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European market assessment

for the main organic export products from Armenia, Moldova and Ukraine

Acknowledgements

Organic Services GmbH prepared this report with Jörn Berger as lead author, under the guidance of Udo Censkowsky and Gerald A. Herrmann. Gerald A. Herrmann provided input for chapter 3.1 about global organic markets, and reviewed the report. The report benefitted from valuable inputs and comments from Gunnar Rundgren (Grolink) and Boudewijn van Elzakker (Agro Eco – Louis Bolk Institute). Claudia Assmann, Lasse Brand, James Rawles, Jennifer Abb and Verena Balke from UN Environment reviewed the final draft of the report and provided detailed feedback. The report has been edited by Elizabeth Kemf. The design of its cover page was created by Michel Favre, based on previous work by Thomas Gianninazzi. This report was made possible thanks to the companies who agreed to be interviewed, and provided their technical expertise.

This report is part of the Organic Agriculture component of the project "Greening the Eastern European Neighborhood" (EaP-Green). The EaP GREEN programme assists six countries of the European Union Eastern Neighbourhood Partnership in progressing faster towards a green economy framework. Decoupling economic growth from environmental degradation should result in higher productivity and competitiveness, better natural capital management, enhanced environmental quality of life, and more resilient economies. EaP GREEN responds to commitments made by countries, the European Union and other partners in major international forums including the Rio+20 Earth Summit.

The EaP GREEN project is funded by the European Union and supported by several EU and OECD countries. It is jointly implemented by four international organisations: the Organisation for Economic Co-operation and Development (OECD), the United Nations Economic Commission for Europe (UNECE), the United Nations Environment Programme (UN Environment), and the United Nations Industrial Development Organization (UNIDO).

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LIST OF ABBREVIATIONS

AMI	Agricultural Market Information Company, Germany
BIOFACH	Annual global trade fair of the organic sector (Nuremberg, Germany)
BRC	British Retail Consortium
BSCI	Business Social Compliance Initiative
BNN	Bundesverband Naturkost Naturwaren Herstellung und Handel e.V. (German umbrella organization for the organic specialized food sector)
CA	Controlled atmosphere
CBI	Centre for the Promotion of Imports from developing countries (an Agency of the Ministry of Foreign Affairs of the Netherlands)
CEE	Central and Eastern Europe
CIF	Cost Insurance Freight according to International Commercial Terms
CN8	Combined European Nomenclature
DDP	Delivered Duty Paid according to International Commercial Terms
EaP Green	Greening Economies in the Eastern Neighbourhood programme
EC	European Commission
EEC	European Economic Community
EFSA	European Food Safety Authority
EFTA	European Free Trade Association
EkoConnect	International Centre for Organic Agriculture of Central and Eastern Europe
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	The Statistics Division of the FAO
FCA	Free Carrier according to International Commercial Terms
FiBL	Research Institute of Organic Agriculture (Forschungsinstitut für biologischen Landbau)
FOB	Free On Board according to International Commercial Terms
GACP	Good Agricultural and Collection Practices
GIZ	German Agency for International Cooperation, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GMO	Genetically Modified Organisms
GMP	Good Manufacturing Practice
HS group	Group of codes from the Harmonized System Code Customs Tariff

IFOAM	International Federation of Organic Agriculture Movements
IFS	International Featured Standards
IQF	Individually Quick Frozen
ISO	International Organization for Standardization
ITC	International Trade Centre
MAPs	Medicinal and Aromatic Plants
MRLs	Maximum Residue Levels
OECD	Organisation for Economic Co-operation and Development
PGS	Participatory guarantee systems
Ph. Eur.	Pharmacopoeia Europaea
RASFF	Rapid Alert System for Food and Feed
R&D	Research and Development
SA8000	Certification standard developed by Social Accountability International
SECO	State Secretariat for Economic Affairs, Switzerland
SME	Small and Medium-sized Enterprises
ToR	Terms of Reference
Trade Map	Trade statistics for international business development - from the International Trade Centre
UAA	Utilised agricultural area
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

This assessment analyses the trade opportunities for organic products exported from Ukraine, Moldova and Armenia to the EU market. The document is written for companies involved or interested in organic exports as well as for organic sector organizations and relevant national stakeholders from these countries, as a market-oriented basis for decisions concerning future programmes and interventions for enhancing a green economy transition in Eastern Europe and the Southern Caucasus.

First, a systematic product selection was conducted in order to identify and focus on the most relevant products of the three pre-defined product categories: a) cereals, oilseeds and pulses; b) fruits, berries and nuts; and c) herbs and honey. As a second step, international trade statistics were analysed, as organic trade relations can be established faster if relevant non-organic value chains are already established and experience at all levels is accessible. Third, a pre-selection of products was made based on information gathered during interviews with stakeholder organizations as well as a review of trade statistics and available literature. Finally, organic EU importers were interviewed in order to assess the potential future demand, requirements and experience in the target region.

The EU market demand for organic products has grown continuously over recent decades even in times of economic crises, and at a faster pace than organic production in EU Member States. Hence, demand for organic raw and pre-processed materials is increasing today. It can be assumed that the long-term prospects are also promising, as all market criteria indicate a trend towards continued positive growth. Thus, the international organic demand is strong enough to allow the conversion of an increasing share of agriculture to organic production in the countries covered in this report. Organic products, certified and labelled as such, already fetch higher prices. The rising demand for organic products and food should enable the three countries to pursue aims beyond production and trade, such as (rural) economic and social development, biodiversity conservation and environmental protection.

In Ukraine and Moldova, favourable climatic conditions and ample fertile soils, together with large farm structures, contribute to their strong position for competitive production. The highest organic export potential exists for raw materials high in protein mainly for feed mixes (from press cakes, soybeans and/or dried pulses). Furthermore, cereals (e.g. wheat, corn, barley, rye, triticale, spelt and oat) and oilseeds like sunflower kernels offer good market opportunities. Considerably higher prices can be charged if domestic processing increases (e.g. de-hulled sunflower kernels as bakery ingredients instead of bulk export).

Successful organic sector development in the target region should not exclusively depend on exports to consolidated organic markets in the EU. Moreover, added value products in the form of finished organic consumer goods should be positioned simultaneously on both domestic and emerging regional organic markets.

Regarding Armenia, the product categories of processed fruits, herbs and honey have the highest export potential. In Armenia, with its negative trade balance for most agricultural products, domestic food security is a challenge and the production of staple food, such as grains, is limited by a lack of arable land. Nevertheless, there are single opportunities for traditional varieties of cereals and pulses, which could be exported as specialty grains. Armenian organic export strategies should consider added value products such as dried

apricots (wild and farmed), fruit kernel oils, herbs (ideally in form of extracts) and specialty honey. Different end uses and specific distribution channels for ingredients should be considered for added value, including food, personal care products and pharmaceuticals.

The market for fruits, berries, nuts, herbs and honey from Ukraine and Moldova offer good prospects and can generate positive socio-economic impact and rural development since labour intensive activities are involved in these value chains (e.g. shelled walnuts, dried prunes, cherries and apples, juices and preserved fruit).

The assessment concludes with examples of tasks and interventions that could contribute to sector development in the target region. For instance, the weakened supplier image caused by past incidents of fraud in the grain commodity trade in Ukraine and Moldova needs to be repaired. The conclusions and recommendations in this report outline approaches that could facilitate this transformation through the creation of transparent, GMO-free and fully traceable supply chains on a sector level. These must provide differentiation in the market and generate direct trade relations with EU processors. In order to seize current market opportunities successfully, the organic sector should be well coordinated by professionals with relevant training. Moldova's strategy to ensure that it is a GMO-free country and present itself as such points in the right direction. Its efforts should be supported and strengthened in order to engender trust and credibility in the regional and international organic marketplace.

1. INTRODUCTION

A Green Economy transition, through the promotion of investment in resource efficiency, productivity, low-carbon growth and employment creation, has the potential to advance sustainable development and poverty eradication objectives by building on reforms currently underway in developing countries.

Stakeholders in the Eastern Europe, Caucasus and Central Asia (EECCA) region recognized that there are significant opportunities for promoting organic farming in their countries, given the low level of pesticide and fertilizer use since 1994, the significant share of small farms and the availability of agricultural labour. Export opportunities exist as well, given the close proximity to the EU, which is one of the biggest and fastest growing markets for organic products. UN Environment undertook scoping studies on Green Economy and organic agriculture in Armenia, Moldova and Ukraine in 2011 (updated in 2014).[1] These country studies confirmed the benefits of organic farming in Eastern Europe and Southern Caucasus.

As a result of historically low levels of pesticide and fertilizer use, the large share of small farms, the high availability of labour and the close proximity to the rapidly growing EU organic market, the EECCA is an ideal region for the promotion of organic agriculture. Mainstreaming organic agriculture will lead to job creation, higher profitability, and improved ecosystem services, as well as significant reductions in pollution and greenhouse gas emissions.

Methodology

This market assessment started in February 2014 with initial desk research of available country and market studies of selected organic products. Personal interviews with exporters from the target region were held during BIOFACH 2014[2], providing insights on products offered, their qualities, and the preparedness of current exporters to engage. In order to focus on the most relevant products, the existing and potential organic offerings from the target region were analysed drawing on available literature, EU organic import authorizations and trade statistics (FAOSTAT[3] and Trade Map[4]). These were ranked in order to determine further selection. This process was followed by a deeper analysis of international trade statistics for the most relevant products of the three pre-defined product categories: a) cereals, oilseeds and pulses; b) fruits, berries and nuts; and c) herbs and honey.

In-person and telephone interviews with were conducted with European importers and stakeholder organizations. These were based on a standardized questionnaire, covering demand and volume of assessed products, qualities, requirements, current price, and experience in the target region.

Presentation of the findings

In order to inform the reader about the topics covered in each chapter of this report, a brief description is given to complement the table of contents.

[1] UN Environment (2011). Organic Agriculture – a step towards the Green Economy in the Eastern Europe, Caucasus and Central Asia region. Case studies from Armenia, Moldova and Ukraine.
[2] BIOFACH is the world's largest trade fair for organic food and agriculture. It takes place each year in February in Nuremberg, Germany. In 2015, it attracted 2,141 exhibitors and 44,624 trade visitors from 130 countries.
[3] http://faostat.fao.org/
[4] http://www.trademap.org/

Following the introduction (Chapter 1) and an explanation of the methodology of product selection for market assessment (Chapter 2), the main findings are presented in Chapter 3. These begin with information on the growth dynamics of global organic markets (Chapter 3.1), followed by a summary of EU market access requirements (Chapter 3.2) and specific findings related to the three main product categories:

- Cereals, oilseeds and pulses
- Fruits, berries and nuts
- Herbs and honey

Each of these three chapters on product categories can be read independently as they share a common structure:

1. Trade statistics between the EU and the target region
   - *Provides figures and graphs about global trade values, the current trade flow from the target region as well as the main EU importing countries of the products in the category in question.*
2. Product distribution and trade flow
   - *Gives insights about final consumer products, internal EU trade channels and roles of involved actors.*
3. Market demand in the EU
   - *Provides an orientation about the market size of the organic product category in question, the size of the organic production globally and in the EU, and indicates price levels.*
4. Lessons learned: the importer's perspective
   - *Reflects statements about the experience of EU importers with regard to the product category and the target region, together with ongoing, pragmatic product specific issues.*
5. Key observations with regard to the product category
   - *Highlights important points, providing messages for the report's different target audiences: a) producers/ processors/ exporter; b) organizations supporting the organic sector; and c) the relevant UN Environment project.*

In Chapter 4, conclusions and recommendations are addressed to different target groups:

Chapter 3.1.
- *Provides product specific conclusions and recommendations directed to companies involved or interested in export of organic products.*

Chapter 3.2.
- *Provides conclusions for organic sector development in the target region directed at stakeholder organizations and the organic network.*

Chapter 3.3.
- *Provides country-specific conclusions.*

Chapter 3.4.
- *Provides a summary of conclusions and recommendations.*

The Annex (Chapter 5) provides further background information, business contacts in the EU (sorted according to the product categories), lists sector organizations, notes trade shows and conferences for organic products in current emerging organic markets and lists examples of organic product specifications.

METHODOLOGY OF PRODUCT SELECTION FOR ASSESSMENT

1.1. Selection and assessment methodology

The selection process followed two objectives:

- to identify products with the highest export potential (in regard to volumes and values) in organic markets in the EU;
- to identify export products relevant for further development of the organic sector in the target countries: Armenia, Moldova and Ukraine.

Both objectives have been taken into consideration while researching information. The results are presented in a 'product selection - synopsis' table in Annex 4.1.

The following sources of information have been used for the assessment and final product selection:

- Export values from the target countries reported by the United Nations Food and Agricultural Organization Statistics Division (FAOSTAT) and Trade Map (trade statistics for international business development from the International Trade Centre (ITC));
- EU database for organic imports from third countries;
- Country reports from the International Federation of Organic Agriculture Movements (IFOAM) and the Research Institute of Organic Agriculture (FiBL) (Ukraine, 2011),[5] EkoConnect (Ukraine and Moldova 2011),[6] former UN Environment Green Economy Sectoral Country Studies and their updates (Ukraine, Moldova and Armenia); and
- National organic export statistics from Moldova, Ukraine and Armenia.

In addition, the author conducted a series of personal interviews with stakeholder organizations and exporters from Ukraine, Moldova and Armenia during BIOFACH 2014. A final draft selection of products was discussed with Boudewijn van Elzakker, Gunnar Rundgren, international and national stakeholder organizations including FiBL, Organic Standard (Ukraine) and EkoConnect (Germany). Finally, all project team members approved the list of selected products.

The assessment of the export potential for the EU market itself is based mainly on more than 50 interviews with potential buyers (e.g. commodity traders, ingredient traders, feed mills and food processors) as well as stakeholder organizations (e.g. the trade branches of the organic associations Naturland and Bioland) using a standardized questionnaire. These interviews were conducted personally during trade fairs (BIOFACH 2014, In-Cosmetics 2014) and by telephone in spring 2014, mostly with general and quality managers in purchase and R&D departments.

[5] IFOAM and FiBL (2011). The World of Organic Agriculture. Statistics and Emerging Trends 2011.
[6] http://www.ekoconnect.org/de/14-L per centC3 per centA4nder-Studie.html

1.2. Product selection

The product selection presented in Table 1 depicts two main and one minor export category and the particularities of each country. As already explained, the selection is not meant to provide a complete list of all potential organic export products, but a purposeful one. In addition to the minor product category presented in Table 1, a number of other potentially interesting market niches were identified that may be selected by other organic producers (and/or exporters) in the countries of concern. Information collected during the research will be mentioned briefly in the following assessment (see Chapter 2 below).

Table 1: Selected products for this survey[7]

Chapter	Selection Armenia:	Selection Moldova:	Selection Ukraine:
3.3 Cereals, oilseeds and dried pulses	(Potential future unique selling proposition: ancient tradition & unique endemic/autochthonic varieties of triticum/wheat, spelt and other cereals)	Sunflower (oil and grains) Soft wheat Rapeseed Soybean Corn Feed peas (rye, triticale, pumpkin seed)	Sunflower (oil and grains) Soft wheat Rapeseed Soybean Corn
3.4 Fruits, berries and nuts	Processed fruits, berries, Apricots, peaches Pomegranate (Juices, purees, canned, IQF (Individually Quick Frozen), dried non-sulphurized fruits, incl. raisins, kernel/shell for cosmetics)	Processed fruits (Dried prunes/plums, dried apples, cherries dried and preventively preserved, jams, juices) Walnuts	Pre-processed berries (Wild collection and cultivated) Walnuts
3.5 Herbs and honey[8]	Farmed herbs (condiments: black basil, tarragon) & wild collection Thyme, mint, St John's wort, rosehip, sea buckthorn Focus herbal teas (max. semi-finished) Honey bulk export Multi-flower mountain (Mono-flower/-origin)	Farmed herbs & wild collection dried rosehip (Honey that needs further conversion)	Farmed herbs & wild collection (Honey – not enough production for the domestic market yet)

[7] In Table 1, following systematic is used to depict the prioritization:
Product level:
Main product priority for the country (bold and underlined characters),
Medium product priority for the country (bold characters),
Low product priority for the country (standard characters).

Chapter level:

Main chapter priority for the country
Medium chapter priority for the country
Low chapter priority for the country

[8] Animal products except beekeeping products are not included in the assessment as the regulatory barriers are evaluated as high. Mushrooms are not included in the assessment due to few (from Ukraine and Armenia) or no nominations (Moldova) by stakeholder organizations.

The countries in the target region are characterized by big differences in agriculture and non-organic as well as organic[9] agricultural exports. Ukraine and Moldova have highly productive arable farming schemes, providing many more products than are consumed in the domestic market. Armenia's agricultural production is weak and the country has a negative trade balance in almost all agricultural products, especially food.

Moldova and Ukraine recently signed the "Deep and Comprehensive Free Trade Agreements" (DCFTAs) with the EU, while Armenia is orienting its trade relations towards the Russian Federation, joining the Russia-led Customs Union (CU) in early 2015.[10]

Based on their international observations, the authors conclude that it is easier to develop new organic supply chains where conventional export relationships already exist in the respective supplying countries. This is why conventional export statistics are cited in this study, as they are an important basis for developing further organic supply chains, and they also indicate where trade-relations already exist; also, there is a dearth of statistics for organic products. This approach facilitates the identification and development of additional organic supply and suggests where there is a need for capacity building as a prerequisite for creating it.

[9] Please refer also to comparative country information about the organic production in Annex 4.4.4

[10] The current negotiations on the association between Moldova/EU and Ukraine/EU could lead to a significant loss of the Russian market as an export destination for Moldova and Ukraine. Furthermore, the current conflict in Ukraine could lead to import bans to the Russian market as has already happened for other products.

2. RESULTS OF THE MARKET ASSESSMENT

2.1. Global organic market growth

Statistics show that the global organic market continuously grew from niche (€10 billion in 1999) to a respected market sector (€50 billion in 2012)[11], and was robust during various European and global economic crises. This was despite its own scandals, attacks from the competing conventional sector, and allegations from pessimists who claimed that "new players have no other motivation than to make money". It also managed for the most part to abide to strict standards, regulations and certification systems. As a consequence of this successful development of the organic market, non-organic food industry and retail chains integrated organic product lines into their portfolio, and introduced their own brands of organic or 'sustainable' products.

2.1.1. The biggest single organic market

In 2012, the US had the biggest national organic food market of around €23 billion. All market parameters are pointing towards continued growth rates (above 10 per cent) over the next decade. Consumer surveys show high confidence for organic products in general, and drive demand and thus market growth for products that are "non-GMO (Genetically Modified Organisms)", "pesticide free", "regional", "good for the environment", and "healthy for you and your family". It should not be underestimated that the infusion of investments by large conventional corporations and private equity is fuelling this development. While the Canadian (€2.3 billion in 2013) and the Mexican organic markets (€500 million in 2012) are much smaller, the North American Free Trade Zone (NAFTA) is thriving, supported by the equivalence agreement between Canada and the US. Since consumption is much higher than domestic production, these imports are supporting the development of supply chains around the globe, and driving the growth of domestic markets in source countries.

2.1.2. The biggest regional market[12]

The European market reached €22.8 billion in 2012, with Germany having the highest market volume of more than €7.5 billion (2013), France with about €4.2 billion (2012 with strong growth rates), the United Kingdom with €1.95 billion in 2012 and Italy with about €1.89 billion in 2012. More important are per capita expenditures: the highest is Switzerland at €210, with Denmark at €163, and medium spending in Sweden at €106 and Germany at €93. For comparison, per capita expenditure in America was €77 (all figures from 2013).

These trends show that there is huge growth potential to be tapped. For example, in North America, even if the ratio between consumption and supply is higher in the EU, market growth is fuelling production globally with positive impact on the development of trade structures and domestic markets in source countries. It should not be forgotten though, that despite high import rates of raw and partly-processed materials, both the US and the EU have become exporters of organic products with increasing market development in other parts of the world, e.g. in Brazil, China and South Korea.

[11] Data of publications vary, also due to changing conversion rates.
[12] Compilation of data by Organic Services based on long-term regular market surveillance based on publications of national market statistics, sector publication and other sources.

2.1.3. Other emerging organic markets around the world

Organic food production is increasing in Central and Eastern European (CEE) countries. As in Southern Europe, most production is export-oriented, although internal organic markets are now slowly developing. Important markets for organic food are the Czech Republic, Poland and Hungary. Further east, the Russian Federation and Ukraine are emerging organic markets. For example, domestic organic sales in Ukraine were worth €0.6 million in 2008, doubling to €1.2 million in 2009. In 2011, this figure reached €5.1 million. The majority of the certified organic products available – baby food, tea, coffee, sugar, spices, fruit, vegetables, pasta, chocolate, oils, cosmetics, wines and beer – are imported, mainly from EU countries, but some are already from Armenia, Georgia and Moldova.

Exporting countries with large areas of organic land are, for example, Brazil (0.7 million ha), China (1.9 million ha) and India (0.5 million ha). Though these countries produce for export, their growing domestic organic markets should not be neglected. The rapidly growing middle class population in their cities increasingly demand organic produce and it is expected that Brazil, China and India will soon develop substantial organic domestic markets. Similar developments can be seen in many other countries in Latin America and Asia. In Brazil, the organic market accounted for about €550 million in 2012. The market is developing and becoming more diversified since new companies, products and innovations are emerging. A distinctive feature of the organic sector in Brazil is that (besides third party certification), Participatory Guarantee Systems (PGS) are part of organic regulation. Products verified under these systems are sold under the classification of organic in Brazil's domestic market.

India's organic sector, which was highly export-orientated in the past, is now close to being balanced, with domestic retail sales of about €130 million and exports of €160 million in 2012. The national programme for organic production (NPOP) regulates export only, but there is no mandatory certification in the domestic market, which like Brazil places emphasis on PGS.

In China, organic retail sales were about €1.8 billion in 2012 and about €300 million in export in 2011. China is one of the very few emerging markets where domestic sales have surpassed exports. Chinese consumers are keen on imported manufactured products, e.g. from Germany, Italy and the USA, because they trust their quality.

Organic sales in Asia (excluding China and India) are growing at a steady rate, reaching a total of about €1.5 billion in 2014. The main importing countries that are not big organic producers themselves include Japan, South Korea, Singapore and Taiwan. Food scandals, especially those involving Chinese non-organic products, are generating consumer alarm, but demand for organic food is increasing as the Chinese become more aware of food safety and environmental issues. An increasing number of conventional retailers are introducing organic products, some under their private labels.

Oceania has the largest continental organic area,[13] but its organic domestic market is relatively small due to its low population. In Australia domestic organic retail sales are growing, increasing over 30 per cent in three years from €709 million in 2009 to €927 million in 2012. In 2009, 67 per cent of all organic sales took place in supermarkets. With the permanent positioning of organic products on the shelves of major supermarkets, including Coles, Woolworths, Aldi and IGA, demand for organic products has reached a new rate of acceleration.

[13] In Australia and New Zealand a lot of pasture land is certified organic.

The Gulf's domestic organic market is estimated at around €300 million, with the Kingdom of Saudi Arabia, the largest food consumer, representing almost 90 per cent of the sector. There are currently over 3,000 outlets dedicated to organic and natural products across the Gulf, and this figure is expected to rise as increasing regional prioritization of health and food safety boosts demand. In the United Arab Emirates the organic market is also evolving, as consumers become more health-conscious. Products especially manufactured for children, as well as fruit, vegetables, breakfast cereals and dairy products are the most popular items. Most of the organic food in the Gulf region is imported, leading to high prices, which are three to four times more expensive than conventional products.

For many years Turkey has mainly been producing organic products for the export market, which was €19.8 million in 2009 (versus domestic retail sales of €3.6 million in 2009). The acreage of organic farmland (half a million hectares, plus half a million hectares of certified organic wild collection area) is still growing (by 18.3 per cent between 2010 and 2011), but lately domestic retail sales have also grown considerably.

In the Middle East, Israel has the largest domestic market for organic products, which continues to grow every year. In 2007, sales in the local Israeli market increased by 30 per cent and about 10,000 families, many of them from the cities, were eating organic food on a regular basis. Distribution channels are farmer markets in the cities, small health food shops and some big natural food supermarket chains like the Eden Teva Market. In addition to Israel's domestic market, the country is also the largest exporter in the region. Organic products account for 13 per cent of all agricultural exports.

Like Israel, much of Egypt's organic produce is exported, though it also has a strong domestic demand for organic products. Specialized shops and supermarket chains in big cities have organic sections, and domestic products are also available in all Shoprite and Saudi stores.

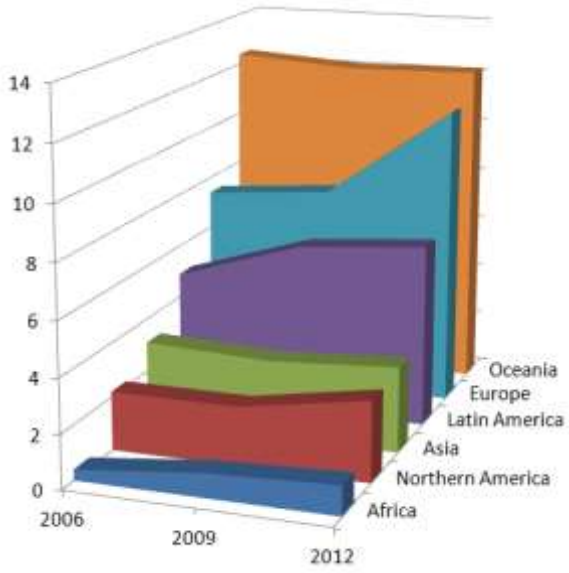
2.1.4. Will this market growth continue?

A comparison of past and current market development suggests that further growth of the organic market is expected. The above examples of per capita spending indicate that the sector is likely to expand. Moreover, citizens' anxieties about environmental degradation, climate change, extreme weather events, and health as well as ethical concerns over unsafe labour conditions and the inhumane treatment of livestock is driving improved safeguards. There is an increasing demand for products that are labelled "fairtrade", "organic" or "bio", depending on geographic location. However, change is likely to remain unchanged in the conventional industry due to inaction by governments and the industry.

2.1.5. Organic area in the world and the EU

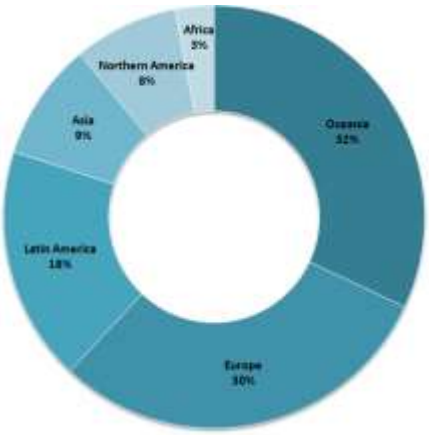
Globally, organically cultivated agricultural land tripled from 11 million ha in 1999 to 37.5 million ha in 2012.

Figure 1: Global evolution of organic area between 2006 and 2012 in million ha[14]



Strongest recent growth of organic agricultural land between 2011 and 2012 took place in Africa (6.8 per cent) and Europe (6.0 per cent) while organic agricultural land decreased in Asia (-12.9 per cent) especially in India and stayed constant in Latin America (-0.3 per cent), North America (-0.2 per cent) and Oceania (-0.2 per cent). The large area of organically certified land in Oceania predominantly consists of extensive grassland. When looking at a longer time period (see Figure 1), significant growth can be registered on a global level.

Figure 2: Global organic agricultural land per continent in 2012[15]



Around one third of global organic agricultural land is situated in Europe and it grew by 6 per cent since 2011 to more than 11 million ha in 2012, representing 5.4 per cent of the total Utilised Agricultural Area (UAA) in the EU.

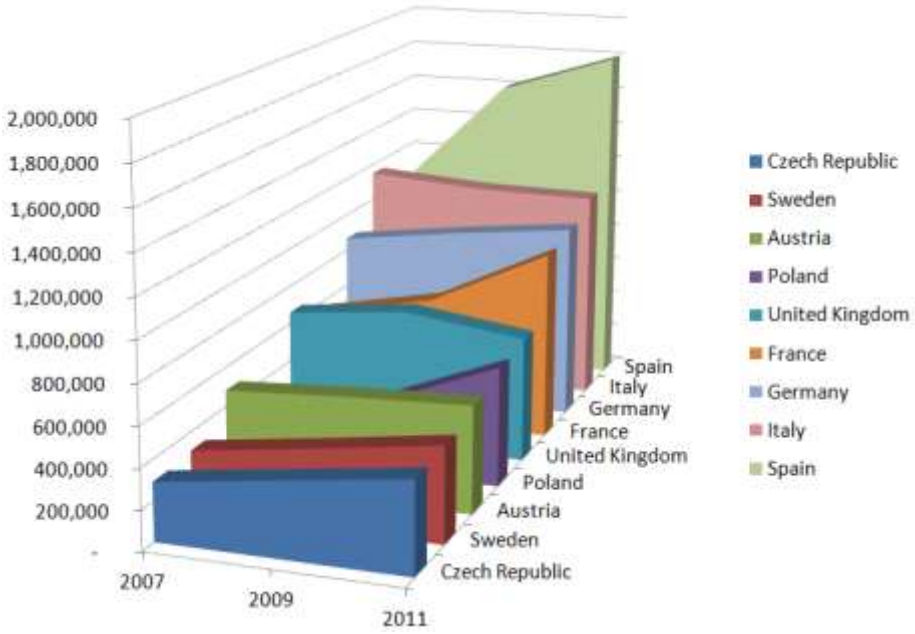
For years, the large area of organically certified land in Oceania has consisted mainly of extensive grassland, while two thirds of the certified areas in the EU in 2012 were located in six countries: Spain, Italy, Germany, France, the United Kingdom and Poland (see Table 3).[16]

[14] IFOAM and FiBL (2008, 2009, 2014). The World of Organic Agriculture. Statistics and Emerging Trends 2008, 2009 and 2014.
[15] Including in-conversion areas. FiBL and IFOAM (2014). The World of Organic Agriculture. Statistics and Emerging Trends 2014.
[16] EU Commission (2013). Facts and figures on organic agriculture in the European Union.

Table 2: Leading EU countries in organic area 2011 and percentage of UAA in 2012[17]

EU member state	Organic land in million ha in 2012	Share of UAA in 2012 (in per cent)
Spain[18]	1.6	6
Italy	1.2	9
Germany	1.0	6
France	1.0	4
United Kingdom	0.6	3
Poland	0.7	4
Austria	0.5	20
Sweden	0.5	16
Czech Republic	0.5	12

Figure 3: Evolution of EU organic area between 2007 and 2011 in ha[19]



There is a clear gap between fast growing consumption in the EU (growing at around 10 per cent annually) and growth of organic production in the EU (growing at around 6 per cent annually), so the organic market growth is increasingly dependent on imports.

[17] FiBL and IFOAM (2014). The World of Organic Agriculture. Statistics and Emerging Trends 2014.
[18] Agence Bio (2013). La BIO dans L'Union Européenne.
[19] EU Commission (2013). Facts and figures on organic agriculture in the European Union.

2.2. Market access requirements[20]

2.2.1. Legal market access and food safety requirements

In the following sections, some of the main standards and legal import requirements are listed, without the intention of providing a full overview over all relevant import requirements. Food legislation and import requirements are complex. Imports of non-processed food ingredients and processed products from outside the EU need to meet the same or equivalent standards and procedures as food produced in EU Member States.

All relevant EU laws and regulations are available on the website of the EU Directorates General (DGs) Health and Consumers.[21] In addition, detailed information on food packaging, food labelling and maximum residue levels for pesticides, microbial contamination, irradiation, food hygiene, food packaging and other specific aspects for the EU, but also for some European Free Trade Association (EFTA) countries can be found on websites like the Centre for the Promotion of Imports from developing countries from the Netherlands and other organizations.[22]

Table 3: Relevant regulations in the context of this study

Main legal standards and import requirements	Content
EU Regulation 178/2002	General Food Law[23]. The basic framework for food safety, established by the European Food Safety Authority (EFSA)
Regulation (EC) 882/2004	Feed and food controls for imported products[24]
Regulation (EC) 852/2004	Food Hygiene
Regulation (EC) 165/2010 of 26 February 2010 amending Regulation (EC) No 1881/2006	Setting maximum levels for certain contaminants in foodstuffs like aflatoxins
Regulation (EC) 1924/2006	Regulation nutrition and health claims made on foods (commonly known as Health Claim Act)[25]

[20] Further information about organic exports: FiBL developed an export manual in July 2014: "Exporting from Ukraine".

[21] http://ec.europa.eu/dgs/health_consumer/index_en.htm

[22] Cereals: http://www.food.gov.uk/business-industry/imports/want_to_import/tradeinfosheets#.U6Frn7GuMs8 Processed fruit and edible nuts: http://www.cbi.eu/marketintel_platform/processed-fruit-and-vegetables-and-edible-nuts/177430
Bee products from Armenia, Moldova and Ukraine have access to the EU market. For honey imports to the EU, a certificate is necessary and must be issued by the local veterinary authority in the country of origin, declaring that the product is free from diseases, which could otherwise be spread in the importing country. Customs papers include "Form A" for Armenia (tax free status) and "EUR 1" for Moldova.

[23] http://ec.europa.eu/food/food/foodlaw/index_en.htm

[24] Imports are checked by the EU's Rapid Alert System for Food and Feed (RASFF). Recently, there were border rejections due to content of dioxin detected in feed corn from Ukraine (in 2010 there was an incident in organic feed corn from Ukraine). Please refer also to the Code of Practice for the Prevention and Reduction of Dioxin and Dioxin-like PCB Contamination in Food and Feeds. Available at: www.codexalimentarius.org and Border rejections are frequent due to aflatoxins in corn. Notifications are listed at https://webgate.ec.europa.eu/rasff-window/portal/?event=notificationsList&StartRow=1

[25] http://ec.europa.eu/nuhclaims/

Regulations (EC) 834/2007 and 889/2008	Organic production
Regulation (EC) No. 1235/2008	Defining detailed rules for implementation of Council Regulation (EC) No. 834/2007 as regards the arrangements for imports of organic products from Third Countries
Regulation (EC) No 258/97	Novel Food Regulation The Novel Food Regulation does not cover foods and ingredients for which a separate directive or regulation exists, such as: o Food additives authorized for use in foodstuffs intended for human consumption (89/107/EEC European Economic Community) o Flavourings for use in foodstuffs and to source materials for their production (88/388/EEC) o Extraction solvents used in the production of foodstuffs and food ingredients (88/344/EEC) o Genetically modified food and feed (European Commission EC 1829/2003)

These legal requirements should be considered as the basic 'must' for exporters.
Codex Alimentarius[26] FAO and WHO International Food Standards provide relevant guidance for governments (and private standard organizations) of the food sector as well as for the definition of trade specifications covering many food products.

