



The Status and Potential of Organic Agriculture in the Republic of Moldova

A background document for the Greening Economies in the Eastern Neighbourhood (EaP-GREEN) partnership programme



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Table of contents

Foreword	3
List of Acronyms	4
Executive summary	5
Introduction.....	7
Moldova's agricultural sector	7
Agricultural policy	10
Trade	11
Organic agriculture in Moldova	14
National policies.....	16
Subsidies	17
Capacity building	18
Key stakeholders	18
Markets and trade of organic products.....	20
Challenges for organic farming	23
Organic agriculture and the Green Economy	26
Conclusion	27
Bibliography	29
Further reading.....	30

Foreword

This report was prepared by Viorel Gerciu and Gunnar Rundgren for the organic agriculture component of the EU-funded "Greening Economies in the Eastern Neighbourhood (EaP-GREEN)" partnership programme. It was revised and edited by Alex Leshchynskyy. Verena Balke from UN Environment reviewed and edited the final draft. The report was originally produced in 2011, as background material for the UN Environment report "*Organic Agriculture – A step towards the Green Economy in the Eastern Europe, Caucasus and Central Asia region*".

In this edition, data and sections on marketing, standards and certification have been updated; new sections on trade barriers have been added; and the overall report has been condensed. The responsibility for the content of this report remains fully with the authors.

List of Acronyms

APEM-AGRO	Moldova's National Association of Organic Farmers
BSCI	Business Social Compliance Initiative
DCFTA	Deep and Comprehensive Free Trade Area
EaP-GREEN	Greening Economies in the Eastern Neighbourhood Partnership Programme
EC	European Commission
EU	European Union
EUR	Euro (official currency of the Eurozone)
FAO	United Nations Food and Agriculture Organisation
GEF	Global Environmental Facility
GHG	Green House Gases
GMO	Genetically Modified Organisms
ha	hectares
ICEA	Italian Environmental and Ethical Certification Institute
ISO	International Organization for Standardization
km	Kilometres
MAFI	Ministry of Agriculture and Food Industry
MIEPO	Moldovan Investment and Export Promotion Organisation
MDL	Moldovan Leu (national currency)
NGO	Non-Governmental Organisation
SGS	Société Générale de Surveillance
SIDA	Swedish International Development Cooperation Agency
SME	Small and Medium Enterprise
SPS	Sanitary and phytosanitary
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
US\$	United States Dollars
USDA NOP	United States Department of Agriculture National Organic Program
WTO	World Trade Organisation

Executive summary

The agriculture and agro-processing sectors play a prominent role in Moldova's economy. They generate about one-third of its Gross Domestic Product (GDP), account for almost 70 per cent of its total export volume, and employ over 25 per cent of the country's active labour force. Moldova's crop yields are, nevertheless, considerably lower than those of neighbouring and other European countries. Moreover, the country's agricultural sector is a significant contributor to the depletion of natural capital, the degradation of ecosystems and the loss of biodiversity.

Moldova has acknowledged the potential of sustainable farming methods not only for increasing yields and incomes of agricultural producers, but also for revitalising its countryside and restoring the integrity of ecosystem services. In 2010, two per cent of the country's subsidies were allocated to the agricultural sector in order to support farmers' conversion from conventional to organic practices. Since 2013, additional subsidies for organic vineyards and orchards has been set up. Two local organic certification companies have also been created in order to reduce the cost of obtaining organic certification for Moldovan farmers. These initiatives have contributed significantly to the development of Moldova's organic sector. Between 2005 and 2009, the area under organic farming in Moldova has expanded 35 times, albeit starting from a very low base. By 2013, land under organic cultivation had reached 51,681 hectares, representing 2.87 per cent of Moldova's total arable land. However, in 2014, the area devoted to organic agriculture dropped to 48,700 hectares, 1.9 per cent of the total agriculture area in the country (UNEP 2011).

Over the past years, Moldovan organic production and export of organic certified products have also shown strong growth. In 2013, registered¹ exports of organic products reached 80,817 tonnes, amounting to some EUR 31.5 million, or more than three per cent of Moldova's agricultural export value. The main certified and exported organic products include wine, walnuts, dried fruits, sunflower seeds, sunflower oil, soybeans and wheat for animal fodder. The European Union's (EU) demand for organic produce from Moldova has remained high, even despite recent economic crises.

Nevertheless, Moldova's organic sector has considerable potential for further growth. The adoption of organic practices – such as crop rotation and the integration of crops and livestock – can help local farmers obtain higher yields without the need of costly inputs. In addition to that, most Moldovan farmers use only small quantities of chemical fertilisers and pesticides, making it easier to transition to fully organic practices. Proximity to the fast-growing European organic market also offers Moldova

¹ Notably, real exports are higher.

a competitive advantage over other organic exporters, especially in light of the recently established Deep and Comprehensive Free Trade Area (DCFTA) agreement that will further facilitate the country's trade with the EU.

The promotion of organic production reduces greenhouse gas (GHG) emissions, compared to those resulting from conventional farming practices, while increasing farmers' resilience to climate change. Organic agriculture also reduces soil vulnerability to erosion and increases its carbon sequestration capacity. Further yet, organic production enhances biodiversity, contributes to the restoration and integrity of various ecosystem services, and helps to preserve valuable traditional landscapes. Finally, it provides Moldova with an opportunity to diversify and increase its export earnings, while contributing to local farmers' incomes through price premiums and reduced production costs. A continued effort to develop the organic sector should, therefore, remain a major component of Moldova's efforts towards the transformation to a Green Economy.

The full potential of Moldova's organic sector can only be realised through the sustained advancement of both the export and domestic organic markets. There are also multi-level obstacles related to the structure of the sector, management capacity, the design of subsidies, infrastructure, access to agricultural inputs, trade barriers, investments, and awareness surrounding organic agriculture. While government support to the sector has been persistent, it must also become more strategic and inclusive.



