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END MARKET STUDY FOR FRESH FRUITS AND VEGETABLES IN MOLDOVA

AGRICULTURAL COMPETITIVENESS AND ENTERPRISE DEVELOPMENT
PROJECT (ACED)

DECEMBER 2011

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DEVELOPMENT PROJECT (ACED)**

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EXECUTIVE SUMMARY

Moldova is a small agrarian country in Eastern Europe where agriculture has always been vital to the overall economy, accounting for 30% of GDP and 60%¹ of exports. Land is very fertile and the climate temperate. There is, however, extensive “parcelization” of land with approximately 300,000² small farmers occupying 50%³ of the land while a small number of larger farmers cultivate the rest. Moldova has a per capita income of only \$2500⁴ and a GDP growth rate of 7%⁵. Over 40% of family income is spent on food and beverages.⁶

Overall, a considerable share of the domestic fruit and vegetables market is satisfied by imports. Moldova is a net exporter of fruit, and from 2003 to present, a net importer of vegetables. With fruit, a good deal of imports are not grown locally due to climatic factors. With vegetables, however, being a net importer is due to the off-season import of products that are grown seasonally (May- November) in Moldova. The local production and marketing season could be extended to provide more competition to imports over a greater time period.

The market structure for fruit and vegetables in Moldova includes the following distribution channels: approximately one hundred open air markets, four wholesale markets, one hundred supermarkets, and a myriad of small kiosks. In addition there is HoReCa (Hotels, Restaurants, Cafes, the foodservice sector) that buys directly from the open air and wholesale markets as well as directly from growers and retailers. Besides those commercial channels a large portion of rural households consume and preserve their production for their own consumption or informal exchange with their neighbors.

Only 10-20% of the Moldovan population buys fruits and vegetables in supermarkets, and even then, it is not their main point of purchase. Fruit and vegetables account for only 2-5% of the sales space in Moldovan supermarkets⁷. The vast majority of fresh produce is purchased in traditional open air markets and not in supermarkets. This is based on longstanding habits as well as the higher prices that can be found for produce in supermarkets. The domestic market is extremely price sensitive and consumers have limited buying power. Food safety is sometimes sacrificed in order to move product quickly when the market price is good, compromising sufficient elapsed time from agrochemical application to harvest and then sale. Often supermarkets purchase domestic and imported products through distributors who facilitate and consolidate paperwork and invoices. This is often based on long standing relationships.

Moldova is in the process of bringing its inspection and export procedures into compliance with EU quality requirements for fresh fruits and vegetables, which will be in force starting in 2012.

In addition to export opportunities, Moldovan high value agricultural (HVA) producers have vast potential to improve overall profitability through domestic expansion in fresh and processed fruits and vegetables. In order to do so, there is a need to increase productivity,

¹ Sutton et. al. "Integrating environment into agriculture and forestry progress and prospects in Eastern Europe and Central Asia," August, 2007.

² Official governmental statistics in recent years can show this to be as high as 432,000 small farmers. However, our estimates are that many people have emigrated or are renting out their land so that in actuality there are many less small farmers than on paper.

³ According to Statistica.md 2011 there were 1.9 million ha of agricultural land. According to statistica.md 2008 data, there were 2597 registered companies farming .95 million ha. Therefore, .95 million ha is approximately half of the 1.9 million ha of ag land.

⁴ <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html?countryName=Moldova&countryCode=md®ionCode=eur&rank=174#md>

⁵ ibid

⁶ Stiopca, Oleg, Brinza, Oleg, 2010 report commissioned by the Moldova Fruit association “Fresh Fruit and Vegetable Market in Moldova: Facts and Figures.” January, 2010.

⁷ ACED estimates based on EMS store visits and interviews.

quality, uniformity, and extend the production season using greenhouses. Moldovan producers need to better understand the importance of food safety requirements for all crops to expand domestic consumption and better position crops for select export markets. The fragmentation of the grower community must be overcome with the consolidation of crops and introduction of new varieties to better meet the needs of retailers. Requirements for better penetrating the supermarket distribution channel include consistent volumes, product visual appeal and conformity, frequency of delivery (fueled by better cold chain management), packaging, labeling, certification, and proper fiscal invoicing.

1. INTRODUCTION

About ACED

ACED is a five year project, co-funded by the United States Agency for International Development (USAID) and the Millennium Challenge Corporation (MCC), and implemented by Development Alternatives, Inc. (DAI) to increase the success of the Moldovan agriculture sector in the production and marketing of high value crops both in the domestic market and internationally. ACED focuses on a limited number of high value agriculture value chains and will take advantage of new programs, supported by MCC, to increase irrigation capacity in the country and provide positive returns to farmers and the rural economy. In addition to striving to improve the business enabling environment, the program provides a combination of technical and managerial training, technical assistance and marketing services to strengthen existing value chains and encourage the development of new ones.

Objectives of the study

The goal of this End Market Study (EMS) is to enable Moldovan fruit and vegetable value chain participants (producers, packers, consolidators and others) to get a better understanding of the domestic market for their products in order to increase profitability in the domestic market. The information presented herein will lead to a more sustainable, reliable domestic supply chain, increasing the competitiveness of Moldovan products vis a vis imports, particularly in the supermarkets during shoulder seasons of early spring and late autumn.

More specifically, in this End Market Study we will address the following objectives:

- to analyze demand in the domestic market—trends, consumer preferences, and market requirements, to analyze market structure (product categories, pricing, volumes, distribution channels, interaction among value chain participants),
- to benchmark Moldovan products against competitive products already in the market to target competitive strengths and weaknesses,
- to gain a better understanding of how to effectively sell more domestically grown product through the various market channels,
- to identify the buyers' critical requirements in the different commercial formats: supermarket, open air market, wholesale market, HoReCa and processors,
- to analyze the general incremental “pricing ladder” (prices and mark-ups) for the entire domestic distribution channel and the different scenarios including imports,
- to identify the packaging requirements for wholesale market, HoReCa and retail markets,
- to identify any important market niches such as organics or Fair Trade,
- to learn the reputation Moldovan products have in the market place compared to other supply countries,
- to identify the normal payment terms used within the supply chain and the level of importance,
- to identify the legal procedures that must be followed for supplying fresh fruits and vegetables in Moldova, and
- to identify the standard trade practices related to local supply of fruit and vegetables as well as imports of fresh fruits into Moldova.

Methodology and report structure

The findings of this report are based on the primary and secondary information collected from different sources. For collecting secondary information, ACED conducted desk research of open and commercial information sources and available market and sector reports. In order to get information directly from the source, ACED interviewed a wide range of market and industry players including producers, processors, traders, and supermarket representatives. The team also interviewed grocery stores, managers, and traders in the Chisinau open air wholesale and retail markets.

This report consists of a brief executive summary, introduction, general description of the Moldovan fruit and vegetable market, an explanation of the market structure, product requirements, major problems and challenges within the sector and conclusions and recommendations.

2. GENERAL DESCRIPTION OF THE MARKET

Moldova is a small agrarian Eastern European country situated between Ukraine and Romania with a population of 3.6 million inhabitants and a land mass of 33,700 sq.km. The majority of the land lies between the Prut and Nistru (Dniester) rivers. Moldova is situated very close to the Black Sea however, aside from a new Danube river port (still being developed), it is a landlocked country. Over 60% of the population lives in rural areas and 40% in urban areas. The capital, Chisinau, comprises 22%⁸ of the population and is the hub for all fruit and vegetable trading activity.

Moldova remains one of the poorest countries in Europe despite recent progress from its small economic base. Moldova has a per capita income of only \$2500⁹ and a GDP growth rate of 7%,¹⁰ which, if sustained, would indicate substantial growth in local demand for a broader range of higher quality fruits and vegetables. This optimism is countered somewhat by official government statistics (below). We remain confident, however, that as economic growth continues, and with it the size and affluence of the middle class, demand for fresh fruits and vegetables will increase, as has been the case in other countries.

Official governmental statistics of fruit and vegetable consumption (including potato and melons) per capita in kg for the last 10 years are presented below. It paints a picture of a relatively stable consumption pattern with some small variations from year to year.

Table 1. Fruit and Vegetable Consumption (Including Potato and Melons) per capita in kg

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
202	205	219	189	213	259	163	198	200	208

Source: <http://www.statistica.md/pageview.php?!=ro&idc=315&id=2278>

Agriculture has always been the mainstay of the Moldovan economy and accounts for over 30% of GDP and approximately 60% of total exports. Agriculture provides employment for approximately 35% of the population. Over 75% of Moldovan territory is made up of Chernozem (black earth), which is excellent agricultural land. Agricultural lands cover 76 percent of the country, and forests nearly 10 percent¹¹. There are no major mineral deposits in the country.

