

PERSPECTIVE AND DEVELOPMENT CHALLENGES OF ECOLOGICAL AGRICULTURE IN THE REPUBLIC OF MOLDOVA

Viorica POPA⁷⁰

Sergiu ȚIRIGAN⁷¹

Oleg FILIMON⁷²

Abstract:

The sustainability of the agricultural system has become a concern in the Republic of Moldova, a country with one of the highest rates in Europe of the share of agricultural land in total and of the role of the sector in the economy and external trade balance. Although the agricultural sector of the country registered important growth and potential based on the application of green revolution technology, the adverse impact on the environment, erosion of natural resources, and vulnerability to climate represent a challenge that is affecting the country's social and economic development perspectives. Organic agriculture plays an important role in the extension of the application and promotion of sustainable production practices, and the extension of this production scheme is a determinant for the achievement of the sustainable development objectives of the agricultural sector of the country. The study explores factors that are limiting and factors that are facilitating the development of the organic food sector in the Republic of Moldova. Comparative qualitative analyses covering EU and Moldova are summarized into analyses of co-variation between policies, regulations, institutional setup and organic sector development trends, focusing on the determination of the key milestones and driven factors. The authors also used a qualitative approach based on focus group interviews with agriculture producers, mostly focused on organic producers or producers who are evaluating the opportunities to initiate conversion to organic agriculture, to evaluate the factors influencing farmers' willingness and limiting factors from their perspective. This study was developed within the framework of Subprogram 030101 „Strengthening the resilience, competitiveness, and sustainability of the economy of the Republic of Moldova in the context of the accession process to the European Union”, institutional funding.

Keywords: sustainability, agricultural land, natural resources.

JEL classification : Q01, Q42, Q53

Introduction

Organic farming gracefully combines our environment, our health and the food we eat. International Federation of Organic Agriculture Movement (IFOAM): "Organic agriculture is a production system that supports the health of soils, ecosystems and people. It is based on ecological processes, biodiversity and cycles adapted to local conditions, less on the use of practices with adverse effects. Organic farming combines tradition, innovation and science to

⁷⁰ PhD, Coordinator Researcher, National Institute for Economic Research, ASEM, Republic of Moldova

⁷¹ PhD Student, National Institute for Economic Research, ASEM, Republic of Moldova

⁷² PhD Student University of Political and Economic Studies "C. Stere", Moldova

benefit a shared environment and promotes equitable relationships and a good quality of life for all involved."

The importance of organic agriculture worldwide has grown over the past two decades, driven by an increase in awareness of the progress of resource degradation and climate change, as well as consumer demand for healthy food alternatives. The Republic of Moldova, like many other countries that rely heavily on agriculture, recognizes this global trend and tries to adapt to it by creating the necessary conditions to address the problems related to conventional agriculture, as well as to increase its value exports to established markets and penetration of new markets (Ministry of Agriculture, 2020).

The promotion and development of ecological agri-food production require the involvement of two types of factors: quantitative - by increasing the areas cultivated in an ecological system and qualitative - the positioning of ecological agri-food products at the centre of agriculture, as the foundation of its sustainable development.

The purpose of this paper is to analyze the development potential and contribution of organic agriculture in the Republic of Moldova in the context of sustainable development, as well as the trends and challenges for this sector.

The research presents the results of some theoretical investigations of the concept of ecological agriculture, as a basic element of sustainable development. The results of the analysis are applied to examine the development of organic agriculture in the Republic of Moldova and the options for integration into sustainable development models and projects. The study is based on open data, on data collected by interviewing agricultural producers. Analysis, synthesis and comparison were used as research methods.

Research methodology

The article presents the results of some theoretical investigations of the concept of ecological agriculture, as a basic element of sustainable agricultural development. Are explored determinant factors in the development of the organic food sector in the Republic of Moldova, applying comparative analyses of policies and tendencies in EU and Moldova. Data interpretation is performed considering the results of interviews with agriculture producers, to consider factors influencing farmers' willingness and limiting factors from their perspective. The quantitative analysis is carried out on the data selected and processed by the authors based on the statistical yearbooks of the Republic of Moldova and other official information of the institutions in our country and in the European Union.