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Introduction

Greening the economy will maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and source of public benefits – especially for the poor whose livelihoods and security are strongly dependent on nature. In 2011, UN Environment conducted scoping studies on green economy and organic agriculture in Armenia, Moldova and Ukraine, which revealed the multitude of potential socio-environmental benefits associated with promoting organic farming in these countries. The summary report “Organic Agriculture – A step towards the Green Economy in the Eastern Europe, Caucasus and Central Asia region” concluded that:

“[...] organic agriculture could play a catalyst role in the Green Economy transformation by re-vitalizing the farm and food sector and creating employment that provides better returns on per unit of labour input all along the value chain. It could increase income and food security for rural communities; create business opportunities for investors and increase the contribution of agriculture to the national economies by, inter alia, reducing import bills for farm inputs, boosting exports of organic products and reducing costs to society that result from the negative externalities of industrial farming.”

The EU-funded Greening Economies in the Eastern Neighbourhood (EaP-GREEN) partnership programme was designed to harness these opportunities and provide support to “Eastern partnership” countries, in particular Armenia, Moldova and Ukraine, in strengthening their organic agri-food supply chains and trade flows. More specifically, the programme aims to support the expansion of these countries' organic sectors by building the capacity of the private sector, including farms and companies, to access the fast-growing European and international organic markets. This report, and similar reports from Ukraine and Armenia, are an EaP-GREEN initiative to provide an up-to-date overview of national trends in organic production and trade, the associated policy climate, as well as opportunities and barriers for the further expansion of this sector.

Moldova's agricultural sector

Moldova is a small and densely populated country situated between Romania and Ukraine, with an estimated population of 3.56 million inhabitants living within the 33,851 square km country area (National Bureau of Statistics of the Republic of Moldova 2011). Moldova is one of the least developed countries in Europe with an estimated GDP per capita of US\$ 2,986 in 2010 (UNDP 2012). The economy relies heavily on agriculture – primarily fruits, vegetables, wine and tobacco – although the relative economic importance of agriculture has been declining. Nevertheless, the country is heavily dependent upon energy and chemical fertiliser imports. It is also one of the world's biggest recipients of foreign remittances (per capita), which made up

some 23.1 per cent of its GDP in 2009 (World Bank 2011). The global financial crisis has had a large effect on the Moldovan economy, leading to a seven per cent contraction of its GDP. Household consumption has fallen steeply, largely as a result of reduced remittances from its migrant population, recession in the country's main export markets, as well as increased domestic unemployment (World Bank 2011).

Land and agriculture production

Moldova's agricultural sector benefits from a favourable climate, high-quality black soils and the geographical proximity to large markets, in particular the EU. Average crop yields, however, are far below average European levels, and do not reach those of Moldova's neighbouring countries. This is largely due to a land ownership structure that does not effectively incentivise efficient agricultural operations and land management practices. Yields for important crops such as wheat, barley, maize, and sunflower seeds are subsequently showing a long-term stagnating trend.

Agricultural land occupies 2,498,000 hectares, of which 1,810,500 hectares are arable. It accounts for 73.8 per cent of Moldova's total land area of 3,384,600 hectares. Orchards and vineyards make up 281,800 hectares, while pastures and hayfields occupy 352,300 hectares. Over 1,843,100 hectares, 54.5 per cent of Moldova's total land area, are under private ownership (UNECE 2014). Approximately 18 to 20 per cent of the country's agricultural land is not cultivated because landowners have either left the country to seek employment abroad, or because they simply do not have sufficient resources to invest in production (MAFI 2013).

After Moldova gained its independence from the Soviet Union in 1991, land was privatised and ownership distributed among eligible citizens. The average family was entitled to plots of between 1.5 and 2.5 hectares (FAO Agriculture and Consumer Protection Department n.d.). By the end of 1997, 82 per cent of Moldova's agricultural land was under private ownership. Four categories of farms emerged: small individual landholdings; individual commercial farms; farms operated in association with close relatives; and agricultural enterprises. The latter comprises private companies, joint ventures as well as remnants of collective enterprises (FAO 2001).

Moldova's agriculture enterprises are mainly specialized in the production of grain crops, sunflower, sugar beet, fruits and grapes. A small number of these enterprises cultivate tobacco and other industrial crops. Individual farms are orientated towards the production of potatoes, maize, vegetables, fruits, grapes and other industrial crops and fodder. They also produce practically all livestock, except poultry. As Moldova is rather arid, irrigation is an important factor for agricultural production. The area of irrigated soils has reduced dramatically from some 308,000 hectares in the early 1990's to 34,000 hectares in 2007 (MAFI 2013). This is primarily because of aging and obsolete pumping and irrigation technologies, the rising cost of energy, which

prohibits small-scale farmers from purchasing water pumps, as well as the farm restructuring process, which meant that the Soviet-era large-scale irrigation systems were no longer suited to the new, small plot sizes (World Bank 2007). At present, the country's agricultural production is characterised by small-scale irrigation systems using water from nearby rivers and lakes (MAFI 2013).

Although the country's use of mineral fertilizers had increased from 16.5 thousand tons in 2005 to 23.6 thousand tons in 2011, Moldova's agricultural producers continue to use relatively small quantities of mineral fertilizers. In fact, since the early 1990's, the use of fertilizers and pesticides has fallen by 90 per cent in comparison to the Soviet era (SIDA 2006). The average amount of fertilizers applied per hectare of sown area made up a mere 40 kg in 2011 (UNECE 2014). This is compared to a world average of 100 kg in 2013 (World Bank 2013). Less than half (47.46 per cent in 2011) of the country's agricultural land receives no fertilizer at all, which increased from 32.12 per cent in 2005 (UNECE 2014). The total area where organic fertilizers (e.g. manure) were applied made up only 0.38 per cent of total agricultural land in 2011 (UNECE 2014). Herbicides are used on less than a third of country's farmland, while fungicides and insecticides are applied over an even smaller area (MAFI 2013).



