ECOLOGICAL AGRICULTURE DEVELOPMENT IN THE REPUBLIC OF MOLDOVA: EVOLUTION AND BENEFITS

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Abstract

In recent years, organic products have been in an increasing demand with consumers. For those who decide to make the transition from conventional to organic or to start a business with organic products, organic agriculture offers many benefits. Organic agriculture is growing in the Republic of Moldova and contributes to global agricultural exports. However, subsidies for organic agriculture are limited. In this context, the study aims to analyse the development prospects in competition with less quality but cheaper traditional products. During the research of this subject, the following methods were used: deduction and induction, analysis, comparison, tabular method and graphical method. In the Republic of Moldova, organic agriculture began to grow only in the years 2002-2004 when the dialogue with the European Union on the share of vegetables, fruits, grapes, berries produced in Moldova and exported to the EU countries began. The structure of crops grown within organic agriculture practices in the Republic of Moldova includes primarily traditional crops (wheat, corn, barley, sunflower, sugar beet, soybeans, peas, etc.), medicinal plants, orchards and vineyards. However, the implementation of organic agricultural systems in the Republic of Moldova is characterized by modest indicators compared to other European countries. Impediments to its promotion are related to the low level of investment, limited access to financial resources, low level of entrepreneurial and professional qualities of most farmers, limited size of the internal market and tough demands of foreign markets, poor harmonization of national standards with the European ones.

Key words: organic agriculture, conventional agriculture, sustainable development, trade, subsidies.

INTRODUCTION

The traditional farming system, with its accompanying shortcomings, tends to be replaced by organic farming (sustainable agriculture). It has also begun to take on a clearer profile in the Republic of Moldova. Organic agriculture is based on the use of those means and methods offered by scientific and technical innovations that ensure high quality production, promoting land cultivation by those means that ensure a balance between agroecosystems and the environment. Organic agricultural systems avoid or completely exclude the use of synthetic fertilizers, pesticides, growth regulators and feed additives. They are based on crop rotation, the use of residues obtained in plant cultivation and animal husbandry [14]. The foundations of organic agriculture were laid between 1920 and 1960, immediately after the beginning of the process of industrialization of agriculture and at the start of the "green revolution" by Rudolf Steiner in Germany, the founder of the concept of "biodynamic agriculture", Sir Albert Howard in England, whose ideas founded the school of "organic farming", H. Müller in Switzerland, author of the concept of "organic-biologic" agriculture, and the founders of the school of "organic farming" C. Lemaire and J. Boucher in France [16]. Initially, the agricultural activity was oriented towards obtaining a higher productivity, in order to satisfy the basic food needs and to increase the self-sufficiency rate. Since the period 1970-1975, organic agriculture has gained in importance, being aware of the issue of conservation of the natural environment. In 1991, the EU Regulation on organic agriculture appeared, marking the beginnings of the official interest in this type of agriculture at European level. Since 1999, the FAO's Global Codex Alimentarius has also included information on organic agriculture. Codex information is intended to guide and
promote organic agriculture, labeling requirements for organic products, contribute to their standardization and thereby protect consumers and facilitate international trade. Organic agriculture involves the use of environmentally sustainable practices and respect for natural resources, by updating traditional methods verified for centuries and combining them with modern methods, in order to maintain and increase soil productivity [20].

The global concept of organic agriculture starts from two major social implications [12]:
1. Organic agriculture is a method of producing food that is usually more expensive than traditional food. Thus, organic agriculture is supported by consumers who benefit from organic products. In this context, organic farming is subject to market rules.
2. Organic agriculture provides public goods, which are financed from the state's financial resources. From this point of view, the development of organic agriculture is a direction of public policies, especially in the field of environmental protection.

However, organic agriculture is considered a mode of production that is characterized by the use of techniques of plant cultivation and animal husbandry that respect the natural balance, aims to harmonize the dynamic interactions between nature and man. Being a type of sustainable agriculture, the purpose of organic agriculture can be expressed by optimizing production in line with existing natural resources and minimizing the negative externalities of agricultural activities [18].

