

## THE COMPETITIVENESS OF HIGH VALUE ADDED AGRICULTURE AND MAJOR FACTORS OF ITS INCREASING: THE CASE OF THE REPUBLIC OF MOLDOVA

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### Abstract

*The key-factors of competitiveness of high value added agriculture of the Republic of Moldova and their great importance in increasing the national wealth of the country are analyzed in this paper. The wealth of a country in terms of competitiveness represents the level in which the country, in conditions of the market economy, produces goods and services to satisfy the global market requirements, thus increasing the real income of the citizens of the country. In this context, factors which have an indispensable contribution in increasing the competitiveness of the high value agriculture are: exports, Foreign Direct Investments, innovations, the role of the state institutions, the business climate and others. By the fact how the state contributes by its agricultural policies to attract FDI, to increase exports, to apply innovations and high technologies in the process of obtaining high value agricultural products depends the competitiveness of the agricultural sector of the country.*

**Key words:** *agricultural policies, agricultural sector, competitiveness, exports, FDI, key-factors, high technologies*

### INTRODUCTION

Competitiveness of a country can be defined as the ability of the country to create welfare (AIGINGER, 2006). Other authors affirm that competitiveness is the capacity to sell goods and services at the right moment of time, place and in a favourable way for foreign buyers, at prices which are equal or smaller than those offered by other potential suppliers, earning at least the opportunity cost of the used resources (SHARPLES, MILHAM, 1990).

The vagueness of the term, the theories behind it or the lack of any theoretical background induces researchers all over the world to continue researches in the field of competitiveness.

The competitiveness of the agricultural sector of Moldova depends on many factors, among them we could mention: exports, productivity of agricultural crops, quality of products, FDI attracted in agriculture, state policy in agriculture etc.

There are many countries producing and exporting agricultural products to the International market.

The products differ from one country to another.

Only countries offering products that correspond to the requirements of the consumers are competitive on the international agricultural market.

The consumers, nowadays, are more cautious on health and nutrition; As a result, the world has changed its attention towards high value agricultural products with high quality and acceptable prices.

The most high value export products which play an important role in increasing the national welfare of Moldova are the horticultural products: fruits and vegetables. The significant question to be addressed is how to increase the competitiveness of fruits and vegetables produced in Moldova to ensure a stable marketplace and to satisfy the customers' requirements on quality and price.

In general, Moldova has very good conditions to grow high value added agricultural commodities. The total area of plantations of fruits in 2011 was 119 thousand hectares. In addition potatoes, vegetables, and melons and gourd are cultivated on 72.6 thousand hectares. Among the most important fruits are

apples, covering approximately 65 thousands hectares, 40 thousands hectares of plums and cherries. The annual production of fruits, nuts and berries in 2012 diminished with about 2 thousand tones in comparison with the previous years and constituted 376 thousand tones.

A similar trend is registered for the annual production of vegetables: due to unfavourable weather conditions it diminished by 28% and reached only 231 thousand tones.

There is a big competitiveness on the International Market of fruits and vegetables from the neighbour countries, as well as there are many problems regarding the marketplace of high value added agricultural products of Moldova.

In this context, the paper presents an analysis of the major factors influencing the competitiveness of high value agriculture of Moldova and especially the production of fruits and vegetables.

## MATERIALS AND METHODS

The research has been conducted on the basis of the official statistics collected from the National Bureau of Statistics, the National Bank of Moldova, and the Minister of Agriculture and the Food Industry of Moldova.

The following indicators which characterise the production of high value added agricultural products of Moldova have been investigated: the global agriculture indices, the global agriculture production of fruits and vegetables, the exports/imports of fruits and vegetables, the GDP of Moldova and others.

