive oil is sold in retail chains (retail), and 30% - in small specialty stores. Consumption of olive oil per capita is the highest in the European Union, sometimes exceeding 20 kg per year (in Italy it is just over 10 kg). Of the nearly 200,000 tons of annual olive oil consumption in Greece, about one-quarter consists of refined olive oil and three-quarters of crude olive oil.

The prospects for the olive oil sector seem quite favorable: domestic production is enough to meet demand and per capita consumption is the highest in the EU. Although Greece has one of the highest levels of olive oil consumption per capita, consumption is steadily declining, to 16 kg per person in 2014 from 20 kg per person in 1990 (compared to about 11 kg in Spain and Italy). Olive oil is being replaced by other, cheaper vegetable oils, which is 55% of the total amount of vegetable oils consumed in 2014 compared to 10% in 1980. Consumption of Greek olive oil has decreased over the past ten years - from 228,000 tons in 2011 to 202,000 tons in 2020, which corresponds to the negative dynamics of previous years. However, olive oil is still the main fat used in Greek cuisine and, despite the decline in real consumer incomes due to the economic crisis, olive oil consumption in Greece remains stable. In the domestic market, there is an increase in competition between brands, but the main problem remains the share of the amount of olive oil distributed in crude form. In particular, due to the much lower price of such olive oil, consumers prefer it to more

standardized products, despite the fact that often such oil does not meet quality standards. Although labeled Greek olive oil is gradually increasing its presence in world markets, the bulk is still exported raw (about 90%), mainly to Italy.

The sector also includes about 250 small workshops for packing table olives, 90 bottling and packaging plants and 40 enterprises for the production of olive oil from cake. Packaging materials are usually plastic bottles of one or two liters and metal cans of five liters. Oil for the export market is presented in plastic bottles of three and four liters. Glass bottles are rarely used and mainly for extra-class olive oil. On the other hand, there are very few modern processing plants, given the high costs of installation and operation. The latter have an annual production of 130-150,000 tons, but they mainly process other oilseeds than olive oil.

Thus, there are now 2,200 plants, which is quite a large number compared to the current level of production, with a predominance of small local businesses. Even in remote areas, olives are usually processed on the day of harvest. Because Greek oil is produced immediately after harvest, it is usually of high quality, but at a high cost, as many companies do not use the most efficient technologies and cannot benefit from economies of scale. Many small factories serve traditional sales channels, with consumers buying olive oil directly at the factory. About 80 percent of plants in Greece use a three-phase process in oil production. There are also several traditional presses and a very small number of more modern two-phase plants. Farmers can sell their olives to factories either through cooperatives or through contracts with packaging companies, and the latter usually provide farmers with better opportunities to participate in the production chain with higher added value. About 60 percent of olive oil producers in Greece are members of cooperatives that often focus on wholesale (crude oil in bulk) rather than looking for higher value-added markets. About 20 percent of Greek factories are owned by cooperatives; they dominate production only in the area of Crete. To participate in higher value-added production chains, some farmers enter into agreements with factories that are part of vertically integrated companies. For example, the largest olive oil producer in Crete receives 25 percent of its raw materials from its own groves, and the other 75 percent comes from 800 local farmers. The company strives to produce only high-quality first-extracted oil, so farmers are paid depending on the quality of the olives after testing after delivery

to the plant. This usually leads to a higher price for those farmers who meet the quality standard.

As mentioned above, there are three main types of olive oil plants: a) traditional oil presses; b) three-phase centrifugal, where the extraction process produces oil, cake and vegetable water; and c) two-phase, which are the most modern, produce oil and wet extract (cake). Cake oil as a result of the subsequent process of extraction of olive oil is usually used only for industrial purposes, but can be eaten after it is purified.

In traditional presses, the non-automatic oil extraction process has a high risk of contamination and increased acidity - thereby reducing the quality of the resulting olive oil.

Between the two types of circular extraction center, two-phase is more productive (by the amount of oil extracted) and more environmentally friendly. The main difference is that they require less water during the extraction process, which leads to lower energy costs, lower water consumption and a higher degree of oil release (output / inlet ratio). In general, the average cost of processing in two-phase mode is about 0.16 euros per kg of olive oil compared to 0.19 euros per kg of olive oil in three-phase mode.

Over the past 20 years, Spain has invested in modernizing its olive oil plants with European subsidies. It is noteworthy that two-phase plants account for about 87 percent of the production sector in Spain, compared to less than 2% in Greece. Greek olive oil plants mainly use three-phase technology (80 percent), while Italy uses both technologies: three-phase (47 percent) and traditional enterprises (37 percent).

In Greece and Spain, olive oil plants are largely owned by cooperatives controlled by farm owners (covering 50% and 70% of olive oil production, respectively). This organizational structure allows small farm owners to take advantage of economies of scale and strengthen their position in negotiations with large manufacturing companies and retailers. Despite their organization into cooperatives, Greek olive oil plants remain relatively small, with an average annual capacity of 170 tons of olive oil compared to 120 tons in Italy and 750 tons in Spain. More importantly, their work is often limited to the distribution of production subsidies to farm owners and other administrative activities, rather than acting as an organized enterprise with a clear business strategy. To change this model towards the promotion of high-quality olive oil brands, the restructuring of the sector should be one of the main priorities, including more vertically integrated production, both at the stage of olive

production and in the production of packaged (branded) products. Moreover, Greek firms need greater economies of scale, regardless of the degree of vertical integration.

Production of olive oil and table olives is estimated at 400 to 500,000 tons with significant fluctuations over the years (insufficient watering, severe droughts). The average value in the seasons 2015-2016 and 2018-2019 was 368,000 tons, which makes Greece the second largest producer in Europe in table olives (16% of European volumes; 70% in Spain) and in 3rd place in oil (18% of total production in the European Union, Spain and Italy are 54% and 26% respectively). Oil production, having increased 2.5 times compared to 1990/91 MY, tended to decrease in the period 2000-2008 (-6,100 tons / year on average with a production of 320,000 tons / year), while the production of tableware olives increased slightly (+1600 t / year with an average production of 108000 t / year).

Marketing and distribution of olive oil

After extraction at the plants, olive oil is distributed through two main channels: domestic consumption or export. Note that only 27% of the total production of Greek olive oil is distributed as a branded product (compared to 50% of production in Spain and about 80% in Italy), while most of it is sold raw in bulk. Mass (wholesale) sales of crude oil - a common practice in Greece for both areas: export channel and domestic consumption. In particular:

- Domestic consumption accounts for about two-thirds of olive oil produced, of which 75 percent is in bulk (compared to 50% of domestic consumption in Spain and only 32% in Italy). Limited branding in the Greek market correlates with a high degree of self-sufficiency, Greek manufacturers sell a significant part of their products to relatives and friends, while in Italy and Spain distribution is carried out through official channels. Although wholesale sales by definition cannot be accompanied by a guarantee of product quality, research shows that crude olive oil is considered by Greek consumers to be of better quality and, in most cases, is preferred over a price similar to the price of vintage olive oil. However, scientific studies of samples of crude olive oil by the Laboratory of Chemistry and Food Technology of Aristotle University of Thessaloniki (2018) showed that only 30% were confirmed as extra virgin olive oil, 35% did not meet the stated characteristics, 18% were considered unfit for consumption and 17% were contaminated.

- 35% of Greek production is exported (compared to 36% in Italy and 57% in Spain). Due to the lack of an effective export strategy and organization of the relevant sector, most is exported in bulk to Italy (about 70%), where it is mixed with olive oil from other countries and then re-exported as branded Italian olive oil. Thus, it can be argued that the main reason for the low competitiveness of olive oil is the low diversification of export markets.

This leads to two main negative effects for the sector:

1) loss of value added

2) low level of acquaintance of foreign consumers with the taste of real Greek extra virgin olive oil (EVOO is more intense than refined oils and mixtures).

The structure of Greece's exports shows its exceptional dependence on wholesale exports to Italy, as well as its significant diversification efforts without relying on this single export channel. In 2017/18 MY, Greece exported about 139,000 tons of olive oil worth $ 416 million (Table 6.3). Italy was the main destination for Greek exports of olive oil, which accounted for 77 percent of the volume and 64 percent of the value this year. More than 80 percent of Greek olive oil exports go to EU countries, while major non-EU markets include the United States, China, Canada and Russia. Although Greek olive oil export statistics do not separate bottled olive oil from bottled oil, unit value is an indicator of trade in each type. For example, in the period from 2012 to 2018, the share of Greek exports to Italy averaged about $ 3,200 per ton, which is the lowest of all major destinations and much lower than exports to non-EU countries, for which the share was about $ 5,300 per ton. This once again confirms that exports to Italy are mainly sent as semi-finished products, while exports to non-EU countries are in the form of a finished product.

The total share of Greek olive oil production exported to Italy remained stable in physical terms and amounted to about 70 percent in most years (Table 3). However, in value terms, the share of Greek exports to Italy has declined in recent years. In the early and mid-2000s, this share usually exceeded 70 percent. Over the past five years, this share has fallen to 57-64 percent per year, indicating that more expensive, likely, bottled exports to other markets are becoming increasingly important. Historically, the number of Greek export markets has more than doubled since the 1990s, and the share of bottled exports has risen from 10% to 20%. The analysis shows that, although sales to Italy in large volumes have remained an important market

for Greek olive oil, Greece has made some progress in exporting more expensive products to other markets. For example, there are several companies that successfully bottle and sell 100% Greek oil in export markets. Trader Joe's and Colavita are one of the main brands offering 100% Greek oil on the US market. In addition, JCS Tradecom, Inc. reports the success of its ZoeDiva Select Koroneiki ExtraVirgin olive oil, which is 100% olive oil made from the Koroneiki variety and won the Sofi Silver 2008 award for outstanding long-storage catering product from the Specialty Food Association. Greece does not import significant amounts of olive oil. Imports in 2019 amounted to 2,400 tons, almost all from Italy and Spain. This small volume of imports is less than 1 percent of consumption. As noted above, demand is met almost exclusively by domestic production.

Ninety percent of Greek olive oil is exported to the European Union: 80 percent raw and 10 percent under Greek brands. Greek exports of olive oil in 2017/18 reached 138,700 tons, mainly due to increased supplies to Italy and Spain, which are the main destinations. Greek exports of olive oil to third countries increased by 10 percent (17591 tons) during the same period, mainly to the United States and Russia (Tables 6.3, 6.4).

Table 6.3

Trade in olive oil with EU countries in 2016 / 17-2018 / 19 MY

Purpose of import	2016/17 MP		2017/18 MP		2018/19 MP	
	tons	%	tons	%	tons	%
Spain	3000	3,2	5700	4,1	2400	2,6
Italy	*70000*	*73,7*	*107000*	*77,1*	*63400*	*68,8*
Portugal	0,0	0,0	0,0	0,0	0,0	0,0
France	1600	1,7	1800	1,3	1700	1,8
United Kingdom	1600	1,7	1700	1,2	2000	2,1
Germany	9800	10,3	11100	8,0	10500	11,4
Netherlands	500	0,5	700	0,5	600	0,7
Others	8500	8,9	10800	7,8	11600	12,6
Total	95000	100,0	138700	100,0	92,2	100,0

MY - marketing year from November 1 to October 30

Excl olive pomace oil

Source: Comext/Eurostat (Data transmission to Eurostat: 40 days for aggregated results)

Table 6.4

Foreign trade in olive oil, Italy's share (in kind and percentage) in Greek olive oil exports

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Export	89	178	43	153	143	95	139	92
Imports	3	2	23	5	3	0,6	1,3	2,4
Share of	74	146	28	128	116	70	107	63,4
Italy (%)	83,5	82	64	83	82	74	77	69

Focusing on the production phase in the value chain, there are about 460 companies in Greece that produce branded olive oil. In contrast to the stage of cultivation and primary processing, the sector of vintage olive oil is highly concentrated and focused mainly on the domestic market. In particular, the food sector is dominated by two companies, which account for more than half of sales of vintage oil, and another 20 percent of goods are sold under its own brand, large retail chains. The export-oriented segment of the Greek market is less concentrated, with four companies controlling 40 percent of olive oil exports under Greek brands, while other exports occur through cooperatives.

Compared to their competitors in Italy and Spain, Greek companies are relatively small and at a disadvantage because they lack economies of scale and access to international distribution networks. In particular, the average annual sales of Greek companies bring about 0.7 billion euros compared to 2 billion euros in Italy and significantly lower - 7 billion euros in Spain. Note that the expansionist strategy of food producers in Italy and Spain over the past decade has led to the creation of powerful groups with an international presence (TNCs). Approximately four groups are based in Spain (controlled by most of the leading Italian brands), covering more than half of the world's sales of branded olive oil. There are a large number of small Greek companies in this environment that have managed to conquer international markets. However, they only manage to maintain their international presence for an average of no more than one year. The small volume and short existence of these companies (with their own brand) in the international market, leads to low awareness of Greek brands among foreign consumers.

The world market of packaged olive oil is dominated by large multinational companies. In particular, the Spanish company Deoleo, as a

result of a number of mergers (for example, with the Italian Bertolli, Caparelli, Sasso and the Spanish Carbonell and Coipe), currently controls about 22 percent of the world market (about 0.4 million tons). As for Greece, two companies (Elais-Unilever and Minerva) control almost 60% of the domestic market of branded olive oil (approximately 35-40 thousand tons). Other manufacturers and manufacturers of the association control another 20 percent, while others are obsessed with their own supermarket brands. The share of sales of olive oil exported under national brands is very small (only about 3%), and is mainly accounted for by four companies (Nutria, Gaea, Elais-Unilever and Minerva), as well as by associations of producers with limited participation in foreign markets.

Olive oil: domestic consumption and foreign trade

Greek olive oil is intended for both domestic consumption and export.

Looking at Table 6.5, we can see that domestic consumption was fairly stable between 2000/01 and 2009/10, ranging from 270,000 tonnes to 264,000 tonnes, with the exception of the last two seasons of the decade, when it fell to 212,500 tonnes and 208,000 t respectively.

On average over ten years, domestic consumption has been quite positive. The average annual value for the last decade (2010 / 11-2019 / 20) is 211,000 tons (Table 5), which is a decrease of 19.43% compared to the average annual figure of 261,900 tons recorded in the previous ten seasons.

In addition to being a domestic consumer, Greece is also a net exporter of olive oil, which exports from 10,000 tons to 15,000 tons in the crop years from 2000/01 to 2009/10 (Table 6.5). On average over two decades, exports increased by 35.54% and 32% between the two periods listed in Table 5, from 8160 tons to 11060 and 14600 tons. In general, production trends are reflected in foreign trade.

Table 6.5

Production, consumption and export of olive oil from Greece

	Average for 1990/91-1999/00	**Average for 2000/01-2009/10**	**Average for 2010/11-2019/20**	**Change %**	**Change %**
Production	352700	366150	273200	+3,81	-25,38
Consumption	223000	261900	211000	+17,44	-19,43
Export *	8160	11060	14600	+35,54	+32,0

* Excluding trade with EU countries

Conclusions

Greece is the third largest producer of olive oil in the world (11 percent of total production) after Spain (40 percent) and Italy (14 percent). Indeed, Greek olive oil is of the highest quality, as 80% of the products produced are extra virgin olive oil (compared to 65% in Italy and 30% in Spain).

The growing popularity of a healthy Mediterranean diet, especially based on olive oil, has more than doubled the demand for this product in other countries (except for the three major producers) over the past 20 years. Despite the comparative advantages of Greek olive oil:

- Only 27 percent of Greek products reach the labeling / branding stage compared to 50 percent in Spain and 80 percent in Italy, and the remaining part is sold in bulk (crude oil), including 70 percent of exports (mainly to Italy for re-use). use - re-export).

- Greece's share of the global market for branded olive oil has fallen from 6 percent in the 1990s to 4 percent over the past 5 years.

Greek producers have not been able to take advantage of the growing global demand for olive oil, mainly due to structural problems:

- The cost of olive production in Greece is relatively high (about 1 euro / kg of olives compared to 0.6 euro / kg in Spain), mainly due to the small size and very low productivity in olive farms.

- Most processing plants in Greece are smaller and less developed (in terms of technology) than in Spain, which leads to higher processing costs of 0.19 EUR / kg of olive oil for Greek plants compared to 0.16 EUR / kg olive oil for Spanish). In Italy, despite the fact that the enterprises are also small, they are vertically integrated with the stage of growing olives, as well as with the stage of distribution.

The fragmented nature of Greek olive oil cooperatives does not contribute to the standardization of quality control, which is necessary for the promotion of premium olive oil.

The small size of bottling companies does not allow to successfully promote branded products.

Despite the expected further increase in demand for olive oil (mainly in other countries, ie other than major producers), a gradual reduction in subsidies for Greek olive oil is expected to make small-scale low-productivity producers unprofitable. As a result, olive oil production in Greece is expected to decline further over the next 5 years.

In the medium term, subject to certain structural changes, the growth of world demand and higher quality of Greek olive oil should lead to an increase in value added for the Greek sector. In particular, the transition from mass production to branded olive oil and a more effective marketing strategy could increase the value of Greek exports by about 500 million euros (about 80 percent more than in 2018). Indeed, a more vertically integrated production structure will increase the efficiency of the sector, strengthen its marketing strategy and, consequently, be conducive to the successful promotion of Greek olive oil brands.

During this jump in global demand for olive oil, Greek producers have not been able to take full advantage of their comparative advantages in terms of product quality. In contrast, production remained low (with a declining trend over the past 5 years), with Greece's share of world production declining from 19 percent in 1990 to 11 percent in 2014, and 5 percent in 2019. The decline in production in Greece was more than offset by a decrease in domestic consumption, which led to a slight increase in exports. However, Greece's share of the export market has also declined amid the rapidly growing international market. In particular:

Although Greece has one of the highest levels of oil consumption per capita, consumption is steadily declining, to 16 kg per capita in 2014 from 20 kg per capita in 1990 (compared to approximately 11 kg per capita in Spain and Italy). Olive oil is being replaced by a cheaper vegetable product, which is 55 percent of the total amount of vegetable oils consumed in recent years, compared with 10% in the 1980s.

The export orientation of Greek producers has increased over the past three decades - in particular, exports have covered 42 percent of production over the past 5 years compared to 35 percent in the 1990s.

In addition to losing market share, the Greek olive oil sector has also lost significant potential due to high sales share of crude olive oil in both the domestic and international markets (as opposed to branded olive oil with higher added value), in part due to inefficient organization.

Factors affecting the competitiveness of Greek olive oil

High cost of production

In Greece, the cost of producing olive oil is high, mainly due to the fact that producers rely on traditional, small-scale cultivation and processing methods. A number of factors contribute to the high cost of olive production. In Greece, old plantations predominate with a constantly declining productivity, which leads to high unit costs. Low yields are also

due to the lack of irrigation in most olive groves in the country. In addition, wage rates are high and rising, despite the fact that productivity remains low. The cost of labor has been identified by a Greek bank as a serious constraint on Greece's competitiveness in olive oil. In addition, only about half of olive growers are considered professional farmers, and many operators rely on activities other than growing olives to increase their income. Some produce products only for personal consumption. Costs are also high in the manufacturing sector, which, as noted earlier, is dominated by small businesses that use older technologies that cannot benefit from economies of scale.

A high quality

Although production costs are high, Greece also enjoys a reputation as a producer of high quality olive oil. In a good season, up to 80 percent of Greek olive oil meets the standard for the highest grade - the highest proportion in the world. Even within the national range, the extra category can be distinguished from others because they have the desired taste and good results on chemical tests, which determines the quality. This is partly due to the fact that the oil produced from the roots of the crown, as a rule, has the highest content of polyphenols among all olive oils. Greek oils are also considered one of the most fruity and fragrant. As a result, they are in great demand among packers for mixing with other oils to improve the overall quality and enhance the taste of the final product.

Lack of marketing and bet on wholesale exports to Italy

Despite the fact that mainly high-quality olive oil is produced, most of the Greek oil is exported in bulk for mixing, and not in the form of branded products. The Greek Association of Olive Oil Producers explains the dependence on wholesale sales by insufficient consumer awareness of the quality of Greek oil in foreign markets due to insufficient attention to consumer familiarity and marketing by Greek producers. As a result of at least 80 percent of exports per year, most of the wholesale supplies go to Italy and are used in mixtures by the enterprises of this country. Thus, 20 percent of olive oil mixed and bottled in Italy may be of Greek origin. This sales channel has existed for many years and is firmly established. Because producers have few alternative markets, Italian buyers often buy Greek oil at prices below market value. Although farmers 'cooperatives in Greece have tried to strengthen farmers' market power, they tend to "work poorly, leaving private buyers the opportunity to pay producers at lower prices." An analysis of the sector's strengths and weaknesses in Greece concludes: “The

gradual reduction in the dependence of Greek olive oil on wholesale supplies to Italy is the key to significantly improving its international success and the basis for a differentiation strategy that will increase the export price. Although Greece has made some progress in reducing the share of its exports passing through the established Italian channel, product differentiation remains a serious problem for Greek industry.

Summing up, given all the links of production and sale of olive oil, the main characteristics of the three competitors are (table.6.6):

Spain - has the advantages of competitiveness in terms of production cost, from mechanization of olive production, as well as modernization in the processing stage. Combined with higher production volumes and an expansion strategy, it has gained access to international markets for medium quality olive oil.

Italian manufacturers have been able to overcome high production costs (high wages and low productivity) through the development of international brands and networks that allow them to sell at higher prices. The combination of large volumes and high quality is achieved through the import of crude olive oil of different quality from different countries, which are mixed to obtain the final product, and advertised as high quality Italian olive oil. It should be noted that without imports from Spain and Greece, Italian products would not be enough even for domestic consumption. However, Italy, along with Spain, is the world's largest exporter of branded olive oil.

Greek olive oil is recognized worldwide as a product of the highest quality, but its potential is limited:

1) small and scattered farms (negatively affects production costs);

2) lack of vertical integration and less modern technologies at the stage of processing;

3) a small share of branded olive oil in both the domestic and export markets, which negatively affects the competitiveness and market share of domestic producers.

Table 6.6

Characteristics of olive oil production in some countries

Sector production of olives	Oil production sector	Characteristics of oil	Competitive advantages	Competitive disadvantages
Spain				
Mostly semi-mechanized,	Harvest processing is	35 percent EVOO	Market power and scale of	Bet on the wholesale

traditional groves, some large-scale intensive	carried out mainly by farmers' cooperatives, efficient high-capacity enterprises	Wide selection of lower quality oil	production Low production costs Supporting programs of the state	market Lack of marketing knowledge and product differentiation
Italy				
Mostly small groves with the traditional method and low planting density Manual harvesting	A large number of small factories, Combination of traditional and modern methods processing Hub for mixing and pouring oil from around the world	Mainly produced by EVOO Wide range varieties, quality, varieties of olives and taste profiles	High quality products Recognition of Italian brands Supporting programs of the state	High cost of production Fragmented supply chain

Continuation of the table. 6.6

Greece				
Mostly small groves with the traditional method and low planting density Manual harvesting	A large number of small factories There are very few oil bottling plants	Extra class products, 80% EVOO	High quality products Supporting programs of the state	High cost of production Underdeveloped marketing infrastructure Reliance on the wholesale market

Thus, the transition to the Italian model with an emphasis on differentiation and quality promotion is a likely strategy that will increase productivity and profits. Certification of Greek olive oil as a high quality product will facilitate the implementation of this strategy, given the small size of Greek producers and their difficulties in promoting their products independently. There are currently 29 brands of olive oil certified under the PDO (Protected Designation of Origin) and PGI (Protected Geographical Indication) schemes, accounting for only 3% of Greek production. These categories can be expanded to include wider regions (thus a higher share of production), especially for PGI products where the rules are less stringent.

Even more important is a coordinated marketing strategy to inform consumers about first-extraction Greek olive oil. These efforts may include 1) campaigns organized by the state and / or industry organizations to promote Greek brands in international markets and 2) cooperation between companies (vertical integration) to create international networks.

6.2. Tomato market analysis (Romania)

Tomatoes are among the most consumed vegetables in the world. In 2016, 177 million tons of tomatoes were grown worldwide on an area of approximately 5 million hectares.

Romania is a key player in the market of fresh tomatoes both in terms of production and imports and ranks 32nd among tomato producers with a share of 0.35% of world production.

List of varieties.

The following varieties of tomatoes are widespread in the Romanian market (table.6.7).

Table 6.7

Names of tomato varieties common in Romania

Scientific name:	Solanum lycopersicum
TN VED codes:	070200 fresh or chilled tomatoes
Varieties	- Big Beef Tomato (Solanum lycopersicum 'Big Beef') - Waltham Tomato (Solanum lycopersicum 'Waltham') - Red seedless Tomato (Solanum lycopersicum 'Red seedless') - Red Globe Tomato (Solanum lycopersicum 'Red globe') - Larochelle Tomato (Solanum lycopersicum 'Larochelle') - ErliHanne Tomato (Solanum lycopersicum 'ErliHanne') - Dalphine Tomato (Solanum lycopersicum 'Dalphine') - Dan Ben Hanna (Solanum lycopersicum 'Dan Ben Hanna') - Blen-Ben-Hann (Solanum lycopersicum 'Blen-Ben-Hann') - Bonheur Tomato (Solanum lycopersicum 'Bonheur') - Barlinka Tomato (Solanum lycopersicum 'Barlinka') - Alphonso La Valee (Solanum lycopersicum 'Alphonso La

	Valee') - Salad Tomato (Lycopersicon lycopersicum 'Salad') - Slicing Tomato (Lycopersicon lycopersicum 'Slicing') - Cherry Tomato (Lycopersicon lycopersicum 'Cherry') - Romania Tomato (Lycopersicon lycopersicum 'Romania') - Rosa Tomato (Lycopersicon lycopersicum 'Rosa') - Premio Tomato (Solanum lycopersicum 'Premio') - Cherokee purple Tomato (Solanum lycopersicum 'Cherokee purple') - Brandywine Tomato (Solanum lycopersicum 'Brandywine')

Tomato production in Romania

The hot production season in Romania lasts from June to October, early production - from late April to early June. Late production covers the months from mid-October to mid-November.

The area set aside for tomatoes in Romania in 2016 was 40,967 hectares. Tomato production and the area allocated for them reached its maximum in 2011. This year the area was 51,745 hectares and the production reached 910,978 tons. From this year, both indicators had a general tendency to decrease with a slight positive increase in 2013 (Fig. 6.1).

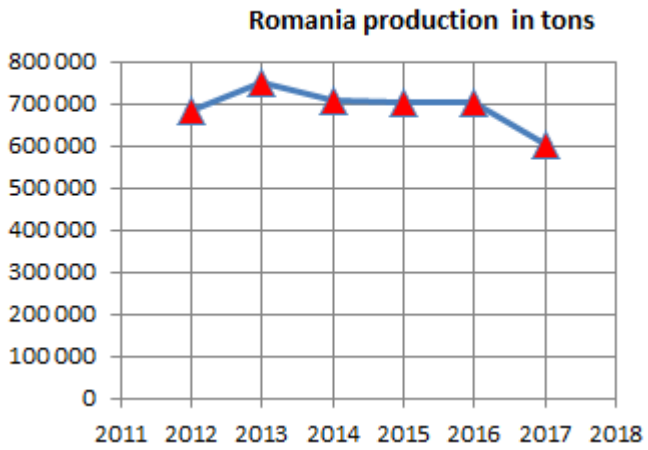

Fig. 6.1. Tomato production in Romania, tons

The sown area decreased by 15.1% in 2015. and tomato production - by 14.7%. Tomato productivity also has a downward trend..

The volume of production in 2016 amounted to 627,177 tons. The average cost of production is $ 750 and tends to increase. In general, we can talk about the negative trends in tomato production in Romania.

Import of tomatoes in Romania

Romania's tomato imports show an annual increase. For example, from 2012 to 2017, it almost doubled and jumped from 41,395 tons in 2012 to 76,507 tons in 2017. In terms of delivery cost, the value of tomatoes imported to the Romanian market in 2016 reached 88.7 million US dollars after a 42% increase over the previous 5 years (Fig. 6.2).

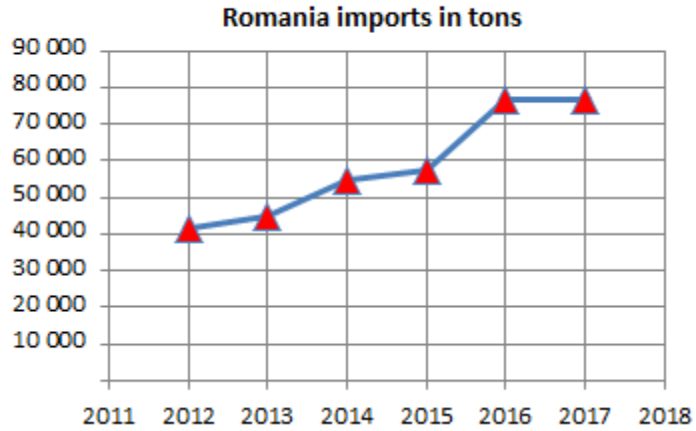

Fig. 6.2. Import of tomatoes to the Romanian market, tons

Romania's share in the global import value of tomatoes is 0.9%. This corresponds to the 20th place among the best importing countries.

The average delivery price in 2018 reached 991.0 dollars per ton. The price decreased by 1.49% compared to 2017 and by 3.05% compared to 2015. The increase in supply from export markets to the Romanian market and the transformation of tomato production into their imports may lead in the future to an even greater reduction in import prices due to increased competition.

In recent years, there has been a change in the direction and source of supply to the Romanian market. Most of the supplies of tomatoes from 2013 to 2016 were from EU countries. The EU's share in the supply of tomatoes to the Romanian market in 2013 was 72.6%. This was followed by an annual decrease in the share of the EU, which reached 53.6% in 2016. In 2017, supplies from outside the EU exceeded supplies from EU countries and

received 58.3% of the Romanian market compared to only 41.7% for supplies from EU countries.

Turkey, Spain and Albania are the main suppliers to the Romanian market, these countries in 2017 bought 66.5% of the total supply of tomatoes to Romania. The share of supplies from Turkey and Albania is growing rapidly, with supplies from Turkey jumping from 24.8% of the total in 2013 to 9.1% in 2017. Deliveries from Albania - from 0.8% in 2013 to 8.4% in 2017.

Deliveries from Spain and Italy fell sharply: deliveries from Spain fell from 15.4% of total deliveries to the Romanian market in 2012 to 8.8% of the market in 2017, deliveries from Italy fell from 17.4% in 2012. up to 8.3% in 2017.

The concentration of imports of imported tomatoes on the Romanian market is average. The dominant supplier provides only 49% of the import quantity and 31% of the import value of tomatoes. The market is very price sensitive and open to any other supplier country that can offer a good price and reasonable quality.

Export of tomatoes from Romania

Romania is not a prominent exporter of tomatoes. The volume of their exports in 2017 did not even reach 500 tons (Figure 6.3).

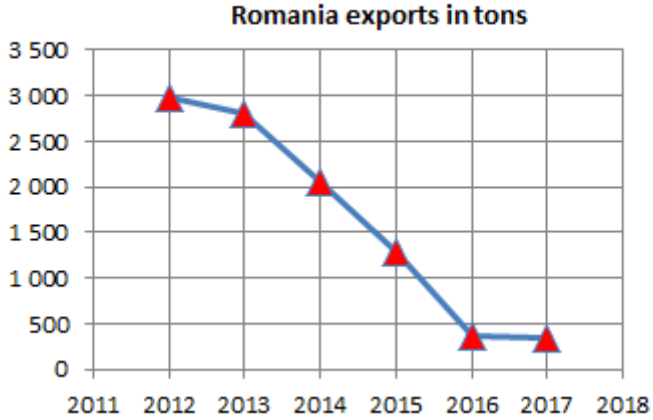

Figure: 6.3. Export of tomatoes from Romania, tons

Romania's export value in 2016 was $ 629,000. Romania's share in world tomato exports is less than 0.01%. It ranks 89th among exporting countries.

About 70% of exports are to Moldova, the Netherlands and Hungary. Two of them are border countries. Most of the exports take place during

Romania's production season. This means that Romania is not a transit hub for any border countries.

The country is now transitioning from tomato production to net imports. Considering that in recent years Romania has tended to increase its import of tomatoes from non-EU countries, global suppliers have a good opportunity to enter this market.

This is especially true when it comes to the months before June and after October.

Consumption

The average per capita consumption in Romania varies from year to year. The highest consumption of tomatoes per capita was recorded in 2013 (40.0 kilograms per capita), and the lowest in 2017 (35.26 kg per capita). In 2017, per capita tomato consumption decreased by 11.8% compared to 2013.

Total consumption of tomatoes in Romania ranged from a maximum of 791,368 tons in 2013 to 678,248 tons in 2017 (Fig. 6.4).

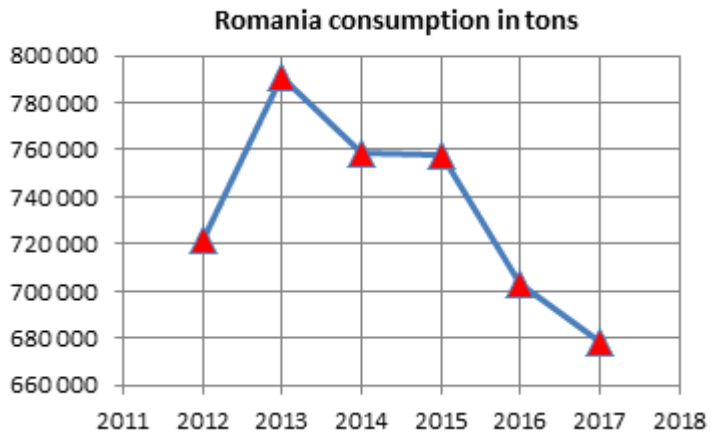

Fig. 6.4. Total consumption of tomatoes in Romania, tons

The largest consumption is registered in the urban environment in contrast to rural areas. The highest average monthly consumption of tomatoes per person in urban areas was 0.9625 kg per capita, and in rural areas - 0.9311 kg per capita.

The number of tomatoes purchased by households also depends on the area of residence. In an urban environment, the number of tomatoes purchased by a household exceeds that purchased in rural areas. This is due

to the fact that part of the rural population produces the necessary tomatoes on their farms for consumption. In winter, when imported tomatoes are usually eaten, rural households buy small quantities of tomatoes due to the high prices and low incomes of these households. In rural areas in 2015, the number of tomatoes purchased by households was only 44.6% of the amount purchased by the urban population.

Production quality

This section presents the FFV-36 standard of the United Nations Economic Commission for Europe, which is used in EU countries for trade and commercial quality control of tomatoes. This standard applies to tomatoes of varieties derived from Solanum lycopersicum L., which are supplied fresh to the consumer. Tomatoes for industrial processing are excluded.

Tomatoes can be divided into the following commercial types:

- "round";
- "ribbed";
- "oblong" or "elongated";
- cherry tomatoes / cocktail (miniature varieties) of all shapes.

The purpose of the standard is to define the quality requirements for tomatoes at the stage of export control after preparation and packaging. However, if it is applied in the stages following the export, the product can be considered in relation to the requirements of the standard on the following grounds:

- Slight loss of freshness and elasticity
- For products in classes other than "Extra", a slight deterioration due to their tendency to spoil.

The owner / seller of the products may not put such products up for sale, offer them, supply them or sell them in any other way except in accordance with this standard. The owner / seller is responsible for maintaining such compliance.

Minimum requirements

In all varieties, subject to the special provisions for each variety and the tolerances allowed, the tomatoes must be:

- Undamaged
- Good quality - products that are prone to rot or spoilage, which makes it unfit for consumption, should be excluded
- Clean - virtually free of any visible foreign matter
- Fresh in appearance

- Virtually free of pests
- No damage caused by pests
- Free from abnormal external moisture
- Free from any foreign smell and / or taste.

In the case of tomatoes on a branch, the stems must be fresh, healthy, clean and free from leaves and any visible foreign matter.

The condition of the tomatoes should be such that they can:

- Withstand transportation and loading and unloading operations
- Arrive in satisfactory condition at the destination.

