

MOLDOVA



Report on the Status of Organic Agriculture and Industry in Moldova

Gefördert durch



Bundesministerium
für Ernährung
und Landwirtschaft

BÖLN

Bundesprogramm Ökologischer Landbau
und andere Formen nachhaltiger
Landwirtschaft

aufgrund eines Beschlusses des
Deutschen Bundestages

Imprint

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Disclaimer

This report was funded by the German Ministry of Food and Agriculture within the framework of the project **28200E002**.

This report has been prepared to the best of our knowledge and belief. We cannot however accept any guarantee for the accuracy, correctness or completeness of the information and data provided.

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Moldova:

Facts and Figures

Country

29,400 km

Area

2.6 m (2020) / **3.6** m (2009)

Usual resident population

2.8 Persons

Average household size

959,200 (2017)

Number of households

MDL (19.5 MDL = 1 €, Ø 2019/20)

Currency

4011 € (2019)

GDP per capita

Food market

371 €

Expenditure on food per capita and year

9%

Expenditure on food (% of GDP per capita)

980 Mio. € (2019)

Turnover in organised food retail trade

88% (2019)

Level of self-sufficiency

44% (2019)¹

Contribution of agriculture and food to total exports
(2019, by value)

¹ trademap.org (2019, by value)

Source: statistica.md

Moldova is one of the largest **suppliers to EU** for ...

Apple juice concentrate	Rank 1
Sunflower seeds / Crude sunflower oil	Rank 2
Fresh plums	Rank 3

Source: comtrade.un.org

Moldova is one of the largest **suppliers to Russia** for ...

Fresh plums	Rank 1
Fresh apples	Rank 2*
Dried plums / Honey / Fresh table grapes / Fresh cherries	Rank 3

Source: comtrade.un.org | * Rank 1 by volume

Most important exports (2019)

	Export value (million €)	Export surplus (million €)	Export share of production (%)
Grains (maize, wheat, etc.)	207.3	187.1	36%
Sunflower seeds	198.3	176.7	72%
Sunflower oil	60.3	57.4	86%
Walnuts	80.2	65.8	4%
Apples (fresh)	48.0	46.8	36%
Apple juice concentrate	41.6	41.5	98%
Stone fruit (fresh)	21.0	18.7	32%
Dried plums	6.4	6.3	70%
Table grapes (fresh)	26.5	26.1	56%

Source: trademap.org

Most important food imports (2019)

	Import value (million €)	Import surplus (million €)	Import share of consumption (%)
Dairy	52.0	46.8	54%
Meat	37.3	29.5	77%
Fish	42.2	42.2	100%
Vegetables	58.9	50.5	92%
Grain products	45.0	30.2	69%

Source: statistica.md, madein.md, invest.gov.md, eba.md, wineofmoldova.com, agrobiznes.md, FAO

Map

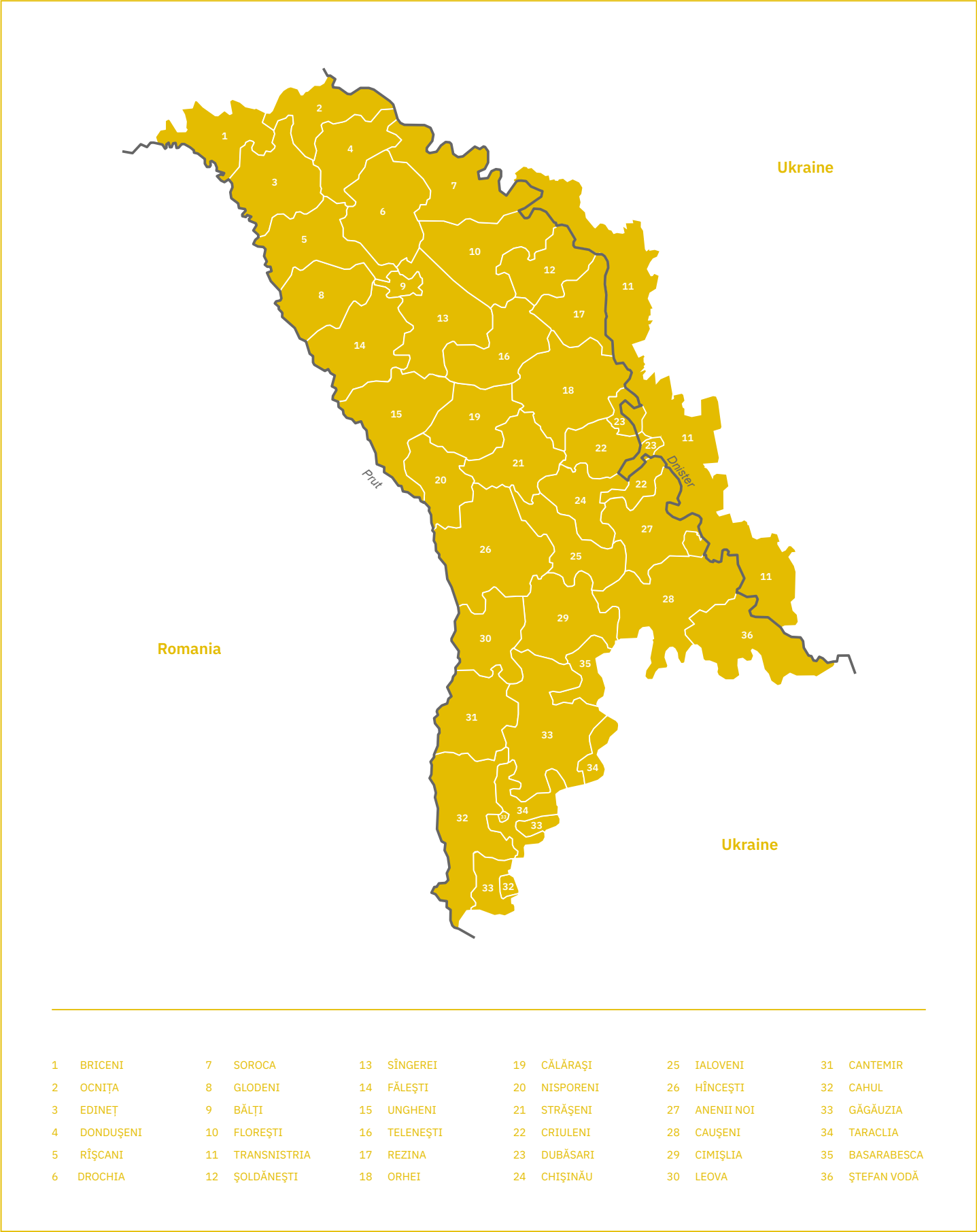


Figure 1: Map of Moldova

The Transnistria problem

In 1992, the strip of land left of the River Dnester (Eastern side) split away from the Republic of Moldova. The so-called Pridnestrovian Moldavian Republic comprising Transnistria with 4163 km² and the town of Bender with 97 km² (population about 470,000) is not recognised by any other state and under the influence of Russia which

maintains a military presence. Although de jure part of the Republic of Moldova, the Government of Moldova has no authority over Transnistria and there is a customs border to the break-away territory. Information in this publication relates to the Republic of Moldova without Transnistria.

Trade relations

Moldova is a member of the WTO and has free trade agreements with EU, CIS, CEFTA, GUAM and Turkey (43 countries). Negotiations of free trade agreement with China and EFTA member states are underway.