The results of research and discussions

Sustainable development has become a central objective in national and international policies for development and the environment. A certain role for the extension of approaches based on this concept was ensured by the adoption of the UN Agenda 2030 for Sustainable Development and the process of nationalizing the objectives. One of the first and key connection of the concept with the agricultural sector as an economic branch and to the rural area as a functional space was performed within the framework of the FAO conference in Rome (1989), the Rio Declaration and Agenda 21 (1992), which established the connection with all three dimensions of sustainable development (social, economic and environmental protection) based on the established priorities: food security; decent income, standard of living and work; conservation of natural resources and environmental protection. The documents also integrate

another related process, "multifunctional rural development" which focuses on the functions of the rural space: social (employment, services for local communities, rural culture), ecological (preservation of the landscape and biodiversity, water management, assimilation of pollutants), production, regional (settlements, infrastructure), touristic. Keeping the right proportions between different functions of rural areas and the agricultural sector represents a challenge for the development of regulations and support policies (Kociszewski, 2018).

Although integrated into policy systems and development objectives, the concept of "sustainability" retains an ambiguity, fuelled by the knowledge gap, lack of standardization, methodological differences and approaches, including based on their and some analyses' biased nature (Trigo, 2021). In the case of the Republic of Moldova, the approaches are related to specific development problems and challenges, being correlated to the country's international commitments, especially to EU policies in the context of the objective of European integration.

In the context of the programming framework for the period 2023-2030, the main strategic planning documents with an impact on the agricultural sector are the National Development Strategy "European Moldova 2030" (SND), the National Strategy for Agricultural and Rural Development 2023-2030 (SNADR), and the Strategy of the Food Security of the Republic of Moldova for the years 2023-2030. SND is focused on improving the quality of life, increasing people's living standards and strengthening demographic resilience through a series of objectives, including economic diversification, modernization of technological processes, economic inclusion, sustainability of natural resources through their responsible use, minimization of the impact on the environment, etc.

The sustainability of the development of the agri-food sector, which has strategic socio-economic importance for the Republic of Moldova, is affected by a multitude of interrelated factors and risks that require the implementation of an integrated set of measures in multiple areas: the development of an effective institutional and regulatory system based on the system and EU requirements; preventing, combating, adapting and increasing the resilience of agricultural producers and the rural population to climate change; promoting the use of beneficial practices for the climate and the environment, including conservation of natural resources; strengthening competitiveness and developing sectors with high added value and market access, strengthening the organization of producers, etc.

SNDAR establish interconnections between the challenges that the agricultural sector is facing and measures with a potential impact. Promotion of the organic production systems is examined not only as a priority but as a direction of intervention with a high degree of complementarity and multiplier effect providing a basis for the implementation of an integrated and balanced approach within multiple key priorities. Achieving the SNDAR objectives, priorities for connecting the national agricultural system to the community one and continuing the integration process on the European market by adjusting to changes in consumer preferences, facilitating investment interest in the development of processing as well as strengthening the competitiveness of ecological value chains, imposes the need for an accelerated extension of the ecologically certified surface.

The development of the national organic system tends to be aligned with the EU ones. According to the European Commission (EC, 2023), organic farming is an agricultural method that aims to produce food using natural substances and processes. Therefore, it has a limited impact on the environment, because it encourages the responsible use of energy and natural resources, preservation of biodiversity, preservation of regional ecological balances, increasing soil fertility, and maintaining water quality. Thus, organic farming rules encourage a high standard of animal welfare and require farmers to meet their specific behavioral needs.

The objectives of the EU policy in the field of organic agriculture aim to provide a clear structure for the production of organic products throughout the EU. The regulations are designed to meet

consumer demand for green products they can trust while ensuring a fair market for producers, distributors and traders (EC, 2023).

In the European Union, organic farming is experiencing a rapid rise, as a direct result of increasing consumer interest in organic products. To find solutions to the challenges generated by this rapid rise and to ensure an effective legal framework for the sector, the EU adopted new rules that apply from 1 January 2022. The development of ecological agriculture is a priority in the context of strengthening the political and legislative approach to the Common Agricultural Policy of the European Union and ensuring a synergistic framework for the European Green Pact, particularly focused on the objectives of the "From Farm to Consumer" Strategy and The EU Biodiversity Strategy for 2030. Thus, the EU establishes that 25% of the agricultural land in the intra-community space will be used for ecological agriculture by the year 2030 (Jițăreanu, Mihăilă, Robu, Lipșa, & Costuleanu, 2022).