Maturity requirements

The development and maturity of the tomatoes must be such as to enable them to continue ripening and to reach a satisfactory degree of ripeness.

Classification

Tomatoes are classified into three classes as defined below:

1. Extra class

Tomatoes of this class must be of the highest quality. They must be firm and characteristic of the variety. They must not have "green backs" or have other defects, except for very minor and superficial ones, provided that they do not affect the appearance of the product, its quality, storage and the appearance of the product in the packaging.

2. I class

Tomatoes of this class must be of good quality. They must be fairly firm and characteristic of their variety.

They must be free of cracks and visible "green backs".

The following minor defects may, however, be allowed provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- Minor defect of form and development;
- Minor color defects;
- Minor skin defects;
- Very slight wrinkling.

In addition, "ribbed" tomatoes can have:

- Healed cracks no longer than 1 cm;
- Lack of excessive performances;
- May have a small scar indentation, but without suberization;

• Suberization of the stigma up to 1 cm^2;

• A thin scar in an elongated shape (like a seam) at the place of flower fall, but not longer than two thirds of the largest diameter of the fruit.

3. II class

This variety includes tomatoes, which can not be classified as higher grades, but meet the minimum requirements specified above.

They must be fairly solid (but may be slightly less solid than in Class I) and must not show incurable cracks.

- The following defects may be allowed provided the tomatoes retain their essential characteristics as regards the quality, the keeping quality and presentation:
- Defects of form and development;
- Coloring defects;
- Defects of the skin or crumpling, provided that the fetus is not seriously injured;
- Healed cracks no longer than 3 cm for round, ribbed or oblong tomatoes.
- In addition, "ribbed" tomatoes can have:
- More pronounced convexities than allowed in accordance with class I, but not deformed;
- Cicatricial indentation;
- Suberization of the stigma up to 2 cm^2;
- Small scar in an elongated shape (like a seam).

The size of tomatoes

The size is determined by the maximum cross-sectional diameter, by weight or by quantity. The following provisions do not apply to

• tomatoes on a branch;

And optional for:

• cherry tomatoes and cocktail tomatoes with a diameter of less than 40 mm;

• ribbed tomatoes of irregular shape;

• II class.

To ensure uniformity of size, the range of product sizes in the package should not exceed:

a) For tomatoes calibrated by diameter:

• 10 mm if the diameter of the smallest fruit (as indicated on the package) is less than 50 mm;

• 15 mm, if the diameter of the smallest fruit (as indicated on the package) is 50 mm or more, but less than 70 mm;

• 20 mm if the diameter of the smallest fruit (as indicated on the package) is 70 mm or more but less than 100 mm

• There are no restrictions on the diameter difference for fruits equal to or greater than 100 mm.

If size codes are used, the codes and ranges in Table 6.8 must be followed:

Table 6.8

Fruit size codes and ranges

Size code	Diameter (mm)
0	≤ 20
1	> 20 ≤ 25
2	> 25 ≤ 30
3	> 30 ≤ 35
4	> 35 ≤ 40
5	> 40 ≤ 47
6	> 47 ≤ 57
7	> 57 ≤ 67
8	> 67 ≤ 82
9	> 82 ≤ 102
10	> 102

b) For tomatoes calibrated by weight or quantity, the difference in size must comply with point a).

Tolerances for tomatoes

At all stages of sale in each batch the presence of products that do not meet the requirements for the specified variety in terms of quality and size.

A. Quality tolerances

1. Extra class

In general, the presence of 5% by number or weight of tomatoes that do not meet the requirements of this variety, but meet the requirements of

the first grade. Within this tolerance, not more than 0.5% of the total quantity may be products that meet the quality requirements of the second grade.

2. I class

In general, the presence of 10% by number or weight of tomatoes that do not meet the requirements of this variety, but meet the requirements of the second grade. Within this tolerance, not more than 1% of the total quantity may be products that do not meet the quality requirements of the second grade or the minimum requirements, or products that are subject to degradation. In the case of tomatoes on a branch, the presence of 5% by number or weight of tomatoes not attached to the stem is allowed.

3. II class

In general, the presence of 10% by number or weight of tomatoes that do not meet either the requirements of this variety or the minimum requirements. Within this tolerance, no more than 2% of the total may be products subject to degradation. In the case of tomato brushes, 10% by number or weight of tomatoes not attached to the stem is allowed.

B. Size tolerances

For all varieties: in general, the presence of 10% by number or weight of tomatoes that do not meet the calibration requirements is allowed.

Appearance of tomatoes

1. Homogeneity

The contents of each package must be uniform and consist only of tomatoes of the same origin, variety or commercial type, quality and size (in the case of calibration). The degree of maturity and color of tomatoes, classified as higher and first varieties, should be almost homogeneous. In addition, the length of the "oblong" tomatoes should be fairly uniform.

However, a mixture of tomatoes which are clearly different in type and / or color may be packed together in one package, provided that they are uniform in quality and, in respect of each variety concerned, in commodity type and / or color, in origin. However, in the case of these mixtures, uniformity in size is not required.

The visible part of the product in the package must correspond to the contents of the whole package.

2. Packaging

Tomatoes must be packed in such a way as to protect the produce properly. The materials used inside the package must be clean and of a quality such as not to cause external or internal damage to the product.

The use of materials, particularly of paper or stamps bearing trade specifications is allowed provided the printing or labeling has been done with non-toxic paint or glue. Stickers affixed to the product individually must be such that as a result of their removal there are no visible traces of glue and no skin defects are formed. Laser marking of an individual fruit should not lead to skin defects.

The packaging must not contain any foreign substances.

Marking of tomatoes

The following information, grouped on one side and visible from the outside, must appear in clear, indelible font on each package..

1. Identification

Packer and / or shipper:

Name and physical address (eg street / city / region / zip code and country if different from country of origin) or code mark officially recognized by the national authority.

2. The nature of the product

• "Tomatoes" or "tomatoes on a branch" and commodity type, or "cherry / cocktail tomatoes" or

"cherry / cocktail tomatoes on a branch" or equivalent designation of other miniature varieties, if the contents are not visible from the outside.

• " "Tomato mixture" or equivalent in the case of a mixture of clearly different varieties, commodity types and / or colors of tomatoes. If the product is not visible from the outside, the varieties, commodity types and / or color and quantity of each in the package must be indicated.

• Variety name (optional).

3. Origin of product

• Country of origin and, optionally, district where grown, national, regional or local place name.

• In the case of a mixture of clearly different varieties, commodity types and / or colors of tomatoes of different origins, the name of each country of origin shall be indicated after the name of the corresponding variety, commodity type and / or color.

4. Product characteristics

• Class.

• Size (in case of calibration), expressed as:

  - minimum and maximum diameter; or
  - minimum or maximum weight; or
  - size code; or

- number of pieces, followed by the minimum and maximum size.

Compliance with requirements for export to Romania

Romanian food laws and regulations have been harmonized with European Union (EU) legislation. Romania, as a member of the European Union, adheres to EU rules and standards on food and agricultural imports (FAIRS). Fresh fruits and vegetables are subject to EU quality standards, which authorize quality control at the border with the EU for customs clearance. Phytosanitary control is not required for fresh vegetables.

Current rules require tracking the movement of products from producer to consumer; thus, each market participant should be able to provide information about its supplier or buyer.

Europe is very demanding on food safety, so working with fresh agricultural products is subject to different requirements of the Buyer. But there are opportunities to avoid this by using additional or niche market quality standards.

Food safety regulations can be divided into two types of requirements.

- The first category consists of requirements that cover certain types of food, which due to the specific characteristics of the product require special precautions. The rules for fresh fruit and vegetables are Regulation (EC) 1234/2007 in conjunction with Regulation (EC) 1580/2007.

- The second category includes special rules that apply to a wide range of foods when special consumer protection is deemed necessary. Examples of important issues covered in these rules are the following:

- Pesticide residues (EC Regulation 396/2005)
- Food labeling (Directive 2000/13 / EC)
- Microbiological contamination (EC Regulation 2073/2005)
- Pollutants (Regulation (EC) 1881/2006)
- Additives (Regulation (EC) 1333/2008)
- Irradiation (Directives 1999/2 / EC and 1999/3 / EC)
- Flavorings (Regulation EC 1334/2008)

Measures to ensure compliance and control do not contain actual product requirements, but establish measures to ensure the safety of food entering the market. They cover hygiene (HACCP) (Regulation (EC) 852/2004), official food control (Regulation (EC) 882/2004) and

traceability. There are different control methods for products of animal and non-animal origin.

Limited use of pesticides

Romania complies with the provisions of the EU Regulation №. 396/2005 with further amendments concerning the maximum residue level of pesticides in food and feed of plant and animal origin. In Romania, there are three competent authorities involved in a program to develop and control pesticide residues:

- National Department of Sanitary Veterinary and Food Safety, which annually approves the frequency of testing for pesticide residues in products of plant and animal origin.
- The Ministry of Agriculture and Agricultural Development, which annually approves the national plan for monitoring pesticide residues in domestically produced fruits, vegetables and grains. The plan is implemented by the Laboratory of Pesticide Residue Control in Plants and Seeds.
- Ministry of Health, which is responsible for controlling pesticide residues in food for special purposes. It is part of the Program for Public Health and Prevention of Food-Related Diseases and Nutritional Risk Factors.

Control of food imported into the EU

The European Union has restricted the use of certain chemicals (MRLs) to ensure food safety and avoid harm to the environment. Therefore, any FFV (Fresh Fruits and Vegetables) export is subject to official controls. This is done to ensure that all products sold on the European market are safe and meet all applicable regulatory requirements.

Checks of FFV products take place through:

1. Check the documentation
2. Product identity verification.
3. Physical inspection.

In case of repeated non-compliance of the same product from the same country, the EU may apply an increased level of control or apply urgent measures. Most inspections are carried out at the point of entry, but the EU can carry out inspections at any stage from import to sale..

European importers of FFV products must use a European product tracking system to be able to remove or recall any FFV products that have been identified as dangerous. Importers require exporters to provide the following documentation to comply with EU traceability requirements:

- Bill of lading (air or sea)
- Phytosanitary certificate
- Certificate of origin
- Packing list
- Commercial invoice
- Complete set of customs documentation

Marking and packaging

Tomatoes are packed in open or closed boxes (tomato boxes), tubs, boxes, trays and connected boxes. Sometimes they are carefully arranged, sometimes randomly packed. Broken, damaged and damp packaging must be discarded. All fruit that falls under EU marketing standards must be labeled according to the nature of the product, country of origin, standard / class. A variety may be specified if provided for in the standard. If the product is packaged, the following additional information must be indicated on the product label: name and address of the packer, weight or number of items in the package, batch number plus its size, if specified in the standard. It is recommended that you contact your importer for labeling requirements before shipping.

FFV products sold in the EU must comply with food labeling legislation. Cardboard boxes with fresh fruits or vegetables should contain the following information :

- Name and address of the packer or dispatcher.
- Name of the product (if the product is not visible from the outside of the package).
- Country of origin.
- Class and size (referring to marketing standards).
- Batch number for tracking
- Official control mark to change the name and address of the packer (optional)

For consumer and pre-packaged fresh products, the name and address of a trading company registered in the European Union with the mention 'Packed for:' or equivalent.

Plant health

Fruits and vegetables exported to the European Union must comply with European plant health legislation. The European Union has established phytosanitary requirements to prevent the introduction and spread of

organisms harmful to plants and plant products in Europe. These requirements are guided by qualified food safety authorities in importing and exporting countries.

Quality of transportation

Quality and suitability for transportation are assessed on the basis of the following criteria. Tomatoes must be of good quality, clean, fresh, undamaged, free of foreign odors and free of abnormal moisture. Round, smooth varieties should be uniform in size and ripeness. They must be of firm consistency and free from hard tops and immature areas and must not have empty seed chambers. Hard tips are present if the pressure of the finger on the end of the stem indicates the hardening of the flesh of the fruit in well-defined areas (usually green).

Trends and prospects for product development

1. Despite the sharp decline in local tomato production in Romania in recent years, the Romanian Ministry of Agriculture wants to increase its tomato supply and is investing € 40 million a year in a program that will allow it to do so. So far, according to the authorities, about 35 million euros have been spent to import 50,000 tons of tomatoes. In turn, only about 3,000 tons worth two million euros were exported. This is despite the fact that the agricultural conditions of Romania in terms of climate are very favorable for the production of vegetables and especially tomatoes, according to experts. That is why the foreign trade balance in the vegetable sector should change as a result of the "tomato program", which is planned for eight years, starting in 2018.
2. Romania has one of the largest e-commerce markets in Southeast Europe. The e-commerce market is estimated to have been worth about $ 1.53 billion in 2015. However, the share of buyers of food and beverages is still quite low - about 5 percent of the total number of online shoppers. There is some prospect for increasing sales of vegetables and, in particular, tomatoes. Metro, Carrefour, MegaMarket and Cora already have online operators, and Mega Image has a partnership with the largest online store, eMag.ro.
3. Romanians are becoming more and more aware of the importance of healthy food, and this is creating a new segment of customers who will be focused on special offers. This trend towards improved lifestyle and healthy foods has not previously been considered as the main strategy for the development of catering establishments. This has now changed with the launch of several projects (such as the

Salad Box) to promote healthy fresh food as an alternative to the fast food industry. All this should increase sales of vegetables and, in particular, tomatoes.

6.3. Berry market analysis (Moldova)

General characteristics of the berry market in Moldova

According to the preliminary estimate of the Ministry of Agriculture of the Republic of Moldova (RM), in 2019 the production of berries amounted to 15.5 thousand tons (in 2018 - about 11 thousand tons). Most of what is grown goes to the domestic market. Exported only 16-17% (How many medicinal berries and products from them cost in Moldova (photo) [Electronic resource]. - Access mode: https://mybusiness.md/ru/zdorove-i-otdykh/item/6064-skolko-v-moldove-stoyat-tselebnye-yagody-i-produkty-iz-nikh-foto).

In recent years, about 100 hectares of new berry plantations are planted annually, and their total area is 4 thousand hectares. Production indicators in the berry industry significantly exceed the global dynamics. The area of berries and their harvest is only about 2% of the total area and yield of fruit in the world, while exports and imports - 8-10% of global trade in fruit products. According to experts, the disparity between the rapidly growing demand for berries - especially in the solvent markets of the European Union - and the relatively low growth of their world production creates favorable conditions for the development of this industry in Central and Southeastern Europe. In this regard, an example for Moldovan farmers can be the berry sector of Serbia, a leader in the export of frozen raspberries - a leader in the establishment of new berry plantations, Poland - a leader in the selection of new varieties and technologies for harvesting berries.

Strawberries, strawberries, red and black currants, raspberries, and gooseberries are grown in Moldova; appeared: blackberries, blueberries, blueberries, dog rose, goji berries (Table 6.9) (Markets are not expanding, and production is growing [Electronic resource]. - Access mode: https://monitorul.fisc.md/editorial/rynki-ne-rasshiryayutsya-a-obem-proizvodstva-rastet.html).

Table 6.9

The market of premium berries in the Republic of Moldova, Moldovan lei

(Ratseburzhinskaya Y. Moldavian berry growing: production, state subsidies and export opportunities [Electronic resource]. – Access mode:http://www.jagodnik.info/381-moldavskoe-yagodovodstvo-proizvodstvo-gosudarstvennye-dotatsii-i-eksportnye-vozmozhnosti/)

Berries	Minimum price	Maximum price	Average price	Date
Blueberry	175	180	175	03.07.2020
	170	180	170	10.07.2020
	170	180	170	17.07.2020
	150	160	150	24.07.2020
Blackberry	40	45	40	03.07.2020
	40	50	45	10.07.2020
	35	45	49	17.07.2020
	35	45	40	24.07.2020
Raspberry	32	40	35	03.07.2020
	35	42	40	10.07.2020
	38	45	40	17.07.2020
	35	40	35	24.07.2020
Black currant	40	45	40	03.07.2020
	40	45	40	10.07.2020
	40	50	45	17.07.2020
	45	50	45	24.07.2020
Red currants	30	35	30	03.07.2020
	35	40	35	10.07.2020
	35	40	35	17.07.2020
	30	40	35	24.07.2020

To date, there are only three berry cooperatives, two of which work directly in the direction of joint cultivation of berries, and the third is focused on processing and sale (Moldovan berry growing: production, government subsidies and export opportunities [Electronic resource]. - Access mode: http://www.jagodnik.info/381-moldavskoe-yagodovodstvo-proizvodstvo-gosudarstvennye-dotatsii-i-eksportnye-vozmozhnosti/).

The process of increasing investment in berry production in Moldova began in 2012. At that time there were only 800 hectares of berry plantations in the country, the yield was 1.5 thousand tons (Table 6.10). In 2017, berry plantations already occupied 3.6 thousand hectares, the harvest reached 10 thousand tons. By 2021, 5.6 thousand hectares and 17 thousand

tons of products are projected (excluding approximately 90 thousand subsidiary farms, in which also grown berries)

(Table 6.11). At the same time, industry experts expect that in 2021 the domestic market will absorb a little more than a third of fresh berries grown in the country. The rest will either be exported fresh or will be processed with the prospect of being sent abroad (Moldova is becoming a country - an exporter of berries [Electronic resource]. - Access mode: https://mybusiness.md/ru/categories/analitika-i-rassledovaniya/item/8261-moldova-stanovitsya-stranoj-eksportjorom-yagod).

Table 6.10

Dynamics of berry production in the Republic of Moldova (Moldova becomes a country - an exporter of berries [Electronic resource]. - Access mode:https://mybusiness.md/ru/categories/analitika-i-rassledovaniya/item/8261-moldova-stanovitsya-stranoj-eksportjorom-yagod)

Indicators	2012	2013	2014	2015	2016	2017
Area of plantations, thousand hectares	0.8	0.8	2.7	3.0	3.1	3.6
Production volume, thousand tons	1.5	1.7	5.4	4.66	9.5	10.0

Source: (Association of Berry Producers of the Republic of Moldova, Business Consulting Center)

Таблиця 6.11

Dynamics of growth of berry plantations in terms of crops, thousand hectares (Moldova becomes a country - an exporter of berries [Electronic resource]. - Access mode:https://mybusiness.md/ru/categories/analitika-i-rassledovaniya/item/8261-moldova-stanovitsya-stranoj-eksportjorom-yagod)

Years	Strawberry wild-strawberry	Raspberry	Currant	Gooseberry	Blackberry	Rowan	Sea buckthorn	Rosehip
2016	1.504	0.841	0.337	0.059	0.099	0.06	0.08	0.07
2021 *	2.1	1.5	0.62	0.8	0.3	0.1	0.3	0.3

**forecast*

Source: (Association of Berry Producers of the Republic of Moldova, Business Consulting Center)

The berry business in Moldova is supported and promoted by the Association of Berry Producers of the Republic of Moldova with the support of the USAID Developed Agriculture of Moldova Project (APM) and the HEKS-Moldova Fund Project "Improving Market Access and Productivity of Berry Producers" (AMIB).

AMIB experts adjusted the total estimated area of 2,021 berry crops (by 0.4 thousand hectares), but increased the assessment of the area of each crop from the "top five": garden strawberries (strawberries), raspberries, black currants, gooseberries and blackberries (Fig. 6.5 and 6.6).

According to experts, the decisive role in the medium term will be played by the development strategy of the industry, which will be selected and stimulated in Moldova by the authorized state structures. There can be several models.

The first is to focus on a strategic monoculture, namely raspberries.

The second - specialization in raspberries, strawberries and blackberries.

Third - specialization, primarily regional / zonal, in six or seven berry crops: strawberries, raspberries, currants, blackberries, dog rose, sea buckthorn, blueberries.

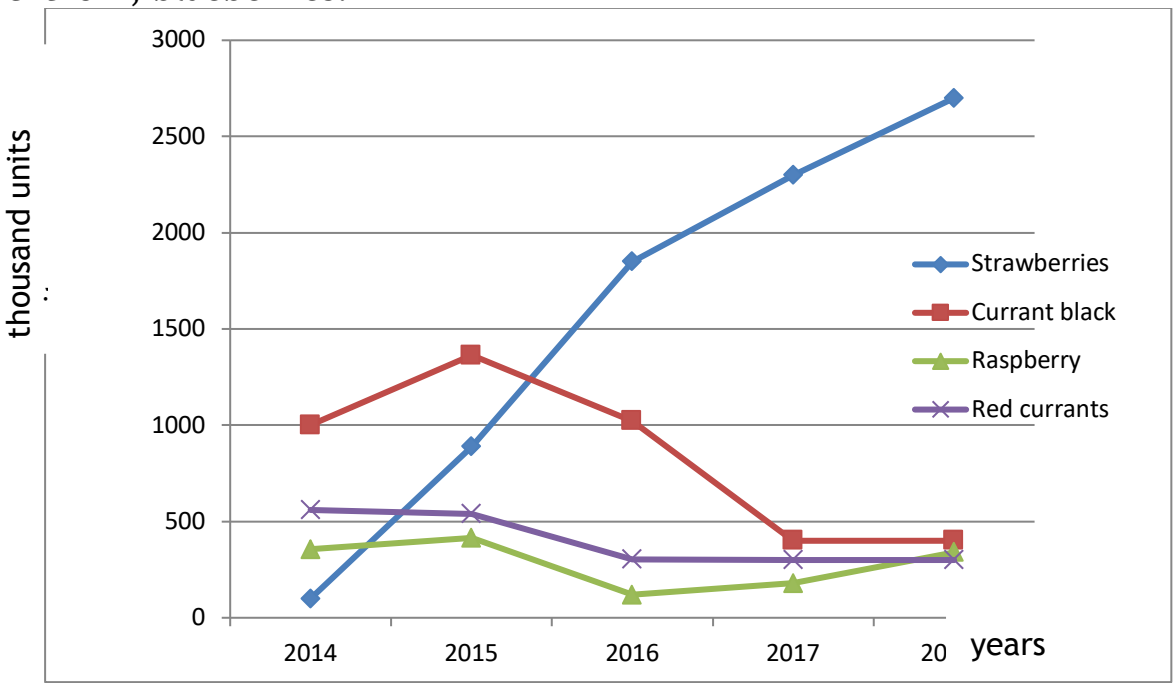

Fig.6.5. Dynamics of production of planting material of berry crops, thousand units

(Moldova becomes a country - an exporter of berries [Electronic resource]. - Access mode: https://mybusiness.md/ru/categories/analitika-

i-rassledovaniya/item/8261-moldova-stanovitsya-stranoj-eksportjorom-yagod)

* *forecast*

Source: (Association of Berry Producers of the Republic of Moldova, Business Consulting Center)

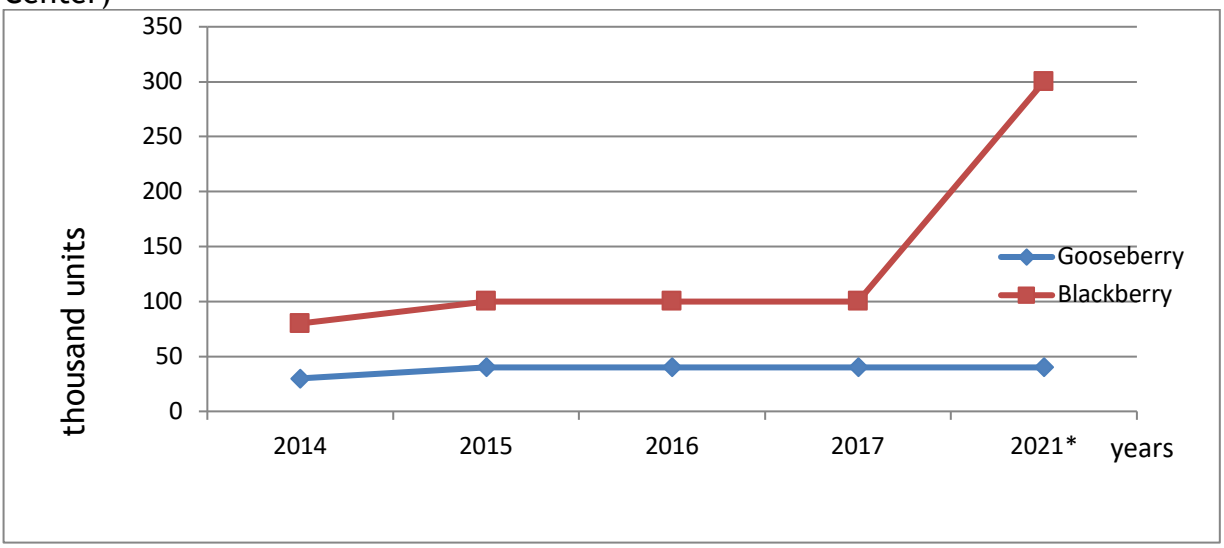

Fig.6.6. Dynamics of production of gooseberry and blackberry planting material, thousand units

(Moldova becomes a country - an exporter of berries [Electronic resource]. - Access mode: https://mybusiness.md/ru/categories/analitika-i-rassledovaniya/item/8261-moldova-stanovitsya-stranoj-eksportjorom-yagod)

Geographically it can look as follows (fig. 6.7, 6.8):

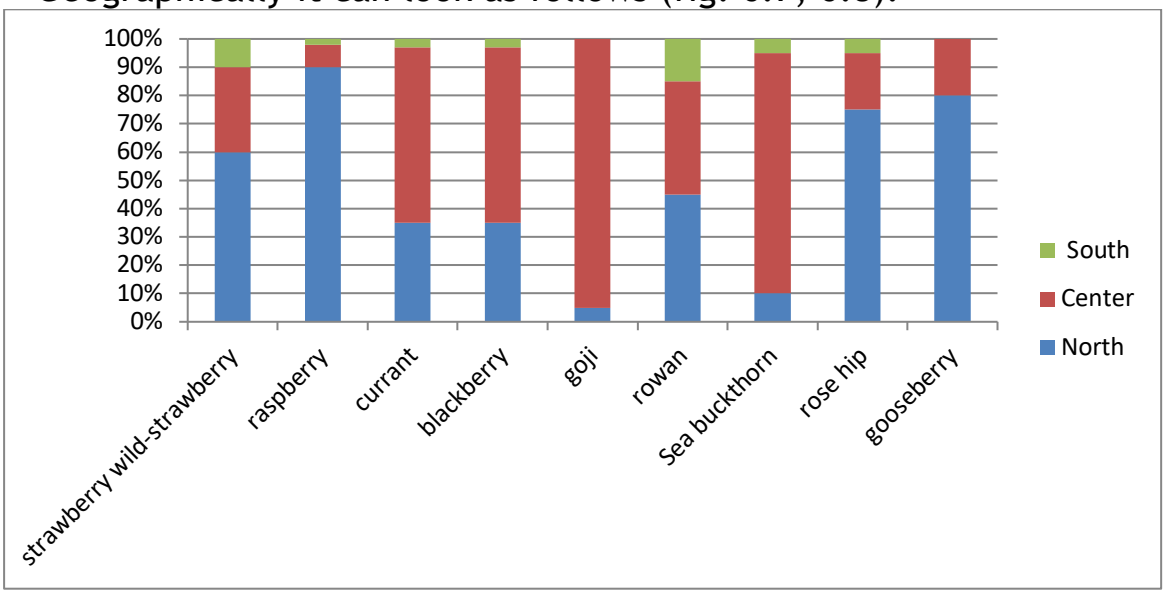

Fig.6.7. Forecast of the geographical distribution of berry production in the Republic of Moldova,%
(Moldova becomes a country - an exporter of berries [Electronic resource]. - Access mode: https://mybusiness.md/ru/categories/analitika-i-rassledovaniya/item/8261-moldova-stanovitsya-stranoj-eksportjorom-yagod)

Source: (Association of Berry Producers of the Republic of Moldova, Business Consulting Center)

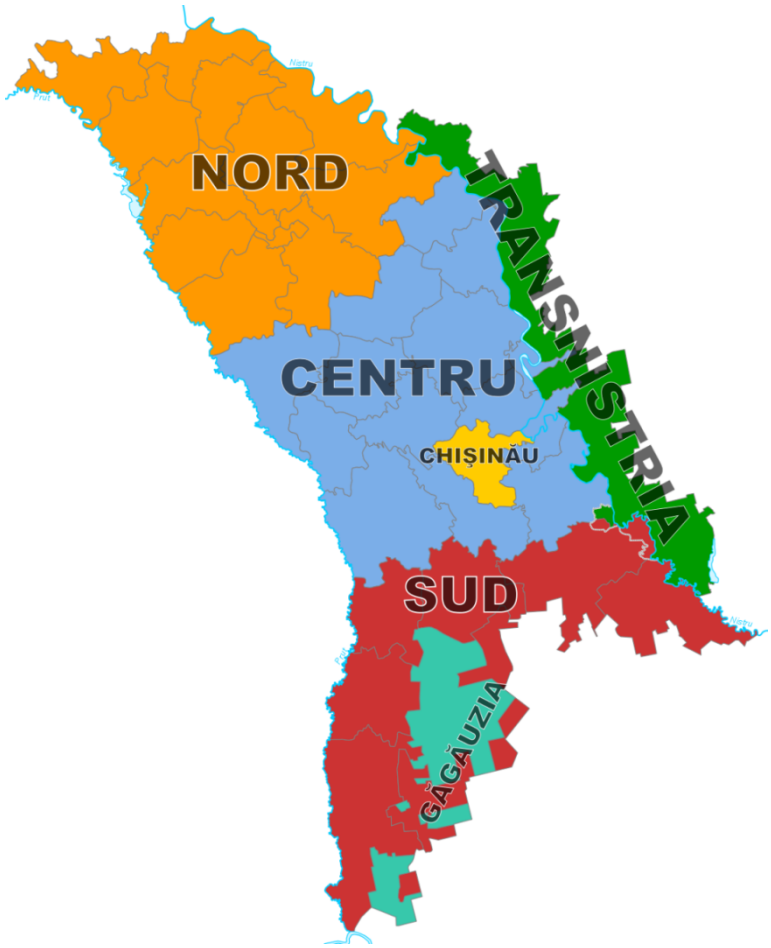

Fig. 6.8. Regions of the Republic of Moldova

Regulatory and financial support tools

The intensification of producers' interest in berries is connected not only with the activities of international projects in Moldova to support the industry (ACED, AMIB-HEKS / EPER, AWP-USAID, the Food and Agriculture Organization of the United Nations (FAO), etc.), but also subsidies provided by the state to berries. Thanks to state support, for example, the area of black currant plantations has increased fivefold. According to the government program, the

budget reimbursed about 20% of all investments in the creation of plantations of this culture.

In Moldova, there is a program that covers from 15 to 25% of the total cost of bookmarking industrial plantations of raspberries, blackberries, strawberries, sea buckthorn, gooseberries and blueberries. Compensation relates to the cost of planting material, irrigation system, supports and other consumables to create a berry. Separately, the state provides a subsidy for the purchase of equipment for cultivation. The number of subsidies under various programs for Moldovan farmers is not limited - receiving compensation for planting material does not prevent you from receiving assistance for the purchase of equipment.

Since 2018, the project "Efficient Agriculture in Moldova" (ARM), funded by the United States Agency for International Development (USAID) and implemented by the American corporation "ChemonicsInternational, Inc." is being implemented in the Republic of Moldova. post-harvest processing of berry harvest to increase their sales.

Initially, the task was to create integrated production - from cultivation to processing. Crops were selected so that it was possible to harvest with the help of a universal combine WEREMCZUK. All products are focused on processing. The plant has a shock freezer with a capacity of 40 tons per day (APM / USAID grants for berry growers [Electronic resource]. - Access mode:https://agroexpert.md/rus/v-moldove/granty-apm-usaid-dlya-proizvoditeley-yagod).

AMIB Berry Project (Raising Productivity and Quality of Berry Products of the Republic of Moldova) cooperates with more than a thousand berry producers, is one of the main centers of information, education, communication with customers in both domestic and international markets. AMIB is supported by the Swiss HEKS / EPER Foundation (APM / USAID Grants for Berry Growers [Electronic resource]. - Access mode:https://agroexpert.md/rus/v-moldove/granty-apm-usaid-dlya-proizvoditeley-yagod).

The development of berry growing is hampered by the lack of professional staff capable of ensuring the appropriate level of technologies for growing, post-harvest processing, and cooling of berries.

In Moldova, not only more and more berry farms are appearing, but also premium berry brands are developing. One of them is the VIOBERRY brand. This is one of the areas - growing strawberries in greenhouses (20 hectares) with annual replacement of seedlings. Fruiting one year in strawberries allows you to get the best quality berries. The berry is sold domestically. The selling

price of the first greenhouse garden strawberry at the end of April is about 5 euros per kilogram.

The practice of industrial cultivation of niches is being introduced*

** "Niche" trend is due to several factors. First, in the domestic market, this segment is in great demand and falls into the category of so-called "healthy products". secondly, in some positions the profitability can reach 250%.*

cultures. In the last few years, farmers, including agricultural holdings, are increasingly diluting the usual crops with exclusive ones. The TOP-15 most promising niche crops include the following berries: red and black currants, dogwood, sea buckthorn, dog rose, honeysuckle.

A 5-hectare plantation for growing chokeberry has been established. This is a technical culture designed exclusively for processing. Direct-squeezed juice is produced. The juice is bottled in 0.33 and 0.5 liter bottles, sold in supermarkets in Chisinau. After visiting the BIOFACH exhibition in Nuremberg, the possibility of exporting products is not excluded.

One of the largest producers and processors of berries in Moldova is TIFERET - a young company founded in 2014. Black currants, chokeberry and dog rose are grown. In 2019, a raspberry plantation of 3 hectares was laid.

RoseLine SRL began to grow two varieties of dog rose ("High Vitamin" and "Start"), in which the content of vitamin C is 15 times higher than in ordinary dog rose. The company sells dried fruits with a quality certificate. Price - 35 lei for 75 g (How much are medicinal berries and products from them in Moldova) (photo) [Electronic resource]:https://mybusiness.md/ru/zdorove-i-otdykh/item/6064-skolko-v-moldove-stoyat-tselebnye-yagody-i-produkty-iz-nikh-foto).

Berry products

Moldovan lozenge will appear on the market thanks to the technology developed by the Moldovan manufacturer in cooperation with the Scientific and Practical Institute of Horticulture and Food Technology of the Republic of Moldova. The product has been tested, meets standards and is registered with ANSA (National Food Safety Agency). The production line initially allows to produce under a single brand of lozenge of 12 fruits and berries in the range, including apple, quince, plum, apricot, as well as raspberries, currants and others.

The new product has excellent nutritional properties. The usual packaging of products is a flowpack, children will be able to use a lozenge in the form of 25 gram candies (Moldavian lozenge - all the benefits of fruits and berries of Moldova [Electronic resource]. - Access

mode:https://agroexpert.md/rus/v-mire/moldavskaya-pastila-vsya-poliza-fruktov-i-yagod-moldovy)

The berries are also frozen by shock freezing at the Moldovan-Jordanian joint venture Kardel and the Soroca cannery AlfaNistru AO You can buy direct juices from blackberries and chokeberry; blackberry juice and wine; honey souffle with blueberries; lozenges with additives of various berries and many other products of European quality, which also have export potential.

Blueberries from LollyBerry are made in 125-gram casseroles.

Cooperative "Trifan Gheorghe" from the village of Sipoten of Kalarash district produces from blackberries: marshmallows (30 lei) and marmalade (21 lei) in a package of 200 g; canned jam and blackberry-apple sauce (with the addition of orange juice) at 35 lei per 250 ml (How much are medicinal berries and products from them in Moldova) (photo) [Electronic resource]. - Access mode:https://mybusiness.md/ru/zdorove-i-otdykh/item/6064-skolko-v-moldove-stoyat-tselebnye-yagody-i-produkty-iz-nikh-foto).

Table 6.12

Dynamics of berry production in the Republic of Moldova

(Statistical data bank [Electronic resource]. - Access mode:http://statbank.statistica.md/PxWeb/pxweb/en/40%20Statistica%20economica/40%20Statistica%20economica__16%20AGR__AGR020/AGR021000reg.px/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774)

Years	All categories of producers, area, thousand hectares	Production, thousand tons	Average yield. c / ha
1980	1	1	35
1990	3	3	18
2000	1	2	29
2010	1	2	20
2017	4	12	35
2018	4	13	38
2019	4	16	45
2020	4	15.5	-

Export potential of the industry

Moldova is a relatively small country. The domestic consumption market is limited, so in any case it is important for Moldova to develop exports. Export of fresh berries is a complex process in terms of certification and product quality control. Exporting processed berries is easier. The future is the release of fresh berries in the European Union.