Table 4: EU legislation for honey

EU legislation honey	Content
Council Directive 2001/110/EC	European honey directive
Council Directive 2002/99/EC	Defining the animal health rules governing the production, processing, distribution and introduction of products of animal origin for human consumption
Regulation (EC) No. 470/2009	Lays down Community procedures for the establishment of residue limits of pharmacologically active substances in foodstuffs of animal origin
Decision 2004/432/EC	Decision on the approval of residue monitoring plans submitted by Third Countries in accordance with Council Directive 96/23/EC

[26] http://www.codexalimentarius.org/standards/list-of-standards/en/

2.2.2. Private requirements set by the industry

Besides the regulatory definitions as mentioned above, additional requirements may apply in case market actors decide to apply private standards, industry norms and other preferences:

Table 5: Optional private requirements set by importers with practical examples

	Requirements	Example
1	Trade requirements: for example codes of conduct from clients, clients' product specifications and sourcing guidelines, internal auditing procedures	BNN: Since 2003, the German Association of Organic Processors, Wholesalers and Retailers (BNN) has been monitoring contamination from pesticides in fruit and vegetables in the organic food sector. The established procedure, including the recommended Maximum Residue Levels (MRLs), is commonly accepted and applied by processors and importers of the organic sector in the EU. In particular, BNN member companies are requesting quality and MRL testing accordingly. Laboratory analyses by EU laboratories are either requested or welcomed.
		Product specifications: Regarding oilseeds, beyond the legal requirements (8-10 per cent humidity), a maximum of 8 per cent humidity is required by some organic importers as well as an analysis of the fatty acid spectrum. In addition to MRLs from agricultural pesticides, residuals of plastic softeners[27] are analysed by oil importers.
		Supplier audits: Before accepting a new supplier, some importers run own audits focusing on quality issues and for better negotiation of prices, volumes and payment conditions.
		TRUST FEED: Dutch organic feed processors are sourcing from suppliers, which are GMP certified and TRUST FEED listed, in addition to organic certification. This includes supplier audits on-site.
2	Quality Management Systems: GlobalG.A.P., ISO 9000 (International Organization for Standardization), ISO 14000, ISO 22000, BRC (British Retail Consortium), IFS (International Featured Standards), GMP (Good Manufacturing Practice), SA 8000 (certification standard developed by Social Accountability International), BSCI (Business Social Compliance Initiative)	Food safety: For further processed products such as fruit juices, the respective importers require external validation of good management practices at origin, e.g. according to one of the established food safety standards in the EU market (ISO 22000, BRC or IFS).

[27] Residuals of plastic softeners are problematic in vegetable oils and can be caused by inadequate rubber tubes used during the process of oil pressing.

3	**Choice of certification body:** The selected certification body has to be accredited according to the EU organic regulation or the country listed on the Third Country List, as otherwise import is not possible or has to be channelled through an accredited certifier. A buyer in the target market (e.g. the EU) might also demand certification by a specific certification body because of reputation or other reasons, although local (accredited) certification bodies could provide for the same.	**Choice of certification body:** A German grain commodity trader stated that in order to avoid corruption he does not buy from certain suppliers, e.g in Moldova.
4	**Private certification (and logos):** Bio Suisse (a must for the Swiss market), Naturland, Demeter, Soil Association, KRAV, Fairtrade, Halal, Kosher, etc.	**FEED:** Dutch organic feed processors are sourcing from suppliers, which are certified by Good Manufacturing Practices (GMP) and listed by TRUST FEED, in addition to other organic certification. This includes supplier audits on-site.
		Private organic associations: Most of German animal husbandry farms are members of organic associations (such as Nederland, Bioland and Demeter). The organic feed in use has to be certified by one of these associations or compliant/equivalent bodies; hence, a strategic cooperation with one of the associations opens access to this privately regulated market; in many cases the associations actively select those producers with whom they want to collaborate.
		Fairtrade: Because of the increasing request from consumers and thus from (Fairtrade certified) companies, even grain importers consider that in the future Fairtrade certification will receive increasing importance for bakery ingredients and snacks. In contrast, grain is not yet considered to be a typical Fairtrade product.

2.2.3. EU Import requirements for pharmaceutical and cosmetic ingredients

Even though the assessment focuses on food and feed products, many of the products are suitable as natural ingredients for pharmaceutical and cosmetic products. Therefore, a brief overview of specific market access requirements is given for these sectors:[28]

- Compliance with EU buyer requirements for Medicinal and Aromatic Plants (MAPs) for pharmaceuticals
- Compliance with EU buyer requirements for vegetable saps and extracts for pharmaceuticals
- Compliance with EU buyer requirements for botanicals for cosmetics
- Compliance with EU buyer requirements for vegetable oils, fats and waxes for cosmetics
- Compliance with the EU requirements for essential oils

[28] A full description of legal requirements is presented and updated on the CBI market intelligence platform, see http://www.cbi.eu/marketintel_platform

With respect to private labelling and certification standards, the following aspects may be taken into consideration:

- Apart from cosmetic products, no additional private labels may be used on medicinal products in the EU. Nevertheless, pharmaceutical companies prefer certified organic ingredients due to a much lower content of pesticide residues.
- The law does not regulate the natural and organic cosmetic sector. However, private standard setting bodies have established a number of different certification marks. Certification marks vary among EU countries; in France, for instance, Cosmebio[29] and Ecocert[30] labels are more known. In Germany the BDIH[31] and/or NaTrue[32] logos play a more important role in the market. An approach to harmonize different labelling schemes has led to a joint standard (COSMOS)[33] of European certifiers.

Table 6: Synopsis of most relevant legal requirements and standards for cosmetic and pharmaceutical ingredients

Regulation/Guideline	Focus	Relevant for ingredients for	
		cosmetic	pharma
(EC) 338/97	Endangered species (CITES) regulates the trade in species and gives a detailed list of species for which trade is prohibited, restricted or bound to certain rules	X	X
(EC) 865/2006	Endangered species (CITES) stipulates the administrative and technical details (design, use of permits and certificates)	X	X
2000/29/EC	Protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community	X	X
85/374/EEC	Liability for defective products	X	X
94/62/EC	Packaging and packaging waste	X	X
76/768/EC	Cosmetics Directive	X	
(EC) 648/2004	Detergents	X	
(EC) 1907/2006	Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)	X	
2003/94/EC	Good manufacturing practices (GMP) in respect of medicinal products for human use and investigational medicinal products for human use		X
2001/83/EC	Community Code relating to Medicinal Products for Human Use		X
European Pharmacopoeia quality standard	(Ph. Eur.) of the Council of Europe is a pharmacopoeia, listing a wide range of active substances and excipients used to prepare pharmaceutical products in Europe		X
GACP	Good Agricultural and Collection Practices		X

[29] http://www.cosmebio.org/
[30] http://www.ecocert.com/en/natural-and-organic-cosmetics
[31] http://www.kontrollierte-naturkosmetik.de/e/index_e.htm
[32] http://www.natrue.org/
[33] http://www.cosmos-standard.org/

2.3. Cereals, oilseeds and dried pulses

Cereals, oilseeds and dried pulses are part of a product category traded as 'commodities' in massive volumes as they serve as ingredients – not only for a huge range of final consumer products – but as well as components for feed (mixes). This category is equally important for the conventional as well as for the organic trade, respectively for feed and food processing in the EU, as these crops are not easily substituted. Cereals represent one of the major categories of Ukrainian and Moldovan agricultural production and export and hence were selected as a category with 'high potential'.

As selected category for this survey (see Table 1), the export of organic cereals, oilseeds and dried pulses was assessed as of high importance for Ukrainian and Moldovan trade.

The small acreage of arable land in Armenia does not allow for production of sufficiently high exportable quantities. In addition, Armenia is threatened by regular drought and already shows a negative trade balance for cereals, leading to a strong dependency on imports for the domestic market. However, Armenia has an agricultural heritage, which might offer certain potential for future unique market positioning. There are indigenous and traditional 'ancient' varieties of wheat, spelt and other cereals with commercial potential, especially for the organic sector. To develop such an approach, concerted action and investment of Armenian stakeholders is needed until market relevance and success is generated.

2.3.1. Trade statistics between EU and target region

In the global grain commodity trade, cereals are the leading product group followed by oilseeds and finally by dried pulses, whereas the leading single crop in international trade is soybean (included in the category of oilseeds due to its oil content). It is mainly in demand because of its high protein content.[34]

2.3.1.1. Cereals

Soft wheat and corn are the leading export cereals from Ukraine and Moldova, traded in major conventional volumes. According to earlier country studies and export statistics, they have also become also relevant for (existing) organic exports, and demand for these cereals is increasing (the statistical data for cereals was assessed on 2012 information, as the trade statistics for 2013 were not yet consolidated as of April 2014).

Soft wheat[35]

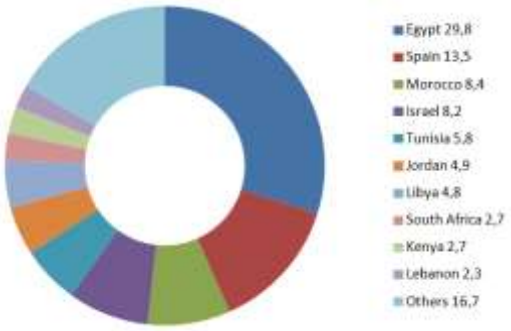
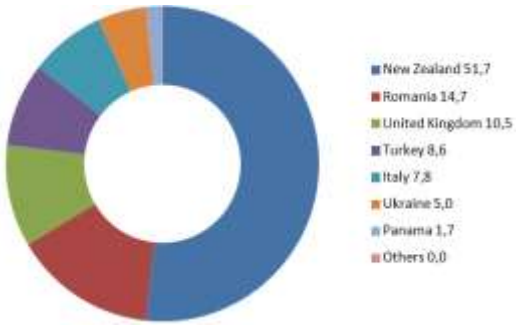
In the global cereal trade, soft wheat is reaching the highest trade values globally, followed by corn and rice. According to Trade Map, total global wheat imports had a value of €37.1 billion in 2013 of which the EU 28 had a share of 18.8 per cent. Leading wheat importing countries in 2013 within the EU were Italy (€1.5 billion), Belgium (€925 million), Germany (€898 million), the Netherlands (€821 million), Spain (€783 million) and the United Kingdom (€777 million). These countries also lead in organic wheat imports. Norway is the main importer of organic wheat in the Scandinavian organic market.[36]

[34] A high content of protein/essential amino acids is rather more a typical characteristic of legume crops which are basically traded in the category of dried pulses (soybeans botanically are related to dried pulses in contrast to statistical trade categories).[35] "Soft" wheat as opposed to "hard" wheat = durum wheat varieties
[35] "Soft" wheat as opposed to "hard" wheat = durum wheat varieties
[36] Norway is not an EU country but an EFTA member.

Ukraine: Wheat is the second export cereal from Ukraine after corn, with total wheat exports in 2012 of €1.8 billion of which 17 per cent were exported to the EU. A comparison of several years shows lower total wheat exports in 2010 and 2011, but exports to the EU dropped drastically in 2010 and 2013. This is mainly due to Ukrainian export bans which are imposed in years of wheat shortage, as well as a former EU wheat import quota.

Moldova: Wheat is the leading export cereal from Moldova with total wheat exports of €4.1 million in 2012, of which 33 per cent were exported to the EU. Main export destinations of both the countries in 2012 are shown in the following figures (non-organic and organic):

Figure 4: Export destinations of wheat exported by Ukraine and Moldova in 2012[37]

Ukraine (total non-organic and organic)	**Moldova** (total non-organic and organic)
	
Wheat: Ukrainian export destinations of wheat 2012 in per cent of values (HS group[38] 1001)	**Wheat:** Moldovan export destinations 2012 in per cent of values (HS group 1001)

The above figures show that only few of the main EU wheat importing countries were supplied by Ukraine (mainly Spain) and Moldova (the United Kingdom and Italy). Most probably, exports from Moldova to Romania are re-exported to other EU countries.

Corn

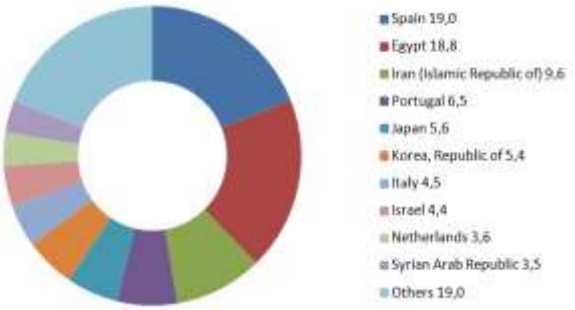
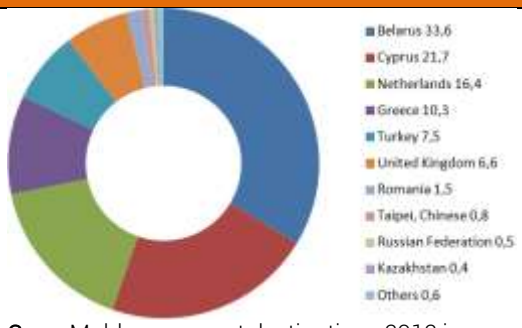
In the global cereal trade, corn has the second highest trade volume after wheat. According to Trade Map, total global corn imports had a value of around €29 billion in 2013 of which the EU 28 had a share of 23 per cent. Leading corn-importing countries in 2013 within the EU are Spain (€1.26 billion), the Netherlands (€1.01 billion), Italy (€916 million), Germany (€666 million), the United Kingdom (€482 million) and Belgium (€410 million). Some of these countries also lead in organic imports (e.g. Germany, Italy and the Netherlands).

Ukraine: Corn is the leading export cereal from Ukraine followed by wheat, with total corn exports in 2012 of €3.0 billion of which 40 per cent were exported to the EU.

Moldova: Moldovan total corn exports in 2012 (second after wheat) were worth €10.7 million of which 57 per cent were exported to the EU. Main export destinations in 2012 of both countries are shown in the following figures (non-organic and organic):

[37] For Moldova, a statistical registration of organic exports is available but apparently is inconsistent; please refer to Table 43: Export of organic products from Moldova to EU countries in 2013 in Annex 4.4.4. Detailed and up-to date organic export statistics don't exist from Ukraine and Armenia.
[38] Group of codes from the Harmonized System Code Customs Tariff.

Figure 5: Export destinations of corn exported by Ukraine and Moldova in 2012

Ukraine (total, non-organic and organic)	Moldova (total, non-organic and organic)
	
Corn: Ukrainian export destinations 2012 in per cent of values (HS group 1005)	**Corn:** Moldovan export destinations 2012 in per cent of values (HS group 1005)

Some of the leading EU corn importing countries are already supplied by Ukraine, but Moldova still has potential to broaden the range of corn clients among leading EU importers (non-organic and organic).

Other cereals such as barley, rye, triticale, spelt and oat, with pseudo cereals such as buckwheat and millet, also offer beneficial trade opportunities. However, in comparison to the cereals selected, they must be considered as niche products (and thus are not covered by the scope of this assessment).

2.3.1.2. Oilseeds

Sunflower seeds, rapeseed and soybeans were selected for the assessment, as they are the leading export oilseeds from Ukraine and Moldova, traded in major conventional volumes. According to earlier country studies and export statistics they are also relevant for (existing) organic exports and have increasing and potential organic demand.

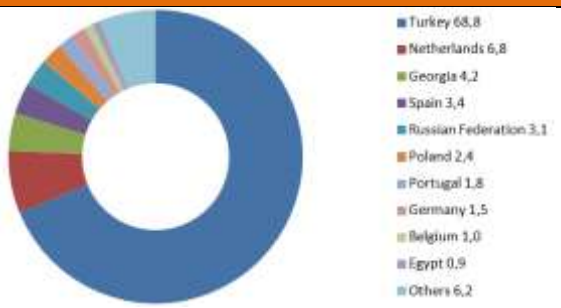
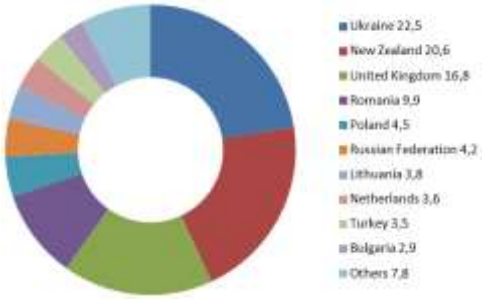
Sunflower seeds

According to Trade Map, global sunflower seed imports had a value of around €3.1 billion in 2013 of which 17 per cent were imported to the EU. Leading sunflower seed importing countries 2013 within the EU are the Netherlands (€290 million), Germany (€277 million), France (€237 million), Spain (€189 million), Portugal (€136 million) and Hungary (€111 million). Some of the mentioned sunflower seed importing countries are also leading in organic sunflower seed imports (e.g. France, Germany and the Netherlands).

Ukraine: Sunflower seeds rank third among exported oilseeds from Ukraine (after rapeseeds and soybeans) with a total sunflower seed export of €129 million in 2012, of which 20 per cent were exported to the EU.

Moldova: Sunflower seeds are the leading export oilseed from Moldova (followed by rapeseed and soybeans) with €56 million, of which 47 per cent were exported to the EU. Main export destinations in 2012 of both countries are shown in the following figures (non-organic and organic):

Figure 6: Export destinations of sunflower seeds from Ukraine and Moldova in 2012

Ukraine (total, non-organic and organic)	Moldova (total, non-organic and organic)
	
Sunflower seeds: Ukrainian export destinations 2012 in per cent of values (HS group 1206)	**Sunflower seeds:** Moldovan export destinations 2012 in per cent of values (HS group 1206)

Turkey is a huge consumer market of sunflower seeds and the main export destination of Ukrainian sunflower seed exports.

Moldova was exporting considerable volumes of sunflower seeds to re-exporting countries such as Ukraine and Romania. In regard to the profitability of the export business, direct exportations should be the preferred option, especially when exporting organic raw materials.

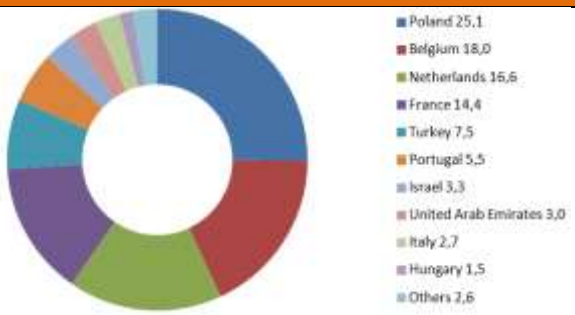
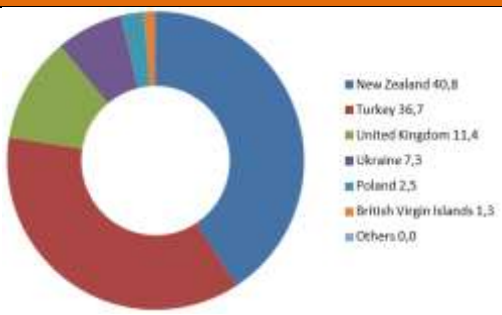
Rapeseed

Rapeseed is the second largest crop in the global oilseed trade (after soybeans). According to Trade Map, total global rapeseed imports had a value of around €9.8 billion in 2013, of which the EU 28 had a share of 51 per cent. Leading rapeseed importing countries in 2013 within the EU are Germany (€2 billion), Belgium (€966 million), the Netherlands (€707 million), France (€497 million), Austria (€109 million) and Poland (€107 million). A number of the mentioned rapeseed importing countries are also the leading countries in organic rapeseed imports (e.g. Germany and the Netherlands).

Ukraine: Rapeseed is the leading export oilseed from Ukraine (followed by soybeans and sunflower seeds) with total rapeseed exports of €615 million in 2012 of which 85 per cent were exported to the EU.

Moldova: Moldovan total rapeseed exports in 2013 (second after sunflower) were worth €16 million, of which 79 per cent were exported to the EU. Main export destinations in 2012 in both countries are shown in the following figures (non-organic and organic):

Figure 7: Export destinations of rapeseed from Ukraine and Moldova in 2012

Ukraine (total, non-organic and organic)	Moldova (total, non-organic and organic)
	
Rapeseed: Ukrainian export destinations 2012 in per cent of values (HS group 1205)	**Rapeseed:** Moldovan export destinations 2012 in per cent of values (HS group 1205)

Ukrainian rapeseed exports to the EU market are continuing, but it is surprising that the main EU importer Germany is not yet supplied on a major scale as it represents a large potential market.

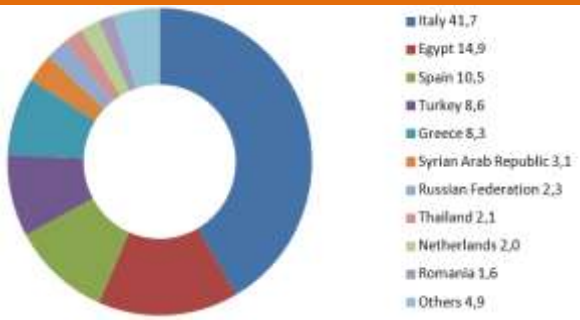
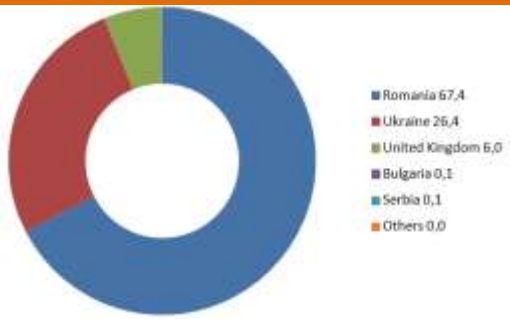
Soybeans

Global oilseed trade is led by soybeans, reaching the highest trade values globally (followed by rapeseed and sunflower). According to Trade Map, total global soybean imports had a value of around €47 billion in 2013, of which the EU 28 had a share of 13.6 per cent. Leading soybean importing countries in 2013 within the EU were Germany (€1.6 billion), Spain and the Netherlands (each €1.4 billion), Italy (€609 million), Portugal (€342 million), the United Kingdom (€284 million) and France (€235 million). Some of these soybean importing countries are also leading in organic soybean imports as well (e.g. Germany, Italy and the Netherlands).

Ukraine: Soybean is the second export oilseed from Ukraine (after rapeseed) with total soybean exports in 2012 worth €546 million, of which 67 per cent were exported to the EU.

Moldova: Total soybean exports in 2012 of Moldova (third largest export oilseed after sunflower and rapeseed) were worth €15 million in 2011, of which 73 per cent were exported to the EU. Main export destinations in 2012 of both countries are shown in the following figures (non-organic and organic):

Figure 8: Export destinations of soybeans from Ukraine and Moldova in 2012

Ukraine (total, non-organic and organic)	Moldova (total, non-organic and organic)
	
Soybeans: Ukrainian export destinations 2012 in per cent of values (HS group 1201)	**Soybeans:** Moldovan export destinations 2012 in per cent of values (HS group 1201)

In the EU market, Italy is the leading importer of soybeans from Ukraine. Moldova is currently exporting considerable volumes of soybeans to re-exporters such as Romania (for further Intra-EU trade) and Ukraine. Through direct access to final markets, higher prices could be attained, such as in the case of exports from Moldova to the UK and from Ukraine to Spain.

For some time, export bans in Ukraine have been negatively affecting long-term trade relationships. An organic soybean project in Ukraine from 2005 to 2008 was not successful due to a ban on soy exports, despite full implementation and availability of the first organic products, and the introduction of GMO soy, which compromised its organic qualities.

Other oilseeds such as pumpkin seeds and linseeds also offer beneficial trade opportunities. However, in comparison to the oilseeds selected, they must be considered as niche products and thus are not covered by the scope of this assessment.

2.3.1.3. Dried pulses

Dried pulses such as feed peas, horse beans, lupines and edible pulses like lentils, chickpeas and beans offer good trading opportunities; nevertheless, in comparison to cereals and oilseeds (soybeans in particular) they are still underutilized and traded as niche products. Detailed trade statistics are not available and a deeper analysis would go beyond the scope of this assessment. Wherever possible, the available information for dried pulses is provided in this assessment.

Pulses are useful crops especially in sustainable organic crop rotations as they fix nitrogen in the soil. Potential is high in organic trade of pulses, notably as a protein source. The 'vegan' trend in organic markets adds to this assessment.

Some pulse producing countries already took advantage of these business opportunities. Pulses are grown on a notable share of the organic area (e.g. 16 per cent in Lithuania).[39]

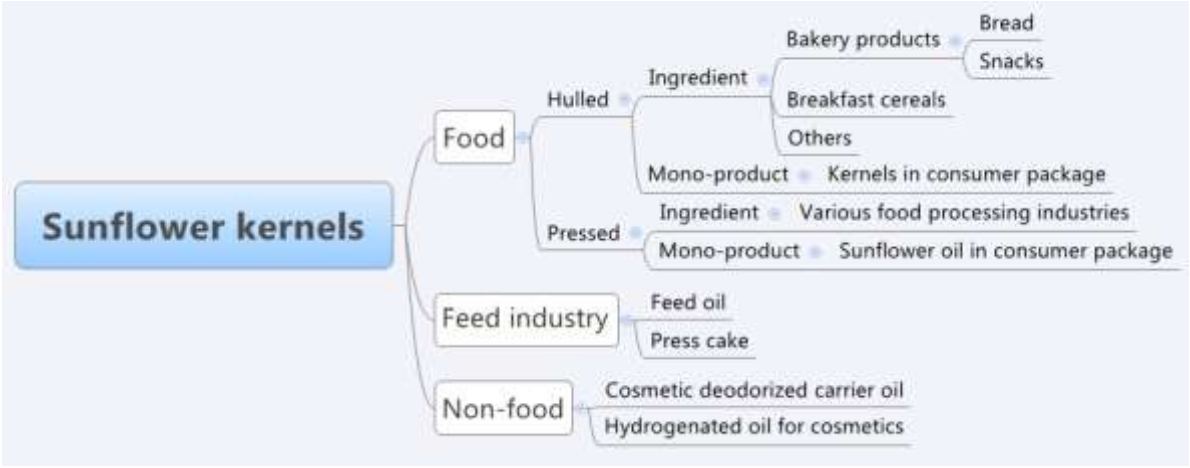
2.3.2. Product distribution and trade flow

Generally, cereals, oilseeds and dried pulses can be used for a wide range of final consumer products, which determine the involved market actors. Therefore, as a practical example for sunflower kernels, a number of potential uses in organic and conventional markets are illustrated in Figure 9.[40]

[39] An alternative for dried pulses and soybeans is the production of alfalfa leaf cobs: prior to drying, the alfalfa leafs are removed from the stalk as they provide considerable higher protein content and interesting essential amino acids. The stalks are rich in fibre and can be used locally for feeding ruminants. The alfalfa leafs are dried and pressed into cobs (large feed pellets). It is recommended that investments into synergy-systems be assessed, such as generation of drying heat energy by a biogas station supplied with manure e.g. from a ruminant production. It is estimated that with an optimum setup of the system, the profitability and output of essential amino acids per hectare is higher in comparison to soy production as well as the beneficial aspects for crop rotation (Personal interview with Prof Albert Sundrum, University Kassel, Germany). Currently, there is a good availability of organic alfalfa leaf cobs in Germany and the Netherlands as several processing plants are in full operation. Future demand could be higher, depending on the price competitiveness of alfalfa leaf cobs (cost per protein unit).

[40] Product trees for other products in are provided in Annex 4.2.

Figure 9: Product tree for sunflower kernels



The main traded volumes in the organic market for sunflower kernels are used in the food processing industry (e.g. hulled as bakery and snack ingredients, as cold pressed virgin food oil or hydrogenated oil in margarine) and in the feed industry (mainly as press cake, expeller and feed oil); increasing volumes are used in the natural and organic cosmetic industry (mainly for oils, creams and soaps). The same oil mills and oil traders are supplying the cosmetic sector as well as the food sector.

Figure 10: Exemplary final organic products containing organic sunflower kernels

				
Organic virgin sunflower oil, cold pressed, Bioplanete, France.	Organic rye bread with sunflower kernels, Hofpfisterei, Germany.	Organic hulled sunflower kernels, consumer package, Davert, Germany.	Organic gluten free muesli mix, Amisa, UK.	Organic layer fodder with sunflower press cake, Demeter Felderzeugnisse, Germany.

However, the products mentioned in this chapter are basically imported as commodities. Exporters sell to commodity traders and/or feed mills, which are also supplying food processors and feed mills. Nowadays, commodity traders as well as feed mills are handling both organic and conventional product lines, but only a few of them specialize in organic commodities;[41] in contrast, there are more than 100 organic processors and packers.

[41] Please refer to Annex 4.3

The role of commodity traders

One important task of commodity traders is providing for storage, as processors, packers and retailers tend to maintain reduced storage facilities, and therefore depend on continuous and reliable supply of smaller batches. If logistics are well-organized, then direct supply to food processors and feed mills could be a chance for organic exporters to reach higher price levels.

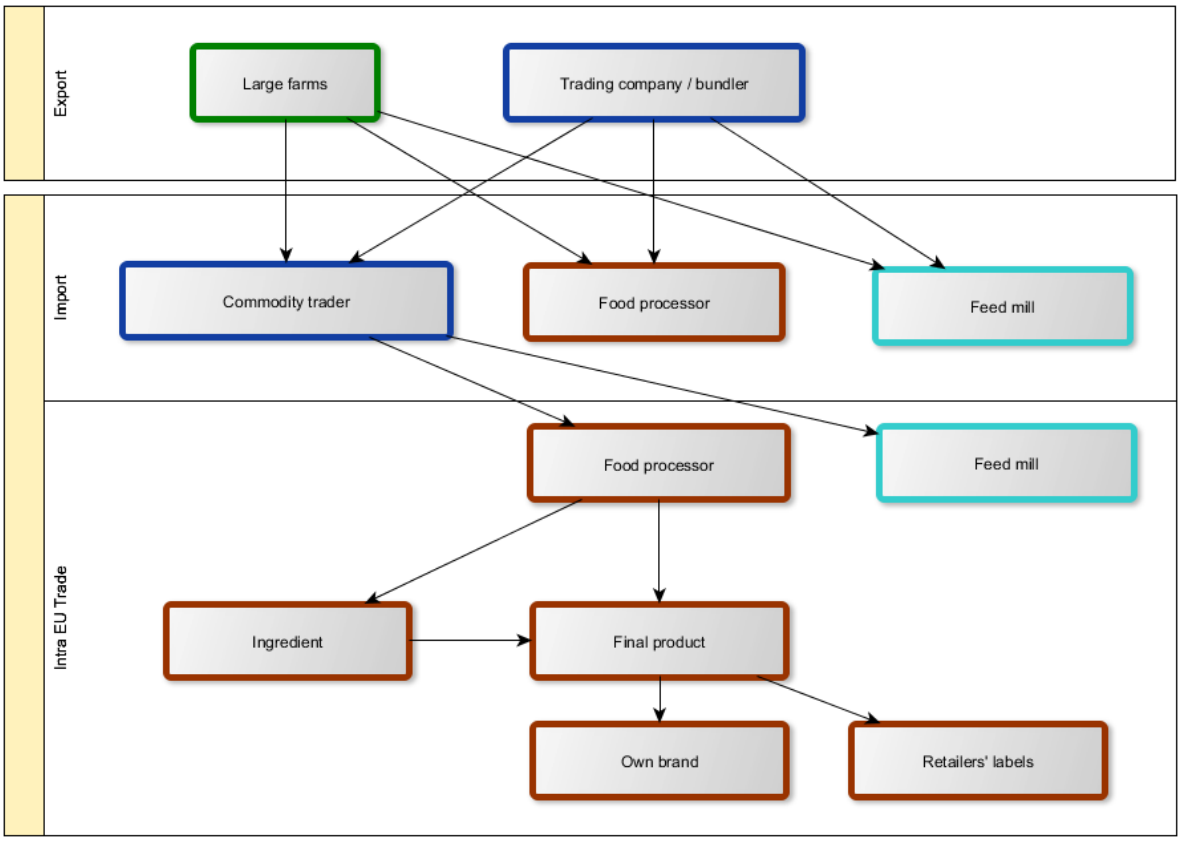
Exporters from the target region sometimes are large organic farms maintaining direct contracts.[42] Direct contracts certainly imply a high degree of responsibility for a reliable supply for further processing, if for example, due to a suspended supply of raw material the receiving processor of organic products would not be able to serve its own clients. Some processors therefore negotiate contractual penalties with suppliers to prevent such cases.

Commodity traders often negotiate exclusivity contracts with their suppliers for certain markets which imply the risk for exporters that a direct supply of processors down the chain is prevented.

EU clients buying big volumes tend to establish direct trade relations with farms of size while processors which source smaller lots prefer buying from specialized importers. The processing industry currently tends to shift the responsibility (and risks involved in the import business) towards well-known importers. As an example, major feed processors in the Netherlands and Germany are buying grains from Eastern European and non-EU countries either from bundling exporters (in exceptional cases from bigger farms directly) or from main EU grain importers (commodity traders). In order to foster transparency in the supply chain, some EU processors and traders directly source from producers or producers' associations, which offer suitable conditions for the latter.

[42] An example from the grain segment is the organic farm Galeks Agro in Ukraine, which established stable and direct export relations with clients in the EU and Switzerland.

Figure 11: Exemplary import supply chain grain commodities (non-organic and organic)[43]



Several formerly non-organic commodity traders in the EU established an organic product line as their clients have broadened their product ranges to include organic. Hence, even conventional/non-organic commodity traders with experience in the target region could be approached in order to establish organic product lines.

Due to recent incidents of fraud, importers (including the trade branches of private organic associations) and processors have begun to actively select individual farms in the target region in order to establish a transparent and traceable trade flow. This is an opportunity for farms in the target region to become aware of the long-term requirements of organic trade

Some large commodity traders from the EU maintain their own branch and office in the target region[44] in order to facilitate export, finance, documentation, forwarding, and investment, in addition to assistance in organizing farms and processors.

Added value products

There are numerous options for adding value to commodity products through semi-processing steps, such as proper cleaning, sorting, de-hulling, milling and oil-pressing. Example of possible added value products are bakery ingredients such as de-hulled sunflower

[43] In Figure 4, following colours are used for value chain functions:

[44] E.g. Alfred C. Toepfer from Germany and BioCore from the Netherlands have own offices in Ukraine.

kernels, de-hulled pumpkin seeds or cleaned dried pulses which can be exported readily packed in 25 kg triple layer paper bags on pallets or in big bags. Another example is oil – pressed in the country of origin – which is in growing demand by big oil traders, even if they own oil mills. However, storing and processing capacities are sometimes limited (e.g. for seed, oil, and cake). In addition, companies who process in the country of origin need to consider the reduced shelf life of the products.

Established organic markets versus emerging organic markets

Export of finished consumer products to 'established' organic EU markets, such as France, Germany and the United Kingdom, is challenging. At best, private labels could be offered as a service to EU packers or distributors for minimally processed mono-products, but this will only be possible in exceptional cases as the market actors' prefer to process in the country of consumption. Hence, in the short, medium and long term the target region will mainly keep its role as a supplier of raw materials[45] for established organic markets.

This situation is slightly different when trading with 'emerging' organic markets in the EU, like Eastern European countries (e.g. Czech Republic, Poland and Hungary) where higher chances exist to enter the market with readily processed products. This would at the same time stimulate the market development for the same products in the country of origin.

Participation at organic trade fairs in emerging organic markets is a useful means for processors to gain market access with readily finished products; examples for such events are listed in Annex 4.4.1.

2.3.3. Market demand for organic grains in the EU

The current as well as the future EU market of organic grains and oilseeds for Ukrainian and Moldovan exporters shows good potential. This is due to the following factors: On the one hand, the market volume is growing faster than organic production within the EU. On the other hand, after a fraud has been discovered in the trade of organic grains and oilseeds from Eastern Europe to the EU, large actors who did not work reliably are withdrawn by the supervising authorities. Their products can then be replaced by those supplied by new and reliable traders.