The free trade agreement with EU is called DCFTA (Deep and Comprehensive Free Trade Area) and is part of Moldova's EU Association Agreement that entered into force on September 1, 2014. It allows Moldova access to the European Single Market and grants EU investors the same regulatory environment as in the EU. It eliminates all custom duties on both sides except for some for which a gradual elimination is foreseen. Today, the most important fruits produced in Moldova (table grapes, apples and plums) are imported into the EU free of customs duties within quotas. The most-favoured-nation (MFN) customs duty rate applies to imports exceeding quota limit. Grains and oil seeds also enjoy duty free access to the EU. Animal products from Moldova (except honey) are currently not allowed into the EU due to inad-

equated sanitary standards. Food products from the EU can easily be imported to Moldova with duty rates between 10% (cheese) and 15% (cereal products). A stepwise liberalisation phase (until 2024) is foreseen for certain sensitive products (such as wine, fruits/vegetables, textiles). To reduce trade barriers, Moldova has so far adopted more than 25,000 EU technical standards (of 26,496) in its national legislation. At the same time, standards (in particular, GOST) that are contradictory to the new European standards are being withdrawn.

The Association Agreement, stimulated the flow of European FDI into Moldova. In addition, EU and Moldova agreed to provide the right of qualified personnel for temporary work. Visa-free travel to the EU started in 2014.

DCFTA so far has brought significant increases of exports of wine, table grapes, plums, nuts and grains to the EU. Today, the EU is Moldova's first trading partner and the first investor. About 70% of Moldovan exports are directed to the EU, and imports represent almost 50%.

Climate

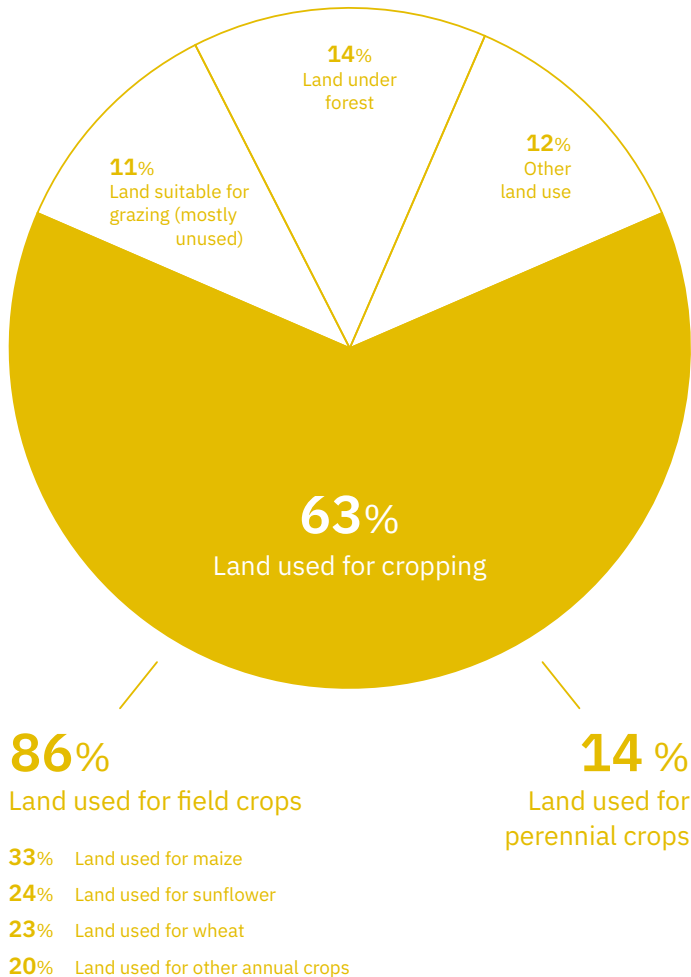
Moldova's climate is moderately continental; its proximity to the Black Sea leads to mildly cold autumns and winters as well as relatively cool springs and summers. The climate is ideal for apple production with rather pronounced day-night temperature differences. Problematic for cropping are late night frosts (such as on 1 April 2020 with -12°C) that can destroy a whole year's stone fruit crop.

Annual precipitation ranges from around 600 mm

in the north to 400 mm in the south. Precipitation can, however, vary greatly and long dry spells are not unusual. While Chisinau should enjoy 550 mm on average, there were only 218 mm of rain between September 2019 and August 2020. Heavy showers and thunderstorms are typical for early summer. They lead to flooding, erosion and damage from hail. Moldova has about 4,000 small water retention dams which are supposed to hold back run-off water from heavy showers.

Land and soil

Moldova's land-use (2019)



Source: statistica.md

Due to its good soils, Moldova's land-use is characterised by cropping: 63% of the land cover is used for cropping (the highest in Europe), forest cover is only 14% (the lowest in Europe) and land suitable for live-stock grazing only 11%.

86% of the land used for cropping land is under arable farming (mostly maize, sunflower and wheat which make up together 80%). 143,000 ha of orchards (mostly apples, followed by stone fruits and walnuts) as well as 126,000 ha of vineyards signify the intensive type of land-use in Moldova (statistica.md). Typical for Moldova are the shelterbelts often made from several rows of walnut or black locust trees every 500 or so meters which were established all over the country in the 1970s and 1980s, but are often poorly maintained.

About 80% of soils are chernozems (black soils) with a thick humus layer (60-100 cm). The average humus content is just above 3% (reaching 7%); however, intensive cropping with tillage and no crop rotation has led to a loss of humus content (in general over 1 percent point since 1990). Approximately 0.7 t/ha of humus, accumulated over millennia, is lost annually (Cerbari, 2015).

Agriculture

Cropping in Moldova is characterised by large commercial farms. Most production comes from farms >100 ha for field crops and >30 ha for plantation crops. The common definition of a small farm is <50 ha. Corporate farms operate over 63% of agricultural land under production (FAO, 2019). However, also so-called Peasant Farms (Gospodărie Țărănească) can be quite large. Usually, one to three "leader farmers" per village (often ex-managers

of the old kolkhozes), who rented the land from the multitude of small land owners, cultivate two thirds to four fifth of the arable land around a village, while the rest is often used for subsistence (potatoes, maize for feed, forage, grapes for wine) by individuals. The "leader farmers" operate mostly under the legal form of "Peasant Farms" and some as "Limited Liability Companies" (personal observation).

The Organic Sector in Moldova



Figure 2: Field day on the organic farm of Alexei Micu (MOVCA 2019)

History

Although the idea of certified organic agriculture only emerged in the late 1990s, the forerunners for organic farming during the Soviet era have been three State Research Institutes:

- The Institute for Field Crops Research “Selectia” in Balti since 1949 with research on soil conservation,
- The Institute of Plant Protection and Ecological Agriculture in Chisinau (today: Institute of Genetics, Physiology and Plant Protection) since 1968 with the development of biological methods of crop protection, and
- The Forestry Research Institute since 1965 with the design of shelterbelts to protect agriculture fields.

After independence, it was the combined efforts of NGOs, private investors and the Government of Moldova that made certified organic agriculture prominent in the country, both for the domestic market as well as for export to the EU. In 2001, the first certified organic farm was created with a total area of 168 ha. Between 2005 and 2010, the certified organic area grew to about 30,000 ha where it has stagnated since then oscillating between 25,000 and 35,000 ha.

The limited growth is also a consequence of 2 fraud cases, 2012 involving Italian dealers and 2017/18 involving Turkish dealers who colluded with fraudulent growers in Moldova. Part of the fraud in 2012 was that four companies certified by the Italian control body Bio-zoo claimed to farm about 60,000 ha². Because of such sudden upward swings, a graph with the development of the organic area in Moldova is not very meaningful.

Both the growth and the stagnation has been a consequence of the national legal frame for the protection and support of organic agriculture and food in Moldova (see Chapter National Legal Frame). The decade 2010 to 2020, however, saw an important development on the consumer side. In 2013, the NGO Ecovisio started annual local fairs (IarmarEco) which sensitise consumers for sustainability concerning not only food, but also hygiene products, textiles and energy. In 2018, the NGO EcoLocal started its weekly ecological markets in Chisinau focussing on artisanal and traditional products, but in which certified organic products are still rare. At the same time, all supermarket chains started to list imported organic products, some on a separate shelf. With regards to organic exports, the volume has reduced during the last decade, but the share of pre-processed and high-value products is increasing.