In recent years, the share of exports of fresh berries from Moldova is relatively small - about 16-17% of total production. In percentage terms, this is significantly less than the indicators of the leaders of the rating of European exporters: Poland - 45% (in 2019, 255 thousand tons were sold abroad out of 573 thousand tons produced), Belarus - 39% (34 thousand tons and 87 thousand tons, respectively). However, the proportion of production / exports in Moldova is better than in its neighbors: Ukraine - 13% (produced 128 thousand tons, exported 16.8 thousand tons), Romania - 5% (29 thousand tons and 1.5 thousand tons, respectively). Moldovan berry growers are export-oriented and have relatively good external supplies (Berry business in Moldova is full of hopes for the medium term) [Electronic resource]. – Access mode:https://agroexpert.md/rus/tseny-i-trendy/yagodnyy-biznes-moldovy-polon-nadezhd-na-srednesrochnuyu-perspektivu).

About 70% of the harvest is sold on the domestic market. Other products are exported to Russia and EU countries. The most popular are strawberries, raspberries and currants. There is a demand for blueberries and sea buckthorn.

Experts believe that the actual export of berries from Moldova in 2019 exceeded 4 thousand tons. The bulk of production went to Russia. In terms of fresh berry exports, Moldova still ranks 11th among all suppliers, and its share in Russian exports reaches 2.5%. Revenue of Moldovan exporters of fresh berries from supplies to Russia increased by 84% compared to 2017 and reached $ 5.6 million.

Berry supplies from Moldova to the EU are still irregular and small.

Climatic conditions of Moldova are ideal for growing blueberries. Blueberry is a berry that is exported in large quantities fresh at a premium price. You can choose varieties, technologies to successfully grow blueberries and export it to the "seasonal window" between Spanish and Polish berries. There is a big deficit in the European market during this period of the season.

Moldovan producers have great potential to export strawberries to Europe. This market is more demanding in quality, it is more competitive, but also more promising, as well as more predictable. The berry market in Western Europe is growing by 8% per year. Consumption of raspberries, blueberries and blackberries in the EU is growing 3-4 times faster than garden strawberries (Berry business of Moldova is full of hopes for the medium term [Electronic resource]. - Access mode:

https://agroexpert.md/rus/tseny-i-trendy/yagodnyy-biznes-moldovy-polon-nadezhd-na-srednesrochnuyu-perspektivu).

Since 2018, there has been some diversification of exports: Moldovan berries were exported to Romania, the Baltic States and Dubai. However, there is a decline in prices for berries. Blueberries in Europe at the beginning of the 2020 season. cost 2-3 euros per kg, in Moldova - 12 euros per kg (Markets are not expanding, and production is growing [Electronic resource]. - Access mode: https://monitorul.fisc.md/editorial/rynki-ne-rasshiryayutsya-a-obem-proizvodstva-rastet.html).

According to the number of farmers who certify their products according to GLOBAL G.A.P. and GRASP, Moldova is in the group of leaders among the CIS countries. 60 farms have valid certificates of these standards. Over the past three years, about 40 farmers have undergone production process modernization for GLOBAL G.A.P. thanks to the support of the project "Efficient Agriculture of Moldova" AWP / USAID. Every year, the number of farmers initiating certification procedures under this standard, which opens the possibility for farmers to supply European supermarket chains, is growing. Most GLOBAL G.A.P. and GRASP are producers of apples, table grapes, plums, cherries and berries (In Moldova, the number of fruit growers with certificates GLOBAL G.A.P. and GRASP [Electronic resource] is increasing. https://east-fruit.com/article/v-moldove-uvelichivaetsya-chislo-plodovodov-obladateley-sertifikatov-global-gap-i-grasp) (Berry business of Moldova: new directions of development [Electronic resource]. - Access mode: https://east-fruit.com/article/yagodnyy-biznes-moldovy-novye-napravleniya-razvitiya).

In 2017, the company from Criuleni Impex Business Grup SRL began delivering Moldovan strawberries to the UAE. Exports in this direction are strongly constrained by the lack of regular direct flights.

To form export batches of products, Moldovan producers unite in cooperatives; to promote their interests created the Association Pomuşoarele Moldovei.

To sell their products, Moldovan producers must focus on new markets, such as Asia and Africa, invest in new technologies, varieties, quality and marketing (Markets are not expanding, and production is growing [Electronic resource]. - Access mode: https://monitorul.fisc.md/editorial/rynki-ne-rasshiryayutsya-a-obem-proizvodstva-rastet.html).

Raspberry market

In Moldova, a large number of berries are grown on subsidiary farms. It is estimated that there are about 90,000 such farms in the country. The price of raspberries can vary from 0.2 to 1.2 euros per kilogram - such jumps during the season are not very conducive to business stability.

Preference is given mainly to three old seasonal varieties: Novina Kuzmina, Bulgarian Ruby, Delbard Magnifique. They have good taste, are transportable and can be stored for a long time.

Most of the plantations are concentrated in the north. Only in the village of Pokrovka, Dondyushan district, 150 hectares of crops are cultivated. Some areas reach up to 30 hectares. Approximately 250 kg are collected at a time from a plot of 25 ares. The price for early berries starts from 45 lei per kilogram, in the middle of the season it drops to 25. The villagers hand over their harvest to special points equipped with refrigeration units. This year, local farmers plan to harvest up to 700 tons of berries, most of which will go to Russia (Assortment of garden strawberries and raspberries in Moldova will be replenished with eight American varieties of these berries [Electronic resource]. - Access mode: https://agroexpert.md/rus/v-mire/sortiment-zemlyaniki-sadovoy-i-maliny-v-moldove-popolnitsya-vosemiyu-amerikanskimi-sortami-etih-yagod).

Moldova has never been one of the powerful producers and exporters of raspberries, but now production has started to grow dynamically (Table 6.13)..

Table 6.13

Dynamics of raspberry production

Statistical data bank [Electronic resource]. - Access mode:http://statbank.statistica.md/PxWeb/pxweb/en/40%20Statistica%20economica/40%20Statistica%20economica__16%20AGR__AGR020/AGR021000reg.px/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774)

Years	Area under culture, ha	Average yield, c / ha	Gross collection, c
2017	29	16.4	411
2018	34	38.9	1128
2019	24	84.1	1767

Many farmers, observing the active development of this line of business in neighboring Ukraine, began to invest in new raspberry plantations using modern intensive cultivation technologies and promising varieties..

Therefore, since 2014, exports of raspberries from Moldova began to increase dynamically, although in 2013 it was not at all. By 2016, Moldova had already exported almost a thousand tons of fresh and frozen raspberries, and in 2017 exports for the first time exceeded 1 thousand tons. At the same time, raspberries from Moldova were exported not only to Russia but also to the EU. And in 2017, a small amount of raspberries from Moldova was first exported to the United States.

In the foreign market, Moldovan berries cost a little less than three dollars per kilogram. At the beginning of the last marketing season, the price of raspberries of export quality did not exceed 35 lei / kg ($ 2.0 / kg). "Trial" - about 48-50 lei / kg ($ 2.74-2.85 / kg). In the 2020 season, due to the crop failure, the price of Moldovan raspberries for export is almost 30% higher than in the same period last year.

In the domestic market, due to small volumes, the berry cost about 55 lei per kilogram (Raspberries - a profitable article of Moldovan exports [Electronic resource]. - Access mode: https://agroexpert.md/rus/v-moldove/malina-dohodnaya-statiya-moldavskogo-eksporta).

The Association of Berry Producers "Pomuşoarele Moldovei" believes that the rather high start of sales of raspberries to Russia is due to the loss of the Russian berry sector due to spring frosts.

In recent years, there has been a growing interest in berries in Poland. The resumption (after a two-three-year break) of Moldovan raspberry supplies to Poland may be due to the intention of local traders to increase supplies of Polish berries to Germany and replace it in their domestic market with relatively cheap products from EU neighbors (Moldova season begins) sales of raspberries [Electronic resource] - Access mode:https://east-fruit.com/article/v-moldove-nachalsya-sezon-realizatsii-maliny).

A small part of Moldovan berries is sold domestically. Therefore, the association "Pomusoarele Moldovei" aims to promote Moldovan products in the domestic market. To this end, a special campaign was announced to promote domestic producers.

The Developed Agriculture of Moldova project of ARM / USAID has allocated funding for the purchase of planting material for high-yielding varieties of garden strawberries (Camarosa, Ventana, Monterey, Portola) and raspberries (Latham, Nova, Killarney, Caverline, Caroline) in nurseries in California and Massachusetts. varieties that meet market requirements (Assortment of garden strawberries and raspberries in Moldova will be

supplemented by eight American varieties of these berries [Electronic resource]. - Access mode:https://agroexpert.md/rus/v-mire/sortiment-zemlyaniki-sadovoy-i-maliny-v-moldove-popolnitsya-vosemiyu-amerikanskimi-sortami-etih-yagod), (The raspberry harvesting season has begun [Electronic resource]. - Access mode: https://agroexpert.md/rus/v-moldove/nachalsya-sezon-sbora-maliny). Increased variety of varieties will give farmers the ability to sell berries for a longer period and become more competitive on the domestic and popular markets.

Three years of raspberry varieties (Latham, Nova, Killarney) and raspberries are tested, yak to bear fruit until late autumn (Caroline). The breeding of new import varieties will give a shortcut: productivity, durability to ailments, transport to distant places Electronic resource]. - Access mode:https://agroexpert.md/rus/v-mire/novye-sorta-klubniki-i-maliny-privezennye-iz-ssha-budut-protestirovany-v-moldove).

Currant market

For assessments of fahivts of berry associations, areas of currants in Moldova, one can dynamically speed up a stretch of the rest of the five rockies (Table 6.14).

Table 6.14

Dynamics of currant production

(Statistical data bank [Electronic resource]. - Access mode:http://statbank.statistica.md/PxWeb/pxweb/en/40%20Statistica%20economica/40%20Statistica%20economica__16%20AGR__AGR020/AGR021000reg.px/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774)

Years	Area under culture, ha	Average yield, c / ha	Gross collection, c
2017	177	8.24	866
2018	157	8.8	658
2019	71	0.1	7

By the beginning of the last week of June 2020 in the domestic market of the country wholesale prices for black currants stabilized in the range of 40-45 lei / kg ($ 2.29-2.58 / kg), red - 30-35 lei / kg ($ 1, 72- 2.01 kg). At the same time last year, the difference in prices for black and red currants was smaller, and the maximum price level for these products was significantly lower - did not exceed $ 1.55 / kg.

Although currant plantations were slightly affected by spring frosts, the amount of adverse weather factors later affected this segment of the berry industry. Currants appeared on the market a little later than usual and in small quantities, its yield is likely to be much lower than last year. This became a major factor in maintaining berry prices in June.

In favor of the probability of lower prices is evidenced by the fact that the Moldovan market has appeared high-quality, perhaps - even calibrated, currants from Ukraine. Deliveries of local berries to urban markets are likely to at least not be reduced. Berry growers note a significant decline in demand as a result of reduced incomes and purchasing power of the population.

On the other hand, it is unclear how active the export of currants will be. In the last few years, external supplies of this berry from the Republic of Moldova have been very unstable and fluctuated between 15-65 tons per season. Blackberries are gradually displacing currants in the structure of Moldovan berry exports. However, last year the situation changed somewhat: the supply of dessert blackberries to the Russian market in the second half of the season decreased, while the Moldovan late currants traders began to supply to Poland for freezing. This year, external supplies of these berries are difficult to predict.

Historically, Moldova has grown varieties of this crop, resistant to frost. However, in the last few years, due to the sharp transition "from winter to summer", the hot weather in April-May is a much bigger problem for the normal vegetation of black currants in Moldova than frosts.

The Pomuşoarele Moldovei Association hopes that the country will gradually restore the area under this berry due to drought-resistant red varieties, in particular - "Jennifer". However, until this happens, red currant varieties are significantly less popular with consumers than black currant varieties. In Moldova, currant prices are kept high due to low supply [Electronic resource]. - Access mode: https://east-fruit.com/article/v-moldove-tseny-na-smorodinu-derzhatsya-na-vysokom-urovne-blagodarya-nizkomu-predlozheniyu).

Titania currant variety is popular. This is a fairly early variety, it is very stable, large berries, black, abundant harvest. If at first the currant seems sour, after a day of storage it has a sweeter and more fragrant taste

(Moldovan farmers have mastered the organic production of black currants. Madein.Md [Electronic resource]. - Access mode: https://east-fruit.com/article/moldavskie-fermery-osvoili-organicheskoe-proizvodstvo-chernoy-smorodiny).

Strawberry and strawberry market

This year, the strawberry harvest was on average 20-40% lower than last year (Table 6.15). Moreover, due to weather stress during almost the whole spring and in June, the quality of berries has significantly decreased. For this reason, some large berry growers have been forced to reorient much of their trade to the domestic market, despite attractive price offers from exporting traders and buyers in foreign markets.

Table 6.15

Dynamics of strawberry and strawberry production

(Statistical data bank [Electronic resource]. - Access mode:http://statbank.statistica.md/PxWeb/pxweb/en/40%20Statistica%20economica/40%20Statistica%20economica__16%20AGR__AGR020/AGR021000reg.px/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774)

Years	Area under culture, ha	Average yield, c / ha	Gross collection, c
2017	57	70.4	3456
2018	148	64.5	4970
2019	142	89.5	12084

Thus, the “strawberry cluster” of the village of Kunichev in the Floresti district (which includes more than a hundred farmers who grow strawberries on an area of about 120 hectares) sent more than 900 tons of berries to the Russian market last year, and this year only about half of last year's volume. Purchase prices for strawberries for export to the Russian market were relatively high - on average $ 1.72-1.75 / kg.

The average price for high quality export products increased slightly - up to 36-38 lei / kg ($ 2.05-2.17 / kg). Separate consignments of strawberries for export were sold at 40 lei / kg ($ 2.38 kg). In fact, wholesale prices for strawberries for export have been equal to retail prices for the best berry in the domestic market.

In the previous three years, Moldova exported (more than 90-95% - to the RF) annually about 2.5-3.3 thousand tons of strawberries. This year, according to preliminary estimates of market operators, the export deliveries of this berry have decreased by about 20-30% (Moldovan farmers redirected a significant share of the strawberry harvest-2020 to the

domestic market [Electronic resource]. - Access mode: https://east-fruit.com/article/moldavskie-fermery-perenapravili-znachitelnuyu-dolyu-zemlyaniki-urozhaya-2020-na-vnutrenniy-rynok).

The alternation of periods of drought and heat with rainy and cool periods, especially during the harvest season, negatively affected the quality of products. It did not always meet the standards set by partner traders. Therefore, most of the strawberries entered the Chisinau wholesale market. The price corresponded to the quality, fluctuated within a wide range of 10-30 lei / kg ($ 0.59-1.72 / kg).

Strawberry export prices are currently slowly but increasing due to several factors. The first and probably the most important one is the reduction in the flow of berries to the Russian market from Turkey and the countries of Central Asia, where it gets too hot in mid-June. According to Moldovan traders, their Russian partners are trying to compensate for the decrease in imports by using strawberries from southeastern Europe, including from Moldova.

Moldovan berry producers consider the restoration of ties with former partners in May 2020 to be another serious factor in increasing the price level for strawberries. were latent due to restrictions due to COVID-19. Currently, long-term contracts have been reinstated or signed again. They will operate throughout the season (although the bulk of supplies of strawberries from the Republic of Moldova to the Russian Federation is carried out in June - the first half of July) (In Moldova, the price of strawberries will increase due to active exports and good quality products [Electronic resource]. - Access mode: https://east-fruit.com/article/v-moldove-tsena-na-zemlyaniku-vozrastet-blagodarya-aktivnomu-eksportu-i-khoroshemu-kachestvu-produktsii).

Thanks to active export, which maintains a relatively high level of prices for berries in the domestic market of the country, by mid-June, almost all Moldovan strawberries went to the fresh market.

Only a few canneries buy strawberries on the domestic market. In total, according to the forecast of the branch association, this year Moldovan enterprises will remake no more than a hundred tons of strawberries. They provide berry growers with standard exchange containers and services for the transportation of products to enterprises. At the same time, only one condition is set - the supply of fresh berries should be carried out only directly from the field. Berry farmers are not interested in a price lower than one euro per kilogram, even if they sell an unsorted

berry. As a result, Moldovan processors import most of the high-quality strawberries for jam from the western regions of Ukraine (in Moldova, almost the entire crop of local strawberries will be sold fresh [Electronic resource]. - Access mode: https://east-fruit.com/article/v-moldove-prakticheski-ves-urozhay-mestnoy-zemlyaniki-budet-realizovan-v-svezhem-vide-mnenie).

Blackberry market

The first blackberry plantations were established in 2007 by a farmer from the village. Tsipala, Yalovensky district. Over the past five years, blackberries in Moldova have grown from scratch to the level of three to four berry positions in popularity in the country. It is already possible to buy blackberry juice and wine.

The market is in dynamic equilibrium: it is sufficiently saturated with domestic products so that imports (in the case of Moldova, more often contraband supplies by individuals) are unattractive, but at the same time without commodity surplus - so that prices do not fall below the level of profitability.

The largest enterprise, Yami Blackberries, grows blackberries on an area of almost 30 hectares. Some large berry producers have departments for its processing - they produce preserves, jams and wine. This allows you to relieve tension from the fresh market during the seasonal peak (at the seasonal peak, purchase prices for blackberries in Moldova have stabilized [Electronic resource]. - Access mode: https://agroexpert.md/rus/v-mire/na-sezonnom-pike-zakupochnye-tseny-na-ezheviku-v-moldove-stabilizirovalisi).

Almost a third of the members of Pomuşoare Moldovei are blackberry producers, there are about two hundred of them. The size of the bulk of blackberry plantations is 0.5-5.0 hectares, but in the whole country this is converted into a total area of about 250-300 hectares. Large producers of blackberries are located in the central regions on both banks of the Dniester.

In Moldova, the harvesting of blackberries of the "Arapakho" variety is nearing completion; in the near future, farmers will start picking berries of the "Triple Crown", "Tornfree", "Chachakska beztrna" varieties. These are the main products for export and sale in the country's trade network. It is slightly inferior in organoleptic properties to early blackberry varieties, but surpasses it in appearance, keeping quality and transportability. By mid-July, export supplies of Moldovan blackberries to the Russian market, due

to their good quality, increased. The price also slightly increased: if in late June-early July the average price for blackberries did not exceed 40-45 lei / kg ($ 2.29-2.58 / kg), then by mid-August for high-quality berries - in casserole by 250- 500 gr. and plywood boxes - has grown to 45-50 lei / kg ($ 2.58-2.87 / kg) (Active export keeps the prices for Moldovan blackberries at a high level [Electronic resource]. - Access mode: https://east-fruit.com/article/aktivnyy-eksport-podderzhivaet-tseny-na-moldavskuyu-ezheviku-na-otnositelno-vysokom-urovne).

At the same time, at the very beginning of last year's sales season for this product, the price for early blackberries was about 10% higher.

Berry farmers note that this year the harvest of early varieties of blackberries was one and a half to two times lower than last year. Early blackberry plantations were hit hard by frost and drought. Due to weather stress, even in the presence of irrigation, the berries are often significantly smaller and lighter than the first collection of blackberries last year. Nevertheless, there is a demand for it from regular buyers, thanks to which manufacturers found it possible to set the starting prices for relatively low quality products at a fairly high level.

The price level for blackberries decreases towards the end of July - at the time of the entry of late varieties of blackberries on the market. This year, despite the damage to the plantations by frosts, blackberries of late varieties have recovered and will give a good harvest. In a similar situation, prices for berries in late July and early August last year dropped to 17-18 lei / kg ($ 1-1.02 kg). That is, the minimum prices for dessert and maximum prices for technical (for freezing) blackberries have become equal. This year, farmers hope for preliminary agreements with processors on the supply of products during this period of the season, as well as for higher prices for it (in Moldova, the harvest of early blackberries will be one and a half to two times lower than last year's [Electronic resource]. - Access mode: https://east-fruit.com/article/v-moldove-urozhay-ranney-ezheviki-budet-v-poltora-dva-raza-nizhe-proshlogodnego).

Taking into account the decline in the blackberry harvest this year, as well as the good quality of the berries and the presence of demand for them from traders, the Pomuşoare Moldovei Association hopes that in 2020 there will be no traditional August price reduction (last August, the prices for this berry dropped to 17-18 lei / kg - $ 1-1.02 kg) (Active export maintains prices for Moldovan blackberries at a high level [Electronic resource]. - Access mode: https://east-fruit.com/article/aktivnyy-eksport-

podderzhivaet-tseny-na-moldavskuyu-ezheviku-na-otnositelno-vysokom-urovne).

Blueberry market

The first blueberry plantation in Moldova was created thanks to the import of soil from Belarus. Moldavian soil turned out to be slightly acidic for these berries growing in the forests of Russia, Belarus, Ukraine.

Under the US-funded Agricultural Competitiveness and Enterprise Development (ACED) projects, Lolly Berry, located in the village of Dolna, Straseni district, received about half a million lei to buy and bring to Moldova several tens of tons of soil from Belarus. The seedlings required for planting 10 hectares were delivered from Poland. The plantation is young, only two years old, but has already begun to bear fruit. The berries are harvested by hand; for this, residents of the village of Dolna and neighboring settlements are involved.

The bushes grow up to 2 meters in height, and a mature bush gives about 7 kg of berries. The blueberry plantation has been bearing fruit for over 50 years.

Blueberries from "Lolly Berry" are sold in almost all large stores in Chisinau. A kilogram of blueberries from the producer costs 250-300 lei, depending on the size of the batch. In shops the cost is higher, 125 g of berries cost from 49 lei.

The largest consumers of blueberries are from northern countries such as Norway and Finland. Producers are still experiencing difficulties in the process of exporting berries due to the fact that there is no laboratory for certification in Moldova. At the same time, there is always a shortage of about 20% of blueberries on the international market and demand always exceeds supply.

Growing berries is a promising industry that can bring good income to those who decide to invest money, but we also need to work in terms of promoting the culture of berry consumption (The first Moldovan blueberries were grown on land "imported" from Belarus [Electronic resource]. - Access mode: https://www.ipn.md/ru/pervaya-moldavskaya-chernika-vyrashchena-na-importirovannoy-iz-belarusi-zemle-7966_1028336.html#ixzz6TVNXp5b4).

Blueberries protect the body from the effects of radioactive radiation, support the functioning of the pancreas and intestines, strengthen the walls of blood vessels, and have a beneficial effect on nerve cells. Blueberry leaves are good for the activity of the heart, intestines and stomach, lower blood sugar.

Some Japanese companies, which spend most of their working hours at the computer, give employees 70 grams of blueberries a day to reduce eye pressure and normal blood circulation.

In 2014, the first blueberry plantation with an area of 10 hectares appeared in Moldova (Nisporeni district, agricultural enterprise "Lolly Berry"). This year the plantation has entered a period of full fruiting, the projected yield is about 150 tons.

The company received a grant from the USAID project to offset the cost of peat. So far, sales are carried out only on the domestic market at an average wholesale price of 10 euros per kilogram. Retail chains sell berries at 17-20 euros per kilogram.

Export of berries is possible to Poland and Romania.

Four blueberry varieties are cultivated - Duke, Bluecrop, BlueGold, Brigitta, as well as one late variety - Aurora. About 15 tons of blueberries can be harvested from one hectare, one kilogram of which should cost 150 lei.

For further promotion on the market, it is necessary to install a packing house (271 thousand Euro). Investors from Poland are ready to invest 1,500,000 Euros to create a modern nursery.

Last and this year, a blueberry plantation (varieties Duke, Bluegold) with a total area of about 1 hectare was established by the farmer Tudor Zacharia (Petushkov village, Calarasi district). In the future, he plans to expand the plantation to 5 hectares. In July 2020, the young plantation gave its first harvest - about 400 kg of berries.

In addition, according to the experts of the Pomuşoare Moldovei Berry Producers Association, the country may still have “microscopic plantings” of blueberries on the private plots of individual berry farmers, however, these products do not enter the market turnover (a second blueberry producer has appeared in Moldova [Electronic resource]. - Access mode: https://east-fruit.com/article/v-moldove-poyavilsya-vtoroy-proizvoditel-golubiki).

Moldavian soils are mostly neutral - slightly alkaline, and require special conditions (lowering the pH) for growing blueberries, and farmers

still do not see the point of investing huge funds in creating favorable conditions for it, preferring crops that can successfully grow and bear fruit in the soil and climatic conditions of Moldova ...

Blueberry bushes bear fruit for about 50 years. To grow it, you need a light soil, so Belarusian peat is used.

After harvesting, the berries are delivered to the pre-cooling chamber, where the blueberries are sorted and packaged, after which they are delivered to shops or individuals (Sweet "business of growing blueberries is still the only one in Moldova [Electronic resource]. - Access mode: https://www.profit.md/articles-ru/number_7-8_2018/551486/).

In the first half of July 2020, local blueberries on the Moldovan market were sold in small wholesale on terms of self-pickup from the plantation at a price of 190-200 lei / kg ($ 10.9-11.5 / kg), retail on terms of delivery to the buyer by prior order - at 230-250 lei / kg ($ 13.2-14.4 / kg). The average wholesale price for imported blueberries in the wholesale markets of large cities during this period did not exceed 170-180 lei / kg ($ 9.8-10.3 kg).

Operators of the berry market believe that by the end of the season the average wholesale price for blueberries - both Moldovan and imported - is likely to drop to about 150 lei / kg ($ 8.6 / kg), just like in previous years (Sweet Business blueberry cultivation is still the only one in Moldova [Electronic resource] - Access mode: https://www.profit.md/articles-ru/number_7-8_2018/551486/).

Despite the crisis caused by the Covid-19, the demand for blueberries around the world continues to grow, and the market increases the requirements for the quality and sanitary safety of berries.

The findings of the Yearbook 2019/2020 International Blueberry Market, published by IQonsulting, note that, having adapted to different climatic conditions, growers have extended their own harvesting seasons and faced increased competition.

Now the success in the market does not depend on "windows" between seasons of other countries, but on the competitiveness of each manufacturer. Among the most important characteristics of the berry, industry participants note firmness, presentation, product attractiveness, overall quality and brand awareness among buyers. Infrastructure, logistics, distribution network, experience, trust and the state of the industry influencing the competitiveness.

One of the possibilities is the development of organic production, it is necessary to support expanded advertising (Blueberry producers are faced with increased competition due to the expansion of harvest seasons [Electronic resource]. - Access mode: https://agroexpert.md/rus/v-mire/proizvoditeli-golubiki-stolknulisi-s-rostom-konkurentsii-iz-za-rasshireniya-sezonov-urozhaya).

Risks. Intermediaries bring low-quality blueberries from Romania and Ukraine, passing it off as Moldovan. The difference between the price is 1 lei (domestic prices are sold in shops for 31 lei, and imported ones - 30 lei).

All responsible authorities in the state turn a blind eye to this, and the industry cannot develop normally. On the Moldovan market, 40% of berries are smuggled (Blueberry producers are faced with increased competition due to the expansion of harvest seasons [Electronic resource]. - Режим доступа: https://agroexpert.md/rus/v-mire/proizvoditeli-golubiki-stolknulisi-s-rostom-konkurentsii-iz-za-rasshireniya-sezonov-urozhaya).

Sea buckthorn market

Sea buckthorn - This fruit contains a very high concentration of vitamin C as well as a wide range of other nutrients. Growing this wholesome crop can be an interesting business idea for Moldovan farmers.

A farmer from the village of Korleteni, Ryshkan region, founded the Narsimu enterprises 2014 He imported planting material (seedlings) from Russia, from the city of Barnaul. After three years of testing and experimentation on the shrubs, fruits appeared, and the northern varieties adapted to the local climate. Most of the varieties were included in the Catalog of Plant Varieties of Moldova. At the moment, on the territory of 20 hectares, 6 varieties of "female" trees are grown: "Chuiskaya", "Elizaveta", "Inya", "Augustina", "Altai", "Chechek" and 2 varieties of "boys" (pollinators).

About 1250 bushes grow on one hectare. When they are still small, the shrubs give 3-4 kg of sea buckthorn, and in the sixth or seventh year they can give up to 10 kg or more.

State subsidies received for 10 hectares of the plantation. To plant one hectare of sea buckthorn, you need 1,500 euros. The price of one seedling is 1.25 euros, and taking into account the fact that they were brought from Barnaul (about 6,000 km), transport costs were also significant. Another factor behind the high price tag is that these berries are difficult to harvest. For manual harvesting, the farmer pays the workers 200 lei per day (this is an average of 10-12 kg). The price is determined by

the small number of producers engaged in the cultivation of sea buckthorn in Moldova.

Although the plant is quite drought tolerant, the introduction of an irrigation system will increase the productivity of this crop, while the lack of water supply near the plantation remains a very significant problem.

At least 5 tons of sea buckthorn are expected in 2020. There is a possibility of producing oil, which Moldovan pharmacies will be able to purchase, but this requires a more serious harvest. From 10 tons of berries, about 500 liters of sea buckthorn oil are obtained.

The harvested sea buckthorn must be quickly sold or processed. At home, it is recommended to store it frozen or dry, since it begins to oxidize within 48 hours after harvesting (Growing sea buckthorn in Moldova: experience and prospects [Electronic resource]. - Access mode: https://east-fruit.com/article/vyrashchivanie-oblepikhi-v-moldove-opyt-i-perspektivy).

Goji market

The world fashion for goji emerged in 2004, when the foreign press began to write about the amazing properties of the berry in the fight against cellulite. Later, reports began to appear that goji has powerful antioxidant properties (Eurostat named the most popular fruits and vegetables in the EU [Electronic resource]. - Access mode: https://ru.sputnik.md/society/20170805/13916003/ VrednajajagodailisredstvootcelljulitatepergodzhirastutvMoldove. html).

Goji are grown in 26 farms. In general, goji plantations in Moldova are 12 hectares. - Due to the high demand, prices will not fall noticeably (26 farms in Moldova grow goji [Electronic resource]. - Access mode: https://point.md/ru/novosti/obschestvo/v-26-fermerskikh-khoziaistvakh-moldovy-vyrashchivaiut-godzhi).

The most goji plantation is in the village of KirilUngensky district. Four hectares are planted here.

The area planted with common tree grows every year. Its homeland is Tibet, and the shrub is most widespread in China. Goji shrubs are not whimsical: they do not require additional watering and installation of an irrigation system. Goji is a frost-hardy crop that can withstand temperatures as low as minus forty degrees Celsius. Goji bears fruit from July until the first frost.

Goji berries are consumed fresh and dried. Tea is made from the leaves. Goji is useful for diabetics, its berries normalize blood sugar levels, and is used as a weight loss aid.

The main supply of goji is carried out to supermarkets in the country. Farmers sell one kilogram of fresh berries at 300 lei, dried - 500. For delivery to retail chains, berries are packed in containers of 200 grams. Farmers are preparing to establish exports to Poland (26 farms in Moldova grow goji [Electronic resource]. - Access mode: https://point.md/ru/novosti/obschestvo/v-26-fermerskikh-khoziaistvakh-moldovy-vyrashchivaiut-godzhi).

Gooseberry, yoshta, honeysuckle market

So far, only four farmers are engaged in the cultivation of yoshta. A kilogram of yoshta berries costs up to 50 lei (rare yoshta berries appeared in Moldova - a hybrid of gooseberries and black currants [Electronic resource]. - Access mode: https://ru.publika.md/v-moldove-poyavilis-redkie-yagody-yoshta---gibrid-kryzhovnika-i-chernoy-smorodiny_2184299.html#ixzz6TVOp3H8D).

The POMUSOARELE MOLDOVEI Association grows six varieties of honeysuckle on an experimental plot and considers harvesting one of the main technological problems of this berry crop. The cost of harvesting one kilogram of honeysuckle in Ukraine is estimated at almost $ 1 per kg. This is significantly more than the cost of picking other berries, which negatively affects the profitability of growing honeysuckle.

In Moldova, gooseberries are grown only by amateurs and small producers. Three types of gooseberries (white, pink, red) and 15 varieties ("Donetsk", "English yellow", "Smena", "Kolobok", "Sunny Bunny", "Power (Commander)", etc.) are grown.).

Risks

In addition to the traditional weather risks for agriculture, Moldovan berries face other difficulties:

- lack of labor. In recent years, labor shortages and relatively low productivity have become one of the main factors holding back the development of berry growing. However, according to expert forecasts, the number of people employed in the berry business of the Republic of Moldova will double by 2021 and will amount to about 10 thousand people.

The branch association recommended to include in the classifier of professions of the Republic of Moldova a new one - "berry collector";

- world price conditions and global competition. For example, Turkish cherry growers leave a significant part of the harvest in their gardens in different years. They consider it inexpedient to harvest because of the low price of berries, as well as high labor costs;

- smuggling from Ukraine. The share of smuggled products at the start of the berry season is up to 70%. It is transported mainly in small batches through Transnistria to Moldovan agricultural farms. In the summer of 2020, despite the fact that there were no official reports of illegal imports of strawberries from the Customs Service, farmers insist: a large batch of berries were imported from neighboring Ukraine by tricksters and sold 30-35 lei per kg.

Smuggled berries from Ukraine are competitive on the Moldovan market due to the relatively low cost of production. Ukraine has a list of its own relatively inexpensive resources of agricultural production: mineral fertilizers, pesticides, electricity, machinery. In Moldova, almost all resources are imported and expensive, and in Moldova the salaries of agricultural workers are higher. The director of Lolly Berr pays his employees 100 lei a day or 5 euros. In Ukraine, for similar work receive only $ 3 (Moldova becomes a country - an exporter of berries [Electronic resource]. - Access mode: https://mybusiness.md/ru/categories/analitika-i-rassledovaniya/item/8261-moldova-stanovitsya-stranoj-eksportjorom-yagod).

Moldova has developed a new draft law "On subsidized insurance of agricultural risks" due to adverse weather conditions (In Moldova, insurance of fruit crops will receive a new impetus [Electronic resource]. - Access mode: https://east-fruit.com/article/v-moldove-strakhovanie-plodovykh-kultur-poluchit-novyy-impuls). The law will regulate relations between insurers and agricultural producers (Berry Business of Moldova: new directions of development [Electronic resource]. - Access mode: https://east-fruit.com/article/yagodnyy-biznes-moldovy-novye-napravleniya-razvitiya).

The problem of irrigation was still acute for berry growers. Irrigation from surface water sources is not always possible, so in the near future the country's authorities need to legislate to allow farmers to use groundwater for irrigation, as well as simplify the regulatory framework for the construction of artesian wells and pools for water collection.

Approximately 32% of land irrigated by centralized irrigation systems grows vegetables, 29% - fruits and planting material of fruit crops, 8% - grapes and berries. In total, there are 88 irrigation systems in Moldova, mostly built in the 70s and 80s of the last century. They are able to supply water to 13.5 thousand hectares of agricultural land.

According to the Foundation for Sustainable Development of Moldova (FDD Moldova), in 2020, due to the drought, the irrigation season began much earlier than usual. Some horticultural and viticultural farms began to periodically include irrigation systems on plantations in February. As a result, at the beginning of July this year in the areas of ten centralized irrigation systems, reconstructed during the American donor program "Compact" in 2010-2015, more than 2.5 thousand hectares were irrigated on a regular basis, more than 2 million were provided for agricultural land. .m3water from the Dniester and Prut rivers (in 2019 - less than 1.5 thousand hectares and 650 thousand m3, respectively) (In Moldova, due to the drought, the scale of irrigation in fruit growing has grown many times [Electronic resource]. - Access mode: https://east-fruit.com/article/v-moldove-iz-za-zasukhi-masshtab-irrigatsii-v-plodovodstve-vyros-v-razy),
(The bill on subsidized insurance in agriculture was approved by the Moldovan government [Electronic resource]. - Access mode: https://east-fruit.com/article/zakonoproekt-o-subsidirovannom-strakhovanii-v-selskom-khozyaystve-odobrilo-pravitelstvo-moldovy).