The numbers in the following subchapters demonstrate a high degree of dependency on imports of the organic sector in the EU, which at the same time provide opportunities for exporters of the target region for establishing stable trade relations. As mentioned, it should be noted that the consumer market in different EU/EFTA countries is growing faster than the increase in organic production.[46] Another issue is the strong growth of organic animal husbandry, which is already consuming more organic cereals than the food segment.[47]

As a result of this widening gap between market demand and production, imports from third countries are increasing much faster than ever before, even with products that could potentially be produced in sufficient quantities within the EU. The current policies to promote organic production within the EU and in single member states will most probably not be able

[45] With regard to the grain commodities of this chapter.
[46] For example: Organic market growth in Germany 2012/2013: 7.2 per cent. Increase of organic production in Germany 2012/2013: 1.0 per cent. BÖLW (2014). Zahlen, Daten, Fakten. Die Bio-Branche 2014.
[47] Bio-Importe nach Deutschland. Ergebnisse aus dem BÖLN Projekt 090E065.

to boost organic agricultural production in the EU soon or strongly enough in the short and medium term to meet the demand.[48]

In order to reduce the risk of being too dependent on only a few export markets, additional organic target markets (e.g. emerging markets in Turkey, the Russian Federation and the Near East) should also be considered. Organic exports from Armenia, Moldova and Ukraine, the focal countries in the target region of this market assessment report, should also be explored. Many emerging organic markets are growing, but traded volumes are still low. Those exports could strategically focus on crops, which are not easily produced in relevant quantities in the region of the target market.

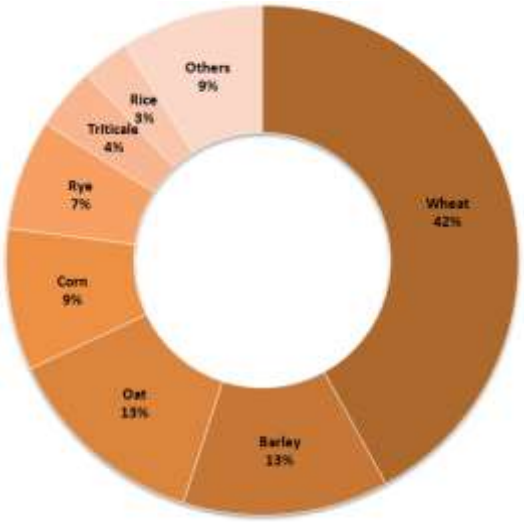
The information about organic production of cereals, oilseeds and dried pulses in the following subchapters was gathered from available statistical data on organic production and markets as well as from a literature survey. Current price levels were collected in personal interviews with EU importers and exporters from the target region (March to May 2014). The intention is to contribute market observations, but it has to be taken into consideration that price levels are volatile and subject to rapid changes.

2.3.3.1. Organic cereals

Production

The global organic production of cereals in 2012 is reported with 2.6 million ha (+5.9 per cent since 2011).[49]

Figure 12: Global organic cereal production in per cent of seeded area in 2012



The world's leading 10 organic cereal producing countries in 2012 were the USA (328,474 ha), Germany (204,000 ha), Canada (201,832 ha), Turkey (197,877 ha), Italy (184,111 ha), Spain (175,880 ha), Kazakhstan (130,882 ha), Ukraine (127,733 ha), France (119,748 ha) and Poland

[48] Policies to promote organic production and trade should always consider up-to-date circumstances.
[49] FiBL and IFOAM (2014). World of organic agriculture 2014; EU Commission (2013). Facts and figures on organic agriculture in the European Union.

(109,511 ha). Five of the 10 leading organic cereal producing countries are EU members listed in Table 7:

Table 7: Leading EU producers of organic cereals 2012[50]

EU member state	Organic cereal production in ha	Per cent of national organic area
Germany	204,000	20.1
Italy	184,111	16.8
Spain	175,880	9.8
France	119,748	12.3
Poland	109,511	18.0
Austria	93,114	17.2
Sweden	84,851	17.7
Romania	79,167	34.4
Lithuania	54,320	35.7
UK	52,862	8.3

In the EU, 1.55 million ha organic cereals were seeded in 2012 at a growth rate of 7 per cent in comparison to 2011. This is a relatively small area seeded with cereals (equivalent to 18 per cent of the 9.6 million ha organic land in the EU in 2011) in comparison to the much higher share in conventional agriculture: 33 per cent of the total UAA is seeded with cereals in the EU (average non-organic and organic).

Share of organic EU imports of cereals

The total EU organic cereal market in 2011 was estimated to be 2.4 million tonnes. The share of organic imports of single cereal types on the EU level is difficult to estimate due to a lack of reliable data for the EU market; hence, it is calculated with the help of a country case as an example. A survey of the German market, the main European organic market accounting for one third of organic retail sales in the EU, showed the following:

The total German[51] organic cereal market in 2011 had a total volume of around 700,000 tonnes.[52] In Germany 60 per cent of the cereals were used for animal feed mixes (cattle: 222,000 tonnes, poultry: 110,000 tonnes, pigs: 98.000 tonnes, sheep: 17,000 tonnes) and 40 per cent were used in the food sector (bread: 111,000 tonnes, other bakery products: 55,000 tonnes, flour/muesli: 52,000 tonnes).

[50] EU Commission (2013). Facts and figures on organic agriculture in the European Union.
[51] Germany is the biggest organic market in the EU, making up one third of organic sales of the European market.
[52] Other sources report almost 800,000 t.[53] Bio-Importe nach Deutschland. Ergebnisse aus dem BÖLN Projekt 090E065.

Table 8: German organic cereal production and import share[53]

Crop	Organic import in t 2009/2010	German organic production in t 2009/2010	Organic import share in per cent	Main supplying countries
Wheat	**70,000**	**185,000**	**27**	**Italy, Kazakhstan, Romania, Hungary, Russian Federation, Slovakia, Ukraine**
Corn	**18,000**	**25,000**	**42**	**Romania, Italy, Slovakia, Hungary**
Barley	11,300	89,000	11	Russian Federation
Spelt	10,000	80,000	11	Italy, Slovakia, Hungary
Rye	8,000	200,000	4	Lithuania, Austria, Latvia, Russian Federation
Oat	1,600	82,000	2	Finland, Denmark, Sweden

The harvested wheat quality in Germany (and other producing regions of Central and Northern Europe) does not always meet bakery quality – hence the import share of organic wheat with higher protein content has risen considerably in recent years. Over a decade ago organic wheat was imported from overseas, but these imports have been substituted by imports from other European countries.

German organic cereal production is almost stagnating and grew only from 601,000 tonnes in 2006 to 648,000 tonnes in 2011. In contrast, German imports of organic cereals grew considerably from 119,000 tonnes in the crop year 2009/2010 to 156,000 tonnes in 2012/2013, representing an import share of 17 per cent of organic cereal.

In 2013, the total German organic wheat market grew to 380,000 tonnes, of which 96,500 tonnes were imported to Germany, representing an import share of 25 per cent of the German organic wheat market (main supplying countries in 2013 were Ukraine, Hungary, Romania, Italy, Lithuania, Slovakia, Austria, Czech Republic, Kazakhstan and Poland).[54] In comparison to 2009/2010 with 255,000 tonnes, it shows an average annual growth of around 14 per cent. According to German and Dutch feed mills this is mainly due to the growth of organic animal husbandry.

Italian traders estimate an annual corn import volume of 40,000 tonnes. There are no exact volume estimates of imports for soft wheat on the Italian market, but they are believed to be considerable. However, corn was assessed as a higher priority than soft wheat.

As Ukrainian farm sizes are much larger than those in the EU, Ukrainian organic cereals can be produced at competitive price levels despite higher transport costs.

Food cereals

In the organic food cereal market, domestic products have the highest attractiveness as consumers prefer that their bread and breakfast cereals are sourced regionally. Considerably

[53] Bio-Importe nach Deutschland. Ergebnisse aus dem BÖLN Projekt 090E065.
[54] Source: AMI (Agricultural Market Information Company, Germany) press release about German imports 2012/2013 of organic products, 2014.

higher prices are paid for products with private organic labels (Naturland, Bioland, Demeter, Bio Suisse, KRAV, Organic Soil Association, etc.), as shown in Table 9.

Two thirds of German organic farms are certified members of a private organic association and have legal EU organic certification. In Switzerland, the private certification Bio Suisse is almost a 100 per cent prerequisite for imported products.

Hence, organic farmers in the project region should approach the private organic associations in order to establish long-term relationships and added value products. Depending on temporary non-availability of grains certified under the standards of private associations, grains with EU organic certification are accepted on exception up to certain percentages for organic feed mixes certified by associations like Naturland or Bioland.

Price levels for food cereals

The minimum organic premium for food grains is currently around 30 per cent above the conventional price for EU food grains. This rises to 40 or 50 per cent for products not exported in large volumes from China and India, and in low supply in neighbouring EU countries (e.g. wheat, sunflower). A smaller price difference is common for imports with highly competitive prices from China and India (e.g. corn and soy).

Table 9: Organic cereal price levels – food grains[55]

Product	Price-level
Organic winter wheat (food)	€390-430/t CIF ("Cost Insurance Freight" according to International Commercial Terms) Germany/Switzerland (from regional sources with Bioland/Naturland/BioSuisse certification)
Wheat, conventional	€165-195/t CIF
Popcorn maize, conventional	€730/t CIF Germany (from Hungary)
Organic brewing barley	€ > 400/t CIF Germany / Switzerland (from regional sources with Bioland/Naturland/BioSuisse certification)
Organic barley, (hulled for food use)	€ > 360/t CIF Germany / Switzerland (from regional sources with Bioland/Naturland/BioSuisse certification)
Organic buckwheat in hull	€500/t CIF Switzerland
Organic spelt in hull	€600-800/t CIF Germany
Organic spelt hulled	€1100/t CIF UK
Spelt flakes, conventional in 25 kg paper bags	€1.79/kg CIF, German origin
Organic millet in hull	€550-570/t CIF Switzerland

Organic wheat is in high demand, driven in part by the demand for organic bakery-ingredients, with an average value roughly double that of conventional wheat.

[55] The information given in the table was generated in personal interviews with EU importers and exporters of the target region.

Feed cereals

During the past few years organic feed cereals in comparison to food cereals gained similar attractiveness and price levels, as the availability of feed cereals was limited. Generally, past years' harvest qualities of organic cereals in central Europe were excellent, thus the food cereal market had a good supply and market prices of feed cereals stepwise reached similar levels. This situation could easily change or reverse depending on weather conditions and farmers' decisions about what to cultivate. Currently, German organic farmers are not very motivated to seed food/bakery wheat as the potential harvest is lower and the price difference is easily compensated by better harvest volumes of feed wheat in the German climate.

In the organic animal husbandry segment there is a steady yearly growth of between 5 to 10 per cent. In 2011-2012 major investments were made in new layer houses in half a million locations in Northern Germany, but growth was slowed by several scandals. It is estimated that two thirds of the traded feed cereals in the German market are certified only in accordance with the EU organic regulation. The other third of feed grains is certified according to private organic standards such those for Naturland, Bioland or Demeter, and fetches considerably higher prices. European feed ingredients are clearly preferred over Asian sources, and the project region could benefit from this premium.

Since 2013, the EU organic regulation has required the purchase of 20 per cent regional feed ingredients per farm and the EU Commission is currently discussing raising it by 50 to 60 per cent.[56] This could become a major future obstacle for Eastern European feed ingredient suppliers. Thus, it would be more profitable to focus on ingredients which do not grow well locally in the main regions of the organic consumer markets such as soy, corn and rapeseed as well as dried pulses like feed pea, horse bean, vetch and lupine.

Price levels for feed cereals

Price levels for conventional and organic cereals, oilseeds and leguminous crops are highly volatile and change considerably from week to week depending on demand, availability, substitutes, quality, etc. Thus, prices levels need to be reviewed frequently. The Central European sector is cross-checking and reporting some of the price levels with the information service AMI.[57]

Table 10: Organic and non-organic cereal price levels – feed grains[58]

Product	Price-level
Organic winter wheat (feed)	€360-390/t CIF Germany/Switzerland (from regional sources with Bioland/Naturland/Biosuisse certification)
Organic winter wheat (feed)	€330/t CIF Switzerland (EU organic certification)
Winter wheat conventional	€191-213/t CIF Netherlands
Organic corn	€310-375/t CIF Netherlands (from China, India) €375-440/t CIF Netherlands (from European sources with Bioland/Naturland certification)
Corn, conventional	€192-205/t

[56] This requirement is already implemented in private organic standards e.g. of the associations Naturland and Bioland.[57] www.ami-informiert.de/ami-english.html

[57] www.ami-informiert.de/ami-english.html

[58] The information given in the table was generated in personal interviews with EU importers and exporters in the target region.

Organic feed barley	€330/t CIF Germany/Switzerland (from regional sources with Bioland/Naturland/Biosuisse certification)
Feed barley, conventional	€173-196/t CIF Germany (week 12, 2014)
Organic rye	€270/t CIF Germany (EU organic certification) € > 300/t CIF Germany/Switzerland (from regional sources with Bioland/Naturland/Biosuisse certification)
Rye, conventional	€170/t CIF Germany (Week 12, 2014)

2.3.3.2. Organic oilseeds

Production

The global organic area seeded with oilseeds grew from 140,000 ha in 2004 to 643,000 ha in 2012. This is around 0.3 per cent of the global area seeded with oilseeds (204 million ha). Countries with the largest area of organic oilseeds are China (150,000 ha in 2011), Kazakhstan (82,493 ha in 2011), the USA (71,636 ha in 2011), Canada (48,253 ha in 2011), Romania (43,923 ha in 2011), Ukraine (38,530 ha in 2011) and France (27,000 ha in 2011). The world's organic oilseed categories by production volume are: soybeans (43 per cent), sunflower (20 per cent), rapeseed (11 per cent), sesame (10 per cent) and linseed (10 per cent).

Table 11: Leading EU producers of organic oilseeds 2011[59]

EU member state	Organic oilseed production in ha	Share of national organic area in per cent
Romania	46,046	20.0
France	26,706	2.7
Austria	11,646	2.1
Italy	11,198	1.0
Spain	9,198	0.5
Hungary	7,438	6.0
Germany	5,800	0.6
Finland	2,921	1.6
Estonia	2,804	1.3
Sweden	2,747	0.6

Share of organic oilseed imports

The share of organic imports of oilseeds to the EU can best be illustrated with examples, as there are not enough reliable data available for the EU market. A survey of the German market – the main European organic market – showed the following import shares:

[59] Facts and figures on organic agriculture in the European Union, EU Commission, 2013.

Table 12: German organic oilseed production and import share[60]

Crop	Organic import in t 2009/2010	Organic production in t 2009/2010	Organic import share in per cent 2009/2010	Main supplying countries
Sunflower	11,000	2,050	84	Romania, Brazil, Argentina, China
Rapeseed	5,000	10,000	33	Romania, Russian Federation, Kazakhstan, Hungary
Soybeans	19,000	1,400	93	Italy, Romania, Kazakhstan, India, Argentina, Brazil
Linseed	5,200	300	95	Canada, Argentina, China, Russia

The domestic production of organic oilseeds in Central Europe is limited by the climate as the temperature is too low for optimal growth. This is reflected in high import shares and a strong dependency on imports from warmer regions. It must be noted though that there is a research and production programme to develop soybean production in Germany; varieties and production processes are viewed with optimism.

Italy estimates that its annual organic import volume of soybeans is around 80,000 tonnes, sunflower (only grains) is around 30,000 tonnes, and rapeseed is approximately 15,000 tonnes.

Oilseeds are in demand especially for processed organic products. There are currently three major trends fuelling this demand:

a. Increased sales of organic animal products (hence higher demand of protein crops and press cake for feed);
b. Growing vegetarian and vegan consumption (higher demand of consumer products suitable for protein replacement); and
c. Preference for regional products.

Oilseeds as bakery ingredients

For bakery ingredients, the biggest organic processors in the EU are clearly tending to shift their sourcing away from China to neighbouring or European countries in order to strengthen product reliability. But for sunflower kernels, the Chinese price continues to be the benchmark, so it will not be easy to reach higher price levels.

Sunflower kernels are facing strong demand, especially as a bakery ingredient. Pumpkin seeds show potential, but they need to be like the Syrian high quality variety, which require special processing.

[60] Bio-Importe nach Deutschland. Ergebnisse aus dem BÖLN Projekt 090E065.

Price levels for organic oilseeds and related products

Table 13: Organic price levels – oilseeds[61]

Product	Price-level
Organic sunflower kernels, hulled, confection/bakery packed in 25 kg triple layer paper bags on pallets	€1.75-1.78/kg CIF Switzerland from China (Biosuisse certification)
Organic sunflower kernels, hulled, confection/ bakery packed in 25 kg triple layer paper bags on pallets	€1.46-1.53/kg CIF Switzerland from China (EU organic certification)
Sunflower kernels, conventional, hulled, bakery	€640/t CIF Germany from Bulgaria
Organic sunflower oil cold pressed	€1600/t FCA "Free Carrier" according to International Commercial Terms. (In flexi tank)
Organic sunflower oil cold pressed (for food / no further refining)	€1450/t CIF Germany
Organic sunflower oil, warm pressed (for organic refining at importer / e.g. for cosmetics)	€1,100-1,200/t CIF Germany
Organic sunflower press cake	€240/t FOB "Free On Board" according to International Commercial Terms (Ukraine)
Conventional sunflower press cake	€140-151/t FOB (Russian Federation) €300/t FOB (from Austria)
Organic rapeseed oil cold pressed (for food / no further refining)	€1,200/t CIF Germany
Organic rapeseed oil, warm pressed (for organic refining at importer / for cosmetics)	€1,050-1,100/t CIF Germany
Organic rapeseed press cake	€632-711/t CIF Germany
Rapeseed conventional	€391-425/t CIF (week 14, 2014)
Rapeseed oil, conventional	€950/t CIF from EU origins to Germany
Rapeseed press cake, conventional	€382-411/t CIF (week 14, 2014)
Organic soybean	€850/t CIF Switzerland (Bio Suisse certification)
Organic soybean press cake	€730-900/t CIF Netherlands (from India) €900-1,100/t CIF Netherlands from European sources (Bioland/Naturland certification)
Soybean, conventional	€383 - 400/t (week 14, 2014)
Soybean press cake, conventional	€524/t CIF (week 14, 2014)
Organic pumpkin seeds, hulled, shine skin, grade A / grade AA	€3.79 – 3.86/kg CIF Germany from China
Linseed, conventional, brown	€601-640/t CIF Germany from Eastern Europe
Pumpkin seed oil, conventional (for food and food supplements)	€1,500/t CIF Germany

Organic sunflower oil and rapeseed oil are already imported from Eastern Europe in major volumes – mainly by commodity traders, but also by single oil mills and feed mills directly.

[61] The information given in the table was generated through personal interviews with EU importers and exporters in the target region.

There is interest especially in organic rapeseed oil and rape press cake from Eastern Europe if qualities are suitable and the supplier is reliable. In the interviews, single importers stated their interest to buy e.g. additional annual quantities of:

- Several thousand tonnes of organic press cake per importer (soybean, sunflower or rapeseed).
- Around 500 tonnes of rapeseed oil per importer (cold pressed for food use without any further refining).
- Several hundred tonnes of organic sunflower oil per importer (cold or warm pressed, food grade).
- 50 tonnes of pumpkin seed oil per importer (for food and food supplements).

2.3.3.3. Organic dried pulses

Production

In this assessment dried pulses as a commodity for feed have been considered. This does not mean that dried pulses for food are not also of interest for organic production and exports. They have excellent opportunities and many organic EU importers want to shift away from sourcing from China or India, but these products are not yet produced nor exported in considerable trade volumes from the target region. It has to be noted that some protein crops (soybeans) are counted as oilseeds, and others as dried pulses.

Global organic production of dried pulses grew from 78,000 ha (2004) to 316,066 ha in 2012 (+7.9 per cent since 2011). This is around 0.4 per cent of the global area seeded with dried pulses (71 million ha in 2011). Globally, the countries with the largest area of organic dried pulses are France (45,000 ha in 2011), Spain (36,000 ha in 2011), Canada (32,000 ha in 2012), Germany (25,500 ha in 2011), Lithuania (24,387 ha in 2011) and Italy (21,445 ha in 2011). About 2.2 per cent of the 9.6 million ha of organic land in the EU was seeded with dried pulses in 2011, representing a relatively high percentage of 16 per cent of the total production of dried pulses in the EU (non-organic and organic). This indicates that dried pulses have a higher importance in organic farming, food and related feed mixes, compared to that of the conventional sector.

Table 14: Leading EU producers of organic dried pulses 2011[62]

EU member state	Organic dried pulses production in ha	Share of national organic area in per cent
France	45,625	4.7
Spain	36,090	2.0
Germany	25,500	2.5
Lithuania	24,387	16.0
Italy	21,445	2.0
Austria	12,474	2.3
Sweden	10,173	2.1

[62] Facts and figures on organic agriculture in the European Union, EU Commission, 2013.

Finland	8,145	4.3
Denmark	5,579	3.4
Estonia	3,725	1.7

Share of organic imports of dried pulses

The share of organic imports of dried pulses exported to the EU can only be described by providing examples as there are not enough data available for the EU market. A survey in the German market showed the following import shares:

Table 15: German organic production of dried pulses and import share[63]

Crop	Organic import in t 2009/2010	German organic production in t 2009/2010	Organic import share in per cent	Main supplying countries
Feed peas	10,000	16,400	38	Lithuania, Russian Federation, Slovakia
Horse beans	2,400	14,300	14	Lithuania, Russian Federation
Lupines	1,000	13,700	7	Lithuania, Poland

Lithuania and the Russian Federation are the main suppliers of organic dried feed pulses (feed peas, horse beans and lupines) to the German market, while organic dried food pulses are supplied mainly by China, India (beans), Turkey, USA and Uzbekistan (lentils and chickpeas).

Dried pulses for feed use

In organic feed mixes, dried pulses (together with press cake) provide high protein and adequate essential amino acids; synthetic amino acids are not permitted in organic feed.

In the currently on-going revision of the organic EU regulation it has been proposed to terminate the exceptional permission for non-organic high protein sources, but it is expected that the exception will be extended until the end of the decade. At present and for years to come, the organic sector in the EU needs a supply of organic high protein crops, particularly with specific essential amino acids, which are unavailable from main protein crops. This situation offers Eastern Europe the opportunity to build a nearby and reliable supply chain of organic protein sources and thus mitigate consumers' criticism of non-organic feed ingredients in organic feed.

The organic sector in the EU depends heavily on organic soybean imports from China, India and South America; however, contamination of genetically modified seeds are frequently reported. Under the circumstances, countries such as Ukraine and Moldova could increase the supply of GMO free soybeans that would be fully traceable and produced sustainably under conditions of fairtrade. This will only be viable if supply is provided at competitive price levels.

[63] Bio-Importe nach Deutschland. Ergebnisse aus dem BÖLN Projekt 090E065.

Price levels for organic dried pulses and related products

Table 16: Organic cereal price levels – dried pulses for feed use[64]

Product	Price-level
Organic feed peas	>€500/t CIF Germany/Switzerland (from regional sources with Bioland/Naturland/Biosuisse certification)
Feed peas conventional, yellow	€437/t CIF Germany from EU origins
Organic horse beans	Around €500/t CIF Germany / Switzerland (from regional sources with Bioland/Naturland/Biosuisse certification)
(Organic alfalfa cobs for comparison)[65]	€250/t CIF Netherlands

2.3.4. Lessons learned – the importer's perspective

The information in this chapter is based on interviews with the EU importers. Pragmatic points of view from importers related to current product specific issues and general experiences in business-relations in the target region are discussed.[66]

Business reliability: Importers stated that they currently need to invest a lot of time to find credible and serious suppliers from Eastern Europe. Mutual trust needs to be built and this process often implies tough negotiations about paying conditions. A main criterion of importers is that contracts, once they are mutually agreed, need to be completely complied without re-negotiation of prices and volumes. In some cases, technical excuses for delays were given just before the due date of delivery. Another criterion is that organic production needs to be taken seriously. Stable, long term business relations need to be understood as an alliance, and risks to such relationships need to be considered, such as a change in the importer's staff. If the relationship is only based on one person then the trade might stop completely if this person leaves the company.

After a series of fraud incidents, feed processors are importing fewer quantities directly, preferring to focus on their core business of processing high quality feed mixes, and thus prioritize commodity importers for their purchases. Also, many of them lack sufficient storage capacities and experience in importing ingredients directly. In addition, processors should avoid the potential for scandals, and buy from reliable importers. Many processors are now purchasing their raw materials from specialized importers/traders with reliable reputations, to ensure on-time delivery of smaller shipments.

Direct trade relations: Experience and reliability in export activities is the key to getting accepted directly as a supplying farm. This implies good English skills and short response time to (e-mail) communication. Exporters tend to negotiate Free on Board (FOB) conditions, whereas importers tend to make CIF contracts to avoid risks until the product is delivered to

[64] The information given in the table was generated in personal interviews with EU importers and exporters of the target region.
[65] Future demand for organic alfalfa leaf cobs depends on the legislation about organic feed mixes, especially the percentage needed to be produced regionally and the price.
[66] For detailed information on organic exports, please consult the export manual launched by FiBL in July 2014: "Exporting from Ukraine".

a defined point of destination. Under many current contracts, delivery is to a store or processing plant in the EU where CIF prices are agreed.

Frauds: There has been repeated fraud associated with imports from Eastern Europe (e.g. from Ukraine, Moldova and Kazakhstan) involving e.g. Italian agents. Thus, major German, Dutch and Swiss importers and processors have stopped sourcing Eastern European cereals from Italian traders. Conventional shipments were falsely declared as organic and some agents are currently under arrest in Italy.[67] In order to prevent further fraud, importing processors often request laboratory analyses of chemical residuals, and in some cases require that suppliers provide organic validity of the products.

Traceability: As a response to repeated frauds, the Italian organization FederBio has developed a traceability system[68] which is verifying certification data and monitors volumes on the market. The system was presented during BIOFACH 2014 in Germany. Suppliers from the target region could be integrated into this system or establish a comparable one that can be interrelated.

Food safety: In spite of several regulations and laws to assure product safety, problems are occurring, e.g. organic feed corn processors and commodity traders stated problems of aflatoxin levels in organic feed- and popcorn imported from Ukraine. Around 2010 an incident occurred in a conventional batch of sunflower oil from Eastern Europe containing traces of mineral oil. A German oil importer stated that it could be assumed that this was due to a technical incident rather than fraud, but nevertheless this case is still preventing several European food oil fillers to source food oil from Eastern Europe.

Transport: Some major central European organic feed processors are located next to navigable waterways. Shiploads/vessels can often lower transport costs. But even though transport costs for shiploads and train are considerably lower in comparison to truck loads,[69] most organic importers and processors prefer truck loads (especially with new suppliers) as these facilitate the traceability of the product. For shiploads, lots are mixed at the exporter's facilities and it is much harder to track the provenance up to the origin. A second serious problem is that proper cleaning of trains and ships is even more complicated than that of trucks. To prevent contamination during transport, some importers load high value crops into big bags (1m³ each), which are packed on pallets. For initial trade contracts, truckloads can minimize the risk for both parties. They can be organized relatively easily by the exporter (e.g. directly by the farm/producer) in order to maximize service and delivery (free destination) to the importer.

Train transport and shiploads are only considered a long term solution by many organic EU importers even if these provide additional advantages besides the lower fuel consumption/ transport cost:

- An earlier payment date is possible when papers are done and the vessel leaves the port.
- The importer only has to negotiate with a single client for a huge lot.

[67] http://www.teatronaturale.com/world-news/italy/4584-icqrf-and-pesaro-financial-guard-against-the-false-organic-products-from-asia-and-east-europe.htm
[68] Presentation available at http://www.feder.bio/files/861.pdf
[69] As an example, interviews showed following costs of truckloads:
Ukraine - Germany, €1,000-1200/truck (22t) (Feb/2014).
Ukraine - Switzerland, €1,500-1,600/truck (22t) (Feb/2014).

2.3.5. Key observations with regard to cereals, oilseeds and dried pulses

Addressed to producers, processors and exporters

- The solid growth of the international and especially the EU organic market offers long term opportunities for the leading export products from Ukraine and Moldova: commodities like oilseeds, dried pulses and cereals which permit transformation of the production of farms, including huge farms, into a production with low external inputs. The organic market faces scarceness of raw materials and current organic price levels are suitable to pay off the cost of the conversion period to organic.
- Organic clients in the EU are highly demanding with regard to quality requirements but offer stable trade relations once these requirements are met.
- Oilseeds, press cakes and pulses currently are excellent door openers to the EU market as protein sources for feed use are scarce due to high growth rates in organic animal husbandry.
- Reliable supply from neighbouring Eastern European countries are preferred by organic EU importers for almost all commodities over supply from China, India and South America.
- Due to climatic conditions grains/cereals for food processing may have higher quality properties compared to central European production, e.g. wheat rich in protein/gluten, thus offering market opportunities.
- Additional certification against private ('organic associations') standards do permit significant higher price levels.
- Semi-processed added value products offer export opportunities to the EU such as oil, press cake or de-hulled seeds, e.g. as bakery ingredients.
- Higher processed and finished organic consumer products do have better market opportunities if directed to emerging (e.g. Czech Republic, Poland and Hungary) and to domestic organic markets. This approach also reduces the risk of dependency on few sales channels.

Addressed to organizations supporting the organic sector

- Organic production and export statistics are not available or not reliable for the target region. It would be very valuable to improve this situation in order to compare non-organic with organic exports and to provide exporters with current figures, trends and opportunities.
- Market chances are not sufficiently exploited. Trade of organic grains is often going through Romania, Italy and other countries rather than being exported directly to the target and consumption markets: e.g. Germany, the Netherlands, United Kingdom, France and Italy.
- Regarding export quantities: exporting truck loads is the appropriate first step for new suppliers at low risk. In future years, these could be converted stepwise into train and vessel loads.

Country specific observations

Ukraine:

- Trade statistics show that only low shares of wheat and sunflower are currently exported to the EU market. Conversely, a good share of corn and the majority of oilseeds are exported. Hence, it can be assumed that organic exports are easier to start with oilseeds, press-cakes and corn, and only after stepwise be extended to cereals.

- Ukraine already has good experience in organic production as it is ranked sixth in global acreage of organic oilseeds and eighth in global acreage of organic wheat.
- Germany for example is underrepresented as one of Ukraine's total export destinations.
- Export bans are a particular threat for organic value chains, as these require long-term engagement and reliability in supply.

Moldova:

- According to trade statistics, Moldova shows a higher share of total exports to the EU compared to Ukraine.
- Moldova is (still) exporting considerable volumes to re-exporting countries: e.g. more than 90 per cent of total soybean exports are directed to Romania and Ukraine; smaller shares of sunflower seed exports go to Ukraine and Romania; rapeseed exports go to Ukraine; and wheat exports to Romania and Ukraine.

Armenia:

- Armenia is not yet a relevant grain producing country, as rainfall and availability of arable land are limited. Armenia has a negative trade balance for most food products, so the export of scarce basic food is not recommended or feasible. However, traditional 'ancient' cereal varieties like spelt may be an option if positioned as specialties (e.g. geographic indication, saving gene-pool).

2.4. Fruits, berries and nuts

The product groups of fruits, berries and nuts are traded in much smaller volumes but at considerably higher price levels per volume in comparison to commodities such as cereals and oilseeds. Importers are either specialized ingredient traders serving a range of processors (e.g. food, food supplements, cosmetics and pharmaceuticals) or are specialized in packing and processing (pre-processing e.g. bakery ingredients or less processed snacks).

Processed fruits, berries and nuts are natural ingredients in a wide range of products. They are confronted with fewer market barriers, bottlenecks and risks, thus generating easier and faster export success compared to fresh fruit.

As shown in Table 1, the organic export product category of fruits, berries and nuts are of importance for the three countries in this study. Armenia has high potential, followed by Moldova and Ukraine. The category contains a large number of products, so the assessment focuses only on the following:

Armenia: Apricots, peaches, pomegranate (dried non-sulphurized, kernel/shell for cosmetics, juices, purees, canned and IQF).

Moldova: Walnuts (shelled and oil), prunes/plums (dried), apples (dried), cherries (dried and jams, juices and IQF).

Ukraine: Berries (wild collection and farmed; dried and IQF), walnuts (shelled and oil).

In this study, viticulture products have been assessed primarily in form of raisins and sultanas included in the category of dried fruits.[70]

2.4.1. Trade statistics between EU and target region

This assessment focusses on different forms of processed fruits, as in comparison to fresh fruit these are easier to handle and offer good market opportunities as demand in the EU is steadily increasing. Some of the leading EU traders of dried fruits and nuts (non-organic and organic) face stronger competition by traders from other global markets resulting in shortage of raw materials and higher price levels. A growing middle class in Asia and Russia are able to afford dried fruits and nuts as a luxury food.

Trade of fresh fruit from the target region to the EU market is still low. This is partly due to relative long transport routes, but also to high requirements set by the EU for fresh fruit as well as poor traditional trade relations with the target region.

2.4.1.1. Dried fruits and nuts

Dried fruits and nuts were selected for the assessment as they offer a good potential in the EU market and can either be produced on large farms, or in groups of small-scale organic producers. Starting new EU trade relations is relatively easier when compared to the fresh fruit market. Also, in comparison to juices, purees, IQF and canned fruit, lower investments and costs are involved.

Apricots, prunes, apples and cherries

These products are among the leading dried fruits in terms of import values globally and in the EU since they are widely available in the target region with existing export experience. All of these products are well suited for organic production. Further, fruits and nuts such as pears, quinces, citrus, kiwis, almonds and hazelnuts are less relevant in current exports, but could broaden the offered range of organic products from the target region.

According to Trade Map, global dried fruit imports (within HS group 0813) had a value of €1.6 billion in 2013, of which the EU 28 had a share of 45 per cent. Leading dried fruit importing countries in 2013 within the EU are Germany (€156 million), the United Kingdom (€145 million), France (€61 million), the Netherlands (€45 million), Poland (€40 million) and Italy (€40 million). Some of these dried fruit importing countries are also leading in organic dried fruit imports (e.g. Germany, the Netherlands, the United Kingdom and France).

Highest trade values in global dried fruit trade are achieved by the HS group 081340 "fruits, dried not elsewhere specified" and had a value of €498 million in 2013 followed by prunes (€421 million), dried apricots (€317 million) mixtures of dried fruits €248 million and dried apples (€129 million).
EU imports are led by dried prunes (€186 million in 2013), HS group 081340 "fruits, dried not elsewhere specified" (€168 million), mixtures of dried fruit (€166 million), dried apricots (€131 million) and dried apples (€74 million).

[70] Other products from viticulture were not included as very few organic wineries were reported from the target region. In Armenia and Moldova, many old grape varieties are traditionally cultivated, which are suitable to elaborate half sweet to sweet wines and brandy. This appeals more to the Russian wine taste rather than the European. For Moldavian and Armenian (and Georgian) wines, Russia is the largest consumer market due to historical trade connections, although the country has partly stopped imports.

Armenia: HS group 081340 "fruits, dried not elsewhere specified" is the leading dried fruit export category from Armenia (€116,000 in 2013) followed by prunes (€48,000) and dried apricots (€20,000). Armenian export share of dried fruits to the EU was 13 per cent in 2013.