## RESULTS AND DISCUSSIONS

The agricultural sector of Moldova in 2012 registered a decreasing of the total agricultural production in comparison with 2011 with 22,4 % (figure 1). The decreasing of the global agricultural production was determined by the accentuated decrease of the vegetal production – with 32,6%, as well as by the decrease of the livestock production with 1,1%. A significant negative impact on

vegetal production has played the harvest reduction of grain crops and leguminous crops with 51.1% (up to 1 mil.204 thousand tones). Thus, the wheat harvest decreased with 37.8% (up to 494 thousand tones), the maize harvest decreased with 61% (up to 571 thousand tones), the potatoes harvest decreased with 48.1% (up to 182 thousand tones), the vegetable harvest decreased with 36.7% (up to 231 thousand tones), the sunflower harvest decreased with 30.9% (up to 295 thousand tones), the harvest of grapes decreased with 15.3% (up to 505 thousand tones). Average production per hectare of maize decreased 2.7 times, of soya, potatoes, and sunflower decreased 1.6 times, of barley decreased 1.5 times, of vegetables decreased by 1.4 times. Approximately 32% of global agricultural output returns to corporate farms, 17% - peasant farms, while 51% - to rural households.

This difficult situation in agriculture was caused by the drought from the summer 2012. A similar situation was registered in 2007 (Figure 1).

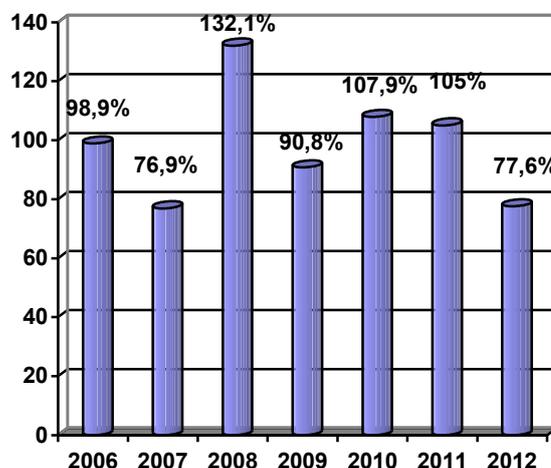


Figure 1. The indices of the agricultural production in the Republic of Moldova during the period 2006-2012 (the previous year =100%)

The drought was caused by high temperatures in June and July which were with 3,7-5,7°C higher than the annual averages, and the precipitations were only 15-60 % from the annual average. The number of days with high temperature in 2012 (more than 30°C) constituted 39-62 days, compared to 8-27 by norm. Unfavourable situation regarding the

climate conditions in 2012, caused the diminution of vegetal production, especially of high value agricultural products.

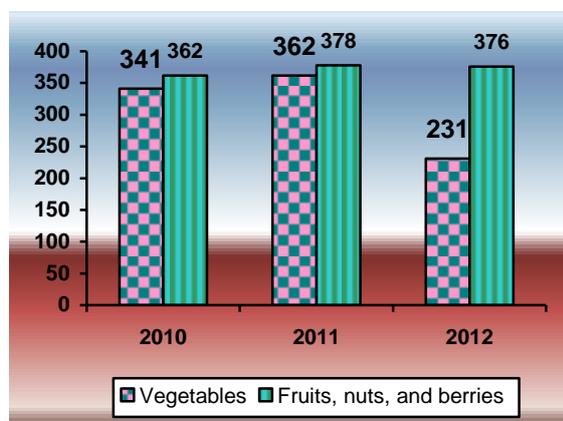


Figure 2. The dynamics of production of vegetables and fruits, nuts and berries during 2010-2012 (thousand tonnes)

The dynamics of the production of vegetables and fruits, nuts and berries during 2010-2012 (BNS, 2012), reveals that the production of vegetables in 2012 constituted 231 thousand tonnes, a diminishing by 36% compared to 2011, when this indicator was 362 thousand tonnes. The production of fruits, nuts and berries has been not affected seriously by drought, being by 1% less than in the previous year (Figure 2).

As it has been already mentioned, one of the factors which influence the production of vegetables, fruits, nuts and berries are the weather conditions. But if we want to develop competitive high value agricultural products we must analyze all the factors which influence the developing of this field.