Conclusions and suggestions

1. The stimulus for the development of the domestic market should be the growth of effective demand for fresh berries from end consumers - individuals - in terms of consumption of berries Moldova lags far behind European countries. Thus, in 2015, according to AMIB, the average consumption of berries in the country was not more than 1.1 kg per capita. With an average selling price of berries of about $ 1.5 / kg, the total estimated capacity of the country's market did not exceed $ 6 million. In recent years, the berry market "fresh" in the Republic of Moldova is growing calculated. In the industrial segment, the situation is similar, purchase prices for "technical" currants and raspberries have increased significantly, procurement volumes have fallen below 1 thousand tons in total.

Experts hope that by 2021 the domestic market will retain an important role in the structure of sales of domestic berries - it is likely to absorb more than a third of the volume of products produced "fresh".

2. There are many limiting factors in the berry sector of the Republic of Moldova. The berry business requires significant investment in certification (according to the Global GAP standard), post-harvest infrastructure and manual operations - against the background of reducing and increasing the cost of labor. In addition, an important role in the functioning of the berry sector in the countries of Southern Europe is played by a natural factor - limited water resources and a changing climate.: https://agroexpert.md/rus/tseny-i-trendy/yagodnyy-biznes-moldovy-polon-nadezhd-na-srednesrochnuyu-perspektivu), (New opportunities and markets for berry products from Moldova [Electronic resource]. – Access mode: https://agroexpert.md/rus/v-moldove/novye-vozmozhnosti-i-rynki-sbyta-dlya-yagodnoy-produktsii-iz-moldovy).

3. Also extremely important is the problem of the lack of a sufficient number of special phytosanitary drugs officially approved in the Republic of Moldova for use on berry crops. In fact, at the moment there are only a few of them in the relevant register.

4. To reduce the cost of berries, it is necessary to reduce customs duties and fees for the import of phytosanitary products, as well as to allow the use of registered drugs from the European Union without approval in Moldova..

6.4. Strawberry Market Analysis (Turkey)

In 2018, the volume of strawberry production in Turkey reached 415.15 thousand tons, which is 4.3% of world volume, and corresponds to the 5th place in the world, with a share of 4.3%, followed by China (40.3%) , USA (15.7%), Mexico (7.1%) and Egypt (4.4%). Other countries in the Black Sea basin engaged in strawberry production include Ukraine (0.6%), Romania (0.3%) and Moldova (0.1%) (Figure 6.9).

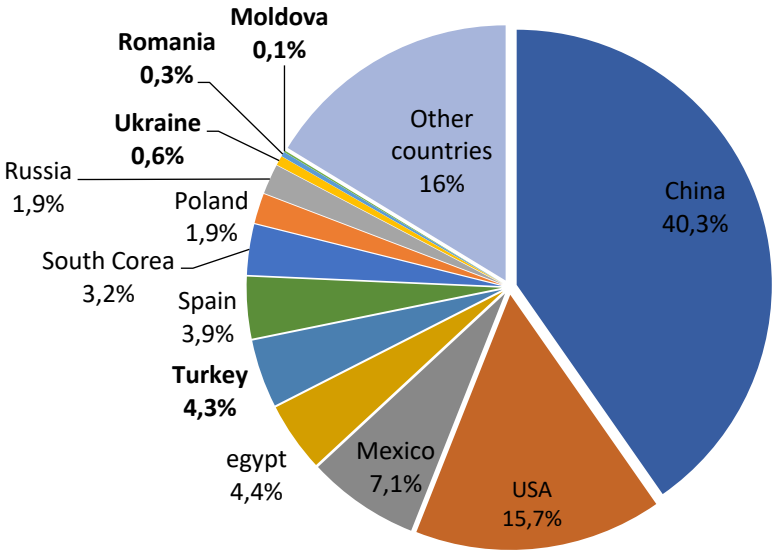

Figure 6.9. The share of countries in total strawberry production in the world,%

Source: (URL: https://www.tridge.com/intelligences/stawberry/TR)

During 1997-2017, the annual volume of strawberry production in Turkey increased from 110 thousand tons in 1997 to 415 thousand tons in 2017, and 400 thousand tons in 2017. The average price per ton of Turkish strawberries ranged from 0.6 thousand dollars. US in 1997, up to 1.36 thousand dollars. USD in 2008, and in 2017 amounted to 0.84 thousand dollars. USA (Fig. 6.10).

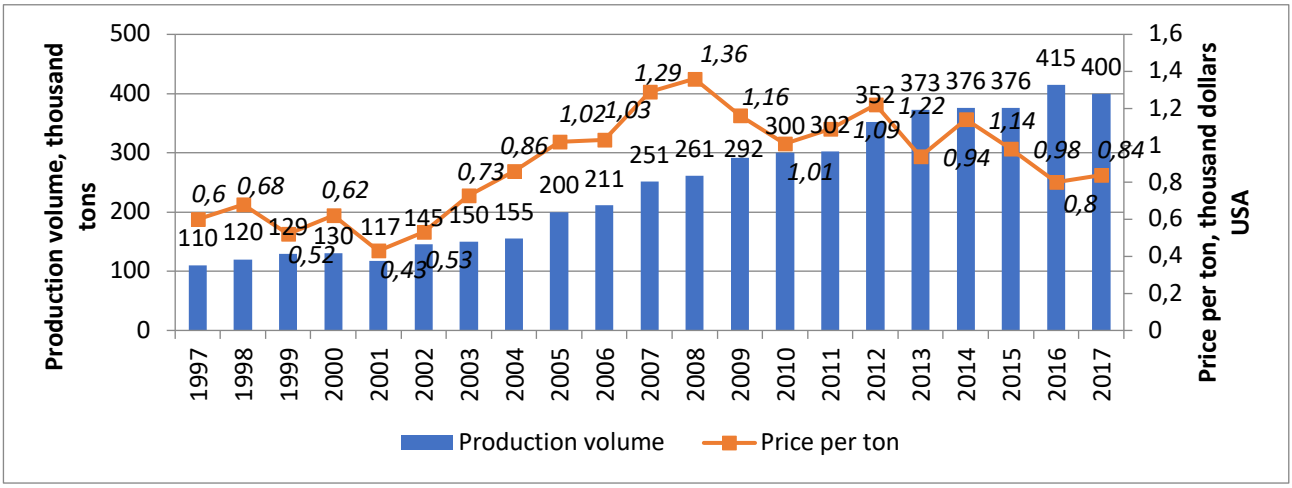

Fig. 6.10. Dynamics of production volumes and the average price of strawberries in Turkey in 1997-2017

Source: (URL: https://www.tridge.com/intelligences/stawberry/TR)

The production area of strawberries in Turkey in 1990 was 5,358 hectares, which produced 51,000 tons of products. In 2015, it increased to 14,189 hectares, of which 378,800 tons of strawberries were harvested (Fig. 6.11).

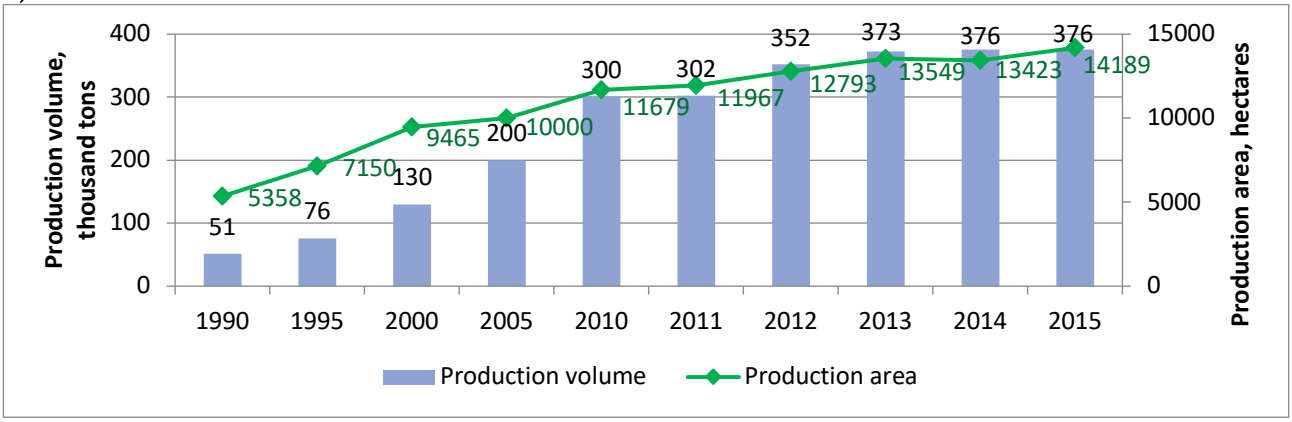

Figure 6.11. Production area and volume of strawberry production in Turkey by years

Source: (Serçe S., Özgen M. (2018) Turkish soft fruit production. The world of horticulture, Vol. 55, No 3, p. 17.)

Currently, you can grow strawberries in all parts of Turkey. However, production is mainly concentrated in the Mediterranean, Aegean and Marmara regions (Fig. 6.12). Silifke, Anamur and Gazipasa are important production centers in the Mediterranean region, while the area around Sultangisara is the main center of the Aegean region.

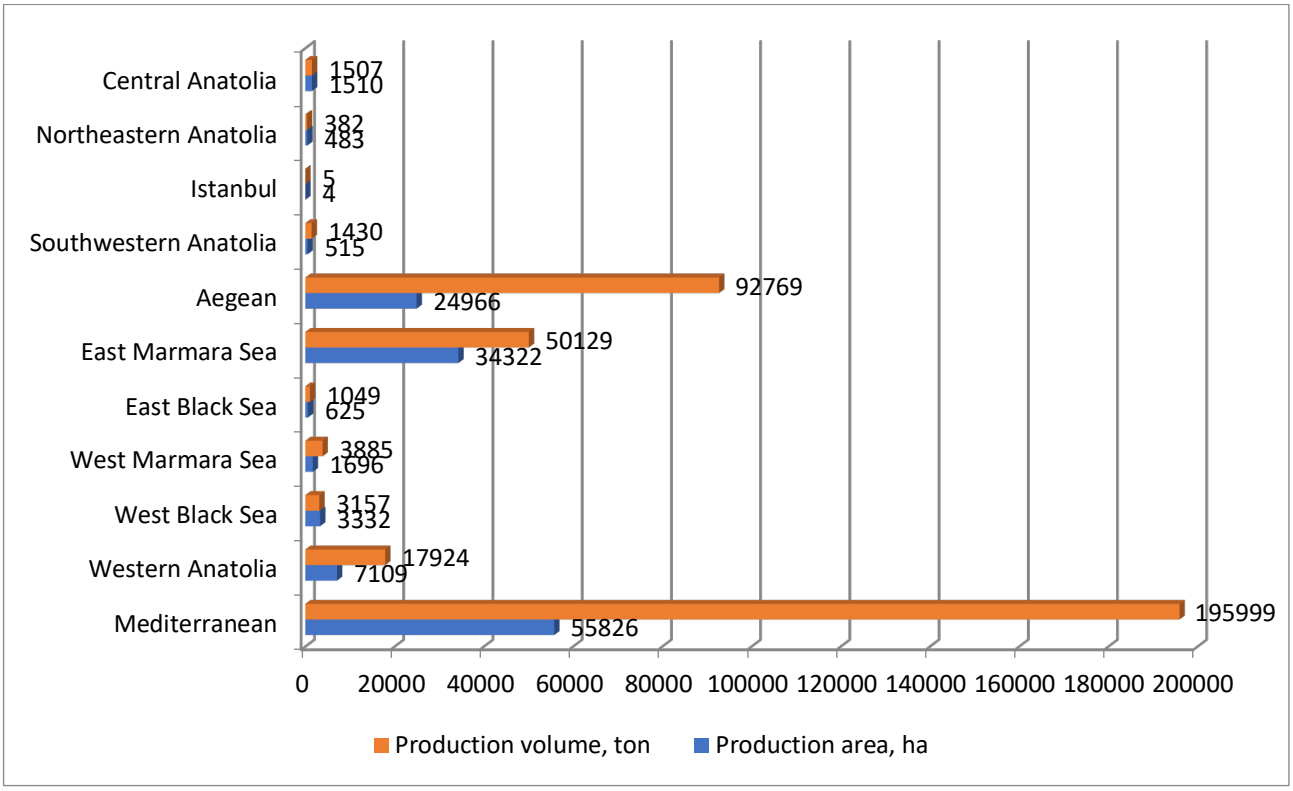

Figure 6.12. Production area and volume of strawberry production in Turkey by region in 2014

Source: (Serçe S., Özgen M. (2018) Turkish soft fruit production. The world of horticulture, Vol. 55, No 3, p. 16.)

Turkey began exporting strawberries in 2000. In recent years, exports increased from 60 tons in 2000 to about 20 thousand tons in 2018 (Fig.. 6.13).

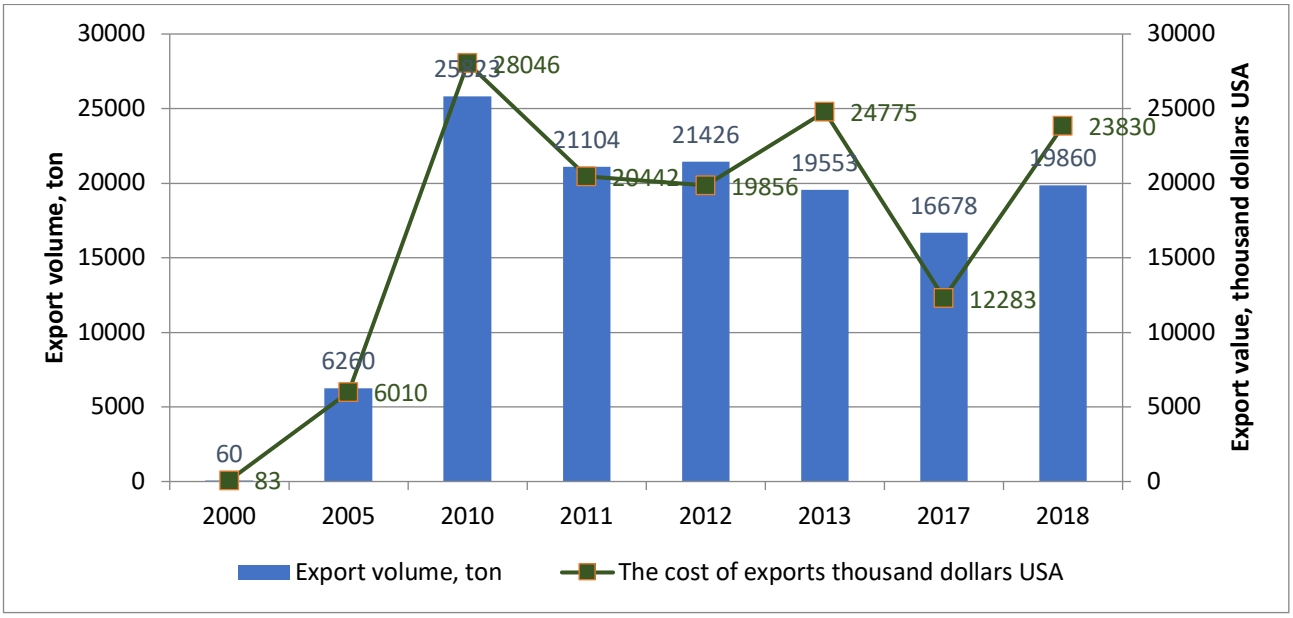

Fig. 6.13. Volume and value of strawberry exports from Turkey in 2000-2018

Source: (Serçe S., Özgen M. (2018) Turkish soft fruit production. The world of horticulture, Vol. 55, No 3, p. 16.

URL: https://www.tridge.com/intelligences/stawberry/TR)

It should be noted that in 2016 and the first half of 2017 there was a significant decrease in Turkish strawberry exports due to the embargo on exports of certain agricultural products from Turkey and other countries, introduced by the main consumer of Turkish strawberries - the Russian Federation. The main market for Turkish strawberries is Russia, and exports are largest during April (Table 6.16, Fig. 6.14, 6.15).

Table 6.16

Volume and value of strawberry exports from Turkey by destination country in 2018

Country	Export volume, thousand tons	The cost of exports, million dollars USA
Russia	13,04	15,61
Romania	3,75	5,12
Iraq	1,60	1,34
Saudi Arabia	0,38	0,75
Serbia	0,38	0,32
Kazakhstan	0,21	0,13
Georgia	0,27	0,07
Other countries	0,23	0,49

Source: (URL: https://www.tridge.com/intelligences/stawberry/TR)

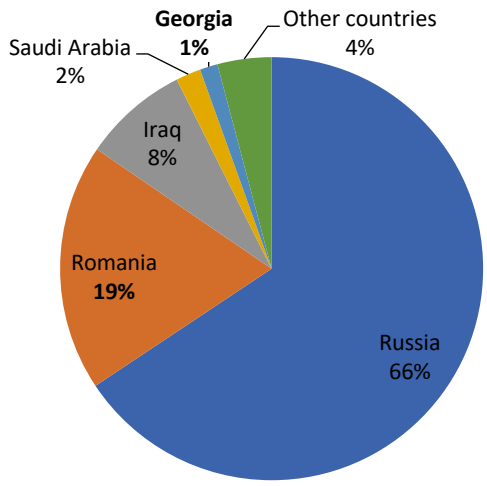

Fig. 6.14. Structure of strawberry exports from Turkey (in kind) by country of destination in 2018,%

Source: (URL: https://www.tridge.com/intelligences/stawberry/TR)

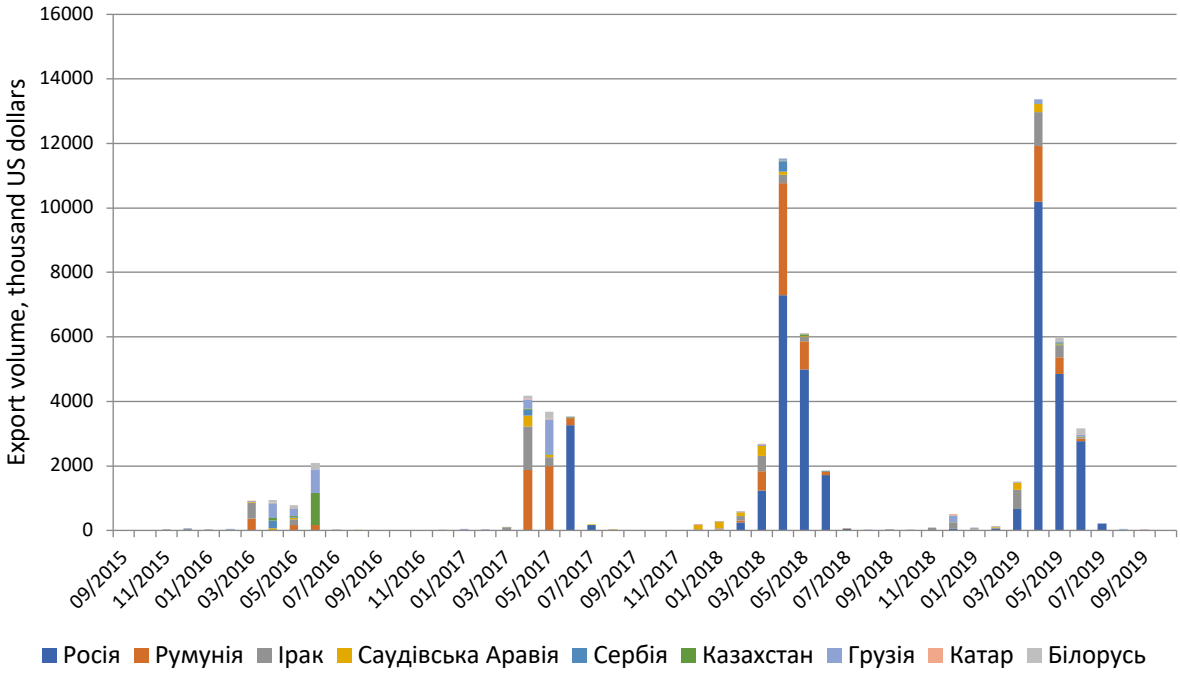

Fig. 6.15. Export of strawberries from Turkey by destination countries by months

Source: (URL: https://www.tridge.com/intelligences/stawberry/TR)

The volume of import of strawberries to Turkey is insignificant and amounts to 447.40 thousand dollars. USA (66th in the world). The main

country from which Turkey imports strawberries is Egypt - 89.4% of the total value of imported strawberries (Figure 6.16).

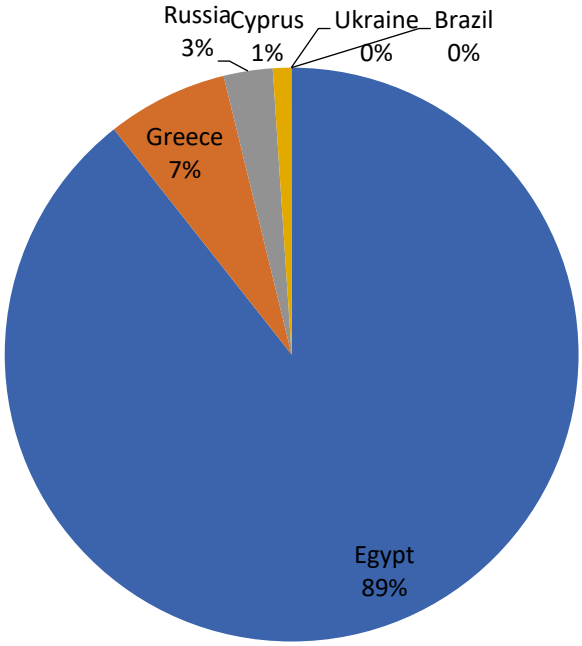

Figure: 6.16. Imports of strawberries to Turkey by country of origin in 2018
source: (URL: https://www.tridge.com/intelligences/stawberry/TR)

Technological aspects of strawberry production in Turkey

Strawberry production in Turkey dates back to Ottoman times, but at that time it was limited to Istanbul and the surrounding regions and consisted mainly of cultivars such as "Ottoman" and "Fraction Chiloensis". Later, with the introduction to the Mediterranean region of such varieties as "Alice", "Tioga" and "Tufts" the production of this type of product has become much more important. With improvements in production technologies such as drip irrigation and protected cultivation, strawberry production has become the main agricultural sector in Turkey, especially in its Mediterranean and Aegean regions.

Protected cultivation is becoming popular in commercial production, especially due to its effect on early maturity and fruit quality. High tunnels are the most common protected cultivation type, followed by mini tunnels, especially in Sultangisari. There are several plastic greenhouses in Antalya that give early fruit in late winter and early spring (fig. 6.17).

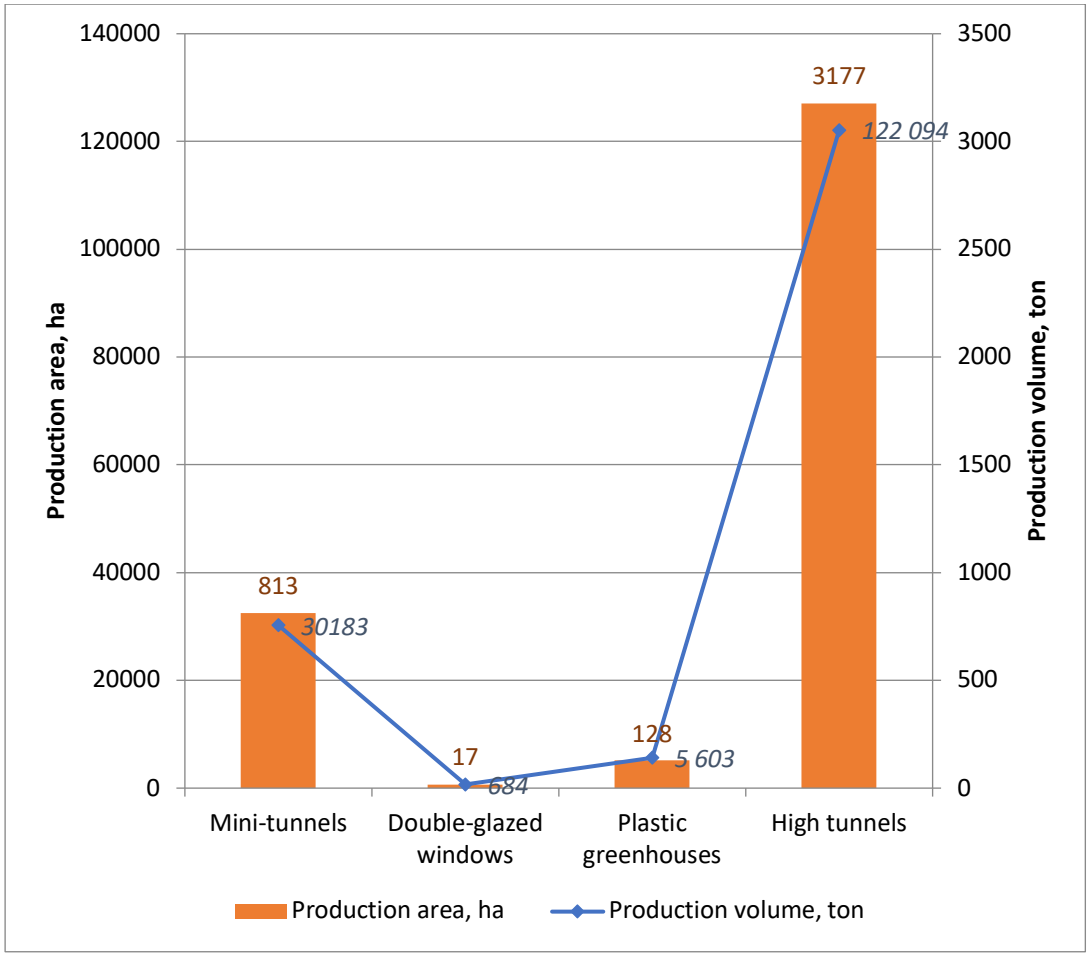

Fig 6.17. Production area and production volume of strawberries in Turkey by type of production in 2014

source: (Serçe S., Özgen M. (2018) Turkish soft fruit production. The world of horticulture, Vol. 55, No 3, p. 16.)

The average size of strawberry farms in Turkey is very small. An annual "raised bed" (tall bed system) system is common practice. Black plastic sheeting and double row drip irrigation are also common. Although this is an annual growing system, some growers keep their plantings for a second year. As a result, in the second year, the yield decreases significantly, and soil fungal diseases and their severity increase. Crop rotation is used against soil pathogens when no fumigation is carried out prior to planting, for example with chloropicrin. When the same farms are used to produce strawberries in subsequent years, several chemicals are used to protect the plants from soil borne diseases. However, one of these

chemicals was not sufficient to achieve the desired level of protection. Therefore, the increase in the incidence and severity of soil borne diseases has become a major problem in strawberry production in Turkey.

All three types of seedlings are used in **strawberry production**. Plants dominate Frigo. They are usually planted in August or September, depending on the climatic conditions of the year. Frigo strawberries are harvested over several weeks, starting in the second or third week of April in the Silifke region. After that, depending on the season, in 2-3 weeks the harvest is harvested in Sultangisari. This is the main production period for Turkish strawberries. You can extend the production period by using fresh plants in both locations. However, the use of fresh plants is not as common as in Spain and Italy. There are basically two reasons for this. Firstly, there is no suitable breeding site in Turkey for fresh seedlings. Second, early strawberry production areas have hotter autumns and colder winters than Huelva, Spain. Therefore, the lack of warm temperatures during December and January prevents significant fresh plant production. Planting dates for fresh plants in Turkey are usually later than in Spain and Italy. Fresh plants also have a long production period in April and May. To date, experimental planting of potted seedlings is being tested in Turkey. Potential problems with potted seedlings include high labor costs and the fact that the climate may not be suitable for early strawberry production.

Most of the **strawberry nurseries** are located directly in Turkey. Nurseries are located mainly in Central Anatolia, around the Cappadocia region, due to its light soil and long cooling time. The altitude of the region fluctuates between 800-1200 m. However, the region is still warm in September, which makes the area unsuitable for the production of fresh plants..

Several varieties of strawberries are registered in Turkey. Central Research Institute of Horticulture named after Ataturk has a special strawberry farming program. Within the framework of this program, several varieties of strawberries were developed (“Istanbul-15”, “Istanbul-104”, “Eren 77”, “Ata 77”, “Erenoglu 77”, “Hilal 77”, “Dorukhan 77”, “rukam 77 "," Bolverim 77 "). Similarly, the Kashka, Sevgi and Ebru varieties were developed under the Chukurov University strawberry breeding program. However, most commercial cultivars are almost exclusively of foreign origin. Kamarosa was the dominant variety until recent years, while varieties from the University of Florida breeding program such as Festival, Florida Fortuna and DPI Rubygem are successful in several regions of

Turkey. Sabrina and Sabrosa are also grown in significant quantities. Festival varieties are preferred due to the high quality of the fruit, while Turkish consumers consider DPI Rubygem very sweet and tasty. Florida Fortuna is the most common early production variety. It is a high-yielding cultivar under optimal conditions but highly susceptible to soil pathogens. Although Amigo does not taste great, it is produced through its exceptional hardness. Surprisingly, these low-cooling varieties are grown not only as Frigo plants, but also as fresh plants.

Turkey is constantly improving gardening practices for strawberry production. For example, sorting berries at harvest time is now common practice. Great efforts are now being made to minimize the time between harvesting and pre-cooling. Pre-cooling is carried out almost exclusively with compressed air. The cold chain is never broken during transport, although a modified atmosphere is not used. Protected cultivation is becoming more common to improve the quality of fruit. Efforts are underway to teach growers that Spanish tunnels are better suited for strawberry production than single block tunnels due to better air movement.

The short production season (April and May) is the main obstacle to further expansion of strawberry production in Turkey. There are several attempts to overcome this problem. These include: using open and protected growing to spread the harvest time, using both Frigo and fresh planting material, and planting a range of varieties in different growing regions. Indeed, the demand for strawberries after the end of the main production period remains significant. However, the hot temperatures in early summer make it difficult to organize production in the current growing locations. Therefore, the subsequent development of strawberry production in Turkey is expected to take place in continental, high-altitude areas, possibly using daytime neutral crops.

Fresh plants are becoming more and more popular in the Mediterranean basin. However, it is difficult to breed high quality fresh plants ready to plant at the right time (September) due to the lack of adequate production space for nurseries in the immediate vicinity of production areas. For this reason, it is expected that Frigo plants will continue to be used in Turkish strawberry production.

The importance of soil pathogens is increasing. The main problem is the lack of an effective fumigant. Solarisation, rotations, and some chemical treatments are used, but none of them solve the problem.

Therefore, it is expected that landless crops will become more widespread as it is one of the ways to fight diseases carried in the soil. The soilless crop is usually grown in taller structures than tunnels, commonly used in Turkey, in pots and using fresh planting material. The price of fertilizers and drip irrigation systems is constantly growing. In addition, labor is becoming less available and more expensive. The competitiveness of strawberry production is under pressure. As a result, there has been a shift from small-scale family-owned production to large-scale production by large manufacturers and companies. This trend is expected to continue in the future.

It usually takes about a week to transport strawberries from Turkish farms to the markets of the main exporter - Russia. The main problem faced by exports is the distance between production facilities and the market. This results in fruit loss from rotting and a decrease in fruit quality. In addition, there is competition in both local and international markets in other countries that also produce high quality strawberries..

Conclusions. The solution to the identified problems and technological obstacles to further expand the production of Turkish strawberries, in our opinion, lies in the intensification of the participation of Turkish regions in European smart specialization, in particular, joining the S3P Agri-Food thematic platform. Participation in smart specialization will allow access to broader networks of business and knowledge; obtain the necessary research potential; enter other markets; expand business opportunities; to combine the complementary strengths of partner regions; and join global value chains.

Given the current challenges and challenges, it should be especially beneficial for Turkish strawberry growers to join the High Technology Farming. Thematic S3 Agri-Food Platform. - Access: https://s3platform.jrc.ec.europa.eu/high-tech-farming) (Thematic area 2 of the S3P Agri-Food thematic platform), focusing on the introduction of advanced agricultural technologies, new solutions for pest detection and disease control, protected cultivation, etc.

6.5. Cheese market analysis (Bulgaria)

The problems of European integration are closely related to the development of the economy and, in particular, commodity markets, in the combination of which all the countries of the Black Sea basin are jointly

interested. This also applies to the cheese market, in which Bulgaria, as an EU member, should be an effective player and strengthen the development trends of the internal cheese market and the possibility of cross-border trade in this useful product.

The country's milk and yellow cheese market is not covered by accurate statistics. According to the latest available data from the Ministry of Agriculture and Food of Bulgaria, in 2015, 51 thousand tons of white pickled cheese and 20 thousand tons of yellow cheese were produced. With an average price of 8 levs per kilogram of the first product and 10 levs for the second, assuming that the whole quantity remains in Bulgaria, this represents an annual market of over 400 million leva for white pickled cheese and over 200 million leva for yellow cheese.

Types of Bulgarian cheeses. Bulgaria produces:

1) Bulgarian feta (Sirene)

Bulgarian feta, or siren, is a salty hard cheese with a grainy structure, usually made from cow's milk (although sheep's, goat's and buffalo's milk is also sometimes used). Bulgarians add it to most of their traditional pastries, vegetable stews and salads. Feta cheese is one of the main ingredients of the national Shopska salad (cucumbers, baked red peppers, tomatoes and onions are added). Unlike the Greek Feta, which is creamy, the Bulgarian crumbles.

2) Sheep's milk cheese

The sheep's milk version of Sirene has a heavier, spicier and usually saltier taste, so it is not as popular as cow's cheese. In restaurants, it should be clearly stated that you want a dish with sheep's milk cheese. It is served with a salad of fresh vegetables.

3) Yellow cheese (yellow cheese)

A popular type of cheese, which is present in many Bulgarian dishes. It is yellow and medium hard, similar to Dutch Gouda cheese or Swiss Emmental (without holes). It melts when baked. It is usually added at the end of the cooking process.

4) Green cheese

It is produced in only one Bulgarian village called Cherni Vit. The village is located on Mount Stara Planina and its inhabitants have been shepherds for centuries. Green cheese is covered with blue-green mold and has a very rich aroma.

The production of cheese requires raw materials, which are milk. In Bulgaria, the main share of milk produced is cow's milk - 1100 million liters.

Buffaloes, sheep and goats give 150 million liters. In total in Bulgaria 290000 dairy cows, 1200000 sheep, 6800 buffaloes, 273000 goats Data are taken from sites of the National statistical institute of Bulgaria and Eurostat. (URL: http://www.nsi.bg/bg www.eurostat.com).

In Bulgaria, farms with 1-9 head of cattle predominate, and most of the milk they produce is processed on the farm. There is a decrease in the number of cows and rising milk prices.

Due to the introduction of stricter requirements for hygiene and quality of products supplied by farms, a transition period has begun for farms, which is characterized by adaptation to new standards. However, there is a tendency to reduce the number of small farms. At the same time, the size increases, the competitiveness of the big farms which have passed control increases (USDA GAIN: Bulgaria Dairy Sector Update, 06.12.2013 URL: http://www.thedairysite.com/reports/?id=3170).

There are 250 processing companies in the Bulgarian dairy industry. At the same time, there are 37,000 farms in Bulgaria, but only 3,560 of them meet the requirements of standardization. A rural development program for 2014-2020 has been developed, which provides for the infusion of more substantial resources to finance young farmers (Rural Development Program. URL: http://prsr.government.bg/).

The share of the largest farms with more than 100 cows in the total number is 15 percent, in total - 43,500 cows. The share of large farms, with 19-100 cows, is 51 percent, totaling 147,900 cows. Large farms consistently show high growth rates. The share of small and medium-sized farms, with a total of 1-19 cows, is 34 percent, totaling 98600, and is declining.

