

## COMPETITIVENESS AND QUALITY OF AGRIFOOD PRODUCTS - KEY FACTORS FOR THE SUCCESS OF EXPORT PROMOTION

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### *Abstract*

*Article reflects the competitiveness and quality management from the perspective of enunciated historical and methodological approaches. They are listed by management functions and show interrelation between quality and profit, thus addressing the economic entity as the core of acting for promotion of exports. Also, we set the calculation of indicators of competitiveness of agri-food exports from the Republic of Moldova and establish the priorities and the necessary conclusions.*

*Key words:* agri-food export, competitiveness, quality, promotion

### INTRODUCTION

At different stages of business development, factors that provided competitiveness were different: from the end of the XIXth century until 1930 - low production costs, 1940-1960 - the quality of products/services, since 1960 - adaptive capacity to the complex, dynamic and unpredictable business environment. The twenty-first century adds to the flexibility, as a requirement, also a high innovative high degree.

Thus we can mention six parameters that being touched, they ensure competitiveness in a constantly changing environment [5]:

- 1) product/service required by consumer,
- 2) a desired quality,
- 3) in a certain amount (the customer buys only the amount that he needs)
- 4) at a certain price,
- 5) at the appropriate time
- 6) in the respective place.

### MATERIALS AND METHODS

This paper involves comparative study in evaluating the impact of different approaches on determinations of competitiveness and quality. Moreover, we use interrelation between quality and profit, so that later to calculate important indicators such as: the effect of competitiveness, the relative change

of the share in the global market, the effect of adaptation, export growth in value, exports per capita and the share on global market.

### RESULTS AND DISCUSSIONS

In the Republic of Moldova the competitiveness has not attracted the attention of researchers and policy makers for a long time, which may be explained by the following points:

- until the 90s of the XX century the domestic enterprises advocated for sale of its products on secure and stable markets within the union republics and socialist countries;

- in the 1990s, the economic system changes aimed, mainly, the creation of private system foundations and institutional environment of market economy, the key-issues of economic policy being privatization and macroeconomic stabilization.

The concept of competitiveness of the enterprise began to be updated by academics and practitioners in the early 1970s due to changes that have occurred in the global market and competition change. The experience of the USA, Japan and other countries proves that the increase of competitiveness of these countries has begun at the level of concrete businesses. Hence the need to cross the economic activity on

providing strong and competitive companies, also taking into account the fact that the competitiveness of a company can not be maintained without the continuous improvement of the determinants of competitiveness of the country [2]. Local economist Gr. Belostecinic considers: "as the country's competitiveness, the notion of competitiveness of the enterprise is treated differently and so far it lacks a single opinion [1, p.163]. Product competitiveness is a complex notion, reflecting, on the one hand, the interests of producers, and on the other hand, the interests of consumers. In the first case it is considered competitive the product which ensures the efficiency of the manufacturer's activity. In the second case, it is the product, which ensures a maximal useful effect per unit of consumption [5]. This suggests that in assessing the competitiveness of products is necessary to take into account the interests of producers and consumers.

The competitiveness of agricultural products is determined by a set of qualitative, technical, economic, aesthetic, organizational characteristics etc. The presence of these features confers some competitive advantages on the market and facilitate the distribution in competition conditions. Determination of the competitiveness of agri-food products appears from need to formulate of specific aspects of this production. D. Sparling and S. Thomspson [7] explains the agrifood sector competitiveness as being an indicator influenced by the costs of agrifood production, resource use efficiency and also market factors, macroeconomic tools on the agri-food sector. Meanwhile, in French literature, Jacques Gallezot and Emmanuelle Chevassus-Lozza [3, pag.143-154] presents the agri-food competitiveness based on concepts of price-non-price, but also in terms of agri-food trade. Russian economists' studies on the competitiveness of agri-food products are of particular complexity. For example, Болоболов А. [10, p.25-28] treats the agri-food production competitiveness through the productivity of internal resources of the sector enterprise, and also of economic

resources, and Трыхачев В. [11, p.21-24] understand this competitiveness, not only from the viewpoint of internal resources as of ensuring criteria and factors that fit and ensure a high level of agri-food competitiveness - the creation of competitive advantages of agri-food products across all economic hierarchies, involving technological and institutional instruments etc.