Photo: Flickr/Creative Commons/Hannah Jane

Environmental challenges related to agriculture

The most pressing environmental issues for Moldova's agricultural sector include:

- Large proportions of arable land and small areas of remaining natural habitat/forests, thereby creating an ecological imbalance between man-made and natural ecosystems;
- Forty per cent of the total arable land surface is subject to erosion; and
- About 10 per cent of the country's total land area is made up of pastures that do not receive any proper management (UNECE 2014).

The annual loss of humus (soil organic matter) is estimated at between 5 to 7 tonnes per hectare. In addition, the continuous depletion of nutrient reserves is disturbing the nitrogen, phosphorus and potassium balance of the soils. According to the *3rd Environmental Performance Review* of the United Nations Economic Commission for Europe (UNECE), soil degradation is estimated to cost Moldova's economy US\$ 239 million each year, with the poorest subsistence farming households being most affected by soil erosion and fertility losses.

Agricultural policy

Moldova's main agricultural policy is the *National Strategy for Agricultural and Rural Development in Moldova 2014-2020*, which was adopted in 2014. This strategy's overall goal is to ensure for the sustainable growth of the country's agro-industrial sector, meaning competitiveness and productivity, within the scope of environmental protection, and the improvement of rural life quality. More specifically, the strategy encourages:

- Increasing the competitiveness of the agrarian sector by improving market integration, restructuring and improving living conditions in rural areas;
- Support of sustainable agricultural land and water management practices, including environmentally-friendly production technologies, organic production and products ensuring biodiversity;
- Adaptation and mitigation of climate change effects on agricultural production;
- Modernisation of the agrarian sector through public-private partnerships;
- Agricultural producers' cooperation and integration within the processing industry, as well as national and regional trade flows, particularly the EU;
- Agricultural producers' access to financial sources, including state subsidies;
- Creation of a system for ecological agro-food production; and
- Alternative sources of energy for agricultural production.

In addition, the harmonisation of the national legal framework with EU standards is a priority for Moldova and this process is taking place within all sub-sectors of agriculture (MAFI 2013).

Trade

At present, the EU is Moldova's largest trading partner. It accounts for 46.6 per cent of the country's total trade exchanges. Trade with Russia and Ukraine accounts for a further 21.9 and 11.8 per cent of Moldova's trade flows, respectively (EC 2015a). It must be noted that Moldova's trade with Russia has fallen after Moldova signed the 2014 EU Association Agreement. This resulted in the nullification of the free trade agreement with Russia and the introduction of Russian import duties for Moldova's agricultural produce, wine, furniture and other goods (Dzhavakhadze 2014).

According to the United Nations Food and Agriculture Organization (FAO), wine was Moldova's most important agricultural export from 2011 to 2013, when it accounted for an average of almost 16 per cent of the country's annual export value. Other important agricultural export products of Moldova include sunflower seeds, walnuts, other alcoholic beverages and oils.

Table 1. The value of Moldova's main agricultural exports from 2011 to 2013 (US\$ 1,000).

	2011	2012	2013	Average
Wine	131,624	142,128	149,569	141,107
Sunflower seed	123,720	72,648	136,153	110,840
Walnuts, shelled	68,824	98,956	95,596	87,792
Beverages, distilled alcoholic	42,749	64,931	92,228	66,636
Oil, sunflower	69,297	80,735	41,636	63,889
Apples	57,768	39,562	47,557	48,296
Wheat	17,362	16,019	65,879	33,087
Maize	38,817	13,713	28,080	26,870
Sugar refined	9,310	29,320	23,377	20,669
Rapeseed	32,544	5,262	20,704	19,503
Soybeans	22,748	19,512	7,790	16,683
Barley	15,761	6,774	26,614	16,383
Grapes	17,554	14,495	17,017	16,355
Cigarettes	11,114	20,630	16,973	16,239
Meat, cattle	14,325	13,270	13,566	13,720
Tobacco, unmanufactured	17,495	13,569	8,341	13,135
Pastry	10,774	12,213	14,868	12,618
Vegetables, preserved	13,192	10,725	10,971	11,629
Tomatoes	12,591	10,813	7,984	10,463
Peaches and nectarines	9,684	12,024	7,065	9,591
Total	885,959	843,010	968,504	899,158

Source: FAOSTAT 2017.

Agricultural trade with the European Union

The EU initiated the Association Agreement and established the Deep and Comprehensive Free Trade Area (DCFTA) with Moldova on the 27 June 2014. The agreement includes provisions which liberalised Moldova's access to EU market for most agricultural products, with the exception of a limited number of sensitive products, such as garlic, to which a quantitative restriction on the volume of import without duty applies (Table 2). This means that for a number of products, such as wheat, maize and barley, the EU reserves the right to protective measures if imports exceed a set "trigger volume". All in all, under the agreement the EU has removed import duties worth EUR 43 million on basic agricultural products and EUR 3 million on processed agricultural products (EC 2015a). The Association Agreement also includes provisions on intellectual property rights and "Geographic Indications" for agricultural products.

Since the signing of the DCFTA, Moldovan imports to the EU increased by 20 per cent, amounting to a total value of EUR 1.16 billion in 2014 (EC 2015b). EU imports of Moldovan agricultural goods have more than doubled from 2006 to 2013, but saw a further notable increase (of 30 per cent) since the onset of the free trade regime. Today Moldova's exports to the EU consist predominantly of agri-food products such as vegetables, foodstuffs and beverages, textiles as well as machinery and appliances (EC 2015a).

Table 2. Products subject to duty-free quotas for exports from Moldova to the EU, in 2014.