In Moldova, despite the challenges faced, insufficient use of beneficial practices for the climate and environment, including conservation of natural resources, is registered. During the previous programming cycle, the lower level of achievement of the objectives and targets was registered in the case of relevant measures for this area of intervention (Decision, 56/2023).

This tendency was also registered in the case of the promotion of organic production. In 2022, 28616.07 ha of agricultural land were registered in the organic system, 1102,86 ha less than in 2021. Of the total area in the organic system, 23756.81 ha (approx. 1.6% of the total agricultural land) are already certified, 1100 ha in the conversion period year 1,4477 ha were already in the second year of conversion and 383.7 ha are in the last year of conversion. Despite the moderated growing trend of the number of certified organic producers from 49 in 2015 to 151 in 2021, according to the data of the registration bodies, 12 producers exited organic farming during the period 2021 – 2022, after a period of stagnation of the areas and number of agriculture producers involved (2017-2021), (Yearbook, 2023).

A high diversity of categories of organic crops proves the potential interest, and initiative of producers that assume risks and test production methods even if they are facing insufficient knowledge, the area covered with organic area is mainly dominated by field crops. The type of activity of the economic entities included in the value chain of organic agriculture is production, processing, animal husbandry, trade and collection. The country exports mainly raw material. In 2022 has increased the interest in the type of processing up to 21.5%, (compared to 2021 - 12.8%). Nevertheless, the actual level of production does not support the development of complex value chains and cross-border integration could be a solution.

Interviews performed in the framework of the meetings with the organic producers and farmers interested in organic farming, performed in the context of the meetings organized by Moldova Organic Value Chain Alliance, demonstrate a high degree of scepticism of the producers when referring to their vision about future perspectives. The interviews were performed in the context of the crises that have affected producers of Moldova due to the increase in production costs and drop in the prices for key agriculture products. Referring to the aspects affecting farmers' activity as organic producers or interests, barriers could be structured as follows:

-Inappropriate regulatory framework, cost of certification, supportive measures and access to inputs.

The delay in the approximation of the national legislation the EU one, and recognition of the equivalence of the national organic system to the European one. Farmers were affected by the need to perform both categories of certificates, the national one in case they opt to apply for the subsidy and the European one when they are interested in exporting to the EU. It decreased the efficiency of the subsidies, considering their symbolic value until the year 2023. Even if the value of the subsidies was increased significantly in 2023, regulatory barriers are limiting access to them. The access to plant protection products, suitable for organic agriculture

is limited by the condition to perform national registration of the EU-approved ones.

-Access to market and price.

In the case of small producers, only a limited number informed that can sell their products at a higher price than conventional products. Usually are sold at the same price as conventional ones, and are in direct competition. Farmers were unable to identify if there are any state-supportive measures for market access, except the possibility of applying for funding of up to 20% of the value of the products sold if they can provide confirmative documents. Larger farmers operate based on local aggregators and support companies and mainly export their products. The drop in the prices affected them. Key concerns were to identify new categories of products to increase revenue and consider it important to perform the primary processing locally.

-Nutrient supply, plant protection and knowledge.

The drop in productivity represents the main challenge for farmers interested in organic agriculture, being related to insufficient knowledge in the area of plant protection. Some market operators assume the support for the farmers that are producing under their umbrella, but this applies in the case of producers of field crops and almonds. Access to organic fertilizers is limited due to the limited application of vegetal compost and insufficient animal waste due to a decrease in the number of cattle. Only one farmer is applying the principle of circular economy by ensuring integrated management of cattle and field crop farming, reporting higher yields than in the case of conventional production.

-Lack of qualified and responsible labour force.

The interest of the young generations towards agriculture is constantly decreasing, young people prefer to work abroad, which creates a pressing problem for farmers. Organic productions need more qualified workers. Farmers mentioned that are lack access well well-trained agronomists or are not able to cover the costs.

Development of organic agriculture is associated with an increasingly better organization of ecological systems. The registered growth is largely determined due to the support of development partners such as the Global Environment Facility (GEF), Donau Soya, USAID, People In Need, Czech Development Agency. The Republic of Moldova is advantageous, having all the climatic conditions for the development of ecological agriculture. However, the share of agricultural areas cultivated in an ecological system is well below the European average. Delays in the approximation of the national system to the EU ones, caused the vulnerability of the country and involvement in cross-border frauds due to uncontrolled activity of certifiers, and atypical fluctuations of the certified areas.