Exports are an important factor determining the competitiveness of the economy of one country. It is very important to determine the national economy sectors where the state has comparative advantages in comparison with the neighbour countries. This will give the possibility to the country to export those goods where were registered comparative advantage and to import the goods which are more expensive to produce in the country than to import.

There were made many studies to determine the comparative advantage of a country. One of the methods to determine comparative advantage is the LAFAY (1992) index giving

the possibility to analyse the comparative advantage of a country in the export of goods, comparing the trade balance of the analyzed good (group of goods) with the general level of trade balance (STRATAN et al., 2011).

$$LF_i = \left( \frac{X_i - M_i}{X_i + M_i} - \frac{\sum_{i=1}^n X_i - M_i}{\sum_{i=1}^n X_i + M_i} \right) * \frac{X_i + M_i}{\sum_{i=1}^n X_i + M_i} * 100, i = 1, \dots, n \quad (1)$$

Where:

LF<sub>i</sub> – the index of specialisation;

X<sub>i</sub> – the export of good I;

M<sub>i</sub> – the import of good i.

The index gives the possibility to analyze the influence of the groups of goods to normalize the trade balance. If there is registered a positive value of this index, this means that the country has a comparative advantage for the analysed group of goods, otherwise the country will have a disadvantage.

Analyzing the comparative advantage of the exported goods from Republic of Moldova during 2009-2011 (based on the Lafay index) we can mention that the biggest comparative advantage was registered for clothing and accessories, which in 2011 constituted 2,51, which represents a diminution in comparison with 2010 with 0,48, and with 0,99 compared to 2009.

If to mention agricultural products, the biggest comparative advantage was registered for vegetables and fruits. In 2011 the Lafay index for fruits and vegetables was 2,34, which is less with 0.4 compared to 2010, when the biggest Lafay index from the analyzed period has been registered. According to the information presented in the table 1, Republic of Moldova has a comparative advantage for drinks - 1,66; oilseeds and oil fruits - 1,8; cereals and products based on cereals - 0,56; fixed vegetable fats and oils refined or fractioned - 0,77; furniture - 0,57.

Although the Republic of Moldova has a comparative advantage for vegetables and fruits, there are problems regarding the development of this sector and the competitiveness of these products on the local and International Market.

There is a necessity of market diversification, but yet, were not registered too big successes

in this area. The state by its agricultural policies must contribute to finding solutions regarding the problems of marketplace of high value added agricultural products.

Table 1. The comparative advantage analyses of the exported goods from Republic of Moldova during 2009-2011 (based on the Lafay index)

Goods	Years			Deviations of 2011 with	
	2009	2010	2011	2009	2010
Clothing and accessories	3,5	2,99	2,51	-0,99	-0,48
<b>Vegetables and fruits</b>	<b>2,6</b>	<b>2,74</b>	<b>2,34</b>	<b>-0,26</b>	<b>-0,4</b>
Drinks	2,5	2,36	1,66	-0,84	-0,7
Oilseeds and oil fruits	1,1	1,19	1,80	+0,7	+0,61
Cereals and products based on cereals	0,9	0,84	0,56	-0,34	-0,28
Fixed vegetable fats and oils refined or fractioned	0,8	0,66	0,77	-0,03	+0,11
Furniture	0,2	0,27	0,57	+0,37	+0,3
Mineral fuels, lubricants	-4,3	-4,15	-4,6	X	X
Chemical products	-1,8	-1,65	-1,52	X	X
Machines and transport equipments	-1,3	-1,53	-1,43	X	X

One of the factors influencing in a negative way the competitiveness of the local production of vegetables and fruits is the import of fruits from other countries. In 2010 in Moldova were imported from other countries the following agricultural products:

- Bananas – the main supplier is Ecuador (82 % of volume), Costa-Rica (7%), Panama (6%), Columbia (5%);
- Tangerines and clementines imported from Turkey (59%), Greece (27%) and Argentina (6%);
- Oranges – delivered from Turkey (43%), Greece (21%), Egypt (17%) and South Africa (10%);
- Lemons – delivered from Turkey (78%) and Argentina (17%);
- Grapefruits – Turkey (72%), China (12%), South Africa (12%);
- Kiwi imported from Greece (94 %).