Product	Duty free volume in 2014 (tonnes)
Tomatoes, fresh or chilled	2,000
Garlic, fresh or chilled	220
Table grapes, fresh	10,000
Apples, fresh (excluding cider apples, in bulk, from 16 September to 15 December)	40,000
Plums, fresh	10,000
Grape juice (categorised according to sugar content and market values).	500

Source: EU-Moldova Association Agreement, Annex XV-A.

It is important to underline that agri-food products imported into the EU must meet stringent sanitary and phytosanitary (SPS) requirements aimed at protecting human and animal health. These include general requirements for all stages of food and feed production and distribution – including traceability throughout the supply and production chain, hygiene specifications, marketing and labelling requirements, as well as rules on microbiological composition and genetically modified food, animal feed, residues, pesticides, veterinary medicines, and contaminants. Plants and animal products exported to the EU must be also be accompanied by a health and sanitary

certificate and are subject to inspections at the point of entry into the EU. The exporting country must be authorised by the EU to export the category of products concerned and all the products must come from approved processing facilities in the exporting country. (EC 2017)

Under the EU-Moldova Association Agreement, Moldovan products of animal origin that are currently not admitted into the EU for sanitary and phytosanitary (SPS) reasons, may nevertheless be imported following expert assessment and approval. This leaves the evaluation entirely to the discretion of EU experts. In the long term, the EU-Moldova Association agreement encourages Moldova to refrain from amending its horizontal and sectoral policies and to progressively align its broader domestic legislation with the corresponding EU regulations (on SPS or otherwise) (EU-Moldova Association Agreement, Article 173).

In addition to regulatory requirements, private standards and other trade preferences may amount to *de facto* compulsory standards in the form of clients' codes of conduct, product specifications, sourcing guidelines and various quality management systems. These include COSMOS (a standard for organic and natural cosmetics that safeguard socio-environmental health²), Globalgap (a system for "Good Agriculture" practices); the standards of the British Retail Consortium; International Organization for Standardization (ISO) 9000 (general quality management); ISO 22000 (quality management in the food sector); SA 8000 (a social standard developed by Social Accountability International); and the BSCI (Business Social Compliance Initiative).



Photo: Flickr/Creative Commons/American Rugbier

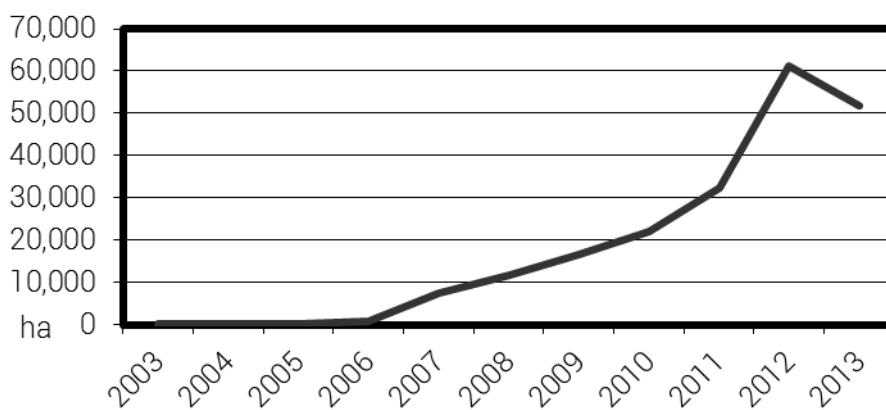
² Established as a joint standard to combine different certifications present on the largely unregulated organic cosmetics markets.

Organic agriculture in Moldova

In 2013, the total area under organic production made up 2.87 per cent of Moldova's total 1.8 million hectares of arable land (MAFI 2013). More recent figures from the UNECE 2014 Environmental Performance Review of Moldova, outline that the country has 32,000 hectares of land that is either certified or under conversion for organic agriculture, which is 1.7 per cent of Moldova's total agricultural land (UNECE 2014). As UN Environment's scoping study established, yields in Moldova for organic agriculture are 20-40 per cent lower than those of conventional agriculture (UNEP 2011).

Data from the Moldovan Ministry of Agriculture and Food Industry (MAFI) outlines that the area cultivated for organic production in Moldova increased from 80 hectares in 2003 with an additional 168 hectares undergoing certification at the end of 2003, to 51,681 hectares in 2013, but decreased to 48,700 hectares in 2014 (UNEP 2011) (Figure 1). Aside from the competitiveness of Moldovan organic products in specific market segments and the 55 per cent price premium that organic producers enjoy, as per UN Environment's 2011 study, the key drivers behind the rapid growth of Moldova's organic sector are the market demand from the EU, the supporting policies of the Moldovan government, as well as the engagement of NGOs and the private sector.

Figure 1: Moldova's organic acreage 2003-2013



Source: Ministry of Agriculture and Food Industry (MAFI) 2013.

Table 3 below outlines the number of organic producers and their operational area certified by bodies that are registered with the MAFI. The 59 registered organic producers include legal entities and enterprises that collect produce from 2,152 small farmers (MAFI 2013). Farms certified by foreign certification bodies, which include some major Moldovan exporters of walnuts and the growers contracted by them, are not part of these statistics and the real area, number of producers and volumes exported are presumed to be considerably higher than those reported here (UNDP

2014). For example, according to the UNECE (2014), there are currently over 250 organic farms in Moldova.

In addition, Moldova hosts nine organic processing units: two processing organic grapes and producing organic wine; three processing organic aromatic plants and producing organic oils; one unit that produces cheese; one that processes organic sunflower seeds and produces sunflower oil; and two units that are specialised in drying organic fruits (MAFI 2013).

Table 3. Certified farms, surfaces, under organic and in conversion production 2013

Certification body	Number of producers		Area (ha)	
	Certified	In conversion	Certified	In conversion
CRPA - Inspect	10	13	2,687	332
ICEA - Group	3	5	338	252
Certificat - Eco	---	18	---	189
Eco Gruppo	1	1	5,870	2,164
BioZoo	6	2	33,482	6,417
Total for each column	20	39	42,327	9,354
Total overall	59		51,681	

Source: Ministry of Agriculture and Food Industry (MAFI) 2013.