⁸ www.statistica.md

⁹ <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html?countryName=Moldova&countryCode=md®ionCode=eur&rank=174#md>

¹⁰ *ibid*

¹¹ Sutton, et. al. "Integrating environment into agriculture and forestry progress and prospects in Eastern Europe and Central Asia" 2007.

The Moldovan climate is temperate continental with summers that are warm and winters that are mild. In spite of the favorable climate, the country has, in recent years, experienced increasingly severe drought periods. The 2007 drought led to extensive crop losses. A drought in the summer of 2011 appears to have had significant impact on planting and germination of next year's winter grains harvest but fruit and vegetable crops were not much affected. Approximately one half of all farmland is in the hands of 300,000¹² small farmers that have small parcels that on average are around 2.2 hectares of used agricultural land. Often these 1-2 hectare parcels are further sub-divided in 3 or even 4 smaller plots that are for different purposes. The ability to make advances with improved inputs and technology are limited due to parcelization, lack of irrigation, lack of finance, and high interest rates for loans. These factors combined have led to lower productivity than key competitors. There have been some advances made by farmers who have been able to lease or buy larger land parcels to become more cost effective. Fifty percent of private land is managed by about 2,600 larger scale corporate farms, averaging approximately 370 hectares each¹³. These larger farms generally cultivate crops such as sugar beets, wheat, and sunflowers that involve less labor, more land and more machinery.

The land is generally very fertile but there are some very pressing environmental problems such as soil degradation, water pollution from municipal sewage and agrochemical run-off, and lack of sustainable manure management practices. In addition the amount of forest land in Moldova is insufficient for effective environmental protection and has been a major cause of a high level of soil erosion, landslides, and water resource degradation, and drought intensification.

According to the data of the National Bureau of Statistics, Moldovans spend on average 40.2% of their income on food and beverage products. Fruits and vegetables account for 8.6% of those expenditures. The average per capita annual consumption is 200 kg of vegetables (from which 110 kg are potatoes) and 65 kg are fruits.

Production

Overall Moldova has very good conditions for producing horticultural crops. Official statistics in 2009 indicated that the total area of fruit and nut plantations is 125.3 thousand hectares including 116.6 thousand hectares of fruit, 8.2 thousand hectares of nuts, and 0.5 thousand hectares of berry bushes, which, combined account for about 6.5% of agricultural land area. The main fruit planted is apples, covering approximately 65 thousand hectares, followed by stone fruit, 40 thousand hectares of mainly plums and cherries, and table grapes, 8 thousand hectares¹⁴. The average annual area of planted open field vegetables is 35 -42 thousand hectares and the protected area (greenhouses) for growing vegetables has a surface area of 550 hectares¹⁵.

Geographically the main zones for production of apples and potatoes are in the Northern part of the country with plums produced in the Central part, peaches in the South and table grapes in the Southern and central areas. Vegetable production, greenhouse and open field are scattered throughout the country based on water accessibility and soil quality.

A lot of controversial statistical data is available regarding overall fruit and vegetable production. Generally, the official data underestimates the real volumes produced due to the fact that growers usually report lower production figures in order to minimize taxes. Many small households that produce fruits and vegetables for their own consumption do not report

¹² See footnote one.

¹³ According to official statistics for the year 2008, www.statistica.md

¹⁴ www.fruitnews.ru referencing www.statistica.md

¹⁵ Open field vegetables statistics are taken from www.statistica.md and greenhouse statistics are from ADP census report

any data at all. In order to get a more accurate picture the research team has analyzed several data sources and interviewed a number of key industry experts. According to the results received the following approximate production figures can be provided:

Fruits – total annual production is about 400 thousand tons, with apples the biggest crop accounting for a minimum of 60% of total production (250-300 thousand tons depending on the year). Plums are the second biggest crop with the annual volumes of around 50 thousand tons followed by cherries (20 thousand tons), peaches (15 thousand tons) and apricots (5 thousand tons)

Table grapes – Are categorized by themselves with approximately 60 thousand tons produced annually.

Melons -approximately 75 thousand tons produced annually.

Vegetables – Annual production totals 400 thousand tons excluding potatoes, which alone account for another 300 thousand tons. The main vegetable crops produced in open field are tomatoes (80 thousand tons), cabbage (60 thousand tons), onions (50 thousand tons), peppers (16-45 thousand tons), cucumbers (30 thousand tons), pumpkins (30 thousand tons), carrots (20 thousand tons), red beets (20 thousand tons) and garlic (10 thousand tons) with averages fluctuating by 10% year on year. In greenhouses, total production approximates 54 thousand tons of vegetables¹⁶ with tomatoes accounting for 77%, cucumbers 9%, sweet peppers 3% and 11%¹⁷ other crops like cabbage and radishes.

Processing

The value of the production output of the processing industry in 2008 was €74 million, accounting for almost ten percent of the total value of the food industry (€755 mil), second only to wine. Approximately 9% of all vegetables and 45% of all fruit are processed. The main fruits and vegetables processed in Moldova are field tomatoes and apples. The total volume of fruits and vegetables that are processed are estimated to be 200-250 thousand tons per year.

Six companies (Orhei-Vit, Alfa-Nistru, Natur-Vit, Natur Bravo, Rozmiar, Cosnita, Floresti) export the majority of a diverse product range including apple juice (clarified and with pulp), fruit nectars, fruit drinks, and preserved fruits and vegetables. Canned fruits and vegetables are the most significant export volumes including peas, corn and whole tomatoes. Additional processed items are tomato pastes and ketchups, purees for babies, jams, preserves and specialty items. More than 90% of production is destined for export. CIS countries remain Moldova's biggest export market for processed fruit and vegetable products accounting for 70% in total, including Russia (38%) and Ukraine (9%). Other European countries account for the other 30% of exports, mostly in the form of semi-finished products.

Walnut production and processing: According to the International Trade Centre in Geneva, Moldova is one of the largest exporters of walnuts to Europe, after USA, Mexico and China. Walnuts are grown on 6,000 hectares an area that has been consistently expanding. The total production of walnuts is 15-18,000 tons annually. Some of the key exporters and processors of products destined for the EU markets are: Reforma Natural Fruit and Nuts (a German investment operating in Moldova in walnut export), Monicol (processor and exporter of dried fruit and walnut kernels), VM Plumcom (processor and exporter of dried fruits), and Prometeu-T (the major processor and exporter of walnut kernels in Moldova).

¹⁶ According to the census report "Protected cultivation of vegetables in Moldova", published in August 2009 by Agribusiness Development Project implemented by CNFA with financial support provided by USAID.

¹⁷ All the data that refers to surface and production in greenhouses are from the ADP Census Report. The data for open field production are from official statistics (www.statistica.md)

Dried fruits production: The Moldovan dried fruit sector includes a few large and medium sized companies and a larger number of smaller companies all competing amongst each other. Over the past three years Moldova produced 2,000-3,500 tons of dried fruit (mostly plums, but also apples, cherries, pears, etc.) per year depending on the growing conditions and availability of raw material. Export levels are usually about 70% of production. The EU absorbs about 80% of Moldova’s dried fruit exports; CIS countries, primarily Russia, Belarus and Ukraine, accounting for the other 20%.

Exports

In 2010 annual fresh fruit exports totaled 200-250 thousand tons accounting for 60% of all fruit produced. Over the last five years export growth of fruits has approximated 20%. The main exported fruits were apples (65% of fruit exports), table grapes (10%) and plums (7%). The export of vegetables in 2010 was just above 10 thousand tons, which is less than 3% of all vegetables produced with no visible trends over the last five years. The main vegetables exported in 2010 were tomatoes (32% of all vegetables exports), cabbage (25%) and peas (5%). Potatoes are mainly produced for local consumption but depending on the particular year they can be also imported or exported in big quantities.

According to MAFI “sectorial” programs, by the end of 2015, total production of fruits, vegetables and table grapes should reach 1,538 thousand tons with 315 thousand tons being exported and 684 thousand tons sold domestically.

Main crops produced versus imported

The figure below shows the main fruit crops imported to Moldova in 2010. As we can see from this figure, Moldova imports fruits that are not produced locally, namely citrus, bananas and kiwi. These crops do not compete with the locally produced apples, plums, cherries and peaches. The volume of imported table grapes is insignificant and is not included in the chart. Locally grown fruits are very competitive in the domestic market and also relatively competitive on export markets due to low price and good perceived value.