Romanian economists expose a highly diversified approach to the phenomenon of agri-food competitiveness. They reveal and argue the internal and external branch that this competitiveness can be assessed on. Since the internal branch is characterized by internal factors (production yields, infrastructure, etc.), the external one is directly linked to commercial expression of agri-food sector. Such an understanding of the agri-food competitiveness manifestation is encountered in the study "Romanian agriculture and rural area from perspective of sustainable development" [4]. There are here reflected such aspects of agri-food competitiveness, as: competitive performance of agri-food trade, measuring of agri-food competitiveness etc., which allows, in our opinion, to focus a number of specific indicators and to understand their dynamic evolution. In this way, one can already appeal to the respective functional tools for the purposes of influencing those factors that determine a certain resultant development (using logic and economic chain: tools-factors-indicators result). Namely the agri-food competitiveness approach methodology allows us revealing the internal considerations within the agri-food sector, which generate positive developments, or the reverse.

The author, after analyzing the exposures of different scholars on the issue, states own reflections on the constituent elements of agrifood competitiveness and concludes that it manifests, particularly, in the export process of the production.

Assessment of agrifood competitiveness is achieved through various methods. These methodologies, used in certain circumstances, and for certain categories of agrifood products, are complicating, from the recital of

specificity of a particular product (or group), but it helps in understanding the economic essence of respective competitiveness. In the same vein, the assessment of agrifood production competitiveness can be also carried out under the aspect of the tendency to maximize quality and minimize price.

Economic conditions in which Moldovan enterprises operate impose certain requirements for criteria and indicators for assessing firms' competitiveness. In our opinion, the competitiveness indicator should reflect not only the current situation of the enterprise, but also development trends; to be stable to changes in the market conditions, to be applicable in practice, not to depend on the degree of monopoly of the company. It should be noted that the methodology for assessing the competitiveness of enterprises, in the specialty literature there is no a unique approach and researches on this subject are scarce, carry a fragmentary character and does not address all methodological and practical aspects of competitiveness. Scientific researches in the area of enterprise competitiveness show that a more objective appreciation of it may be obtained using the method of comprehensive assessment, which includes the determination of unitary and group indicators of enterprise competitiveness. An agrifood product of a better quality is generally, more expensive. The farmer must know, but if superior sale price advantage is not somewhat canceled by the additional expenses for "quality increase", or, in some cases, inferior yield obtained per hectare. A quality real policy does not always permit farmers to increase the sales prices of their products, it ensuring, generally, a security of selling and a low fluctuation of sales prices.

Consumers are willing to pay more expensive for a quality product, but they need to know:

- what constitutes the quality of ?
- what and how many are the consumers of that product ?
- up to what price to accept its purchase ?

In the monograph "Efficiency and competitiveness in agriculture" [8, p.48-49], Timofti E. exposes the classification of factors

of economic competitiveness of enterprises in the agricultural sector in 2 categories: internal factors and external factors, at the same time presenting new trends in competitiveness strategy of these businesses. Based on the condition of product competitiveness ( $K_{prod}$ ), the consumer will buy the product which will satisfy the condition [8, p. 291]:

$$K_{prod} = P/C \longrightarrow \max$$

where:

P - utility effect,

C - consumptions of acquisition and use.

As it is known, the competitiveness of production is influenced primarily by 2 main factors - quality and price. But also the conditions for the product promotion to consumer, sales and after-sales services, advertising, demand fluctuations affect the competitiveness level of products. The author emphasizes thus the new dynamics with a focus on quality, on a promotion of more and more efficient. In this way, we can see a great diversity in the research of agrifood products competitiveness within international studies, or national. This results, in our opinion, from the complex nature of the respective competitiveness, but also from the multitude of issues that can be treated. Argumentation of the increase of market share of a particular entity is presented as a direct result of how this economic agent manages and increases its competitiveness. An increase in the competitiveness of the economic entity involves an increase in its market share. So the more important are structural, innovative and instrumental approaches, as these project considerable effects on demand and market positioning, bringing thus an important financial gain.

Thus, the importance of the quality management results from at least the following reasons:

1. First, for an enterprise, to obtain and maintain the quality required by the customer is a business necessity. Achieving this goal is conditioned by planned and efficient use of human, material and financial resources, available to the enterprise.
2. On the other hand, the client wants to have a fuse on the company's capacity to provide

the production required quality in the future too. To gain the customer's trust, the company must demonstrate that it has implemented a quality effective system.