Analyzing the volume of imported fruits (Greece, Turkey, Ecuador) on the local market of Moldova we can notice that this factor will not increase the local demand of fruits but it will contribute at the decreasing of the capacity of selling of the local products (Figure 3).

Traditionally, apples are the most exported agricultural products from Moldova. Russia is the biggest market for Moldovan apples. In

2010 the exports to Russia represented 93% of total exports. Belarus is another big market, where were exported 3-5 % of total exports.

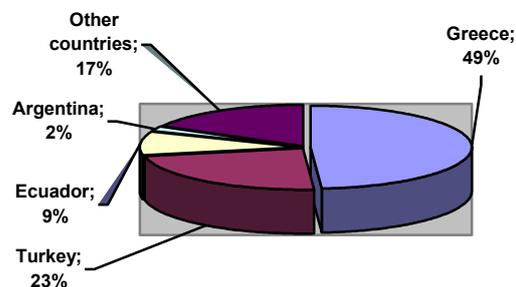


Figure 3. The main exporters of fruits to Moldova (2010)

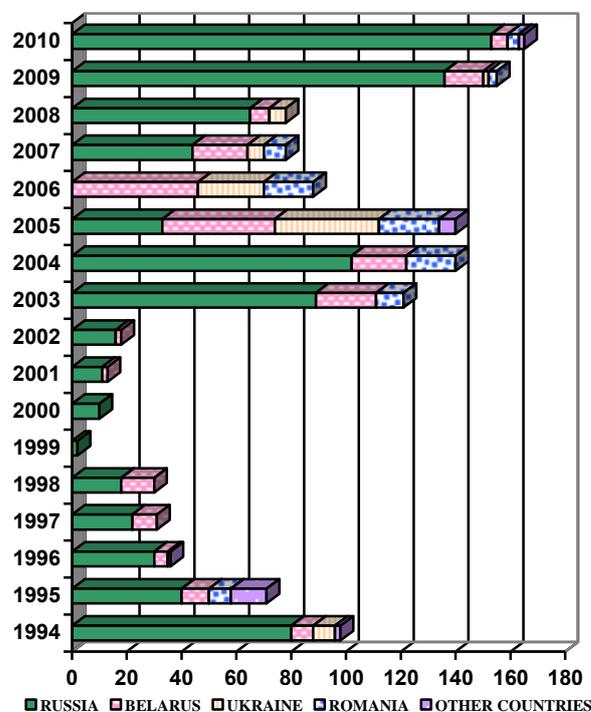


Figure 4. The structure of the Moldovan fresh apple exports (thousand tonnes)

An increasing of the exports of apples was registered in Romania during 2003-2006, reaching up to 20%.

However, once Romania joined the EU in 2007 and adopted EU custom tariffs, the Moldovan exports registered a sharp decrease. (LEAHU et al, 2011).

So far, Moldova was the biggest fruit exporter in Russia (Figure 4), but once this country joined WTO in 2012, the Moldovan producers of fruits (especially of apples) registered

difficulties at the export of fruits in this country. According to the producers of apples, export to Russia decreased in 2012 with 30%, in comparison with 2011. The biggest competitor of Moldova on the Russian Market is Poland. The supply of apples on the Russian market from Poland increased by 2,6 times, reaching 128 thousand tones, which gave the possibility to Poland to become a leader on the market, in comparison with the same period of the last year when Poland was situated on the third place.

The biggest problem for local producers of fruits from Moldova is the differences of price and quality. The agricultural products from Moldova will be competitive on the International Market when they will reach high level of quality and good prices.

Analyzing the situation of vegetables produced in Moldova we can state that these are not competitive on the export markets and faces a big competitiveness on the local market out of the season. The most imported product in 2010 was the potatoes from Romania and Poland. Also such products like: tomatoes, carrots, onions and are imported every year.