Figure 1. Fruits imported to Moldova in 2010 by volume

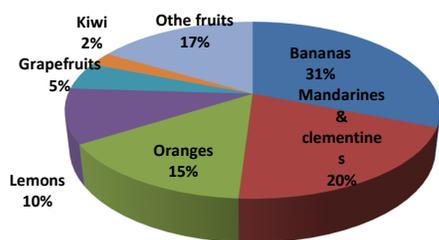
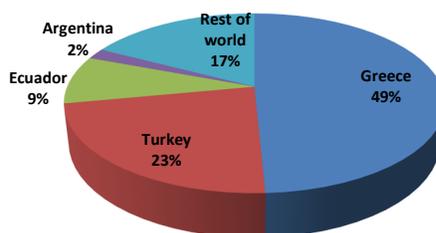


Figure 2. Import of fruits to Moldova by country, by value in 2010



Source: UN Comrade Database

Figure 2 above shows that the main country from which fruits are imported into Moldova is Greece due to the high volume of peaches that are then re-exported to Russia. Turkey is also a main supplier of fruits to Moldova. If re-exported fruits are excluded, the average volume of fruits imported for domestic consumption in 2009-2010 was around 34 thousand tons.

In 2010 the main fruit imports to Moldova according to UN Comrade Database are as follows:

- Bananas - the main supplier is Ecuador (82% by volume), Costa-Rica (7%), Panama (6%) and Columbia (5%)
- Mandarin and clementine imports from Turkey (59%), Greece (27%) and Argentina (6%)
- Oranges shipped from Turkey (43%), Greece (21%), Egypt (17%) and South Africa (10%)
- Lemons shipped from Turkey (78%) and Argentina (17%)
- Grapefruits shipped from Turkey (72%), China (12%) and South Africa (12%)
- Kiwis imports from Greece (94%)

It is quite clear that import substitution in the fruit market will not be a major factor for increasing demand for locally produced fruit. The vegetable situation is quite different. With few exceptions, Moldovan vegetables are not competitive in export markets and meet strong competition in the domestic market outside the major production season. In the period 2009-2010 the average volumes of vegetables and potatoes imported was approximately 72 thousand tons. The main crop imported in 2010 was potatoes (a price sensitive commodity) shipped mostly from Romania and Poland. Besides potatoes, the main imported vegetable crops are tomatoes, carrots, onions, and garlic, all of which are crops that would be supplied more from local producers if improved production and storage practices were adopted. Their percentage of total imports is presented in the figure below:

Figure 3. Vegetables imported to Moldova in 2010 by volume

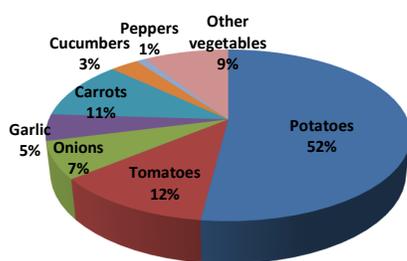
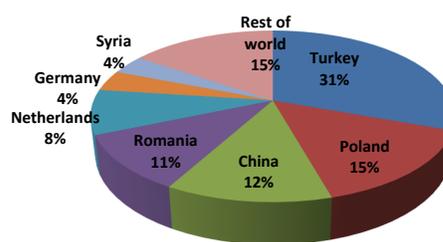


Figure 4. Import of vegetables to Moldova by country, by value in 2010



Source: UN Comrade Database

The main countries of import of these specific crops in 2010 were:

- Tomatoes – imported from Turkey (83%), Syria (12%), Spain and Macedonia (2% each)
- Carrots – Poland (70%), Belarus (12%), Turkey (12%)
- Cucumbers – Turkey (82%), Syria (7%), Romania (5%)
- Onions – Poland (28%), Egypt (25%), Netherlands (15%), Turkey (12%)
- Garlic – China (99%)
- Peppers – Turkey (57%), Spain (20%), Netherlands (15%)

Moldova's high season for harvest of most vegetable crops lasts from June to October. The extended season with greenhouses is most feasible during the period May till November for most crops due to significant incremental heating costs if this period would be further extended into the winter months. There is a strong need to reduce costs wherever possible and eliminate inefficiencies in the greenhouse production sector to be cost competitive. Heating costs are a big factor why during this period of time some of the basic vegetable crops are imported from countries with warmer climates and longer production periods. However, there is room to improve production practices to get more production volume and value from the same amount of heat.

Presented below is a table indicating production figures for the main vegetables in open field and greenhouses versus imported ones.

Table 2. Main Vegetable Crop Production versus Imports

Crop	Production, th. tons		Import in 2010, th. tons
	open field	greenhouse	
Potatoes	300	not produced	38.5
Carrots	20	not produced	8.0
Onions	50	not produced	5.0
Garlic	10	not produced	3.7
Tomatoes	80	42	7.5
Cucumbers	30	4.9	2.3
Peppers	25	1.5	0.8

Sources: UN Comtrade (Imports), and USAID/ ADP production survey.

The first four crops from the table above are vegetables that are not typically produced in greenhouses. It is important to note that these main open field crops hold up well with proper conditions (potatoes, carrots, and onions) and even garlic, which can be stored up to 9 months under controlled conditions. Most of the imported garlic comes from China and the imported potatoes from Poland and Romania due to varietal preferences, price differentials or specific domestic shortages.

The market share of imported vegetables compared to total volumes of product consumed (imports and local grown) range from 9% for onions to 29% for carrots¹⁸.

A more meaningful comparison would be to compare imports to consumption during the off season when there is no local open field production. It is possible to compare the volume of domestic greenhouse production to import volumes to see how one relates to another. As an example, in 2010 the total volume of greenhouse tomatoes was 42 thousand tons with 5 thousand tons being exported leaving 37 thousand for the domestic market. With the additional 7.5 thousand tons being imported this would still equate to imports being only 17% of the total market during this timeframe which is still a relatively small number. Conversely, in the case of cucumbers and peppers, imports accounted for 32 and 35% respectively of total domestic off-season market consumption.

A considerable amount of domestic fruit and vegetable consumption can be attributed to imports. In the case of fruit, these are mostly crops that are not grown locally due to weather conditions and other constraints that inhibit cultivating these products profitably. It is also possible to find some imported apples and grapes in the Moldovan market, but these tend to be filling very small openings for niche products. The situation with vegetables is different with many key crops grown in Moldova facing direct competition from other producer countries. The need to employ strategies to increase import substitution is being realized more and more all the time. Moldovan HVA producers and traders need to better understand the modern consumer and improve domestic production, varieties, packaging, and quality to increase domestic sales through import substitution.

3. MARKET STRUCTURE

The structure of the fruit and vegetable market in Moldova includes the following distribution channels: open air markets, wholesale markets, traditional retail, modern retail supermarkets, small kiosks, HoReCa and direct sales from growers.

Moldovans living in urban areas buy fresh produce from open air retail markets, street vendors and very small amounts in supermarkets. In the rural areas, self-production/consumption still remains the dominant way fresh fruit and vegetables are

¹⁸ Author's calculation based on the above sources. This assumes that not more than 10% of all vegetables produced locally are sold to processors or exported.

secured with no apparent reason this would change in the near term. In these rural communities the limited buying power, parcelization of land, and active agricultural involvement of most everyone all are contributing factors to why people are engaged in growing what fresh produce they can, deferring expenditures in the process.

The majority of distribution of fresh produce in Moldova still is carried out through traditional outlets such as open air markets (retail and wholesale), and small kiosks and gifts from family and friends in the village. The supermarket sector is still small, but steadily gaining market share, predominantly in urban areas. In rural agricultural communities, any change away from traditional outlets is extremely slow and almost non-existent. As of 2010 there were over 100 supermarkets competing with one another in a country of 3.6 million. From various distributor estimates, it is assumed that 10-20% of the Moldovan population buys at least a portion of their fruits and vegetables in supermarkets. The market structure at different levels of the value chain is examined further below.

Producers

It is still common in Moldova for growers to consume and preserve produce that they have grown, limiting the need for expenditures. It is also common for family members and friends to gift or trade produce with each other. Moldovan vegetable production consists mainly of open-field vegetables harvested from June to September/October. These vegetables are consumed locally, sold to processors, as well as exported. Greenhouse vegetables can be harvested starting in May and run through November. Greenhouse vegetables land area approximates 550 hectares which produces around 54 thousand tons of vegetables. A rough estimate of the total number of vegetable producers is 13,500 when open field vegetable producers and greenhouse producers are taken into account together.

