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HIGH VALUE AGRI-FOOD PRODUCTS IN ROMANIA'S TRADE PATTERN

ABSTRACT

The present study focuses on the Romania's high-value agriculture trade pattern and changes subsequent to the EU accession impact, analyzing the dynamics and ranks of the production volumes and values of the trade flows.

The main results provide assessments of the Romania's high-value agricultural products competitive potential expressed on foreign markets. Among such commodities, the following are particularly significant: livestock, dairy products, horticulture products including fruit and vegetables, berries and spices, mushrooms, wine.

The high-value agrifood products are provided from high-natural value zones and are typically produced on small-size farms. Consequently, their production and marketing are important, both as a catalyst to maintain and develop rural communities and as a source of multiple sustainable benefits incumbent on local economies and rural socio-economic development.

In this context, the message of the present scientific endeavor addresses the design of a strategy of small-scale farmers' income increase to help them diversify from low-value unstable food into higher-value sustainable supplies.

Key words: agriculture, foreign trade, high-value products, sustainable development.

JEL Classification: Q13, F15, Q17, O13, Q01.

1. INTRODUCTION

High-value agricultural product (HVP) is a relatively new concept, not only in Romania. As defined by Jasper Womach (Wormach, 2005), HVP are *consumer-oriented agricultural products that are high in value, often but not necessarily due to processing*; they can be grouped in: (i) semi-processed products, such as fresh and frozen meats, flour, vegetable oils, roasted coffee, refined sugar; (ii) highly processed products that are ready for the consumer, such as milk, cheese, wine, breakfast cereals; and (iii) high-value unprocessed products that are often raw foods, such as fresh and dried fruits and vegetables, eggs, and nuts.

The term "high nature value farmland hectare" was introduced in the early '90s, when the general characteristics of low-input farming systems were described in terms of biodiversity and management practices (JRC, 2008). Previous studies

define the high-value agricultural products as agricultural goods with a high economic value per kilogram, per hectare, or per calorie (Gulati et al, 2005). They may include a crop, fish, livestock or non-timber forest product that returns a higher gross margin per unit of available resources (land, labor, capital, human capacities) than other products within a given location and context [...] and have a smaller market share than commodities (GFAR, 2006). Given these features, such goods usually consist in livestock, meat, dairy products, horticulture products including fruit and vegetables, berries and medicinal plants, spices, mushrooms, natural juices, wine, fresh and processed goods. The category may include other products with high economic or natural value according to the zone resources specificity and biodiversity.

HVP are typically produced on small-size farms, sold through specialized markets that imply vertical integration under the form of cooperation or contract and the prices are highly sensitive to quality variations (IFAPRI, 2012). HNV farmland results from a combination of land use and farming systems. Some "natural values", related to high levels of biodiversity or the presence of certain species and habitats, depend on certain types of farming activity.

The dominant feature of HNV farming is low-intensity management, with a significant existence of semi-natural vegetation, in particular extensive grassland (EC, 2011). A common problem in entering HVA produced by small-scale farmers on market chains is that their products frequently do not comply with the established technical standards (Davis, 2006). Among the broader category of high-value agricultural products, these are some of the more widely grown products, thus trends in these commodities have broad effects on the marketing channels and the opportunities of small farmers in the region (IFAPRI, 2012).

Romania has a large area of HNV farmland. The objective of the research was to investigate the evolution of high-value agricultural products on foreign markets, due to its direct implications for the restructuring of the agricultural supply chain and its indirect implications for the role of small farmers.

2. MATERIAL AND METHOD

The research aims to design Romania's agrifood high value products trade pattern, with the main objective of identifying the export potential in most valuable agrifood products to bring large revenues for the rural economy (Rusali, 2012). The methodological approach used the analysis of the agrifood sector competitiveness based on foreign trade performance by destination area of products, trade structure by sections, chapters and products.

The informational material used in the study included statistics for agriculture and foreign trade provided by NIS and FAO database on Food and Agricultural commodities by country (FAO, 2012), recent research works and specialized literature. The research was based on the statistics of the Harmonized System (HS)

corresponding to FAO codes, in the period 2006 – 2010; within the limits of disponibility, the selected data have been processed in order to identify and rank the domestic products resulted from agricultural enterprises with largest export values and highest unit values.

The outcome provides an assessment of the effects of the integration of the Romanian agri-food products in the Common Market upon the structure and trade balance and the subsequent changes induced in Romania's export pattern. The results consist in the dynamics of trade structure by sections and agrifood net exports by chapters of HS, Romania's place of in world hierarchy of top high value agrifood products, a hierarchy of the first twenty important food and agricultural commodities (ranked by value) productions and world exports.