The biggest import countries in Moldova for the listed vegetables are:

- Tomatoes – imported from Turkey (83%), Syria (12%), Spain (2%);
- Carrots- Poland (70%), Belarus (12%), Turkey (12%);
- Cucumbers – Turkey (82%), Syria (7%), Romania (5%);
- Onion – Poland (28%), Egypt (25%); Netherlands (15%), Turkey (12%);
- Garlic – China (99%);
- Pepper – Turkey (57%), Netherlands (15%) (Cipriciuc et al., 2011).

Moldova imports a big quantity of vegetables from other countries especially in the period out of season. In Moldova the harvest season of vegetables is from June till October. The biggest problems for agricultural producers are the high costs at heating the greenhouses, Also a big problem for the local producers is the difficult conditions of storing the production. There must be created conditions to storage the potatoes, carrots, onion, etc.

If the local producers want to develop high value agriculture they must understand the requirements of the modern customers and to improve the local production of vegetables and fruits, the quality of products, the packaging of fruits and vegetables to satisfy the clients requirements with high value added products all the year round.

To satisfy the mentioned above conditions in developing high value added agriculture there is necessary to apply Foreign Direct Investments, which is an important factor at increasing the competitiveness of the state (GARRELLI, 2008).

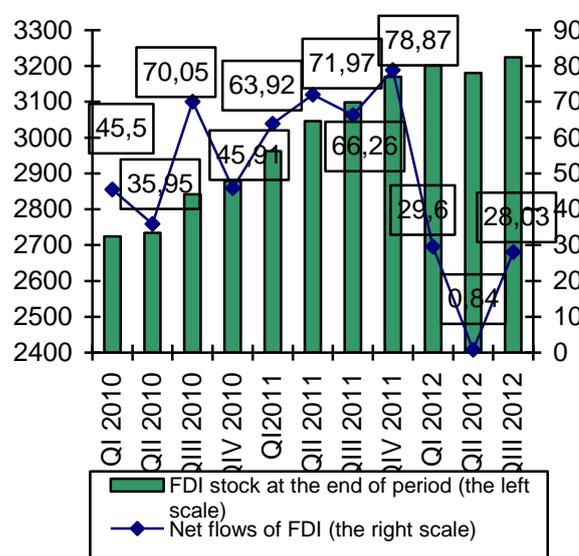


Figure 5. The dynamics of FDI in economy of the Republic of Moldova during 2010-2012 (mil. USD)

The dynamics of FDI in economy of Republic of Moldova during 2010-2012 (Figure 5) reveals that the FDI stock during the analyzed period increased from 2724.58 mln. USD in the first quarter of 2010 to 3224.53 mln. USD in the third quarter of 2012. The dynamics of the net flows of FDI in the economy of Moldova is very irregular. The highest flow of net FDI was registered in the fourth quarter of 2011, when the FDI flow constituted 78,87 mln. USD, which is more than in the fourth quarter of 2010 with 32.96 mln. USD. In 2012 a decreasing of net flow of FDI in the economy of Moldova was registered, which constituted in the first quarter 29,6 mln. USD, which is less than in the first quarter of 2011 with 34.32 mln USD. Also we can mention

that in the second quarter of 2012 was registered the lowest net FDI flow from the analysed period which constituted 0.84 mln. USD, which is less than in the same period of the previous year with 71,13 mln. USD. In the third quarter of 2012 a small increase of net FDI was registered which constituted 28.03 mln. USD, but the net flows of FDI in the economy of Republic of Moldova remain still low. The state must take measures to increase the FDI flows in the Republic of Moldova, because this is an essential factor of economic growth of the state and also of the increasing the competitiveness of the branches of the national economy (BNM, 2012).