Organic agriculture pursues two fundamental objectives [17]:
1) Reduction of pollution by excluding use soluble pesticides and fertilizers;
2) Conservation of fertility heritage and even enriching the soil with organic matter.

Therefore organic agriculture is an alternative to traditional agriculture as a result of improper operation thereof and the causes which led to decreased resistance of plants, animal health and soil quality and thus human health. Organic agriculture is based in principle on increasing soil organic matter content by using natural fertilizers [2].

Sustainable agri-food production aims to retain the environmental balance and not to adopt practices that negatively affect ecosystems. A sustainable agri-food supply chain system also benefits the society through the creation of synergies among stakeholders with different objectives and through fostering the wellbeing of the society [9].

Agricultural organic sector is differed by its own characteristics, arising from the natural, economic, social and other conditions of production. Organic agricultural production refers to the intensive agricultural [1].

The need to address this research topic originates from current trends in promoting the consumption of organic products. The research in this field has a multilateral character: social, economic, political, etc. In accordance with the aspects mentioned above, the paper aims to analyze the development trends of organic agriculture in the Republic of Moldova, the marketing of organic production, and the subsidization of organic agriculture.

MATERIALS AND METHODS

The theoretical and methodological basis of this article is the scientific work of researchers in the field, as well as the institutional and regulatory framework for organic agriculture. The data required for the analysis were selected from the statistical databases of Eurostat and the National Bureau of Statistics. During the research of this subject, the following methods were used: deduction and induction, analysis, comparison, tabular method and graphical method.

RESULTS AND DISCUSSIONS

The results of the study are reflected in four compartments: fundamental notions regarding organic agriculture, the evolution of organic agriculture in the Republic of Moldova, marketing of organic agri-food products, subsidizing organic agriculture.

Fundamentals of organic agriculture. The process of obtaining organic products is governed by strict rules and principles, which aim to maintain soil quality and obtain
organic products. The role of the organic agricultural system is to produce much more natural food, but in full correlation with the environmental protection. In plant cultivation, organic agriculture tends to sustainably preserve the natural basis of agricultural products, genetically modified organisms and their derivatives being banned. Animal welfare aims at the well-being and high performance of animal life. The principles and practices underlying organic agriculture have been described in the International Federation of Organic Agriculture Movement (IFOAM) standards document. These principles refer directly to organic agricultural techniques, such as: the use of large rotations; avoidance of soluble fertilizers; prohibition of intensive animal husbandry; avoidance of antibiotics and hormonal stimulants; emphasizing the processing of products on the farm and the direct sale to the consumer; the use of additional work when strictly necessary (Figure 1).

IFOAM defines organic agriculture as a production system that supports the health of soils, ecosystems and people. It is based on ecological systems and life cycles adapted to local conditions, instead of using resources with adverse effects. Organic agriculture combines innovation and science for the benefit of the environment, promotes fair relations and a good quality of life. Thus, organic agriculture differs fundamentally from conventional agriculture (Figure 2).

Comparing organic agriculture and conventional agriculture, from an economic point of view, we can mention that it brings slightly higher incomes, in some cases, such as the initial costs for pesticides, fertilizers or fuel. However, the mechanization of agricultural works favors the occurrence of environmental risks, so organic agriculture doesn’t differ from conventional one. There are small differences between the two agricultural systems when it comes to invested capital, as the practice of organic production requires additional investment, which aims to obtain certifications and investment in special equipment. Large differences occur in the case of social and environmental benefits offered by organic agriculture aimed at food safety, reducing environmental risks by replacing chemical resources with renewable ones, crop resistance in situations of heavy rain or drought, etc. Due to the abandonment of synthetic pesticides, organic agri-food

### Fig. 1. Principles of practicing organic agriculture according to IFOAM standards

- to produce high quality food in sufficient quantity
- to work with natural systems
- to encourage biological cycles within agricultural system
- to maintain long-term fertility of the soils
- to use renewable resources in agricultural systems
- to work as much as possible in a closed system
- to ensure all the living conditions of the animals to enable them to fulfill all the aspects of their innate behaviour
- to avoid all forms of pollution that may result from agricultural techniques
- to maintain the genetic diversity of the agricultural system and its surroundings, including plant and wild habitats protection

Source: Developed by the author based on [14].