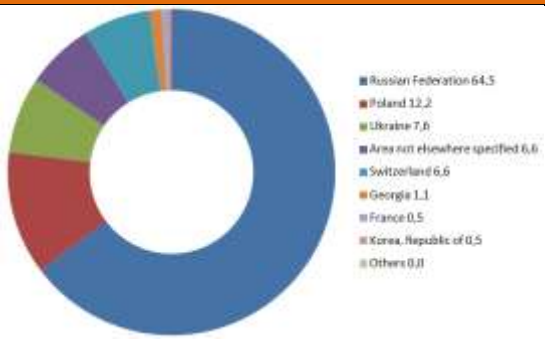
Moldova: Prunes are the leading dried fruit export category from Moldova with total exports of €1.6 million in 2013 followed by HS group 081340 "fruits, dried not elsewhere specified" (€1.4 million) and dried apples (€243,000). Moldovan export share of dried fruits to the EU was 27 per cent in 2013.

Ukraine: HS group 081340 "fruits, dried not elsewhere specified" is the leading dried fruit export category from Ukraine with total exports of €603,000 in 2013 followed by prunes (€152,000) and dried apricots (€29,000). Ukraine's export share of dried fruits to the EU was 17 per cent in 2013.

Main export destinations of the three countries for 2012 are shown in the following figures (non-organic and organic):

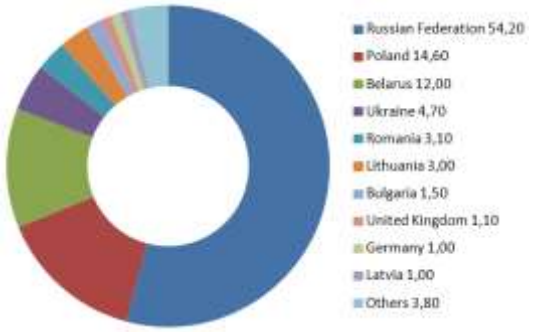
Figure 13: Export destinations of dried fruit from the target region 2013

Armenia (total non-organic and organic)



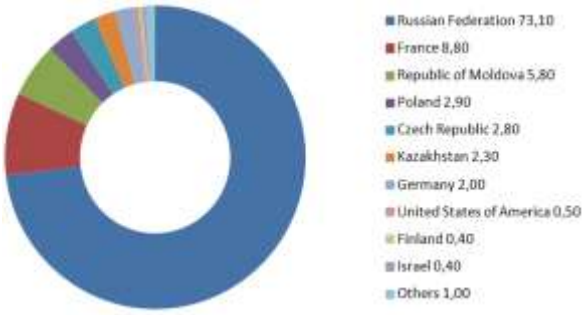
Dried fruits: Armenian export destinations of dried fruits 2013 in per cent of values (HS group 0813)

Moldova (total non-organic and organic)



Dried fruits: Moldovan export destinations of dried fruits 2013 in per cent of values (HS group 0813)

Ukraine (total non-organic and organic)



Dried fruits: Ukrainian export destinations of dried fruits 2013 in per cent of values (HS group 0813)

The three countries are exporting dried fruit predominantly to the Russian Federation. The export share to the EU market is relatively low, considering that the EU is the global leading market. Poland, France, Romania and Czech Republic are examples of current EU destinations from the target region, but main EU dried fruit importing countries still offer huge market potential.

Switzerland[71] is importing 6.6 per cent of Armenia's dried fruit exports and sales could be expanded. Generally, traded values from all three countries are still low and trade could grow along with the primary production without reducing traditional trade channels. This would diversify the markets of dried fruit exports and contribute to increased income for rural communities.

Walnuts

Walnuts are widely available from Moldova and Ukraine and have good market opportunities in the EU. In the global nut trade, walnut imports (total of shelled and in-shell €1.7 billion in 2013) rank second after almonds (€3.9 billion) and are followed by pistachios (€1.5 billion), hazelnuts (€1.3 billion) and macadamia (€303 million).

According to Trade Map, global shelled walnut imports (HS group 080232) had a value of €1.1 billion in 2013 of which the EU 28 had a share of 45.8 per cent. In-shell walnuts (HS group 080231) are traded in smaller volumes and had a value of €629 million in 2013. Leading shelled walnut importing countries in 2013 within the EU were Germany (€133 million), Spain (€72 million), France (€54 million), the United Kingdom (€46 million), the Netherlands (€37 million) and Austria (€26 million). Some of these walnut importing countries are also leading in organic walnut imports (e.g. Germany and France).

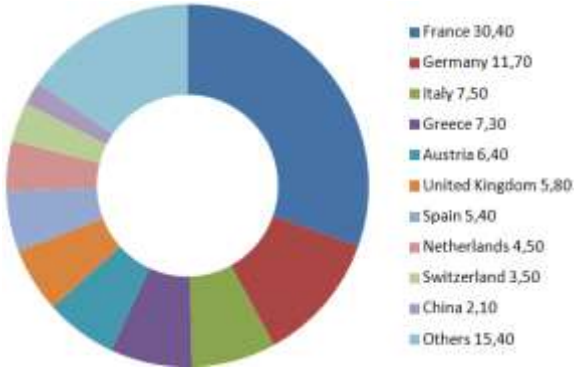
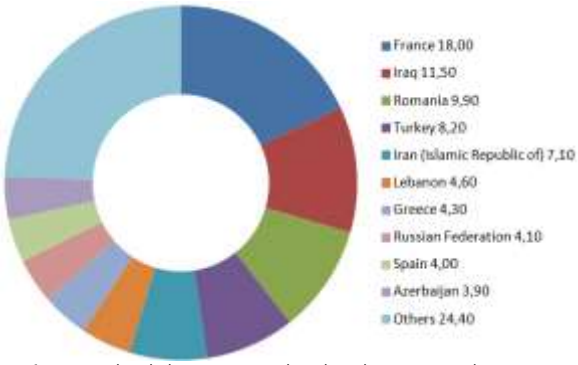
Moldova: Shelled walnut is the leading exported nut from Moldova with total exports in 2013 of €72 million followed by in-shell walnuts (€1.4 million). The Moldovan export share of shelled walnuts to the EU was 87 per cent in 2013.

Ukraine: Shelled walnut is the leading export nut from Ukraine with total exports of €51 million followed by walnuts in shell (€7 million) and shelled hazelnuts (€153,000) in 2013. Ukrainian export share of shelled walnuts to the EU was 53 per cent in 2013.

Armenia: Currently, there is no relevant nut export from Armenia.

Main export destinations of shelled walnuts from Moldova and Ukraine in 2013 are shown in the following figures (non-organic and organic):

Figure 14: Export destinations of walnut from Moldova and Ukraine 2013

Moldova (total non-organic and organic)	Ukraine (total non-organic and organic)
	
Walnuts: Moldovan export destinations of walnuts 2013 in per cent of values (HS group 0802)	**Walnuts:** Ukrainian export destinations 2013 in per cent of values (HS group 0802)

[71] Switzerland is not an EU country but an EFTA member.

From both countries, walnut exports to the EU market are continuing, but Ukraine still has potential to focus on the leading EU walnut importers (e.g. Germany and the United Kingdom).

2.4.1.2. Fruit and vegetable juices, purees, IQF, canned fruit

Fruit juices, purees, IQF and canned fruit were selected for the assessment, although in comparison to dried fruits such processing involves higher food safety requirements and investments, especially if these products are sold to the EU market. Fruit juices were selected for the assessment, as they are the leading processed fruit category from Ukraine as well as from Moldova. Only Armenia is exporting more preserved fruit (€6.3 million in 2013), in comparison to fruit juices (€2.2 million in 2013).

Fruit and vegetable juices

According to Trade Map, global fruit and vegetable juice imports (HS group 2009) had a value of €12.4 billion in 2013 of which the EU 28 had a share of 56 per cent. Leading fruit and vegetable juice importing countries in 2013 within the EU are the Netherlands (€1.2 billion), Germany (€1.2 billion), France (€959 million), Belgium (€929 million), the United Kingdom (€840 million) and Austria (€284 million). Some of these fruit and vegetable juice importing countries are also leading in organic fruit and vegetable juice imports (e.g. the Netherlands, Germany and France).

Global and EU trade values of fruit and vegetable juices are led by orange juice and had a global import value of around €4.7 billion in 2013 followed by apple juice (€2.3 billion).

Armenia: HS group 200989 "unfermented juice of fruit or vegetables" is the leading fruit juice export category from Armenia with total exports of €1 million in 2013 followed by apple juice (€325,000), tomato juice (€322,000), orange juice (€216,000), mixtures of juices (€131,000), pineapple juice (€68,000) and grapefruit juice (€42,000). The Armenian export share of fruit and vegetable juice to the EU was 5.3 per cent in 2013.

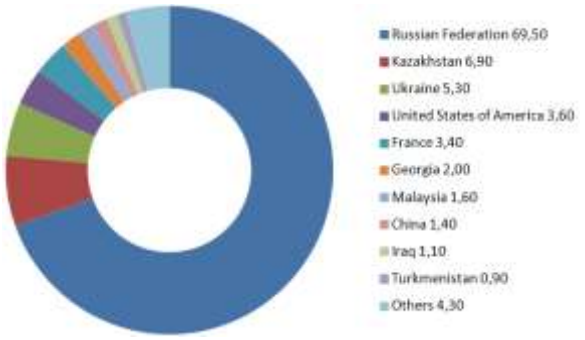
Moldova: Apple juice is the leading fruit juice export category from Moldova with total exports of €37 million in 2013 followed by juice mixtures (€1.5 million), orange juice (€540,000), tomato juice (€322,000) and grape juice (€256,000). The Moldovan export share of fruit juices to the EU was 91 per cent in 2013.

Ukraine: Apple juice is the leading fruit juice export category from Ukraine with total exports in 2013 of €165 million followed by tomato juice (€6.2 million), orange juice (€3.3 million), juice mixtures (€1.4 million), grape fruit juice (€188,000) and grape juice (€90,000). The Ukrainian export share of fruit juices to the EU was 64 per cent in 2013.

The main fruit and vegetable juice export destinations of the three countries in 2013 are shown in the following figures (total, non-organic and organic):

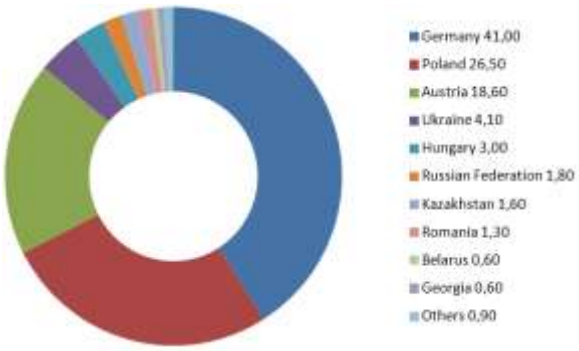
Figure 15: Export destinations of fruit & vegetable juices from the target region 2013

Armenia (total non-organic and organic)



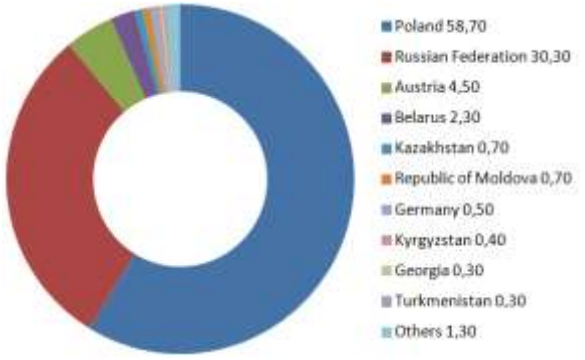
Fruit & vegetable juices: Armenian export destinations 2013 in per cent of values (HS group 2009)

Moldova (total non-organic and organic)



Fruit & vegetable juices: Moldovan export destinations 2013 in per cent of values (HS group 2009)

Ukraine (total non-organic and organic)



Fruit & vegetable juices: Ukrainian export destinations 2013 in per cent of values (HS group 2009)

Armenia is exporting fruit and vegetable juices mainly to eastern markets such as the Russian Federation, Kazakhstan and Ukraine.

Poland, Germany and Austria are major players in the global fruit and vegetable juice trade and are currently the main EU destinations for **Moldova and Ukraine**.

Ukraine and Moldova established a high share of fruit and vegetable juice exports to the EU, while Armenia would still need to develop the EU market.

Frozen fruit and berries

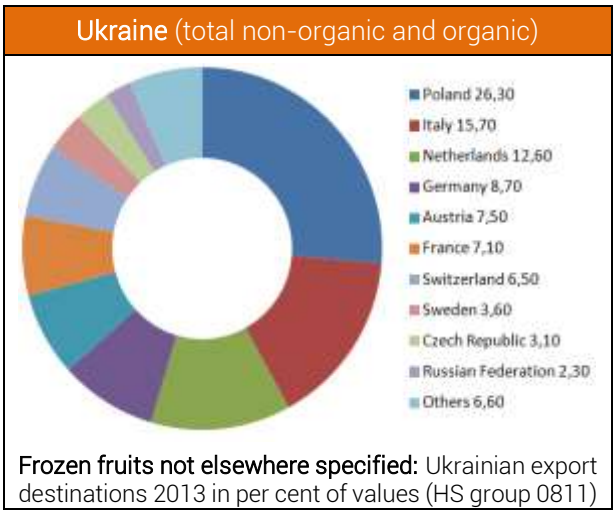
A lot of berries are traded within unspecific groups of HS codes like "fruits not elsewhere specified" and therefore the available information about the trade flow is limited and can only be assessed by way of examples. The category of frozen fruits and nuts not elsewhere specified (HS group 081190) had a global import value of €1.8 billion in 2013. A more specific category are raspberries and mulberries (uncooked HS group 081120) which had a global import value of €774 million in 2013 of which 70 per cent were exported to the EU. The traded import values are like those for frozen strawberries (HS group 081110), which had global import values of €714 million in 2013.

Leading importing countries of frozen raspberries and mulberries in 2013 within the EU were Germany (€156 million), France (€96 million), Belgium (€70 million), the United Kingdom (€40 million), Austria (€37 million) and the Netherlands (€32 million). Some of the mentioned frozen fruit importing countries are leading in organic frozen fruit imports as well (e.g. Germany, France, Belgium and Austria).

Armenia and Moldova have low and irregular exports of frozen fruits and nuts (Armenian exports were worth €46,000 in 2013 and were exported to Hungary, the Russian Federation and Switzerland). Moldovan exports were last registered in 2011 (€11,000 to the Russian Federation) and in 2012 (€48,000 to Belarus).

Ukraine's main frozen fruit export destinations for 2013 are shown in the following figures (non-organic and organic):

Figure 16: Export destinations of frozen fruit from Ukraine 2013



Frozen fruits not elsewhere specified: Ukrainian export destinations 2013 in per cent of values (HS group 0811)

Ukraine: Frozen fruits and nuts not elsewhere specified (HS group 081190) are the leading frozen fruit export category from Ukraine with total exports of €33 million in 2013. The Ukrainian export share of frozen fruits to the EU was 89 per cent in 2013.

Figure 17: Export destinations of frozen raspberry / mulberry from Ukraine 2013

Frozen raspberries and mulberries: Ukrainian export destinations 2013 in per cent of values (HS group 081120)

Ukraine: Frozen raspberries and mulberries had an export value of €1.2 million in 2013 whereas strawberries had an export value of €420,000. The Ukrainian export share of frozen raspberries and mulberries to the EU was 90 per cent in 2013.

The EU is the main Ukrainian export market for frozen fruit.

Preserved fruit

Ukraine: Nut and seed preparations are the leading export category of preserved fruits with total exports in 2013 of €17 million followed by fruit mixtures (€4.3 million), ground nuts (€2.8 million), strawberries (€2.6 million), fruit preparations not elsewhere specified (€1.1 million),

cherries (€821,000) and apricots (€451,000). The Ukrainian export share of preserved fruits to the EU was 8 per cent in 2013.

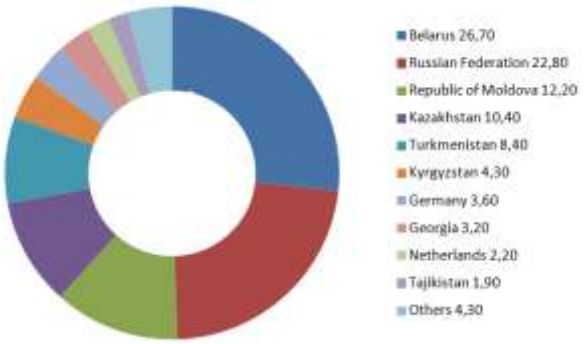
Moldova: Fruit preparations not specified elsewhere (HS 200899) was the leading preserved fruit export category from Moldova with total exports in 2013 of €721,000), followed by nut and seed preparations (€414,000), cherries (€233,000), apricots (€107,000) and peaches (€59,000). The Moldovan export share of preserved fruits to the EU was 30 per cent in 2013.

Armenia: The principal products exported were fruit preparations with an export value of €3.4 million in 2013 (HS 200899), followed by preparations of nuts and seeds with an export value of €1.0 million (HS 200819), cherries with (€962,000), apricots (€323,000), strawberries (€228,000) and peaches (€206,000). The Armenian export share of fruit preparations to the EU was 3.4 per cent in 2013.

For 2013, main export destinations of the three countries are shown in the following figures (non-organic and organic):

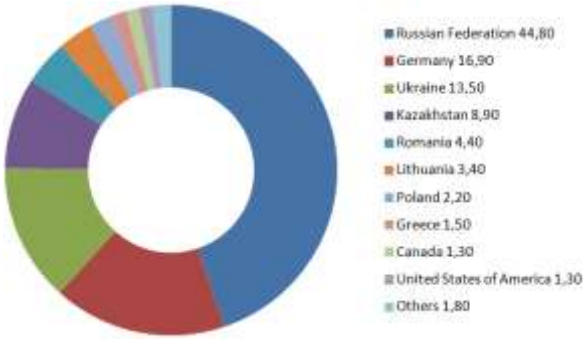
Figure 18: Export destinations of fruit preparations from the target region 2013

Ukraine (total non-organic and organic)



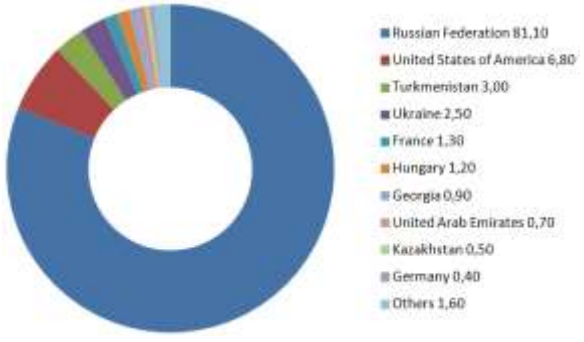
Fruit preparations: Ukrainian export destinations 2013 in per cent of values (HS group 2008)

Moldova (total non-organic and organic)



Fruit preparations: Moldovan export destinations 2013 in per cent of values (HS group 2008)

Armenia (total non-organic and organic)



Fruit preparations: Armenian export destinations 2013 in per cent of values (HS group 2008)

Fruit preparations from the target region are predominantly exported to the Russian Federation, Belarus and other eastern markets.

With some exceptions, the main EU importing countries of fruit preparations are not yet supplied by the target region (e.g. Austria, Belgium, France, Germany, Poland, the Netherlands and the United Kingdom) and could be developed as an export destination.

The exported values still offer room for growth along with growth of the primary production and processing without necessarily lowering traditional trade channels.

Fruit kernel oil

Many fruit processors are considering seeds and pomace as waste products and are not yet aware of their beneficial market opportunities. In order to achieve sustainable and waste-free processing, all side-products should be used as raw materials or as biomass for the production of biogas or as agricultural fertilizer. The market opportunities for extracts made from these side products need to be considered carefully as they can contribute to improved profitability from processing. Most fruit kernel oils, e.g. apricot, peach, plum oil, or seed oils like pomegranate[72] or grape, have active substances (e.g. anti-oxidants) which are useful for the processing of cosmetics or use as specialty food oils. Trade flow of these products is difficult to track in statistics, as in the Combined Nomenclature (CN8) e.g. apricot kernel oil is included in:

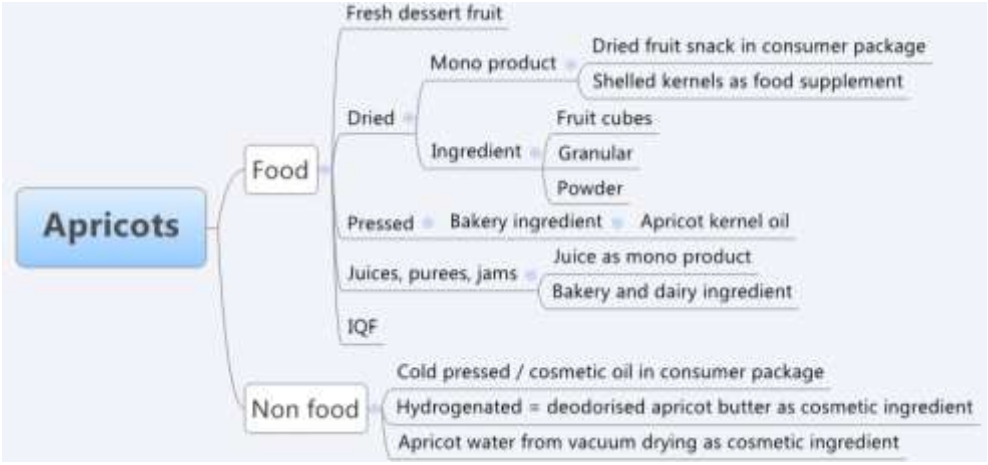
- 33012991: Terpene-less essential oils, including concretes and absolutes.
- 33019090: Concentrates of essential oils in fats, fixed oils, waxes, etc.

The current opportunities in the market for cosmetic ingredients are promising; therefore, the kernels left over from processing of juices, purees and jams should be properly dried and stored until sufficient volumes are collected. In some cases, the pomace that remains after juice processing can be utilized for extracts suitable for the cosmetic industry (e.g. in form of CO_2-extracts). Another example of fruit processing side-products is the fruit water left over from vacuum drying, which can be used as a cosmetic ingredient as it contains fruit oils. Leading importing EU countries for natural ingredients for cosmetics are Belgium, France, Germany, Italy, the Netherlands and the United Kingdom. These ingredients are also relevant for display at trade events like InCosmetics,[73] which brings together personal care ingredients suppliers, formulators, R&D and marketing specialists from around the globe.

2.4.2. Product distribution and trade flow

Generally, fruits and nuts can be used for a wide range of final consumer products that determine the involved market actors. As a practical example for apricots, a number of potential utilizations in organic and conventional markets are illustrated in Figure 19.[74]

Figure 19: Product tree for apricots



[72] Pomegranate is traded in smaller volumes but face growing international demand. Armenia has excellent conditions to produce pomegranate and exports fresh pomegranate to the Russian Federation.
[73] www.in-cosmetics.com
[74] Product trees for other products in are provided in Annex 4.2.

The main traded volumes of apricot products are used in the food industry as: fresh fruit, pressed juices, puree as a baby food ingredient, IQF and jams for the dairy industry, fruit puree as a bakery ingredient or dried as a snack ingredient, dried cubes for muesli mixes, powder as a food ingredient, and IQF for further food processing.

Apricot kernel oil is mainly used in the natural and organic cosmetic industry (usually as an oil for skincare, or in creams, body butters, lip care products, in facial masks, massage products, or in smaller volumes as a carrier oil e.g. for colour cosmetics and soaps). Only a small part is used as food oil and a bakery ingredient to provide a slightly bitter taste. Shelled kernels are offered as food supplements, but toxicity issues have been raised in the market segment for food (especially from varieties with bitter kernels).

The same EU importers and oil mills are supplying the cosmetic sector as well as the food sector.

Figure 20: Exemplary final organic products containing apricots

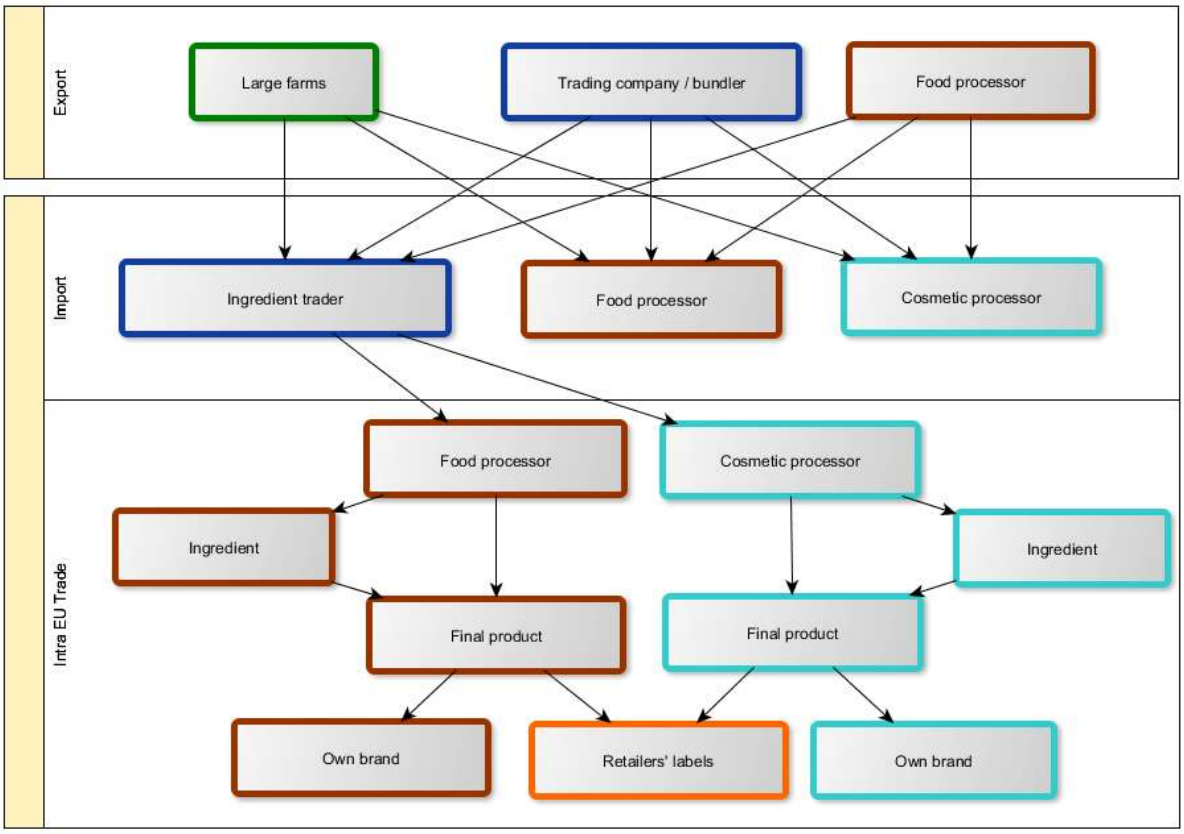
					
Organic dried apricots, Crazy Jack, UK	Organic apricot jam, Søbogaard, Denmark	Organic baby food: apple, apricot & cinnamon puree, Goodness Gracious, UK	Organic apricot juice, Beutelsbacher, Germany	Organic apricot kernels as food supplement, PlanetBIO, Slovenia	Organic cosmetic apricot kernel oil, Florame, France

Processed fruits and ingredients are traded by specialized ingredient and oil traders; commodity traders are less involved. Some large ingredient traders are specialized in providing natural ingredients and supply a global range of clients from the food and cosmetic processing segment. If demand for sufficient volumes increases due to improved logistics, then direct trade between exporters from the target region and EU processors would be viable.

Some of the potential clients are exclusively trading in organic products, like traditional processors with their own trademarks; others are trading both product lines (conventional and organic).

The cosmetic sector is much more driven by innovation in comparison to the food sector. The use of fruit ingredients is fashionable in natural and organic cosmetics; therefore, these ingredients are experiencing a strong growing demand. Consumers are seeking products with perceived health benefits that have less risk of undesired side effects, rather than those that contain chemical ingredients. The range of cosmetic ingredients is constantly growing thanks to new drying and extraction methods.

Figure 21: Exemplary import supply chain processed fruit (non-organic and organic)[75]



Some fruit processors from the EU[76] maintain their own branch and office in the target region in order to organize wild collection, farming, processing and trade near to their products' origin.

There are many opportunities for added value products through semi-processing steps like drying (e.g. slicing, cutting, vacuum drying of fruit powder), oil-milling,[77] and extraction (e.g. CO_2 extracts). One example of an added value product is apricot kernel oil, suitable as a cosmetic ingredient or bakery ingredient/food oil.

Exporting of processed fruits in the form of finished consumer products to 'established' organic EU markets (e.g. France, Germany, the United Kingdom) may be difficult. Final packaging, under the label of an EU company or retailer (private label), may be an option for a processor from the target region, if the processer has established good business relations. This approach is viable for minimally processed products, such as jam in buckets as bakery ingredients, apricot kernels as a food supplement, or dried apricots. In the organic business, the major tendency is to carry out the final stage of processing in the country of consumption

[75] In Graph 21, following colours are used for value chain functions:

[76] Examples are the juice processor Pfanner from Austria and the baby-food processor HIPP from Germany, both with facilities in Ukraine.

[77] Fruit kernels often are dried and stored until available volumes permit profitable oil pressing. As an alternative, dried fruit kernels can be sold to selected oil mills for oil pressing.

or in an EU country. Hence, in the short, medium and long-term, the target region usually maintains its role as a supplier of raw materials for established organic markets.

This situation is slightly different in trade with emerging organic markets in the EU like those in Eastern European countries (e.g. Czech Republic, Hungary and Poland). In some of these countries, there is a greater chance to enter the market and provide readily processed fruit products and concurrently establish the same organic products in the domestic market as well. Participation at organic trade fairs in emerging organic markets helps processors to gain market access with readily finished products; examples for such events are listed in Annex 4.4.1.

2.4.3. Market demand for organic fruits and nuts in the EU

The current and future EU market for processed organic fruits from the target region shows high potential. This is mainly due to the fact that the organic market volume is growing faster than organic production within the EU.

The information about organic production of fruits and nuts in the following subchapters was gathered from available statistical data on organic production and markets, as well as from a literature survey; current price levels were collected in personal interviews with EU importers and exporters of the target region (March to May 2014). The intention is to contribute market observations, but it must be noted that price levels are volatile and subject to rapid changes and big price differences paid by market players.

Production of organic fruits and nuts

Global organic fruit production in 2012 covered 0.94 million ha. Production is split into the following categories: Temperate fruit, 156,768 ha (+5.7 per cent since 2011); subtropical and tropical fruit, 209,969 ha (+9.8 per cent since 2011); grapes, 284,265 ha (+7.4 per cent since 2011); and other fruit, 291,018 ha, including 42,566 ha of berries (+3.9 per cent since 2011). Organic nuts were grown on 271,294 ha globally in 2012 (-0.4 per cent since 2011).

Statistical sources regarding organic production in the EU record permanent crops including fruit orchards and other crops like olives; these permanent crops have a high share of 13.1 per cent of organic land use in the EU, representing a relatively high percentage of 11 per cent of the total production of permanent crops in the EU (non-organic and organic). In 2011, the leading EU producers of organic permanent crops[78] (including fruit orchards) were; Spain (636,019 ha); Italy (302,468 ha); France (90,668 ha); Poland (85,594 ha); Greece (62,705 ha); Portugal (25,045); Germany (12,700 ha); Bulgaria (8,969 ha); Czech Republic (6,943 ha); and Austria (6,045 ha).

The category of permanent crops includes fruit trees and multiannual fruit bushes, but also other permanent crops (e.g. olives) as shown in Table 17. Mediterranean countries have a high share of organic permanent crop production. For example, Spain, Italy, Greece and Bulgaria cultivate up to one third of national organic land with permanent crops as the Mediterranean climate provides optimum conditions for the production of a wide range of crops, including olives, fruits, grapes, nuts and citrus fruits.

[78] EU Commission (2013). Facts and figures on organic agriculture in the European Union.

Table 17: Main permanent organic crops in the EU 2011[79]

Crop	Organic production in ha	Share of total EU organic permanent crop area in per cent
Olives	384,510	31
Fruit (excl. citrus fruit, grapes, olives)	**263,787**	**21**
Grapes	216,304	17
Nuts	**163,683**	**13**
Citrus fruit	29,838	2
Other permanent crops	201,167	16

Organic temperate fruits production

The world's leading organic producers of temperate fruits in 2012 were Poland (42,000 ha); Italy and the USA (18,000 ha each); Turkey (12,000 ha); France (10,000 ha), Germany (6,800 ha); Czech Republic (5,700 ha); Argentina and Romania (4,700 ha each); and China (4,000 ha).

Table 18: Global organic temperate fruit areas by crop group 2012[80]

Main crop	Area (ha)
Apples	80,148
Berries (cultivated)[81]	42,566
Fruit, temperate, no details	19,651
Plums	10,566
Apricots	10,364
Cherries	10,355
Fruit, temperate, other	10,188
Pears	8,098
Peaches	4,397
Peaches and nectarines, no details	1,624
Nectarines	834
Stone fruit, no details	529
Quinces	15
Total	**199,334**

As shown in Table 18, apples were the leading organic fruit from temperate zones, followed by berries. The global organic cultivation of berries in 2012 grew by 3.9 per cent since 2011.

[79] EU Commission (2013). Facts and figures on organic agriculture in the European Union.
[80] FiBL and IFOAM (2014). World of organic agriculture 2014.
[81] In addition, wild berries were collected from 7 million ha globally in 2012 (just as in 2011).

The 2012 organically certified areas for wild collection of fruits, berries and nuts are shown in Table 19:

Table 19: Global organic wild collection areas of berries, fruit and nuts in 2012[82]

Land use	Area (ha)
Berries, wild	7,007,624
Fruit, wild	24,706
Nuts, wild	983,322

European organic fruit production is often located in traditional fruit growing regions with optimum climatic conditions that prevent freezing of fruit flowers. In these regions the required infrastructure is available (e.g. input suppliers, controlled atmosphere (CA) and cold stores, sorting and packing facilities). The high degree of regional concentration of organic fresh fruit production is illustrated by the main apple producing countries shown in Table 20. These include Italy,[83] Germany[84] and Austria.

Table 20: Growth of harvest volume of organic apples in main EU producing countries[85]

Main organic apple producing countries in the EU	t in 2007	t in 2011
Italy (South Tirol)	28,809	43,349
Germany	32,511	34,537
Austria	2,244	10,862
Netherlands	4,774	5,673
Belgium	2,147	2,670
France	1,110	2,679
Total harvest as dessert fruit	**71,595**	**99,770**
Total harvest incl. industrial qualities	**75,029**	**111,242**

The harvest volumes in Table 20 exclude an additional considerable number of direct farm sales, which are not distributed in retail stores. The main organically traded varieties in 2011 were Golden Delicious, Gala, Jona (group of varieties), Elstar, Braeburn, Topaz, Pinova, Red/Stark Delicious and Idared.[86]

[82] FiBL and IFOAM (2014). World of organic agriculture 2014.
[83] South Tirol is producing 50 per cent of all organic apples in the EU.
[84] German organic apple production is mainly coming from two regions: Lake Constance and "Altes Land" near Hamburg.
[85] "Foreign supply of organic apples: Consequences for German organic apple producers", BÖLN project 08OE110.
[86] Traded varieties of organic apples are not preliminarily optimum varieties for organic cultivation (rust-resistant or -tolerant), but in many cases a "heritage" variety from those grown prior conversion to organic production.