2 organic-market.info article of 03.03.2014

National legal frame

Moldova is a country fully implementing a regulation on organic agriculture.

A first legal framework was given to organic agriculture in 2005 when the **Law No. 115 of 09.06.2005** (↗) regarding organic food products was adopted. It was enabled by the **GD No. 149 of 10.02.2006** (↗) with detailed implementation rules. The term “Moldovan organic regulation” mainly refers to this document.

It comprises the rules regarding:

- The principles and methods of organic agrifood production;
- The inspection and certification system;
- The import and export of organic agrifood products.

The initial legal framework was based on EU Council Regulation 2092/91. The Technical Regulation “Organic agrifood products and labelling of organic agrifood products” **GD No. 1078 of 22.09.2008** (↗) which makes reference to the Law 115/2005 and GD 149/2006, adds some new rules as required by national legislation. A modification to the Law 115/2005 was adopted through the **Law No. 26 of 24.02.2011** (↗) to correspond to changes in EU regulations.



Figure 3: Misleading brand names are not sanctioned in Moldova (Arndt, 2020)



Figure 4: National Organic Logo (MADRM, 2020)

In 2010, the Government of Moldova launched the national organic farming logo “Agricultura ecologică – Republica Moldova” for organic food products which have been inspected and certified according to the Moldovan standard (**GD No. 884 of 22.10.2014**) (↗). The logo is somewhat poorly designed, does not memorise well and cannot be printed black and white. In addition, the use is over-regulated. An inter-ministerial committee gives authorisation, which is valid for one year only, after application is made to the Ministry of Agriculture. It is therefore hardly seen on organic products (currently only three Moldovan producers use it). On the other hand, the Law 26/2011 makes the use of the logo compulsory for the domestic market and for export.

The law refers to the terms “ecologic”, “biologic”, “organic” in Romanian language (and экологический, “биологический”, “органический” in Russian). However, **it does not explicitly forbid the use of these terms to conventional products**. A number of non-certified products in Moldova bear labels with these and a dealer of chemical pesticides uses the internet address organic.md apparently without suffering consequences. Mrs. Tamara Schiopu, the founder of the EcoLocal NGO striving for the creation of a market for local organic products repeatedly hinted at the problem of misleading labelling: This creates a loss of “trust and interest when local consumers are bombarded with fake products.” In most cases, it is the misleading brand name as the agencies registering the company (ASP) and the brand name (AGEPI) appear not to feel bound by the Law 115/2005.

Despite Moldova’s strategic objective to harmonise its legislation with that of EU in the context of the Association Agreement, harmonisation of the organic legislation lags behind. At the end of 2020, the Ministry

of Agriculture is still not in a position to exert effective control over organic production, processing, imports and certification. Only one officer, Mrs. Marcela Stahi, works in the Ministry's Service of Organic Production; however, this position is also responsible for the protection of geographical indications. A delegation of control to **ANSA**, the well-equipped and well-staffed Food Safety Agency reporting directly to the Cabinet, has not been made despite recommendations by the private sector, civil society and donor agencies. In addition to deficient control, Moldova also lacks an official, updated list of inputs allowed in organic agriculture following Law 115/2005. The Ministry of Agriculture is currently not informed about the organic producers controlled and certified by EU accredited control bodies. In addition, the Ministry has no oversight of imported certified organic food and feed.

Work on a new Moldovan organic law started in 2016 to address these shortcomings and align Moldovan legislation with the new EU Regulation 848/2018 taking effect on 01.01.2022. However, in its present version, the new law will not resolve the problem of deficient oversight by the Ministry of Agriculture. The view of the private organic sector (as expressed by its association MOVCA) has so far not been sufficiently considered.

For the Moldovan control body Certificat-Eco, the most likely scenario to avoid farmers having to go for double certification is therefore not a perfect new national law which would get Moldovan certificates recognised by the EU, but the control body's endorsement by the EU as one of the official control bodies for Moldova.

National support system

Moldova has an agricultural subsidy system run by the National Agency **AIPA**. The current scheme is based on Government Decision No. 455 of 21.06.2017 ("Distribution of the means of the National Fund for the Development of Agriculture and Rural Environment). Mostly, agricultural investments (machinery, orchard establishment, irrigation systems, greenhouses, cold stores) are subsidised with amounts of up to 50% of the investment. Also for organic producers, this type of subsidies constitutes the major piece of support received from the government.

For "the promotion and development of organic agriculture", AIPA uses its sub-measure 2.5 which tops up the income from annual sales by 20% (with a cap of

200,000 MDL, i.e. 10,000 EUR). This support is granted to producers who are certified to the Moldovan organic regulation. Beneficiaries who get de-certified within the first 5 years must reimburse all organic subsidies.

In addition to income subsidy, organic producers in conversion receive

- between 75 and 125 EUR/ha for the conversion of orchards and vineyards, ,
- between 65 and 80 EUR/ha for the conversion of medicinal and aromatic plants,
- between 40 and 50 EUR/ha for the conversion of arable land for field crops, and
- 15 EUR per beehive.

In accordance with the EU standard, the conversion period is 2 years for annual crops and 3 years for perennial crops.

The latest published annual report of AIPA (November 2018 to October 2019) lists subsidies of 8.6 m MDL (i.e. about 440,000 EUR) for sub-measure 2.5 (for 76 producers).

Info

MADRM
Ministry of Agriculture

www.madrm.gov.md



ANSA
Food Control Authority

www.ansa.gov.md



AIPA
Authority for Agricultural Subsidies

www.aipa.gov.md



Organisations

What's striking about Moldova's landscape of organic organisations is the fact that there is nearly no competition, but good complementarity and cooperation. The organisations have been regularly meeting at quarterly Organic Round Table Meetings convened by the Ecovisio NGO since 2017.



Figure 5: Celebrating diversity at Ecovisio's potato market (Ecovisio, 2020)

In this report, the organisations supporting organic agriculture and food in Moldova are categorised:

- 1 mainly defending the interests of members (i.e. association of organic producers),
- 2 mainly grassroots organisations with a mission to bring organic farming to the next level and involving considerable volunteer contributions,
- 3 organisations for project implementation, and
- 4 public organisations supporting organic agriculture.

The driving forces behind organic agriculture and food advancement in Moldova in recent years have been **MOVCA** (Category-I-organisation) as well as **Ecovisio** and **EcoLocal** (Category-II-organisations).

Among the important organisations implementing projects funded by international donor agencies (Category III) have been recently People-In-Need Moldova (PIN), Association of Public Education for Development (AED), Bios and Cutezatorul. Their involvement strongly depends on donor-funded projects. They may no longer be active when projects come to an end, but have maintained (to different degrees) the acquired knowledge and networks in their respective organisations. PIN certainly has profound experience from successfully linking Moldovan organic producers to organic buyers in the EU over many years.

The most important public organisations supporting organic agriculture (Category IV) are three Research Institutes: The Institute for Field Crops Research "Selectia" in Balti, the Institute of Genetics, Physiology and Plant Protection, as well as the Forestry Research Institute (see Chapter Research and Training).

Some organisations active in the past (and mentioned in EkoConnect's 2011 country report) are no longer around, such as the National Association of Organic Farmers (APEM-AGRO) or the NGO ProRuralInvest.