### Fig. 2. Peculiarities of organic agriculture compared to conventional agriculture

Source: Developed by the author based on [6].
products contain less residues and pesticides than conventional products. Also, organic agriculture increases natural biodiversity, does not pollute the aquatic environment, protects the climate, it is energy efficient, etc. Organic agriculture stimulates the development of advanced science and technology through the application of various modern devices and programs. Practicing organic agriculture has a number of beneficial effects for both the farmer and the environment and society [13]. Thus, the beneficial effects at farm level are:

- restoring natural balances by using classical technological measures (fertilization, soil works, etc.), as well as by using ecological measures (rotation, associated and catch crops, agroforestry curtains, hedges, grass strips, etc.), improvement measures of soils (green fertilizers, mulching, conservative works, etc.) and plant protection (preventive, biological, biotechnical methods, etc.);
- sustainable increase of soil fertility by stimulating the activity of soil microorganisms and the use of compost, green manures and long rotations with perennial and annual plants with rich and deep root system;
- decrease of soil erosion as a result of the improvement of its quality (increase of the organic matter content and improvement of the structure) and of its better coverage (mulching, protection crops, etc.);
- water retention and conservation in the soil. The high content of soil organic matter leads to better retention and conservation of water in the soil, as a result the irrigation needs are reduced and the soil structure is maintained;
- compliance with the basic needs of animals regarding food, shelter, movement; ensuring the best living conditions for each species and category of animals, this objective being a primary one in organic agriculture.

The beneficial effects on the environment are manifested by:

- reducing global environmental problems. Organic agriculture contributes to the reduction of global environmental problems, such as: acid rain, global warming, biodiversity reduction and desertification;
- protection of soil, water and air. By not using synthetic chemical fertilizers, pesticides, etc., by rational and balanced use of resources, especially renewable ones, by caring for nature and by specific methods and techniques, organic agriculture ensures good protection of soil, water and air;
- increasing and conserving biodiversity. The basic principle of organic agriculture is the growth and maintenance of biodiversity. This fact contributes to ensuring the sustainability of the agro ecosystem;
- restoration and protection of the natural landscape. The organic agricultural system is an environmentally friendly system, it promotes the sustainable use of natural resources, helping to restore and protect the natural landscape.

The beneficial effects of organic agriculture on the society are less visible, but by no means less important. Among them we can highlight:

- production of food and other agricultural goods of high quality and in sufficient quantity. Organic agriculture contributes to ensuring food security and safety;
- diversification of agricultural production. The structure of agricultural production is largely influenced by consumer requirements. Organic agriculture contributes to the diversification of agricultural production, in particular through quality and healthy products, which meet the consumer’s requirements;
- reducing the consumption of non-renewable resources, promoting the use of renewable sources and actively contributing to the reduction of non-renewable energy consumption;
- improving the quality of farmers’ life. Organic agriculture offers business opportunities and rural development, which leads to improved quality of life for farmers and rural residents.

In addition to the mentioned benefits, however, organic agriculture has some disadvantages [8]:

- low level of yields;
- higher prices than conventional products;
- the need to support organic agriculture;
- the presence of counterfeit organic products on the market;
- difficult certification process;
• research and limited extension of ecological agricultural practice.

Organic agriculture can be analyzed in three dimensions, comprising ecological, economic and social elements, these being in a balanced ratio.

The ecological dimension includes climatic, biological, plant and animal potential. The ecological agricultural system is long-lasting, it’s a peculiarity determined by its high level of integration in nature. The processing of organic agricultural products is carried out while maintaining the quality and, as far as possible, the structural integrity of agricultural products, in impeccable hygiene conditions.

The economic dimension includes material and financial values in operation or conservation. The lands, goods and services of agro-ecological enterprises are private property, and the money sources are provided, for the most part, from own resources. In developed countries, a significant part of the financial resources for the development of organic agriculture is provided by the state through subsidies.