The most important precursors of quality management are considered: W. Edward Deming, Joseph M. Juran, A.V. Feigenbaum, K. Jshikawa and Philip B. Crosby. Deming program on quality improvement "14 points program" is intended to management of the company that Deming consider rewarding for ensuring the framework necessary to achieve this profitability, following the "14 points" [6]. Juran's contribution in the field of quality management is expressed by the fact that, arguing the need for continuous quality improvement, he distinguishes between "incidental problems" and "chronic problems"[6]. While the first can be solved by workers, the chronic ones are the responsibility of managers. The latter have a share of 80%, so, for the improvement of quality it is very important the resolving of chronic problems. Armand V. Feigenbaum is known, especially, for having introduced the concept of "Total Quality Control" [6]. Total Quality Control means the coordination of the actions of workers, machines and information to reach this goal. Like Deming and Juran, his opinion is that a product or service may be considered of a superior quality only when it meets the consumer's expectations. But he gives a great importance to the correlation between quality and price, demonstrating a "cost orientation" in definition of products quality.

According to authors, *the quality is the totality of characteristics of products capable of satisfying the consumers' demands, for which they are intended. While the management is the science that deals with the organization and leadership of a quality system through managerial functions.*

The quality planning function consists of a set of processes through which the firm determines the main objectives of quality, and the resources and means to achieve them [6]. The coordination function consists of all processes through there are harmonizing the decisions and actions of the firm and of its

subsystems on the quality, in order to achieve the objectives defined, within the previously established quality system.

The mobilization function covers all the processes by which the company staff is attracted and determined to participate in achieving the objectives planned in the quality area, taking into account the motivational factors. The controlling function relates to the whole processes conduct surveillance activities and evaluation of results in the quality field, within every stage of the product trajectory, to predetermined objectives and standards, in order to eliminate deficiencies and prevention of their occurrence in subsequent processes. Quality assurance function refers to the whole preventive activities, which seeks, systematically, to ensure the accuracy and effectiveness of planning, organization, coordination, training and controlling activities, in order to secure the results at desired qualitative level. Quality improvement function refers to activities undertaken at each stage of the product trajectory, in order to improve performance of all processes and outcomes of these processes to ensure better satisfaction of customers' needs in conditions of efficiency.

Favorable effects of increasing products quality are materialized in increased profitability, labor productivity and competitiveness.

➤ **Increase of profitability.** Dependence of the profitability of quality is well reflected in Figure 1. According to the figure, on the one hand, an improvement in product quality causes an increase in "value" as perceived by the customer, that can be achieved by a higher price and increase of market share, which leads to the increase in sales volume and hence the profit, on the other hand, an improvement of manufacturing processes will lead to lower operating costs and increase of productivity and therefore to the increase of profit.

➤ **Increase of productivity.** Any improvement of the processes that take place in the enterprise will lead to more efficient use of resources and a reduction of "waste".

Productivity is, in fact, a determining element in assessing the competitiveness of a company, industry or nation.

➤ **Competitiveness.** A firm reputation for a competitive quality is the best asset of the company. National reputation for the quality is perhaps the most illustrative thing that can characterize a country.

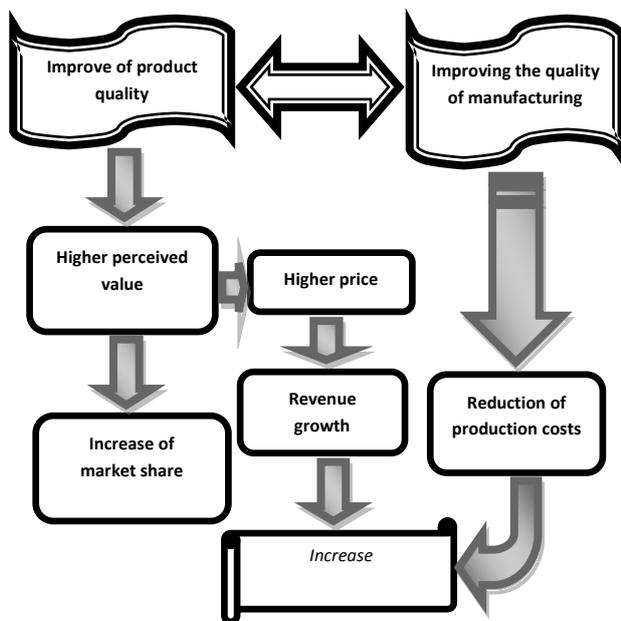


Fig.1. The relationship between quality and profit

Ensuring competitive products on export markets of Moldovan agrifood positions is possible given the actions resulting from the quantification competitiveness, by key indices synthesis, features of real situation [9].