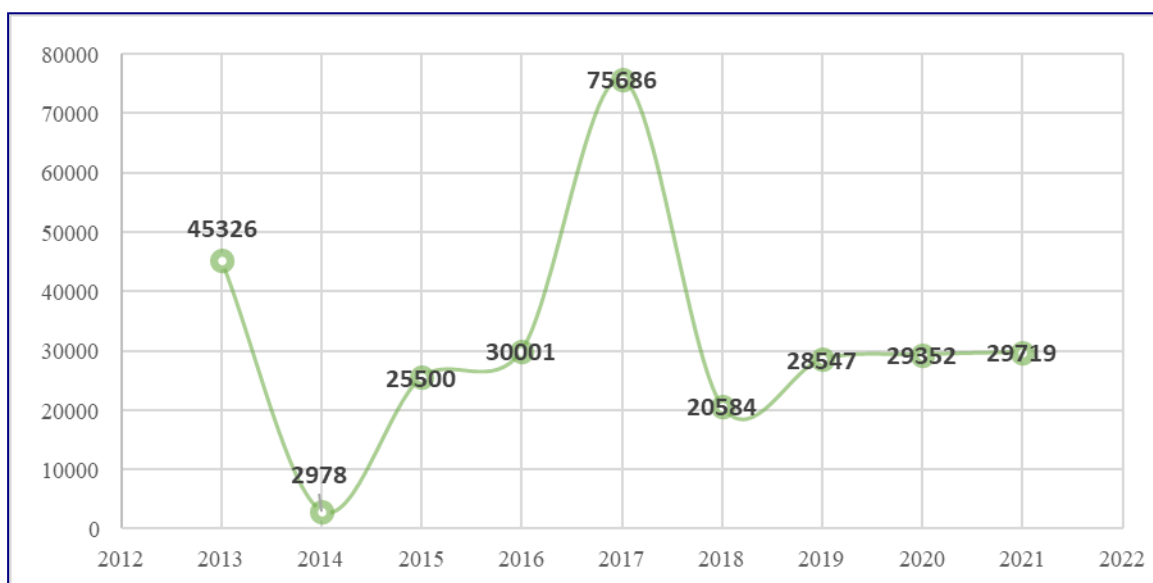


Figure 1. Dynamic of the organic certified area in the Republic of Moldova

Source: developed by authors based on the data of the Ministry of Agriculture.

During 2023 an important switch of the state policies in the area of organic agriculture was registered. It was approved the new sectoral Law (No. 237/2023 "On ecological production and labelling of ecological products"), represents an important step for the approximation of the national system to the EU ones. The new Regulation on advance subsidy measures and the specific eligibility conditions (GD 464/2023) has increased the support during the conversion period, and the limits of the total support to be requested. The new Regulation, despite procedural barriers to accessing the subsidies, has doubled the total amount of requested funds in 2023 compared to 2022 (based on the date of the Agency for Intervention and Payments in Agriculture).

Conclusions

Achieving the objectives of SNDAR, the priority of connecting the national agricultural system to the community one and continuing the integration process on the European market by adjusting to changes in consumer preferences, facilitating investment interest in the development of processing as well as strengthening the competitiveness of ecological value chains, imposes the need to achieve a share of ecologically certified agricultural land of at least 10% of the total, or about 200 thousand ha by the year 2030.

The most important barriers to the development of the ecological agriculture system in the Republic of Moldova:

- Delays in establishing a regulatory framework according to that of the European Union
- Insufficient support measures (low value of support, lack of support for the post-conversion period)
- High costs determined by regulatory barriers (eg: the requirement to register fertilizers and plant protection products in national registers)
- Lack of a policy and measures to promote the consumption of organic products
- Lack of an adequate protection system for the terms associated with organic production

- Distrust of producers in the efficiency of organic production methods, especially regarding plant protection solutions.

- Deficiencies regarding the development of the livestock sector.