The social dimension includes labor, physical skills and knowledge of agriculture and related economic activities, as well as interpersonal relationships. Practicing organic agriculture involves the use of a larger number of labor than in conventional agriculture, which, from a practical point of view, means not only new jobs, but also additional expenses.

In general, we can mention that organic technologies and foods are, with the exception of costs and the level of production, superior to traditional technologies and products. Organic agriculture is agriculture of the future.

The evolution of organic agriculture in the Republic of Moldova

Organic agriculture is becoming more and more important and is constantly expanding worldwide. This development is supported by the growing consumer demand for organic agricultural products, which are becoming more aware and interested in health insurance through the consumption of products, to which are added the company’s requirements for sustainable agricultural development, as well as the multitude of favorable effects at the level of agricultural enterprise and the environment.

In the Republic of Moldova, organic agriculture began to grow only in the years 2002-2004 when the dialogue with the European Union on the share of vegetables, fruits, grapes, berries produced in Moldova and exported to the EU countries began. Taking into account the fact that in the Republic of Moldova agriculture is the basic branch of the national economy, the problem of major importance such as organic agriculture has emerged. Our country has the full human and production potential, favorable climatic conditions, fertile soil and so there are all the prerequisites to partially move from traditional agriculture to organic agriculture.

In support of organic agriculture, since 2005 the Ministry of Agriculture and Food Industry has adopted the basic legislative framework harmonized with the EU regulations in this field, necessary for the development of organic agriculture. In order to implement them, within the Republican Center of Applied Pedology there were elaborated and there are applied in practice "Land assessment procedure in the ecological agricultural circuit", the guide "Risk management within ecological agricultural practices", and during the years 2007-2008 the National Body for Inspection and Certification of Ecological Agri-Food Products included 46 economic agents with about 9 thousand ha of agricultural land in the ecological agricultural circuit.

An important step towards achieving this goal was the elaboration of the National Strategy for agricultural and rural development for the years 2014-2020 which provides for 3 general objectives and 8 specific objectives. One of the specific objectives is "Supporting environmentally friendly production technologies, environmentally friendly products, including biodiversity" [10]. The achievements of this objective include "Development of minimal tillage technologies, including the organization of seminars on the advantages of the No-till / Mini-till tillage system". Thus, only in the
first year of implementation, the area of agricultural land cultivated under No-till/Minitill technology is about 84 thousand ha, increasing by 20 thousand ha compared to 2014. This increase is largely due to the subsidy allocated to procured agricultural equipment and implementation of programs through IFAD and 2KR projects.

Another achievement is "Development and promotion of the organic agricultural system". By the MAFI Order no. 49 of 27.03.2015, there was approved the Regulation on the organization and functioning of the Profile Commission on the examination of applications for the use of the national trademark "Organic Agriculture - Republic of Moldova". That Commission examines national trademark application and use confirming that the goods in question are environmentally friendly [19].

At the same time, in order to ensure the promotion and implementation of the objectives specified for organic agriculture, by Order no. 107 of May 26, 2008 of the Ministry of Agriculture and Food Industry, the Republican Center for Applied Pedology is empowered with the function of coordinator of the activities related to organic production, but also responsible for assessing soil quality and fertility and developing projects and plans for ecological management of agricultural enterprises.

In recent years, the spectrum of crops grown within organic agriculture practices has diversified considerably. In the northern part of the Republic of Moldova, the structure of crops includes primarily traditional crops (wheat, corn, barley, sunflower, sugar beet, soybeans, peas, etc.). In the Central area, in addition to traditional crops, the structure of the crops also includes medicinal plants, and the products obtained from the processing of the latter are exported to Bulgaria and France. Organic orchards and vineyards have been set up in the South and South-East.

The main danger, which threatens and may compromise organic agriculture in the Republic of Moldova, is the wrong approach and misperception of this field. Thus, the implemented ecological agricultural practices are reduced when they refuse synthetic mineral fertilizers and phytosanitary substances.

Organic agriculture has the chance to assert itself in the Republic of Moldova only if we realize that organic agricultural systems are a new generation of agricultural systems, which involves two basic components: greening and biologicalization of agrosystems. The first involves the practice of agricultural systems adapted to the functioning mechanisms of the soil ecosystem. The second component involves restoring the energy resources of pedogenesis by increasing the amount of organic matter.