A patterning in this respect is shown in Table 1, where indicators of Moldovan agrifood export competitiveness are exposed under dynamic and comparative report, with specific aspect of adapting to the market, increasing exports, and also the share on international market.

In terms of primary relevance, expressing the number of partner countries on the respective positions, we see that the most pronounced dynamic and as such, the very number of importer partners more significant is characteristic for *Fruit and nuts*, *Oilseeds*, *Cereals and milk preparations* and *Drinks*. In contrast, the lowest numerical values are concentrated in groups of animal products, dairy, vegetables, meat.

However, the most comprehensive and

objectively reflect the situation namely the indicators that quantify the share, market response, market penetration etc. by domestic exporters.

Table 1. Moldovan agrifood export competitiveness indices

Positions/group of positions	Number of partner countries			Quantifying agrifood products competitiveness		
	2008	2010	2012	Indexes	Fresh agrifood products, result: 2010, 2011, 2012	Processed agrifood products, result: 2010, 2011, 2012
01 Live animals	4	5	6	Competitiveness effect (2006, 2007, 2008 – reporting years), p.a., %	12.96 (position 19 in the world)	-4.03 (position 128 in the world)
02 Meat and edible meat offal	4	4	4		15.44 (21)	0.62 (76)
03 Fish, crustaceans, molluscs	2	3	2		6.63 (36)	1.21 (63)
04 Dairy products, eggs, honey	13	10	13	Relative change of the share on the global market, p.a., %	13.24	-4.41
05 Products of animal origin	6	5	9		15.75	-3.13
07 Edible vegetables	9	13	13		8.76	1.02
08 Edible fruit, nuts	35	36	48	Adaptation effect (2006, 2007, 2008 – reporting years), p.a., %	-13.17 (position 173 in the world)	-6.30 (position 144 in the world)
09 Coffee, tea, spices	6	4	3		-1.00 (108)	-3.91 (141)
10 Cereals	23	29	16		2.02 (55)	-0.39 (98)
12 Oil seed, oleagic fruits	31	37	39	Export growth in value, p.a., %	25 (position 16 in the world)	3 (position 129 in the world)
15 Animal, vegetable fats and oils	21	19	20		29 (20)	5 (119)
16 Meat, fish and seafood food preparations	6	3	2		16 (32)	5 (71)
17 Sugars	25	23	24	Exports per capita (USD/capita)	107.2 (position 70 in the world)	100.8 (position 66 in the world)
18 Cocoa and cocoa preparations	22	19	22		146.8 (66)	114.1 (70)
19 Cereal, flour, starch, milk preparations and products	23	26	27		114.9 (73)	134.3 (60)
20 Vegetable, fruit, nut food preparations	30	34	33	Share on global market (%)	0.06 (position 93 in the world)	0.06 (position 88 in the world)
21 Miscellaneous edible preparations	16	16	18		0.07 (93)	0.06 (86)
22 Beverages, spirits and vinegar	50	54	59		0.05 (93)	0.07 (79)
24 Tobacco and manufactured tobacco substitutes	19	20	18			

Source: Elaborated on the basis of data from Trade Competitiveness Map, Intracen 2013. <http://legacy.intracen.org>

Thus:

**Competitiveness effect** highlights reflection of percentage change in exports

competitiveness of a country on global market, for the selected sector, in selected period. In this way, the index reflects the change in share of the exporting country to import markets, related to the initial share of countries' imports:

$$\sum_j \left( \frac{X_{djs}^t}{X_{js}^t} - \frac{X_{djs}^{t_0}}{X_{js}^{t_0}} \right) \times \frac{X_{js}^{t_0}}{X_{ws}^{t_0}}$$

Here,  $t$  is the current year,  $t_0$  - the first year under consideration,  $d$  - the country under considered,  $j$  - partner country(s),  $s$  is the sector,  $X$  is exports and  $X_s$  - global exports for sector  $s$ .