Fruit production is fragmented, but not as much as vegetable farming. There are an estimated 2100 table grapes producers and roughly 500 apple producers (small and large) who are taking lead positions in the apple production business. The estimate of the number of stone fruit producers, consisting of mainly plums, peaches, apricots and cherries, total 663 with 89% being smaller than 50 hectares.

As for gender, women are very present in production, but less present as one goes up the value chain, except for as accountants and book-keepers where they dominate. More women than men harvest apples, table grapes, and tomatoes. In the tomato value chain, women work at all steps of production. In orchards they dominate in pruning and harvesting. The places where they are less present are integrated pest management, spraying, operating tractors, machinery and truck driving.

Importers

Importers that bring products to the wholesale market are typically individuals with their own liquid capital, who see an opportunity (for example a missing product or high prices), travel (for example, to Germany, Romania or Poland using a Romanian passport) to conclude a contract, and then hire an broker services firm which does the wire transfer and brings the product to the market. The broker service fee is \$250-400 per truck and between the broker's fee and the VAT and other taxes, a typical cost will be 10-15,000 MDL (\$850-\$1300) per truck. The major importing brokering firms are PAVIRAMUS (potatoes and root tubers), TAIEX-PRIM (potatoes and root tubers) and POLITRANS (tomatoes and citrus).

Another category of importers are Turkish companies, typically acting out of the AMIR wholesale market, which also deliver to other wholesale, retail, and supermarkets. They trade a large amount of tomatoes, lemons, mandarins, clementines, seedless grapes, peppers, aubergines, cucumbers, pomelos, pomegranates, cashews, and raisins. As for gender, women are infrequently working as importers.

Wholesale traders

Almost all commercial growers are connected to a certain list of wholesale traders (also called middlemen) who buy commodities from the grower and then trade them in the wholesale markets. In the market, one can meet many sellers competing against each other with similar commodities with price fluctuations in every possible direction. This is mainly due to the limited shelf-life (perishability) of produce, the lack of refrigeration facilities, and the daily arrivals of competing products.

A wholesaler usually has his own means of transportation, a mini-truck or several of them. He is the person who negotiates the purchase price with the grower and travels to the growers "gate" to pick up and pay for the different commodities. The wholesaler cannot control the quality of produce from the grower, and if the quality is different than what is requested, re-negotiates the price before acceptance. Once the product is received and there is exchange of money, the transaction is final.

Often growers bring their produce to the wholesale market, especially greenhouse vegetable producers. What usually happens is that they create competition for the commercial wholesalers because they usually sell their produce at lower prices just to "get rid of it" due to time constraints, their lack of market intelligence, and the imminent need to get back to the farm to do other tasks. Wholesalers generally believe that growers are bad traders due their tendency to drive prices down.

As for gender, the dominance of wholesale by truck means that there are less women wholesalers than men, since women tend to drive trucks less than men in Moldova.

Wholesale Markets

There are four permanent wholesale markets (WSM) in Moldova: three in Chisinau and one in Balti.

The open air wholesale markets are privately run businesses that offer a place for traders with trucks or mini-buses or other transportation means to trade their goods. The wholesale markets generally offer basic infrastructure necessities such as: toilets, tap water, canteens and bars, limited security services, storage and cooling rooms. In the Amir wholesale market one can find a more elaborate base of services and comfort for the sellers compared to the "Under the bridge" market.

1- The Chisinau **Izumrud** wholesale market primarily sells local produce (potatoes, carrots, onions, cabbage, and red beets (borsch items) all year round. Imports from Poland, Turkey and to a lesser extent Ukraine also appear in the market. Exotic fruits and "green salads" are not available in this market. The market does, however, offer storage rooms (non-refrigerated) mainly for potatoes, onions, carrots, beets and radishes with the capacity of each storage room being about 40 tons. Sales are also carried out directly from trucks and minivans. The market has approximately 20 storage rooms and at least 100 trading/parking spots for direct sales. The market has its own testing laboratory and analysis is performed by a "sanitary doctor" who works in the market and is paid by the government. Tests are conducted for nitrate levels. The traders pay for this service to be done and the cost depends directly on the weight of the lot and can range from 3 to 27 MDL. The customers of this wholesale market include individual households, retail markets, convenience stores, restaurants and all other Foodservice establishments (Horeca).

2-The Chisinau **wholesale market "Under the Bridge"** predominantly trades in imported exotic fruits, tomatoes, cucumbers and green salads from many different countries. They also trade heavily with the traditional locally grown "borsch mix" vegetables. There are 70 trading "storefronts" (12-15 sq. meters each) available for rent. In addition there are 120 - 150 trading/parking spots where sales are conducted directly from trucks and minivans

3-The Chisinau wholesale market “**Amir**” sells a broad range of fresh produce imported from Turkey, Poland, and Ukraine. There are eight cold storage rooms with a combined capacity of 160 tons available for rent and the occupancy level is usually high. This wholesale market also offers 153 “storefronts” (12-15 sq. meters each) for rent and about 100 trading/parking spots for trucks and minivans. The Amir wholesale market as well has its own testing laboratory. The clients of this market are mostly retailers and supermarkets.

4-The “**Balti**” **wholesale market** is situated next to the main stadium in the town of Balti. The total area of the market, paved with asphalt, is 1.5-2.0 hectares. The market itself operates in a manner similar to the “Under the Bridge” market in Chisinau where the sellers operate from either a “storefront” in the market or trade from their respective transport vehicles. Imports and domestic product is traded as this is the only wholesale market outside of Chisinau. The market offers minimum services and facilities but it does have a phyto-sanitary specialist and does provide on-site security. There are approximately 200 trading/parking spots in this wholesale market where products are sold directly from trucks or minivans.

5- In addition, during the period of June thru October when local producers have their peak production, a **temporary wholesale market** is set up **adjacent to the Chisinau Central Market**, and operated from 8pm to 6am out of the central market’s 60 truck loading dock and some other nearby spaces. Here, local producers (approximately 50-60% of those present), as well as traders, sell locally grown products from minibuses and cars. At 6am the loading dock needs to be clear as the space is designated as a drop off location from out of town buses. Therefore, those who have not sold their products by 6am are likely to move to the “Under the Bridge” wholesale market at that time. Furthermore, growers who have work to do back on their farms, have been known to dramatically slash their prices to dump produce in order to move their produce. Because of the proximity and these last minute price cuts, traders from the central market have shifted in recent years to either sourcing products at the central market’s adjacent wholesale before 6am and filling in any missing products at a wholesale market (if some are needed), or at a minimum assessing prices in this wholesale “open truck” venue before moving on to a wholesale market (such as “Under the Bridge”) to negotiate prices at a “take it or leave it” low price.

The four official wholesale markets are open 24 hours per day during the summer and have more regular hours (6 A.M.-6 P.M.) during the rest of the year. During the summer, the majority of the sales take place during the day. They close only two days per year for Easter and New Year’s days. This is not a complete stop of operations but a significant reduction in activity since many traders are village inhabitants who leave Chisinau for the holidays.

It is interesting to note that sales during the day take place during several peak windows for different types of customers. During the early part of the day: 6:30-8:00 A.M. the traders from the city open air markets come and purchase larger volumes at lower prices. Between 11:00 A.M.-1:00 P.M. the buyers from Horeca (foodservice) as well as supermarkets come to purchase the best quality at a little higher price. As the supermarkets have longer term contracts directly with growers or wholesalers to supply most of their needs, they predominantly come to the wholesale market to buy fresh produce when they need product immediately to fill a supply void. During the night, the open air middle men who have sold out during the day visit to check prices and/or availability of product for the following day. Some middle men have direct relationships with growers so that daily deliveries would take place directly to the sales outlet in the city.

In conclusion, the existing wholesale markets are predominately supplied by local producers although in some cases (i.e. the Amir Wholesale Market), the produce is mostly imported. In general, the existing wholesale markets are poorly equipped, old-fashioned and provide basic retail space with limited storage capacities. In some instances the sales areas are not covered and offer only a specified area to park a vehicle and from which to conduct sales. There is a very limited offering of organic produce or other niche products.

Retail Open Air Markets

In Chisinau, there are nine permanent open air retail food markets in operation located in different sectors of the city with the biggest being the Piata Centrala (Chisinau Central Market) in the downtown area. These open air markets are where the majority of the people buy their produce.