According to official statistics, organic agriculture grew at a steady pace during 2009-2012. Organic agricultural areas (both certified and in conversion) have expanded from 16.6 thousand ha to 61.6 thousand ha. Subsequently, by 2015, the area of organic agriculture is declining, and then it rises again (Figure 3).

At the same time, the number of economic agents who practiced organic agriculture expanded during the period 2003-2009, reaching a number of 185. Starting with 2011 the number of economic agents who practice organic agriculture is in permanent decline, reaching 40 until 2015, and then there is again an increase to 127 producers in 2018 (Figure 4).

One of the main reasons for the increase in the registered dynamics was the favorable policies supported by the Government of the
Republic of Moldova, being granted subsidies from 2007 for the reimbursement of the expenses incurred during the conversion period. Since 2012, the granting of subsidies has been directed towards the establishment of multi-annual plantations, which has had a negative impact on organic agriculture.

Another factor that influenced the growth of organic agriculture during that period was the European Union’s policies regarding the import regime of organic products from third countries, which allowed the export of “organic” products to the European Union market. The export of organic products was carried out on the basis of import authorizations, which were granted by Member State authorities and national inspection and certification bodies. This option, however, was transitory. From June 2014, the transition period ended, with the system of import authorizations being replaced by the system of equivalent control bodies.

However, despite the efforts to increase the number of economic operators applying organic production methods, the organic area is found to be considerably small compared to other European countries (Figure 5).

The small areas registered in the national organic agriculture are marked by a series of factors, such as:

- lack of information on the record of areas, types of crops grown in organic agriculture;
- lack of an effective legal framework for granting exceptions for organic agri-food production;
- lack of a system of state supervision and control regarding the traceability of organic agri-food products.

In this context, we can mention that organic agriculture represents for the Republic of Moldova a solution for the revitalization of agricultural lands with the help of sustainable practices, but also an opportunity, taking into account the relatively small areas with which we can assert ourselves on the foreign market.

Marketing of organic agri-food products

Regarding the formation of a national market of organic agri-food products, we can say that in the Republic of Moldova there are no shops or sections specializing in the sale of organic products, although some organic products can be seen occasionally in large supermarkets. Organic agriculture and organic products are not sufficiently promoted, the perception of this field is quite low and consumers confuse organic products with conventional ones. Contrary to the legislation of the Republic of Moldova, words such as "biological", "ecological", "organic" are frequently used on the packaging of products that, in fact, are not ecologically certified. Thus, because there is no clear line of differentiation for consumers, on the local market organic products compete in the same segment as products from other countries.

![Fig. 4. Number of economic agents registered in organic agriculture within the period 2003-2018 in the Republic of Moldova](source)

Source: Elaborated by the author based on [11].

![Fig. 5. The total area registered in organic agriculture – 2019, thousand ha](source)

Source: Elaborated by the author based on [4, 7].

![Table: Registered areas in organic agriculture for selected countries (thousand ha)](source)

<table>
<thead>
<tr>
<th>Country</th>
<th>Area (thousand ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>2,354.9</td>
</tr>
<tr>
<td>France</td>
<td>2,240.8</td>
</tr>
<tr>
<td>Italy</td>
<td>1,993.2</td>
</tr>
<tr>
<td>Germany</td>
<td>1,290.8</td>
</tr>
<tr>
<td>Austria</td>
<td>671.7</td>
</tr>
<tr>
<td>Sweden</td>
<td>613.9</td>
</tr>
<tr>
<td>Turkey</td>
<td>551.7</td>
</tr>
<tr>
<td>Czechia</td>
<td>535.6</td>
</tr>
<tr>
<td>Greece</td>
<td>528.7</td>
</tr>
<tr>
<td>Poland</td>
<td>507.6</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>459.3</td>
</tr>
<tr>
<td>Romania</td>
<td>395.2</td>
</tr>
<tr>
<td>Finland</td>
<td>306.5</td>
</tr>
<tr>
<td>Hungary</td>
<td>303.2</td>
</tr>
<tr>
<td>Portugal</td>
<td>293.2</td>
</tr>
<tr>
<td>Latvia</td>
<td>289.8</td>
</tr>
<tr>
<td>Denmark</td>
<td>285.5</td>
</tr>
<tr>
<td>Lithuania</td>
<td>242.1</td>
</tr>
<tr>
<td>Estonia</td>
<td>220.7</td>
</tr>
<tr>
<td>Moldova</td>
<td>28.6 (18 nov)</td>
</tr>
</tbody>
</table>
conventional agriculture. As a result, organic farmers tend to export their products. In the Republic of Moldova, the market for organic products is very small, but there are accessible distribution channels for organic products. To facilitate the connection between consumers and farmers, who practice organic agriculture, web portals have been created in the Republic of Moldova. The primary objectives that web portals assume are the following:

1. Strengthen cooperation between eco-farmers and consumers;
2. Systematization of ecologically certified products from the Republic of Moldova in a catalog;
3. Development of farmers' skills in the field of organic agriculture, by describing different environmentally friendly agricultural practices;
4. Increasing the level of information on local organic products.

Following a liberal trade regime, the Republic of Moldova became a full member of the World Trade Organization in 2001. This step has led to a gradual advancement of foreign trade and increased efforts to adopt international standards in production processes. Moldova has signed free trade agreements with 43 countries so far. The one that most influences the trade of the Republic of Moldova is the Deep and Comprehensive Free Trade Agreement (DCFTA) with the member states of the European Union. There are also Free Trade Agreements with the Member States of the Commonwealth of Independent States (CIS), the Balkan countries (Albania, Bosnia and Herzegovina, Kosovo, the former Yugoslav Republic of Macedonia, Montenegro and Serbia) and Turkey. In addition, Moldova has signed preferential trade agreements with Canada, Japan, Norway, Switzerland and the United States (MIEPO, 2017).

At the same time, the lack of homogeneous, compatible, packaged and certified domestic products that would be accepted by importers from the European Union substantially reduces the capacity of Moldovan organic products to cover the quotas and tariff concessions set by DCFTA. The non-tariff measures set by DCFTA – sanitary, phytosanitary, quality standards, product certification and compliance – are currently the worst barriers to increasing the export of Moldovan organic products to the EU [15]. However, organic agriculture is gaining more and more ground in our country and contributes significantly to the export of agricultural products of the Republic of Moldova (Table 1).

Table 1. Export of certified organic products to the EU, 2019

<table>
<thead>
<tr>
<th>No</th>
<th>Products</th>
<th>Quantity, t</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prunes</td>
<td>298</td>
</tr>
<tr>
<td>2</td>
<td>Peas</td>
<td>1,010</td>
</tr>
<tr>
<td>3</td>
<td>Soya</td>
<td>1,221</td>
</tr>
<tr>
<td>4</td>
<td>Peeled nuts</td>
<td>3,665</td>
</tr>
<tr>
<td>5</td>
<td>Wheat</td>
<td>8,883</td>
</tr>
<tr>
<td>6</td>
<td>Corn</td>
<td>9,191</td>
</tr>
<tr>
<td>7</td>
<td>Sunflower seeds</td>
<td>15,593</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>39.861</strong></td>
</tr>
</tbody>
</table>

Source: Elaborated by the author on the base [5].

Moldova's exports to the EU have declined in recent years. Thus, in 2019, Moldovan exports decreased by 27.7% compared to 2018. One of the causes could be the ecological fraud manifested by the repeated detection of pesticide residues. Moldova has joined Ukraine, Kazakhstan and Russia, countries from which additional residue analyzes are required on each batch before shipment. Another reason would be Moldova's position in competition with the three mentioned countries: Ukraine, Kazakhstan and Russia, which have much larger production units. In this case, the solution for Moldovan farmers is to carry out the primary processing of organic products in the country, exporting value-added products.