Info

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- Program Manager in Organic Agriculture
- Organizer of the round tables of Moldovan organic organizations

www.ecovisio.org

Overview of the most important organisations

MOVCA



The Moldovan Organic Value Chain Alliance (MOVCA) is a membership-based business association representing organic farmers and food manufacturers in the country. It was founded in 2015 by organic producers SRL Micu & Co (Alexei Micu), SRL Agro Walters (Kelsey Walters, now in the US) and the organic exporter SRL Prograin Organic (Spartac Chilat). Now MOVCA has 80 members (65 producers) and an office in Chisinau run by two staff. Board members today are Alexei Micu, Boris Boincean and Tatiana Nistorică, State Secretary at the Ministry of Agriculture. MOVCA organises the Moldova country booth at Biofach Nuremburg each year and is a strong defender of certified organic agriculture.

www.movca.md

EcoLocal



The Association of Ecological and Artisanal Consumers and Producers of Moldova was created in April 2018. In the board serve Tamara Șchiopu (organic farmer from the UK and long-standing advocate for organic farming in her home country Moldova), Vitalie Pintilei (inspector at the Moldovan control body Certificat-Eco) and three entrepreneurs related to sustainable food (Ana Sîtnic, Stela Babii and Nicolae Cojocaru). The NGO aims to contribute to the well-being of producers of local organic, artisanal and traditional food and raise the level of consumer awareness for these three types of food. The NGO's main activity is the organisation of the EcoLocal Farmers' Market with about 500 customers every Saturday. EcoLocal is a defender of locally certified organic agriculture and wants to see that more organic products grown in Moldova, are also sold on the domestic market. Today, only a small minority of food products sold on the EcoLocal market are certified organic.

www.ecolocal.md

NGO People-In-Need Moldova (PIN)

www.moldova.peopleinneed.global

Ecovisio & Katalyst



Ecovisio with its spin-off Katalyst are two grassroots NGOs led by young adults and targeting young adults. Founded in 1999, Ecovisio runs educational programs for individuals, creates viable examples of ecological and social innovations (many of them in the village of Rîșcova) and builds networks between change-makers. Ecovisio hosts the Organic Round Table Meetings, runs the annual IarmarEco Fairs for Ecological Opportunities and Social Entrepreneurship with workshops and networking events, and contributes to the InfOrganic project generating information materials for farmers on organic farming. Katalyst as a social enterprise operates a home delivery scheme with organic and home-grown vegetables from Rîșcova and is currently building a business incubator ("Katalyst Kitchen") for food manufacturing start-ups. Ecovisio and Katalyst acknowledge the value of certified organic agriculture, but prefer trust-based approaches.

www.ecovisio.org

NGO AED



The NGO AED has lately been the reporter to FiBL's World of Organic Agriculture yearbook. However, Ecovisio and MOVCA will probably have more information about the present-day organic producers, processors and traders.

www.aed.org

NGO Bios

www.bios.org.md

NGO Cutezatorul

www.cutezatorul.org.md

Control bodies

For the certification of production in accordance with the Moldovan organic regulation, two Control Bodies (CBs) are currently accredited and registered with the Ministry of Agriculture of Moldova. **Certificat-Eco** and **Control Union Dnestr**. In August 2019, the Moldovan accreditation body MOLDAC suspended the accreditation of Bio-Cert Tradițional.

In addition, the EU Organic Farming Information System (OFIS) currently lists 12 CBs for the purpose of equivalence to the EU Regulation (↗). Equivalence guarantees provided by these CBs enable Moldovan exporters to export products as organic to the EU. Among these CBs, the Swiss bio.inspecta and the German Agreco and **CERES** are the most active; however, only CERES has an office in Moldova (CERES SRL) with an inspector speaking both Moldovan languages, Romanian and Russian (Mrs. Mariana Cantir). While CERES has been active in Moldova for quite some time (with an own Moldovan daughter company since early 2017), bio.inspecta has only just become important as the new certifier of the 45 contract farmers of Moldova's leading organic grain exporter Pro-grain Organic, and Agreco only started to certify 26 organic beekeepers from Moldova.

The Netherlands-based CB Control Union Certifications was excluded from this list in early 2019 by the EU Commission and the NOP following a fraud with shiploads of allegedly organic grains from Russia, Kazakhstan, Ukraine and Moldova getting to the US via Turkey which in volume did not correspond to the inspected areas. This was first reported by the Washington Post (↗) in May 2017 and later backed by research of the American NGO Cornucopia (Anne Ross, 2018). When checked by EU inspectors, Control Union could not demonstrate the traceability and organic status of grain products from Eastern Europe. This fraud harmed the reputation of Moldova although only few Moldovan actors were involved. The 25,000 tons of "organic" maize carried on the vessel Mountpark to the US originated from farms in Russia, Kazakhstan and Moldova (WeTrade Agro SRL) who all surrendered their organic certifications in 2018. They had been clients of A-CERT.

Today the USDA Organic Integrity Database lists only three CBs for Moldova: CERES, Kiwa BCS and Letis (↗). The organic companies certified for the US market now mostly deal with walnut production and processing.

Some few producers growing organic crops for export are also certified against private standards in addition to the EU and/or NOP standards. Two organic producers and exporters (Maestro Nuts and AMG Kernel) certified by CERES and bio.inspecta have BioSuisse certi-

fication, and the organic lavender producer Resendjer SRL certified by CERES is preparing for Demeter certification.

As explained above, organic producers in Moldova are in need of double certification (by Moldovan and EU/NOP accredited CBs) to be able to export and benefit from Moldovan organic subsidies. Common practice, however, is to start with Moldovan certification during conversion period and until tree crops bear an exportable crop. Only then producers add on the international certification which can be five times or more expensive than Moldovan certification (which starts at about 250 EUR per year for a 5 ha operation). The process to receive international certification is simple and fast for companies with a valid Moldovan organic certificate.

Research and training

Moldova has some formal research supporting organic agriculture: The Institute for Field Crops Research "Selectia" in Balti performs long-term field experiments, trials and demonstrations on topics of soil conservation, crop rotations and minimum tillage. Its 1000 ha of land are being converted to organic certified farming (Dr Boris Boincean). The Institute of Genetics, Physiology and Plant Protection in Chisinau (↗) has extensive knowledge

Info

Certificat-Eco

www.certificat-eco.md



Control Union Dnestr

www.controlunion.com



CERES

www.ceres-cert.com



bio.inspecta

www.bio-inspecta.ch



and experience in the field of lavender and medicinal plants (Dr Maria Goncariuc) and biological insect control (Dr Leonid Voloşciuc). It is producing different types of pheromones to monitor and control pests as well as trichogramma wasps and *Bacillus thuringiensis* used to control caterpillar pests. The Forestry Research (↪) not only supports the forestry administration, but also designs shelterbelts for arable farms and local government to protect fields from erosion (Dr Dumitru Galupa).

Funded by the Czech Development Agency, the Czech state institution supervising the organic sector in Czech Republic, ÚKZÚZ, has been intensively collaborating with the “Selectia” Institute and the State Commission for Crops Variety Testing to run country-wide trials for organically grown winter wheat and spelt to identify varieties which produce a quality crop without receiving fast-soluble nitrogen fertilisers. Three testing sites of the State Commission participate in these trials as well as plots at the “Selectia” Institute, a private farm (GT “MAGASPER”) and the Zăbriceni monastery (Boincean, 2020). The monastery (known for its organic certified Biocă-mara tea) also hosts demonstration plots of alternative crops, cover crops and medicinal plants.

The University of Balti offers a Master in Environmental Sciences with Specialisation in Agricultural Ecology (↪). This course benefits from the immense experience of the “Selectia” Institute with which it collaborates. 5-7 students graduate every year.

Beyond public institutions, trainings by MOVCA (↪) and the NGOs as mentioned in Chapter B.4 are on offer.