Table 2. The structure of FDI by sectors of national economy of Moldova during 2006-2012

Years National economy sectors	2006	2009	2012	Deviations of 2012 with	
				2006	2009
Financial activities	10.7%	25.1%	28.7%	+18.0%	+3.6%
Processing industry	24.2%	22.6%	21.4%	-2.8%	-1.2%
Wholesale	25.1%	20.5%	16.9%	-8.2%	-3.6%
Real Estate	9.5%	8.8%	11.4%	+1.9%	+2.6%
Transports, communications	11%	4.8%	5.4%	-5.6%	+0.6%
Heating, energy, gas, water	16.4%	12.6%	9.6%	-6.8%	-3.0%
Hotels, restaurants	1.2%	2.1%	1.9%	+0.7%	-0.2%
<b>Agriculture</b>	<b>1%</b>	<b>1.1%</b>	<b>1.3%</b>	<b>+0.3%</b>	<b>+0.2%</b>
Others	0.9%	2.4%	3.4%	+2.5%	+1.0%
TOTAL	100%	100%	100%	X	X

Analyzing the structure of FDI by sectors of national economy of Moldova during 2006-2012 (table 2), we can mention that financial sector is the most attractive sector for foreign investors, the rate of FDI in 2012 was 28,7%, which represents an increasing with 3.6% in comparison with 2009. Other important sectors for FDI are: processing industry – 21.4%; wholesale – 16,9 %; real estate transactions – 11.4 %; and others. In agrarian sector the rate of FDI in 2012 constituted only 1,3%, which is insignificant for developing a high value added agriculture. Applying FDI in development of high value agriculture will contribute to modernization of the park of machinery and tractors, will contribute to increase the productivity of agricultural

products, to achieve quality indices and to be competitive on the International Market.

## CONCLUSIONS

The Republic of Moldova has comparative advantage in growing fruits and vegetables as high value added products, but it faces problems in this area. Among the problems are the import of fruits and vegetables from other countries, the quality of exported products, the lack of high technologies in producing high value added products, the problem of finding a stable marketplace and others. Analyzing the situation of vegetables produced in Moldova we can state that these are not competitive on the export markets and faces a big competitiveness on the local market out of the season because the local producers are specialized to produce only in open field and there are a few of the producers which produce all the year around in greenhouses. Another big problem for the local producers is difficult conditions of storing the production. There must be created conditions to storage high value products all the year round. The decreasing of FDI in the economy of the Republic of Moldova, especially the small flow of FDI in agriculture influences the competitiveness of this sector and this is why we do not have technological advantage in the agrarian sector.

On the one hand, to develop high value added agriculture requires from the local producers to focus on increasing the quality of products, to supply products well packed, and at good prices but on the other hand, the state by its agricultural policies must contribute at opening new markets for agricultural products, elaboration of new policies for attracting FDI, creating conditions for a sustainable development of high value added agriculture.

## REFERENCES

- [1]Aiginger K., 2006, Competitiveness: From a dangerous obsession to a welfare creating ability with positive externalities. Journal of industry, competition and trade. - Dordrecht : Springer, Vol 6, p. 162.

[2]Cipriciuc L., Belschi A., White P., 2011, Studiu de piață privind fructele și legumele proaspete în Moldova. ACED, Chisinău, p. 10-11.

[3]Garrelli, S., 2008, Competitiveness 20 years later. IMD World Competitiveness yearbook, p.30, [www.imd.org/research/publications](http://www.imd.org/research/publications)

[4]Leahu, V., Cojocaru, A., Cumpanici, A., 2011, Apple value chain study and action plan. ACED, Chisinau.

[5]Sharples, J., Milham, N., 1990, Longrun Competitiveness of Australian Agricultura. USDA Foreign Agricultural Economic Report No.243, US Department of Agriculture.

[6]Stratan, A., Clipa, V., Pelivan, M., Fala, A., 2011, Analiza competitivității naționale prin prisma indicatorilor de performanță a exporturilor. IEFS.

[7] [www.bnm.md](http://www.bnm.md)

[8] [www.statistica.md](http://www.statistica.md)