Within the rayons (regions) the regional open air markets are in full operation. In each rayon center there is at least one functional retail (open air) market. Collectively, there are over 100 retail open air markets spread throughout the country.

These open air markets are very competitive and many times similar products are offered by multiple vendors driving prices downward. In the high season, domestic produce often has the same characteristics (size, color, cosmetic appeal, freshness) and appears all at once at these traditional markets. As farmers use relatively simple technologies, all produce a limited range of products that are harvested at the same time, flooding the market. One solution is to expand the range of products produced locally, and the other is to extend the production and harvesting season. In contrast, during the winter months (December through March) there are more imports and a more noticeable differentiation of products.

The Chisinau Central Market is the cheapest in the country. This is because the market is large and sellers have more competition from each other. Since they have the most foot traffic, retailers there can make more money based on volumes than in the other markets. There is a tradition in Moldova that older female pensioners go and see 2-3 of the major markets (e.g. Botanica, Flacara, Alioshina- the most expensive market in Riscani as it is in wealthy residential area) and then stop at the Central Market and buy their produce if the prices prove to be best and then go home, making a full day excursion out of it. Generally, only the Ciocana open air market competes directly on price with the Central market (Piata Centrala).

Markets in rural areas generally work one day per week and sell everything (clothes, shoes, electronics, etc., second hand) and produce. In the rural areas there are limited produce sales as most people have their own fruit trees around their houses. They might buy peppers, onions, potatoes, cabbage, and tomatoes if they live in the town and don't have land, and, typically, if a relative sends them money from abroad.

Balti, similar to the Central Market in Chisinau, also sources from Amir. The prices in Balti could be more or less expensive. In some cases the prices are higher due to the fact that there is less competition than amongst vendors in Chisinau.

Similar to Balti, but not as large, in Cahul there is a daily retail market, however no wholesale market. The Cahul market sells all kinds of consumer products (including produce) all year round. In the off season produce is sourced from the Chisinau wholesale market, but in season it is sourced locally. Traders from Chisinau supply the market there and go on to trade with Romania as Cahul is close to the border. Traders sell early cabbage and re-export Chinese garlic to Romania.

Due to delays at the border and political-economic interests, the trade of produce between Transnistria and the rest of Moldova is difficult. However, there are some places and timeframes where mini-buses can cross with unofficial payments. Grapes, Turkish tomatoes, and other products are rumored to go to Transnistria from the rest of Moldova with a "customs" payment. Moldovan cherries go via Transnistria to Kiev. Transnistria generally exports its own produce to the east (Kiev, and onward). A new large Transnistria

greenhouse with Russian investors has plans to produce starting in March 2012, complementing the large Sheriff greenhouses focused on vegetables and cut flowers.

In the open air markets there were not any distinguishable niche products such as “fair trade” noted and no real representation of any collective organic offerings. Even though it isn’t officially allowed, often along the streets of these open air markets individuals are selling their own local produce in very small quantities.

As for gender, women are often retailers in the open air markets. Furthermore, an estimated 70-80% of fresh fruit and produce purchases are made by women in Moldova, so they comprise the majority of consumers present at the markets. This is also true in supermarkets (described more below), but the traditional roles are less defined as it is a less traditional format.

Supermarkets

Although a small but growing factor in the overall fresh produce market, modern supermarkets face stiff competition from one another. Some of the major supermarket chains in Moldova are Fourchette, Green Hills, N1, Fidesco, Metro Cash & Carry, IMC Market, Piatiorochka, Unimarket Discounter and Linella.

Generally there seems to be a lack of emphasis and overall commitment to the fresh produce aisles in terms of allocation of space and strategic location within the supermarkets. While 10-20% of the Moldovan population buys at least a portion of their fruits and vegetables in supermarkets, fresh produce accounts for only 2-5% of the vending space. This percentage is even lower in convenience stores or local groceries where there is not the proper attention to fresh produce due to limited shelf space and competition from open air markets. As expected, the larger the city, the higher the supermarket share and volumes of sales. For a country of 3.6 million inhabitants, competition at the modern retail (supermarket) level with over 100 stores is fierce, and the pressure to keep prices affordable to the masses continuous. Generally prices in the supermarkets are consistently higher than at the traditional markets. On average, supermarkets work on a gross margin of 6-17% however for fresh produce the gross margin ranges from 20-30%¹⁹. Due to the perishable nature of fresh produce, gross margins are distinctly higher than other products, although supermarkets were unwilling to disclose exact percentages. Typically eight times in a month the supermarkets will put out new produce. While this varies by store, the product turnover is definitely much lower than in the open air markets or international supermarkets. In the high season, the locally sourced produce is the same quality of produce as the open air markets. However, the open air markets bring fresh produce every day, and typically don’t allow customers to sort through and choose. Supermarkets also source a good deal of imports which are more uniform with fewer defects irrespective of where you find them. Some stores such as the Nr. 1 Hypermarket, will place local produce with a cheaper price next to cleaner and more visually appealing imports. In the supermarkets, in addition to the “mainstream” produce items, there are a number of pre-cut and convenience value added items that can be found for the on-the-go shopper/consumer who wants to save time. There is very little focus on organics or any other niche strategy as price is still the main concern of shoppers, keeping the differential compared to the open air markets within reason. Many times domestic produce is not merchandised well and seems to have an appearance that it is just “there” with no real attention or emphasis placed on overall esthetic appeal or product presentation. Compared to other countries there is an overall lackluster approach to the retail fresh produce section, even compared to other areas of the store.

Generally Moldovan supermarket chains follow a system where the consumer selects produce, puts it in a bag, an attendant ties the plastic bag closed, weighs the produce and

¹⁹ ACED estimates based on triangulation of information gained in interviews and store observations.

puts a sticker with a bar code and the price on it. Stores such as Fourchette, Number 1, and IMC Market offer a selection of some produce which is already packaged and labeled with a price, which means that customers might not have to wait in line for it to be weighed. Compared to open air markets, supermarkets offer more choice to the consumer in selecting individual items, however, sometimes at the expense of less fresh products.

Competing in the domestic supermarket channel is something quite different than the traditional open markets. This requires consistent volumes to meet delivery windows, proper labeling, packaging, sanitary inspections, and requires invoices. This is the channel where competition from imports is strongest and quality becomes a little more important in order to compete effectively. In supermarkets, the overall cosmetic appearance of the domestic product must be equal to the import's and this cannot be at the expense of products costing more at retail as consumers perceive the traditional markets as a more economical option.

Generally, every supermarket chain has an agreement with some distribution company(s) that organizes and fine tunes the list of fruits and vegetables that are inventoried for that specific chain. Typically fresh produce that arrives into the store goes directly to the shelves as there is very little space to inventory products. A distribution company is hired because Moldovan supermarket chains don't have enough storage and handling infrastructure. This same company also does the invoicing and document clearance for all imported goods which simplifies things a great deal as the retailer only has to deal with one invoice. Many times these distribution companies are run by relatives or friends of the owners of the retail chains.

Often supermarkets purchase produce from the wholesale open air market where there are no invoices provided (particularly when there is a shortage of an item that is usually provided by a longer term contract with a grower). In order to sell produce to a formal trade outlet such as a supermarket, the supermarket would like for them to provide a fiscal invoice and they may not want, or be capable of doing this. Many times supermarkets draw up a document after the sale for proper record keeping which is referred to as the "Acquisition Act". The purpose of this is to have the specific accounting "paper trail" required by tax inspectors for the produce that was bought by the supermarket. This will be explained in more detail later under the heading of Fiscal Requirements. General payment terms for supermarkets are "no sooner" than 14 days from delivery of product.

Green Hills Market

This chain has 10 supermarkets in the country of which nine are located in Chisinau. The chain carries a broad range of products numbering 25,000 items and offers a wide choice of quality goods and services. Green Hills sells fresh produce, foodstuffs, non-food and household goods as well as delicatessen items produced by the network's own delicatessen department. At their largest store in Botanica, they offer an assortment of fresh hydroponic grown produce, including three different kinds of green lettuce in addition to iceberg lettuce and various herbs. At their mid-sized store on Calea Iesilor, it is possible to look for a zucchini or red pepper and find one shriveled specimen left with bruises and cuts across the skin.

Fidesco

This chain was established in 1992. Originally, it specialized in imports and wholesale distribution of food products only to local groceries, restaurants, bars, and other wholesalers. In 1995 "FIDESCO" branched out into retail with vertical integration from their wholesale base. They now have a total of 13 stores with five in Chisinau and eight around the country (Balti, Edinet, Cahul, Briceni).