In 2017, 601 million liters of raw milk were processed at 220 milk processing enterprises in the country. The main share (93.5%) is occupied by cow's milk, which is 10.4% more than in 2016, followed by sheep's milk with a share of 4.5% (+ 23.5%). Goat's milk accounted for 1.5% of the total amount of processed quantities and decreased by 9.6% compared to the previous year. According to the Department of Agrostatistics of the Ministry of Agriculture of Bulgaria, there was also a decrease in processed buffalo milk (0,5%).

Production of most dairy products continues to increase, with the most significant increase in white cheese production by 30 percent. Production of non-cow cheeses made from goat's and buffalo's milk increased by 40 percent due to constant local and export demand, although production remains small relative to cow's milk, only 3,200 tons. Production

of yellow cheese from cow's milk decreased by 9 percent, and from other types of milk - increased by an average of 27 percent (Ministry of Agriculture and Food of the Republic of Bulgaria. URL: http://www.mzh.government.bg/).

Leading cheese producers in Bulgaria (Progressive. Focus on yogurt: Taste for health. URL: http://www.cmg-bg.com/htdocs/data/archive/2009-04/focus_food.pdf):

- BCC Handel, Mlekimex - manufacturer of the brand "Elena". Product groups: Iron; Cheese; Yogurt; Bifidomolok drink;
- Bor Chvor - manufacturer of brands "Bor-Chvor", "Culture", "Elsie". Product groups: Cheese; Sour cream; Yogurt; Iron;
- Fama - manufacturer of brands "Rosa", "Avita". Product groups: Yogurt; Sour cream; Iron; Cheese; Cheese.

Over the past three years, sales of packaged cheese increased in 2016 from 60 million to almost 80 million levs per year. Sales of packaged yellow cheese are estimated, as well as sales of packaged cheese, at about 80 million levs per year.

Sales of non-fixed weight cheese prevailed and accounted for 91.3% of the market in 2016 and 83.1% in value, but there is a downward trend compared to previous years. At the same time, purchases of cheese with a fixed weight increased by 1 percent compared to 2014 and reached 8.7% market share by volume, and their share in value is 16.9%.

The best-selling cheese is cow's milk cheese - 70.9% of sales and 81.2% of the value in 2016 and there is an increasing trend compared to previous years.

Over the past three years, packaged white brined cheese has accounted for about 80% of the market share and about 70% in value. The share of yellow cheese has also increased since 2016, both in volume (18.1%) and in value (27.2%).

The price / quality ratio of Bulgarian cheeses allows you to enter the markets of the Black Sea basin and compete on them.

The average price per kilogram of white brine cheese in the Bulgarian market as a whole is slowly growing - from BGN 5.95 to BGN 6.15 per kg (Table 6.17). It was the highest in hypermarkets - BGN 7.21 per kg, and the lowest - in small shops (up to 40 sq. M) - BGN 5.41 per kg.

The most expensive cheese - in the capital Sofia - BGN 8.17 per kg, and the cheapest - in the region of Moesia - BGN 5.48 per kg.

Table 6.17

Average prices for white brined cheese, lions per kg

	2014	2015	2016
By types of points of sale			
In general, the Bulgarian market	5,95	5,98	6,15
Hypermarkets (over 301 sq. M)	6,93	6,99	7,21
Medium-sized shops (41-300 sq. M.)	5,65	5,53	5,71
Small shops (up to 40 sq. M.)	5,39	5,44	5,41
By regions			
Sofia	8,00	7,93	8,17
Moesia	5,37	5,39	5,48
Strandzha / Dobrudzha	5,65	5,79	5,83
Thrace	5,67	5,66	5,95

Source: (Compiled according to data Nielsen Bulgaria, 2017)

The most popular on the market is yellow cheese. Its average price on the market as a whole decreases from BGN 17.80 per kg in 2014 to BGN 17.14 per kg in 2016 (Table 6.18). The highest average price of this cheese in hypermarkets is BGN 17.06 per kg, but Table 6.12 shows that there is a downward trend over three years. The lowest price - in small shops (up to 40 sq. M) - BGN 16.02 per kg.

The highest price among the regions of Bulgaria was in Sofia (BGN 18.10 per kg), and the lowest - in the region of Moesia (BGN 15.95 per kg).

Table 6.18

Average prices for packaged cheese Kashkaval, lions per kg

	2014	2015	2016
By types of points of sale			
In general, the Bulgarian market	17,80	17,76	17,14
Hypermarkets (over 301 sq. M)	17,36	17,55	17,06
Medium-sized shops (41-300 sq. M.)	19,96	19,01	17,82
Small shops (up to 40 sq. M.)	17,78	17,07	16,02
By regions			
Sofia	18,39	18,36	18,10
Moesia	16,82	16,75	15,95
Strandzha / Dobrudzha	17,35	17,75	16,86
Thrace	17,17	16,75	16,05

Source: (Складено за даними Nielsen Bulgaria, 2017)

Experts of the Center for Agropolitical Analysis of the Institute of Agrarian Economics predict that in 2020 the domestic consumption of white brine in

Bulgaria may increase slightly, but the maximum it can reach is 18 thousand tons per year and stabilize at this level.

The rest of white cheese production can be exported to the most promising market in the Black Sea basin.

In Bulgaria, there is a tendency to reduce the number of small farms in favor of large ones due to the tightening of hygiene and milk quality requirements. At present, this has led to a decrease in milk supplies to the processing industry, but the quality of raw materials coming for processing has increased significantly.

For Bulgarian fermented milk products, control measures have also been strengthened for raw materials coming for processing, and a ban on certain additives has been introduced. The Bulgarian Institute for Standardization has narrowed the scope to the minimum and maximum content of a number of product components. This means that companies that are not able to strictly control the composition and proportions, are forced to tolerate a number of restrictions and reduce the status of their products, buy new equipment or leave the market.

Bulgarian standards, compared to EU standards, are much stricter (Tables 6.19, 6.20), so Bulgarian cheeses in terms of price / quality is a very promising product in the markets of the Black Sea basin.

Table 6.19

Comparative table of requirements for the production of brine cheeses in the Bulgarian standard and the EU standard

CHARACTERISTICS	BDS 15: 2010 "BULGARIAN WHITE BRUSHED CHEESE "	CODEX GROUP STANDARDS 208-2001FOR CHEESES IN BRINE
Type of milk	Cow, sheep, goat, buffalo; Mixed of the above	-
Bacterial cultures	Lactobacillus lactis subsp. lactis та Lactobacillus casei: Lactobacillus delbrueckii, subsp. bulgaricus та Streptococcus thermophilus	Bacterial cultures harmless lactic acid and other flavorings harmless bacteria
Dry matter content,%	46,0 – 48,0 %	40,0 – 52,0 %

Milk fat content,% in dry matter	44,0 – 48,0 %	min 40,0 %
Titratable acidity	200 - 270 °T	-
Allowed components	Yeasts, abomasum enzyme, Salt for food industry, Drinking water	Yeasts, Harmless enzymes, chloride sodium, drinking water, Spices typical of Cheese
Allowed additives	Calcium chloride E 509, Citric acid E 330	Glucono-delta-lactone (GDL) E575 - regulator acidity, lactic acid
Preservatives, stabilizers, emulsifiers	Forbidden	-
Maturity (proportion soluble protein in total protein),%	min 14-16	-

Table 6.20

Comparative table of requirements for the production of yellow cheeses in the Bulgarian standard and the EU standard

CHARACTERISTICS	BDS 14: 2010 "BULGARIAN CHEESE"	CODEX STAN 263-1966 FOR CHEDDAR
Type of milk	Cow, sheep, goat; Mixed of the above	Cow's, buffalo's milk
Bacterial cultures	Lactobacillus delbrueckii, subsp. bulgaricus и Streptococcus thermophilus, Lactobacillus helveticus	Bacterial cultures harmless lactic acid and other flavorings harmless bacteria
Dry matter content, %	56,0 – 58,0%	49,0 – 66,0%
Milk fat content,% in dry matter	44,0 – 48,0 %	22,0 – 60,0%
Allowed components	Symbiotic bacterial cultures (yeasts); Abomasal enzyme of animal or microbiological origin; Salt	Yeasts, Harmless enzymes, Chloride sodium, drinking water,

	food; drinking water	
Allowed additives	Calcium chloride E509	Dyes; preservatives; acidity regulators; Substances, preventing sticking
Preservatives, stabilizers, emulsifiers	Forbidden	-
Degree of maturity (share dissolved protein in total protein),%	min 20-22	-

The Bulgarian Ministry of Agriculture and Food has given export policy to the leading cheese producers, so their isolated actions in foreign markets have been unsuccessful. It should be recommended to strengthen incentives for the development of foreign cheese markets, especially in the Black Sea basin.

6.6. Honey market analysis (Ukraine)

Among the world commodity markets a special role belongs to the agricultural market, which is motivated, on the one hand, by the strategically important importance of agriculture in achieving food security and, on the other hand, the uneven development of agricultural production and imbalance of supply and demand for agri-food products. different countries and regions of the world. The honey market also has its own specifics.

Paying attention to current trends in technical and technological development, human society is highly dependent on bees, especially on the results of their activities - pollination of most crops, honey and other beekeeping products. The main products produced by honey bees are honey and wax. They also produce propolis, pollen, perga, and royal jelly, which are irreplaceable in terms of medicinal and dietary properties and are widely used in both the food and pharmaceutical industries. We must not forget the importance of the beekeeping industry for medicine, which uses bee venom. Cross-pollination increases the yield of such crops, improves their quality, increases the content of protein, carbohydrates and vitamins. At the same time, today Ukraine is one of the world's leading countries in

beekeeping, which produces products for export. This industry is promising for domestic exporters.

Ukraine has all the conditions for the development of the beekeeping industry. Large areas of honey lands, favorable climatic conditions, thousands of years of experience in beekeeping, strong potential indicate the possibility of highly productive operation of the industry.

Beekeeping itself (honey, pollen, royal jelly, etc.) can provide invaluable help in increasing food production. In addition, bees are the main pollination plant. Cross-pollination significantly increases the yield of entomophilous crops, improves the quality of seeds and fruits, increases the content of protein, carbohydrates and vitamins. Unfortunately, this reserve is not sufficiently quantified.

Beekeeping is one of the oldest human occupations. In Ukraine, it originated more than 2.5 thousand years ago. Ukrainian beekeeping received the greatest development during the period of beekeeping. At that time, beekeeping was one of the main national industries that did not require capital investment and did not require large expenditures of living labor, but brought a good income, thanks to the richness of nature with honey and widespread demand for bee products. At that time, the technology of production of alternative substitutes for beekeeping products, such as sugar, paraffin, etc., had not yet been invented. Honey and wax were one of the main sources of wealth, they were widely exported, they took tribute, paid taxes, gifted foreign monarchs and ambassadors. In addition to exporting bee products, our ancestors consumed a lot and used it themselves.

Charitable policy in the field of beekeeping was carried out during the Soviet era. At the beginning of 1941, the number of bee colonies in Ukraine exceeded 1503 thousand. During the Second World War, more than 90% of apiaries were destroyed. Further, there was a gradual increase in capacity and in early 1990 in Ukraine the number of bee families reached 3.5 million. Beekeeping was engaged in 10.3 thousand state farms and collective farms, or 92% of their total number. At this time there was a developed network of procurement organizations. In addition to honey production, beekeepers, in order to increase the profitability of apiaries, were actively engaged in the production of wax, propolis, pollen, royal jelly, bee venom and more. According to statistics for 1986-1990, the average annual production was: wax - 1141 tons, apricots - 605 kg, pollen - 40 kg, royal jelly - 52 kg, propolis

- 1443 kg, bee venom - 640 g, queen bees - 692 thousand pcs. and 72 thousand bee packages.

Thus, beekeeping has long been a special and extraordinary branch of agriculture in Ukraine. The basis of beekeeping is the breeding of honey bees, which are organized in bee colonies and are a kind of biological units. Beekeeping provides the following two main types of products: honey and wax, as well as additional: bee packages, queen bees, pollen, royal jelly and propolis. But the main product produced by bees is pollination of crops. As a result of pollination by bees of sunflower, buckwheat, fruit and vegetable, vegetable and many other cultures their productivity increases by 20-30%. Thus, the cost of the formed additional products throughout Ukraine significantly exceeds the cost of honey and other products.

The main products of beekeeping, the production of which is widespread in Ukraine, are honey and wax, but the production volumes indicate that beekeeping in our country is focused on the production of honey. The main reason for this situation should be considered the lack of demand for wax, low prices, the emergence of alternatives for consumers of wax, lack of exports.

Beekeeping products, namely honey, wax, bee pollen, perga, royal jelly, bee venom, propolis, are widely used in various sectors of the economy. They are able to meet the needs of consumers in quality and healthy food. Honey is a valuable nutritious and dietary among these products. Recently, the domestic industry focuses on natural raw materials containing biologically active substances of natural origin, so the use of honey is very diverse. Natural bee honey, as a raw material, is used in the food industry, in the manufacture of confectionery, various beverages, pharmaceuticals, cosmetics, dairy products. Honey has become popular in the diet of the population to maintain a healthy lifestyle and in the fight against obesity.

According to the State Statistics Service, Ukrainians eat about 30 kg of sugar a year and only 0.6-0.65 kg of honey. The caloric content of honey is 315-335, sugar - 400 kcal per 100 g. The main source of calories in honey is fructose and glucose, which is up to 80%. As the fructose content of honey increases, it will be sweeter and the caloric content will be lower (Table 6.21). Honey fructose is 1.7 times sweeter than sucrose.

Table 6.21

The degree of sweetness of common varieties of honey

Honey	Sugar content	The

	fructose	glucose	sucrose	maltose	degree of sweetness
Lime	32,8-41,5	51,0-55,0	-	5,0-7,0	113
Acacia	47,0-58,0	39,0-44,0	0,5-0,9	2,5-5,7	109-113
Sunflower	37,5-44,1	52,0-57,0	0,3-0,8	0,8-2,3	114-116
Sainfoin	38,0-44,0	48,0-57,0	-	1,5-3,7	110-115

Despite the similar caloric content of honey and sugar, these products are completely different. In terms of nutrition, honey is 4.7 times higher than cow's milk, beef is 2.4 times higher than wheat, and wheat bread is 1.5 times higher.

Today, Ukraine ranks fifth in the world in terms of honey production and is a leader in Europe. In recent years, the world's main producers of honey are China - 27%, Ukraine, Argentina, USA and Russia produce 4% each, India and Mexico - 3% each. Significantly increased honey production in Turkey - by 18%, the United States - by 14%, Iran - by 13%, Argentina - by 12%, China - by 10%, Russia - by 7%, India - by 2%.

Most countries in the world cannot provide domestic consumption of honey with their own production due to the limited potential of honey collection. Another problematic issue is that there is a shortage of various sweeteners in the world. Therefore, the demand for honey in these countries exceeds the supply. Ukraine has all the prerequisites for both increasing production and increasing the export potential of the beekeeping industry.

It is important that from all existing types of beekeeping products, the following data were available for research: on the production and sale of honey, export-import operations, the presence of bee families. This is what causes us to focus on the study of organizational and economic conditions of the honey market as the main type of beekeeping products. According to the analysis, Ukraine is among the top five honey-producing countries in the world, where an average of 1.6 million tons were produced annually. The dynamics of world honey production shows a tendency to increase it (over the past 10 years in 1 , 2 times), indicating an increase in demand for honey worldwide.

Honey production in Ukraine

Personal subsidiary farms, agricultural enterprises, as well as farms are engaged in the production of beekeeping products. Analysis of the production of bee products by categories of farms showed the presence of

different trends. From 1990 to 2000, personal production of honey in personal subsidiary farms increased from 40 to 48.9 thousand tons, or 22.1%, and in agricultural enterprises - decreased from 11.3 to 4 thousand tons, or almost three times.

The result of a sharp decline in honey production in agricultural enterprises was a reduction in their number. Thus, in 1990 they produced 22.2% of all honey produced, and in 2000 this figure decreased to 7.6%, or three times. During this period, the share of personal farms in the production of these products increased from 77.8 to 92.4%, reaching almost 98 percent recently. It is characteristic that such a pattern occurred in all regions of Ukraine.

During the period 2005-2018, the volume of honey produced stabilized at just over 70 thousand tons, although in some years (2014-2017) production decreased, and in 2016 amounted to 59,294 tons. (Table 6.22). The largest decrease was observed in agricultural enterprises, while in farms, despite a significant decrease in the number of bee colonies (by 47%), there was an increase in honey production by 54.7%.

Table 6.22

Dynamics of honey production in agriculture of Ukraine, tons

Categories of farms	**2005 p.**	**2010 p.**	**2012 p.**	**2013 p.**	**2014 p.**
Agricultural enterprises	2461	1620	1417	1323	982
including farms	117	215	162	172	138
Personal peasant farms	69001	69253	68717	72390	65539
Total	71462	70873	70134	73713	66521

Continuation of Table 2

Categories of farms	2015 p.	2016 p.	2017 p.	2018 p.	Change in 2018 to 2005 years, %
Agricultural enterprises	918	901	862	889	36,1
including farms	120	124	132	181	154,7
Personal peasant farms	62697	58269	65237	70209	101,7
Total	63615	59294	66231	71279	99,74

The supply of beekeeping products is influenced, in addition to the above demand, by two important factors: the number of bee colonies and

the level of their productivity. The first refers to the extensive factor of increasing production, and the second - to the intensive.

From 1990 to 1995, the number of bee families increased from 3131.5 to 3965.2 thousand families (by 833.7 thousand). Since 1995, the number of bee colonies has been rapidly declining every year, averaging more than 180,000 bee colonies per year. During 1995-2000, their number decreased by 22% and amounted to 2856.5 thousand bee colonies. Such a significant decrease in the number of bee families adversely affected both the volume of bee production and the productivity of entomophytic crops. The density of bee colonies per 100 hectares of agricultural land in Ukraine (2000) was 4.7 bee colonies, while in 1990 there were 5.2 colonies, or 9.7% more. The maximum for the period 1990-2000 was this figure in 1994 - 7 bee colonies per 100 hectares of agricultural land. For comparison, it should be noted that in the European Union this figure is 4, which is twice less than the norm.

The distribution of the number of bee colonies by categories of farms shows that in 2000 in Ukraine 86.4% of their total number were kept in personal subsidiary farms of the population. In 2018, there were about 2.5 million in the private sector, or almost every second yard has 1 bee family.

Honey production in Ukraine is usually concentrated in households - 98% and only 2% is produced by registered businesses, so there is a big problem in the market in calculating the number of producers, the amount of honey produced and its sources of origin. Official statistics also do not always provide accurate figures. According to the State Statistics Committee of Ukraine, there are about 3 million bee families in all categories of farms (Table 6.23).

Analyzing the statistical data, we see that in agricultural enterprises there is a significant decrease in the number of bee colonies - by 48.2%, in households there is also a decrease in the number of families - by 11.7%. Such negative trends are explained by the fact that there is a constant poisoning of bees with pesticides, or chemical toxicosis. Thus, the volume of honey production is directly affected by the number of bee colonies, which has decreased in recent years, and our country ranks only 8th in this ranking, with an average of 3 million families in 2007-2016, which is 3, 6% of the total number of bee families in the world. In the first place in this ranking are India (11337 thousand families), then - China (8939) and Turkey (6278 thousand families).

Table 6.23

Dynamics of the number of bee families in Ukraine in 2012-2018.

Indicator	Presence of bee families in agricultural enterprises, thousand families	Specific weight, %	The presence of bee colonies in households, thousands of families	Specific weight, %	Total
2012	83,9	2,9	2807,0	97,1	2890,9
2013	77,4	2,6	2858,1	97,4	2935,5
2014	71,0	2,4	2914,8	97,6	2985,8
2015	59,0	2,2	2640,6	97,8	2699,6
2016	49,9	1,9	2540,1	98,1	2590,0
2017	47,1	1,9	2440	98,1	2487,1
2018	43,5	1,8	2480,2	98,2	2523,7
2018/2012 %	51,8	-	88,3	-	101,4

At the beginning of 2005, there were about 3379 million bee colonies in all categories of Ukrainian farms, while in 2016 there were 2590 million, which indicates a significant decrease in the number of colonies - by 23.2%. If we consider in terms of categories of farms, the decrease was observed both in agricultural enterprises (by 74%) and in private farms (by 24.4%). The number of bee families in households in 2018, compared to 2012, decreased by 367.2 thousand, but compared to the previous year, on the contrary, increased - by 36.6 thousand.

Analyzing the dynamics of honey production since 2005, we see an almost annual downward trend, the same situation with regard to bee colonies, except in 2013, when there was an increase in honey production and the number of bee colonies. Although the productivity of honey production increases, it cannot compensate for the rapid decrease in the number of bee colonies and, consequently, the number of honey produced, so it is necessary to pay attention to the number of bee colonies and encourage those who keep them to increase their number. their number can significantly affect Ukraine's competitiveness in this area and partially displace our producers from world markets.

It should be noted a positive trend of significant increase in productivity of bee colonies. For example, in 1990 the average collection of honey from one bee colony was 14.5 kg of honey, in 2000 - 17.3, in 2005 - 21.2, in 2016 this figure was 23.8 kg. The highest productivity over the last

10 years increased in farms - 100%, agricultural enterprises - 43.3 and in private farms - 10%. This difference in productivity growth is associated with significant capital expenditures for beekeeping. It should be noted that the average productivity of bee colonies in the world is 12-15 kg of honey. The growth of honey productivity of domestic apiaries occurs almost in the complete absence of state support and regional authorities. The main factors of success of domestic beekeepers are favorable natural and climatic conditions and own efforts of apiary owners.

According to experts, the productivity of bee colonies is most influenced by the fodder (honey) base, as well as advanced methods of keeping bees. Productivity is also formed under the influence of the interaction of various seasonal phenomena in biology and hereditary properties of the bee family and the influence of environmental conditions on it. The productivity reserve of 1 bee colony is 1.5 times or more higher than the existing level.

Ukraine in world honey production

Ukraine produces 4-5% of the world's honey. The potential for honey production, based on the biological stock of nectar-bearing plants, is about 140 thousand tons of honey, which is almost twice the current level.

For the period from 2013 to 2016, statistics declare a decline in honey production - a decrease of 14,419 tons, or 19.6%. But in 2018, farms of all categories produced 5048 tons, or 7.6% more than in the previous year.

As mentioned above, beekeeping in Ukraine is practiced mainly at the amateur level. Therefore, up to 98% of honey is produced in households and only 2% - in agricultural enterprises. We have one of the world's largest indicators of the number of beekeepers, about 400 thousand people. However, production efficiency is very low. The productivity of bee colonies ranges from 12 kg to 20 kg, while in Canada it reaches 50 kg of honey per year. This significant difference is due to the fact that honey production in Canada is at the industrial level.

The main producers of honey are 11 regions, which provide production up to 70-75% - Vinnytsia, Zhytomyr, Khmelnytsky, Mykolaiv, Dnipropetrovsk, Zaporizhia, Poltava and Kirovohrad, Sumy, Kharkiv and Donetsk (Fig. 6.18).

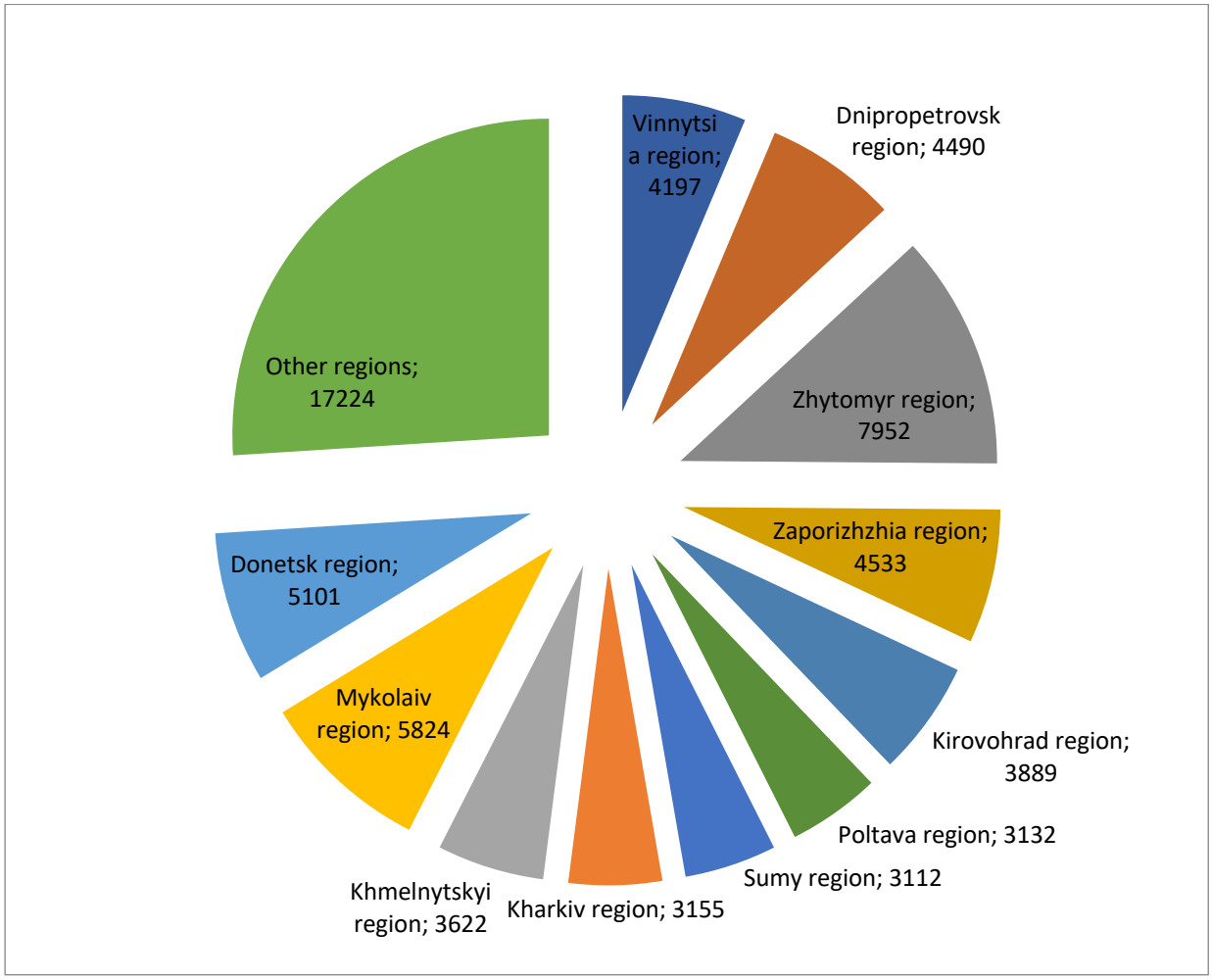

Figure 6.18. Honey production by regions of Ukraine, tons

According to statistics in 2017, the most honey was produced in Zhytomyr (7952 tons) and Mykolaiv (5824 tons) regions, which is almost 21% of gross production.

The regional structure of honey production is generally characterized by average indicators for most regions, but the highest production volumes in 2018 were set in Zhytomyr (7834 tons), Khmelnytsky (5961 tons), Mykolayiv (5418 tons) and Donetsk (5265 tons), the lowest in Zakarpattia (1017 tons), Rivne (1006 tons), Chernivtsi (883 tons) and Volyn (318 tons).

The average global consumption of honey, according to the latest data, is 0.22 kg, while in the EU - 0.65 kg per person per year, the United States - 0.76 kg. Ukraine produces the largest amount of honey per capita in Ukraine - 1.5 kg, but consumes about 0.62 kg of honey per year. The largest consumption is in Slovenia - 1.6 kg, Greece - 1.55 kg, in Switzerland

this figure is 1.3 kg. Since 2001, the average annual consumption of honey by Ukrainians has been gradually increasing until 2008, when the highest rate was recorded - 1.55 kg. Then, with each passing year, the dynamics gradually declined and in 2018 honey consumption decreased to 0.62 kg (Fig. 6.19).

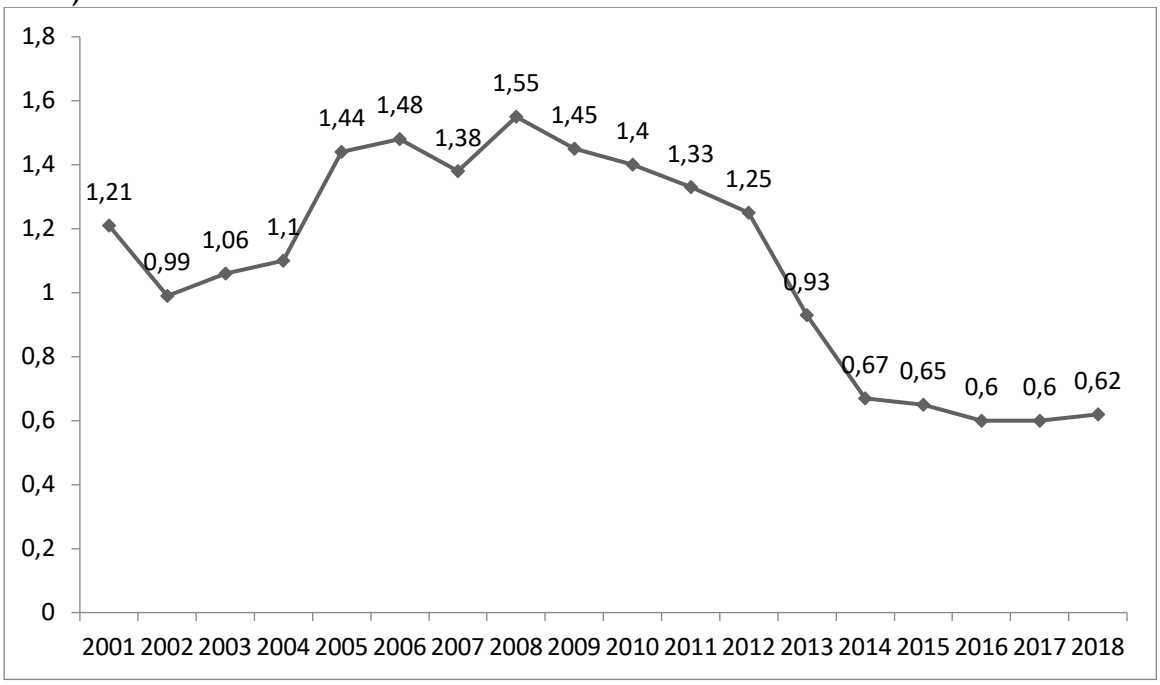

Fig. 6.19 Average annual consumption of honey in Ukraine, kg

The domestic market of honey in Ukraine is oversaturated, and per capita consumption is low, so only 25-30 thousand tons are used, everything else is exported. Domestic consumption of honey has decreased due to the fact that Ukrainians are in no hurry to pay a high price for it. After all, if the price of Ukrainian honey in the world has hardly changed and is quite low (within $ 2), then in the domestic market the hryvnia has grown almost 3 times. Since honey is not an essential product, Ukrainians try to do without it. Therefore, the demand in the domestic market is low, but high - in the foreign, where the advantage of our honey is its low price, which is slightly cheaper than Chinese, and quality that meets the requirements of the importing country.

The world honey market is one of the most globalized food markets in the world, which is why there is a high level of competition in this market. In order to integrate into this market and adapt to the conditions of its functioning and to carry out effective foreign economic activity, it is

necessary to provide information to entities on competitors, volume, needs of the market and its conjuncture. The main factors of a high level of competition are unsatisfied global demand for this product and rising prices.

The volume of world trade in honey has grown significantly in recent years, due to increased demand for products - over the past 5 years more by 67.1 thousand tons, or 10.8%. The largest volumes of honey trade were in 2017 - 709.4 thousand tons, which is almost 18% more than in 2014 (Fig. 6.20). However, in 2018, the volume of world trade in honey decreased by 3% - to 689 thousand tons and 7% in value terms, due to lower prices for products.

Fig. 6.20. Dynamics of world honey exports

Every year in the world, as a result of deteriorating environmental conditions and poisoning of bees by means of plant treatment, a significant number of bees die, in 2018 alone in Ukraine about 45 thousand bee families died, which led to significant losses. As a result, both honey production and exports decreased significantly. Until 2018, our country ranked third among the world's exporters of these sweet products, within 10%. However, the supply of honey to the foreign market decreased by 27%, and the share of total exports decreased to 7%. Ukraine has left the top three world exporters, giving way to Mexico and India.

The TOP-7 largest exporters of honey in the world, according to 2018, include countries such as China, Argentina, India, Mexico, Ukraine, Vietnam and Brazil (Fig. 6.21).

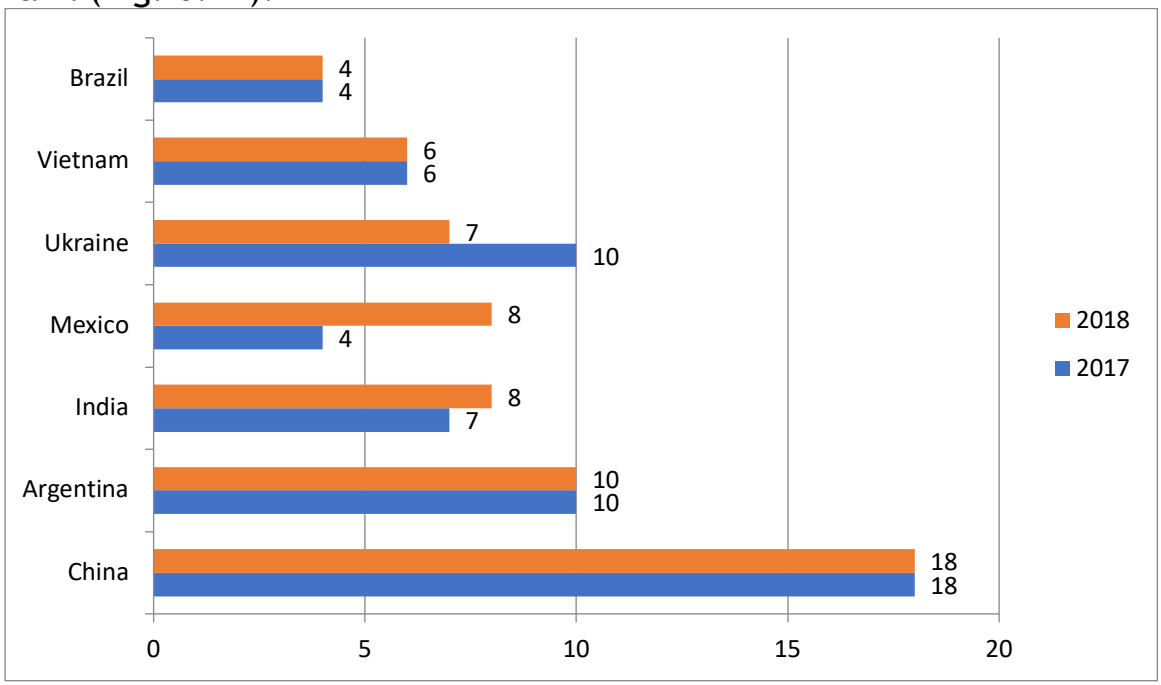

Fig. 6.21 Share of major world exporters of honey, %

China (18%) ranks first among world exporters, Argentina (10%) second, Ukraine (7%) yielded third place to India and Mexico, which increased their share in world exports to 8%. In Ukraine, with a small margin (1%) is Vietnam (export share is 6%).

The largest honey producer is still China, whose average annual production was 450.7 thousand tons, which is almost five times higher than the average annual production of Turkey (92.5 thousand tons) or Ukraine (70.3 thousand tons). In recent years until 2016, Russia and Argentina lost their positions in the ranking. But such countries as China, Turkey, Ukraine improved their positions. In China, over the analyzed period, honey production increased by 90% or by 63 thousand tons, in Turkey, respectively, by almost 26% or by 31 thousand tons. In Ukraine, gross production decreased by 12% or by 17 thousand tons.

Exports play an important role in the functioning of the Ukrainian honey market, tangible changes in which took place in 2012-2013. Domestic exporters achieved the greatest success based on the results of 2017, when at the peak of growth, almost 68 thousand tons of honey worth about 134

million US dollars were sold in foreign markets (Table 6.24). On the other hand, during the analyzed period, the export price of domestic honey decreased, since it was influenced by external and internal factors. Thus, the global market is characterized by an increase in supply volumes, and one has to compete more not in quality, but in price.