Very important in its essence, the analyzed competitiveness effect for Moldovan fresh and processed agrifood products illustrates the positive percentage changes, which means gains on desired market due to increased competitiveness on the world market for those sectors. The most favorable situation was registered for fresh products, in terms of indicator value, in the reporting period 2011/2007 (15.44%) and as position, during the period 2010/2006 - 19th world place, a performance that has not been recorded for this indicator during the reporting period. On the other hand, processed products are less competitive, the effect index records negative values (-4.03) for 2010/2006, and for 2011/2007 and 2012/2008 the values are already positive with advancement including the position of the Republic of Moldova in the world. They tell us about the excessive cantonment of diminished competitiveness on processed segments, with added value, which assumes, implicitly, a specialization and higher competitiveness effect for fresh products, which significantly reduces the processing industry contribution and, overall, gives an weakened image to the capacities of those sectors, which have to be primarily taken into consideration.

**Relative change of the share on the global market** - shows the percentage change in exports of a country on the world market for a particular sector, between time  $0$  and time  $t$ . Positive values of this index reveals increased importance of that sector of the country on

foreign market:

$$\left( \frac{X_{ds}^t}{X_{ws}^t} \right) - \left( \frac{X_{ds}^{t_0}}{X_{ws}^{t_0}} \right) = \sum_j \left[ \left( \frac{X_{djs}^t}{X_{js}^t} \right) \times \left( \frac{X_{js}^t}{X_{ws}^t} \right) - \left( \frac{X_{djs}^{t_0}}{X_{js}^{t_0}} \right) \times \left( \frac{X_{js}^{t_0}}{X_{ws}^{t_0}} \right) \right]$$

consideration,  $d$  is the country under consideration,  $s$  - respective sector,  $j$  is importing markets group,  $X$  - exports,  $X_{ws}^t$  - world exports of sector  $s$ .

In this case, there is a slight increase (from 2010/2009 to 2011/2010) of the index for fresh products (from 13.24 to 15.75%), ie an increase in the importance of these products in the domestic export structure; thereafter (2012/2011) value of the indicator falls below the level of the first period. Processed products, however, albeit they register negative values (-4.41 and -3.13%) in the first 2 reference periods, the third period confirms the positive dynamics of the index by the value of 1.02% for 2012/2011, thus confirming an increase in the significance of these products having, however, quite slow paces.

**Adaptation effect** shows the ability to adjust the export supply of a particular sector to changes in global demand. We believe that this indicator reflects thus the mobility performance on markets, such as the exchange of flows depending on the state reflected by the partner country.

The effect is positive if:

- country's market share is increasing on a growing importing market (scenario 1);
- country's market share is diminishing on a declining importing market (scenario 2).

However, the effect is negative if:

- country's market share is increasing on a declining importing market (scenario 3);
- country's market share is diminishing on a growing importing market (scenario 4).

As a formula, this indicator is as follows:

$$\sum_j \left( \frac{X_{djs}^t}{X_{js}^t} - \frac{X_{djs}^{t_0}}{X_{js}^{t_0}} \right) \times \left( \frac{X_{js}^t}{X_w^t} - \frac{X_{js}^{t_0}}{X_w^{t_0}} \right)$$

Here,  $t$  is the current year,  $t_0$  - the first year under consideration,  $d$  is the country under consideration,  $j$  - partner country(s),  $s$  - respective sector,  $w$  - group of all exporting countries and  $X$  is exports.

Past in the light of of this index, both *fresh*

*products* developments, as well as the *processed products* are geared towards improving the situation. However, the effect is negative for 2 of 3 reference periods of fresh products, suggesting scenario 3 and scenario 4 above, both quite dangerous for the future competitiveness of the agri-food exports. More highlighted and positive is shown the adaptation index for 2012/2008 period (2.02%), which contributed to Moldova's 55 th worldwide ranking in the manifestation of these processes. The situation of processed products is more complex and complicated; although the dynamics is presented as one of positive growth, positive effect values have not yet been achieved, which is essentially normal, since the respective product range is very diverse one and the whole related infrastructure could be slower tailored to the market situation.

Confirmation of positive dynamics and values greater than "0" will show, certainly, a continuously adapting of national exporters to external market conditions, particularly by directing the flow to the EU and Asian emerging markets and framing in the most favorable scenario - scenario 1.