Shop Nr.1

The network of Nr.1 supermarkets is one of the most popular within the city of Chisinau and has a total of seven locations. Convenient location in the Center of the city, wide choice of various goods and a high-level of service attract a wide range of customers. The supermarket has a very broad base of over 12,000 products and price ranges for all consumers. The fresh produce section in the city center is rather small but does carry the basic fresh fruit and vegetables and a surprising amount of pre-cut and processed selections for the urban customer on the go. The stores have their own delicatessen and bakery section that will satisfy the most demanding customer. Nr.1 supermarket often offers expensive imports that look very clean, uniform and high quality next to local produce that looks much worse and is much cheaper.

Fourchette

Fourchette is a supermarket chain that has recently taken an aggressive position in entering the market. The first store opened in 2007 (Ukrainian investors) and now there are nine supermarkets with locations in Chisinau, Comrat, Soroca, Edinet, and Balti. The general format and approach to marketing within the produce section is to move more volume with keeping the margins relatively low in comparison with the other chains. The produce departments of the newer stores are ample in size and they have a good selection of products including convenience value added and pre-cuts.

Metro Cash & Carry Moldova

This is a branch of Metro Romania (parent company is Metro Germany with its vast number of stores throughout the world placing them 4th in annual volume behind Walmart, Carrefour and Tesco). Currently in Moldova there are two Metro hypermarkets in Chisinau and one in Balti. Metro's principal customer base is HoReCa, re-sellers as well as individual persons, all of whom are supposed to be members (however, day passes are offered). Metro offers approximately 20,000 food products and 30,000 non-food items in their huge distribution centers. They have efficient displays and sell fresh products in bulk and consumer packs as needed. Their philosophy is to focus on value and provide the customer with a one-stop shop to cover all of their needs.

Piatiorchka

This is a network of small supermarkets originating in Russia that follows the soft discount format. They have opened four stores in different parts of Chisinau. Their expansion plan is to open an additional eight stores by the end of the year. The philosophy of these supermarket shops is to make everything convenient for easy access and quick purchase whilst keeping the prices relatively low.

Unimarket Discounter

Unimarket Discounter has a total of 15 shops, with representation in Chisinau and other towns such as Yaloveni where the first store was opened. It has Russian-Moldovan investors that have announced plans to be in 40 locations by the end of 2012. It is a discount store featuring a limited assortment and lower prices.

Linella

Linella has eight stores in Chisinau and one in Telenesti. Linella uses a smaller "supermarket" format with close proximity to their customer base. They open outdoor produce stands in front of stores during the high season. During the off-season they carry a very small selection of not very fresh produce basics (e.g. carrots, cabbage, lemons, onions), and some of the local brand convenience/ value added products (like salads from carrots, eggplant, etc.).

IMC Market

IMC Market is a supermarket chain of six shops (medium sized), mainly in Chisinau, that place emphasis on a selection of prepared foods. They offer weekly discounts and a bonus card system. They offer a variety of fresh fruits and vegetables including imports.

As for gender, the supermarket personnel working behind the counters and as check out cashiers are almost entirely women. In contrast, men dominate the store security and managerial jobs. Women dominate book-keeping and accounting.

Horeca (Foodservice)

There are approximately 3,000 HoReCa entities in Moldova²⁰. Typically, produce procurement for hotels, restaurants, cafes and other “Horeca” foodservice entities is done by personnel who are responsible for going into the market, selecting the best fruits and vegetables and purchasing it for their respective business. A delivery system whereby fresh produce arrives by truck with the rest of the supplies does not exist. The procurement staff have their specific retailers at the market that they do business with and all transactions are done with cash and are vehicles for them to make extra money and avoid taxes due to the informal nature of these transactions. Typically they are very selective as to whom they do business with and are not easily approached with “side traders” that they do not know well. There are a couple of eateries in town mentioning organic “bio” on their menus (such as Toureg restaurant).

Within the foodservice sector are also those state and governmental establishments such as schools, hospitals, prisons, and governmental canteens that conduct business with formal tenders for their fresh produce needs. Traders request an open bid for a specified volume of a product that is needed with certain specifications and the vendor that has the cheapest price gets awarded the bid for that volume for that stated period of time. As an exceptional case, when certain products are not available they would go to the open air market and purchase the item(s) directly.

Price formation

The usual flow of fresh vegetables and fruits consist of: grower-wholesaler/intermediate trader-retailer-consumer.

Producer and retailer generally have the greatest mark-up followed by the wholesaler/intermediate trader. With exact trading prices (tomatoes) not known, we have used estimated prices derived from various value chain stakeholders to show the different margins realized from those trading product throughout the commercial chain.

Table 3. Example of Price Formation for Moldovan Tomatoes, MDL/kg

	Producer ex-farm gate	Wholesaler Mark-up	Retailer Mark-up	VAT	Average Consumer Price
Open field	2.51	0.60	1.20	0.34	4.65
Greenhouse (small retailer)	5.00	0.73	0.70	0.51	6.94
Greenhouse (chain retailer)	5.00	1.23	3.04	0.74	10.01

A wholesaler/intermediate trader would usually realize a minimum mark-up of 0.5-1.0 MDL per kilo in order to make a decent profit irrespective of the overall price. When there is a

²⁰ Estimate provided in interview with Metro manager.

shortfall of product and product sells for a higher price his/her profit increases as well. For example if tomatoes from the field are brought to the wholesale market the wholesaler/intermediate traders would seek at least a 0.5 MDL/kg mark-up which is common in high season. At the end of the season, (beginning of October) when there is a shortage of tomatoes and a limited period before Turkish tomatoes arrive, the profit for the wholesaler/intermediate trader could increase to 1.5-2.0 MDL/kg.

Trading in the market has direct costs and below we provide a basic depiction of what it would cost to sell a 2000 kg "batch" of tomatoes in the wholesale market (excluding the cost of product):

- a) 0.25 MDL per kilo first day of trade (400 MDL for fuel and amortization, 100 MDL cost of renting the parking spot)
- b) 0.07 MDL per kilo in second day and each subsequent day (100 MDL cost of renting the parking spot) this also includes miscellaneous expenses.
- c) 0.05 to 0.1 MDL per kilo, for discounts provided to large volume customers or regular customers, which is a common practice.

In summary, one can see that the profit realized by the intermediate trader (wholesaler) varies depending on the time of the year and market conditions. When there is an abundance of product in the market and product such as tomatoes are selling for 3-4 lei per kilo the profits are very low. Marketing costs equate to more than 10% of the wholesale sale price and profit is approximately 0.08 lei/kg or for 2000 kilos only 160 lei (\$15) profit. On the other hand, during limited periods (1st part of October) when there is a shortage of product before imports arrive, the profit can be as high as 1.0-1.5 lei/kg which would equate to 2,000 to 3,000 lei for the same 2000 kg load. The vast majority of the time the intermediate trader/wholesaler is dealing with smaller profits, however, they are very keen to take full advantage of the limited periods when the returns are very favorable.

4. PRODUCT REQUIREMENTS

Quality requirements

The traditional open market is the primary consumer source for fresh produce and it imposes its standard approach of quality evaluation to the whole produce market. The general principle is that all produce can be sold on the market if the price is correct. If local fresh fruits or vegetables are small, not uniform, have different maturity or are even partially spoiled they can still be sold at a reduced price. There will always be a price that equates to the offering irrespective of defects as long as the produce is edible.

Supermarkets are not as price competitive as the traditional markets due to incremental costs and the need to include VAT in the final price. In order to avoid further pricing differentials from the open market, they do not typically raise the quality standards which would imply even higher prices. For fresh produce in supermarkets the main requirement is that produce is somewhat fresh and not spoiled. In effect, the strategy is to check a box, instead of attract customers with high quality produce. Markets such as Nr. 1 will offer imported exotic fruits and vegetables for exorbitant prices. ACED can help supermarkets find a middle ground, by starting with inexpensive fixes such as better maintenance, merchandizing and display, and moving into sourcing better quality product for marginally higher prices, and/ or for testing the market for such products alongside less expensive produce.

Contrary to the low bar set by the local standard (of not being spoiled), imported fruits and vegetables generally have higher quality standards for both the traditional markets and supermarkets. The majority of imported fruits and vegetables have more uniform size and no major visual defects. Initially this quality standard differentiation was not consumer driven,

however, over time importers brought fruits and vegetables with higher quality standards and now this is what is expected by consumers when purchasing imported products.