Organic subtropical fruit production

Statistical data about organic subtropical fruit is registered in one group together with data about tropical fruit. Some subtropical fruits are relevant in the target region and the current organic global production is shown in Table 21.

Table 21: Global organic subtropical fruit areas by crop group 2012[87]

Main crop	Area (ha)
Fig	16,472
Date	4,765
Kiwi	4,706
Pomegranate	924
Persimmon	184

Fig is the leading subtropical organic fruit. It should be noted that many of the temperate fruits listed in Table 18 (like apricots, peaches, nectarines, plums and cherries) are also grown in subtropical areas, e.g. in Mediterranean countries.

EU imports of organic fruits and nuts[88]

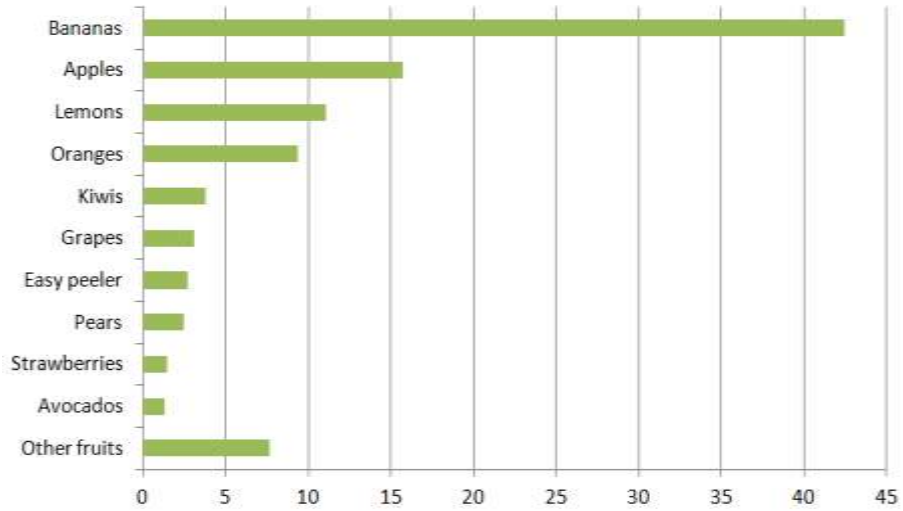
The share of organic fruit imports can only be described by examples or estimated, as specific organic trade statistics available for the EU market are inadequate, particularly for processed fruits. The following import shares in

Table 22 below were reported in a survey conducted in the German market, and are indicative for the fresh segment.

[87] FiBL and IFOAM (2014). World of organic agriculture 2014.

[88] For an orientation regarding the Central European (fresh) fruit consumption, Graph A gives an overview over the preferred (fresh) fruit types in the German organic market.

Graph A: Share of fresh fruit types in German organic sales 2013 (in per cent)



The information given in Graph A should not lead to the conclusion that processed fruits would originate from the same fruit species or would be consumed in similar distribution of volumes. A high priority for organic fruit producers in the EU is to produce for the fresh fruit segment.

Table 22: German organic production and import share[89]

Crop	Organic import in t	German production in t in 2012	Import share in per cent	Supplying countries in order of supply (high to low)
Apples fresh (2011)	26,000	26,000	50	Italy, Argentina, New Zealand, Austria, Chile, Netherlands, Slovakia
Strawberries fresh (2012)	1,100	2,280[90]	33	Spain, Italy

Temperate fruits such as apples, cherries and plums are imported especially in the counter-season for the fresh market, but a considerable part of the production from the supplying countries is sold in processed form. Mediterranean fruits including citrus, figs, apricots and peaches are produced in Greece, Italy and Spain, and some are imported from outside the EU (e.g. Turkey). Tropical organic fruits like banana, mango and pineapple are almost all imported to the EU (fresh and processed). Current origins of organic fruit imports to the EU are illustrated in Table 23.

Table 23: Selected organic import fruits and main supplying countries[91]

Organic fruit	Main supplying countries
Apricots	Turkey (wild and farmed, dried fruits, kernels, concentrate, flake, dried paste, frozen fruit and puree to Czech Republic, France, Germany; Uzbekistan (dried fruit, IQF, juice, puree, concentrate, kernels and blossom to Austria and Germany)
Peaches	Turkey (dried fruit, frozen, concentrate and puree to Germany); Uzbekistan (dried fruit, IQF, juice, concentrate, kernels to Austria and Germany); Egypt (to the Netherlands)
Pomegranate	India (to the United Kingdom); Serbia (vinegar to Germany); Turkey (to Germany); Uzbekistan (concentrate to Germany, dried fruit, flower, IQF, juice, concentrate to Austria)
Prunes	Turkey (in from of dried fruit to the United Kingdom; Uzbekistan (dried fruit and frozen, puree and kernels to Austria)
Apples	Chile (fresh and dried fruit to Germany and Switzerland; Argentina, New Zealand, Turkey (concentrate, dried fruit and puree to Germany); Serbia (vinegar to Germany and dried fruit, pulp, puree and frozen fruit to the Netherlands); Albania (dried fruit to Germany); Uzbekistan (concentrate, dried fruit, IQF, and leaf to Austria and Germany)
Cherries	Turkey (dried fruit, frozen, concentrate, puree to Germany), Serbia (frozen fruit with and without stone, puree), Uzbekistan (IQF, dried, juice, kernel, blossom, puree, concentrate to the Netherlands, Germany and Austria)
Strawberries	Albania (dried wild leafs to Germany); China (dried fruit to Germany, IQF to Sweden); Egypt (fruit leaf to Germany and the Netherlands); Serbia (frozen and puree to the Netherlands); Turkey (concentrate, frozen and puree to Germany); Uzbekistan (concentrate, dried fruit, IQF, juice and blossom to Austria)

[89] "Bio-Importe nach Deutschland". Ergebnisse aus dem BÖLN Projekt 090E065. Available at: http://www.bioimporte.de/fileadmin/images/subdomains/bioimporte/schaack-etal-2012-bioimporte.pdf

[90] The cultivated area of organic strawberries in Germany might be much higher as another source states a German volume of 6,746 tonnes harvested organic strawberries (from 759 ha) in 2012. Source: "Zahlen, Daten, Fakten. Die Bio-Branche 2014". Bund Ökologische Lebensmittelwirtschaft, BÖLW.

[91] Organic Farming Information System of the European Commission (OFIS). Available at: http://ec.europa.eu/agriculture/ofis_public/r9/ctrl_r9.cfm?targetUrl=filt

Bilberry	Belarus (to Poland)
Blackberry	Albania (dried leaf, flower, dried fruit to Germany); Belarus (to Poland); Serbia (frozen and puree to the Netherlands); Turkey (frozen to Germany); Uzbekistan (concentrate, dried, juice, IQF, juice and blossom to Austria)
Blueberry	Albania (dried and leaf to Germany); Canada (processed to the United Kingdom); China (IQF to Germany); Belarus (to Poland); Serbia (vinegar to Germany)
Cranberry	Belarus (to Poland); Canada (to the United Kingdom)
Goji berry	Canada (processed to the United Kingdom); Uzbekistan (dried, IQF, concentrate, juice to Austria)
Juniper berry	Albania (dried to Germany); Bosnia Herzegovina (dried to Germany); Uzbekistan (dried to Austria)
Raspberry	Albania (dried leaf, IQF to Germany); China and Serbia (vinegar to Germany, frozen and puree to the Netherlands); Turkey (frozen to Germany); Uzbekistan (concentrate, dried, juice, IQF, juice and blossom to Austria)
Citrus	South Africa, Uzbekistan, South America, Egypt
Persimmons	Uzbekistan (dried, slices to Austria)
Figs	Turkey (protoben figs to Czech Republic, and dried, diced, paste, flake, and roasted to Germany, dried to France and Sweden); Iran (dried to Germany)
Dates	Egypt (dried to Germany; Tunisia (fresh to the Netherlands); Turkey and Pakistan (to Sweden)
Raisins	India (to the United Kingdom), Turkey (dried and paste to Germany and dried to Sweden), Uzbekistan (to Germany, Austria and the Netherlands)

Organic nuts production

Complete statistics for organically cultivated nut species are not yet available. Walnuts are the most relevant nuts cultivated in the target region. After almonds, walnuts are second in the non-organic global nut trade, followed by hazelnuts, so it is assumed that walnuts have a similar position in organic trade.

Table 24: Leading EU producers of organic nuts 2011[92]

EU member state	Production of organic nuts in ha	Share of national organic area in per cent
Spain	96,990	5.4
Italy	27,839	2.5
Poland	22,028	3.6
France	1,788	0.2
Hungary	1,440	1.2

France, Germany, the Netherlands and the United Kingdom lead organic nut imports in the EU. A major German importer of conventional and organic dried fruit and nuts currently purchases 90 per cent of its organic walnut imports from Moldova and has expressed interest in further organic suppliers. According to EU import authorizations, the main exporters of organic walnuts to the EU are India, Turkey and Uzbekistan.

[92] EU Commission (2013). Facts and figures on organic agriculture in the European Union; Agence Bio (2013). France 2013.

2.4.3.1. Dried fruit and walnuts

The dried fruit market is still far from saturation, so price levels are sufficiently high for profitable production and processing. Importers state that raw materials are scarce and new competing consumption regions have entered the market (China, the Middle East and the Russian Federation). Fruit trade in general, and the fresh fruit trade in particular, is a highly volatile business as it depends on the climatic conditions of the specific year, the harvested qualities and available volumes in domestic and neighbouring countries. Simple processing steps like drying can contribute to buffering risks, as storage and transport is much easier than for more perishable fresh fruit.

According to the Global Berry Congress held in Amsterdam in April 2014, berries still have huge growth potential, especially in the organic segment. The target region could participate in the market growth of organic processed fruit imports, if competitive conditions and cost structures of production and processing are favourable.

Price levels for dried fruit

Table 25: Price levels – dried fruit (non-organic and organic)

Product	Price-level
Dried apricots, conventional (size 4)	Low price season €2.20/kg CIF Netherlands from Armenia. High price season €5.84/kg CIF Netherlands from Turkey (e.g. 2014 due to regional frost during flowering).
Dried apricots, organic (size 4)	Low season €3.20-3.65/kg CIF Netherlands from Turkey (2013). High season €8.76/kg CIF Netherlands from Turkey (e.g. 2014 due to regional frost). Up to €13/kg CIF Netherlands (wild apricots from Turkey).
Dried apricots, conventional, diced	€1.99/kg CIF Germany from China
Dried apricots, conventional, sulphurized Nr. 8	€4.37/kg CIF Germany from Turkey
Dried apples, conventional	€1.82/kg CIF Netherlands from China
Dried apples, conventional, diced	€4.12/kg CIF Germany from China
Dried apples, organic (chips, rings)	€10.00/kg CIF Netherlands from Austria
Dried plums, conventional, Ashlock 70/80 - 60/70	€2.89 - 2.97/kg CIF Germany from Chile
Dried lingonberry filling, conventional, bakery ingredient	€2.08/kg CIF Germany from Poland
Dried aronia, conventional	€3-4.00/kg CIF Netherlands from Romania
Dried cherries, conventional	€8.00/kg CIF Netherlands
Dried sultanas, conventional, Thompson jumbo	€2.10/kg CIF Germany from Chile
Dried sultanas, conventional, grade A type 9, standard	€1.46/kg CIF Germany from Turkey
Dried figs, organic	€4.00/kg CIF Netherlands from Iran

Organic dried cranberries, (sweetened with maple syrup or concentrated apple juice).	€6.22/kg CIF Netherlands from North America
Dried cranberries, conventional (sweetened with maple syrup or concentrated apple juice).	€5.18/kg CIF Netherlands from North America
Dried cranberries, conventional, soft, industrial quality	€2.70/kg CIF Germany from USA
Dried juniper berries, conventional	€3.22/kg CIF Germany from Eastern Europe
Dried barberries[93], organic	€19.00/kg CIF Netherlands from Uzbekistan

The price levels for many products (e.g. apricots) are highly volatile and change on a daily basis. Due to frost during apricot flowering in spring 2014, the import price went up to €13/kg. Some importers prefer to suspend sales until the price comes down again to a level viable in the market (max. €6/kg on long term, rather than trying to compete).

A Dutch trader stated interest in conventional and organic dried apricots from Armenia and would initially start with importing one container a year (each), possibly scaling up to one container every month. Organic wild collected apricot (currently mainly sourced from Turkey) is a product in strong demand, with potential availability also from Armenia.

A Dutch importer stated interest in buying dried organic blueberry, dried organic elderberry and dried organic aronia. Several tonnes per year per importer would be possible.

In the conventional dried fruit trade, those with traditionally known origins are preferred and are compensated by higher price levels, e.g. cranberries from the United States, dates from North Africa, figs and apricots from Turkey, prunes and raisins from Argentina, Chile, France and South Africa. Suppliers from other countries will have to compete by setting competitive price levels. They also need to gain a good reputation for providing high quality products prior to this. With the right approach, reputation can be achieved faster with organic products, as the market is smaller.

Price levels for walnuts

Shelled walnuts (as a snack) are often traded in the category of dried fruits: The great majority of walnuts are shelled before they are exported; importers prefer to buy from producers that shell the nuts at farm level.

Table 26: Price levels – walnuts (non-organic and organic)

Product	Price-level
Walnut, shelled, conventional, light halves	€8.0/kg
Walnut, shelled, organic, light halves	€8.5/kg
Pistachios, organic, roasted, salted	€14.00/kg CIF Netherlands from Iran

[93] Berberils vulgaris – barberry is available in Armenia (e.g. wild collection in forests) and cultivated in Moldova.

There is space in the market for considerable additional organic volumes; while the aim for an organic mark-up should be higher as the above €0.5/kg (which was mentioned by a German importer and equals an organic surplus of only 6.25 per cent).

Price levels for walnut oil

Nuts which are not suitable as half or broken nuts for the snack and food ingredient sector are suitable for oil pressing. Walnut oil is used in food and cosmetics. Availability of cold pressed organic walnut oil is low and importers are interested in cold pressed oil - pressed at origin.

For the non-organic cosmetic sector, importers refine conventional walnut oil in order to remove any colour and odour. The presence of aflatoxin is not an issue in conventional walnut oil, as refining by bleaching, deodorization, neutralization and active charcoal filtering are used to solve this problem in the conventional segment.

For the marketing of final consumer food oils, convenience for is a major concern; therefore, oil mills must first reduce intensity of taste and colour of walnut oil. In the conventional food oil sector, it is usual to add a certain amount of roasted oil after completing the refining process, to help achieve the desired taste and colour.

Table 27: Organic price levels – walnut oil

Product	Price-level
Conventional walnut oil from USA	€7/kg CIF (to Germany)
Organic walnut oil	Scarce at the moment, organic surplus depends on qualities and availability (current harvest). Organic walnut oil still counts as specialty oil; hence, a relatively high surplus could be expected (>30 per cent).

Organic walnut oil is scarce at the moment due to limited sources. Thus, it offers excellent market opportunities; however, the market could be oversaturated quickly if production and supply are too high.

A single major oil importer is importing 800 to 1,000 tonnes of conventional walnut oil annually, mainly from the United States. Large oil importers with a non-organic and an organic product range are trading organic volumes of around 5 per cent to 15 per cent of their total volumes. Some smaller, specialized organic oil mills are directly importing and trading a 100 per cent organic assortment. In comparison, they often are able and willing to pay higher price levels.

2.4.3.2. Organic juices, purees, IQF, canned

Specialized fruit farms carry out most organic fruit production. Trade is organized through producers' associations by private traders and organic wholesalers. Even if the EU fruit production mainly targets fresh dessert fruits, the role of processed fruit is similar to the one of juice (made from fallen or defective fruits). Industrial fruit (e.g. extra-large sizes) is very important as the price for juice fruits is strongly influencing the price for fresh dessert fruit. The main reason is that harvest costs for juice fruits are considerably lower, compared to dessert fruit, which needs particular care to prevent spoilage until consumption. Many farmers

decide whether the market pays profitably for proper harvesting or if the juice price is preferable in the case of an insufficient dessert fruit price.

For export of fruit juices, purees, IQF or canned fruits, a mature processing industry is needed to access the EU market and to meet its requirements.

Price levels for fruit juices, purees, IQF, canned[94]

Table 28: Organic price levels – processed fruit

Product	Price-level
Apricots, pitted, peeled halves, conventional, in 3 kg jars, pasteurized bakery ingredient	€0.90/kg CIF Germany from China
Apricot filling, conventional, bakery ingredient 70 per cent fruit	€1.54/kg CIF Germany from Poland
Apple, steamed slices, conventional, in 5 kg jars, pasteurized bakery ingredient	€0.64/kg CIF Germany from Italy
Peaches, pitted, peeled halves, conventional, in 3 kg jars, pasteurized bakery ingredient	€0.97/kg CIF Germany from Greece
Plum butter, conventional, bakery ingredient in 12 kg bucket	€1.33/kg CIF Germany from EU origins
Cherries, sour, steamed, pitted, conventional, in 5 kg jars, pasteurized bakery ingredient	€1.12/kg CIF Germany from Netherlands

Price levels for fruit kernel oils

Table 29: Organic price levels – fruit kernel oils

Product	Price-level
Organic apricot oil	€9-10/kg CIF Germany from Turkey / Pakistan
Organic rosehip kernel oil	€14.60-18.25/kg CIF Germany
Organic Pomegranate kernel oil	€25-30/kg CIF Germany

In the interviews, some importers said that they would like to buy on an annual basis, 10 to 15 tonnes of organic apricot oil, 10 to 20 tonnes of organic rosehip kernel oil, and 5 tonnes of organic pomegranate oil. In addition, traders said that organic sea buckthorn oil, cold pressed organic safflower seed oil, organic plum kernel oil and organic almond oil were scarce, due to limited supply; thus, these oils offer excellent market opportunities.

2.4.4. Lessons learned – the importer's perspective

The information in this chapter is based on interviews with EU importers. Pragmatic points of view from importers are given, which are related to current product specific issues and general experience in business relations in the target region.[95]

[94] Further price info is available at: http://www.intracen.org/itc/market-insider/fruit-juices-pulps-and-purees/
[95] For detailed information on organic exports, please consult the export manual launched by FiBL in July 2014: "Exporting from Ukraine".

Business reliability: EU traders of processed fruits and nuts did not mention specific obstacles, but they referred to repeated cases of fraud in the organic grain commodity business which caused general damage to the image of the organic sector in Moldova and Ukraine, causing concern among EU importers.

Processed fruit in general: As set out in the chapter about market access requirements, EU importers and processors are certified according to multiple standards. These are not only legal and private organic standards, but also food safety standards such as IFS, BRC or ISO 22.000, required by their customers (e.g. retailers). These criteria include requirements for the entire value chain (primary production, processing, packing, transport and storing etc.). Hence, importers ask new suppliers to fill in a supplier questionnaire in order to ensure if a supplier is already satisfying most of the requirements along the supply chain and if its development process is extensive. If such a questionnaire is not answered and sent back to the importer, the relationship is null.

Commonly, questionnaires for first time suppliers include the following aspects:

- Responsible person for general management and quality management
- Offered product groups
- Availability of specifications
- Availability of product analyses and documentation
- Availability of a system to handle non-conforming products
- List of relevant activities carried out
- Availability of a process flowchart
- Description of processing locations
- Supply chain information (sourcing from defined origins and suppliers)
- Criteria for selection of suppliers
- Internal standards for transportation
- Involved domestic food laws for the processing
- Involved domestic laws for drinking water
- Access to drinking water
- Separate disposal of sewage
- Hygiene and health directives and facilities
- Employee training on food safety and quality
- Hazard analysis and risk assessment
- Certifications on food hygiene, quality management and organic production/processing/transport
- Technical equipment and processes to clean raw materials
- Inspection of incoming goods
- Pest control
- Monitoring and documentation of storage conditions
- Traceability system in place

As a next step, and prior to a first order, importers ask for suppliers' specifications and the stated qualities. They verify whether the product fits their expectations and then assess product samples. Quality parameters include taste, appearance, and absence of shell fragments, aflatoxin levels, etc.

Quality- and MRL-testing is monitored at origin. Additional laboratory analyses by EU laboratories are welcome. The recommended MRLs for organic products set by the German sector organization BNN[96] are applied by relevant EU importers.

Before accepting a new supplier, some importers run their own audits, focussing on quality issues, hygiene, negotiated prices, volumes and payment conditions.

Dried fruit: Good product appearance with natural vibrant colours is important for dried fruit as are pleasant sensorial properties and suitable sizes of the machine cut. Drying should prevent solar radiation as sunlight destroys vitamins, aroma and colours. Suitable solar tunnel dryers are available, which prevent direct sun radiation by using a dark cover foil.

Fruit juices: The author assessed, during BIOFACH 2014, the current offer of an Armenian exporter of organic apricot juice and pomegranate juice. In comparison to common products in the EU market, these juices had a pale colour, aromatic qualities seemed to be low, and a slightly burnt aroma was observable. The assessment concluded this could be due to lack of pasteurization of the juices. The exporter stated that they were heated up to 100°C at a pressure of one atmosphere. This method is considered to be a mode of sterilization, rather than a pasteurization method. In the modern juice industry, a minimization of the applied temperature (level and duration) and a fast cooling after pasteurization is usually done in order to preserve at a maximum, the natural qualities of the juice. Plate heat exchangers are used to protect natural properties and to achieve long shelf life until bottles are opened for consumption. Hence, technical training of skills and investment in suitable technology are required in order to prepare export success for Armenian exporters.

Walnuts: Packing of walnuts can be done in carton boxes of 10 to 12.5 kg with a double-layer plastic bag inside and vacuum sealing. CO_2 pressure-chamber treatment is optional, but not required or carried out by walnut importers.

Walnut oil: Traceability and compliance with maximum residue levels are important (organic: compliance with BNN guidelines would be ideal). 100 per cent exclusivity is not a precondition for bigger oil traders as they are not able to pay more than average price levels, in contrast to specialized organic importers and oil fillers.

2.4.5. Key observations with regard to fruits, berries and nuts

Addressed to producers, processors and exporters

- Processed organic fruits and berries have excellent opportunities on the EU market and fewer risks are involved compared to fresh fruits. The product range of dried fruits is combinable with walnuts as mainly the same traders and packers are involved.
- Dried fruits face particular scarcity in the market as global levels of new consumption markets evolve. Hence, price levels are suitable to create added value throughout the value chain and to create new possibilities for rural income. Proper handling of dried fruits requires less investment, in comparison to juices, pulps, fruit powder, canned fruit or IQF.
- In spite of low current exports of dried fruits to the EU from the target region, market entrance with this product range is assessed to be much easier in comparison to other processed goods (e.g. fruit preparations).

[96] Bundesverband Naturkost Naturwaren Herstellung und Handel e.V. (German umbrella organization for the organic specialized food sector).

- Products formerly considered as waste materials do find new markets, e.g. fruit kernels, which are mainly used in the cosmetic industry in the form of oil and fats, as well as (CO_2-) extracts, made from fruit shells and kernels. EU importers for this range of natural ingredients for cosmetics are located for example in Belgium, France, Germany, Italy, the Netherlands and the United Kingdom.
- While a very high share of fruit juices from Ukraine and particularly Moldova are exported to the EU (via branch offices and facilities of EU juice companies), Armenia exports small volumes to completely different markets.
- For EU market entrance with preserved fruits there are opportunities like bakery ingredients in buckets. This is a good first step into the market prior to offering, e.g. private labelling for finished consumer products.
- The additional certification against private standards by organic associations allowing the use of their logos offers fewer advantages (compared to commodities like cereals, oilseeds and pulses, see chapter above). This option can wait until there is a concrete request from a customer.

Addressed to organizations supporting the organic sector

- Organic production and export statistics are not available or reliable enough for the target region. It would be useful to improve reporting in order to compare non-organic with organic exports, and to provide exporters with current figures, trends and opportunities.
- On a global level, the EU is the leading market for fruit products including dried fruit, shelled walnuts, fruit and vegetable juices, and frozen fruit and berries. Organic exports from the target region should focus on the leading importing countries. Few dried fruits exports to the EU have materialized. The best opportunities for the export of organic dried fruits have been assessed for France, Germany, the Netherlands and the United Kingdom.
- Even small markets offer valuable opportunities: the fact that Switzerland is buying 6.6 per cent of Armenia's dried fruit exports illustrates the potential of further expanding exports to the European market.

Country specific observations

Armenia:

- Armenia has an interesting fruit range suitable for organic exports in processed form. Even if export quantities to the EU are still low, market entrance can be considered feasible with suitable products and qualities.
- Farmed and wild apricots are ideal as products to start with; the range of products offered can be expanded stepwise.
- The development of organic value chains of (dried) fruits and vegetables will contribute to domestic food security, in addition to employment and income generation.
- The ability of the Armenian fruit juice and preserved fruit industry to comply with EU standards and demand needs to be further evaluated; most probably (major) investments are required prior to an expansion of exports.

Moldova:

- The mature Moldovan juice and preserved fruit industries already have a high share in exports to the EU. Thus, the broadening of the exported product range to include organic juices and preserved fruits to existing EU clients is viable.
- Moldovan non-organic and organic walnut trade is successful. EU clients are buying shelled walnuts directly from producer associations. This business can be further expanded as demand is still higher than supply. Discarded qualities are suitable for oil pressing as value added product, the processing of which could be done in producer groups. Walnut oil is currently scarce and offers interesting price levels.

Ukraine:

- Like Moldova, the mature Ukrainian juice industry has already achieved a high share of exports to the EU. The broadening of the range of fruit juices with organic quality to existing and new EU clients is viable.
- Export of frozen berries and fruits (predominantly to the EU) is already a mature business and an organic market already exists. Further expansion is viable as similar clients can be addressed.
- Walnuts are available from Ukraine and are suitable for conversion to organic farming. Furthermore, walnuts are ideally combinable with dried fruit exports. Ukrainian exports of walnuts in shell are assessed as high (14 per cent) compared to Moldova (2 per cent) and offers opportunities for value addition.

2.5. Herbs and honey

The product group of herbs and honey is traded in limited volumes and relevant importers are specialized on one of these product groups. Medicinal herbs and aromatic plants are currently used as natural ingredients in a wide range of products (e.g. herbal teas, as medicinal ingredient, food supplement and in form of extracts for cosmetic and pharmaceutical use). Honey is mainly used in the food sector and in some cases for cosmetics, while by-products from beekeeping are principally used as cosmetic, pharmaceutical ingredient and food supplement. As shown in Table 1, the organic export product category of herbs and honey is of importance for all three countries, with the highest importance assessed for Armenia, followed by Moldova and Ukraine.[97] A huge number of single products are involved; hence, the prioritization for the assessment focused on the following products:

Armenia:

- Herbs & wild collection: Ingredients for herbal teas (thyme, mint, St John's wort, rosehip, sea buckthorn)
- Farmed condiments: black basil, tarragon
- Honey: Bulk export (multi-flower mountain honey, mono-flower/mono-origin honey)

Moldova:

- Herbs & wild collection: dried rosehip
- (Honey: Only limited organic volumes are available)

Ukraine:

- Farmed herbs & wild collection
- (Honey: There is not enough production for the organic domestic market yet)

[97] Please refer also to Table 42 in Annex 4.4.4

2.5.1. Trade statistics between EU and target region

2.5.1.1. Medicinal herbs and aromatic plants

According to Trade Map, total global medicinal herb imports had a value of €2.7 billion in 2013 of which the EU 28 had a share of 22 per cent. Leading medicinal herbs importing countries 2013 within the EU are Germany (€177 million), France (€72 million), the United Kingdom (€64 million), Italy (€63 million), Spain (€47 million), the Netherlands (€40 million), Belgium (€30 million), Poland (€20 million), Austria (€14 million) and Czech Republic (€13 million). Some of these medicinal herbs importing countries are leading in organic imports as well (e.g. France, Germany and the United Kingdom).

Ukraine: Total medicinal herb exports 2013 of Ukraine were worth €5.1 million of which 52 per cent were exported to the EU.

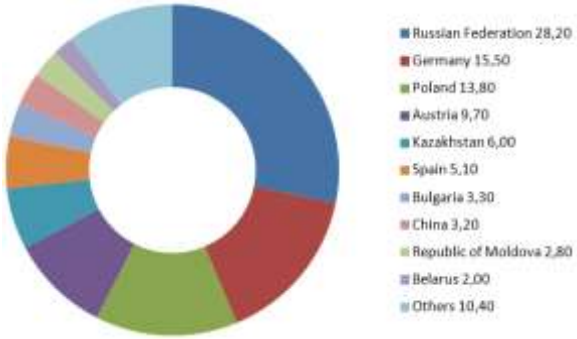
Moldova: Total medicinal herb exports 2013 of Moldova were worth €310,000 of which 38 per cent were exported to the EU.

Armenia: Total medicinal herb exports 2013 of Armenia were worth €118,000 of which 1 per cent was exported to the EU.

Main export destinations 2013 of the three countries are shown in the following figures (non-organic and organic):

Figure 22: Export destinations of medicinal herbs from the target region 2013

Ukraine (total non-organic and organic)

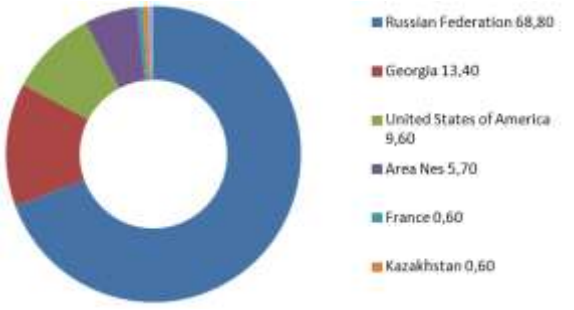


Medicinal herbs: Ukrainian export destinations 2013 in per cent of values (HS group 1211)

Moldova (total non-organic and organic)

Medicinal herbs: Moldovan export destinations 2013 in per cent of values (HS group 1211)

Armenia (total non-organic and organic)



Medicinal herbs: Armenian export destinations 2013 in per cent of values (HS group 1211)

Medicinal herbs from the target region are mainly exported to the Russian Federation, Belarus and other eastern markets.

To a smaller degree, some EU importing countries of medicinal herbs are supplied by the target region (e.g. Austria, Germany, Poland, Romania and Spain) but there is market potential in other importing countries (e.g. Belgium, France, Italy and the United Kingdom).

2.5.1.2. Honey and beekeeping by-products

Honey

According to Trade Map, total global honey imports had a value of €1.5 billion in 2013 of which the EU 28 had a share of 53 per cent. Leading honey importing countries 2013 within the EU are Germany (€242 million), the United Kingdom (€95 million), France (€85 million), Italy (€57 million), Belgium (€51 million), Spain (€40 million), Poland (€36 million), the Netherlands (€34 million), Austria (€26 million) and Sweden (€16 million). Some of these honey importing countries are also leading in organic honey imports (e.g. Germany, France and the United Kingdom).

Ukraine: Total honey exports 2013 of Ukraine were worth €40 million of which 79 per cent were exported to the EU.

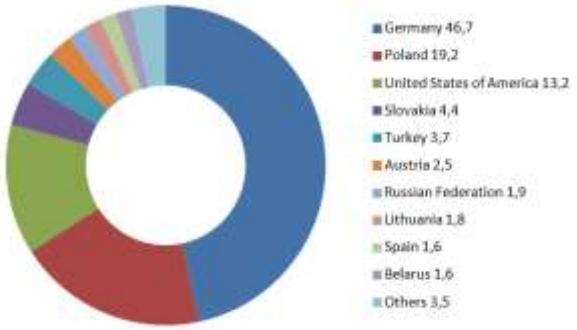
Moldova: Total honey exports 2013 of Moldova were worth €1.8 million of which 86 per cent were exported to the EU.

Armenia: Total honey exports 2013 of Armenia were worth €74,000 with no exports to the EU due to a former import ban which was due to a formerly lacking monitoring system in Armenia.

The total export destinations 2013 of the three countries are shown in the following figures (non-organic and organic):

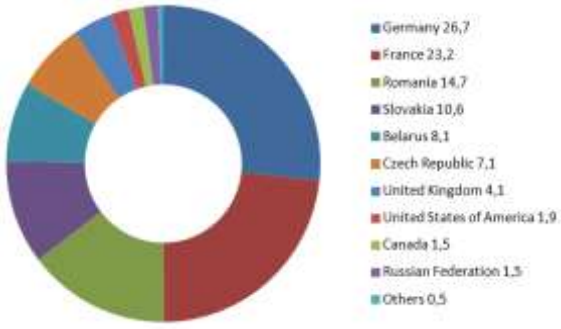
Figure 23: Export destinations of honey from the target region 2013

Ukraine (total non-organic and organic)



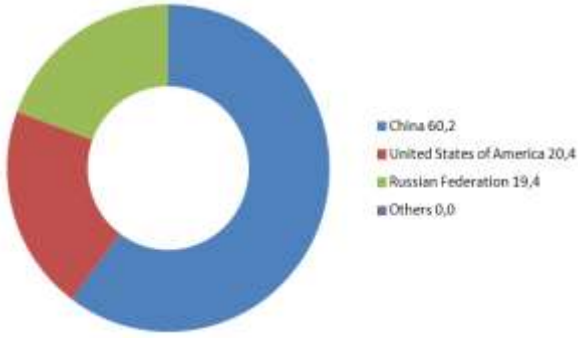
Honey: Ukrainian export destinations 2013 in per cent of values (HS group 0409)

Moldova (total non-organic and organic)



Honey: Moldovan export destinations 2013 in per cent of values (HS group 0409)

Armenia (total non-organic and organic)



Honey: Armenian export destinations 2013 in per cent of values (HS group 0409)

While Moldova and Ukraine export honey primarily to EU destinations, Armenia exports mainly to China.

Moldova and Ukraine could focus on exports of organic honey to clients in France, Germany and the United Kingdom, while Armenia could also sell honey to the EU. Its organic mountain honey could be sold as a specialty product through advertising of its distinctive qualities and health properties. The recent opening of the EU market for honey from Armenia[98] offers an excellent opportunity for the country to diversify its international honey and other export markets.

By-product: Beeswax

According to Trade Map, total global beeswax imports had a value of €88 million in 2013 of which the EU 28 had a share of 48 per cent. Leading beeswax importing countries in 2013 in the EU, in order of import totals, are Germany (€18.5 million), France (€10.1 million), the United Kingdom (€3.8 million), Italy (€3.6 million), Spain (€3.1 million), Greece (€1.9 million), Poland (€1.6 million), Belgium (€1.1 million), Romania (€0.9 million) and Slovakia (€0.8 million). Some of these beeswax importing countries are also leading in organic beeswax imports (e.g. Germany, France and the United Kingdom).

At present, there are no beeswax exports registered from Armenia, Moldova and Ukraine in Trade Map. Restrictions are set by the import authorities for the use of beeswax from Armenia, Moldova and Ukraine for sheet comb bases to prevent spread of diseases in beehives. Potential residues from bee treatment with pharmaceuticals in honey and wax need to be monitored.

2.5.2. Product distribution and trade flow

Due to the good performance of the EU natural ingredients sector (including global re-exports) the demand for natural ingredients is continuously growing to higher price levels (due to generally higher costs of food and raw materials in recent years), even though the performance of other sectors was stagnating in most of the traditional European markets due to the economic crisis and they still need time to recover.