3. RESULTS AND DISCUSSIONS

High-value agricultural products (HVP) are provided by high-natural value (HNV) farmland and forestry associated with high biodiversity, referring to agricultural and forestry management systems as a driver for creating or maintaining HNV. The concept of HNV covers distinct areas as well as HNV features (e.g. ponds, hedgerows, buffer strips etc.), although part of the areas are however excluded from the HNV definition (EC, 2011).

The need to evaluate and to prevent the loss of high nature value (HNV) farmland is widely recognized, and it represents an explicit objective of the current Rural Development EU Policy. The aim of estimating HNV farmland distribution at European level according to a standardized method JRC and the EEA prepared the first EU-27 map of High Nature Value farmland (JRC, 2008). According to these regionally differentiated selection criteria, Romania's high-value land and its regional pattern reside in areas included in Table 1.

Table 1
High natural value land in Romania by development regions

Region	HNV farmland area (EC-JRC) [ha]	Regional area share in HNV farmland [%]	Agricultural land (CLC Agricultural classes +HNV areas) [ha]	Utilized Agric. Area (official figures from EUROSTAT FSS) [ha]	Share of HNV farmland area (col1*100/col3) [%]
0	1	2	3	4	5
Romania	4860372	100	14433920	13906700	33.7
R1 North-East	741197	15.2	2070320	2032950	35.8
R2 South-East	422703	8.7	2395440	2151210	17.6
R3 South	318265	6.5	2486960	2325760	12.8
R4 South-West	492539	10.1	1788990	1782600	27.5
R5 West	694835	14.3	1784220	1751710	38.9
R6 North-West	988420	20.3	1999750	1941420	49.4

Source: JRC, 2008, Appendix X. pp: 96.

With 4.8 million hectares of HNV land, Romania shares 33.7% in the UAA (CLC method) (PNADR, 2012). By spatial distribution, it covers the major areas from the regions Centre (66.8%), North-West (49.4%), North-East and West. Comparing to other EU-27 countries, more than 30% of UAA of HNV areas are also found in Bulgaria, Greece, Spain, Italy, Cyprus, Austria, Portugal, Slovenia and Finland, while in Belgium, Germany, Latvia, Lithuania and Netherlands the share ranges from 10 to 20%; in Luxembourg and Denmark, the share of HNV area in the UAA is less than 10% (JRC, 2007).

Romania's gross value added (GVA) of the agricultural industry ranks on the seventh place in EU-27, with an average share of crop output of 5% and of animal output of 3%, after France, Italy and Spain (17.2%–15.8% GVA) and Germany, Netherlands and UK (10.5%–5.5% GVA).

Based on FAO statistics processing, in the year 2010, the most expensive Romanian agri-food products were: sheep meat (2073 Euro/t), cattle meat (2056 Euro/t), pig meat (1170 Euro/t) and chicken meat (1084 Euro/t). Cow milk had the highest production value (1047.8 million Euros), followed by wheat (528.6 million Euros). Table 2 indicates the top highest value productions obtained in 2010, including corresponding quantities (metric tons), values (thousand Euros) and prices (unit values).

Table 2
Top Romania's agrifood products rank by unit value, in 2010

Rank	Commodity	Production (Mt)	Production (1000 €)	Price (€/t)
1	Sheep meat	78724	163164	2073
2	Cattle meat	199382	409992	2056
3	Pig meat	363191	424992	1170
4	Chicken meat	278944	302451	1084
5	Cherries	70290	68020	967
6	Hen eggs, in shell	297535	187845	631
7	Grapes	740118	322040	435
8	Chillies and peppers, green	243493	87254	359
9	Sheep milk, whole, fresh	651317	193067	296
10	Apples	552860	162527	294
11	Tomatoes	768532	216200	282
12	Cow milk, whole, fresh	4410840	1047767	237
13	Plums and sloes	624884	146348	234
14	Rapeseed	943033	199113	211
15	Sunflower seed	1262930	263426	209
16	Cabbages	983648	100655	102
17	Wheat	5811810	528618	91
18	Potatoes	3283870	275983	84
19	Barley	1311040	88153	67
20	Maize	9042030	274869	30