The training programme “System of Organic Agriculture” by MOVCA contains 24 training modules made by 10 experts. They cover the fundamental principles of organic farming, crop-livestock integration, composting, crop rotations, adaptation to climate change, green fertilisers, the benefits of growing Lucerne, disease and pest management, cooperatives in organic farming, processing of organic products, certification and finally labelling of organic food products.

The project InfOrganic (2020-22) currently aims at developing and pooling relevant advisory materials for organic farming in Moldova. It is carried out by AED and Ecovisio with funds from Liechtenstein (LED) and focuses on people already working in agriculture. Produced materials are shared openly on one central webpage called AgroEco (↪) run by the agriculture online portal Agrobiznes.md (in addition to the individual websites (↪) and Facebook accounts (↪) of the participating organisations). A number of infographics and videos have been produced, e.g. on green manuring (↪) or soil management in organic cereal production (↪). Infographics (↪) for organic agriculture can be located also on the website of Ecovisio or the site of its agricultural project “Agrovisio”.

In addition to institutional training and advisory opportunities in Moldova, a number of very experienced experts and practitioners can be approached by whoever wants to start an organic business. Some of them are on a list compiled by the Organic Round Table. They comprise:

Consultants for organic farming in Moldova

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Donor support

The list of donors who supported organic agriculture in the past 25 years is long. Donors showing significant continuity despite setbacks and challenges have been USAID, Czech Development Agency, Netherlands Enterprise Agency, Liechtenstein's LED, and GEF in collaboration with UNDP.

Some examples shall be highlighted: The Czech Development Agency has been supporting the private sector in organic farming since 2011 with B2B measures, training and consultancy. In addition, since 2017 it has been contributing to the capacity of the Ministry of Agriculture in the area of legal framework development and institutional control. The Czech state institution supervising the organic sector in Czech Republic, ÚKZÚZ, is making available its expertise in adjusting the law and building the capacity of institutions for state control, laboratory analyses and variety testing.

At the meso-level, USAID was supporting the activities of the Czech NGO People-In-Need (PIN) together with the Czech Development Agency to strengthen private sector institutions in organic farming. USAID's Farmer-to-Farmer Programme is making available national and American experts to support the organic association MOVCA. USAID was also supporting the Moldova booth at Biofach Nuremburg. Recently, USAID sponsored

legal expertise for the Ministry of Agriculture to get the new organic law, which is in development, out of the deadlock it fell into following disagreement by MOVCA.

At the enterprise level, the Netherlands Enterprise Agency and the Austrian ADA supported Prograin Organic, the leading organic grain exporter in Moldova, to become more competitive so that it can render better services to the company's contract farmers.

European Union institutions are supporting organic agriculture in Moldova significantly, but indirectly. The subsidy fund run by AIPA (about 50 m EUR in 2020) with subsidies for investments and a special measure for organic farming (see Chapter National Support System) is subsidised at about 16% by the EU (22 m EUR contribution of the EU to the Moldovan agriculture budget of 135 m EUR in 2020).

The European Investment Bank (EIB) allocated 120 m EUR to a credit lines supporting horticultural investments in Moldova ("Fruit Garden of Moldova" or "Livada Moldovei" in Romanian). The credit line is open until mid-2022 or longer finances not only investments in fruits and vegetable value chains, but also into wine, honey and medicinal and aromatic plant businesses. In 2017, Moldova's largest producer of organic walnuts, AMG Kernel (780 ha organic nuts), used 2.5 m EUR of EIB financing for a walnut processing (shelling and packing) and storage facility.

Organic Crop Production

Certified enterprises and area

Very different figures have been used to describe organic farming in Moldova. Some are incomplete, others the result of double counting and considering fraudulent certified areas. A reliable statement about the development of certified organic farming over the past 20 years since the first farm got certified can therefore not be made. In this study, we use the figures of the “Atlas of Organic Agriculture in the Republic of Moldova” launched in 2020. For the NGO Ecovisio, Vitalie Pintilei collected the 2019 data from CBs and the Ministry of Agriculture and verified it by calling the certified enterprises.

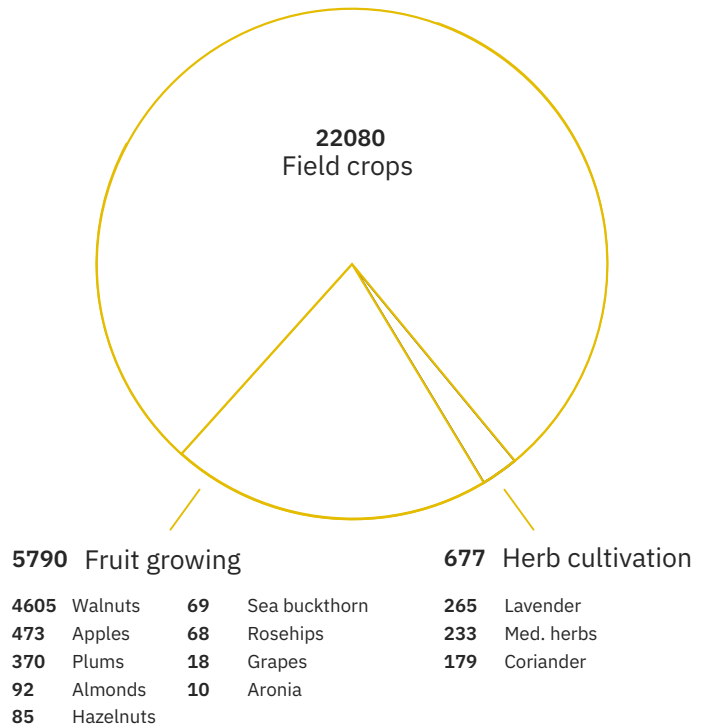
In 2019, **152 certified organic companies** (including those in conversion) have been recorded, mostly producers, but also about 10 who are just trading and/or processing. More than two thirds are certified by international CBs, which means that they are actively exporting to the EU. Just under one third is certified by the two Moldovan CBs, as they either only produce for the local market or do not produce an exportable crop yet.

Every single of the 152 certified organic companies is described in the **Atlas of Organic Agriculture** (↗) (data of 2019). Another source is the **Ministry of Agriculture** (↗) (data of 2019) which uploaded the certificates of the 77 companies certified against the Moldovan organic regulation. Information about the 115 companies certified by an EU accredited CB is displayed on the individual websites of the CBs for equivalence with the EU Organic Regulation (**OFIS Liste**) (↗) While the publication of certificates by the Ministry of Agriculture and the EU accredited CBs are a legal requirement, the updating of the Atlas of Organic Agriculture depends on the availability of donor funds and/or the benevolence of the NGO Ecovisio.

The **Atlas of Organic Agriculture** (↗) indicates an organic area (including in-conversion) of **28,547 ha**. This would be **1.1%** of Moldovan agricultural land.³

Although the figures of the Atlas of Organic Agriculture cannot be compared to earlier figures (due to incomplete data and double counting), the general indication is that the number of farms and area is stagnating or even decreasing. This is linked to the suboptimal Moldovan legal framework necessitating double certification, a generally low level of commodity prices during the period

Organic area (in ha)



Source: Figures from the Atlas of Organic Agriculture in the Republic of Moldova, 2020

2015-2020 as well as the incidence of organic fraud (see Chapter Control Bodies) which had an impact on the reputation of Moldova's organic sector.

The 152 organic producers in Moldova are almost all crop producers except for 26 beekeepers (with about 7200 organic beehives). The largest producer, Rostan SRL, with production in Transnistria, grows organic crops on 6740 ha while the 65 organic producers, which are members of MOVCA, operate about 100 ha on average. The arithmetic average for the entire country lies at 188 ha. According to the Atlas of Organic Agriculture, the 28,547 ha of organic farmland splits into 77% for arable crops, 20% tree crops and 3% medicinal and aromatic plants.