In terms of crops, organic cereals cover the biggest part of Moldova's organic land, followed by oil and protein crops (Table 4).

Table 4. Organic crop area in Moldova in 2013

Crop	Area (ha)
Wheat	13,708
Barley	3,142
Corn	7,614
Sunflower	8,744
Soy	1,942
Peas	3,083
Rapeseed	3,187
Triticale and rye	6,670
Alfalfa	1,258
Fruit and nuts	1,329
Wine, grapes	321
Pastures	802
Total	51,681

Source: Ministry of Agriculture and Food Industry (MAFI) 2013.

National policies

The Government of Moldova has provided significant support for the development of organic agriculture with the aim of supporting farmers' incomes and encouraging them to produce goods of high quality and in sufficient quantities. It considers the increasing international market demand for organic products as a major opportunity to achieve economic, environmental and social benefits for the country. In 2006, a government programme was initiated under the aim of developing ecological and competitive agriculture in Moldova, including a national programme for promoting organic agro-food production (MAFI 2013).

In February 2005, the government implemented the Law Nr.115-XVI on Ecological Agro-Food Production (Government Decision No. 149). This law includes:

- Protections on the word "organic," based on EU regulations;
- Regulations on the principles and methods of organic production;
- Regulation of the agro-food inspection and certification systems; and
- Regulation on the import and export of organic products.

In September 2008, the "Organic agro-food production and labelling of agro-food products" regulation (No. 1078) entered into force. The regulation requires that inspection and certification bodies be accredited in accordance with the European standard for product certification EN 45011, now ISO 17065, and by the Moldovan Centre of Accreditation in the Field of Products' Conformity Assessment. When accreditation criteria are met, MAFI authorizes qualified organic producers' permission to operate. The regulation also developed a Moldovan organic logo (Figure 2) (MAFI 2013).

Despite considerable efforts by the government, the national organic system has yet to meet the product, process and services' certification requirements of major organic export markets. Therefore, Moldovan operators who want to export organic goods need to be individually certified in accordance with regulations in their destination market.

Figure 2. Moldovan organic agriculture logo



Image: Agricultura Ecologica - Republica Moldova

Subsidies

Agricultural subsidies allocated for organic products form a small share of the total amount of agricultural subsidies in Moldova. In 2011, MDL 5.3 million (EUR 318,000) were allocated as subsidies for organic products (1.3 per cent of the total fund for agricultural subsidies) with an average sum of MDL 60,000 (EUR 3,600) per beneficiary (UNECE 2014).

In 2010, two per cent of the total subsidies allocated to agriculture were assigned specifically to support farmers during the three-year conversion period from conventional to organic farming, for example the period when a farmer has to follow organic standards, but may not yet sell products under organic certification. These subsidies amounted to MDL 700 (EUR 42) per hectare in the first year, MDL 400 (EUR 24) per hectare in the second and MDL 350 (EUR 21) per hectare in the third year. The subsidy was also used to ensure a premium price for organic products, which is set at 20 per cent higher than the market price of equivalent conventionally grown products. To ensure transparency, the list of farmers who received subsidies is made available on the MAFI website. Organic producers have also been able to access other forms of state support, for example, in order to purchase processing equipment, machinery and to invest in new orchards and vineyards (GoM 2010).

In 2013, the Moldovan government issued a policy directive under which a new agency, the Moldovan Agricultural Payment Agency, was established as the body responsible for managing subsidies for the agricultural sector, including for organic producers. The key features of the new policy included:

- Organic agricultural producers who invest in plantation of intensive orchards and vineyards will receive MDL 5,000 (EUR 300) more per ha than conventional farmers;
- Organic producers will receive 10 per cent more for insuring their crops subsidies than conventional producers; and
- Organic farmers will be offered a higher credit ceiling on subsidised rates than conventional producers.

The actual payments of subsidies to organic producers amounted to a total of MDL 2,150,000 in 2013 (EUR 129,000), of which half was allocated as credits and the rest for vineyard and orchard development (MAFI 2013). Opinions regarding the effectiveness of the subsidies vary. Notably, support is only extended to producers who are part of the national organic system, meaning that some major organic export operators that are certified by foreign certification bodies are excluded from receiving these benefits (UNDP 2014).

Capacity building

There are several Moldovan institutions that are active in conducting research and promoting organic agricultural practices. The Moldovan Research Institute of Field Crops ("Selectia") has carried out research on organic production for 40 years and their findings have been disseminated among Moldova's agricultural producers. The Institute of Biological Protection is also involved in organic agriculture research, creation of demonstration plots, as well as dissemination of best practices. The Agricultural University opened a section on organic agriculture under the Faculty of Agronomy, while agricultural research institutions have organised demonstration plots for organic technologies, as well as field days and knowledge transfer courses. Within the MAFI, a special organic department, the Department for Organic Agriculture and Renewable Resources, has been established. Representatives responsible for the promotion of organic agriculture were also appointed in regional agricultural departments. Courses on organic agriculture for farmers and consultants are also organised annually by MAFI.

Advisory, training and education programmes on organic farming are available through MAFI and the NGO ProRuralInvest, among others. In addition, associations, traders and companies that supply farming inputs are organising organic seminars, field days and supplying written information to Moldova's organic producers and processors. In addition to certification, the Centre for Applied Pedology provides consultation for conversion to organic agriculture and offers soil quality tests, as well as tests of fertilizers, plant protection substances, water, animal fodder, etc. Finally, the All-Union Institute of Biological Plant Protection is producing 28 pheromones for biological plant protection.