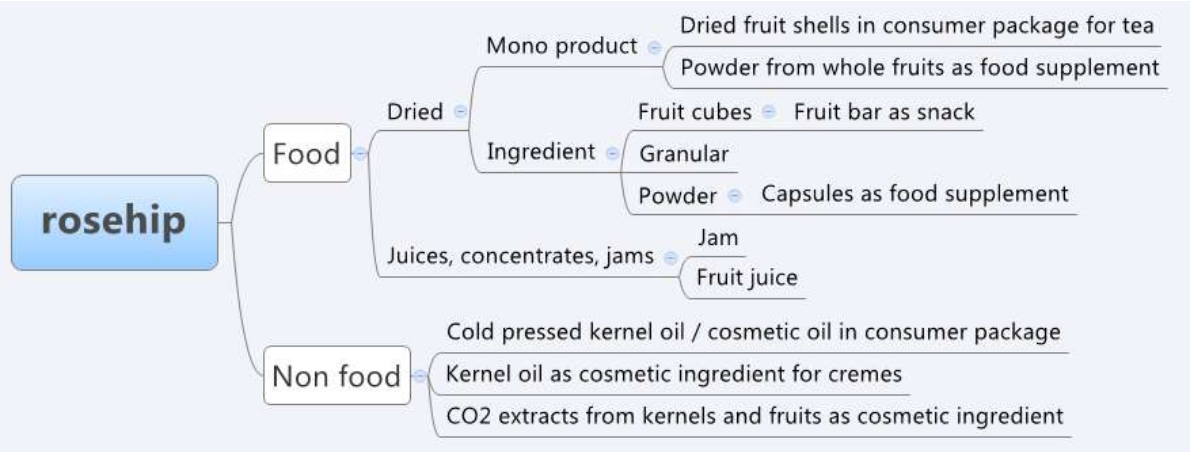
In the sourcing of raw materials, scarcity of resources is enhancing direct and long term relationships with exporters and producer groups. In comparison to spot markets, this approach facilitates quality assurance and thus supports the integrity of brands.

Even though the use of private labels on medicinal products in the EU is not allowed, pharmaceutical processors often prefer to purchase certified organic ingredients because of their much lower content of pesticide residues. The same is true for herbal and spiced teas.

Generally, herbs and honey can be used for a wide range of final consumer products. Therefore, as a practical example for wild collected rosehip, a number of potential utilizations in organic and conventional markets are illustrated in Figure 24.[99]

[98] Veterinarian import authority Hamburg (see: www.hamburg.de/grenzdienst): Honey and Royal Jelly for human food consumption can be imported, whereas there might be restrictions for beeswax for sheet comb bases. Beeswax imports for other technical uses are permitted from Armenia, Moldova and Ukraine.
[99] Product trees for other products are provided in Annex 4.2

Figure 24: Product tree for organic rosehip



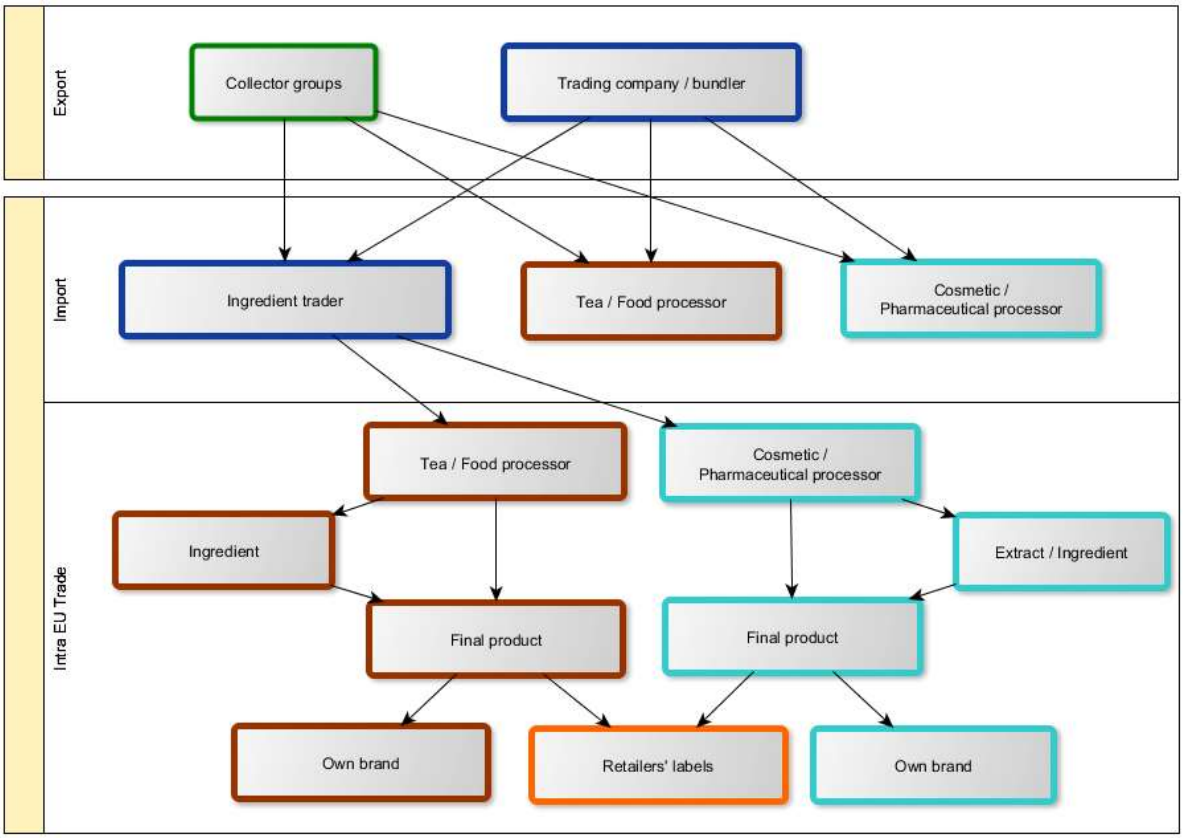
The main traded volumes of rosehip products are used in the food and cosmetic industry as dried fruit for teas, in concentrates/juices and puree as baby food ingredients, in jams, and as powder for food supplements.

Rosehip kernel oil is predominantly used in the natural and organic cosmetic industry (mainly oil for skincare and as an ingredient for creams, body butters, sun care and massage products). It has a short shelf life; therefore, it is often mixed with oils rich in vitamin E during processing. Rosehip provides properties for fast skin regeneration.

Figure 25: Exemplary final organic products containing organic dried rosehip

				
Organic and fair-trade rosehip tea, Hampstead Tea, the United Kingdom	Organic rosehip jam, Verfeuille, France	Organic fruit bar with rosehip concentrate, as a snack, Schuldt Weber, Germany	Organic rosehip powder from whole fruits as food supplement, Raab Vitalfood, Germany	Organic rosehip BioRenegerate oil with CO_2 extracts from fruits and kernels, Pai Skincare, the United Kingdom

Figure 26: Exemplary import supply chain for medicinal herbs and aromatic plants (non-organic and organic)[100]



There are various options for adding value to products through semi-processing steps such as drying, slicing, cutting, milling (e.g. of fruit powder), oil-milling (e.g. of kernels), extraction (e.g. CO_2-extracts from kernels and fruit shells).

Export of processed products in the form of finished consumer products to 'established' organic EU markets (such as France, Germany, the United Kingdom, etc.) is difficult. Nonetheless, if good business relations were established, trusted processors from the target region could produce final consumer packaging using labels from an EU company or retailer (private label). In the organic business, however, final processing tends to take place in the EU or another consuming country. Thus, for established organic markets the target region will probably maintain its role as a supplier of raw materials or minimally processed ingredients.

This situation is slightly different in trade with emerging organic markets in the EU in Eastern European countries (e.g. Czech Republic, Hungary and Poland), where the chances are higher for entering the market with readily processed products. This change would probably also increase demand for the same organic products in the country of origin. Participation in organic trade fairs in emerging organic markets is a useful way for processors to gain market access with finished products; examples of such events are listed in Annex 4.4.1.

[100] In Figure 26, following colours are used for value chain functions:

2.5.3. Market demand for organic herbs and honey in the EU

The current as well as the future EU market of processed organic herbs and honey from the target region has great potential. This is mainly due to the fact that the organic market volume is growing faster than the organic production within the EU, but also because organic raw materials are used as ingredients for some conventional products as residual levels are lower.

With regard to herbs, the German market is leading in imports, processing and consumption of medicinal and aromatic plants in the EU (e.g. in the form of herbal and fruit teas). The German herbal and fruit tea trade association (WKF) reported a recent market record of 12.9 billion cups of herbal tea consumed in Germany in 2013.[101] The current top 10 herbal tea ingredients in Germany are ginger, lime, fruit-chai, currants, elder, mint, orange, apple and fennel. The leading herbal tea category was single-herb teas (53.8 per cent, led by peppermint leaf, fennel fruit and chamomile flower), while mixtures of herbs were consumed at a share of 46.2 per cent.

German retail sales of herbal and fruit teas were 38,844 tonnes in 2013 (at an annual growth rate of 2.8 per cent) of which organic herbal teas had a share of 5.7 per cent with around 2,200 tonnes (at an annual growth rate of around 4.6 per cent).

The information about organic production of herbs and honey in the following subchapters was gathered from available statistical data on organic production and markets as well as from a literature survey. Current price levels were collected from the ITC website on market information[102] and in personal interviews with EU importers (April to June 2014). The intention is to contribute market observations, but it has to be taken into consideration that price levels are volatile and subject to rapid changes; thus, big price differences are paid by market actors.

2.5.3.1. Organic medicinal herbs and aromatic plants

Production

The global organic production of medicinal and aromatic plants on arable land in 2012 was reported to be 71,183 ha (-16.2 per cent since 2011), plus 39,821 ha as permanent crops (-15.9 per cent since 2011). Medicinal and aromatic plants from certified organic wild collection were collected on 3.1 million ha in 2012.

The global area of total certified organic wild collection in 2012 was reported with 30.4 million ha (-4.2 per cent since 2011) including the following crops.

[101] WKF Wirtschaftsvereinigung Kräuter- und Früchtetee e.V. (2014). Rekord in der Kräuter- und Früchtetee-Tasse, Pressemitteilung Mai 2014. Available at: http://www.wkf.de/fileadmin/wkf_redaktion/Fotos/Marktdaten/2014-05_Marktzahlen2013-3-1.pdf

[102] www.intracen.org/itc/market-info-tools/market-information

Table 30: Global organic wild collection areas by crop group in 2012[103]

Land use	Area (ha)
Wild collection, no details	**11,441,497**
Medicinal and aromatic plants, wild	**3,126,711**
Wild collection other	**65,073**
Apiculture	6,804,699
Forest honey	110,130
Berries, wild	7,007,624
Fruit, wild	24,706
Marula, wild	70,000
Mushrooms, wild	2,902
Nuts, wild	983,322
Oil plants, wild	455,494
Palm sugar	72
Palmito, wild	66,780
Seaweed	200,000
Total	**30,359,009**

The table above shows statistical data about organic wild collection; certain overlaps exist with the earlier chapter of fruits, as the collected product group is not always reported in detail.

Price levels herbs and spices

The following prices are indicative of price levels when traded in major volumes:

Table 31: Indicative conventional and organic price levels – herbs and spices

Medicinal herbs (cultivated)	Price-level
Calamus rhizome (European Pharmacopoeia)	€5.99/kg CIF Germany
Chirata herb (European Pharmacopoeia)	€5.23/kg FOB from India
Fennel fruit (European Pharmacopoeia)	€1.07/kg FOB from Egypt
Fennel fruit (European Pharmacopoeia)	€3.77/kg CIF Germany
Fenugreek seed (European Pharmacopoeia)	€0.76/kg FOB from Egypt
Nigella seed (European Pharmacopoeia)	€1.87/kg FOB from Egypt
Herbs	**Price-level**
Basil, dried, conventional	€2.16/kg FOB from Egypt
Dill weed, dried, conventional	€2.01/kg European origin
Marjoram, dried, conventional	€2.88/kg FOB from Egypt
Mint, dried, conventional	€4.54/kg FOB from Egypt
Oregano, conventional	€2.56/kg FOB from Turkey
Parsley, dried, conventional	€5.06/kg European origin

[103] FiBL and IFOAM (2014). World of organic agriculture 2014.

Rosemary, dried, conventional	€1.61/kg FOB from Morocco/Spain
Sage, dried, conventional	€4.80/kg FOB from Turkey
Tarragon, dried, conventional	€18,39/kg FOB from France
Thyme, dried, conventional	€2.38/kg FOB from Morocco/Spain
Herb oils	Price-level
Basil oil, conventional	€119/kg FOB from Egypt
Basil oil, organic	€149/kg FOB from Egypt
Sage oil, conventional	€78/kg FOB from Croatia
Sage oil, organic	€189/kg FOB from Croatia
Rosemary oil, conventional	€33/kg FOB from Portugal/Spain/Tunisia
Rosemary oil, organic	€74/kg FOB from Spain
Marjoram oil, conventional	€99/kg FOB from Spain
Marjoram oil, organic	€167/kg FOB from Spain
Thyme oil, conventional	€50/kg FOB from Spain
Thyme oil, organic	€238/kg FOB from Hungary
Lavender oil, conventional	€100/kg FOB from Bulgaria
Lavender oil, conventional	€111/kg FOB from France
Lavender oil, organic	€167/kg FOB from France
Mint oil, spearmint, organic (M. Spicata)	€89/kg FOB from USA
Mint oil, peppermint, organic	€71/kg FOB from USA
Mint oil, cornmint, organic (M. Arvensis)	€41/kg FOB from India
Mint oil (conventional)	€9.63/kg FOB from India
Chamomille oil (Roman), conventional	€416/kg FOB from UK
Chamomille oil (Roman), organic	€416/kg FOB from Italy
Fennel oil, sweet, organic	€119/kg FOB from Bulgaria
Juniper berry oil, organic	€178/kg FOB from India
Spices	Price-level
Aniseed, conventional	€2.96/kg FOB from Syria
Mustard seed, yellow, conventional	€1.01/kg CIF Germany from Canada
Mustard seed, brown, conventional	€0.97/kg CIF Germany from Canada
Mustard seed, brown, conventional	€0.57/kg CIF Germany from India
Dried parsley stalks, conventional	€0.94/kg CIF Germany from Poland
Coriander, conventional	€1.46/kg FOB from Eastern Europe
Cumin, conventional	€2.27/kg FOB from Turkey, Syria, India
Fenugreek seed, conventional	€0.50/kg FOB from India
Caraway, conventional	€1.46/kg FOB from Netherlands
Caraway, conventional	€1.34/kg CIF Germany from Poland
Spice seed oils	Price-level
Aniseed oil, conventional	€37-63/kg FOB from China
Coriander seed oil, conventional	€119/kg FOB from Russia
Cumin seed oil, conventional	€125/kg FOB from Egypt

A major EU medicinal and aromatic plant trader has about 1,500 single products in its portfolio plus about 500 organic products. The traded volumes range between 0.3 tonnes per year

(specialties like daisy) and 30 tonnes per year (e.g. used in herbal teas like nettle). If a truck cannot be filled due to a small batch, combined transport needs to be considered (if viable with other products or shared with other clients).

According to EU import authorizations, current origins of organic herb imports to the EU are:

Table 32: Selected organic herbal products and main supplying countries[104]

Examples of organic herbal products	Main supplying countries
Diverse relevant herbs	Albania, China, Egypt, India, Moldova, Morocco, Turkey, Sri Lanka
Basil	Egypt (dried leaf to Germany, the Netherlands, Poland, the United Kingdom and France, essential oil (wild) to France and Germany), India (dried to the United Kingdom, frozen to Belgium, essential oil to France and Germany), Turkey (black, dried to Germany), Uzbekistan (dried and frozen to Austria), Vietnam (essential oil to Belgium)
Peppermint	Egypt (dried leafs, teabags and essential oil to Germany, dried leafs and essential oil to France)
Rosehip	Albania (dried to Germany), Chile (dried fruit and fruit shell to Germany), Uzbekistan (dried to Austria)
Spearmint	Egypt (dried leaf to Germany and France, essential oil to France), Morocco (essential oil to France)
Sea buckthorn[105]	China (to Norway), Uzbekistan (dried, juice, concentrate, IQF, blossom to Austria)
St John's wort	Albania (dried to Germany)
Tarragon	Turkey (dried to Germany)
Thyme	Albania and Turkey (to Germany), Uzbekistan (to Austria), Egypt (to Germany, the Netherlands, the United Kingdom and Poland), Morocco (to France)
Wild collection	Albania (to Germany), Egypt (to France), India (to Belgium), Morocco (to France), Turkey (to Germany)
Essential oils	Egypt (to France and Germany), India (to France and Germany), Morocco (to France), Ukraine (to France), Vietnam (to Belgium)
Extracts	India (to the United Kingdom), Morocco (to France)

The target region currently exports organic essential oil of lavender (English variety) as well as organic essential oil of clary sage from Ukraine to France and organic calendula as well as marigold from Moldova to the Netherlands. Organic products including organic seeds for herbs and spices exported from Moldova (basil seed, borage seed, coriander seed, dill seed, fennel seed, lemon balm seed, and oregano seed) to the Netherlands are also of interest.

[104] Organic Farming Information System of the European Commission (OFIS). Available at: http://ec.europa.eu/agriculture/ofis_public/r9/ctrl_r9.cfm?targetUrl=filt

[105] Sea buckthorn berries and seeds are experiencing growing demand for commercial applications in food products, cosmetics and pharmaceutical products. They are part of traditional herbal medicines (in China, Russia, and parts of Europe). Sea buckthorn is widely available in wild collection areas in the target region and can be cultivated as well.

Table 33: Examples of CO_2 extracts for cosmetics

Product	Botanical Name	Part
Chilli	*Capsicum spp*	Seed
Evening Primrose	*Oenothera biennis*	Seed
Marigold	*Calendula Officinalis*	Flower
Rosehip	*Rosa canina*	Seed
Rosemary	*Rosmarinus officinalis*	Leaf
Sea buckthorn	*Hippophae rhamnoides*	Fruit

2.5.3.2. Organic honey and beekeeping by-products

Production

Globally, organic honey was produced with more than a million organic beehives reported in 2012 (equivalent to around 1 per cent of global beehives) and 8.9 per cent growth since 2011. The highest number of organic beehives was reported in Europe (57 per cent), followed by Africa (22 per cent) and Latin America (20 per cent). Other origins only account for 1 per cent. The countries with the highest number of organic beehives are Brazil, Bulgaria, Ethiopia, France, Italy, Mexico, Romania, Spain, Turkey and Zambia.

Table 34: Global organic beekeeping areas by type 2012[106]

Land use	Area (ha)
Apiculture	6,804,699
Forest honey	110,130

The demand in the EU honey market offers great potential for further import volumes and is far from being saturated (both non-organic and organic). No limitation in supply volumes for new suppliers is expected in the next few years. Honey is easy to handle for importers as it has a long shelf life with little deterioration during storage. Domestic markets in many producing countries also offer good opportunities, but not always steadiness. The EU honey market has stable and good long-term prospects and many importers are willing to agree to a purchase guarantee.

Both poly-floral and mono-floral honey is in demand as are by-products from beekeeping in lower volumes. The current origins of organic beekeeping product imports to the EU are shown according to EU import authorizations in the following table.

[106] FiBL and IFOAM (2014). World of organic agriculture 2014.

Table 35: Selected organic beekeeping import products and main supplying countries[107]

Organic beekeeping product	Main supplying countries
Honey	Australia (to Germany), Brazil (to France and the United Kingdom), China (to Germany, the Netherlands, the United Kingdom, Spain and Belgium), India (to the United Kingdom), Mexico (to Germany and Belgium), Nicaragua (to Belgium), Zambia (to Germany and Belgium)
Beeswax	Australia (to Germany and Italy), Cameroon (to Belgium), India (to the United Kingdom and Italy), Zambia (to Germany and Belgium)
Pollen	Brazil (to France), China (to Germany and France), Egypt (to the Netherlands)
Propolis	Brazil (to France), China (to Germany)
Royal jelly	China (to Germany and Spain)

Not all countries that are exporting organic beekeeping products are exporting the full range of by-products. This is most probably due to low awareness about market opportunities and competitive, low price levels from China.

Price levels honey

Table 36: Indicative conventional and organic price levels – honey

Product	Price-level
Poly-floral/wildflower honey, conventional	€2.50 – 2.60/kg DDP ("Delivered Duty Paid" according to International Commercial Terms) to Germany.
Poly-floral/wildflower honey, organic	€3.00 – 3.30/kg DDP to Germany.
Mono-floral: Acacia honey, conventional	€3.70-3.80/kg DDP from Moldova to Germany.
Mono-floral: Acacia honey, organic	€4.30-4.50/kg DDP from Moldova to Germany.
Specialty honey: Rosemary/thyme, conventional	€4.50/kg DDP to Germany.
Specialty honey: Rosemary/thyme, organic	€5-6.00/kg DDP to Germany.
Specialty honey: Manukra, conventional	€20-25.00/kg DDP from New Zealand to Germany.

Major importers are interested in purchasing up to one container of organic honey monthly from new suppliers if all requirements are met. For some mono-floral honey, known origins are preferred and fetch higher price levels for those countries, e.g. acacia from Bulgaria, Hungary and Romania.

By-products: Bees wax, pollen, Royal jelly and propolis

Beekeepers' associations often forget about their by-products like beeswax and its market opportunities. Organic beeswax is in very high demand and has been scarce for the past five years. Organic beeswax is considered to be the market of the future in the beeswax sector. The organic certificate is valid for all by-products including wax, pollen, Royal jelly and

[107] Organic Farming Information System of the European Commission (OFIS). Available at: http://ec.europa.eu/agriculture/ofis_public/r9/ctrl_r9.cfm?targetUrl=filt

propolis. Pollen, Royal jelly and propolis are traded in considerably lower volumes compared to honey and beeswax.

Table 37: Indicative conventional and organic price levels – beekeeping by-products

Product	Price-level
Conventional bees wax, low pesticide residuals (European pharmacopoeia), suitable for bleaching (from neighbours of organic beekeepers with similar environment or from the conversion period).	€5,000-6,000/t CIF Germany
Organic bees wax	€9,000-18,000/t CIF Germany

A single major beeswax importer could be potentially supplied with an additional 400 tonnes of conventional beeswax (low pesticide residuals according to the European Pharmacopoeia) annually. This product is facing strong growing demand; the global market volume of these products is estimated to be 1,000 tonnes annually.

For first organic beeswax shipments a batch of 2 to 3 tonnes is common for checking quality and price; a further up-scaling is desired. A major importer moves a volume of around 50 to 70 tonnes annually, limited only by a lack of supply. Growth potential could quadruple.

Major importers said they would buy around one container (20 tonnes) of organic pollen annually from new suppliers and they are also interested in importing hundred kilos of organic Royal jelly annually, if the price is definitely below €100/kg.

2.5.4. Lessons learned – the importer's perspective

The information in this chapter was generated in interviews with EU importers. Pragmatic points of view from importers are given, which are related to current product specific issues and general experiences in business-relations in the target region.[108]

Business reliability: Traceability of wild collected raw materials is of utmost importance. Since wild collected raw materials originate from significant biodiversity rich areas, processors need to demonstrate that they work ethically and responsibly; otherwise they run risk of being accused of fraud. It is possible to cultivate a variety of organic plants and to reduce collection of species from the wild in order to reduce this risk. Of course, this is not possible for all species.

Medicinal and aromatic plants: Certification of wild collected plants according to the standard of the organization FairWild has grown over the past few years and final consumer products may be labelled with the FairWild logo.[109] This is a suitable option for certain trade channels.

For aromatic and medicinal plants, Good Agriculture and Collection Practices (GACP) certification at the origin would be optimal, but is not yet a prerequisite for trade.[110] As for dried fruit, direct sun drying is not a suitable option for herbs.

[108] For detailed information on organic exports, please consult the export manual launched by FiBL in July 2014: "Exporting from Ukraine".
[109] http://www.fairwild.org/
[110] World Health Organization (2003). WHO Guidelines on Good Agricultural and Collections Practices (GACP) for Medicinal Plants. World Health Organization, Geneva.

A good appearance of the product is important, with fresh colours, rich sensorial properties and the right mesh size. Depending on the product, transport is organized in triple layer paper bags (max. 25 kg) or cartons (chamomile and mint). Transport is normally in smaller bags as the traded volumes are often limited and some major importers do not have the capacity to handle big bags.

Honey: As soon as an exporter has indicative volumes and varieties of available honey he should get into contact with importers. Bigger importers are trading both qualities: organic and non-organic. This facilitates the conversion period and enables familiarity with organic production without the need to change clients when the first batch of certified organic honey becomes available.

Major importers use their own or external laboratories to analyse samples and final lots directly after arrival. Payment to the exporter is done after the results from analyses and quality testing are approved.[111] Quality parameters include water content, enzymatic content, hydroxymethylfurfural (HMF) value and organoleptic properties. Honey is often also tested for residues of antibiotics and pesticides. The latter may originate from agricultural production with pesticides on the areas where bees are collecting honey. Potential residues of antibiotics could result from bee treatments with pharmaceuticals forbidden in organic beekeeping, which sometimes occur even in organic honey; thus, testing is taken very seriously and may take a week to complete after the arrival of the honey.

Importers will ask for a certificate of origin of the honey (this can be issued by a chamber of commerce or by local authorities).

Importers may be able to agree to pre-payments, but these are usually only for projects which are directly supported e.g. with technical training for beekeepers or for long-term relationships.

Transport of bulk honey is done in 200 to 212 litre steel drums containing 280 to 300 kg. They need to be suitable for food use. The steel drums can be directly loaded on trucks without using a container. Economic viability of transport from Eastern Europe starts with a truck of 10 tonnes, but 20 tonnes per truck load is optimal.

Beeswax: The European pharmacopoeia sets the most relevant requirements with regard to pesticide residues. It is almost completely equivalent to its two relevant global counterparts – the US-Pharmacopeia and the Japanese Pharmacopoeia. Differences refer to details e.g. minimal differences in the temperature of the dropping point.

Pesticide residues in beeswax normally origin from varroa mite control-pesticides directly applied in beehives. Recently, there have been problems with Coumaphos and Tau-fluvalinat. Other current problems are traces of DDT (combatting malaria by spraying from aircrafts) in

[111] New laboratory testing methods for honey are available which are able to simultaneously:
- Detect added sugars – independently of the origin: Maize, sugar cane, sugar beet, wheat, rice, etc.
- Confirm the floral origin of the mono flower honey.
- Detect irregularity due to excessive heating (identification of 5-(Hydroxymethyl) furfural (5-HMF) or fermentation.
- Detect the most important sugars (glucose, fructose and saccharose as well as quantification of the sugar metabolite 5-(Hydroxymethyl) furfural (5-HMF), according to Council Directive 2001/110/EC of 20 December 2001 relating to honey and the Codex Alimentarius.

African beeswax. If traces are found, the waxes still can be used in technical products like lubricants.

2.5.5. Key observations with regard to herbs and honey

Addressed to producers, processors and exporters

- Herbs (wild collected or farmed) and honey face strong demand on the EU market. Importers are specialized on one of these segments.
- The EU market for herbal ingredients is growing steadily and the market for organic herbal ingredients even more rapidly.
- Certified organic herbs (and beeswax) are not only used in organically labelled food products and in natural and organic cosmetics, but also in pharmaceutical products (which are not permitted to carry organic labels in the EU). Organic herbs are also used in some non-organic teas, as processors aim to prevent contamination with chemical residues by sourcing organic products.
- Shortage in supply of organic wild collected herbs leads to domestication and cultivation of plant species.
- The product range of organic herbs can be combined with organic dried fruits and nuts as in some cases similar importers are involved.
- There is huge demand for additional honey and side products from beekeeping on the EU market (both non-organic and organic) as well as on domestic markets.
- Considerably higher prices are paid in the EU for beeswax free from or low in pesticide residues; certified organic beeswax is especially in demand.
- The global number of organic beehives grew by 9 per cent between 2011 and 2012.
- There are various options for adding value to organic herbs, e.g. through oil distillation and other extraction methods like CO_2 extraction), if proper technology is applied.

Addressed to organizations supporting the organic sector

- Support and national sector coordination is required to establish traceability for wild collected products and honey from organic origin.
- Training in market intelligence and technical skills (e.g. domestication, training on GACP, extraction, organic beekeeping) is required for success in the organic herbs and honey sector.

Country specific observations

Armenia:

- Armenia is exporting small volumes of MAPs only and considerable exports to the EU have not yet begun.
- The value chain of organic herbs offers good opportunities as high values can be generated on small-cultivated areas.

Moldova:

- Exports of MAPs to the EU are moderate but potentially high in France, Germany and the United Kingdom.
- For Moldovan non-organic honey exports, the EU is already the main target market. This facilitates the introduction of organic honey, as part of the current EU buyers is interested in organic qualities as well.

Ukraine:

- The EU already is the main destination for Ukrainian MAPs and honey exports.
- France and the United Kingdom are potential further destinations for organic MAPs.

3. CONCLUSIONS AND RECOMMENDATIONS

In this chapter, conclusions and recommendations are made and addressed to different target groups:

- The product specific conclusions and recommendations in Chapter 3.1 are directed to companies involved or interested in export of organic products.
- The conclusions for organic sector development in the target region in Chapter 3.2 are directed to stakeholder organizations and the organic network.
- Country specific conclusions that are mainly applicable in just one of the three countries of the target region are made in Chapter 3.3.
- A summary of the conclusions and the way forward for the organic sector in the region is outlined in Chapter 4.4.

3.1. Product recommendations for exporters

The main opportunities in the three market segments are summarized in this chapter. The outstanding prospects for organic exports from the target region are a result of slow growth in organic production in Central Europe. For some years now, growth in production has fallen behind the fast growing consumer demand of organic products, especially in Central Europe, a major consumption regions of organic products located in close proximity to the target region. Organic EU imports kept growing at around 10 to 14 per cent even in times of economic crises. They fetch higher export prices and offer stable future opportunities, because organic products fit consumers' concerns about environmental, health and ethical issues. Non-organic traders, who are getting interested in future suppliers, have also noticed this trend. Traders managing non-organic and organic products are especially interested in products in conversion (when necessary sold as non-organic), as they will continue trade relations after certification has been completed.

3.1.1. Grains – cereals, oilseeds and pulses

Organic protein sources for feed mixes have the highest commercial export potential. They can originate from oilseeds in the form of oil-press cakes, which are rich in protein (e.g. from sunflower or rapeseed), and can be pressed in the target region. They can also be derived from legume crops like soybeans (also traded in the category of oilseeds), or from feed peas, horse beans and lupines that are traded in the category of dried pulses. Climatically, Ukraine and Moldova have a competitive advantage in the production of organic oilseeds (including soybeans), compared to Central Europe, the region with the biggest demand for protein sources due to rapid growth in organic animal husbandry.

EU importers currently source organic soybeans mainly from overseas, but the organic EU sector would be most interested in shifting this supply towards alternative sustainable and more transparent supply chains in neighbouring countries with shorter transport routes, if better control and traceability would be provided. Organic and GMO-free seeds are needed for these supply chains, but are not easy to develop; in the past, frequent contamination with GMO-seeds was reported on a regular basis.

Nevertheless, demand is high and EU price levels are suitable for building further organic supply chains for all other assessed grain products. These include wheat and corn; specialty cereals such as barley, rye, triticale, spelt, oat; pseudocereals such as buckwheat and millet;

specialty oilseeds such as pumpkin seeds and linseeds; and dried pulses such as chickpeas, beans and lentils.

The quality of grain products always depends on seasonal climatic conditions and has to be assessed from harvest to harvest to determine whether it is suitable for food or feed use. Export of wheat with bakery quality from Ukraine and Moldova provides occasional opportunities when adverse weather conditions in Central Europe prevent an optimum protein content of the harvested wheat. Available volumes, qualities and prices will normally be defined and negotiated after the harvest.

Added value is particularly viable at pre-processing levels such as cleaning, sorting, de-hulling, milling, flake-pressing and oil-pressing. After special hulling processes, some de-hulled oilseeds (such as sunflower kernels or pumpkin seeds) are suitable as snacks and bakery ingredients and can be sold in 25 kg double layer paper bags at profitable price levels.

3.1.2. Fruits, berries and nuts

There is high EU demand for organic fruits, berries and nuts and they serve as ingredients for a big range of products, not only for food products, but also for cosmetics (and in some cases for pharmaceuticals). The potentially offered range of fruits, berries and nuts from the target region suits product demand in the EU.

Processed fruits have a higher commercial export potential than fresh fruits, because fewer risks and bottlenecks are involved. Value chains of dried fruits are especially easy to establish as lower investments are involved compared to other forms of processing (e.g. IQF, canned fruit and juices, etc.). Even if the EU is not yet a main destination for dried fruit from the target region, the organic market provides good prospects for this product range. An optimal drying of fruits is, for example, possible in de-central combined solar/ gas dryers close to primary production. The required technical skills can be acquired through producer organizations, which directly benefit from this form of rural value addition and thus generate better family income.

For other forms of processing (IQF, canned fruit and juices etc.), up-to-date facilities with certification in compliance with international food safety standards are required to gain acceptance and reputation in the market. Moldova and Ukraine already export juices mainly to EU markets and have a mature juice industry. Armenia still has a low share of juice exports to the EU. Exports of frozen fruits and berries to the EU can only be realized by Ukraine and little preserved fruit is exported to the EU from the target region. If the existing facilities are not suitable to comply with EU food safety requirements, high investments are necessary to start organic exports of these product ranges. Nevertheless, it is possible, as the example of exporters in Uzbekistan shows, which built organic supply chains for such organic product ranges within a few years (e.g. IQF, concentrate, juice and puree).

3.1.3. Herbs and honey

There is an undersupply of raw materials in the EU market of organic herbs and honey, which offers business opportunities for projects in the target region. But wild collection of herbs should not deplete the natural resource base. Suitable management and certification schemes for wild collection exist; in particular, they are required in organic certification and trade. At the same time, fewer collectors are available in many remote collection areas. Domesticating plants for agricultural cultivation could partially alleviate excessive collection

in the wild. For many of the species, very specific cropping conditions are required. Sustainable supply chains for herbs can be organized in close cooperation and long-term relations with EU importers.

The EU demand for (non-organic and) organic honey is enormous and the market will not be saturated easily. This offers room for major organic beekeeping projects in the target region. If beekeeping side-products can be offered at competitive prices, these will also be in high demand.

3.2. Conclusions for an organic sector development in the target region

Past frauds - review and consequences for organic grain commodity exports

In the organic grain commodity sector, the image of Ukraine and Moldova suffered severely as several incidents of fraud were recorded in the past.[112] The sector should prevent falsified certificates from being issued and ensure producers and traders take appropriate measures to stop infractions in the future. Moldova and Ukraine both need to ensure compliance with domestic and international legislation regarding standards for organic production and trade.