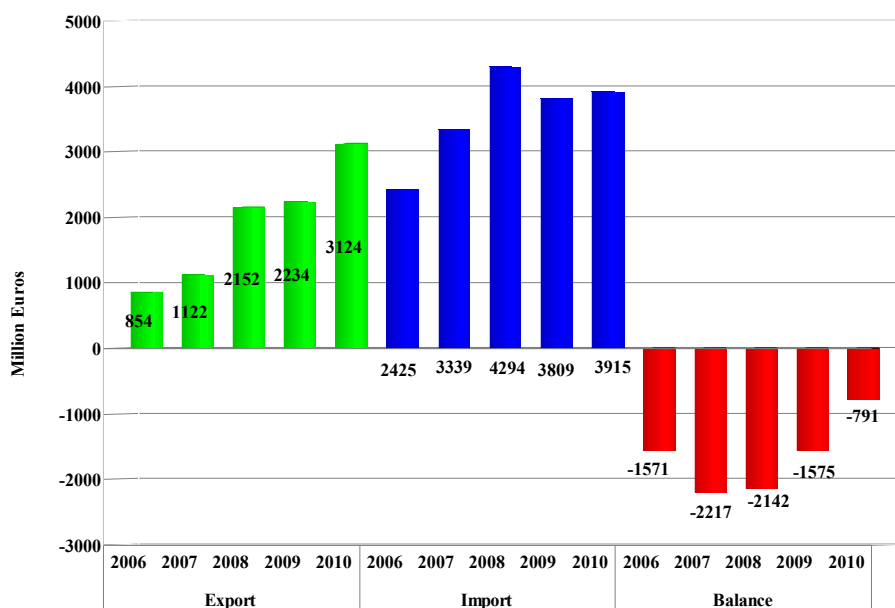
Source: Processing of FAOSTAT data.

The main world markets for those commodities were Italy, Germany, Spain, Belgium, Netherlands, France, Greece, Portugal, Ireland, Sweden for cow milk; Algeria, Italy, Egypt, Japan, Indonesia, Spain, Brazil, Iran, Pakistan, Netherlands for wheat; the Russian Federation, Germany, USA, Poland, Italy, for pig meat.

Romania is a net agri-food importer since 1990, although under the influence of developments in the national economy induced by the EU accession preparations, Romania's foreign trade expanded both in export and import flows.

In the post-accession period, the Romanian agri-food sector experienced a growing openness to foreign markets, significantly more important than indicators derived from national development. Romania is highly dependent on external agrifood markets, sharing 83% in 2009 and the indicator reflects the low performance facing international competitiveness, while EU is the major trade partner.

Trade policy and exchange rate in recent years have favored high levels of coverage of imports by exports, although lower than at national economy level; in the year 2010 it amounted to 80%. According to the statistics presented in Fig. 1, the total agricultural trade increased continuously, from 3.28 billion Euros in 2006 to 7.04 billion Euros in 2010, while the trade unbalance tended to recover, after the deep historic deficit of -2.2 billion Euros in 2007, to -791 million Euros in 2010.



Source: Processing of National Institute of Statistics data, <http://insse.ro>.

Figure 1. Romania's agrifood foreign trade – evolution and structure during 2006–2010.

Romania's main agrifood exports rank by highest value in the year 2009 and the evolution compared to the year 2006 are shown in Table 3.

The top five agri-food products that brought the highest revenues from exports in 2006 were sunflower seed, wheat, pastry, maize and canned chicken meat. Compared to that, the rank by export value revealed that the top five Romanian agri-food exports in 2009 were cigarettes, wheat, maize, rapeseeds and sunflower seeds.

According to FAO data (FAO, 2012), in a world hierarchy of top high value agrifood products, in the year 2009, Romania was among the first 6 major exporters of cigarettes (19149 tons), after Germany, Netherlands, Poland, China & Hong Kong and Switzerland, gaining the second highest unit value of this product. At the same time, Romania was placed on the 11th place (with 2.3 million tons) among the wheat exporters, below USA, Canada, Australia, France, Russian Federation, Germany, Ukraine, Argentina, Kazakhstan and UK, with 130 Euros/ton unit value.

According to these records, the potential markets in Europe are Italy, Spain, Netherlands, Germany and Belgium, while the major world importers are Algeria, Egypt, Japan, Indonesia, Brazil, Iran, Pakistan, Korea, Nigeria and Turkey.

Romania was also the ninth exporter of maize (1.6 million tons), after USA, France, Argentina, Brazil, Ukraine, Hungary, India and South Africa; the fifth exporter of rapeseeds (0.782 million tons) after Canada, Ukraine, France and Australia. However, in the year 2006, in quantitative terms, it was the first world exporter of sunflower seeds (0.634 million t), while in value terms, it was the second world exporter after France; in 2009 (with 0.564 million tons), it stepped down on the fourth place after Bulgaria, Hungary and Ukraine by quantity and it maintained its second position in value terms, after USA.