**Export growth in value** - reflects the development of a sector exports in the period under review, and positive index indicates that exports increased in value. The formula is as follows:

$$GVX_{ds}^t = 100 \times \left[ \left( \frac{X_{ds}^t}{X_{ds}^{t_0}} \right)^{1/(t-t_0)} - 1 \right]$$

Here,  $t$  and  $t_0$  are the current time, respectively, reference period time,  $d$  - the country studied,  $s$  - respective sector,  $X$  - exports.

While 2010 proved for fresh products 16th worldwide positioning at the chapter of growth dynamics of exports, subsequently the latter has reduced rates to 16% annually in 2012, ie below the level of 2010 and processed products showed modest increases (3-5%), but without elucidating any trends of diminishing. Most likely, being influenced by such factors as: lack of a massive manifestation on already well established

markets, lack of a diversification that would correspond to final consumption, etc., the processed products experience low dynamic as value in export growth. On the other hand, in most respects, these products reveal positive trends, which inspires safety in the continuity of their manifestation on the external market, of course on condition with an appropriate and comprehensive support.

**Exports per capita** express the extent to which a country's population produces for the world market. Expression of quantification is as follows:

$$Xcap_{ds}^t = X_{ds}^t / Pop_d^t$$

Here,  $d$  - the target country,  $s$  - respective sector,  $X$  - exports and  $Pop_d^t$  represents total population for the period  $t$ . For both categories of products this index ranks the Republic of Moldova globally within the limits of 60-73 places, ie quite favorable compared to other indicators of the above, at least from the point of view of the extremes achieved. However, of value point of view, this report proved to be one with fragmented tendency but growing for fresh products (107.2 USD in 2010, 146.8 in 2011 and 114.9 in 2012) and one growing continuously for the processed products. The year 2012 was the period when processed products surpassed to the values of per capita exports the fresh products and, thanks to such exceedances, there was achieved the 60th position worldwide.

**The share on the global market** indicates how important is the country concerned in world export profile for a particular sector. In this way, higher values indicate more significant importance of the state under research. The results are obtained by applying the formula:

$$SHWX_{ds}^t = \frac{X_{ds}^t}{X_{ws}^t} \times 100$$

Here,  $d$  - the target country,  $s$  - respective sector,  $w$  - group of all exporting countries and  $X$  represents exports. Obviously, the worst situation is presented for Moldova namely at the values of this indicator, since, both for fresh products, and for processed

ones the share on the global market is a very small one, almost negligible (0.05-0.07%), which leads implicitly to a rank on the last places. Lack of a massive base of production, the inefficiency of national operators and the limited nature of investments, availability of an incipient infrastructure other factors have catalyzed the establishment of present situation.

## CONCLUSIONS

The concept of competitiveness of the enterprise began to be updated by academics and practitioners in the early 1970s due to changes that have occurred in the global market and competition change.

Romanian, Russian, local and foreign economists expressed different opinions on competitiveness and quality management.

Favorable effects of increasing products quality are materialized in increased profitability, labor productivity and competitiveness.

In practical terms, measuring Moldovan agrifood export competitiveness indices, they reveal that in terms of primary relevance, expressing the number of partner countries on the respective positions, we see that the most pronounced dynamic and as such, the very number of importer partners more significant is characteristic for *Fruit and nuts, Oilseeds, Cereals and milk preparations* and *Drinks*. In contrast, the lowest numerical values are concentrated in groups of animal products, dairy, vegetables, meat. However, the most comprehensive and objectively reflect the situation namely the indicators that quantify the share, market response, market penetration etc. by domestic exporters.

The analyzed competitiveness effect for Moldovan fresh and processed agrifood products illustrates the positive percentage changes. The most favorable situation was registered for fresh products, in terms of indicator value, in the reporting period 2011/2007 (15.44%) and as position, during the period 2010/2006 - 19th world place, a performance that has not been recorded for this indicator during the reporting period. On

the other hand, processed products are less competitive, the effect index records negative values (-4.03) for 2010/2006, and for 2011/2007 and 2012/2008 the values are already positive with advancement including the position of the Republic of Moldova in the world.

While 2010 proved for fresh products 16th worldwide positioning at the chapter of growth dynamics of exports, subsequently the latter has reduced rates to 16% annually in 2012, and processed products showed modest increases (3-5%), but without elucidating any trends of diminishing.

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