Table 6.24

Export of honey from Ukraine

Year	Volume, t	Cost, million dollars USA	Price, USD USA / t
2011	9874	28	2818
2012	13338	31	2333
2013	21674	53	2444
2014	36336	93	2565
2015	36013	84	2332
2016	56988	97	1707
2017	67848	134	1972
2018	49366	98	1985

The main importers of Ukrainian honey are the countries of the European Union, which in 2018 accounted for about 80% of exports in kind. The largest volumes of exports were made to Germany (12.3 thousand tons), Poland (8.7 thousand tons), the United States (7.1 thousand tons), Belgium (4.2 thousand tons) and Lithuania (3, 6 thousand tons). At the same time, Ukraine has a duty-free quota for the import of honey to the EU. In 2019, the main quota of 5,600 tons and an additional preferential quota of 2,500 tons were fully used, access to which opened on October 1, 2019. Honey quotas are closed by Ukrainian producers as one of the first, so in January 2020 the main annual quota for honey (5800 tons) has already been selected by domestic exporters. And the maximum basic quota will be for Ukraine in 2021 - 6000 tons. In the framework of cooperation with the EU (Free Trade Area) Ukraine received a tariff quota for honey at a rate of 0% of 5 thousand tons. At the same time 28.06.2017 EU Council approved the proposal Of the European Parliament on increasing quotas for Ukraine. In particular, the quota for honey was increased by 2.5 thousand tons. The quota is distributed on a first-come, first-served basis among EUR.1 certificate holders. The duty rate above the quota is 17.3%. In recent years, honey exports to the EU have increased more than 8.4 times. Compared to 2011, the volume of honey exports to the EU increased from 5761 to 48315

tons. At the same time, under the Association Agreement, Ukraine has committed itself to introduce European requirements for honey, which are set out in Council Directive 2001/110 / EU. Ukraine should do this by the end of 2019. With the increase in honey exports to Europe, Ukraine began to export beeswax. Only since 2015, after the introduction of Ukraine's free trade zone with the EU, beeswax has become a commodity export item, and Ukraine has gradually begun to increase its exports.

As for the import of honey, it was significantly lower than the export for the analyzed period. For example, in 2018, our country imported only 21 tons of honey. But still it is necessary to tell about dangerous processes in the domestic import market of honey: despite small general volumes, import of honey for the last six years increased 59 times in quantitative terms and made 118 tons in 2015 that testifies to negative tendencies which. are found in the import of significantly cheaper and low-quality honey to Ukraine and its use in the processing industry.

Analyzing official statistics, exports from Ukraine in 2016 and 2017 were higher than its production. This situation has several explanations. First, it is very difficult to establish the amount of honey actually produced, because the vast majority of producers are small and unregistered. According to information from market participants themselves, today Ukraine produces a total of 80 to 100 thousand tons of honey. Secondly, depending on the market situation, transitional stocks of products of different sizes are formed, which can amount to 40 thousand tons and remain in storage at the manufacturers after the end of the season. Third, at the present stage of development, export activity is crucial, which determines both the volume of supplies and the range of purchase prices. Therefore, it is very difficult to estimate the true capacity of the domestic market, because for many objective reasons there is a relatively high "shadowing".

Analyzing the changes in the volume of honey exports (Table 4), we see that Ukraine has a positive stable tendency to increase. During the period from 2005 to 2015, its volume increased 9.5 times, while the total cost increased 16 times. Exports of Ukrainian honey have been growing rapidly in recent years, despite the fact that the duty-free quota for honey exports to the EU until 2017 was 5,000 tons. The rest of the honey is exported, paying a duty of 17.3%. It should be noted that the volume of honey exports from Ukraine in 2016 amounted to 54.5 thousand tons, which

is 33% more than in 2015. The main buyers of Ukrainian honey during the study period were Germany, Poland, the United States and Turkey.

Examining the structure of honey exports to major trading partners, it should be noted that over the past 10 years, the structure of exports has changed significantly. If in 2005 Poland was the main trading partner (58% of total exports), in 2015 - 16%. The share of honey exported to Germany has increased significantly: from 10% in 2005 to 33% in 2015. The United States also accounts for a significant share of exports, the share of which increases every year from 8% in 2005 to 23% in 2015. The share of exports , which accounted for other trading partners, in 2015 amounted to 18%.

It should be noted that the competitiveness of domestic honey in the foreign market is weak and is gradually declining. It should be noted that the competitiveness of Ukrainian honey is formed due to such factors as: increasing the volume of domestic honey production and reducing the purchasing power of Ukrainian consumers. These two economic preconditions form the export price of Ukrainian honey, which is the lowest among the main players in the export honey market. The most significant factors influencing the export potential are: the volume of honey production in Ukraine, honey consumption per capita in Ukraine, honey production in the importing country and the volume of honey consumption in the importing country.

Note that the export price of Ukraine for honey is one of the lowest among the main suppliers on the world market (Table 6.25). The reason is that Ukrainian producers mainly export sunflower honey, which is one of the cheapest because it crystallizes quickly. Instead, liquid honey is much more highly valued on the international market. The largest importers of this product are the United States, buying in foreign markets almost 200 thousand tons. The rest of the countries are significantly behind in terms of imports, representing mainly the European Union and Asia, and Germany, Spain and Belgium are both key importers and exporters of honey (Table 6.26).

Table 6.25

The average export price of honey from the world's largest exporters

Country	Price USD US / kg	Country	Price USD US / kg
China	2,09	Brazil	4,48
New Zealand	24,32	Spain	4,46

Argentina	2,61	Mexico	3,78
Germany	5,81	Hungary	4,03
Ukraine	1,98	Belgium	3,91

Table 6.26

World trade in honey

Major exporters	Обсяг, тонн	Export price, USD USA / t	Major importers	Volume, tons
China	123477	2019	USA	197867
Argentina	68692	2471	Germany	85968
India	58231	1759	United Kingdom	50597
Mexico	55674	2163	Japan	44521
Ukraine	49366	1985	France	32203
Brazil	28524	3345	Spain	27942
Spain	23111	4575	Italy	27833
Germany	22778	6198	Poland	25712
Hungary	22018	4116	Belgium	24858
Belgium	19680	3942	Saudi Arabia	16970

The pricing policy for Ukrainian honey is much lower compared to other exporters (Table 6.27), due to the fact that almost all products (99%) are exported in barrels - without packaging and brand. In addition, the lack of variety of honey makes it difficult to increase the price, as the greatest demand is transparent, light varieties and with a higher fructose content than glucose. About 90% of Ukraine's export honey is sunflower honey, the consumer properties of which do not meet the basic needs of the market, in terms of its ability to crystallize. This is a quality honey, but it crystallizes fairly quickly, and even after pasteurization, still within 3-6 months returns to a crystalline state.

Table 6.27

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Germany	5,81	Hungary	4,03
Ukraine	1,98	Belgium	3,91

New Zealand exports small volumes of honey, only 11.1 thousand tons, however, its average cost is the highest in the world - at $ 24.32 / kg. It is the most expensive honey in the world (Manuka honey) and 80% of its exports are packaged products.

Ukrainian honey is exported to 35 countries to the four largest markets: Europe, the United States, the Middle East and Japan. The main buyer is the EU countries, which in 2018 purchased 73.2% of gross exported honey (Table 6.28).

Table 6.28

Export of Ukrainian honey to the EU

Country	Volume, tons Specific share of gross exports,%	Volume, tons Specific share of gross exports,%
Germany	12336	25,0
Poland	8720	17,7
Belgium	4246	8,6
Lithuania	3567	7,2
France	2141	4,3
Italy	1495	3,0
Denmark	1392	2,8
Hungary	863	1,7
Spain	828	1,7
Netherlands	614	1,2
Together	36202	73,2
Gross export volume	49405	100,0

According to the register of export capacities of the State Service of Ukraine for Food Safety and Consumer Protection, as of July 1, 2017, the number of registered as exporters of beekeeping products is 63 entities, although in 2015 there were 45, therefore, for this period an additional 18 entities were registered. Currently, there are 69 officially registered exporting companies in Ukraine, which have the right to supply honey to world markets. The second reason that influenced the decrease in the price of Ukrainian honey is the increase in the number of exporters, ie the increase in the supply of Ukrainian honey on the world market.

The rating of the largest exporters of Ukrainian honey is as follows

(Fig. 6.225). Askania-Pak supplied the most honey from Ukraine to foreign markets - 15.2% of total exports. The second place in the overall ranking is occupied by Ukrainian Bee LLC - with a rate of 10.7%, the third - Lumeli LLC (6.6%). Vinnytsia annually exports more than 3.5 thousand tons of honey and the largest exporter of honey is the company "Podillya Honey".

The location of these companies in areas geographically close to the border with European countries is somewhat natural. Thus, the largest number of exporters are located in the Kyiv region, namely - 23 units, which exported 9487 tons of honey. At the same time, only 451 tons were produced in the region. Next in volume are Zakarpattia, Kherson, Khmelnytsky, Rivne, Odessa, Kirovohrad and Mykolaiv regions, of which more honey was exported than was produced. And exports from such regions as Zhytomyr and Zaporizhia, which are leaders in terms of production, are only 2.2 and 7.5% of honey produced.

In order to ensure the competitiveness of Ukrainian honey, the problem of ensuring the quality and safety of this product in accordance with international requirements is particularly acute. The transition of beekeeping to the industrial level requires quality improvement in accordance with EU quality standards, which requires that the export of honey can be traced to its origin, as well as meet the requirements of the importing country.

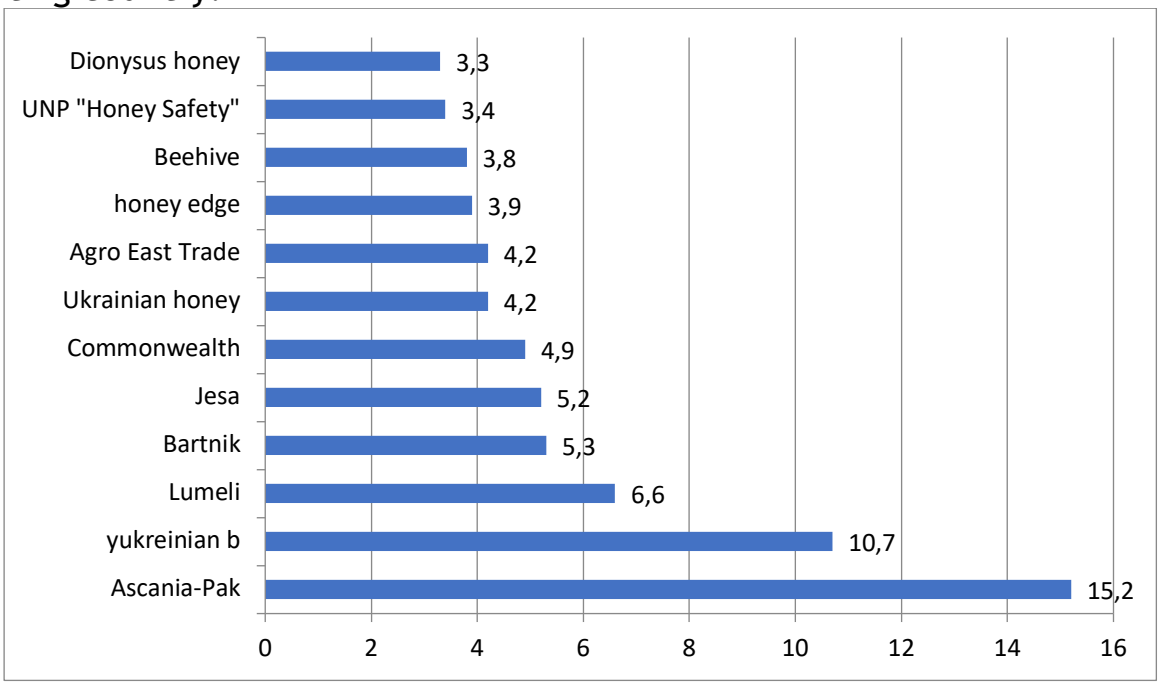

Figure: 6.22 Rating of the largest exporters of Ukrainian honey

To increase the sale of honey in packaged containers, several processing plants have been built in our country. Recently, in 2017, the largest honey processing plant with a capacity of more than 10,000 tons of finished products per year was built in Cherkassy. The company exports sweet products to the EU countries, the USA and Canada. The company

received an international food quality certificate FSSC 22000, which makes more demands on honey products than GOST.

Previously, a very important problem was that in Ukraine there were no mandatory requirements for the quality of honey, and the existing state standard was voluntary. But after signing an agreement with the EU, Ukraine has committed itself to bringing standards up to European standards. Currently, the requirements for the quality of honey are established by the law "On basic principles and requirements for food safety and quality" and the order of the Ministry of Agrarian Policy "On approval of veterinary and sanitary requirements for facilities (facilities) for beekeeping".

Conclusions. The determinants that have a positive impact on the development of the Ukrainian honey market, experts consider the following: staff qualifications; quality of domestic products and public confidence in it; profitability of production; its diversification and geographical location of Ukraine, and negative are: the solvency of the population; lack of research in the field; lack of reliable statistical information; high inflation and inadequate degree of integration formations in beekeeping. Further development of the market will be determined by supply and demand, as well as environmental factors (the situation on the world honey market). At the same time, the volume of honey exports will increase annually until it is limited by the volume of its production in Ukraine. The study suggests that the real volume of honey production in Ukraine is not 70 thousand tons, according to official statistics, and 90-100 thousand tons per year.

Thus, analyzing the honey market in Ukraine, we can say that we need to solve the problem not only of expanding the geography of honey exports, but also the problem of beekeeping in Ukraine. Such problems include small-scale production, a small number of sales channels, insufficient implementation of marketing developments and technologies, and so on. In addition, it is necessary to increase the number of bee colonies in Ukraine and ensure the protection of their health, for this it is necessary to raise awareness of beekeepers and farmers and establish a dialogue between them. General support and protection of beekeeping and production and processing of honey, the introduction of state measures in this area aimed at supporting it, will allow Ukrainian companies to maintain a competitive position in the world market and improve them. The destructive influence of macroenvironmental factors also causes limited capacity of the domestic

honey market and constrains the export-oriented vector of industry development. Based on this, the further development of the industry should be aimed at forming a market infrastructure, improving logistics and improving the system of legal regulation and support of beekeepers, as well as creating added value for products and industry. The strategic goal of the development of this market should be to achieve sustainable and highly efficient production of honey and other beekeeping products to meet the needs of domestic and foreign markets.

It should be noted that with the increase in honey exports, the consumption of honey per capita in Ukraine has catastrophically decreased, ie there is a very strong negative relationship between honey exports and consumption.

There is a high relationship between the price of imported honey from Ukraine and the world price, which on average in ten years was lower than the world price by 20-27%, which indicates potential untapped competitive advantages or low quality of domestic honey. Taking into account consumer preferences, Ukrainian honey is equated to Argentine, which is considered the best and confirmed by the relevant certificates and standards, while Ukrainian is not always confirmed by relevant documents.

The volume of honey production and export is directly affected by the number of bee colonies. It is established that the number of bees in Ukraine has been decreasing in recent years, and the country still ranks eighth in the ranking of countries, having an average of 3 million families in 2007-2018, which is 3.6% of the total number of bee families in the world. In the first place in this ranking are India (11337 thousand families), then - China (8939) and Turkey (6278 thousand families). At the same time, Ukraine is approaching the leading positions in the world in terms of honey exports. Thus, over the past 10 years, this figure has increased more than 20 times and amounted to 67.8 thousand tons in 2017, which allowed Ukraine to take first place among European countries.

Studies have shown that the transition of domestic products to the next price category requires solving a number of organizational and economic problems associated with the quality of Ukrainian honey to world standards, which has been partially resolved after the introduction of European standards. Also important is the need to reorient sales not of raw materials but of the finished product in individual branded packaging, ie a gradual departure from the purely raw nature of exports to value-added goods, such as honey from several crops, with various additives or organic,

the price of which is 2 -3 times higher than the current price of ordinary honey.

To maintain Ukraine's leading position in the world market, a mechanism is needed to register beekeepers and bring their supply from the "shadow" level to the official level, as domestic demand is met mainly by "gray" supply, and according to official statistics is close to zero. There is a need for state regulation of activities in the honey market at three levels, namely: the level of the territorial community; regional, which involves a combination of efforts of several territorial communities; interregional, or state, indicating the functions of each level of government in the transition to a territorial self-governing system of sustainable rural development.

7. Safe production of important agricultural products

The urgency of ensuring the safe production of important agricultural products is primarily due to the need to implement effective measures to protect consumers from unsafe food, as well as plant and animal protection and remove barriers to food trade between Ukraine and the EU, Black Sea basin, environmental protection. Appropriate mechanisms should be in place in a specific legal field that creates opportunities and obliges producers to maintain a level of safety by minimizing the potential risks of harm to the health of the consumer. These risks are associated with the presence of pathogenic microorganisms, toxic compounds, spoilage in food, the use of hazardous packaging materials. European legislation is a response to certain developments that have prompted the creation of hygiene and safety rules for a wide range of products, which apply to the sectors of production, processing and introduction of food into the consumer market. These are the so-called "horizontal" requirements. Complements the legislation "vertical" requirements and information for consumers (labeling). The Based on European experience and practice, food policy to ensure the safe production of important agricultural products should be based on the following principles:

- esponsibility for the safety of agricultural products borne by producers at all stages of production through the introduction of warning systems that allow to identify and control potential hazards;
- ensuring high safety standards for agricultural products throughout the food production chain, transparency of food policy to increase trust between producers and consumers;

Table 7.1

Food law of the European Union

Legislative document	The essence and purpose of the document
White Paper on Food Safety	Launched the legal framework for food and feed production and food safety control throughout the production chain, namely the creation of a list of consistent and transparent food safety rules.
Codex Alimentarius	Standards and recommendations for food additives, veterinary drugs, pesticide residues, contaminants, methods of analysis and sampling, as well as rules on hygiene. Within the Code, a risk analysis model has

	been developed, which consists of risk assessment, risk management and risk reporting.
General Food Law Regulation № 178/2002 / EC of 28.01.2002	Defines general principles and procedures for ensuring food safety.
Directive 89/392 / EC	Establishes hygienic requirements for equipment in agriculture and food industry.
Quality Assurance Systems (QA Systems): Codes of Good Manufacturing (GMP) and Hygienic (GHP) Practice	Set standards and requirements for food processing and storage. Focused, like the HACCP system, on ensuring compliance with technological requirements.
HACCP system	Ensures food safety in the production process on the basis of error prevention, not through quality control.
ISO system	Focused on product quality management.
Regulations № 882/2004 / EC, № 853/2004 / EC and №854 / 2004 / EC	Rules of official control of foodstuff and special sanitary rules are stated.

- organization of monitoring of compliance with the requirements of the food law and effective official control of producers, who are obliged to provide complete information on the management of the production process and delivery of products;
- mandatory implementation of a system of accounting for suppliers of all types of raw materials, a system of inspections and controls, the development of appropriate procedures, including in case of danger of the procedure of withdrawal from circulation of food products that harm the health of the population;
- introduction of sanctions against producers who do not ensure compliance with the criteria and procedures for ensuring safe production of agricultural products;
- formation of an annual report on the national strategy for food security, including safe production of agricultural products as a basis for assessing its condition;
- adaptation of control plans for agricultural products exported by analogy with EU plans, establishment of periodicity of control and creation of appropriate control bodies.

Thus, the development of food law will regulate and promote the intensification of international trade in safe food products, as in the context of globalization of markets and intensification of competition, more

and more attention is paid to the quality and safe production of agricultural products. It is these components of food characteristics that have become a determining factor in the successful economic activity of enterprises. Quality and safety along with its physical and economic accessibility is the most important component of food security of different countries (Law of Ukraine "On Basic Principles and Requirements for Food Safety and Quality" № 771/97-BP. URL:http://www.rada.gov.ua).

Safe production of important agricultural products is often not a visible characteristic, and the consumer has to rely on the information provided by the producer. Usually, a relationship of trust should be created between consumers and food producers, which imposes a certain responsibility on the producer and determines the nature of his actions in the direction of strengthening market positions and shaping the image of the enterprise. This practice has been formed and operates in Western countries. Its violation can lead to the bankruptcy of any food business. Meanwhile, ensuring the quality and safety of agricultural products is a priority public health issue in both developed and developing countries. This encourages governments to develop and improve regulatory frameworks, effective food safety systems that ensure responsible behavior by producers and suppliers throughout the food chain, and consumer access to safe food. The urgent need to focus on food safety and quality management is evidenced by the fact that the actual number of cases of diseases caused by unsafe food products is much higher than the number of reported cases.

Therefore, determining the trends of the food market of Ukraine, European requirements for product quality and safety, adaptation of enterprises to safe production of important agricultural products to the global requirements of the WTO and the world food market and justification of its safe formation is an urgent issue. In the context of global intensification of competition, there is a need to significantly accelerate the process of improving the quality of governance nationwide and increase the efficiency and competitiveness of most domestic enterprises and organizations. The current socio-economic situation requires accelerating the preparation of domestic enterprises to the harsh conditions of international markets, improving consumer protection systems and technical regulation and their components standardization, confirmation of compliance and metrology in accordance with international practice and EU requirements, further adjustment of economic and business philosophy. general culture of quality throughout the state.

Safe production of important agricultural products is a complex interdisciplinary problem that covers the health of the nation, economic, political, social, scientific, technical and organizational aspects. The creation of a national system of quality control and safety of the entire food chain is considered to be the most important component of the country's food security. An effective food control system has a dual function: it ensures the safety of food quality, as well as regulates trade relations, filling the domestic market with imported products and promoting exports.

The creation of a single European market or a common market of the Black Sea basin provides for the harmonization of food legislation, which will lead to the removal of legal and technical barriers to exports, to achieve equivalence and mutual recognition in trade. To substantiate the directions of this harmonization it is necessary to carry out a comparative analysis of national and European food legislation (Table 7.2).

Table 7.2

Comparative assessments of food legislation in Ukraine and in EU countries

National food legislation of Ukraine	European food legislation (relevant for all countries of the Black Sea basin)
Features of formation	
Formed on the basis of the DSTU system and state control of food production and is gradually adapting to the conditions of international trade.	Food legislation began to develop from the very beginning of the European Economic Community and was formed into a separate area of law
System of normative legal acts	
Enshrined in various regulations: the Law of Ukraine "On Food Safety and Quality"; "On standards, technical regulations and conformity assessment procedures"; "On consumer protection"; "On veterinary medicine"; "On baby food"; "On withdrawal from circulation, processing, utilization, destruction or further use of low-quality and dangerous products", etc. That is, the main legal framework for food safety is represented by a number of legislative acts that have a fragmentary nature, which can not be the basis for the establishment and development of a single food safety system.	EU legislation adopts several forms of legal documents - regulations, directives and decisions. The Regulation is a document of direct effect in all EU member states, ie it becomes law from the moment of their adoption. Directives are binding, but come into force only when they become part of national law. The decision is binding on those to whom it applies. Recommendations and opinions are not mandatory. The main EU Regulations defining food safety: № 178/2002, 852/2004, 853/2004, 854/2004 and 882/2004.

Horizontal and vertical regulations	
National legislation does not specify the types of technical regulations. A significant number of food safety indicators are not regulated or controlled. In Ukraine, horizontal regulations are just beginning to adapt, vertical - require the adoption of national standards for them.	Vertical acts refer to individual foods. They normalize all components of the product: raw materials, production process, ingredients, labeling, etc. Horizontal acts regulate the characteristics that apply to all food products or groups of products (hygiene, food additives, labeling, packaging).
An integrated approach to the entire farm-to-table food chain	
The law applies only to food.	The scope of EU food law is somewhat broader. Regulation № 178/2002 applies not only to food and raw materials but also to feed.

Continuation of the table.7.2.

Compliance with international standards	
Food safety requirements need to be developed. Ukraine has validated more than 250 food safety standards with European legislation. Otherwise, the set quotas will remain unrealized. Enterprises need to be modernized to European standards of product quality and safety.	Compliance with standards is seen as an ongoing exchange of information and action at the national or international level.
Traceability	
Work on traceability throughout the food chain is just beginning. However, it is possible to find out where the raw materials came from and where the manufactured products were sent. The retailer must provide information about the manufacturer or importer.	An approach to safe food production in the EU, from farm to fork, is provided, which guarantees transparency and traceability throughout the food production chain.
Area of food coverage	
Food - all substances or products that are intended for human consumption in processed, partially processed or unprocessed form.	The European definition is somewhat broader and tries to cover as many cases of use of a substance as a food product.
Risk analysis	
There is no terminology for risk analysis, but the risk analysis system is gradually being introduced into national legislation. In the meantime, it is extremely difficult to guarantee official food safety oversight.	The concept of risk analysis and assessment, risk management and risk communication is seen as an integral part of science-based food security policy.
Caution	
There is no single independent body	The EU has an independent organization,

responsible for food quality and safety in the country. Currently, it is within the competence of the State Veterinary and Phytosanitary Service, the Sanitary Epidemiological Service, the State Inspectorate for Consumer Protection.	the European Food Safety Authority, which is responsible for providing binding scientific advice, risk assessment and technical support for food safety legislation.

Continuation of the table.7.2

Primary responsibility of food business operators	
There is an obligation of legal entities and individual entrepreneurs engaged in the production and circulation of food raw materials and food products, to perform production control of quality and safety of products produced in the prescribed manner, taking into account the definition of critical control points	It is envisaged that food business operators are required to have a self-monitoring system based on HACCP principles - Hazard Analysis and Critical Control Points) to ensure the safety of food products. item 1 of Art. 5 of Regulation № 852/2004 on food hygiene
State regulation of the food business	
Lack of coordination and exchange of information between all bodies involved in food safety processes leads to problems with communication and interruption of the flow of information.	Carried out through the procedure of registration and approval of objects of production, processing or sale of food products, which are under the control of food business operators (paragraph 2 of Article 6 of Regulation № 852/2004; hygienic requirements defined by Regulation № 853/2004).
Circulation of food products	
There are no procedures such as registration or approval of facilities owned by food business operators.	No permits are required (except for unprocessed food products of animal origin, for the implementation of which requires a veterinary examination).

Competitiveness of products is the most important factor in the competitiveness of the enterprise as a whole. Modern business conditions require each company to implement and adhere to an effective comprehensive mechanism for product quality management in order to gain a proper position both in the domestic market and in markets outside the country.

Strengthening the competitiveness of enterprise products by improving the quality of goods and services, finding new ways to improve quality management at the enterprise, compliance with international product quality standards are considered today as the main tasks of enterprises.

Ukrainian food companies have a high potential to increase the export of food products to the markets of the European Union, which requires compliance with European legislation, and for certain products, including animal origin - a special permit. But in this case, the importing country must prove that food companies have a control system that ensures compliance of specific goods with EU requirements.

To date, export licenses have been issued to 24 organizations in six categories of agricultural products intended for human consumption (mainly fish products, as well as poultry meat, meat products and semi-finished products, egg products, etc.), and 192 organizations in five categories of non-human agricultural products (EU Food and Veterinary Office). (URL: https://webgate.ec.europa.eu/sanco/traces/output/non_eu_listsPerCountry_en.htm#). The relevant permitting process in the dairy industry has not yet been completed. After signing the Association Agreement, Ukraine has undertaken to bring closer to European standards its entire legal and regulatory framework as a whole, which will cover almost all areas of EU sanitary and phytosanitary measures. That is, not only individual export-oriented industries are subject to harmonization, but the entire sector of agricultural and food production.

The analysis of the existing legal framework showed that the degree of proximity to European norms of most of the laws in force in Ukraine today, which to some extent relate to sanitary and phytosanitary measures is "B" - "partial proximity" on a three-point scale (A, B, C).).

Some work has already been done both in the field of harmonization of the existing legal framework and in the field of technical assistance. In particular, within the framework of technical assistance, enterprises are equipped with modern laboratory equipment, accreditation of state laboratories according to the international standard (General requirements for the competence of testing and calibration laboratories. International standard ISO 17025. URL: http://iso-management.com/wp-content/uploads/2013/12/17025-2005.pdf), training and competence of laboratory staff. But this area needs further development in three areas, covering food quality and safety, as well as the introduction of phytosanitary and veterinary measures.

Each of these areas has its own specific list of measures that reveal their specifics. The process of harmonization is complicated by the breadth of the regulatory framework on the part of both Ukraine and the EU. The

directions and essence of measures to ensure food safety are shown in the table 7.3.

Table 7.3

Priority measures for harmonization with EU food safety legislation

Activities	Content
Identification of possible risks and formation of a risk management mechanism.	Formation of a register of potential hazards and a description of risk elements, including hazards (events), and the probability and consequences of hazards (events).
Development of food safety criteria	Determining the limit (threshold) value of the indicator, which is the limit beyond which the food situation in the country (region) is considered dangerous.
Development of control measures and creation of human resources in the field of food safety.	Ensuring verification of compliance of products or processes on which its quality depends on the established requirements.
Dissemination of good practices in food hygiene.	The general application of procedures, good hygiene practices should strengthen the responsibility of entrepreneurs in the food sector.
Implementation of a monitoring program in certain areas and by food groups.	Ensure compliance with national and EU food safety legislation.
Harmonization of procedures for issuing permits for food additives.	Streamlining the procedures for issuing permits to the capacity operator (facility) on the basis of verification of compliance with these facilities (facilities) sanitary measures and technical regulations
Creation of infrastructural support of processes of maintenance of quality and safety of foodstuff.	Ensuring the organization, functioning and development of the food segment of the consumer market on the basis of quality and safety.
Involvement and development of interaction of all stakeholders in the field of food safety.	The right choice of direction of strategic development of the enterprise and the way to achieve such a level of food security, from which everyone benefits: both stakeholders and society.

The ultimate goal of the harmonization process is not only to protect human, plant and animal health, but also to remove barriers to trade in food products between Ukraine and the EU, and to preserve the environment.

Thus, the integration of Ukrainian enterprises into the food market of the Black Sea basin requires:

- implementation of sanitary and phytosanitary measures, which provides for special procedures for their detection in the forms of pre-market inspection, market control and quarantine;
- harmonization and adaptation of food legislation in line with European, in particular on food safety, sanitary and phytosanitary control, as well as measures set out in the Action Plan for the implementation of the Association Agreement, approved by the Cabinet of Ministers of Ukraine № 847-r, and a sound basis for production, processing and trade facilitation.
- introduction of mechanisms of control over observance of norms and rules, carrying out of procedure of equivalence of procedures concerning hygiene of the enterprises-exporters and the enterprises-importers that will allow to simplify reception of certificates;
- developing a strategy to eliminate unnecessary trade barriers;
- development of targeted strategies related to the impact of enterprises on the environment;
- introduction of the order of sale of products of animal and vegetable origin of domestic production.

Today, market transformations in the agri-food complex are associated with the emergence of new trends that have manifested themselves in the redistribution of gross crop and livestock production between the public and private sectors. About 70% of gross agricultural output is produced in households, which are known to be at the lowest level of social organization of production in terms of susceptibility to innovation, agribusiness, low marketability and non-compliance with national and international standards (Strategy of Economic and Social Development of Ukraine (2004-2015) "Through European Integration" / Author: AS Galchinsky, VM Geets, etc .; National Institute of Strategic Studies, Institute of Economic Forecasting, NAS of Ukraine, Ministry of Economy and European Integration of Ukraine - Kyiv: IPC of the State Statistics Committee of Ukraine, 2004. - 416 pp., Section VII, P.181-193).

Economic instability and rising food prices have significantly changed the purchasing power of all segments of the population, increased the share of families living below the poverty line. Social differentiation of the population generates demand for all types of food, both quality and low quality, due to the solvency of the consumer. However, the diversity and saturation of the food market in the absence of appropriate public

awareness and proper control create conditions for mass consumption of low-quality and dangerous products. After all, so far the consumer behavior of the majority of the population is built on the simple satisfaction of the need for food as a vital necessity..

These trends in terms of preserving the health of the nation are accompanied by a decrease in the responsibility of producers for compliance with the technologies of production and processing of agricultural products. This is especially true for small businesses that do not have quality laboratories, pay insufficient attention to incoming quality control of raw materials (nitrates, pesticides, heavy metals, antibacterials, radionuclides) and technological control (to improve taste and appearance use more than 500 synthetic additives) and focused mainly on the production of products under technical conditions, rather than technical regulations. In addition, there are cases of exposing "underground" food production and smuggling of products into the country. All this contributes to the replenishment of the food market with products that contain a dangerous factor - chemical, physical, biological or material (material) that affects human health through nutrition..

The main reasons for the decline in food quality and safety are formed both directly in the production sector and in the field of transportation, storage and trade. These include:

1) in the field of agriculture:

- growth of anthropogenic and technogenic load on the environment;
- violation of agricultural technologies for growing crops;
- use in animal husbandry of drugs and hormonal drugs, artificially synthesized vitamins, transgenic feed;

2) in the food industry:

- insufficient sanitary level of production; weakening of production control, outdated standards and lack of their expertise;
- food falsification;

3) in the field of food preservation:

- lack of hygienic certification of containers in direct contact with food;
- use in the processing of food products for the purpose of their disinfection not of biological means of protection, but of ultraviolet and radiation irradiation, ozonation, chemicals, gaseous media;

4) in the field of transportation:

- lack of specialized transport and a system of control over the transportation of perishable food;

5) in the field of trade:

- violation of sanitary norms and rules, trade in expired and counterfeit goods;
- a large number of intermediaries on the way of food from producer to consumer (Kupinets LE Quality and safety of food products as a dominant development of the food complex / LE Kupinets // Economics of food industry. №1. - 2009 - P.43- 50.), (Kupinets LE Ecologization of the food complex: theory, methodology, mechanisms / LE Kupinets Odessa: Inst. Of Market Problems and Economic and Ecological Research. NAS of Ukraine, 2010. - 712 p.).

Regulation and control of these areas in European practice is carried out through food law, the components of which are:

1. "Horizontal" legislation governing the safety of a wide range of food products or groups thereof (hygiene and control of compliance with traditional and new food products, additives, food contact materials).
2. marking and labeling;
3. "Vertical" directives in relation to specific types of products, special purpose products or manufactured in a particular region. They regulate all components of the product: raw materials, production process, ingredients, labeling, etc.

All rules serve the three main purposes of food law, namely:

- health protection: only safe food is for sale.
- consumer protection against fraud.
- proper public information.

In this way, compliance with the requirements of the WTO and the Codex Alimentarius Commission is achieved, within which the WTO member states independently monitor compliance with EU directives and inform the EU Commission about their activities. In European practice, food safety systems have been developed to identify and control potential hazards in order to prevent them. That is, product safety is ensured by a quality system. In turn, the consumer must trust that the quality requirements will be meti.

Product quality is considered as the most important factor of effective activity of the modern enterprise. World experience confirms the formation of fundamental, fairly strict consumer requirements for the quality of agricultural products, which are presented on the market.

In the current conditions of fierce competition for markets, companies use quality systems that meet recognized international requirements contained in International and European standards for quality and certification. The effectiveness of this tool is now particularly increasing due to the adoption in many countries of legislation that sets strict requirements for product safety for human health and life, protection of consumer rights and interests, environmental protection and more. That is, improving product quality can not only ensure high profits, but also maintain the competitiveness of products and enterprises in the world market. This can be achieved only in terms of product quality management. Thus, an important component of the management strategy of a modern enterprise is the strategy of ensuring and maintaining the quality of its products. It is this thesis that actualizes the problem and reflects the vector of industrial development in the world.

The problem of product quality has undergone some transformation and significant differences in the world over several decades. Over time, from its inception and further development, a certain systematic view of the state of the problem and ways to solve it at the national level has changed, the requirements for product quality assurance have changed, due to today's global challenges. This means that the idea of product quality and quality management has undergone evolutionary changes (Table 7.4).