Although not included in top rank, the demand for medicinal plants is growing. In Romania, as an effect of the political support and standards limiting context, the exports of medicinal herbs amounted from 1.9 million Euros in 2007, to 5 million Euros in 2008, but dropped to 1.8 millions in 2010.

The analysis of the main agrifood exports by the highest unit value in descending rank revealed that Romania's most expensive agrifood exports were those listed in Table 4.

The agri-food Romanian exports rank by unit value, in 2006, were: skin furs (157694 Euro/t), silk raw (26673 Euro/t), dried mushrooms (16230 Euro/t), spices (8989 Euro/t), nutmeg mace and cardamoms (8761 Euro/t), prepared meat (7897 Euro/t), oil of vegetable origin (7575 Euro/t), hazelnuts shelled and grease including lanolin wool (7168 Euro/t), mushrooms and truffles (6611 Euro/t) and cigarettes (6125 Euro/t).

While comparing to previous period, in the year 2009 only skin furs (48609 Euro/t) maintained on the first position although with smaller quantities and unit values, and silk raw (26828 Euro/t) and dried mushrooms (19551 Euro/t), among top 5 exported products.

Table 3
Pattern of Romania's high value agri-food exports, 2009 vs. 2006

Rank	Commodity	Quantity [t]	Value [1000 €]	Unit value [€/t]	Commodity	Quantity [t]	Value [1000 €]	Unit value [€/t]
1	Sunflower seeds	636254	131206	206	Cigarettes	19149	361334	18869
2	Wheat	904702	94441	104	Wheat	2340670	303069	130
3	Pastry	20820	38996	1873	Maize	1686410	249267	148
4	Maize	241209	37968	158	Rapeseed	782186	223373	285
5	Chicken meat canned	13019	32926	2529	Sunflower seeds	564243	145767	258
6	Sunflower oil	61725	31722	514	Barley	543311	60052	110
7	Rapeseed	130931	31281	239	Sunflower oil	92102	54340	590
8	Food prep nes	30393	27277	898	Food prep. nes.	14757	43973	2980
9	Wine	25384	24795	976	Chicken meat	29767	43782	1470
10	Sugar refined	56382	22218	394	Pastry	19494	37091	1903
11	Mushrooms and truffles	2798	18499	6611	Cake of soybeans	103339	32981	319
12	Walnuts shelled	5501	18359	3337	Honey, natural	10654	29408	2760
13	Honey, natural	9606	16330	1700	Beverage non-alcoholic	60281	24391	404
14	Fruit prep. nes.	540	15382	1459	Sugar refined	36996	20483	553
15	Silk raw	508	13550	26673	Chocolate preps.	7509	19925	2653
16	Beverage non-alcoholic	36958	12968	351	Rapeseed oil	36182	19367	536
17	Sunflower cakes	182184	12744	70	Chicken meat canned	4708	16851	3579
18	Barley	118791	12071	102	Walnuts shelled	5667	15017	2650
19	Cheese of cow milk	4167	11270	2705	Wine	10888	13691	1258
20	Chocolate preps.	4126	11212	2717	Sunflower cakes	142197	13401	94

Source: Processing of FAOSTAT data.

Table 4
Rank of Romania's agrifood exports by the highest unit value, in 2006 vs. 2009

Rank	Commodity	2006			2009			
		Quantity [t]	Value [1000 €]	Unit value [€/t]	Commodity	Quantity [t]	Value [1000 €]	Unit value [€/t]
1	Skin furs	7	1104	157694	Skin furs	5	243	48609
2	Silk raw	508	13550	26673	Cigars cheroots	1	39	39432
3	Dried mushrooms	277	4496	16230	Offals liver geese	22	661	30047
4	Spices nes.	7	63	8989	Silk raw	81	2173	26828
5	Nutmeg mace and cardamoms	1	9	8761	Offals liver duck	2	45	22584
6	Prepared meat nes.	176	1390	7897	Dried mushrooms	196	3832	19551
7	Oil of veg. origin	233	1765	7575	Cigarettes	19149	361334	18869
8	Hazelnuts shelled	1	7	7168	Prepared meat nes.	232	2939	12670
9	Grease incl. lanolin wool	1	7	7168	Hair carded/combed	4	43	10754
10	Mushrooms and truffles	2798	18499	6611	Cocoon unr.&waste	1	8	7886
11	Cigarettes	1587	9720	6125	Almonds shelled	1	7	7169
12	Pepper	5	28	5575	Tobacco products	159	1137	7152
13	Pistachios	20	106	5296	Mushrooms and truffles	1779	11471	6448
14	Cloves	1	5	4779	Natural rubber	4	24	5915
15	Raspberries	130	556	4276	Pistachios	18	106	5895
16	Canned mushrooms	157	668	4256	Infant Food	26	141	5432
17	Sheep meat	1408	5925	4208	Goat meat	6	32	5377
18	Fat prep. nes.	172	718	4172	Cashew nuts shelled	1	5	5019
19	Coffee extracts	540	2250	4166	Oil of veg. origin	1	5	5019
20	Vegetable frozen	1585	6383	4028	Almonds, with shell	96	477	4974