³ This figure is assumed on the basis of a total agricultural area of 2.496 m ha made up of 1.832 m ha arable land, 0.290 m ha perennial plantations and 0.374 m ha pastures, hayfields and fallow land (Statistica.md, 2019-2020)

Outstanding organic producers

Prograin Organic

Since 2015, Prograin Organic, a fully Moldovan-owned company, has been supporting contract farmers with inputs, advice (7 farm advisors) and certification and return has been purchasing from them organic grains, oil seeds and pulses for export into the EU. In 2020, the company was working with 50 farmers growing organic crops on 7,700 ha. In 2017, a grain terminal with 8,000 t capacity was erected at Moldova's new Danube port in Giurgiulesti with some support of the Netherlands Enterprise Agency. From here, grain is shipped by vessels of 3,500 to 5,000 t capacity to Austria. In 2018, with the support of the Austrian Development Agency, a facility in Floresti was opened for primary processing of grains, sunflower seeds and pulses (hulling, deep-cleaning). The grain terminal in Floresti has a storage capacity of 4,000 tons. From here, the produce is exported to the EU by truck. Prograin Organic has the capacity to market much more Moldovan produce and is therefore the key to bring organic agriculture in Moldova to another level.

www.prograinorganic.com

www.youtube.com

Fernuci SRL

Fernuci SRL is another large organic walnut producer. Contrary to other main producers, Fernuci planted American (Chandler) and French varieties (Ferner and Franquette) which the company got registered into the State variety list. An own nursery sells organic seedlings to other growers. On 200 ha of own land, 115 ha of drip-irrigated walnuts have already been planted. Fernuci targets the high-end market in Europe and employs 90 workers from the local village for manual shelling – becoming the second largest employer in the area. To guarantee year-round employment, Fernuci is shelling walnuts from France when the own harvest is processed.

www.fernuci.com

Monicol SRL

Monicol SRL, established in 2001, is a supplier of both conventional and organic walnuts, dried plums and distillates. For Moldovan consumers, the company only makes conventional products available (brand "Fruit2go"). Monicol is EU and NOP organic certified by the German CB Kiwa BCS. Its organic plantation comprises 320 ha of walnuts, 60 ha of hazelnuts, 64 ha of prunes, 13 ha of pears. Conventional products are made from raw material purchased from local farmers and people collecting walnuts from shelterbelts.

www.monicol.md

Natur Perpetua SRL

Founded in 2017 by Violeta Primac, Natur Perpetua SRL is producing organic certified sea buckthorn on 26 ha near Balti. The company is certified by Certificat-Eco against the Moldovan organic regulation and by CERES against the EU standard. Planted varieties are mostly Romanian ones registered in Moldova: Clara and Mara. The company sells frozen berries mostly in bulk to European buyers, but also some to Moldovan processors.

E-mail: vprimac80@gmail.com

AMG Kernel

Since 1999, AMG Kernel has been active in Soroca District producing organic grains and walnuts as well seedlings of walnut and fruit trees. The company also shells nuts and stores produce (nuts and cereals) in an organic certified facility with a capacity of 22,000 tons. All of the company's 3,800 ha is certified organic or in conversion putting AMG on second position of largest organic companies in Moldova after the Transnistrian Rostan. The organic walnut production of 780 ha (only Moldovan varieties) is the second largest walnut plantation in Moldova. Future plans are to extend it to 2,000 ha. On 50 ha, AMG Kernel produces walnut seedlings for the local market as well as for export. The company converted its system of field crop production to low-till and strip-till to prevent soil erosion. AMG Kernel also has BioSuisse certification (in addition to the EU standard).

www.kernel.md

Maestro Nut SRL

Since 2004 Syrian-owned Maestro Nut SRL has been a company with activity in production, processing and exporting of organic walnuts. The total certified surface is 2,000 ha and represents the largest organic walnut plantation in Moldova and Europe. In addition, the company buys conventional walnuts from small local producers. Shelled nuts are exported to the EU, Middle East, USA, Russia and China. Products of Maestro Nut carry certification against EU, NOP, BioSuisse, Kosher and Halal standards. The daughter company Maestro Fruits SRL was founded in 2016 dealing with the production of dried apples and apple chips. The company is certified by bio.inspecta for its nuts and apples and by CERES for all wild collection activities.

www.maestro-nut.com

Euro Alun SRL

In 2018, Alexandr Perjan and several partners opened Euro Alun SRL which supplies hazelnut seedlings from Italy to growers with the ultimate aim of marketing larger lots of hazelnuts with an organic certificate or other quality management certificates. By 2030, the Euro Alun wants to see 1,500 ha of hazelnuts established of which 50% shall be certified organic. Until 2020, 24 customers of Euro Alun have established in total 250 ha. 5 years of free consultancy are included in the price for the seedlings.

www.alune.md

Resendjer SRL

Since 2003, the UK citizen Robert Ethrington (Resendjer SRL) has been growing organic lavender in Moldova. He delivers only to the German cosmetics manufacturer Weleda and expects Demeter certification in 2021. With about 15 employees, over 4 t of lavender oil are produced from 140 ha certified and another 50 ha of in-conversion lavender in Minceni (Rezina District).

E-mail: bobethrington@resanco.com

Organic production and export of organic raw materials

The most important organic products from Moldova (in terms of volume) are:

- **From arable farming:**
sunflower seed, maize, wheat, soybean, peas and rapeseed (in this order),
- **From tree crop farming:**
shelled walnuts, dried plums, and
- **From medicinal and aromatic plants:**
lavender, coriander seed, sage.

The acreages of these crops in the past years give an indication of quantities that can be expected whereby produce from tree crops only adapts after 5 years or so to market changes, while arable crops can be well orchestrated by the few exporters such as Prograin Organic who are in close contact with the market.

Production figures can only be estimated, but can be crosschecked with the EU TRACES Database providing the volumes of EU imports from Moldova (it must be, however, borne in mind that Moldova is still exporting considerable volumes to re-exporting countries such as Ukraine):

Expected Organic Production and Moldovan Exports to the EU

Certified organic products	Available crop (t)	EU import from Moldova (t)
Sunflower seed	14,000-18,000	15,593
Maize	20,000-34,000	9,191
Wheat	19,000-26,000	8,833
Soybean	1,800-2,300	1,221
Peas	3,000-3,500	1,010
Rapeseed	2,300-2,900	No data
Shelled walnuts*	8,000-14,000	3,665
Dried plums	1,200-1,600	298
Lavender oil**	11-15	No data

Available crop: Author's calculations on the basis of the Ecovisio Atlas of Organic Agriculture. EU imports: TRACES Database (EC, DG Agriculture, Unit B4, E-COI Team)

* or equivalent if processed to oil

** or equivalent if flowers are just dried

As a general trend, the exports of Moldova to the EU and the US have been reducing during the past 5-8 years. Reliable figures for this, however, are not available as TRACES data is available from 2018 only. While Moldovan exports were 40,053 t in 2019 (1.2% of all EU organic imports), they were significantly larger in 2018 (55,368 t, i.e. 1.7%). The Ministry of Agriculture (2014) even put the Moldovan exports to the EU at 80,817 t for 2013. Although this figure seems unrealistic, it signifies the downward trend.

One reason for this may be the organic fraud described in Chapter Control Bodies. Due to the repeated detection of pesticide residues, Moldova has now joined Ukraine, Kazakhstan and Russia, countries from which additional residue analyses are required per consignment prior to shipment. This all harmed Moldovan exports, mainly to the US. The number of NOP certified farms or businesses allowed to export into the US shrank from 18 in 2017 to only 5 in 2020.