Moldova's organic producers have expressed a need for more plant protection agents. Meanwhile, international companies are reluctant to enter the small Moldovan market and obtain registration for their organic products. The situation regarding organic seeds is similar: on the one hand, organic seeds must be used in accordance with organic standards (although there are many exceptions to this rule), but, on the other hand, there is little organic seed production in Moldova and international businesses are reluctant to obtain registration for small batches of organic seed.

Key stakeholders

Moldova's organic sector is driven mainly by commercial producers, certification organisations and NGOs and there is no unified organic sector organisation. In 2010, the National Association of Organic Farmers (APEM-AGRO) was established. The association promotes the products of its members by organising joint stands at local and international fairs and aims to be the voice of the private sector in dialogue with the government.

Certification companies

Despite the rather low number of certified operators, there are 11 certification bodies active in Moldova. Prices for certification services vary among companies and range between MDL 60 and 90 (EUR 3 to 4.5)³ per hectare for local companies, and US\$ 2,500 per farm for international companies. The rates also vary according to the crops produced (MAFI 2013).

Foreign certification companies play an important role in the development of organic agriculture and in the promotion of Moldovan products on international markets. The foreign organic certification companies that are operating in Moldova, but which are not locally accredited, include Agreco, Austria Biogarantie, BCS Öko-Garantie, Ceres, Ecocert and SGS (EU OFIS 2015). These companies certify operators exporting to the European Union. Furthermore, the Italian Biozoo company set up a local Moldovan branch, which is now independent. Eco Gruppo Italy also has a local office registered and approved in Moldova, as does the Italian *Istituto per la Certificazione Etica ed Ambientale* (ICEA).

Two local organic certification companies have also been established and accredited: the Certificate-ECO and the Centre for Applied Pedology CRPA-Inspect. These bodies may collaborate with the above-mentioned international certification companies. For example, ICEA recognises the inspections and accreditation of CRPA-Inspect and issues export certificates, thereby facilitating EU market access (MAFI 2013).

NGOs

Since its establishment in 2003, the NGO ProRuralInvest has organised (with support from various international donors) field demonstration projects and seminars, prepared publications on different aspects of organic production and established contacts with similar organisations in other countries. The NGO collaborates with the Selectia research institute and the National Agency for Extension and Advice in Agriculture to disseminate up-to-date information on organic agriculture. Other Moldovan NGOs active in organic agriculture include Bios and Cutezatorul (UNDP 2014).

Investors and donors

In Moldova, around EUR 3 million was invested in the development of organic agriculture in 2010. The main investors were the government (EUR 1 million); agricultural producers (EUR 700,000); and private investors (EUR 1.3 million). Most of these investments were made into vineyard and nut plantation development.

³ At 0.05 EUR to MDL average exchange rate in 2014.

In addition, several projects promoting organic agriculture have been supported by national and international donors. These projects have contributed to seminars, training events and publications, among others, and include:

- The EU-funded UN Environment project *Greening Economies in the Eastern Neighbourhood Organic Agriculture* (EaP-GREEN), operating in Armenia, Moldova and Ukraine, which is building the capacity of the private sector to access growing international and European markets for organic products. As part of this initiative, this publication aims to provide an overview of available organic products, stakeholders and policies as well as recommendations for the further development of Moldova's organic sector;
- The UNDP/Global Environmental Fund Environmental Fiscal Reform Project in Moldova financed the *National Study on Organic Agriculture and Greening of Conventional Farming* in 2014; and
- The Support of Organic Agriculture Project, funded by USAID and implemented by the NGO People in Need. It is aimed at increasing the production of organic products and expanding the organic agricultural sector in Moldova.



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Markets and trade of organic products

Currently Moldova's organic product supply chains are relatively unreliable and lack appropriate grading (or inspection), storing, processing and packing facilities. There is also room to improve cooperation and networking among key organic market players. Nevertheless, the country's organic sector has made advances in several export markets.

Export

Over the past five years, Moldova has experienced rapid growth in the export of certified organic products. In 2013, registered exports of organic products amounted to more than 80,000 tonnes, valued at MDL 588 million (EUR 31.5 million), representing 3.18 per cent of the total agriculture export value, according to MAFI⁴. Moldova's main certified and exported organic products in 2013 were: wine, shelled walnuts, dried fruits, sunflower seeds, sunflower oil, soy seeds, wheat for animal fodder, lavender oil, beans and barley. The main markets for Moldovan organic products are the Czech Republic, Germany, Italy, Poland and Slovakia.

Table 5. Export of organic products from Moldova to EU countries in 2013.

Products	Export to	Quantity (tonnes)	Price (MDL/kg)	Total value (MDL)
Walnuts (core)	Germany	962	89.83	86,416,460
Cherries preserved	Austria	130	8.50	1,105,000
Dried prunes	Germany	208	34.79	7,236,320
Dried apples	Germany	175	36.66	6,415,500
Dried cherries	Austria	44	54.50	2,398,000
Sunflower oil	Poland	2,800	25.77	72,156,000
Rose hips	Switzerland	68	44.50	3,026,000
Sunflower seeds	Slovakia	9,500	6.25	59,375,000
Soy	Italy	8,940	7.20	64,368,000
Feed grains	Italy	16,350	4.25	69,487,500
Feed corn	Italy	7,600	3.90	29,640,000
Pumpkin seeds	Netherlands	500	26.40	13,200,000
Rye	Poland	2,340	4.05	9,477,000
Forage peas	Czech republic	8,650	6.80	58,820,000
Barley	Poland	10,350	3.65	37,777,500
Triticale	Czech republic	2,100	3.85	8,085,000
Rapeseed	Czech republic	10,100	5.85	59,085,000
Total		80,817		588,068,280

⁴ Note that actual exports will be larger as the figures do not include crops certified by foreign certification bodies that certify several very large trade flows.

Source: MAFI 2013.