While in most markets, HoReCa quality requirements are higher than for price sensitive consumers, in Moldova they do not differ from what can be found in traditional markets and supermarkets. In other words, HoReCa simply consumes what is available on the market based on the “value” which is in essence the price to quality relationship.

Packaging Requirements

The most common packaging for vegetables in the local market is a 20 kg banana box and traders normally use this as a reference unit of measure. This is due to availability, cost and durability. Bulk products such as borsch mix vegetables (potatoes, onions, cabbage, carrots, red beets) and peppers are sold in mesh sacks in varied weights. New wooden boxes can also be found.



Picture 1: Peppers in Banana boxes and mesh sacks



Picture 2: Zucchini in banana box



Picture 3: Tomatoes in banana boxes

It is worth mentioning that these recycled boxes are widely utilized despite the fact that the Legislation (Government Decision №929) requires the use of new materials for fruit and vegetable packaging and stipulates that packages must be labeled correctly with contents. As this legislation has not been enforced, banana boxes are still widely used for other products with banana labeling. However, officials could decide to crack down on this at any time.

Some greenhouse producers and importers dealing directly with supermarkets pack their tomatoes in 5 kg. open carton boxes. There are also producers who sell their produce such as peaches, strawberries and/or raspberries in plastic boxes that are recycled from Turkish tomatoes or other fruits and vegetable offerings. These Turkish plastic boxes used for tomatoes are 5 kg two layer boxes.



Picture 4: Turkish tomatoes in 5 kg cardboard boxes



Picture 5: Cauliflower in 'recycled' Turkish 5 kg plastic boxes



Picture 6: 'Second hand' recycled 5kg carton boxes of Turkish tomatoes used for peaches

Grapes and plums are usually sold in 8-10 kg wooden boxes. Apples are sold in either 10 - 18 kg wooden or carton boxes.



Picture 7: Wooden 8 kg box for grapes

Picture 8: Plums and apricots in 7 kg wooden box

Picture 9: Summer apples in 10 kg wooden box

5. LEGAL FRAMEWORK

Legal certification requirements

There are two basic certificates that are required by local legislation from suppliers of fresh fruits and vegetables which are:

1. *Conformity certificate*

The minimum quality requirements for fresh fruits and vegetables are spelled out in the technical regulation “Fresh fruits and vegetables for human consumption” regulated by Government Decision №957 of 08.21.2007. Government Decision № 1469 from 12.30.2004 requires all producers/importers of fresh fruits and vegetables to comply with the minimum quality requirements stipulated in the above mentioned technical regulation and to confirm it by having in their possession a Conformity Certificate. It is important to note that starting in 2012 the Governmental Decision No 929 will enforce adoption of EU minimum quality requirements for all fresh fruit and vegetables. Conformity certificates are issued by four accredited certification bodies. They can be issued for a specific lot of produce or for the whole volume harvested from a field in one year; the choice ultimately depends on the individual agreement between the producer and the certification body.

The cost of this certification is paid by the farmer and the minimum cost ranges from 2000-3600 MDL. The certificate for a single batch/lot of produce costs 2,000 MDL. The certificate for one year costs 3,600 MDL and the procedure consists of multiple visits made by the certification body personnel with the grower paying for their transportation costs as well. The elapsed time from the initial application to final receipt of the certificate is generally seven to ten days.

It should be mentioned that although this certificate is imposed by Moldovan legislation it rarely is requested and very few producers acquire such certification. However, officials could decide to enforce this legislation at any time.

2. *Sanitary certificate*

All commercial fresh produce activity shall correspond to the sanitary norms and the Sanitary Certificate, which has replaced the Hygienic Certificate, indicates such compliance. This document certifies product “safety” in terms of compliance with the maximum permissible residuals of pesticides, metals, nitrates and other agrochemicals. It is regulated by Governmental decision №384 of 05.12.2010, “Regarding the State Inspectorate for Public

Health” and specifies the necessity for all products (food and non-food) to have this certificate.

The Sanitary certificate is issued by 36 laboratories of the National Center for Public Health within the Ministry of Health. The certificate is issued based on laboratory tests and is done for each batch/lot of produce. In reality, due to lack of required chemicals and other reasons (expense and time) these laboratory tests are not always performed properly. Sometimes the certificate can be issued for the total volume of produce coming from a specific field for one year and in this case it is called a “Sanitary Decision”. Before issuing this certificate the laboratory collects produce samples from the field and, according to the growers’ “Pesticide Registry,” performs residual tests for the last 5-7 pesticide applications. In addition, there are tests performed for radionuclides. One test for one pesticide residual costs 180 MDL so on average the grower has to pay around (900-1260) lei for the Sanitary Certificate for a batch of produce or the same amount of money for a Sanitary Decision. The Sanitary Certificate is verified at all key commercial points of sale so it is imperative for all those wanting to sell produce to have secured it.

Phyto-sanitary certification (assessing the presence of different pests and diseases) is not required by legislation for local produce designated for the domestic market and only concerns imported (and exported) products.

Imports

Prior to any shipment being allowed to enter Moldova, the foreign exporter must declare what goods are being shipped and send this to the Main State Phytosanitary Quarantine Inspectorate. The Inspectorate then issues a preliminary import permit that states what phytosanitary requirements must be met. Upon arrival the goods are inspected and tested either at the border or in Chisinau at the state enterprise, “Center of Quarantine, Identification, Arbitration Expertise and Disinfection of Produce”. If the requirements are met, the preliminary import permit is stamped. Often exporters must present a phytosanitary certificate from their country of origin along with a laboratory analysis and, in case of identification of pest or diseases, a certificate of disinfection treatment. This system which tests and certifies imported products is a contributing factor as to why imports in the Moldovan market are of higher quality than Moldovan produce.

Fresh produce related legal framework

Besides the necessary certificates there is a set of normative acts that regulate different aspects of activities related to production and commercialization of fresh fruits and vegetables. These are as follows:

- Packing, transportation and storing of produce is performed according to Government Decision no. 1279 of November 17, 2008 regarding adoption of the Technical Regulation “Packing, transportation and storing of fruits, vegetables and fresh mushrooms. This Decision deals with the following issues: packaging requirements, types and methods of packaging, need for pre-cooling, requirements for transportation vehicles, loading, storing, air ventilation, temperature and humidity regime for some vegetal crops and also their maximum period of storage.
- Quality of the produce itself shall meet the requirements of the Technical Regulation adopted by Governmental Decision no. 929 of December 31, 2009 (see above).
- Law no. 78-XV of March 18, 2004 requires that produce should be safe and the information provided should be correct. It also introduces the requirements of produce traceability, issuance of quality certificates, performance of safety control, and the need to provide correct information to consumers and controlling authorities.

- Law no. 105-XV of March 13, 2003 deals with consumer protection, requiring safe produce, the possession of conformity certificates and prohibiting any conveyance of incorrect or abusive information to customers.
- Governmental Decision no. 996 of August 20, 2003 “concerns the norms for labeling food products and norms for labeling home cleaning supplies”. For fruits and vegetables sold in bulk the minimum information that must be clearly presented on the label is the identification of the product (i.e. “apples”), name and address of producer and country of origin.

Despite a wide range of regulatory acts within the produce industry the majority of value chain members, especially growers, are not aware that these legal requirements even exist. Inefficient enforcement mechanisms allow market players to act “as they want,” which occasionally results in the sale of unsafe products. Often these are products with high pesticide residuals, re-used packaging, lack of correct product information, lack of necessary labeling, absence of conformity certificates, and violation of other legal requirements.

Legal quality requirements

Moldova is in the process of conforming with EU quality requirements²¹ for fresh fruits and vegetables. These requirements will come into force starting in 2012. As an example, the quality requirements for tomatoes are provided below and translated from articles 16-18 of the Governmental Decision no. 929 of December 31, 2009

16. Taking into account special requirements for each category tomatoes have to be:

- intact in their entirety
- healthy (excluded are tomatoes with rot or other defects which may cause tomatoes to become unsuitable for consumption)
- clean, free from noticeable cosmetic defects and other foreign matter
- free from pests
- free from defects caused by insects which can affect the pulp
- free from high external humidity
- without unspecific smell and/or taste; and
- have a fresh appearance.

17. Tomatoes in bunches must have stems that are fresh, healthy, clean, lacking leaves and any other foreign matter.

18. The development and condition of tomatoes shall permit them:

- to be able to withstand proper transportation and handling.

The subsequent articles of this respective regulation refer to different categories of tomatoes, quantities, packaging and size. Given that the current regulations are not enforced, it is unlikely that these regulations will be enforced as soon as they come into effect. However, by working with producers to meet these requirements, ACED will be able to help them access supermarkets and compete against imports, as well as increasingly access export markets over time.