Another reason for the downward trend is Moldova's positioning in the competition with the three giants Ukraine, Kazakhstan and Russia. As Spartac Chilat from Prograin Organic puts it: "When we grow a new crop like spelt, peas, soybean or linseed, we are successful for the first one or two years. But when farmers in Ukraine see that we make money, they replicate what we are doing, and as they are much bigger, they flood the market and let prices shrink."

Being in competition with Ukraine which has much larger production units, the solution for Moldovan farmers probably is to carry out the first processing step in the country (hulling, deep-cleaning, sorting, milling and oil extraction) and in this way export a higher value product just-in-time when it is required by food or feed manufacturers in the EU. In this way, Moldova could benefit from its closeness to the EU and its logistic advantages. Prograin's hulling facility in Floresti is a first step in this direction, and more investment into primary processing is expected.

Import of organic inputs

Organic seed is mostly imported by Prograin Organic for its contract farmers. However, with the help of the "Selectia" Institute, local varieties suitable for organic farming have been bred which are currently multiplied by seed farms so that they get available from 2021.

Moldovan black soils often lack phosphorous for the production of grains and oil seeds. In organic farm-

ing, phosphorus levels could be increased with growing Lucerne, spreading compost or applying rock phosphate. However, this major mineral fertiliser is not available in Moldova. Horticulture crops, on the other hand, generally require higher levels of potassium. However, a major mineral potassium fertiliser allowed in organic agriculture, Patent-Kali, is not available in the country. For input dealers it could be a lucrative business to import rock phosphate and Patent-Kali. On the other hand, a variety of different plant strengthening products are available by a

multitude of dealers, and the country definitely does not need more.

Some biological pesticides are currently imported; however, Moldova has sufficient knowledge of the production of *Bacillus thuringiensis* and *Trichogramma* wasps (Institute of Genetics, Physiology and Plant Protection) as well as the use of plant extracts (Maria Darii) to control pests, but there is no commercial production of these products. Fungicides permitted in organic farming (copper and sulphur) are readily available from imports.

Organic Processing and Food Manufacturing

Certified enterprises

At least 14 companies in Moldova are certified to carry out processing operations (FiBL World of Organic Agriculture, 2020). Among them are those who do primary processing. In addition, there are a few companies manufacturing or-

ganic food products. Their combined turnover is miniscule compared to the total turnover of 859 m EUR for food manufacturing in Moldova in 2019 of and 268 m EUR for manufacturing beverages (below 0.1%). Having said so, a few outstanding organic food manufacturers who shall be presented here:

Biocămara

One of the few Moldovan certified organic products available to consumers since 2013 are Biocămara herbal teas. Produced by Biocămara SRL, a company linked to the Zăbriceni Monastery in Edineț District, the company offers readily packed herbal tea and blends in bags and for infusion.

www.biocamara.md

Biantti

Igor Golban's brand Biantti is known in Moldova for its variety of oils. The major activities of the company, Ygrick-Group, is food manufacturing; however, Igor also has some orchards in Carahasani (Ștefan Vodă District) of organic walnuts (9 ha), almonds (7 ha) and sea buckthorn (2 ha). Full certification is expected for 2021. With financing sought from the EIB Fruit Garden of Moldova credit line, Igor built a new warehouse in 2020 near Chisinau with 600 m² of oil processing as well as equipment to produce mueslis and flour. Plans are to supply the domestic market with culinary oils and organic cereal products. Raw material for the oil press shall be mostly imported from Asia if in short supply in Moldova. In addition to serving the domestic market, there are plans to export in bulk to Europe while most probably exercising parallel production.

www.biantti.md

Crama Domneasca SRL

"Crama Domneasca SRL" translates into Royal Wine Cellar and is currently the only certified organic winery in the wine country of Moldova. However, other small wineries are preparing for organic certification, and some large wineries as Poiana and Cricova plan to do parallel production. Crama Domneasca's brand is Equinox which is made from only 5.4 ha of grapes, certified since 2013, in Olănești near the famous Purcari winery on a hill rising along the Dnester Valley. Red varieties are the indigenous Rara Neagră and Feteasca Neagră along with Cabernet Sauvignon Merlot and Malbec, the white varieties Feteasca Regală, Fetească Albă and Chardonnay. The winemaker Constantin Stratan only sells 9-10,000 bottles of his price-winning wines per year both in Moldova and abroad (Ukraine, Germany, Austria, China and Japan).

www.equinox.md

Dorin Mereuță

Dorin Mereuță ist eine familiengeführte Bäckerei, die seit 2020 nach moldauischem Bio-Standard zertifiziert ist. Dorin kauft das Bio-Getreide von Prograin Organic und nutzt handwerkliche Methoden, um ein Sortiment von 30 Backwaren herzustellen. Dorin Mereuță is a family owned bakery certified since 2020 by Moldovan organic standard. Dorin buys the organic grain from Prograin Organic and uses artisanal methods to produce a range of 30 bakery products, mostly bread. Grinding is made in a stone mill and the forms are lubricated with beeswax. Dorin Mereuță (official name Carabica SRL) has an own shop and sells at Nr1, Fourchette and a few Linella supermarkets as well as at the EcoLocal market.

www.cudragsibunatate.md



Figure 6: Dorin Mereuță in his bakery certified organic since 2020 (Arndt, 2020)

Roseline SRL

In 2013, Roseline SRL started with a small plantation of rosehips in the North of Moldova testing two Russian varieties (Extravitamin and Start) which proved to have much more Vitamin C than usual rosehip. The company then developed a 94 ha rosehip plantation of which 68 are certified organic. The certificate by Certificat-Eco was obtained in 2020, while the CERES certificate is due in 2021. The company has an own processing unit where it turns fruits into pulp, powder and tea. The production of tea bags is until now done by another company. The final products still go mostly to Russia (sold as conventional). However, Roseline tea is also sold in Moldovan supermarkets. It is planned to also cooperate with local dairies for the production of milk products with rosehip pulp.

www.roseline.org

Organic products and export of organic products

At the end of 2020, there are only four processed organic food products available on the market:

- **Biocămara herbal teas,**
- **Equinox wines,**
- **Dorin Mereuță bread and bakery products,** as well as
- **Roseline rosehip pulp, powder and tea.** Of them, only **Equinox wines** are exported as finished organic products.
- **Biantti** will probably follow in 2021 with certified organic food products. Their business model is based on serving both export and the domestic market. Another bakery which is preparing for organic certification is **Bread Corner** (Organic Foods SRL).

The question whether Moldovan organic finished food products can be exported to the EU's major markets of Germany, France and the UK has been discussed by the EaP GREEN European market assessment report (2015). The authors argue that the export of finished consumer products to established organic EU markets, which are the largest, is challenging. At best, private labels could be offered to EU distributors for minimally processed mono-

products, although processing in the country of consumption is most often preferred. However, Moldovans have the ability and tradition to promote own brands transporting authentic messages, and the example of Equinox shows that niches in established markets can be conquered with a quality product under a Moldovan brand. At the same time the EaP GREEN report is right when it recommends trading with emerging organic markets, like Czech Republic, Poland and Hungary where higher chances exist to enter the market with finished products. Candidates are wine, oils, packed herbal tea, honey as well as bagged lavender flowers.

Import of organic inputs

Moldovan companies that manufacture organic food for the domestic market or for export need to use at least 95% organic ingredients. Organic sugar or glyucose syrup is not produced in Moldova and needs to be imported. The same is true for a number of other ingredients such as starch, cocoa powder, dairy products and eggs. At present, only very little locally made flour is available; however, Ygrick-Group has plans to start organic flour production shortly. Companies wanting to make a wide range of organic oils (like Ygrick-Group) will have to import organic oil seeds (e.g. sesame, pumpkin, linseed, chia seeds) from countries like India, Iran, Syria and Ukraine.