According to UN Environment's forthcoming *Market assessment of the European market for the main organic export products from Armenia, Moldova and Ukraine*, protein-rich raw materials for feed mixes, such as oilcakes, soybeans and dried pulses, have some of the largest export potential for Moldova. The market potential is also very promising for cereals (e.g. wheat, corn, barley, rye, triticale, spelt and oat) and oilseeds such as sunflower kernels. Furthermore, if organic products were processed domestically, Moldova's organic producers could obtain considerably higher price premiums on the international marketplace (UNEP forthcoming).

Domestic markets

A survey conducted in 2007 by the NGO ProRuralInvest showed that there is growing demand for organic products in Moldova's urban areas, most notably in Chisinau and Balti. Twenty per cent of consumers interviewed in that survey responded that they were ready to buy organic products and pay premium prices. In 2013, almost 3,000 tonnes of organic vegetables, fruits and cereals were sold on the domestic market (Table 6).

An important step taken by Moldova's government towards the development of the local organic market was the provision of a 20 per cent price premium above the price of conventional products to organic producers during the period of 2007 to 2009. This has meant that organic producers can obtain a financial premium even if the local market price of their products is on par with that of conventional produce. In addition, based on the Law on Public Procurement, 320 tonnes of organic products, vegetables and fruits were purchased by the state for public catering. These procurements are based on a government tender for which interested farmers may bid. Organic products are purchased first, and additional purchases are then complemented with conventional products.

Imported, non-certified organic food, as well as a wide range of so-called (sometimes fraudulently) "environmentally clean" and "produced on non-contaminated soils" products can be found in supermarkets, where they are sold at premium prices. As a result, there is a growing interest to develop and diversify the domestic market with Moldovan organic produce. In 2009, local governments in the Stefan Voda and Causeni regions organised seasonal organic open-air markets in order to raise awareness and foster growth in the organic sector.

However, fierce competition in the retail market combined with the low purchasing power among local residents has often lowered retailers' incentive to stock and sell organic foods (MIEPO 2012). As there is still insufficient awareness-raising and promotion of organic products, Moldova's local markets are predominantly characterised by a shortage of organic products.

Table 6. Volume of organic products sold on Moldova's domestic market in 2013

Product	Quantity (tonnes)
Wheat	500
Barley	200
Cabbage	150
Sunflower	320
Soybean	249
Carrots	120
Corn	200
Sweet corn	100
Onion	146
Potatoes	550
Tomatoes	175
Sweet peppers	110

Source: MAFI 2013.

Prices

Prices on Moldova's domestic market do not vary significantly between organic and conventional produce. The 20 per cent price premium mentioned above was provided as compensation for organic farmers, but did not substantially affect the final price of the products on the shelves. For exports, however, the price for organic products is typically higher, as stipulated in long-term contracts with international buyers that guarantee a premium price. For example, in November 2013, when the price for conventional soybeans on the local Moldovan market was roughly EUR 0.32/kg, the country's organic producers exported soybeans to Italy for EUR 0.45/kg (at a 46 per cent price premium compared to conventional products). Similarly, organic sunflower seeds were exported at a 23 per cent higher price than that obtained on the domestic Moldovan marketplace.

Challenges for organic farming⁵

Both organic and non-organic producers face a number of challenges, such as the lack of advanced irrigation systems and technologies for harvesting and storage. In Moldova, some major infrastructural deficiencies that affect the development of the agricultural sector as a whole include sub-standard roads, insufficient storage capacity and lack of modern refrigeration facilities. Organic production is disproportionately affected by shortages in processing technology, as the whole organic market segment is a premium market. In addition, acquiring organic

⁵ Based on the assessment of the authors, interviews with stakeholders, results of a validating workshop as well as screening of reports.

certification and labelling requires the full traceability of products to their sources and production methods, making compliance difficult and prohibitively expensive for many small-scale producers.

On the whole, the conditions for organic production in Moldova are favourable because fertilizer use is historically low, and it is the lack of trained labour, an unfavourable land ownership architecture, as well as poor financing and marketing schemes that present the largest challenges for the sector's future development.

Barriers to production

In Moldova, the decline in livestock production and the improper management of manure have meant that there is little local production of organic fertilisers, while the import of these is all-too-often prohibitively expensive. This problem is further exacerbated by a general lack of livestock and crop integration practices. Knowledge about many other aspects of organic production, such as biological pest control is also inadequate among the country's producers. Moreover, although several national policies support organic production, government subsidies for organic farmers are subject to frequent changes and have various restrictions that limit the attractiveness of converting to and pursuing organic agricultural practices.

Barriers to domestic market development

The average Moldovan citizen lacks knowledge about organic production methods and the benefits of organic products. Market growth is further challenged by low purchasing power of consumers, as well as the unstable supply, fluctuating quality, and small range of organic products. Organic fresh fruit, vegetables, and organic dairy and meat products, for example, are not widely available in shops. For smaller farms that do not have access to international markets, the cost of obtaining organic certification is often considered to be too high.

Barriers to exporting organic agricultural products

There are several factors that may discourage the export of organic products from Moldova. First and foremost, the capacity of Moldovan agricultural producers and processors to establish solid relationships with foreign buyers is often limited by a lack of foreign language skills and knowledge of business culture. In addition, most of Moldova's agricultural producers lack access to information on international markets and international terms of trade. Fluctuations in export market demand also discourage long-term investments into organic production, branding, marketing and trade infrastructure.

It must also be noted that due to the high cost of international organic certification, in the majority of cases, it is the traders and exporters that hold organic certificates for

their farms. While this offers existing organic producers the advantage of being connected to international customers and to have their certification costs covered, this also means that these farmers do not have direct contract with their customers and, being tied to single trader, their bargaining power may be severely compromised.

Tariff and non-tariff barriers for exports of organic products

Historically, organic products were often subject to less stringent quality requirements of traders and food processors. Today this is no longer the case and, being a premium segment of the market, it is often harder to sell second- or third-grade organic products.⁶ Regulatory barriers for organic products are in fact equivalent or often considerably higher to those encountered by producers and/or exporters of non-organic agricultural produce.