Deficiencies in the regulatory system, policies and the system of support measures have led to an insufficient development of organic agriculture in the Republic of Moldova. These are correlated with the difficulties of establishing a regulatory, institutional framework and effective support measures connected to that of the EU, the insufficient expansion of both practices beneficial to the environment and conservation of natural resources as well as knowledge regarding these practices, difficulties in the organization and consolidation of value chains, integration on the internal and western markets, the insufficiency of communication and awareness measures regarding the importance of ecological agriculture and the benefits of organic products, etc.

- The importance of the development of organic the agriculture is correlated with several challenges the country is facing: Vulnerability to climate change and degradation of natural resources (soil, whater, biodiversity) – contribution to preventing, combating, adapting and increasing the resilience of agricultural producers and the rural population and promotion of beneficial practices for the climate and the environment;

- Reduced revenues - Strengthening competitiveness and developing sectors with high-added value;

- Securing access to the market – Corresponding to changing trends in requirements and preferences on the EU market (main market);

- Limited resources to support the development of the agricultural sector - ecological agriculture: a direction of intervention with a high degree of complementarity and multiplier effect;

- Corresponds to the EU integration priorities.

So, the main objective of organic farming is to obtain healthy and safe agricultural products for consumers, taking into account the protection of the environment.

For a long period, the support measures were rather symbolic, the average annual value of payments for ecological agriculture being about 300-400 thousand Euros at the level of the country. The lack of protection in case of unfair competition with conventional products, as well as the lack of promotion measures, reduces the attractiveness of investments in production and certification. The development problems of the livestock sector reduce the availability of natural fertilizers. It is important to mention that the insufficient development of ecological agriculture is also correlated with the deficiency of the rural extension system, which is practically absent in the case of the Republic of Moldova. Its functions are taken over by donors through the implemented projects, but they have a limited impact in terms of time and territorial coverage.

ACKNOWLEDGMENT

This study was developed within the framework of Subprogram 030101 „Strengthening the resilience, competitiveness, and sustainability of the economy of the Republic of Moldova in the context of the accession process to the European Union”, institutional funding.

Bibliography

CE. (2023). Comisia Europeană, Agriculture and rural development. ctp. https://agriculture.ec.europa.eu/farming/organic-farming/organics-glance_ro.

Decision, G. (56/2023). *Government Decision 56- National Strategy for Agricultural and Rural Development for the years 2023-2030*.

Guvernul RM. (2006). HOTĂRÂRE Nr. 149 din 10-02-2006 pentru implementarea Legii cu privire la producția agrolimentară ecologică. ctp. https://www.legis.md/cautare/getResults?doc_id=114152&lang=ro.

Guvernul RM. (2023). Cu privire la aprobarea Strategiei naționale de dezvoltare agricolă și rurală pentru anii 2023-2030. ctp. <https://gov.md/sites/default/files/document/attachments/subiect-03-nu-864-maia-2022.pdf>.

Jităreanu, A., Mihăilă, M., Robu, A.-D., Lipșa, F.-D., & Costuleanu, C. (2022). *Dynamic of Ecological Agriculture Certification in Romania Facing the EU Organic Action Plan. Sustainability*. <https://doi.org/10.3390/su141711105>.

Kociszewski, K. (2018). *Sustainable development of agriculture: Theoretical aspects and their implications, Economic and Environmental Studies (E&ES)*. Kociszewski, Karol (2018) : Sustainable development of agriculture: Theoretical aspects and their implications, EconISSN 2081-8319, Opole University, Faculty of Economics, Opole, Vol. 18, Iss. 3, pp. 1119-1134: <https://doi.org/10.25167/ees.2018.47.5>
https://www.econstor.eu/bitstream/10419/193133/1/ees_18_3_05.pdf .

Ministry of Agriculture. (2020). Bulletin on Organic Agriculture from the Republic of Moldova. *Chisinau*, ctp. http://movca.md/wp-content/uploads/2021/04/Buletin_AE_ROM_2020.pdf.

Parlamentul RM. (2005). Legea nr.115 din 09-06-2005 cu privire la producția agroalimentară ecologică. ctp. https://www.legis.md/cautare/getResults?doc_id=26873&lang=ro.

Trigo, A. &.-C. (2021). *Principles of Sustainable Agriculture: Defining Standardized Reference Points. Sustainability*. . 13. 4086. [10.3390/su13084086](https://doi.org/10.3390/su13084086) .

Yearbook. (2023). *Yearbook On Organic Agriculture In The Republic of Moldova for years 2021-2022*. Chisinau .