The Organic Market in Moldova

Market size and trends

The turnover of the formal food retail trade in Moldova is about 1 billion EUR (980 million EUR 2019, statistica.md). It is estimated that of this 0.1% (about 1 million EUR) is from certified organic products. However, with a rising middle class, a growing number of returnees from EU countries as well as more local organic products available, the share is growing. At present, young mothers are the single most important customer group. On Rank 2 and 3 are the followers of a healthy lifestyle and those who are bound to eat healthy foods.⁴

Sales channels and actors

Direct sales

Two markets for direct sales of artisanal and sustainable products exist: **EcoLocal** (weekly) and **Iarmareco** (once a year in Chisinau and different towns in the region). Certified organic products are rare, but in 2020 consumers can enjoy already certified vegetables (🌿), hazelnuts (🌿), bread (🌿), tea (🌿) and wine (🌿). More certified products are expected in 2021.

Several home delivery services of organic or home-grown vegetables exist such as **Ecovillage Farms** (Katalyst NGO) and **Ecoparadis** (Vasile Niculita).

Specialised retail and catering

The only importers certified organic by Moldovan control bodies are the Moldovan supermarket chain Nr1 and the German chains Metro and Kaufland. By law, the importer of products sold in Moldova as organic needs to be certified; however, a great share of organic food products is imported by companies without such certificate.

Importers

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Info

Direct sales

— EcoLocal

www.ecolocal.md

— Iarmareco

www.iarmareco.md

— Ecovillage Farms (Katalyst NGO)

www.covillage.farms.md

— Ecoparadis (Vasile Niculita)

www.ecoparadis.md

Wholesale and importers

— Sincer Gastromarket

www.facebook.com/sincer.gastromarket/

— Arome Bio

www.aromebio.md

— Natur

www.natur.md

— Ebio

www.ebio.md/shop

4 survey of Ian Corăuș, (<https://ecology.md/md/page/produse-ecologice-din-republica-moldova>)

Supermarket chains

In the year of pandemic, 2020, the supermarket turnover jumped for the first time over the 50% mark of formal food retail. In Chisinau, about two thirds of retail turnover was made in supermarkets in 2020 as open markets have been closed for three months due to quarantine. This has helped supermarkets win market shares with a lasting effect beyond the quarantine period. Entrepreneurs, who want to place organic products on the market, whether local or imported, will not be able to bypass supermarkets.

The last years saw a large number of new supermarket stores opening, mostly smaller “intra-quarter stores” rather than single large retail facilities. At the same time, Kaufland opened very large stores, two in Chisinau in 2019 and one in Balti in 2020. Currently, it is the larger stores and only selected chains with a strategy for organic products: Kaufland, Nr1, Metro and Fourchette.

Supermarkets in Moldova

Supermarket chain	Number of stores	Location	Organic products
Linella	106	All over Moldova	Below 10
Fidesco	34	All over Moldova	Below 10
Nr1	17	Only Chisinau	180 (of which 60 baby food & 3 dairy)
Green Hills	10	Chisinau, Balti	Below 10
Fourchette	9	Chisinau, Balti	30 (of which 10 baby food & 2 dairy)
Kaufland	3	Chisinau, Balti	200 (of which 20 baby food & 30 dairy)
Metro Cash-&Carry	3	Chisinau, Balti	64 (of which 32 baby food, 27 fruits & vegetables)

Source: Store check 07.12.2020

Kaufland has the largest number of organic products, but not a single Moldovan one in organic quality. All products are in separate shelves. Most are sold under the company’s own label (Kaufland Bio), followed by Hipp (baby food) and the Romanian brand “BIO All Green” belonging to the Romanian BIO LOGISTIC SRL. To promote or-



Figure 7: Organic shelf at Nr1, C. (Arndt 2020)

ganic farming and consumption in Moldova, Kaufland would need to offer certified organic fruits and vegetables and give Moldovan producers a chance to get listed.

Metro Cash&Carry has come up with the idea of putting a separate organic shelf in the fruit and vegetable department with 27 types of fruit and vegetables, all imported from Spain. It is not heavily frequented and may not help to improve general acceptance of organic products.

Nr1 has a remarkably high share of organic products. Although the market operates a separate shelf, organic products are also integrated into the main assortment. The German Biogreno label is the major brand followed by Hipp. Moldovan organic bread has been listed recently.

The Ukrainian Fourchette chain stands out because it has listed all available Moldovan organic brands (Biocă-mara and Roseline tea, Equinox wine, Dorin Mereuță bread).

Opportunities

In addition to adapting Moldovan organic legislation and improving regulatory oversight to increase confidence in Moldovan organic production, three developments are considered necessary to make organic agriculture in Moldova more robust:

- Diversification of crops and markets;
- Investments into primary processing to be able to export food and feed ingredients just-in-time; and
- Integration of crops and livestock.

Crop and market diversification

The highest export potential exists for high-protein raw materials for feed mixes, cereals and oilseeds. Lately pulses for food became an interesting option. Pumpkin seeds also have potential, but require special processing.

In horticulture, in addition to the market for shelled walnuts, there is increasing demand in the EU for organic fresh and dried plums, table grapes, berries, herbs and honey.

It seems to be easiest to develop new organic supply chains where conventional export relationships already exist (see tables in Chapter Moldova: Facts & Figures). The progress that Moldova achieved in the trade of plums, table grapes, wine and honey with the EU are a good basis to develop organic trade.

To reduce the risk of being too dependent on only a few export markets, other organic target markets should also be considered: Russia for fresh apples, the Middle East for fruits, nuts, Lucerne, hay and pellets, and China for wine. The port of Giurgiulesti gives Moldova access not only to the EU via the Danube River, but also to Istanbul, and from there by train to the Middle East and China or by ship to the entire world.

Primary processing

To improve competitiveness, Moldovan organic entrepreneurs will in the future endeavour to do more primary processing to export products like organic press cake,

cold pressed oil, hulled, cleaned and sorted seeds, and even flour. This requires not only investments into processing, but also storing capacities for the raw material, as the processing will be just-in-time before delivery (probably by truck) to feed mills and food manufacturers in the EU. As the EaP GREEN European market assessment report (2015) explains, this could cut out the importing company, but it would only work if the bundling exporters in Moldova can build up trust with their customers in the EU who would normally buy from importers.

Crop-livestock integration

If Moldovan organic farmers continue producing grains and oil seeds in a narrow crop rotation with 33% sunflower or more, they will deplete soil fertility and reduce soil organic matter making farming more vulnerable in times of drought. Ideally, sunflower is reduced to 20% in the crop rotation while every organic farmer should grow a 3-year Lucerne crop. This, however, is only realistic with a good utilisation of the legume crop. Lucerne could be exported as bales or pellets to the Middle East or the EU. The best use of Lucerne, however, would be feeding to livestock (cattle, sheep and goats). From today's situation in which nearly all farms are without livestock, a move towards crop-livestock integration is necessary. This requires heavy investment that can be, however, justified by the great demand on the domestic market for red meat and dairy products (see "Most important food imports" in Chapter Moldova: Facts & Figures).

Large-scale compost production based on residues from the wine industry, manure from livestock as well as pruned and chopped branched from orchards will also help to manage soil organic matter. Investments in composting equipment will produce not only environmental, but also economic returns as nutrients thus return to the soil in a cost effective way. Euro Alun is pursuing an investment idea that goes into the same direction: Establishing an organic fertiliser factory based on heat-treated poultry manure.

All such investments would help to render organic agriculture not only beneficial to the consumer, but also to Moldova's natural resources, one of which is the valuable black soil.

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⁵ All internet addresses used in the text are verified for December 1st, 2020.

Interviews

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