Source: Processing of FAOSTAT data.

Cigarettes (18869 Euro/t), prepared meat (12670 Euro/t), mushrooms and truffles (6448 Euro /t) and oil of vegetable origin (5019 Euro/t) keep listing among products with export highest unit value.

The main places in the rank also included cigars cheroots (39432 Euro/t), offals liver geese (30047 Euro/t), offals liver duck (22584 Euro/t), hair carded/combed (10754 Euro/t), cocoon (7886 Euro/t), almonds shelled (7169 Euro/t), tobacco products (7152 Euro/t), natural rubber (5915 Euro/t), pistachios (5895 Euro/t), infant food (5432 Euro/t), goat meat (5377 Euro/t), cashew nuts shelled (5019 Euro/t), and almonds, with shell (4974 Euro/t).

Some re-exports of products were as well included in the rank, of which Romania is not a traditional producer, such as natural rubber, pistachios, cashew nuts or almonds.

The analysis highlighted certain products with export potential (7168 Euro/t – 4028 Euro/t) such as grease including lanolin wool, raspberries, canned mushrooms, sheep meat, fat preparation, vegetables frozen, that amounted high unit values in 2006. Besides, the exports with highest unit values reached in 2009 added other products such as cigars cheroots, offals liver geese, offals liver duck and hair carded/combed, cocoon, tobacco products and goat meat.

Summing up, only a few products proved an export potential revealed by significant export values in 2009, although in 2006 Romania's export pattern was more diversified. Other high value products among those listed, even though are potential revenue providers, amounted to only small export quantities. Compared to 2006, only skin furs, silk raw, dried mushrooms, prepared meat, oil of vegetable origin and cigarettes have maintained among high value exports of agricultural and food products.

4. CONCLUSIONS

Romania has 3.32 million ha of high natural value of farmland, sharing 14% of the country's area and 22.5% of total agricultural land. The area under forests covers 26.7% of the country, while the European average is 35%, the most part of it being found in the mountain area (58.5%), 34.8% in the hills and 6.7 in the plain.

There is a wide range of local products considered HNV goods which are provided by small farmers, such as dairy and cheese, goat and sheep meat, as well as beef meat, sausages, pastrami preserves, jams and compotes, honey and honey products, produced from berries and medicinal herbs, wine, juices and spirits/brandy as 'palinca' and 'tuica'.

The statistics on high-natural value products, or HVP, lack either in figures or in categories by producer or holdings size. Therefore, the research provides an evaluation framework for study of this market segment of products provided by agricultural activities with high income potential.

The empirical results indicate Romania's highest-value agri-food products with export potential revealed by their performances in the investigated period. Summing up, the domestic products were of a kind included in categories corresponding to 6 digits-HS codes, such as: skin furs, Chapter 43; silk raw and wool or animal hair, belonging to Section 'Textiles and textiles articles', respectively comprising Chapters 50 and 51; dried mushrooms, mushrooms and truffles, hazelnuts shelled, spices, nutmeg mace and cardamoms, in Section 'Vegetable products', respectively Chapters 07, 08, 09, including edible vegetables, fruits and nuts and spices, medicinal and aromatic plants; prepared meat in Chapter 16; oil of vegetable origin, and grease including lanolin wool, in Chapter 1 and cigarettes in Chapter 24.

Compared to the pre-accession period, the evaluations of the post-accession performance of Romania's agricultural and food high-value commodities generally revealed a less diversified export pattern and lower quantities.

Some exceptions have to be mentioned, such as: commodities of Chapter 24, among which cigarettes experienced significant growth; also new products with high value and places in the rank, such as offals liver geese and offals liver duck, belonging to Chapter 2 – Meat and edible meat offals; in addition, goat meat, with high export values contrasting the reduced quantities, replaced the sheep meat that previously experienced large exports.

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