Additionally, organic soybeans from Ukraine have unfortunately not been sufficiently GMO-free. Some Dutch feed grain traders stopped importing organic soybeans from Ukraine as they contained GMO traces. Legally, accidental GMO traces up to 0.9 per cent are tolerated if they cannot be avoided technically. But the private organic sector is setting higher requirements and aims for zero tolerance, as the legal approach is unacceptable to organic consumers who pay higher prices than they would for conventional products and thus expect certified organic and GMO-free food. Hence, cases of GMO contamination need to be eliminated, which is possible only with suppliers who are willing to work transparently. This issue needs to be solved on a sector level as well, and authenticity can only be achieved if the organic sector cooperates fully and is well organized to guard against future subterfuge, counterfeiting and sabotage.[113] If not, buyers will shift quickly to purchase organic products from more reliable and proven sources.

Network tasks (cross-company)

Even if a single exporter can implement the following measures, implementation by a whole organic sector network of exporting companies would have more impact. A network approach would strengthen the market position of the target region. The importers in the EU would appreciate:

- A GMO-free supply.
- A traceability database platform for fully traceable, credible and transparent supply chains (including plausibility if the offered volumes can be produced on the certified seeded acreage).
- Establishment of direct trade relations (instead of exports e.g. via Italy or Romania).

[112] FiBL (2015). Is Ukraine a trustworthy place to source organic produce? Available at: http://www.ukraine.fibl.org/de/ua-resources/ua-news-item.html?tx_ttnews[tt_news]=1468&cHash=d1edb9475202e5c32f73f44313d3c839

[113] In interviews it was stated that most likely, acts of sabotage were involved in recent years against GMO-free organic seed propagation in different commodities worldwide. If this is the case, the organic sector needs to find preventive solutions.

These targets could be supported in pilot projects in the form of capacity building and sector coordination, which are required to seize organic trade opportunities. A successful implementation of this approach will facilitate further up-scaling in the target region and in neighbouring countries.

3.3. Country specific conclusions

Ukraine

The bulk business of organic grain commodities has the biggest economic value and strongest environmental impact on natural resources such as fauna, flora and groundwater. However, social impact and rural development by organic farming and processing can be generated easier by organic value chains of processed fruits, herbs and honey.

Moldova

As in Ukraine, the bulk business of organic grain commodities has a major economic and environmental impact, but organic processed fruits and nuts as well as herbs offer good export opportunities and are already important export products from Moldova.

GMO-free Moldova

In the context of GMO-free value chains, Moldova has the competitive advantage of presenting itself as a GMO-free country,[114] which could strengthen the country's image as a reliable organic sourcing region.

Armenia

All export activities need to consider domestic food security. Thus, priority in Armenian organic exports should be on added value products such as processed fruits (e.g. dried apricots), herbs (ideally in form of extracts) and specialty honey. Supply chains of organic specialty grains need to be established first and offer rather selective opportunities.

Armenian traditional varieties for biodiversity conservation

Armenia has a wide range of traditional varieties that are ideally adapted to local climatic conditions and provide resistance to drought, diseases and pests and can be of particular interest for organic and sustainable farming schemes with low external inputs. The international organic market greatly appreciates products with a unique profile and properties.[115]

Together with stakeholder organizations and investors, a strategy could be developed for these crops. This plan would entail registration and use of protected "Appellations of Origin" in the international System of Appellations of Origin from the World Intellectual Property Organization (WIPO), in order to protect the products early enough from copying by competing countries and to create a strong relation between consumers and the origin via the products.

In the framework of the UN Environment programme, the authors recommend development of a marketing strategy for identified ancient Armenian varieties (e.g. Triticum/wheat, spelt,

[114] Government leaflet aimed at attracting investment available at: http://www.rigp.pl/sites/default/files/invest-in-moldova-agriculture-flyer.pdf

[115] As a reference product, *Khorosan wheat*, an ancient grain type originating from Afghanistan and Iran, was successfully launched in the international organic market under the name "Kamut" during the past few years.

other cereals and pulses, and fruits) for the international organic market. The organic sector is an ideal trade channel for these products, because it targets interested consumer groups.

Food security and rural development

Production of organic dried pulses such as drought resistant chickpeas, beans and lentils for food use could also be an option for organic production in Armenia as they can be produced by associations of small farmers and marketed locally to contribute to domestic food security or exported to increase income.

3.4. The way forward

This report confirmed the outstanding prospects for organic exports from the target region. The rising EU demand for organic products offers opportunities to not only increase production and trade, but also to benefit rural development, biodiversity conservation and environmental protection.

In Ukraine and Moldova, the highest organic export potential exists for high protein raw materials for feed mixes, cereals, and oilseeds. The market for fruits, berries, nuts, herbs and honey also offers good prospects and can generate rural development.

In Armenia, the product categories of processed fruits, herbs and honey have the highest export potential. Due to its negative agricultural trade balance and lack of arable land, opportunities for cereals and pulses are limited to traditional varieties, which could be exported as specialty grains.

Successful organic sector development in the target region should not exclusively depend on exports to consolidated organic markets in the EU. Moreover, added value products in the form of finished organic consumer goods should be positioned simultaneously on both domestic and emerging regional organic markets.

In order to seize current market opportunities successfully, this report has suggested targeted interventions. For instance, the weakened supplier image caused by past incidents of fraud in the grain commodity trade in Ukraine and Moldova needs to be repaired. The authors recommend a network approach to create transparent, GMO-free and fully traceable supply chains on a sector level. These must provide differentiation in the market and generate direct trade relations with EU processors. Another important aspect is to professionalize the organic sector with relevant training. Moldova's strategy to ensure that it is a GMO-free country and present itself as such points in the right direction. Its efforts should be supported and strengthened in order to engender trust and credibility in the regional and international organic marketplace.

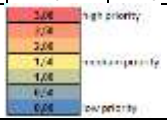
4. ANNEX

4.1. Product selection - synopsis table

Value chains Ukraine	Existing conventional export values FAOSTAT 2009-2011	EU organic import authorisations	FiBL Eisenring / Prokopchuk 2011	Country report EkoConnect 2011	UNEP former Green Economy Sectoral Study	Average
cereals/grain crops						
soft wheat	3	2	3	3	3	**2,80**
maize	3	1	2	2	2	**2,00**
barley	3	1	2	2	2	**2,00**
spelt	0	0	0	2	1	**0,60**
durum wheat	0	0	0	0	2	**0,40**
buckwheat, oat, rye	0	1	0	1	1	**0,60**
triticale	0	0	0	0	1	**0,20**
millet	2	1	0	1	1	**1,00**
sorghum	2	1	0	1	1	**1,00**
processed: flakes, flour, bran, pastry	2	1	1	1	2	**1,40**
oil crops						
sunflower	3	3	2	3	3	**2,80**
soy	3	2	2	2	2	**2,20**
rapeseed	3	2	2	2	2	**2,20**
pumpkin seed	0	0	0	1	1	**0,40**
mustard seed	2	2	0	0	1	**1,00**
safflower	0	1	0	0	0	**0,20**
alfalfa oil	0	1	0	0	0	**0,20**
processed: oil, cake, expeller	2	3	2	0	0	**1,40**
linseed	1	1	0	0	1	**0,60**
processed olive oil	0	0	0	0	0	**0,00**
leguminous crops						
peas dry	2	1	0	1	1	**1,00**
vetch	0	0	0	1	0	**0,20**
lupine	0	0	0	1	1	**0,40**
beans dry	0	0	0	0	0	**0,00**
lentils	0	0	0	0	0	**0,00**
chick pea	0	0	0	0	1	**0,20**
vegetables						
tomatoes	2	0	0	0	1	**0,60**
cucumbers and gherkins	2	0	0	0	1	**0,60**
processed: canned vegetables, dried vegetables	2	0	1	0	0	**0,60**
processed: olives preserved	0	0	0	0	0	**0,00**
processed: sweet corn prep	0	0	0	0	0	**0,00**
processed: vegetables in vinegar	2	0	0	0	0	**0,40**
processed: tomato paste	2	0	0	0	0	**0,40**
processed: chillies and peppers dry	0	0	0	0	0	**0,00**
beans green	0	0	0	0	0	**0,00**
pumpkins	0	0	1	0	1	**0,40**
watermelons, melons	1	0	1	0	1	**0,60**
potatoes	1	0	0	0	1	**0,40**
chillies peppers fresh	0	0	0	0	1	**0,20**
brassica	0	0	0	0	1	**0,20**
garlic	1	0	0	0	1	**0,40**
eggplant	0	0	0	0	0	**0,00**
fruits / nuts						
walnuts	2	0	1	1	1	**1,00**
grapes	0	0	1	0	0	**0,20**
peaches and nectarines	0	0	0	0	0	**0,00**
plums and sloes	0	0	0	0	1	**0,20**
strawberries	0	0	0	0	0	**0,00**
processed: juice, dried fruit, jam, syrup	2	0	1	0	1	**0,80**
processed: wine	2	0	0	0	0	**0,40**
processed: nuts	2	0	0	0	0	**0,40**
apples	2	0	0	1	1	**0,80**
kiwis	0	0	0	0	0	**0,00**
cherries	1	0	0	0	1	**0,40**
berries, cranberries, aronia, blackberries, blueberries, elderberries, lingonberries	0	1	1	0	2	**0,80**
apricots	0	0	0	0	1	**0,20**
citrus	0	0	0	0	0	**0,00**
hazelnuts, chestnuts	0	0	0	0	1	**0,20**
almonds	0	0	0	0	0	**0,00**
quinces	0	0	0	0	0	**0,00**
figs	0	0	0	0	0	**0,00**
pears	0	0	0	0	1	**0,20**
persimmon	0	0	0	0	0	**0,00**
pommegranate	0	0	0	0	0	**0,00**
others						
honey	2	0	1	0	1	**0,80**
herbs / wild collection / essential oil plants lavender, clary sage, coriander, dill weed, sweet fennel	1	1	1	2	1	**1,20**
herbs / spices	0	0	0	0	1	**0,20**
tea and extracts	0	0	0	0	1	**0,20**
mushrooms ceps (boletus), chanterelle and other	1	0	1	0	1	**0,60**
seed propagition cereals, oilseeds	0	1	0	0	0	**0,20**
destilled alcohol	2	0	0	0	0	**0,40**
sugar	1	0	0	0	0	**0,20**
beer of barley	2	0	0	0	0	**0,40**

1=low; 2=medium; 3=high

1=1,4 - 10 Mio $ / year
2=10 - 100 Mio $ / year
3=>100 Mio $ / year



Value chains Moldova	Existing conventional export values FAOSTAT 2009-2011	EU organic import authorisations	Cuntry report EkoConnect	UNEP former Green Economy Sectoral Study	Organic exports 2013 country update	Average
cereals/grain crops						
soft wheat	3	3	3	0		2,25
maize	3	2	2	0	3	2,00
barley	3	2	1	0	3	1,80
spelt	0	1	0	0		0,25
durum wheat	0	1	0	0		0,25
buckwheat, oat, rye	0	0	1	0	2	0,60
triticale	0	0	0	0	2	0,40
millet	0	0	0	0		0,00
sorghum	0	1	0	0		0,25
processed: flakes, flour, bran, pastry	3	0	0	0		0,75
oil crops 9843 ha 2009						
sunflower	3	3	2	0	3	2,20
soy	3	1	1	0	3	1,60
rapeseed	3	3	1	0	3	2,00
pumpkin seed	0	0	1	0	2	0,60
mustard seed	1	0	0	0		0,25
safflower	0	0	0	0		0,00
alfalfa oil	0	0	0	0		0,00
processed: oil, cake, expeller	3	0	0	3		1,50
linseed	0	0	0	0		0,00
processed olive oil	1	0	0	0		0,25
leguminous crops						
peas dry	1	1	1	0	3	1,20
vetch	0	0	0	0		0,00
lupine	0	0	0	0		0,00
beans dry	1	0	0	0		0,25
lentils	0	0	0	0		0,00
chick pea	0	1	0	0		0,25
vegetables						
tomatoes	3	0	0	1		1,00
cucumbers and gherkins	1	0	0	0		0,25
processed: canned vegetables, dried vegetables	3	0	0	0		0,75
processed: olives preserved	0	0	0	0		0,00
processed: sweet corn prep	3	0	0	1		1,00
processed: vegetables in vinegar	2	0	0	0		0,50
processed: tomato paste	1	0	0	0		0,25
processed: chillies and peppers dry	0	0	0	0		0,00
beans green	0	0	0	0		0,00
pumpkins	1	0	0	0		0,25
watermelons, melons	0	1	0	0		0,25
potatoes	2	0	0	1		0,75
chillies peppers fresh	1	0	0	1		0,50
brassica	1	0	0	1		0,50
garlic	1	0	0	0		0,25
eggplant	1	0	0	0		0,25
fruits / nuts						
walnuts	3	0	2	3	3	2,20
grapes	3	0	0	0		0,75
peaches and nectarines	3	0	0	0		0,75
plums and sloes	3	0	0	0	2	1,00
strawberries	3	0	0	0		0,75
processed: juice, dried fruit, jam, syrup	3	0	2	3	1	1,80
processed: wine	3	0	0	3		1,50
processed: nuts	1	0	0	0		0,25
apples	3	0	0	0	2	1,00
kiwis	2	0	0	0		0,50
cherries	2	0	0	3	1	1,20
berries	0	0	0	3		0,75
apricots	2	0	0	0		0,50
citrus	2	2	0	0		1,00
hazelnuts	1	0	0	0		0,25
almonds	0	0	0	0		0,00
quinces	1	0	0	0		0,25
figs	1	0	0	0		0,25
pears	1	0	2	0		0,75
persimmon	0	0	0	0		0,00
pommegranate	0	0	0	0		0,00
others						
honey	2	0	0	0		0,50
herbs / wild collection	2	1	2	0	1	1,25
spices	0	1	0	0		0,25
tea and extracts	0	0	0	0		0,00
mushrooms	0	0	0	0		0,00
seed propagition vegetables, herbs, flowers, green	0	3	0	0		0,75
destilled alcohol	3	0	0	0		0,75
sugar	3	0	0	0		0,75
beer of barley	1	0	0	0		0,25

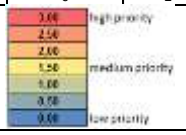
1=low; 2=medium; 3=high

1=0,05 - 1 Mio $ / year
2=1 - 5 Mio $ / year
3=>5 Mio $ / year

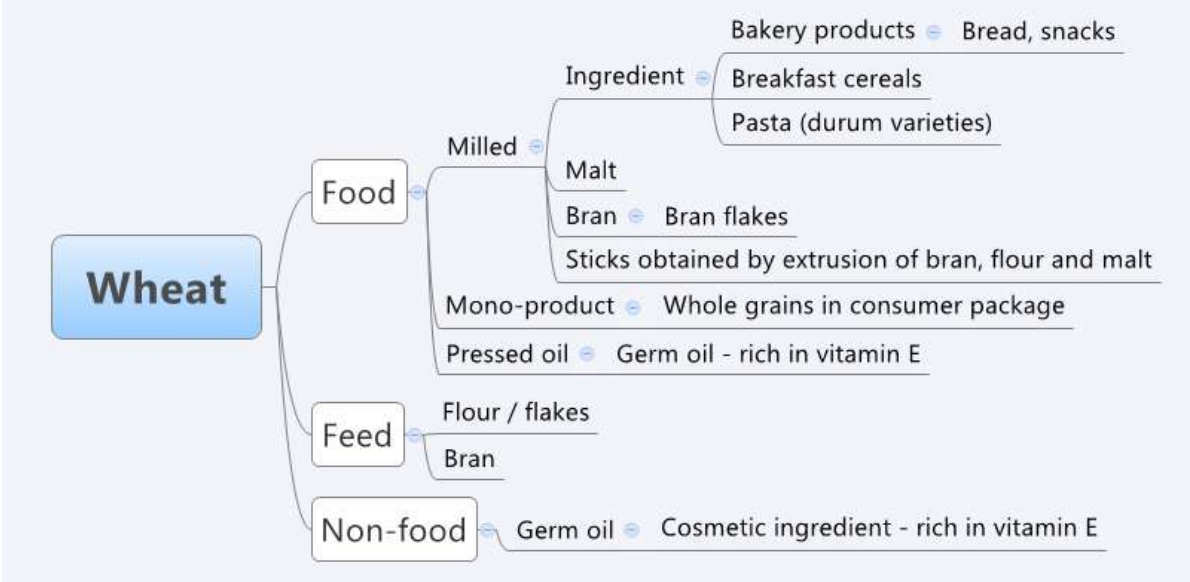
Value chains Armenia	Existing conventional export values FAOSTAT 2009-2011	currently no EU organic import authorisations listed	UNEP former Green Economy Sectoral Study	TRADEMAP	Average
cereals/grain crops					
soft wheat	1		0	0	**0,33**
maize	0		0	0	**0,00**
barley	0		0	0	**0,00**
spelt	0		0	0	**0,00**
durum wheat	0		0	0	**0,00**
buckwheat, oat, rye	0		0	0	**0,00**
triticale	0		0	0	**0,00**
millet	0		0	0	**0,00**
sorghum	0		0	0	**0,00**
processed: flakes, flour, bran, pastry	2		0	0	**0,67**
oil crops					
sunflower	0		0	0	**0,00**
soy	0		0	0	**0,00**
rapeseed	0		0	0	**0,00**
pumpkin seed	0		0	0	**0,00**
mustard seed	1		0	0	**0,33**
safflower	0		0	0	**0,00**
alfalfa oil	0		0	0	**0,00**
processed: oil, cake, expeller	1		0	0	**0,33**
linseed	0		0	0	**0,00**
processed olive oil	0		0	0	**0,00**
leguminous crops					
peas dry	0		0	0	**0,00**
vetch	0		0	0	**0,00**
lupine	0		0	0	**0,00**
beans dry	0		0	0	**0,00**
lentils	1		0	0	**0,33**
chick pea	0		0	0	**0,00**
vegetables					
tomatoes	2		0	0	**0,67**
cucumbers and gherkins	2		0	2	**1,33**
processed: canned vegetables, dried vegetables	3		3	3	**3,00**
processed: olives preserved	3		0	0	**1,00**
processed: sweet corn prep	0		0	0	**0,00**
processed: vegetables in vinegar	3		0	2	**1,67**
processed: tomato paste	3		0	3	**2,00**
processed: chillies and peppers dry	1		0	0	**0,33**
beans green	1		0	1	**0,67**
pumpkins	0		0	0	**0,00**
watermelons, melons	1		0	0	**0,33**
potatoes	2		0	0	**0,67**
chillies peppers fresh	2		0	0	**0,67**
brassica	2		0	2	**1,33**
garlic	1		0	0	**0,33**
eggplant	1		0	0	**0,33**
fruits / nuts					
walnuts	0		0	0	**0,00**
grapes	3		0	3	**2,00**
peaches and nectarines	2		0	2	**1,33**
plums	2		0	2	**1,33**
strawberries	0		0	0	**0,00**
processed: juice, dried fruit, jam, syrup	3		3	3	**3,00**
processed: wine	3		3	2	**2,67**
processed: nuts	3		0	0	**1,00**
apples	1		0	2	**1,00**
kiwis	0		0	0	**0,00**
cherries	3		0	0	**1,00**
berries	0		3	3	**2,00**
apricots	3		3	3	**3,00**
citrus	1		0	0	**0,33**
hazelnuts	0		0	0	**0,00**
almonds	1		1	0	**0,67**
quinces	0		0	0	**0,00**
figs	0		0	2	**0,67**
pears	0		0	2	**0,67**
persimmon	0		0	2	**0,67**
pommegranate	0		3	1	**1,33**
others					
honey	2		3	0	**1,67**
herbs / wild collection / tea and extracts	1		3	1	**1,67**
spices	2		0	0	**0,67**
tea and extracts	1		3	0	**1,33**
mushrooms	2		0	0	**0,67**
seed propagition	0		0	0	**0,00**
destilled alcohol	3		0	3	**2,00**
sugar	3		0	0	**1,00**
beer of barley	3		0	1	**1,33**

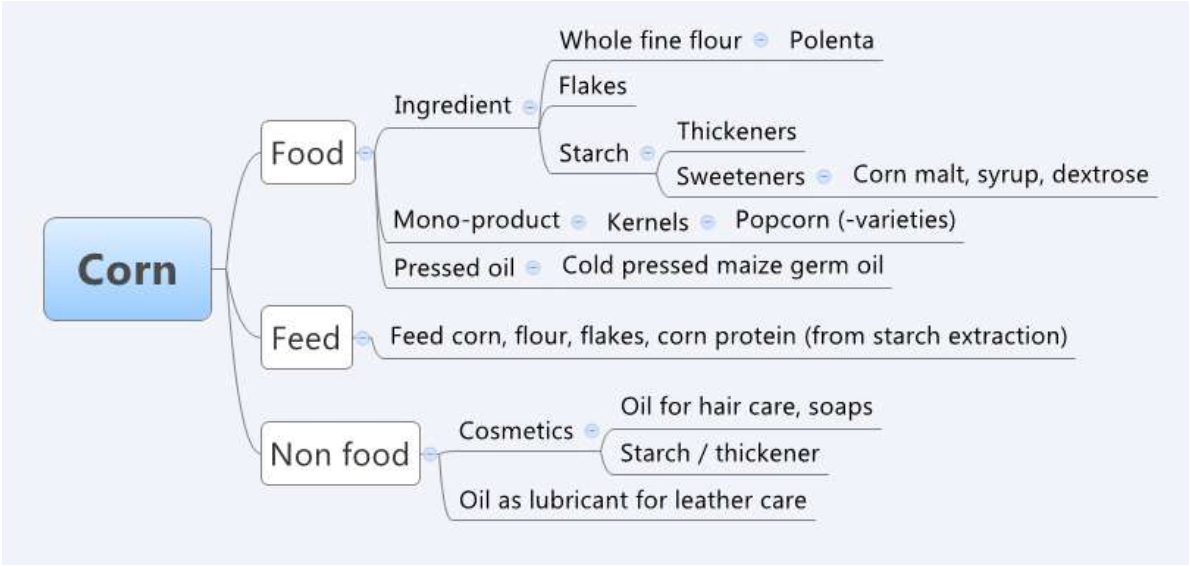
1=low; 2=medium; 3=high

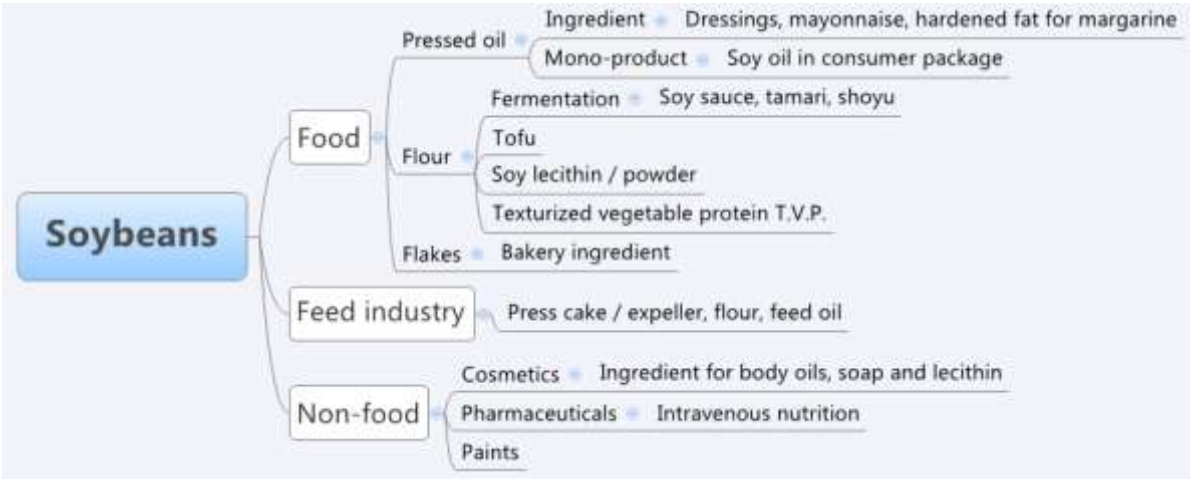
1= 0,001 - 0,025 Mio $ / year
2=0,025 - 0,5 Mio $ / year
3=>0,5 Mio $ / year



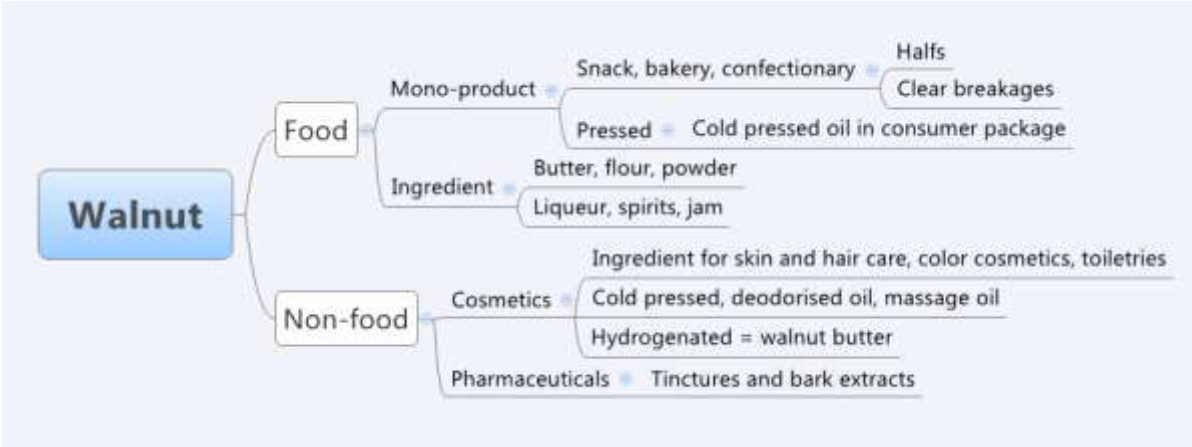
4.2. Product trees for selected products








Apple
Food
Fresh dessert fruit
Dried
Mono-product
Dried fruit snack in consumer package
Ingredient
Air / vacuum / freeze dried
Slices, cubes, chunks, granular
Snacks
Mueslis
Juices, purees, jams
Mono-product
Juice, puree, preserved in consumer package
Ingredient
Pieces as bakery ingredient
Concentrated juice / sweetener
IQF
Pectine as thickener
Apple seed oil as aroma
Non-food
Cosmetic ingredient
Apple seed oil as aroma
Water from vacuum drying


Walnut
Food
Mono-product
Snack, bakery, confectionary
Halfs
Clear breakages
Pressed
Cold pressed oil in consumer package
Ingredient
Butter, flour, powder
Liqueur, spirits, jam
Non-food
Cosmetics
Ingredient for skin and hair care, color cosmetics, toiletries
Cold pressed, deodorised oil, massage oil
Hydrogenated = walnut butter
Pharmaceuticals
Tinctures and bark extracts

4.3. Main importers in Europe

Cereals, oilseeds and dried pulses

Germany			
Bohlsener Mühle GmbH + Co. KG Mühlenstraße 1 29581 Bohlsen Germany Tel: +49 5808 987-0 www.bohlsener-muehle.de *Organic ingredient trader, processor, packer and wholesaler including grains, oilseeds, pulses, milling-products and bakery ingredients*	**Davert GmbH** Zur Davert 7 59387 Ascheberg Germany Tel: +49 2593.9280-0 www.davert.de *Organic ingredient trader, processor, packer and wholesaler including grains, oilseeds, pulses, milling-products and bakery ingredients*	**Naturkost Übelhör GmbH & Co. KG** Friesenhofen-Bahnhof 23-25 88299 Leutkirch Germany Tel: +49 7567 9881-0 www.organic-germany.com *Organic ingredient trader of grains, oilseeds, pulses, milling-products and bakery ingredients*	**Marktgesellschaft mbH der Naturland Betriebe** Eichethof 4 85411 Hohenkammer Germany Tel: +49 8137 9318-20 www.naturland-markt.de *Organic trade branch of the international organic association, incl. trade of cereals, oilseeds, pulses*
Bioland Markt GmbH & Co. KG Gradestraße 92 12347 Berlin Germany Tel: +49 30 530237-0 www.bioland-markt.de *Organic trade branch of the organic association, incl. trade of cereals, oilseeds, pulses*	**Demeter Felderzeugnisse GmbH** Neue Bergstraße 13 64665 Alsbach Germany Tel: +49 6257 93400 www.felderzeugnisse.de *Organic trade branch of the organic association, incl. trade of cereals, oilseeds, pulses*	**Öko-Korn-Nord w.V.** Wulfsoder Weg 5 21386 Betzendorf Germany Tel: +49 4138 5106-11 www.oeko-korn-nord.de *Organic trader of feed and food grains and oilseeds*	**Selton GmbH** Hans-Duncker-Strasse 9 21035 Hamburg Germany Tel: +49 40 7367756-80 www.selton-gmbh.de *Organic trader of feed and food grains and oilseeds from Ukraine*
P. Krücken Organic GmbH Mallaustraße 74 68219 Mannheim Germany Tel: +49 621 4321 754 www.kruecken-organic.de *Organic commodity trader of feed and food grains, oilseeds and press cakes*	**Gut Rosenkrantz** Oderstraße 45 24539 Neumünster Germany Tel: +49 4321 9900 www.gut-rosenkrantz.de *Organic trader of feed and food grains and bakery ingredients*	**Meyermühle (für Hofpfisterei)** Hammerstraße 1 84034 Landshut Germany Tel: +49 871 607-0 www.meyermuehle.de *Organic food cereal mill and trader of bakery ingredients*	**Bode Naturkost Import-Export GmbH** Havighorster Weg 6 21031 Hamburg Germany Tel: +49 40 7393320 www.bodenaturkost.de *Organic ingredient trader and wholesaler of grains, oilseeds, pulses, milling-products, bakery ingredients, dried fruits and nuts*
CARE Naturkost GmbH & Co. KG Am Markt 9 27419 Sittensen Germany Tel: +49 4282 9324-0 www.care-natur.de *Organic ingredient trader and wholesaler of grains, oils, press cake, pulses, milling-products*	**Ölmühle Solling GmbH** Otto- Hahn- Str. 2 37639 Bevern Germany Tel: +49 5271 9 66 66-0 www.oelmuehle-solling.de *Organic oil mill*	**Tampico Trading GmbH** Volbehrstrasse 11d 90491 Nürnberg Germany Tel: +49 911 91 9669 0 www.tampico.de *Non-organic and organic trader of cereals, oilseeds, nuts and bakery ingredients*	**Henry Lamotte Oils GmbH** Merkurstrasse 47 28197 Bremen Germany Tel: +49 421 52 39 46 0 www.lamotte.de *Non-organic and organic ingredient trader and oil mill for a big range of natural ingredients, oils for food, cosmetics and pharmaceuticals, beeswax*
August Töpfer & Co Raboisen 58 20095 Hamburg Germany Tel: +49 40 3 20 03-0 www.atco.de *Non-organic and organic commodity trader of food and feed grains, oilseeds and press cake*	**Bergmann GmbH** Schillerstraße 1 63796 Kahl am Main Germany Tel: +49 6188-91411-0 www.getreide-bergmann.de *Non-organic and organic trader of cereals and oilseeds*	**Gustav Heess GmbH** Mollenbachstr. 29 71229 Leonberg Germany Tel: +49 7152 2007-0 www.heess.de *Non-organic and organic oil mill and trader for a big range of oils for food, cosmetics and pharmaceuticals*	**Bressmer & Franke KG** Gutenbergring 37 22848 Norderstedt Germany Tel: +49 4089 05860 www.bressmer-oils.de *Non-organic and organic oil mill and trader for a big range of oils for food, cosmetics and pharmaceuticals*

Netherlands			
BioCore B.V. **(+BioCore Ukraine B.V.)** Bronsweg 22b 8222 RB Lelystad the Netherlands Tel: +31 320290029 www.biocore.nl *Organic commodity trader of cereals, oilseeds, pulses and by-products.*	**DO-IT B.V.** **Dutch Organic Intern. Trade** Hermesweg 7 3771 ND Barneveld the Netherlands Tel: +31 854 870487 www.organic.nl *Organic ingredient trader of cereal ingredients, oilseeds, pulses, milling-products, dried fruits and nuts, preserved fruit.*	**Tradin Organic Agriculture BV** Stationsplein 61-65 1012 AB Amsterdam the Netherlands Tel: +31 20 4074499 www.tradinorganic.com *Organic ingredient trader of, grains, oilseeds, oils, pulses, dried fruits and nuts, canned fruit, juices, frozen fruit*	**Joannusmolen** Hulsbos 3 5431 NZ Cuijk the Netherlands Tel: +31 485 330600 www.joannusmolen.com *Organic ingredient processor and packer*
Naturz Organics Europe B.V. Kromme Steenweg 7 5707CA Helmond the Netherlands Tel: +31 73 6898828 www.naturzorganics.com *Organic trader of feed and food ingredients*	**BV Graanhandel** **P. van Schelven** Oudelandsedijk 10a 3244 LR Nieuwe Tonge the Netherlands Tel: +31 187 652063 www.schelven.nl *Organic trader of cereals, oilseeds, pulses and by-products.(Partner of Spack BV)*	**Spack BV** Oudelandsedijk 10a 3244 LR Nieuwe Tonge the Netherlands Tel: +31 181 48 64 86 www.spack.nl *Organic vegetable oil milling, refining, filling (Partner of BV Graanhandel P. Van Schelven)*	**Reudink B.V.** Postbus 46 7240 AA Lochem the Netherlands Tel: +31 800 738 3465 www.reudink-bio.eu/de/default.aspx?taal=true *Organic feed processor -Partner of the group Trouw nutrition/Nutreco/ForFarmers*
Freeline Organic Food B.V. Boekweitstraat 58 2153 GL Nieuw Vennep the Netherlands Tel: + 31 252 624 790 www.freelineorganicfood.nl *Organic oil mill and trader of seeds and oil*	**Trouw B.V.** Piekstraat 63-65 3071 EL Rotterdam the Netherlands Tel: +31 10 4866332 www.trouw-buckwheat.nl *Non-organic and organic buckwheat and ingredients made of buckwheat. (Partner of Tisco b.v.)*	**Tisco B.V.** Piekstraat 63-65 3071 EL Rotterdam the Netherlands Tel: +31 10 2909155 www.tis-co.nl *Non-organic and organic grains, pulses, seeds, bakery ingredients. (Partner of Trouw B.V.)*	**Doens Food Ingredients B.V.** Oranjestraat 40A 4515 CA IJzendijke the Netherlands Tel: +31 117 302020 www.doensfood.com *Non-organic and organic trader of food and feed ingredients, grains, pulses, oilseeds, bakery ingredients, dried fruits, herbs and spices.*
Dipasa Europe B.V. Marssteden 56 7547 TD Enschede the Netherlands Tel: +31 53 4283366 www.dipasa.nl *Non organic and organic grains, bakery ingredients and oilseeds*			
Austria			**Denmark**
AGRANA feed, **AGRANA Beteiligungs-AG** Friedrich-Wilhelm-Raiffeisen-Platz 1 1020 Vienna Austria Tel: +43 1 21 137-0 www.agrana.com/en/products/starch/feed-and-fertilizers/ *Non-organic and organic commodity processor including organic feed ingredients*	**Stöger GmbH** 2164 Neuruppersdorf 65 Austria Tel: +43 2523 82 77 www.stoeger-oel.at *Non-organic and organic oil mill and oil trader*		**BioMar Group** Vaerkmestergade 25, 6th floor - DK-8000 Aarhus C Denmark Tel: +45 86 20 49 70 www.biomar.com *Non-organic and organic aquaculture feed processor*