Table 7.4

Genesis of the problem of quality management of agricultural products in Ukraine

Time period	The essence of quality assurance requirements
50s of the twentieth century.	Product quality is determined by state standards and indicators of the level of marriage. That is, product quality is related to the management of labor quality as an individual producer, and the team, site, shop. A system of defect-free production, a quality control system, which is separated from the direct production process. Production conditions ensured the manufacture of products without deviations from the technical documentation.
60s of the twentieth century.	In determining the quality of products increasingly began to take into account the focus on demand and customer satisfaction. Product quality is confirmed by market competitiveness and demand in the international market.
70s of the twentieth century.	Directive implementation of integrated product quality management systems as a set of measures that ensure the required level of quality at all stages of the product life cycle. Planning measures to reduce the causes of defects.
80s of the twentieth	The country has taken new steps to improve product quality. The introduction of sectoral product quality management systems has begun.

century.	
90s of the twentieth century.	The concept of "product quality" has expanded significantly. Reducing the percentage of marriage is accompanied by a fundamentally new approach - the focus on continuous improvement of products to the level of competitors, the active organization of service.
Present time	Dissemination in domestic practice of the experience of leading companies that have created a system of "total quality control" and subordinated management to all its manifestations to solve the problem of quality maintenance at all stages of product promotion to intermediate and final consumers. The main tasks were: increasing the cost of ensuring the appropriate level of product quality (to prevent the production of unsatisfactory quality and quality control) and reducing the cost of eliminating shortages (in the field of production and consumption), introduction of training programs, employee motivation, step-by-step metrological control technological process, organization of quality groups at the enterprise, etc.

Analysis of these data shows that to solve the problem of improving product quality, it is time to do business systematically, increase business excellence, intensify management systems, implement fundamental concepts of overall quality management, taking into account social responsibility to consumers and society, and leadership, and innovation, and everything else that affects the competitiveness of the enterprise. The presence of competitive enterprises is a necessary prerequisite for solving most of the tasks of the state. That is, the policy of quality promotion should become a priority component of national policy, and the main way to promote quality should be to support the business excellence of domestic enterprises.

Several types of quality assurance systems (QA systems) have been developed for the food industry: Codes of good practice (eg Code of Good Manufacturing Practice (GMP), Code of Good Hygienic Practice (GHP), etc.), HACCP System and management at critical points), the ISO system (the system of the International Organization for Standardization), as well as combined systems. The Code of Good Manufacturing Practice and the HACCP are focused on ensuring compliance with technological requirements, and the ISO system is focused on management (Akimenko E. Implementation of food safety management system / E. Akimenko // Standards and quality.– 2008.– №2.– p. 90).

The EU has proposed a radically new approach to developing food safety standards for food businesses. It is based on the need to ensure a high level of food safety in the future and is based on the following principles that apply throughout Europe.:

1. the principle of production and marketing food chain;
2. the principle of responsibility of the entrepreneur;
3. the principle of tracking the origin of products;
4. independent scientific risk assessment;
5. the distinction between risk assessment and risk management;
6. the principle of prevention;
7. transparent risk communication;

Over the last two years, independent national food safety agencies have been established in almost all EU Member States. They are within the scope of their competence:

- preparation of independent scientific recommendations on all issues related to food safety,
- operation of rapid alert systems,
- dialogue with consumers on food safety and health,
- cooperation with national agencies of other countries.

The establishment of an independent body was accompanied by a number of other measures aimed at improving and harmonizing all legislation on all aspects of food on the way from farm to fork.

The safe production of important agricultural products in the food industry must meet a wide range of EU requirements. The food industry is one of the leading industries in Ukraine, uniting more than 20 industries that produce food. Today, the food industry accounts for about 15% of all products produced in Ukraine. The constant growth in the number of food producers indicates the development of this sector, which remains one of the most attractive for both foreign and Ukrainian investors. But recently the development of the food industry in Ukraine is characterized by a sharp decline in technological level of production, reduction of volumes and range of products, deterioration of its quality, attenuation of investment and innovation processes, displacement of national food products from domestic and foreign food markets. receipts. The Ukrainian agricultural and food sector is poorly integrated into the international trade system. Meanwhile, the food industry of Ukraine is able not only to meet the needs of the domestic market in food products, but also to form a strong export potential of the state and compete in the international food market (The future of Ukraine - in the global system of food

producers. URL: http://gazeta.dt.ua/LAW/maybutne_ukrayini__u_globalniy_sistemi_virobnikiv_prodovolstva.html).

Quality and safety, being factors of competitive advantage of products and enterprises, at the same time do not stimulate work in this direction. Such an incentive can be a change in consumer preferences.

In the national food industry, the focus is on production processes and technological processes. The current situation in the food markets and in the chain of creating food products from agricultural raw materials is unmanageable due to the variability of consumer demands, increasing competition, environmental problems, government interests and more. This determines the current dynamics of food quality. Agricultural production and the food industry are still in transition from a cost-orientation to a consumer-orientation one. The implementation of quality management systems in executive bodies has been stopped altogether. There is no systematic monitoring and investigation of cases that have occurred due to dangerous products (services), in order to summarize them and prepare for the Government of Ukraine sound recommendations for the prevention and reduction of such cases and their consequences. The development of sectoral and regional programs for the improvement of management systems based on international and national standards and modern concepts of excellence using the best world and domestic practice has not become widespread. Quality (in a broad sense) has not become a national idea of Ukrainian society.

The focus of businesses on profit maximization has led to a loss of food quality in the face of food shortages, growing imports, weak government control and oversight. This is especially true of the unsaturated market, but there is also the opposite trend, when an increase in the amount of food is also accompanied by a loss of quality. Of course, competition in the food market forces commodity producers to take targeted steps to meet consumer demand, expand their market niches, diversify the range. But in conditions of low purchasing power of the population, its focus on cheap products, lack of mass interest in the composition of consumed products, manufacturers have no motivation, both to appropriate labeling and to advertise the quality of their products. Moreover, there is a tendency of mismatch of consumer demand for quality product contrary to the expectations of the manufacturer.

A quality product may not be cheap, but this fact leads to the fact that a number of products remain unnoticed by the consumer. Thus, the

retail food market offers both domestic and imported products of various qualities and does not guide the consumer in his choice. Trade, in turn, is in no hurry to get rid of substandard goods, as the focus on profit maximization is incompatible with rising costs and losses.

Improving the quality and its component - the safety of agricultural production and food - is a priority that requires the development of national strategy and tactics as a tool for implementing the strategy in this area.

The development of the strategy aims to establish general areas of activity, the promotion of which will ensure the growth and strengthening of the company's position, in this case by improving the quality and safety of food produced. The strategy is developed for the near future, implemented in the process of mastering certain projects, programs or other practical actions and may change over time under the influence of conditions in the external environment, organization of production, operational management. The common vision of the strategy of development of production of important agricultural products is presented in fig.7.1.

The guarantee of successful operation of the enterprise is: transition to the international ISO standards, use of the newest systems of management of quality and safety of production; improvement of processes of standardization, technical regulation, metrology and conformity assessment (Kupinets LE Production of ecologically clean products in agro-industrial complex: international and national aspects / LE Kupinets, SK Kharichkov. - Odessa: Inst. of market problems and econ .-ecological research of the National Academy of Sciences of Ukraine, 2007. - P. 458).

Unfortunately, the implementation of these strategic guidelines is not for every company. However, in early May 2013, the order "On approval of the Requirements for the development, implementation and application of permanent procedures based on the principles of the Food Safety Management System (HACCP - Hazard Analysis and Critical Control Point: risk analysis and critical control points)" came into force. "(Order" On approval of the Requirements for the development, implementation and application of permanent procedures based on the principles of the Food Safety Management System ". URL: https://zakon.rada.gov.ua/laws/show/z1704-12#Text). According to this order, the requirements for the development, implementation and application of the HACCP system were approved.

Implementation of the considered strategic tasks requires:

- financial support for domestic enterprises by reducing the cost of targeted loans to pay for the development, implementation and verification of quality management systems, environmental

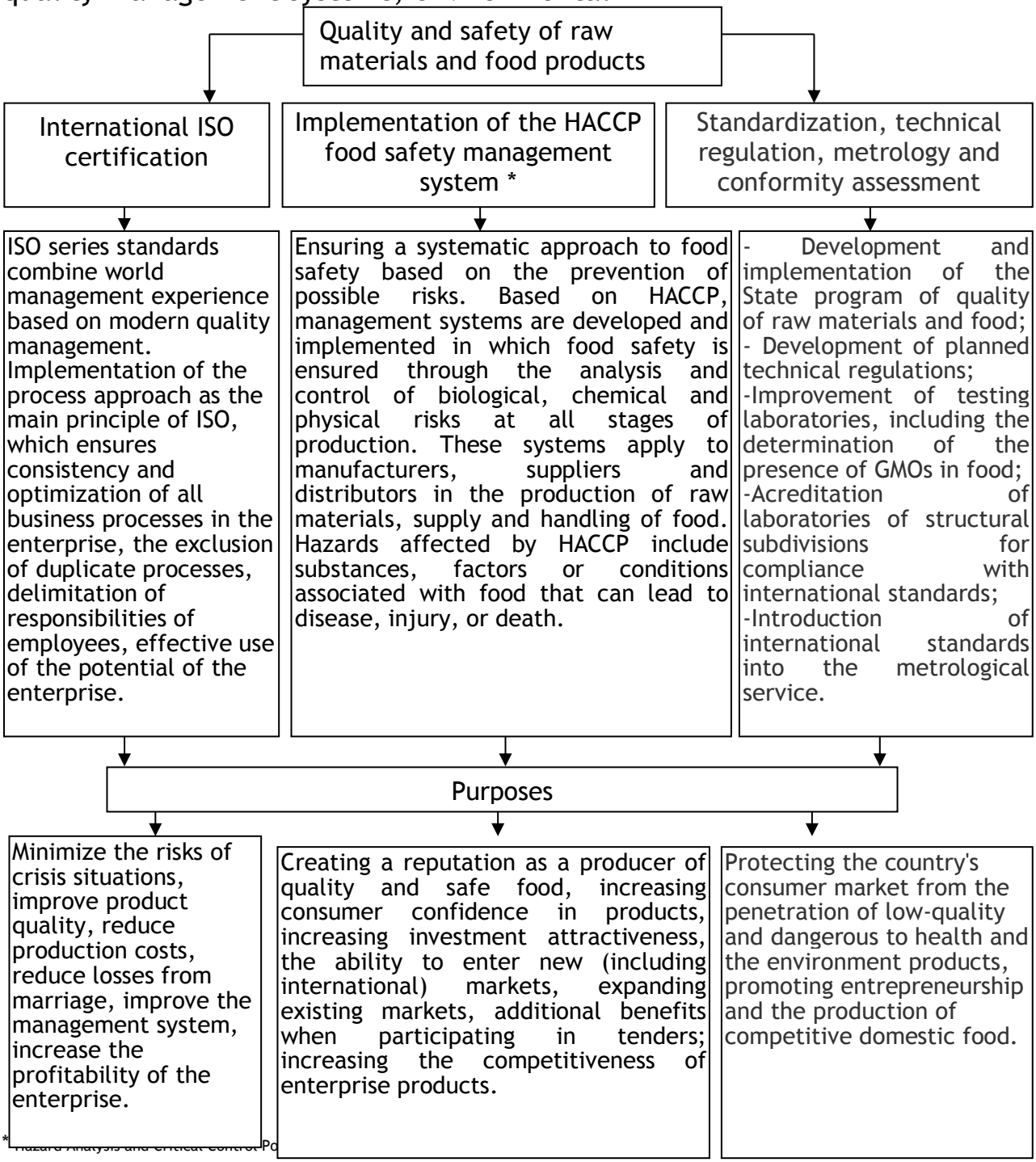

Fig.7.1. Strategic guidelines for achieving safe production of important agricultural products

management and other management systems in accordance with international and national standards;

- reduction of administrative barriers to the preparation of documents required for the transition to HACCP, effective information services and staffing of enterprises;

- creation of national certification systems and their integration into the system recognized in European countries and in the world, assistance in the entry of certification bodies into international unions and accreditation of Ukrainian certification bodies abroad.

The strategy achieves the main goal through the solution of intermediate tactical tasks:

- harmonization of Ukrainian legislation with EU legislation in accordance with the Association Agreement and relevant international standards, in particular on food safety, sanitary and phytosanitary control, as well as measures set out in the Action Plan for the implementation of the Association Agreement;

- identifying one of the priority areas of socio-economic revival of the state and society to ensure the further development of the national movement for quality and excellence and its integration into the European movement, taking into account current global and European trends, in particular to strengthen social orientation and disseminate concepts of organizational excellence;

- systematization of actions of the government, administration of regions, management of enterprises on production of high-quality and safe products, to continue work on adoption of the technical regulations developed on the basis of the corresponding acts of the EU legislation, and the national standards of Ukraine harmonized with the international and European standards;

- long-term, the most fundamental issues of theory and practice of implementation of quality management systems at domestic agricultural and food enterprises, preparation of enterprises for this process;

- solving problems of motivation and stimulation of national producers, formation of investment and innovation policy, creation of tax, financial and credit mechanisms;

- creation of integrated food safety systems based on food risk assessment, as well as the development of scientifically sound measures to prevent safety violations throughout the chain of production and use of food products;

- improving the legislative, regulatory and methodological framework for quality control and product safety, including harmonization with international requirements for food safety indicators based on basic research in the field of food science;

- increasing the efficiency of the product safety control system, including the creation of a modern technical base and a base of production laboratories of processing enterprises;

- strengthening the requirements for business entities engaged in the production, transportation and sale of products for the strict implementation of the established sanitary and hygienic training;

- ensuring strict compliance with technological regimes, sanitary and hygienic requirements established by regulations;

- establishing and maintaining appropriate food safety systems and infrastructure (eg laboratories) to take appropriate action and manage food safety risks throughout the food chain, including in emergencies;

- development of intersectoral cooperation in order to improve communication and capacity for joint action between such sectors as public health, animal health, agriculture, etc..;

- mainstreaming food safety into broader food policy measures and programs (eg, food security));

- search for a benchmarking model to create a food safety standard;

- developing a model of good food retail practice based on hygienic requirements for the operation of shops, which can also be offered for use in developing countries.

Against the background of significant problems with safe production of agricultural products that fill the domestic market, the system of state protection of consumer rights in Ukraine remains imperfect and does not meet the requirements of the time and situation in the country. The public has almost no leverage to influence the actions and decisions of the authorities on consumer protection issues, which are mostly non-public and non-transparent, and public consumer organizations (associations) do not receive adequate support from the authorities.

It should be noted that in the field of consumer education on food safety, the most important are informing the public about the importance of healthy eating, compliance with standards in technological processes of food preparation and storage, ensuring proper food labeling for healthier food selection, improving surveillance systems.). To ensure food safety, it is necessary at the national level to combine the activities of various

sectoral agencies controlling the production, storage and consumption of products, to apply preventive systems for food safety and quality control based on risk analysis at critical control points, monitoring.

An important condition for the practical monitoring of food safety is the organization of an electronic data collection and processing system. Such a system will allow to systematize online the information accumulated in the work of current supervision; unify information on food products; to conduct separate accounting of information on consumer goods; to establish the relationship between morbidity in humans and the results of food research; promptly assess the effectiveness of the measures taken.

The introduction of food safety monitoring systems in the disease surveillance system will allow:

first, assess the real contamination of food and adverse health effects;

secondly, to create a domestic database of contaminants for the scientific substantiation of regulations and the development of targeted measures to prevent any emerging risks associated with food. The solution of this problem at the state level is also necessary for the harmonization of domestic standards, norms and sanitary rules with international.

Thus, the most important task of the Ukrainian economy is the introduction of quality systems and their certification in enterprises in general, and especially in food enterprises, which form the country's export potential. This direction can be considered as the most important condition for the competitiveness of products in domestic and foreign markets, as a basis for consumer demand and credit of consumer confidence, as a way to expand markets and guarantee stable product safety, as a basis for financial stability and investment activity.

Ensuring the introduction of safe production of important agricultural products requires the formation of organizational and economic foundations that will create the necessary basis for increasing investment flows in the production of environmentally friendly agricultural raw materials and finished products, as well as minimizing the negative impact of agro-industrial production on the environment. The main organizational and economic prerequisite for the intensification of production is the appropriate motivation for producers of important agricultural products. Such motivation should cover both direct methods (grants, compensations, targeted financing) and indirect methods (tax benefits, reduction of interest rates for loans, liberalization of the customs regime).

Organizational and economic principles of safe production of important agricultural products are presented in Fig.7.2.

The main tools for the introduction of safe production of agricultural products should be organizational, economic and institutional levers.

Organizational and economic levers include:

- standardization optimization and intensification - increasing the array of organizational and technical documentation, regulations and requirements while eliminating conflicts and contradictions in the field of primary processing and secondary production;

- formation of an effective materially guaranteed (due to insurance) system for calculating the risk of project implementation for the period of adaptation to the requirements of safe clean production according to the principles of HACCP;

- liberalization of the fiscal burden in the areas of introduction of safe clean production in the agro-industrial complex;

- filling with theoretical (specific programs, business proposals, etc.) and economic (direct and indirect financing) content of indicative tools of the state in terms of implementation of safe production;

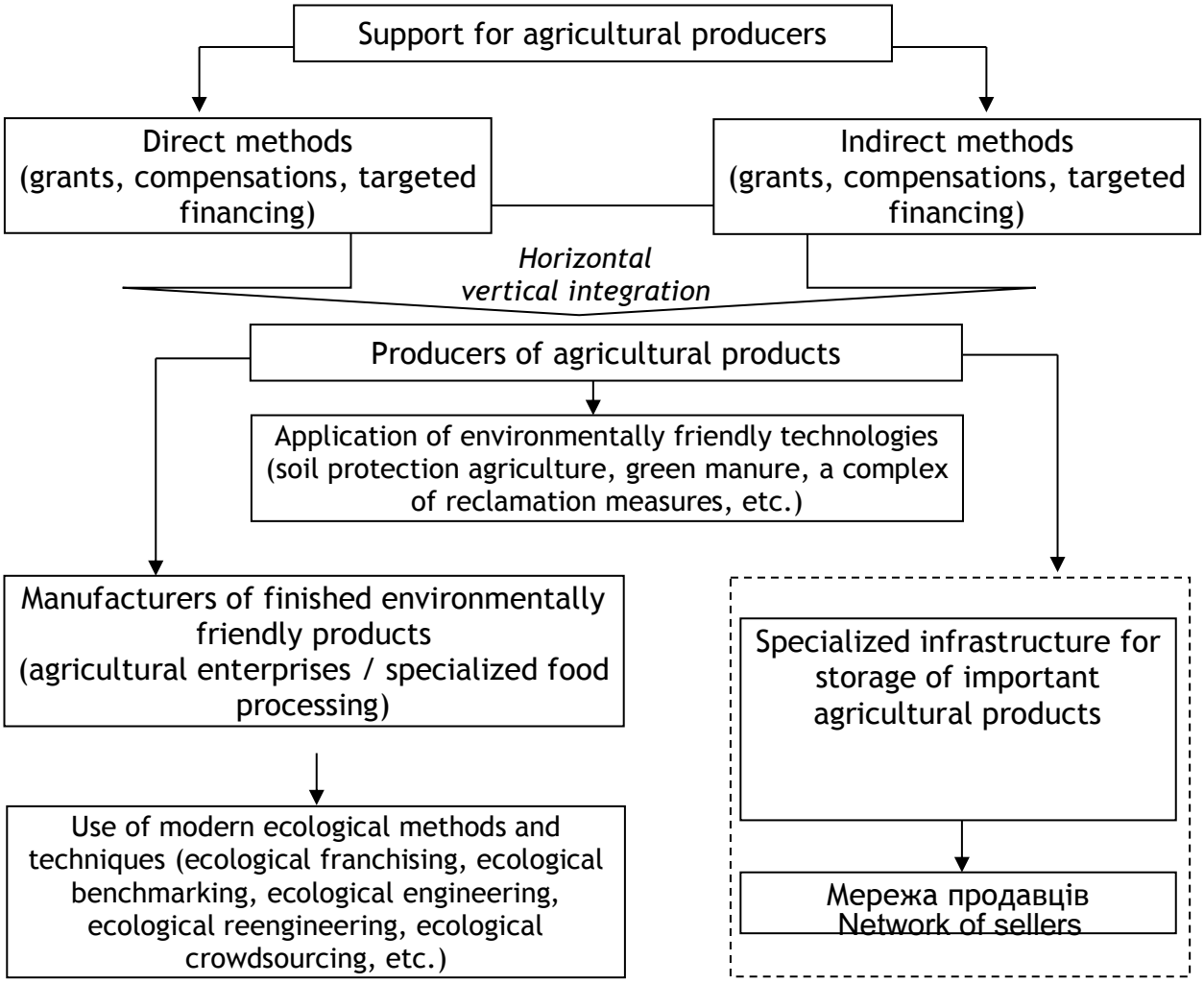

Fig. 7.2. Organizational and economic principles of safe production of important agricultural products

- application of state interventions on national markets with a high share of implemented innovations (at the expense of state agents);
- counteracting attempts to reduce the competitive environment in agricultural markets through the intensification of antitrust activities;
- establishing a regime of "maximum assistance and accessibility" in the field of mutual funds for programs of safe production of important agricultural products;
- formation and constant updating of the national breeding and seed base;

- presentation and material support for the development of coordinated projects for deep processing of waste;

- compensatory material incentives for the introduction of energy-saving technologies.

The choice of strategic priorities for safe production of agricultural products requires the formation of a set of institutional prerequisites that will ensure the synchronization of state policy in this direction with international rules and regulations, as well as create the necessary advisory and financial support.

Institutional preconditions include:

1) Incorporating into the range of priorities of the national agricultural policy certain Sustainable Development Goals approved by the UN, which relate to improving nutrition, ensuring the transition to rational consumption patterns, etc..

2) Implementation of EU directives and harmonization of Ukrainian and European regulations on the production of agricultural raw materials and food products.

3) Real implementation of the institute of agricultural advisory in terms of informing the subjects of agricultural entrepreneurship about the benefits of safe agricultural production.

4) Institutionalization of the system of tax, credit, customs and property preferences for subjects of agrarian and food processing enterprises, which implement projects for introduction of ecologically clean production.

Institutional levers should include:

- formation of a coordinating agency for information processing in terms of implementation of technologies for safe production of agricultural products;

- creation of a center of operational control over the condition of agricultural lands and the dynamics of transformations in them;

- establishing the export of goods through the exchange space and the introduction of international environmental markers for agricultural products;

- initiation of the national agrarian technopolis as a consolidated center of testing and research in the field of safe production at all phases of the agro-food chain;

- dynamic development and preventive regulation by the state of the institution of non-diversified investment funds in the sector of venture investment introduction of safe production of agricultural products;
- integration into the national system of the institute of centers of closed cyclic full processing of wastes of organic or inorganic origin;
- implementation of common standards of the Black Sea basin countries for analysis, laboratory research and requirements for safe and high-quality production of important agricultural products.

8. Mechanisms for increasing the capacity of local agricultural producers.

8.1. Wholesale markets for agricultural products as a tool to ensure access (inclusion) of local producers to the domestic and foreign markets

Market transformations in the agricultural sector of Ukraine's economy, accompanied by the replacement of the system of state distribution of agricultural products with new market infrastructure, have led to the formation of various forms of ownership and agribusiness structures. However, the efficiency of agricultural enterprises has remained extremely low, and agriculture as an industry with a long period of capital turnover, high natural and price risks is unattractive for investment.

In our opinion, the root cause of numerous financial problems of agricultural producers should be sought in the existing systems of agricultural sales, which with the liquidation of state contracts for the sale of agricultural products in Ukraine have become unable to provide an acceptable level of agricultural profitability and effective financing of the agricultural market.

Practice shows that due to the lack of effective marketing systems, most farmers sell their products immediately after harvest, ie during the price minimum. Most agricultural products are sold directly from the field and warehouses to commercial intermediaries who control significant flows of agricultural goods. At the same time, due to the lack of the necessary infrastructure, agricultural producers cannot postpone the sale of their products for the period of price growth.

Accordingly, the main financial problems of the agricultural sector are related to the scope of sales, as the direction of the main commodity flows in unorganized, non-transparent sales channels leads to significant financial losses (according to our data, 20-30%) of farmers. In addition, insufficient capitalization of agricultural traders complicates their access to financial resources, limiting the ability to absorb significant surpluses in crop years, which puts pressure on purchase prices, reducing their level for the producer.

Thus, in modern conditions there is a need to create an effective market infrastructure capable of ensuring the transparency of the process of selling agricultural products by producers. The functions of such structures can be performed by regional wholesale markets for agricultural products (WMAP).

The dominance of monopsony in the primary agricultural market causes chronic losses during the last ten years of production of many types of agricultural products. Many types of agricultural products, including products of the whole group of industrial crops (sugar beets, sunflowers, flax, hops, tobacco, etc.) by their consumer properties can act as a commodity only in the market of means of production, where there is no competition between buyers, because the only the buyer of such products can be only the relevant enterprise of processing industries.

Monopsony is manifested by dairy plants - especially when they buy milk in private households. It is known that monopsonists in the primary agricultural market are large grain traders and various suppliers to agricultural enterprises of means of production, mainly fuels and lubricants, under barter agreements. In the market of fruit and vegetable products today monopsonic formations are large small wholesale and retail chains, such as "Metro", "Silpo", "Tavria" and others.

The lack of a mechanism for influencing pricing leads to significant regional variation in prices for agricultural products and uneven distribution of sales in different regions. In addition, the lack of complete, reliable and accessible information on prices for agricultural products, supply and demand causes losses of producers due to erroneous decisions on production volumes.

WMAP is a very important entity in the logistics market supply chains of agricultural products from producer to final consumer. The absence of such an element as organized wholesale trade, which would unite all or most of the chains of trade, leads to a decline in the efficiency of the entire market, both regional and national. And the result is the exit of economic entities from the market, for example, the transition of farmers to grain markets (which is already observed in Ukraine), and, accordingly, their niches are occupied by imported suppliers.

The low efficiency of agricultural production is also due to the fact that the producer-farmer, according to various estimates, spends up to 40% of time and 20% of funds to promote their products on the market and its sale. Therefore, the lack of wholesale markets for agricultural products, in our opinion, should be considered as a primary problem of the agricultural sector of Ukraine, which has a significant impact on the income of rural and urban populations, efficiency of domestic agro-industrial complex, profitability of agricultural enterprises and, consequently, inflation.

To solve these problems in Ukraine, the legislative framework for the development of a network of wholesale markets for agricultural products was gradually developed. However, there is still no clear state policy on this issue, as there are no real grounds for its implementation. Thus, the Resolution of the Cabinet of Ministers of Ukraine of 03.06.2009 № 562 approved the State target program for the creation of wholesale markets for agricultural products, which aimed to ensure the sale of high quality agricultural products and products of its processing by producers of all forms of ownership in wholesale markets and reduce their prices .

The result of the Program was to be the creation by 2013 of a network of 25 RDPs and the creation of 3,000 jobs. However, despite the fact that the Program was financed from the State Budget by UAH 1,200,000, the expected results were not achieved.

According to the Ministry of Agrarian Policy and Food of Ukraine, from 2009 to 2019 the status of "wholesale market of agricultural products" was granted to 12 legal entities, but only 4 WMAPs were put into operation. At the same time, only two facilities are actually operating - the Stolychny Regional Unitary Enterprise in Kyiv and the Shuvar Regional Unitary Enterprise in Lviv.

In our opinion, the reason for this is not quite an adequate approach to defining the very concept of WMAP. Thus, in the Law of Ukraine "On Wholesale Markets of Agricultural Products" of 25.06.2009 № 1561-VI, Article 1, WMAP is defined as "... activities of purchase and sale of agricultural products in batches for subsequent sale to the final consumer through retail or for production or other uses, as well as ancillary activities that provide such purchase and sale through the provision of related services ".

In European countries, WMAP is being developed to bring producers closer to consumers, identify market prices for agricultural products, landscaping and food security. That is, the emphasis is on the formation of transparent sales channels for safe agricultural products (especially for small and medium-sized producers), as well as the expansion of exports.

The Law of Ukraine “On Wholesale Markets of Agricultural Products”, Article 13 “Provision of State Financial Assistance to Wholesale Markets of Agricultural Products in the Period of Their Formation” stipulates that wholesale markets of agricultural products, regardless of ownership and organizational and legal form, are provided with financial assistance at the

expense of the State Budget of Ukraine on a non-refundable and / or repayable basis.

Resolution of the Cabinet of Ministers of Ukraine of September 29, 2010 № 893 stipulates that the provision of state support for the creation of WMAP from the state budget is carried out on a non-refundable basis.

Thus, the state does not acquire any financial leverage to influence the activities of WMAP (and most importantly - on the formation of their tariff policy). This is very important given that the rates for renting seats on domestic WMAP are too high for most farmers. Local authorities also do not control WMAP tariff policy. However, given that WMAP is an object of increased social importance, some researchers believe that it would be appropriate to introduce the coordination of WMAP tariff policy with the local authority in which the WMAP is located. This practice exists in EU countries, in particular in Spain.

In general, it should be acknowledged that in Ukraine there is no monitoring of the effectiveness of WMAP.

Despite the fact that Article 15 of the Law of Ukraine "On Wholesale Markets of Agricultural Products" states that "... In the structure of the central executive body that implements state agricultural policy, agricultural policy, in order to permanently and fully ensure wholesale agricultural markets products and operators of wholesale markets for agricultural products with information on the situation on the market of agricultural products creates a system of information support of wholesale markets for agricultural products. ", such a system has not yet been created, although 10 years have passed since the law came into force.

In addition, there are many other shortcomings in the Law, namely:

there are no defined criteria according to which a particular object of market infrastructure can be attributed to WMAP;

no WMAP classification;

WMAP hygiene standards are not defined (very important for expanding exports of agricultural products, especially to EU countries);

the mechanisms of state regulation of WMAP functioning are not defined.

The financial problems faced by domestic WMAPs are mainly due to the lack of wholesale buyers among the people creating WMAP. After all, this leads to a significant decrease in the interest of agricultural producers in its sale on WMAP, which, in turn, leads to underutilization of trading platforms and, consequently, to the difficult financial situation of WMAP.

In order to avoid such problems, it would be appropriate to make changes to paragraph 9 on the composition of the criteria for determining the winner of the tender for the acquisition of the status of a wholesale market of agricultural products, approved by the Resolution of the Cabinet of Ministers of Ukraine dated 11.02.2010 від 141 acquisition by a legal entity of the status of a wholesale market of agricultural products, in terms of the requirement to have among the founders of legal entities - wholesale buyers of agricultural products.

Solving the problem of access of domestic agricultural producers to foreign markets (including the market of the EU and the Black Sea Basin) also highlights the need to improve the legal framework for the development of the WMAP network. It is known that domestic small and medium-sized agricultural producers are not able to form a large consignment of calibrated products for export, so WMAP services for unification and standardization of product packaging, the formation of its export consignments are an urgent need for them.

This is also due to the fact that EU countries set strict requirements for the quality of agricultural products and procedures for food identification, in particular:

- the basic procedures for food safety are laid down in Regulation (EC) № 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and establishing procedures for related to food safety ";

- the requirements for the identification of foodstuffs are laid down in Directive 2011/91 / EC of the European Parliament and of the Council of 13.12.2011 "On the indication or marking to identify the consignment to which the foodstuff belongs".

It should be noted that in the EU, in contrast to Ukraine, scientists are actively involved in improving the legal framework for the formation and operation of the WMAP network.

In addition, in 2009 the European Commission approved the World Wholesale Markets Guidelines "Hygienic Standards for European Union Wholesale Markets", which set out the requirements for the area of WMAP and its premises, lighting, ventilation, thermal control, water supply and drainage, equipment, and - waste disposal, which is not in the domestic legislation regarding WMAP. Although such scientific developments were previously performed by scientists from the Institute of Market Problems

and Economic and Environmental Research of the National Academy of Sciences of Ukraine and proposed to the Ministry of Agrarian Policy of Ukraine.

Thus, if we take into account the socio-economic importance of WMAP as centers for the formation of transparent channels for the sale of safe agricultural products (especially for small and medium producers), as well as export expansion, it is necessary to stimulate the development of such WMAP in Ukraine as agricultural marketing center (AMC). The main purpose of the AMC is to form an effective transparent mechanism for wholesale and retail sale of agricultural products and products of its processing by producers of all forms of ownership, providing comprehensive services and creating the most favorable conditions for sellers and buyers of such products, introduction of best practices of European technologies and wholesale standards. export of products, a positive impact on its quality, the level of its final price and customer satisfaction.

The main element of the AMC is the wholesale market of agricultural products, on the territory of which are concentrated the structures that ensure the functioning of a holistic system of relations between the subjects of logistics channels to promote goods from producer to final consumer (Fig. 8.1).

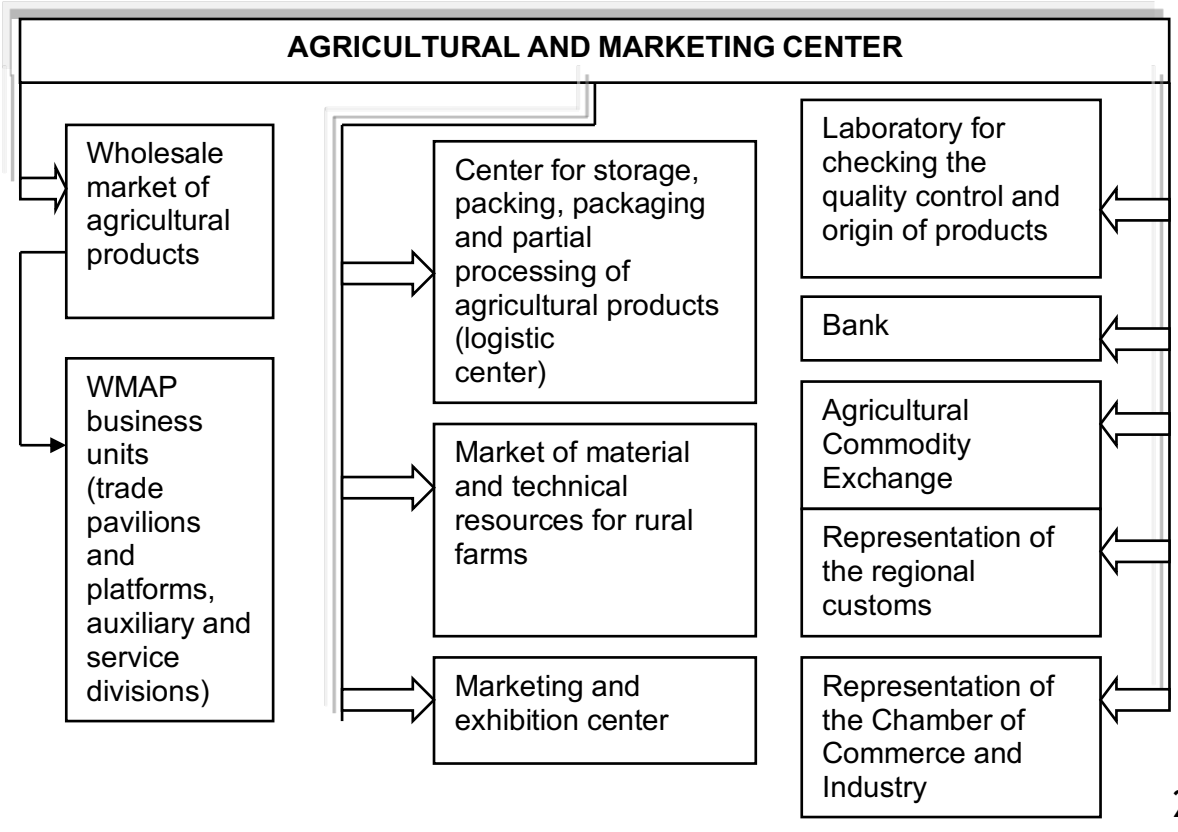

Fig. 8.1. The structure of the agricultural marketing center.