**Subsidizing organic agriculture**

The promotion and development of organic agriculture, the extension of greening measures of conventional agriculture can stimulate the possibilities of the Republic of Moldova to respond to global environmental challenges, in order to ensure the sustainable social, economic and ecological development of the country.
In order to support organic agriculture, the state provides subsidies. In the Republic of Moldova, support is granted to producers who are registered in the organic agricultural system in the form of compensation for loss of income and additional costs incurred by agricultural producers and who undertake to remain in the organic agricultural system for a period of 5 years. If the agricultural producers do not stay in the organic agricultural system for 5 years they will return the collected amounts. Agricultural producers who repeat the conversion period for one and the same area may not benefit from subsidies.

Subsidizing organic production is much lower than current needs (Table 2). The main problems, that manufacturers face, are the lack of infrastructure to prepare products for sale, lack of access to certain technologies and finance, lack of tools in export promotion, imperfect information and limited knowledge of the opportunities offered by the external market.

Table 2. Distribution of the means of the subsidy fund for agricultural producers, 2019

<table>
<thead>
<tr>
<th>Areas and forms of support</th>
<th>Nr. of applicants</th>
<th>Amount requested, thousand USD</th>
<th>Nr. of beneficiaries</th>
<th>Authorized amount, thousand USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidation of agricultural land</td>
<td>3</td>
<td>5.19</td>
<td>2</td>
<td>2.88</td>
</tr>
<tr>
<td>Purchase of irrigation equipment</td>
<td>230</td>
<td>2,464.25</td>
<td>111</td>
<td>1,478.09</td>
</tr>
<tr>
<td>Compensations for irrigation costs</td>
<td>32</td>
<td>262.60</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Purchase of No-Till and Mini-Till equipment</td>
<td>192</td>
<td>1,959.63</td>
<td>107</td>
<td>1,163.21</td>
</tr>
<tr>
<td>Promotion and development of organic agriculture</td>
<td>76</td>
<td>497.12</td>
<td>22</td>
<td>75.55</td>
</tr>
<tr>
<td>Total subsidies requested</td>
<td>7,965</td>
<td>68,212.23</td>
<td>2,331</td>
<td>33,737.60</td>
</tr>
</tbody>
</table>

Source: Elaborated by the author on the base [3, 21].

We can state that the largest share of grant applications in 2019, aimed at ensuring the sustainable management of natural resources, are aimed at subsidizing investments in the purchase of irrigation equipment. During that period, 230 applications for financial support were received in the amount of the requested subsidy of USD 2,464.25 thousand, which is 3.61% of the amount of the requested subsidies.

The subsidy for organic agriculture is much more modest, during the analyzed period being received only 76 applications for financial support in the amount of the requested subsidy of USD 497.12 thousand, which is 0.73% of the amount of the requested subsidies.

Based on the analysis, we can mention that for the promotion and development of organic agriculture, for the stabilization of the market of organic agri-food products, ensuring fair incomes for farmers practicing organic agriculture it is appropriate and rational to grant direct payments, depending on the crop, animal species and birds, as well as depending on the actual land area or the number of animals in possession.

CONCLUSIONS

In the Republic of Moldova, climatic and pedological conditions are favorable for the practice and development of organic agriculture, organic agri-food production, they create opportunities for competitive organic production on markets abroad.

The implementation of organic agricultural systems in the Republic of Moldova is characterized by modest indicators. Impediments to its promotion are related to the low level of investment, limited access to financial resources, low level of entrepreneurial and professional qualities of most farmers, limited size of the internal market and tough demands of foreign markets, poor harmonization of national standards with the European ones. The problems related to the reduction of the technical-material and financial base of the research and higher education institutions in the field, the vulnerability of the agricultural sector to natural disasters and the deterioration of the production infrastructure remain unsolved.

The development of organic agriculture is supported by financial aid or other incentives, which promote conversion to organic agriculture and stimulate the development of the agricultural sector as a whole. In the Republic of Moldova, the stimulation of the promotion and development of organic
agriculture is carried out by granting subsidies from the National Fund for the Development of Agriculture and Rural Environment, and the size of subsidies and their allocation are established by the Government. The development of a market of ecological products can be achieved by creating commercial policies adapted to the specifics of each region, taking into account the degree of urbanization, the existing professional categories, the degree of environmental damage.

REFERENCES