Fiscal Requirements

A major problem for small growers/traders is the obligation to use all the fiscal documents required by the current legislation. All commercial sales to any formal trade outlet, such as a supermarket, should be accompanied with a fiscal invoice. This entails additional paperwork, time and most importantly small growers/traders do not know how the paperwork must be

²¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2000R0790:20010701:EN:PDF>

filled out. Furthermore, many would not like to pay taxes that can be associated with this paper trail. In order to buy from small growers/traders who cannot provide invoices, supermarkets often draw up an "Acquisition act", which is a simplified document that can be applied to meet this fiscal invoice requirement. This document enables the grower/trader to sell to the supermarket and provides to the supermarket an accounting "paper trail" for the quantity and price paid for that specific purchase. It has been expressed that this practice of "making documents" referred to as Acquisition Act for fruits and vegetables for the supermarket trade is common. The supermarkets are required to keep this document on file, and the grower still faces the risk that tax authorities could request access to and use this document to claim taxes from growers.

6. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions can be made based on the analysis of the information provided above:

6.1 CONCLUSIONS

- 1- There is a very fragmented grower community with parcelization of land and limited economies of scale-- more so in the cultivation of vegetables than fruits.
- 2- The Moldovan market is extremely price sensitive with stiff import pressure in the off-season but apparent competition year round with only a few small windows where it abates.
- 3- Over 80% of all produce is purchased from traditional open air markets. Supermarkets only have a small market share, but it is steadily growing, predominantly in the urban areas.
- 4- Consumers/farmers are resistant to change and prefer to do things as they have in the past.
- 5- Producers need improvement on meeting safety regulations (nitrates, pesticides use, sufficient time from spraying and handling of all agrochemicals).
- 6- More consumer awareness about "safety" of fruits and vegetables is needed.
- 7- Growers are too dependent on open air markets, limiting profitability.
- 8- There is a need for better post-harvest handling, grading, cold chain management, packaging, labeling, certification, and consistency to improve overall quality and more effectively compete with imports.
- 9- The supermarkets will need to provide consumers with good reason to change where they satisfy their fresh produce and price needs.
- 10- The volume of supermarket sales will increase if there will be less price variances for domestic produce found in supermarkets compared to traditional markets.
- 11- There is a need to improve productivity and diversification of products grown in greenhouses as well as extend the season to capture more market share from imports.
- 12- More emphasis/merchandising is needed within the supermarket fresh produce aisles to enhance consumer awareness.
- 13- There is a need to expand domestic processing for finished and semi-finished products as well as sales of processed fruits and vegetables in external markets.
- 14- There are currently no significant niches such as "organics," however, there are local market actors who are beginning to move in this direction, focused on export.

6.2 RECOMMENDATIONS

The following recommendations based on the findings and conclusions presented above are aimed at helping Moldovan producers/processors of fresh fruits and vegetable capture a larger and more profitable portion of the domestic market and be better poised to compete in external markets.

- 1) Identify and work closely with a trustworthy collective produce buyer/consolidator paired with leading entrepreneurial growers from the fragmented domestic grower community and secure required volumes of key vegetable and fruit items needed for the retail community (especially supermarkets and HoReCa), defined by specific contracts. The “collective buyer/consolidator” must deliver good consistent quality certified produce at reasonable prices and promote more “domestic” product.
- 2) Work with growers to improve volumes, varieties, grading, packaging, delivery schedule, certification, safety regulations, payment terms and all other requirements. ACED will emphasize the product value and safety in trainings. Facilitate contracted volumes for core items that would enable select farmers to have some price stability through pre-determined pricing. These farmers would be less dependent on traditional markets and the inherent price fluctuations that exist. Furthermore, they will provide a model for other producers.
- 3) Work with the local supermarkets to further promote domestic product with the “Buy Moldovan Campaign.” The margins on these produce items must be in line with the open air markets. Value, freshness, safety, and convenience must be the distinguishing factors.
- 4) Help the “collective buyer/consolidator” increase exports of select upgraded products that will now have all the basic certifications and packaging requirements to ship to other countries as market opportunities appear. Proper grading/sorting machines, with consistent volumes will be essential. This will help alleviate some of the pressure of where to sell these growing volumes of quality products. These exports to other markets can be initiated by marketing trips to select countries and with participation in certain key shows such as Fruit Logistica, and Prod Expo where market linkages will be made.
- 5) Working in partnership with the local supermarkets, expand overall consumer awareness of the health benefits of fruit and vegetables. Formulate promotional material to emphasize “five-a-day” and the inherent benefits. Work closely with the supermarkets so that they have a better understanding of the most strategic store layouts to optimize consumer traffic through the produce section. Generate more fresh produce revenue with greater volume sold at lower prices, still affordable to the masses.
- 6) Develop processed fruit and vegetable exports to generate better crop return and better use of “cull outs” and residual product. This can be done through trade fairs and other linkages with industrial sales brokers.
- 7) Increase productivity of greenhouses and tunnels with select items (i.e. specialty tomatoes) as well as extend the season. Reduce inefficiencies such as loss of heat through use of double plastic liners in greenhouses.
- 8) Help facilitate grower contracts with processors that pre-identify volume and delivery periods. These volumes must be committed to by the growers and the contracts must be adhered to by the processors irrespective of any changes in market conditions. Any additional volumes that may be required would be determined by prices in the spot market.
- 9) ACED should train growers as to why it makes financial sense to have the proper certification (national standards and GlobalGAP) to commercially sell to domestic supermarkets as well as export so that there is complete acceptance, adherence and conformity.
- 10) ACED will train growers on the significance of proper application and methodology pertaining to all agro chemicals (inclusive with record keeping) to stay within safety regulation norms.

- 11) Look at possibilities to develop new varieties of salads and cabbage and identify possible opportunities for organics in export markets. ACED will create demo plots and further explore what is possible for further product diversification and differentiation.
- 12) Work with supermarkets to create some more excitement within the fresh produce aisles with perhaps “theme advertising” selecting some key items each month (for a few days only) and selling them at very low prices (no margins) as to induce trial and repeat sales. This can be done with some new varieties grown in greenhouses such as salads and cabbage that are new to the market. The produce section should have a creative “look” with product being merchandised effectively inclusive with in-store demos when possible.
- 13) Train farmers on certification/ compliance issues.
- 14) Develop partnership with supermarkets to increase range, volume, and quality of local product that they are sourcing.
- 15) Train farmers on record keeping and cost analysis.

ANNEX 1. SOURCES OF INFORMATION

Legislation and normative acts:

1. Law №78-XV of March 18, 2004 “Regarding food products.”
2. Law №105-XV of March 13, 2003 “Regarding consumer protection.”
3. Government decision №741 of 17.08.2010 “Regarding adoption of agriculture produce market infrastructure program.”
4. Governmental decision №929 of December 31, 2009; regarding enforcing the technical regulations on “quality requirements for fresh fruits and vegetables commercialization.”
5. Government Decision №957 of 08.21.2007 enforcing Technical regulation “Fresh fruits and vegetables for human consumption.”
6. Governmental Decision №996 of August 20, 2003 “ to the norms for labeling food products and norms for labeling home cleaning supplies.”
7. Government Decision № 1279 of November 17, 2008, regarding adoption of the Technical Regulation “Packing, transportation and storing of fruits, vegetables and fresh mushrooms.”
8. The Government Decision № 1469 of 12.30.2004 “Regarding adoption of the list of products obligatory for conformity certification.”
9. Decision of the “head of the sanitary dept.” № 5 on 02.20.2006 regarding “implementing the activity of hygienic certification of goods, food and non-food products.”
10. MAFI sectorial program “Strategic priorities for the activities of the Ministry of Agriculture and Food Industry of the Republic of Moldova in the years 2011 – 2015.”

Sources of secondary market information:

11. Ministry of Agriculture and Food Industry of Moldova
12. [National Bureau of Statistics of the Republic of Moldova, www.statistica.md](http://www.statistica.md)
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14. UN Comrade Database, <http://comtrade.un.org>
15. EU legislation, <http://eur-lex.europa.eu/>
16. www.fruitinfo.ru
17. www.fruinews.ru
18. V. Rosca, A. Belshi, L. Gogu, “Census Report Protected Cultivation of Vegetables in Moldova”, developed by Agribusiness Development Project implemented by CNFA with financial support provided by USAID, August, 2009.
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