United Kingdom			
Earthoil Plantations Ltd Northern Way Bury St Edmunds United Kingdom Tel: + 44 1284 702500 www.earthoil.com *Organic importer and processor of organic and fair trade specialty oils including fruit kernel oils*	**Essential Trading** Unit 3, Lodge Causeway Trading Estate, Fishponds, Bristol, BS16 3JB United Kingdom Tel: +44 117 9583550 www.essential-trading.co.uk/home.aspx *Organic and fair trade processor, packer and wholesaler of dried fruits, processed fruits, pulses and milling products*	**Queenswood Natural Foods Ltd** Bristol Road, Bridgwater Somerset. TA6 4AW United Kingdom Tel: +44 127 8423 440 www.queenswoodfoods.co.uk *Non organic and organic ingredient trader including grains, bakery ingredients and oilseeds*	**Community Foods Ltd** Micross, Brent Terrace, London NW2 1LT United Kingdom Tel: +44 20 8208 2966 www.communityfoods.co.uk *Non-organic and organic importer and packer of grains, pulses and bakery ingredients*
Silbury Marketing Ltd 2 Trinity Mews Priory Road Warwick CV34 4NA United Kingdom Tel: +44 1926 410022 www.silbury.co.uk/index.php *Non-organic and organic oil trader and mill*			
France			
CELNAT 213, avenue Antoine Lavoisier - Z.I. 43700 Saint Germain Laprade France Tel: +33 4 71 03 04 14 www.celnat.fr *Organic trader of grains, oilseeds and pulses*	**OLVEA** Parc D´Activités des Hautes Falaises 76400 Saint Leonard France Tel: +33 2352 92854 www.olvea.fr/index.html?changlng=en *Non-organic and organic oil trader and mill*	**BIORGANIA** MIN de Rungis 10 avenue de Bretagne 94 150 Rungis France www.biorgania.fr *Organic trader and packer of processed fruits, herbs and spices*	**SARL AR COUR** La guillauderie 86240 Iteuil France Tel: +33 5 49 41 93 94 www.arcour.com/en *Organic trader of grains, oilseeds and pulses*
BIO PLANETE Huilerie F.J. Moog SARL Route de Limoux 11150 Bram France Tel: +33 4 68 76 70 60 www.bioplanete.com *Organic oil mill and filler*	**Agribio Union** Route Départementale 999 81630 SALVAGNAC France Tel: +33 5 63 40 24 40 www.agribio.fr *Organic trader of grains, oilseeds and pulses*		
Italy			
Organic Oils S.p.A. Str. Montebuono 12/b - 06132 - Perugia Italy Tel: +39 075 529991 www.organicoils.it/Ing/Default.asp *Organic oil mill of specialty oils*	**Cominter s.a.s.** Viale Monza 43/b 20126 Milano Italy Tel: +39 02 2840392 www.cominter-bio.it *Organic ingredient trader including dried fruits, nuts, herbs and spices*		

Switzerland			
Hofmann Nutrition AG Industriestrasse 27 4922 Bützberg Switzerland Tel: +41 62 958 80 80 www.hokovit.ch *Non-organic and organic feed mill*	**Agrokommerz AG** Dorfstrasse 27, 6196 Marbach, Switzerland Tel: +41 34 493 93 93 www.agrokommerz.ch *Non-organic and organic commodity processor and feed mill*	**GRANOSA AG** Poststrasse 15 9000 St. Gallen Switzerland Tel: +41 71 844 98 20 www.granosa.ch *Non-organic and organic commodity trader of grains, oilseeds, pulses for food and feed*	**KM Commodities AG** Mattstrasse 18 Postfach 6052 Hergiswil Switzerland Tel: +41 41 619 10 00 www.kmcommodities.ch *Non-organic and organic commodity trader of grains, oilseeds, pulses for food and feed*
Weber & Hermann AG Zürcherstrasse 9 8903 Birmensdorf Switzerland Tel: +41 44 737 0350 www.weber-hermann-ag.ch *Non-organic and organic commodity trader of grains, oilseeds, pulses for food and feed*			

Fruits, berries and nuts

Germany			
Voelkel GmbH Fährstr. 1 29478 Höhbeck /Pevestorf Germany Tel: +49 58 46 950 o www.voelkeljuice.de *Organic importer and processor of fruit juices, purees*	**Beutelsbacher Fruchtsaftkelterei GmbH** Birkelstraße 11 71384 Weinstadt Germany Tel: +49 7151 99 51 50 www.beutelsbacher.de *Organic importer and processor of fruit juices, purees and concentrates*	**Dennree GmbH** Hofer Strasse 11 D 95183 Töpen Germany Tel: +49 9295 180 www.dennree.de *Organic trader and retailer, owns Organic Supermarket chain denn's biomarkt, including dried fruits, nuts and processed fruits*	**Rapunzel Naturkost AG** Rapunzelstraße 1 D-87764 Legau Germany Tel: +49 8330 5290 www.rapunzel.de/uk *Organic and fair trade importer, processor, packer and trademark of organic product range*
Alfred Galke GmbH Am Bahnhof 1 · 37534 Gittelde/Harz Germany Tel: +49 5327 8681 0 www.galke.com/home-en *Non-organic and organic trader and wholesaler of processor of herbs, spices, dried berries and dried fruits*	**Bösch Boden Spies GmbH & Co. KG** Heidenkampsweg 73 20097 Hamburg Germany Tel: +49 40 333016 0 www.boesch-boden-spies.com *Non-organic and organic ingredient trader and processor of dried fruits, frozen fruits, concentrates and canned fruit*	**K.-W. Pfannenschmidt GmbH** Habichthorst 34-36 22459 Hamburg Germany Tel: +49 40 555 866 0 www.pfannenschmidt.de *Non-organic and organic ingredient trader and processor of fruit extracts and herbal extracts*	**DöhlerGroup** Riedstraße D-64295 Darmstadt Germany Tel: +49 6151 306 0 www.doehler.com *Non-organic and organic ingredient trader and processor of fruit juices, concentrates and fruit ingredients*
Ernst Rickertsen Trockenfrucht Import Handelsgesellschaft mbH Biedenkamp 13a 21509 Glinde Germany Tel: +49 40 6549760 www.erik.de *Non-organic and organic ingredient trader and processor of dried fruits, nuts, pulses, frozen fruits, concentrates and canned fruit*	**Henry Lamotte Food GmbH** Merkurstrasse 47 28197 Bremen Germany Tel: +49 421 52 39 47 0 www.lamotte-food.de *Non-organic and organic ingredient trader for a big range of natural ingredients, including processed fruit*	**Worlée NaturProdukte GmbH** Grusonstraße 22 22113 Hamburg Germany Tel: +49 40 733 33 0 www.nr.worlee.de *Non-organic and organic trader, wholesaler and processor of natural ingredients including herbs, spices, dried berries and dried fruits*	**STUTE Nahrungsmittelwerke GmbH & Co KG** Abtsbrede 129 33098 Paderborn Germany Tel: +49 5251 170 0 www.stute-fruits.de *Non-organic and organic processor of fruit juices, concentrates, purees, preserved fruit, jams, preparations and honey*
Carl Wilhelm Clasen GmbH Dieselstraße 2 21465 Reinbek bei Hamburg Germany Tel: +49 40 32 56 520 www.cwclasen.de/en *Non-organic and organic trader and packer of dried fruits and nuts*			

Netherlands			
TerraSana Natuurvoeding BV Postbus 70 2450 AB Leimuiden the Netherlands Tel: 0031 172 503333 www.terrasana.nl *Organic processor and packer of dried fruit, nuts and raw food*	**Tradin Organic Agriculture BV** Stationsplein 61-65 1012 AB Amsterdam the Netherlands Tel: +31 20 4074499 www.tradinorganic.com *Organic trader of ingredients, grains, oilseeds, oils, pulses, dried fruits and nuts, canned fruit, juices, frozen fruit*	**DO-IT B.V.** **Dutch Organic Intern. Trade** Hermesweg 7 3771 ND Barneveld the Netherlands Tel: +31 854 870487 www.organic.nl *Organic trader of cereal ingredients, oilseeds, pulses, milling-products, dried fruits and nuts, preserved fruit*	**Rhumveld Winter & Konijn BV** Rivium 1ste straat 111 2909 LE Capelle aan den IJssel the Netherlands Tel: +31 10 233 09 00 www.rhumveld.com *Direct importer of non-organic and organic dried fruits and nuts, grains and food ingredients*
Catz International B.V. Blakeburg Building, Blaak 22, 3011 TA Rotterdam the Netherlands Tel: +31 10 411 34 40 www.catz.nl/index.htm *Non-organic and organic ingredients including organic dried fruits, nuts, spices and herbs*	**Nutland BV** Laan van Waalhaven 440B 2497 GR - Den Haag the Netherlands Tel: +31 70 82 09 777 www.nutland.nl *Non-organic and organic nuts, dried fruits and seeds*		
United Kingdom			
Essential Trading Unit 3, Lodge Causeway Trading Estate, Fishponds, Bristol, BS16 3JB, United Kingdom Tel: +44 117 9583550 www.essential-trading.co.uk/home.aspx *Organic and fair trade processor, packer and wholesaler of dried fruits, processed fruits, pulses and milling products*	**Earthoil Plantations Ltd** Northern Way Bury St Edmunds United Kingdom Tel: + 44 1284 702500 www.earthoil.com *Organic importer and processor of organic and fair trade specialty oils*	**Crazy Jack / Community Foods Ltd** Micross, Brent Terrace, London NW2 1LT United Kingdom Tel: +44 20 8208 2966 www.communityfoods.co.uk www.crazyjack.co.uk *Non-organic and organic importer and packer of dried fruits, nuts, pulses and ingredients*	**Country Products** Unit 6 Centre Park Tockwith North Yorkshire YO26 7QF United Kingdom Tel: +44 1423 358858 www.countryproducts.co.uk *Non-organic and organic trader of dried fruits, grains, pulses, bakery ingredients, herbs and spices*
France			**Sweden**
S.A.S. Jean-Luis Boyere Parc d\'Activités de la Querminais Montenay - BP 60 53500 Ernee France Tel: +33 2 43 13 10 00 www.vijaya.fr *Organic packer of dried fruit & berries*	**BIORGANIA** MIN de Rungis 10 avenue de Bretagne 94 150 Rungis France www.biorgania.fr *Organic trader and packer of processed fruits, herbs and spices*	**Sarl Touret - l'Herbier du Diois** 26410 Châtillon-en-Diois - France Tel: +33 4 75 21 25 77 www.herbier-du-diois.com *Organic and fair trade processor of aromatic and medicinal herbs, spices, essential oils, dried fruits and vegetables*	**ICA SVERIGE AB** SE-171 93 Solna Sweden Tel: +46 20 83 33 33 www.ica.se *Non-organic and organic retailer in Scandinavia with organic product range*

Italy			
Bio Organic Largo Rosolino Pilo, 39/A - 95128 Catania Italy Tel: +39 095 448933 www.bioorganic.it *Organic trader including IQF with branch in the Netherlands*	**Cominter s.a.s.** Viale Monza 43/b 20126 Milano Italy Tel: +39 02 2840392 www.cominter-bio.it *Organic ingredient trader including dried fruits, nuts, herbs and spices*	**Ctm Agrofair Italia Srl** Via Crispi 9 39100 Bolzano Italy Tel: +39 0471 941190 www.ctmagrofair.it *Non-organic and organic fair-trade wholesaler including processed fruits*	**Steinhauser Group** via Borgonovo 37043 Castagnaro-Verona Italy Tel: +39 0442 635611 www.steinhausergroup.de/english/homee.htm *Non-organic and organic processor of fruit juices, concentrates, purees*
V. Besana S.p.A. via Guido D'Arezzo 4 20145 Milano Italy Tel: +39 081 8659111 www.besanaworld.com *Non-organic and organic nuts, dried fruit, seeds, food ingredients*			
Belgium	**Spain**	**Switzerland**	
SVZ Rijkevorsel nv Gammel 85 2310 Rijkevorsel Belgium Tel: +32 3 340 84 00 www.svz.com *Non-organic and organic processed fruits, IQF, pulps and juices*	**Buenola / TOSTADOS DE CALIDAD, S.L.** Ctra. Cogullada, 14 50014 Zaragoza Spain Tel: +34 976 464394 www.buenola.com *Non-organic and organic dried Fruits and nuts*	**TRAWOSA AG** Poststrasse 15 9000 St. Gallen Switzerland Tel: +41 71 844 98 40 www.trawosa.ch *Non-organic and organic food ingredients including dried fruits, nuts*	**W.Kündig & Cie AG** Stampfenbachstr. 38 8023 Zürich Switzerland Tel: +41 1 368 25 73 www.kuendig.com *Non-organic and organic food ingredients, dried fruits, nuts and vegetables, processed fruits, IQF, juices, concentrates, herbs, spices, cereals, pulses*
Austria			
Lemberona GmbH Kratzmanngasse 8 1220 Wien Austria Tel: +43 1 8972999 http://www.lemberona.at/ *Organic and fair trade assortment including dried fruit, nuts, juices*	**Pfanner Austria Hermann Pfanner Getränke GmbH** Alte Landstraße 10 6923 Lauterach Austria Tel: +43 5574 6720 www.pfanner.com.ua *Non-organic and organic fruit juice processor with facilities in Ukraine for apple juice concentrate and apple aroma*	**AGRANA fruit** AGRANA Beteiligungs-AG Friedrich-Wilhelm-Raiffeisen-Platz 1 1020 Vienna Austria Tel: +43 1 21 137-0 www.agrana.at/en/our-products/fruit/ *Non-organic and organic commodity processor including organic processed fruits*	

Herbs, spices, essences, flavours

Germany			
HerbaPack GmbH Citrusstraße 11 37318 Kirchgandern Germany Tel: +49 36081 6840 www.herbapack.de *Organic trader of herbs and spices*	**Ulrich Walter GmbH** Dr.-Jürgen-Ulderup-Straße 12 49356 Diepholz Germany Tel: +49 5441 98 56 0 www.lebensbaum.de *Organic processor and packer of herbal teas and spices with own brand*	**Heuschrecke Naturkost GmbH** Redcarstr. 50a 53842 Troisdorf – Spich Germany Tel: +49 2241 39726 0 www.heuschrecke.com *Organic processor and packer of herbal teas and spices with own brand*	**YOGI TEA GmbH** Hanseatic Trade Center Kehrwieder 8 20457 Hamburg Germany Tel: +49 40 42 30 11 0 www.yogitea.eu *Organic processor and packer of herbal and spice teas with own brand*
MB-Holding GmbH & Co. KG Dutendorfer Straße 5-7 91487 Vestenbergsgreuth Germany Tel.: +49 9163 88 0 www.martin-bauer-group.com/de *Non-organic and organic trader, wholesaler and processor of aromatic plants, herbs and spices, dried berries and dried fruits for beverages and pharmaceuticals*	**K.-W. Pfannenschmidt GmbH** Habichthorst 34-36 22459 Hamburg Germany Tel: +49 40 555 866 0 www.pfannenschmidt.de *Non-organic and organic ingredient trader and processor of fruit extracts and herbal extracts*	**Gebrüder Wollenhaupt GmbH** Gutenbergstraße 33-35 21465 Reinbek Germany Tel: +49 40 72 83 00 www.wollenhaupt.com *Non-organic and organic trader, wholesaler and packer of tea ingredients including aromatic plants, herbs and spices, dried berries and dried fruits*	**FLORAPHARM Pflanzliche Naturprodukte GmbH** Am Steinernen Kreuz 7 96110 Scheßlitz Germany Tel: +49 9542 94 12 0 www.florapharm.de *Non-organic and organic processor and packer of herbal teas with own brand*
Worlée NaturProdukte GmbH Grusonstraße 22 22113 Hamburg Germany Tel: +49 40 733 33 0 www.nr.worlee.de *Non-organic and organic trader, wholesaler and processor of natural ingredients including herbs, spices, dried berries and dried fruits*	**Rijk Zwaan Welver GmbH** Werler Straße 1 59514 Welver Germany Tel.: +49 23 84 / 501 – 0 www.rijkzwaan.de *Non-organic and organic seed propagation for vegetables and herbs*	**Alfred Galke GmbH** Am Bahnhof 1 37534 Gittelde/Harz Germany Tel: +49 5327 8681 0 www.galke.com/home-en *Non-organic and organic trader and wholesaler of processor of herbs, spices, dried berries and dried fruits*	**Henry Lamotte Food GmbH** Merkurstrasse 47 D-28197 Bremen Germany Tel: +49 421 52 39 47 0 www.lamotte-food.de *Non-organic and organic ingredient trader for a big range of natural ingredients, including herbs and spices, extracts, beeswax*
Hälssen & Lyon GmbH Pickhuben 9 20457 Hamburg Germany Tel: +49 40 36 14 3 0 www.haelssen-lyon.com *Non-organic and organic trader, wholesaler and packer of tea ingredients including aromatic plants, herbs and spices, dried berries and dried fruits*	**Frey + Lau GmbH** Immenhacken 12 24558 Henstedt-Ulzburg Germany Tel: +49 4193 99 53 www.freylau.de *Non-organic and organic trader and processor of essential oils, fragrances and flavours*	**Firmenich GmbH** Alfred-Nobel-Str. 46-56 50169 Kerpen Germany Tel : +49 2237 6 90 10 www.firmenich.com *Non-organic and organic ingredient trader and processor of fragrances, flavours, fruit extracts and herbal extracts*	**SYMRISE AG** Mühlenfeldstraße 1 37603 Holzminden Germany Tel: +49 5531 90 0 www.symrise.com *Non-organic and organic trader and processor of food ingredients including essential oils, fragrances and flavours*

France			
Sarl Touret - l'Herbier du Diois 26410 Châtillon-en-Diois - France Tel: +33 4 75 21 25 77 www.herbier-du-diois.com *Organic and fair trade processor of aromatic and medicinal herbs, spices, essential oils, dried fruits and vegetables*	**Le secret des traditions** Route des Moutiers – 26400 ALLEX France Tel: +33 475 81 00 01 www.secretdestraditions.com/index_boutique.php *Organic processor and packer of herbal and spice teas with own brand*	**BIORGANIA** MIN de Rungis 10 avenue de Bretagne 94 150 Rungis France www.biorgania.fr *Organic trader and packer of processed fruits, herbs and spices*	**Euro Kapsule** 99 Bis, Avenue du Général Leclerc 75014 Paris France Tel: +33 1 43 35 48 11 www.eurokapsule.fr/index.php *Non-organic and organic processor of herbal ingredients*
United Kingdom			
The Organic Herb Trading Company Milverton Somerset, TA4 1ND United Kingdom Tel: +44 1823 401205 www.organicherbtrading.com *Organic and fair trade trader of herbal and spice ingredients, essential oils, extracts, oils and fats*	**Hambleden Herbs** Unit 6 Park Street Business Centre, Park Street, Chatteris, Cambridgeshire, PE16 6AE United Kingdom Tel : + 44 1354 694693 www.hambledenherbs.com *Organic processor and packer of herbal and spice teas with own brand*	**Pukka Herbs Ltd** 8 Hawkfield Business Park Bristol BS14 0BY United Kingdom Tel: +44 845 375 1744 www.pukkaherbs.com *Organic processor and packer of herbal and spice teas, oils and health products with own brand*	**Verstegen Spices & Sauces UK Ltd** Unit A9B, Plough Road Center Great Bentley Essex C07 8LG United Kingdom Tel: +44 1206 250200 www.verstegen.nl *Non-organic, organic and fair trade processor of spices*
Netherlands		**Switzerland**	
Organic Flavour Company Turbinestraat 12, 3903 LW Veenendaal the Netherlands Tel: +31 318 519 www.ofc.nl *Organic processor herbs and spices, teas and dried vegetables*	**Catz International B.V.** Blakeburg Building, Blaak 22, 3011 TA Rotterdam the Netherlands Tel: +31 10 411 34 40 www.catz.nl/index.htm *Non-organic and organic ingredient trader including organic dried fruits, nuts, spices and herbs*	**Bioforce AG** Gruenaustrasse 4 9325 Roggwil Switzerland Tel: +41 71 4546161 www.bioforce.ch *Organic processor of phyto-pharmaceuticals and health products*	**W.Kündig & Cie AG** Stampfenbachstr. 38 8023 Zürich Switzerland Tel: +41 1 368 25 73 www.kuendig.com *Non-organic and organic food ingredient trader, including dried fruits, nuts and vegetables, processed fruits, IQF, juices, concentrates, herbs, spices, cereals, pulses*

Honey

Germany			
Walter Lang GmbH Am alten Sicherheitshafen 2-4 28197 Bremen Germany Tel: +49 421 52 71 74 0 www.walter-lang.de *Organic trader and packer of honey with own brand*	**Allos Hof-Manufaktur GmbH** Domshof 18 – 20 28195 Bremen Germany Tel: +49 421 16 33 53 0 www.allos.de *Organic trader and packer of honey with own brand*	**Tuchel & Sohn GmbH** Hermann-Buck-Weg 6 22309 Hamburg Germany Tel: +49 40 639007 0 www.tuchel-sohn.de/honey *Non-organic and organic trader of honey and bee-products*	**Breitsamer & Ulrich GmbH & Co KG** Berger-Kreuz-Str. 28 81735 München Germany Tel: +49 89 4505 620 www.breitsamer.de *Non-organic and organic trader of honey with own brand*
GEPA mbH GEPA-Weg 1 42327 Wuppertal Germany Telefon: +49 2 02 266 83 0 www.gepa.de *Non-organic and organic fair trade brand including honey*	**Kahl GmbH & Co. KG** Otto-Hahn-Straße 2 22946 Trittau Germany Tel: +49 4154 8431 0 www.kahlwax.de *Non-organic and organic trader of natural waxes including beeswax*		
United Kingdom			
Al-Ameen Honey Ltd 34 Grainger Park Road Newcastle upon Tyne NE4 8RY United Kingdom Tel: +44 191 4065368 www.al-ameenhoney.co.uk *Organic trader and packer of honey with own brand*	**Rowse Honey Ltd** Moreton Avenue Wallingford, Oxfordshire OX10 9DE United Kingdom +44 800 954 8089 www.rowsehoney.co.uk *Non-organic and organic trader of honey with own brand*	**Tropical Forest** PO Box 92, Aberystwyth, Ceredigion, SY23 1AA United Kingdom Tel: +44 1970 832511 www.tropicalforest.com/Tropical_Forest/Tropical_Forest_home.html *Non-organic and organic trader of honey with own brand*	**FDL Head Office** Devon House 58 – 60 St Katharine's Way London E1W 1JP United Kingdom Tel: +44 20 7488 0777 www.fdlworld.com/cms *Non-organic and organic ingredient trader including organic and fair trade honey*
France			
Famille Michaud Apiculteurs, Domaine St Georges, 9 Chemin Berdoulou 64290 GAN France Tel: +33 5 59 21 91 00 www.lunedemiel.fr *Non-organic and organic trader of honey with own brand*	**Mellidor** 9 bis avenue de la Trillade 84000 Avignon France Tel : +33 4 90 14 11 96 www.mellidor.com *Non-organic and organic trader of honey with own brand*	**Alter Eco** 217, chemin du Grand Revoyet 69561 Saint Genis-Laval Cedex France Tel: +33 4 72 67 10 20 www.altereco.com *Non-organic and organic fair trade brand including honey*	
Belgium		**Poland**	
Meli NV Handelsstraat 13 8630 Veurne Belgium Tel: +32 58 310 310 www.meli.be *Non-organic and organic trader of honey with own brand*		**Gospodarstwo Pasieczne "Sądecki Bartnik"** A. i J. Kasztelewicz 33-331 Stróże 235 Poland Tel: +48 18 445 18 82 http://bartnik.pl *Non-organic and organic trader of honey with own brand*	

4.4. Relevant events, organizations and useful links

Cereals/grains, oil seeds and leguminous crops

German Association of Food industries (BVE)
https://www.bve-online.de/english

German Association of Wholesale Traders in Oils, Fats and Oil Raw Materials (GROFOR)
www.grofor.de

German Association for oilseed processing industries (OVID)
www.ovid-verband.de

Netherlands Oils, Fats and Oilseeds Trade Association (NOFOTA)
www.nofota.nl

Dutch Food Industry Federation (FNLI)
www.fnli.nl

Fruits, berries and nuts (dried, juices, canned, IQF)

INC International Nut and Dried Fruit Council
www.nutfruit.org

FRUCOM European Federation of the Trade in Dried Fruit, Edible Nut
www.frucom.eu

Freshfel Europe
www.freshfel.org

Waren-Verein der Hamburger Börse e. V.
www.waren-verein.de

The Nut Association
http://www.thenutassociation.org/

NZV, De Nederlandse Vereniging voor de Handel in Gedroogde Zuidvruchten, Specerijen en aanverwante artikelen
www.zuidvruchten.nl/home

Nucis Italia
www.nucisitalia.it

Fruitimprese - Associazione Imprese Ortofrutticole
www.fruitimprese.it

Medicinal and aromatic plants

Association for Medicinal and Aromatic Plants of Southeast European Countries (AMAPSEEC)
http://amapseec.com/

Associazione Italiana fra Coltivatori, Raccoglitori, Trasformatori, Importatori, Esportatori, Grossisti e Rappresentanti di Case Estere di Piante Medicinali, Aromatiche, Spezie, Estratti Vegetali, Oli Essenziali e loro derivati (ASSOERBE)
www.assoerbe.eu

European Herb Growers Association (EUROPAM)
http://www.europam.net

European Herbal Infusions Association (EHIA)
www.ehia-online.org

Federazione Italiana dei Produttori di Piante Officinali (FIPPO)
www.fippo.org

International Council for Medicinal and Aromatic Plants (ICMAP)
www.icmap.org

PELERO CZ o.s. (Association of the Producers and Processors of Medicinals and Aromatic Plant and Spices)

www.pelero.cz

Polski Komitet Zielarski (Polish Herbal Committee)
www.pkz.pl

Verein für Arznei und Gewürzpflanzen (SALUPLANTA e.V.)
www.saluplanta.de

WKF Wirtschaftsvereinigung Kräuter- und Früchtetee e.V.
www.wkf.de

German Society for Seabuckthorn and Wild Fruits
www.sanddorn.net

International Seabuckthorn Association
www.isahome.net

Honey

International Honey Commission
www.ihc-platform.net

APIMONDIA Federation of international beekeepers' associations
www.apimondia.org

Bees for development, information centre
www.beesfordevelopment.org

FEEDM - European federation of honey packers and distributors
www.feedm.com

British honey importers and packers association
www.honeyassociation.com

4.4.1. Trade fairs and conferences for organic products in emerging markets

Updated list of organic fairs: http://www.organic-bio.com/en/fairs/

http://www.festivalevolution.cz/en/
BIOSTYL, fair of organic food and natural cosmetics, Prague, Czech Republic, 18-20 March 2016

www.wellness-expo.info
WELLNESSEXPO 2014, Fair for organic products, health and wellness, Moscow, Russian Federation, 25-27 March 2016

http://ekolojiizmir.izfas.com.tr/#
7th Izmir Organic Products Fair, Izmir, Turkey, 27-30 April 2016

http://agroexpo.in.ua/Rus/organic.php
AGRO-ORGANIC, Exhibition of organic products & technologies, Kiev, Ukraine, 8-11 June 2016

www.incheba.sk/buxus/generate_page.php?page_id=7492
BIOSTYL, fair of organic food and natural cosmetics, Bratislava, Slovakia, 6-8 October 2016

http://www.targi.lodz.pl/en/fairs/297-9th-international-organic-and-regional-food-fair-natura-food/info/
NATURA FOOD, 9th International Organic and Natural Food Fair, Lodz, Poland, 7-9 October 2016

www.nature-health.si/for-visitors/home
47th Nature-Health Fair, Ljubljana, Slovenia, 24-27 November 2016

www.exponatura.net
8th Natural, Organic & Healthy Product Exhibition, Istanbul, Turkey, 15-18 December 2016

http://www.ecogorod-expo.ru/en/
EcoCityExpo, Moscow, Russian Federation, autumn 2016, tba

4.4.2. Price information sources

www.ami-informiert.de

www.euromonitor.com

www.agra-net.net/agra/public-ledger

www.intracen.org/itc/market-info-tools/market-information

www.cmegroup.com/trading/agricultural

4.4.3. Examples of organic specifications

The following specifications originate from re-sellers. Importers' purchase departments usually demand higher qualities. By this difference, traders guarantee the promised quality of their products.

Table 38: Quality specifications for organic cereals, oilseeds and pulses[116]

	Humidity	Impurity	Protein	Gluten	Falling number	Oil content	Oleic acid	GMO content
Organic wheat	max 15 per cent	max 2 per cent	min. 12,5 per cent	min 24 per cent	min 250 sec.			
Organic sunflower	max 9 per cent	max 2 per cent				min 44 per cent	max 75 per cent	
Organic sunflower high oleic	max 9 per cent	max 2 per cent				min 44 per cent	75-93 per cent	
Organic rapeseed	max 9 per cent	max 2 per cent				min 40 per cent		max 0,1 per cent
Organic linseed		max 2 per cent				min 40 per cent		

Organic cereals
www.cominter-bio.it/index.php/en/about-us/itemlist/category/51-cereals

Organic sunflower-, flax- and pumpkin- seeds
www.cominter-bio.it/index.php/en/about-us/itemlist/category/57-seeds

Organic pulses
www.cominter-bio.it/index.php/en/about-us/itemlist/category/55-pulses

Organic fruits and nuts

Organic fruit and vegetable products
www.cominter-bio.it/index.php/en/about-us/itemlist/category/53-fruits-and-vegetables

Organic apricot pulp
www.organic.nl/pdf/19150.pdf

Organic apricot halves
www.organic.nl/pdf/19170.pdf

[116] www.selton-gmbh.de

Organic peach halves
www.organic.nl/pdf/19153.pdf

Organic apple pieces in tin
www.organic.nl/pdf/18120.pdf

Organic apple puree
www.organic.nl/pdf/19082.pdf

Organic prunes sauce
www.organic.nl/pdf/19155.pdf

Organic pitted cherries
www.organic.nl/pdf/19120.pdf

Organic blueberry sauce
www.organic.nl/pdf/19153.pdf

Organic currants
www.organic.nl/pdf/18140.pdf

Organic herbs and spices

Organic herbs and spices
www.cominter-bio.it/index.php/en/about-us/itemlist/category/58-herbs-and-spices

Organic caraway seeds
www.organic.nl/pdf/14064.pdf

4.4.4. Country specific organic data from the target region

Table 39: Development of organic agricultural land in the target region[117]

	2009 (ha)	2010 (ha)	2011 (ha)	2012 (ha)	Change 2011/2012 (ha)	Change 2011/2012 (per cent)
Armenia	600	750	750	810	60	8.0
Moldova	32,105	32,105	22,102	22,102	0	0
Ukraine	270,193	270,226	270,320	272,850	2,530	0.9

Table 40: Total organic areas in the target region 2012[118]

	Organic agricultural land (ha) 2012	Organic wild collection (ha) 2012	Total
Armenia	810	11,050	11,860
Moldova	22,102	0	22,102
Ukraine	272,850	330,000	602,850

Table 41: Organic operators in the target region 2012[119]

	Producers	Processors	Importers	Exporters
Armenia	24	10	-	-
Moldova (2011)	172	-	-	-
Ukraine	164	59	41	36

Table 42: Number of organic beehives in the target region 2012[120]

	Beehives
Armenia	526
Moldova	-
Ukraine	300

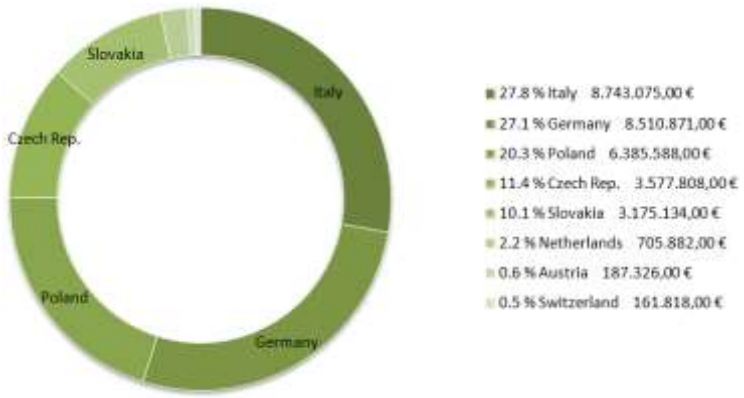
[117] FiBL and IFOAM (2014). World of organic agriculture 2014.
[118] FiBL and IFOAM (2014). World of organic agriculture 2014.
[119] FiBL and IFOAM (2014). World of organic agriculture 2014.
[120] FiBL and IFOAM (2014). World of organic agriculture 2014.

Table 43: Export of organic products from Moldova to EU countries in 2013[121]

Products	Export to	Quantity (tons)	Price: (lei/kg)	Total value lei	Total value €
Walnuts (shelled)	Germany	962	89.83	86,416,460	4,621,201
Sunflower oil	Poland	2,800	25.77	72,156,000	3,858,610
Feed grains	Italy	16,350	4.25	69,487,500	3,715,909
Soy	Italy	8,940	7.20	64,368,000	3,442,139
Sunflower seeds	Slovakia	9,500	6.25	59,375,000	3,175,134
Rape	Germany	10,100	5.85	59,085,000	3,159,626
Feed peas	Czech Rep.	8,650	6.80	58,820,000	3,145,455
Barley	Poland	10,350	3.65	37,777,500	2,020,187
Feed corn	Italy	7,600	3.90	29,640,000	1,585,027
Pumpkin Seeds	Holland	500	26.40	13,200,000	705,882
Rye	Poland	2,340	4.05	9,477,000	506,791
Triticale	Czech Rep.	2,100	3.85	8,085,000	432,353
Dried prunes	Germany	208	34.79	7,236,320	386,969
Dried apples	Germany	175	36.66	6,415,500	343,075
Dried rosehip	Switzerland	68	44.50	3,026,000	161,818
Dried cherries	Austria	44	54.50	2,398,000	128,235
Cherries preserved	Austria	130	8.50	1,105,000	59,091
Total		**80,817**			**31,447,502**

According to Table 43, sunflower is the leading organic export crop from Moldova as export values of sunflower oil and seeds together totalled €7 million in 2013.[122] Detailed and up-to-date organic export statistics are not available for Armenia and Ukraine.

Figure 27: Main organic export destinations Moldova 2013[123]



[121] "ProRuralInvest" based on statistics from Ministry of Agriculture, Moldova.
[122] Table 43 above seems to be inconsistent as there is only one export destination country per product mentioned – this does not seem plausible as clients in several destinations should be expected at least for some of the products.
[123] Own graph based on statistics from Ministry of Agriculture, Moldova.

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This project is funded by the EU

The “Greening Economies in the Eastern Neighbourhood” (EaP-GREEN) programme is financed by the European Commission and other donors, and is jointly implemented by the Organization for Economic Cooperation and Development (OECD), the United Nations Economic Commission for Europe (UNECE), the United Nations Environment Programme (UNEP), and the United Nations Industrial Development Organization (UNIDO). Under this programme, UNEP provides support to countries to enhance their knowledge of domestic and international market opportunities and barriers of organic products, and builds trade and production capacities.

For further information visit
http://www.unep.org/greeneconomy/organicagriculture or
www.green-economies-eap.org

The EaP GREEN programme is funded by the European Union and other donors, and is jointly implemented by four international organizations.