The main functions of the AMC should be:

▫ providing conditions for the formation of fair prices for agricultural products;

▫ storage and preparation of goods for sale in various divisions of WMAP;

▫ involvement in the market and organization of wholesale market operators;

▫ formation of homogeneous batches of goods to order;

▫ formation of production orders;

▫ examination of safety and quality of goods;

▫ customs clearance of export consignments of goods;

▫ ensuring the functioning of banking structures for the provision of banking services;

▫ information support of stakeholders in the market;

▫ consulting functions, etc.

Agricultural marketing centers are a constant practice of wholesale markets of other countries, in particular, European countries. Accordingly, their creation and operation in Ukraine is one of the most promising areas for the development of organized transparent marketing systems for agricultural products and the expansion of trade relations with the Black Sea Basin.

It should be noted that in modern conditions, when the economy is increasingly gaining logistical features, and trade flows are organized on a logistical basis, the importance of building a WMAP network is growing, and their activities are gaining logistical features. This is facilitated by their market and logistics functions:

- optimization of routes (logistics chains) of movement of domestic agricultural products;

- curbing inflation by optimizing pricing policy in relevant markets and increasing competition with small wholesale retail chains;

- import substitution by improving the quality of domestic agricultural products, reducing costs and time of delivery;

- growth of value added in the market, which in general increases both its efficiency and the efficiency of all its subjects, which will lead to an increase in budget revenues at various levels.

To solve the problems identified above, it is proposed to develop and approve a program to create and develop the AMC.

The main goal of the Program is to increase the efficiency of the agro-industrial complex of Ukraine by:

- reduction of existing losses of agricultural products (almost 30% of produced and unsold) due to the introduction of a modern optimal system of procurement and storage;

- optimization of pricing of agricultural products due to, firstly, the creation of a national information and reference system for wholesale prices for agricultural products in wholesale markets of different regions, and secondly, reducing the difference between prices for purchases of agricultural products directly from producers and retail prices ;

- achieving a positive balance of foreign trade in agricultural products by, firstly, increasing the competitiveness of domestic products (improving quality as a result of modern technologies of processing, storage, packaging and certification of products in accordance with international standards, etc.), and secondly, by reducing language imports of agricultural products, including as a result of optimization of domestic production. In this regard, the example of Poland is illustrative, where the creation of a network of wholesale markets has allowed for four years to achieve a significant increase in agricultural exports (twice) and a positive foreign trade balance.

According to many researchers (Kozak Yu. G. The role and place of Ukraine in regional interstate economic organizations: CIS, BSB, GUAM. / Yu. G. Kozak // Problems and prospects of cooperation between the countries of Southeast Europe in the Black Sea economic cooperation and GUAM - Collection of scientific works - Odesa-Donetsk: DonNU, RF NISI in Odesa, RF NISI in Donetsk, 2008. - P. 24-28 - P. 27); (Novitsky VE Black Sea economic cooperation in the system of subregional priorities of Ukraine / VE Novitsky, VA Khomanets // Problems and prospects for the development of cooperation between the countries of Southeast Europe in the Black Sea economic cooperation and GUAM. - Sb. nauch tr. - Odesa-Donetsk: DonNU, RF NISI in Odesa, RF NISI in Donetsk, 2008. - P. 851—853. - P. 851); (Perepelytsia G. The policy of Ukraine towards the Black Sea region [Xenophon paper]. International Center for Black Sea Studies (ICBSS), Athens, Greece, 2007. - № 2, P. 146. - [Electronic resource] - Access mode:

http://mercury.ethz.ch/serviceengine/Files/ISN/103761/ichaptersection_singledocument / 073a508c-e8f2-445d-8993-caf21ad55d62 / en / 11.pdf), especially promising for Ukraine is trade integration with BSB countries - Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Serbia and Turkey. First, access to the Black Sea, which has 6 countries, can lead to significant savings on transport costs in trade in agricultural products (which is especially important for perishable products). Secondly, as noted by A. Honcharuk and I. Troyan (Trade and economic priorities of Ukraine in the BSB. International Economic Policy. 2013. № 2 (19). P.31), the intensification of trade cooperation between Ukraine within the Black Sea subregion contributes to the most comprehensive realization of national economic interests. In addition, the implementation of trade cooperation with the BSB countries in the field of agricultural production will stimulate the innovative development of domestic agriculture.

Thus, the implementation of the tasks of the AMC Development Program and regional wholesale markets for agricultural products in Ukraine will allow:

- to reduce the existing losses of the grown crop of agricultural products as a result of introduction of the modern optimum system of purchase, storage and processing;

- to improve the pricing system of agricultural products by, firstly, creating a national information and reference system on wholesale prices for agricultural products in wholesale markets of different regions, and secondly, reducing the difference between prices for purchases of agricultural products directly from producers and retail prices for the population. ;

- to achieve a positive balance of foreign trade in agricultural products (in particular, with BSB countries) by, first, increasing the competitiveness of domestic products (improving quality as a result of modern technologies of processing, storage, packaging and certification of products in accordance with international standards, and, accordingly, increase in exports, etc.), secondly, due to a decrease in non-compulsory imports of agricultural products;

- to save public funds due to the fact that WMAP will perform the functions of regional agricultural marketing centers, which will solve the problem of food security in the country as a whole, by diversifying the supply of agricultural products, ie the optimal ratio of export and import supplies, and in individual regions - due to the rational redistribution

between them through WMAP of the required volumes of certain types of agricultural products;

- to exclude unreasonable price fluctuations for certain types of agricultural products due to their deficit or surplus in the regions;

- to obtain a significant economic benefit for the state through: streamlining commodity-money relations between producers and intermediaries, legalization of transactions and, as a result, the growth of tax revenues to the budget.

The economic effect of the AMC construction project is generated by the following components:

- release of areas of urban wholesale markets operating directly in the city, due to the concentration of wholesale trade outside the city limits. Only retail markets will be concentrated in the city;

- increase in tax revenues from enterprises. It is expected that the development of organized transparent marketing systems of agricultural and food products, fair pricing, the establishment of uniform trade rules, creating equal conditions for all trade participants, dissemination of objective market information will promote agriculture, processing and food industry, will be a powerful factor and profitability of enterprises of these types of economic activity, thus expanding the tax base;

- intensification and increase of exports of agricultural products, primarily with the BSB countries, development of joint export infrastructure with them, additional tax revenues;

- increasing the investment attractiveness of agriculture;

- increase of guarantees of sale of agricultural products for domestic producers, optimization of sales channels as a result of trade integration with the BSB countries and, accordingly, reduction of expenses;

- providing the population with a continuous supply of fresh agricultural products throughout the year;

- increasing the role and economic significance of the region in which the AMC is located in the system of interregional and international trade in agricultural products;

- strengthening the foundations of food security, increasing the level of food self-sufficiency, reducing dependence on imported trade flows of agricultural and food products.

The environmental effect of the organization of the AMC provides:

- ensuring high quality, environmental friendliness and safety of agricultural products sold through the AMC;

- observance of ecological and sanitary norms and rules;
- promoting the development of the market of environmentally friendly agricultural products of domestic production; increasing the income of farmers who specialize in growing organic agricultural products;
- effective use of agricultural potential, maintenance of long-term soil fertility during the introduction of organic agricultural production, preservation of the natural environment, minimization of environmental risks;
- enhanced quality control and certification of environmentally friendly agricultural products in accordance with the requirements of international standards and, as a consequence, the growth of its exports to European countries, where today there is a steady unmet demand for such products.

The social effect of the AMC construction project is as follows:

- creation of additional jobs in rural areas by increasing the production of existing agricultural enterprises and the creation of new farms, in particular those engaged in the cultivation of organic products;
- growth of incomes of the population employed at the enterprises of agrarian and industrial complex;
- improving the living standards of the population, reducing the number of diseases due to poor nutrition, reducing the threat to public health;
- ensuring optimal consumer prices, increasing the purchasing power of the population, increasing the level of economic affordability of food, which is a component of food security.

To implement such a program, it would be appropriate to use the mechanisms of public-private partnership, because as a state contribution to joint projects can be considered land allocated for the creation of WMAP (AMC), state financial assistance for the period of project payback, etc.

8.2. Unification of logistics procedures (in terms of packaging) as a mechanism for integrating local agricultural producers into cross-border markets

Containers and packaging for food products supplied to the countries of the European Union must meet its requirements. On the one hand, they must ensure the preservation of products, on the other - to allow reuse or recycling, which eliminates the generation of waste harmful to the

environment. Labels applied to both packaging and packaging must serve the function of informing consumers about the properties of the product and be environmentally friendly.

Knowledge of EU packaging requirements will make it easier for suppliers to enter EU markets and protect them from possible claims from consumers and regulators.

Containers and packaging for berries and strawberries

Two types of packaging are used for packing berries and strawberries: primary, when the packaging is in direct contact with the product, and secondary, when the goods in the primary packaging are packed in transport packaging for transportation. Transportation by several modes of transport (combined transport) should ensure the delivery of products in good condition to the place of its final destination - retail, further sorting / packaging, processing. In the retail segment, the purpose of packaging is to protect berries from mechanical damage and rot. Most ready-made retail berries are packed in baskets with lids, tightly closed plastic boxes or films (plastic packaging for retail sale) in accordance with the requirements of the retailer (Table 8.1.). Retail packaging is then loaded into corrugated cardboard boxes weighing from 1 to 6 kg, and then - in pallets up to 1.5 tons.

For packing berries and strawberries, plastic containers-special booties with a capacity of 100 g to 1 kg are used. The bootie can be with or without a cover. The booties themselves are transported in a cardboard package. Secondary packaging protects the product and its primary packaging. Strawberries can be supplied in cardboard packaging without booties. Tertiary packaging can also be used - transport packaging, which is removed by the retail network operator before placement in the trade hall (wooden pallet, protective cardboard corners, packing tape, floor covering), this packaging remains with the distributors.

Table 8.1.

Typical sizes of retail packaging

Strawberries	Raspberries	Blueberries	Blackberries	Red currants	Berry mixes
8 x 250 g 8 x 500 g 10 x 250 g 10 x 400 g	8 x 125 g 8 x 150 g 8 x 200 g 8 x 250 g	8 x 125 g 8 x 200 g 8 x 250 g 10 x 250 g	8 x 125 g 8 x 150 g 10 x 150 g	8 x 125 g 10 x 150 g 10 x 500 g 12 x 125 g	10 x 125 g 10 x 150 g

10 x 500 g 12 x 250 g 12 x 400 g 12 x 500 g 16 x 250 g	10 x 150 g 10 x 170 g 12 x 125 g 12 x 150 g 12 x 170 g	10 x 300 g 10 x 500 g 12 x 125 g 12 x 150 g 12 x 200 g	12 x 125 g 12 x 150 g 12 x 170 g	12 x 150 g	

Labeling requirements for the wholesale export of fresh berries to the EU must comply with the rules and regulations in force on the European market. The package is designed to protect berries from mechanical damage, contamination, leakage and dehydration, as well as to present the company's image.

The packaging must meet the requirements of the United Nations Economic Commission for Europe (UNECE). The UNECE standard for berries defines the following packaging requirements:

- Berries must be packaged in such a way as to ensure the proper safety of the product.
- The materials used inside the package must be clean and of a quality that does not cause external or internal damage to the product. The use of materials, particularly of paper or stamps bearing trade specifications is allowed provided the printing or labeling has been done with non-toxic ink or glue.
- The packaging should not contain any foreign substances, except for random leaves and branches of wild berries.

The Codex Alimentarius (Collection of Food Standards) sets international food standards and guidelines for improving the safety and quality of international food trade. Codex Alimentarius contains the Code of Practice for the Packaging and Transport of Fresh Fruits and Vegetables CAC / RCP 44-1995. It represents best practices for the use of transport equipment, loading and pre-cooling.

Special legislation applies to all wooden pallets exported to the EU. Based on this international standard, each pallet must be disinfected (phytosanitary treatment against pests), after which each pallet must be marked with a special stamp "IPPC".

Some EU countries have additional rules for wooden packaging materials. For example, in Germany, the possibility of recycling packaging materials is another important requirement. The Law on the Recycling of Packaging Waste (Verordnung über die Vermeidung und Verwertung von

Verpackungsabfällen (or VerpackV) sets out requirements for the disposal of packaging materials, based on European Union Directive 94/62 / EC, which aims to harmonize national packaging management measures). The Directive states that all those involved in the production, use, import and distribution of packaged products shall be liable for packaging waste in accordance with the "polluter pays" principle.

The "Green Dot" sign (Der Grune Punkt) in black and white, green and white and green indicates that the packaging material is recyclable as part of the "Dual System" (DSD), which is the basis for the recycling of certain types of waste in Germany. . The mark can be affixed by companies participating in a system that unites more than 15 European countries. It means that the manufacturer ensures the receipt of labeled packaging material for recycling.

The text on the label must be made in the language of the country of sale. Labels must not contain toxic ink or glue. If the nature of the product is not visible from the outside, the name of the product, (optionally) the name of the variety and / or the commercial name must be indicated on the packaging.

All labels for fresh berries covered by European Union marketing standards must contain the following information:

- the nature of the product and the name of the variety (for example: raspberry Rubus idaeus L.);
- place of production / country of origin;
- commercial identification: class, size (code), number of units, Net weight (for example: class I, UNECE standard for fresh berries);
- indicate "wild" when the berries were harvested in the wild.
- date of collection.

If products are sold in prepackaged packaging, the labeling must comply with the rules set out in EU Regulation № 1169/2011 on the provision of food information to consumers. The following information must appear on the product label in prepackaged berries:

- name and address of the packer, including the country of origin;
- weight or number of items in the package;
- lot number;
- size.

Containers and packaging for honey

The choice of containers for transportation and storage of honey should be given great attention: many materials used for contact with food are unacceptable for use as containers for honey, because the latter has an acidic environment.

Large batches of honey can be transported in wooden barrels (up to 70 liters), as well as in plastic containers. It is believed that transporting and storing food in plastic is not very useful, so it is necessary to maintain a special temperature of + 13 ° C - + 14 ° C (especially in the warm season) at all stages of transportation.

Aluminum and stainless steel tanks (up to 27-30 liters) are often used to transport medium batches. Glass jars are most often used for retail sale.

Other products of life of bees (honeycombs, wax) are packed separately in plastic containers, paper, cardboard boxes, etc.

For deliveries of sectional honeycomb use special polyethylene containers which are established in a multiple sectional frame.

Prepackaged honey must be labeled with its name, which includes the name and address of the producer / packer, the name of the country of origin, storage conditions, expiration date, batch / batch and the specified weight. The product can only be called "honey" if it meets the established standards of composition.

Honey is one of the products on the labels of which the country of origin of honey must be indicated.

Directive 2014/63 clarifies the labeling requirements if the honey originates from more than one EU country (several EU countries) or a non-EU country. In these cases, the name of the country of origin should be replaced, where appropriate, by one of the following wording:

"A mixture of honey from the EU"

"A mixture of honey not from the EU"

"A mixture of honey from the EU and not from the EU"

In some cases, these names may be replaced by the simple common name of the product "honey". Information on regional, territorial or topographical origin, as well as information on flower or plant origin or special quality criteria may complement this labeling (except for "filtered honey" and "confectionery honey").

Honey, like other foodstuffs supplied to the EU, must comply with EU labeling rules aimed at ensuring that the consumer has all the necessary information to make an informed choice when buying food.

Labeling should not mislead the buyer about the characteristics or effects of the product, and should not attribute to the product special properties for the prevention and treatment of various diseases. The information on the labels should be clear, legible, indelible, easy to view.

Any statements made in the text of food labeling in the European Union must be clear, accurate and based on scientific evidence.

8.3. Innovative mechanisms for intensifying cross-border cooperation in the agricultural and related sectors of the Black Sea Basin

Well-established interaction between all stakeholders in innovation development in agriculture promotes the diffusion of innovation. Cooperation can arise spontaneously or as a result of the implementation of a certain program. Effective coordination requires the following prerequisites: 1) leadership; 2) appropriate incentives; 3) favorable environment; 4) availability of a program and / or strategy; 5) relevant institutions; 6) involvement of state institutions in more active participation in innovation processes. According to world experience, organizational innovations (committees or councils, platforms or networks, various associations, etc.) contribute to the emergence and diffusion of innovations.

Effective cross-border coordination and organization of participants in the innovation process in agriculture can be supported by a number of tools and incentives, such as joint development of innovation development priorities, joint research or implementation of innovation programs, creation of innovation platforms, involvement of innovation brokers, cross-border clusters. Creating agricultural alliances that bring together buyers, manufacturing organizations, and small producers helps gain access to important markets. Farmers can set up local associations to conduct applied research, help implement standards, and provide technical and financial support to each other. Innovation networks bring together various agents of innovative development, including farmers, private firms, researchers, agricultural enterprises, etc., who voluntarily coordinate their activities, share experiences and other resources in order to improve production efficiency. Value-added chains are networks with a commercial focus,

aimed at creating new business models, and are organizational innovations. The creation of small self-organization groups of farmers and their associations within federations contributes to the development of effective strategies for rural communities, including in the field of innovation. Rural institutional platforms disseminate practices and innovations in agriculture, give farmers access to up-to-date knowledge in agriculture, bank loans, modern equipment centers, and the opportunity to represent their interests at the state level.

Cooperation within such platforms contributes to the accumulation of social capital (Agricultural Innovation Systems : An Investment Sourcebook. Washington : World Bank, International Bank for Reconstruction and Development, International Development Association, 2012. 658 p. URL: https://openknowledge.worldbank.org/handle/10986/2247, C. 84-89).

In essence, clusters are an organizational innovation - each cluster is a unique management system with a unique combination of resources. However, the ultimate goal of each cluster is to provide enhanced playback.

With the help of the cluster mechanism of economic management in the agricultural and related sectors is possible in several areas, among which are the following: 1) commercialization of entrepreneurial initiative; 2) extension of the value chain; 3) commercialization of innovations; 4) processing of by-products of other industries - providing a closed production cycle (Yermakova OA. Foreign economic activity of the region: institutional levers of improvement: monograph. Odesa National Economic University. Odesa: Interprint, 2014. 312 p., P. 241-249).

1) Commercialization of entrepreneurial initiative: the cluster is created on the initiative of an entrepreneur who seeks to implement their business idea and is faced with the task of creating a production network. The core of the cluster becomes a certain manufacturing enterprise, and other members of the cluster are accompanying enterprises, which may include suppliers of raw materials, transport, repair enterprises, research, educational, financial institutions, consumer enterprises of finished products and more. As a rule, the involvement of members of such a cluster is based on long-term contracts. The peculiarity of this type of clusters is that the introduction of innovations is not a priority for them and they are poorly focused on innovation development. An example is a cluster for the production of feed from industrial fish. The cluster is based on an

entrepreneurial idea, which consists in the production of ecological nutritious compound feeds from industrial fish. The core of the cluster is an enterprise that is able to provide this production process. On the basis of long-term contracts, the cluster involves suppliers of raw materials - fisheries, consumer enterprises - farms, a research institution that will provide technological support for the production process.

A variant of this type of cluster is a commercial association of small producers, which alone are unable to commercialize their products. The cluster involves enterprises / institutions capable of providing commercial support (accounting, legal, marketing and sales services, quality control, etc.) of the cluster's products on the principle of outsourcing. For example, amateur winemakers are interested in creating this type of cluster. For many amateur winemakers, winemaking is a hobby, although none of them would mind if their favorite business would bring legalized profits. The cluster allows to solve a number of problems of amateur winemakers, including: obtaining a license to conduct its activities, creating and promoting a brand, quality control, introduction of new technologies, legal protection. The state will also benefit from the creation of a cluster and the legalization of amateur winemakers - tax revenues to the budget will increase.

2) Extension of the value chain: the cluster includes enterprises that are connected by the technological cycle of production of certain products, from suppliers of raw materials to enterprises that carry out the highest technological stages of production. The cluster may have a narrower specialization, focused on a particular technological stage. A variant of this type of cluster is the association of enterprises that provide services in a particular area in order to fully meet the needs of the consumer. The competitive advantage of such clusters is the complexity of service provision. Clusters of this type are common in the tourism sector, in particular agro-ecological and recreational tourism. Examples of such clusters are the Wine and Taste Roads of the Danube Bessarabia project, as well as the Frumushika-Nova cluster in the Tarutyn district of the Odesa region, which has established cross-border ties with Moldova.

3) Commercialization of innovations: the core of clusters of this type are universities and research institutions. The enterprises included in the cluster focus on the introduction of innovations in the production process and their commercialization. This type of cluster is the most innovation-oriented.

4) Ensuring a closed production cycle: production within clusters of this type is focused on the processing of by-products of other industries. The new economic model is based on the recovery industrial system, in which waste is used in production. The basis of zero-waste production is the transformation of non-profit values into capital, ie capitalization, but it takes into account the priorities of sustainable development and "green" economy. The introduction of low-waste and zero-waste production is considered as a strategic direction of rational use of limited natural resources and environmental protection in the concepts of sustainable development and "green" economy.

The problem of secondary use of resources is relevant for the wine industry, as this industry generates a significant amount of waste. Today, most of the secondary raw materials of winemaking in Ukraine are disposed of. Grape processing in the wine and non-alcoholic industries generates approximately 15-20% of waste, the rational use of which could provide additional products that are of significant value to a number of sectors of the economy. In the processing of secondary material resources of winemaking you can get the following products: tannins, tartaric acid, tartaric salts, ethyl alcohol, monochromatic, polyphenolic concentrates, grape oil, bioconcentrates of B vitamins, enanthate ether, organic fertilizers, feed, wood boards, etc.

For example, every year the economy of Odesa region loses tens of millions of hryvnias of income that could be obtained by processing and selling secondary winemaking products. Products of secondary winemaking in Odesa region, in particular in the Danube economic subregion, are practically not used in further production, which causes undercapitalization of the region's economy. The share of the Danube subregion in the gross harvest of Odesa region is 31.1% (about 9.2 thousand hectares of vineyards) (Vlasov VV, Jaburiya LV, Belous IV, Levchuk VV Wine road Odesa: Odesa: NEC "IViV named after VE Tairov", 2009. 198 p.). Given that the average yield of grapes is 35 kg / ha, its annual harvest is 32.2 thousand tons, the share of secondary winemaking products - 5-7 thousand tons. However, the products of secondary winemaking are practically not used in further production, which does not comply with the principles of waste-free production and saving of natural resources..

In the Danube subregion there are a number of preconditions for the formation of a cluster for the processing of secondary winemaking

products, in particular: significant volumes of winemaking waste; small scale of domestic production for processing of secondary winemaking products, the need to solve the problem of import substitution; high profitability.

Another example of clusters of this type is the energy saving cluster, the ideology of which is to produce electricity and heat through cogeneration units that use renewable energy sources as fuel, such as: biofuels derived from vegetable oil, biogas through the disposal of animal waste and vegetable origin, solid waste, degassing mine gas methane, synthesis gas and other alternative fuels. The cluster unites the manufacturer of cogeneration units, suppliers of energy raw materials for processing in the plant, consumers of electricity and heat. The activity of this cluster will ensure the utilization of waste from agricultural enterprises, food industry enterprises, household waste, mine gas, etc. Today, the level of involvement of renewable energy sources, including biofuels, in the energy balance of Ukraine is low. The bulk of raw materials for biofuels in Ukraine is disposed of without any further use. In addition, biomass energy technologies are at an early stage of development in Ukraine, but have great potential for widespread introduction and commercialization in the near future. However, this resource has a powerful potential for energy conservation. There are only a few examples of implementation of biogas plants and landfill gas collection and utilization systems (Yudin MA Regulatory policy of the state in ensuring the competitiveness of energy-saving machine-building products: monograph. NAS of Ukraine, Institute of Market Problems and Economic-Ecological Research Odessa , 2011. 264 p.).

Conclusions

Some agricultural and food products differ in certain characteristics, qualities or reputation, which are essentially the result of their geographical origin. This differentiation can be attributed to the unique local characteristics of the product, its history or its distinctive character, related to natural or human factors such as soil, climate, local know-how and traditions.

These originating quality products can increase food security by promoting rural development and food diversity, as well as offering consumers greater choice. Indeed, by linking such products to their territories of origin, they can help preserve local resources, support traditions, strengthen local stakeholder organization, and prevent delocalisation and rural outflow.

In the process of Ukrainian European integration, interest may be given to a product that is endowed with unique properties, which can be caused by the peculiarities of the locality of its production. Ratification of the EU-Ukraine Association Agreement requires safeguarding the safety and quality of Ukrainian products.

The legal conflict of the GIO definition can be resolved by implementing substantive and procedural international norms. There are a sufficient number of regional products in Ukraine that require certification. Its promotion requires effective information support, training, seminars, publication of a manufacturer's manual for product certification. After all, the new legislation has no accompanying regulation of actions to date. Manufacturers do not have full legal information, which leads to low rates of the European integration process.

The reduction in information asymmetry that GIO should provide depends on consumer awareness, and there is often a gap. A massive information campaign, like our AgriTradeNet project, is able to counteract this fact.

The AgriTradeNet project is aimed at enhancing the ability of local producers, their geographical certification / identification capabilities, and establishing links between business organizations at BSB that support these producers locally.

Appendix A

Exports and imports of agricultural products of Ukraine with some countries of the Black Sea Basin (Greece, Bulgaria, Romania, Moldova, Turkey) in 2019

Groups 1-24 of the Ukrainian classification of goods of foreign economic activity	Export			Import		
	cost, thousand dollars USA	in% to resp. period poper. year	in% to total volume	in% to total volume	in% to resp. period poper. year	in% to total volume
Greece						
I. Live animals; products of animal origin						
02 meat and edible offal	56,3	42,2	0,0	-	-	-
03 fish and crustaceans	0,3	15,8	0,0	47,7	20,7	0,0
04 milk and dairy products, poultry eggs; natural honey	5,7	96,9	0,0	405,3	119,6	0,1
II. Products of plant origin						
06 live trees and other plants	-	-	-	13,3	11 597,8	0,0
07 vegetables	46,7	14,0	0,0	162,9	117,2	0,1
08 edible fruits and nuts	13 906,1	107,8	5,1	41 887,9	180,3	13,4
09 coffee, tea	3,0	45,8	0,0	22,6	386,9	0,0
10 grain crops	7 843,1	52,9	2,9	-	-	-
11 products of the flour and cereal industry	162,4	112,0	0,1	1,2	-	0,0
12 seeds and fruits of oilseeds	56 520,6	155,1	20,6	0,3	74,6	0,0
14 vegetable materials for manufacturing	405,0	98,7	0,1	-	-	-

III. 15 Animal or vegetable fats and oils	8 620,0	181,7	3,1	4 845,8	220,5	1,6

Continuation of the table of the Annex A

IV. Ready-made food products						
16 meat and fish products	23,3	31,8	0,0	31,9	501,6	0,0
17 sugar and sugar confectionery	789,0	184,5	0,3	12,5	-	0,0
18 cocoa and products from it	4 416,5	112,1	1,6	85,7	342,6	0,0
19 finished grain products	777,2	113,1	0,3	607,3	221,4	0,2
20 vegetable processing products	180,5	420,1	0,1	4 422,9	106,2	1,4
21 different foods	124,1	114,5	0,0	226,2	127,2	0,1
22 alcoholic and soft drinks and vinegar	190,0	138,9	0,1	467,8	129,9	0,2
23 residues and wastes of food industry	5 040,4	121,4	1,8	-	-	-
24 tobacco and industrial tobacco substitutes	5,6	120,5	0,0	1 115,7	49,9	0,4
Bulgaria						
I. Live animals; products of animal origin						
02 meat and edible offal	163,6	13,3	0,0	-	-	-
03 fish and crustaceans	65,7	5 116,3	0,0	37,4	143,1	0,0
04 milk and dairy products,	733,0	103,5	0,2	5 692,1	110,6	1,2

poultry eggs; natural honey						
II. Products of plant origin						
06 live trees and other plants	0,1	370,0	0,0	-	-	-
07 vegetables	22,3	11 144,5	0,0	162,5	1 157,8	0,0
08 edible fruits and nuts	1 366,3	217,7	0,3	15,7	96,3	0,0
09 coffee, tea	4 551,3	108,6	0,9	71,7	96,2	0,0

Continuation of the table of the Annex A

10 grain crops	98,7	70,4	0,0	4 323,1	113,0	0,9
11 products of the flour and cereal industry	594,1	294,6	0,1	64,8	31,5	0,0
12 seeds and fruits of oilseeds	468,0	109,5	0,1	6,8	99,2	0,0
III. 15 Animal or vegetable fats and oils	14 686,5	267,5	3,0	649,8	701,1	0,1
IV. Ready-made food products						
16 meat and fish products	109,0	1 654,7	0,0	-	-	-
17 sugar and sugar confectionery	4 345,3	92,7	0,9	198,4	544,8	0,0
18 cocoa and products from it	9 806,3	125,3	2,0	3 331,2	160,5	0,7
19 finished grain products	4 280,3	144,8	0,9	8 387,1	112,4	1,8
20 vegetable processing products	150,7	123,3	0,0	2 935,4	229,4	0,6
21 different foods	4 369,0	130,4	0,9	5 417,3	84,4	1,2
22 alcoholic and soft drinks and	1 438,5	640,9	0,3	390,2	124,8	0,1

vinegar						
23 residues and wastes of food industry	415,4	827,7	0,1	952,1	63,9	0,2
24 tobacco and industrial tobacco substitutes	-	-	-	5 530,1	112,9	1,2
Romania						
I. Live animals; products of animal origin						
02 meat and edible offal	1 964,3	18,2	0,2	-	-	-
03 fish and crustaceans	193,6	279,7	0,0	-	-	-

Continuation of the table of the Annex A

04 milk and dairy products, poultry eggs; natural honey	83,3	6,8	0,0	122,9	137,8	0,0
05 other products of animal origin	-	-	-	16,4	58,7	0,0
II. Products of plant origin						
06 live trees and other plants	3,7	-	0,0	474,2	230,2	0,1
07 vegetables	3 822,2	66,6	0,4	10,1	13,5	0,0
08 edible fruits and nuts	4 558,4	89,4	0,5	13,2	59,7	0,0
09 coffee, tea	95,0	570,3	0,0	0,0	4,5	0,0
10 grain crops	2 067,5	37,5	0,2	41 366,3	93,0	6,4
11 products of the flour and cereal industry	256,5	162,2	0,0	213,2	575,3	0,0
12 seeds and fruits of oilseeds	5 717,3	140,1	0,6	5 074,5	76,6	0,8
13 shellac natural	-	-	-	122,6	515,2	0,0

14 vegetable materials for manufacturing	225,8	1 294,1	0,0	-	-	-
III. 15 Animal or vegetable fats and oils	2 236,1	42,8	0,2	2 751,1	157,1	0,4
IV. Ready-made food products						
16 meat and fish products	1 079,6	63,3	0,1	-	-	-
17 sugar and sugar confectionery	13 995,6	115,6	1,4	148,4	113,4	0,0
18 cocoa and products from it	12 074,7	114,3	1,2	333,1	95,4	0,1
19 finished grain products	21 793,6	164,7	2,2	1 255,5	116,3	0,2
20 vegetable processing products	1 503,4	119,4	0,1	88,0	111,0	0,0

Continuation of the table of the Annex A

21 different foods	7 471,3	204,8	0,7	3 997,7	199,4	0,6
22 alcoholic and soft drinks and vinegar	401,4	24,7	0,0	137,0	135,9	0,0
23 residues and wastes of food industry	6 982,1	117,1	0,7	-	-	-
24 tobacco and industrial tobacco substitutes	-	-	-	421,8	217,1	0,1
Moldova						
I. Live animals; products of animal origin						
01 live animals	782,0	425,7	0,1	0,3	-	0,0
02 meat and edible offal	12 851,4	166,9	1,8	-	-	-
03 fish and	1 896,5	98,0	0,3	94,3	94,0	0,1

crustaceans						
04 milk and dairy products, poultry eggs; natural honey	34 073,1	115,1	4,7	541,5	187,7	0,6
05 other products of animal origin	40,4	30,4	0,0	3,2	38,3	0,0
II. Products of plant origin						
06 live trees and other plants	921,4	112,5	0,1	422,8	98,9	0,5
07 vegetables	3 411,5	56,1	0,5	342,7	119,0	0,4
08 edible fruits and nuts	2 368,3	69,6	0,3	5 995,9	237,3	6,6
09 coffee, tea	1 963,8	114,0	0,3	-	-	-
10 grain crops	1 515,5	72,3	0,2	42,4	59,7	0,0
11 products of the flour and cereal industry	13 742,2	100,6	1,9	-	-	-
12 seeds and fruits of oilseeds	1 901,9	102,0	0,3	3 395,3	375,2	3,7

Continuation of the table of the Annex A

13 shellac natural	28,9	79,5	0,0	13,4	-	0,0
14 vegetable materials for manufacturing	179,1	37,4	0,0	-	-	-
III. 15 Animal or vegetable fats and oils	9 083,2	88,2	1,3	9,4	120,3	0,0
IV. Ready-made food products						
16 meat and fish products	3 934,2	99,5	0,5	-	-	-
17 sugar and sugar	9 256,6	78,5	1,3	249,1	14,9	0,3

confectionery						
18 cocoa and products from it	10 219,0	103,4	1,4	82,7	190,2	0,1
19 finished grain products	27 048,1	116,7	3,7	374,0	1 536,7	0,4
20 vegetable processing products	7 070,4	113,7	1,0	2 520,6	198,0	2,8
21 different foods	20 922,2	106,3	2,9	5,5	5,9	0,0
22 alcoholic and soft drinks and vinegar	24 152,6	102,7	3,3	8 077,0	54,7	8,9
23 residues and wastes of food industry	5 620,5	67,3	0,8	96,5	108,8	0,1
24 tobacco and industrial tobacco substitutes	35 545,9	90,1	4,9	242,5	51,7	0,3
Turkey						
I. Live animals; products of animal origin						
01 live animals	1 246,2	64,7	0,0	-	-	-
02 meat and edible offal	15 322,7	146,6	0,6	-	-	-
03 fish and crustaceans	2 804,4	327,5	0,1	11 439,6	158,8	0,5
04 milk and dairy products, poultry eggs; natural honey	9 583,4	42,3	0,4	21,3	3,0	0,0

Continuation of the table of the Annex A

05 other products of animal origin	21,5	59,3	0,0	-	-	-
II. Products of plant origin						
06 live trees and other plants	112,2	56,1	0,0	818,2	101,6	0,0

07 vegetables	19 301,9	203,7	0,7	63 441,7	119,8	2,7
08 edible fruits and nuts	34 579,7	169,3	1,3	187 788,2	120,3	8,0
09 coffee, tea	224,8	97,2	0,0	555,2	105,8	0,0
10 grain crops	718 406,9	389,7	27,4	1 374,9	65,8	0,1
11 products of the flour and cereal industry	4 620,8	93,2	0,2	563,0	102,0	0,0
12 seeds and fruits of oilseeds	467 044,0	144,6	17,8	67 293,7	75,5	2,9
13 shellac natural	12,0	2 162,3	0,0	18,9	123,5	0,0
14 vegetable materials for manufacturing						
III. 15 Animal or vegetable fats and oils	19 519,8	33,8	0,7	773,6	109,7	0,0
IV. Ready-made food products						
16 meat and fish products	2 046,0	81,8	0,1	40,1	-	0,0
17 sugar and sugar confectionery	6 902,5	37,4	0,3	10 150,0	105,6	0,4
18 cocoa and products from it	2 657,8	104,5	0,1	7 019,7	68,8	0,3
19 finished grain products	6 473,9	122,3	0,2	12 625,3	140,1	0,5
20 vegetable processing products	1 166,5	140,3	0,0	19 676,1	107,6	0,8

Continuation of the table of the Annex A

21 different foods	1 848,5	78,8	0,1	3 893,9	163,4	0,2
22 alcoholic and soft drinks and	334,5	31,7	0,0	366,5	77,8	0,0

vinegar						
23 residues and wastes of food industry	229 491,3	175,9	8,8	62,6	11,6	0,0
24 tobacco and industrial tobacco substitutes	129,5	30,2	0,0	13 105,5	126,8	0,6

Source: (Countries by commodity structure of foreign trade 2019 State Statistics Committee of Ukraine).

URL: http://ukrstat.gov.ua/operativ/operativ2019/zd/kr_tstr/arh_kr_2019.htm)