First and foremost, organic products are subject to the same tariffs and quotas in major export markets as non-organic products. There have been several proposals for countries to apply more favourable trading conditions on environmental goods and services, including by reducing or eliminating tariff and non-tariff barriers to organic products, for example on imports of organic bananas into the EU (European Parliament 1998, Central America Data 2008). To date, organic products have not been given preferential treatment in international trade and there are no international customs codes for organic products.⁷ Therefore, organic producers have to comply with all the broader agri-food product export requirements, as well as standards and certification procedures that are specific to organic produce. For example, for exports to the EU, the certification body has to be accredited according to EU organic regulation, or the exporting country needs to be listed on the Third Country List, which recognizes some countries that have equivalent organic production rules and systems as the EU.⁸ There is perhaps a window of opportunity for Moldova's organic standards and verification systems to be recognised as "equivalent" to those of the EU under Article 183 of the EU Association Agreement, that deals with sanitary and phytosanitary issues. However, as organic regulations are more technical, market standards, it remains to be seen to what extent they can be aligned under this trade agreement.

In addition to regulatory demands, organic products also face special requirements from importers. For example, a buyer in the target market, such as the EU, might demand certification from a specific certification body because of its reputation or

⁶ One notable exception to this trend are organic (non-GMO) commodities that are suitable for animal feed, of which there is a global shortage and which provides an excellent market opportunity.

⁷ Interestingly, the United States has introduced 35 import codes and 26 export codes to its trade data schedule to facilitate tracking of imported and exported organic products.

⁸ The EU organic regulation, including the import rules, is subject to a much debated revision (with a very unclear outcome) at the time of writing.

their personal familiarity with the label. In addition, various markets have strong preferences for certain organic labels (e.g. the BioSuisse label in Switzerland, Soil Association in the UK and KRAV in Sweden), thereby creating additional challenges for foreign certification bodies and producers. Depending on the importing country, organic products may also be required to comply with fair trade, climate-neutral or other additional product certification. While compliance with several standards can provide new market opportunities, the complexities associated with their attainment constitute major market access barriers, particularly for small-scale producers.

There are also specific problems encountered by countries, such as Moldova, with a less developed organic sector when attempting to access markets where organic farming is well established. For example, EU organic import regulations require the use of organic seeds, the procurement and use of which is challenging for a number of EU producers, let alone those operating within a small, external organic market. In some instances, this may push organic producers to fraudulently claim their products' market eligibility, thereby tarnishing the international reputation of their country's organic sector as a whole.

Organic agriculture and the Green Economy

Organic agriculture can make a substantial contribution to Moldova's broader transition to a Green Economy. Organic agriculture creates more value not only because it allows to obtain price premiums of around 20 per cent on farmers' produce, but also because it contributes to greater quality differentiation on the marketplace and helps to boost Moldova's international image as a quality supplier. Moldova also has a strict non-GMO policy that could provide additional advantages in export markets. Most Moldovan farmers use minimal amounts of synthetic inputs, making it relatively easy for them to switch to organic production. Organic techniques, such as crop rotation, offer environmental and economic benefits as they enable farmers to increase productivity without using costly, largely imported, agricultural inputs (UNEP 2011).

Organic farming also contributes to the reduction of GHG (notably those emitted during the production of fertilisers), as well as CO₂, methane and nitrous oxide emissions. It contributes to the maintenance of soil organic matter and thereby reduces the soil's vulnerability to erosion, while also increasing its carbon stocks. According to some estimates, soils under organic cultivation can sequester up to two tonnes of CO₂ per hectare per year. Further yet, organic agriculture contributes to the preservation of biodiversity and soil fertility and thereby is essential for the maintenance of the balance between human activity and nature. Research also reveals that the diverse organic production systems are often more resilient in the

face of sporadic weather events, as well as long-term climatic change, for example extended drought periods (UNEP 2011).

Conclusion

Moldova's organic sector saw rapid development since the 2006 government initiative to develop competitive, ecological agriculture in the country, which included a national programme for promoting organic agro-food production. According to data from the Ministry of Agriculture and Food Industry, Moldova's cultivated area under organic production increased from 80 hectares in 2003 to 51,681 hectares in 2013. The main drivers of this growth are the market demand from the EU, which today accounts for roughly 54 per cent of Moldova's total trade flows, favourable government policies, as well as the engagement of NGOs and the private sector.

While Moldova's organic products have proven to be notably competitive in various international market segments, there is a strong case for the further development of the country's organic sector, not least because it can serve as a model for Moldova's broader transformation to a Green Economy. The growing demand for organic products in domestic and international markets offers the country with timely opportunities to produce high-value commodities that bring about social, economic and environmental benefits.



Photo: Flickr/Creative Commons/Demetri Mouratis

Factors related to the sector's structure, production capacity and infrastructure; farmers' access to agricultural inputs, complex certification processes (e.g. some producers are certified by local certification bodies that are recognised by the Moldovan government but not by the EU, and vice versa) and prohibitive trade regulations; as well as limited investments and awareness of organic agriculture at all levels are nevertheless strongly limiting the future development of organic agriculture in Moldova. In addition, while there is firm government support for organic production, subsidies are subject to frequent changes and restrictions that make them less attractive. Government support also only reaches those certified by domestic certification bodies, meaning that the sector is divided and important actors are excluded from interventions.

The continued expansion of export and domestic organic markets will be a key incentive for farmers to convert to organic production, as well as for increasing investments and innovation for a more ecologically sustainable agrarian sector. Efforts to build the capacity of farmers and service providers, such as traders, processors, certification bodies, as well as to increase the awareness of state officials about the benefits of organic agriculture must also form a major component of Moldova's organic agriculture promotion strategy.

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