

OVERVIEW OF THE RICE MARKET IN ROMANIA DURING 2007-2015

Irina-Adriana CHIURCIU¹, Elena SOARE¹, Denisa-Florentina BURCEA¹,
Aurelia-Ioana CHEREJI²

¹University of Agronomic Sciences and Veterinary Medicine Bucharest, 59 Marasti Boulevard, District 1, 011464, Bucharest, Romania, Phone: +40213182564, Fax: +40213182888, Emails: irina.chiurciu@yahoo.ro, soare.elenausamv@gmail.com, burceadenisa@gmail.com,

²Oradea University, 1 Universităţii Street, Oradea, Bihor County, Romania, 410087, Phone: +40 259 432830, Email: aureelia_brinaru@yahoo.com

Corresponding author: irina.chiurciu@yahoo.ro

Abstract

In the present paper was carried out radiography of the rice market in Romania, during 2007-2015. Romanian culinary tradition has a strong impact on the evolution of the rice market in our country. Rice is an important food for about 50% of the planet's population and its consumption has beneficial effects on the health of the population. In order to highlight the evolution of the rice market in Romania and the changes that have taken place on this market, a series of relevant indicators have been used, such as: rice areas cultivated at national and macro-regional level; Total rice production at national and macro-regional level; Average rice production at national and macro-regional level; Rice prices; Consumption of rice at national level; Imports and exports of rice. During the analyzed period there was a positive evolution of this market because, on the one hand, we are witnessing an increase of rice surfaces and production, and on the other hand, we have identified changes in the consumption behavior of rice. Consumers in our country are aware of the rice-specific nutritional properties and have begun to use a range of varieties of this product. Rice consumption in Romania is about 4 kg rice / year /per capita. The statistical data used in the paper was provided by the National Institute of Statistics.

Key words: rice, production, imports, exports, market, Romania

INTRODUCTION

Currently, according to published statistics, rice is an important food for about 50% of the world's population. According to nutritional studies, the most favorable rice variety is the brown one. An amount of 100 grams of brown rice consumed provides a person: 120 mg of phosphorus; 99 mg of potassium; 43 mg of magnesium and 0.14 mg of vitamin B1. Unlike brown rice, consumption of white rice (100 grams/person) provides: 54 mg of potassium; 43 mg of phosphorus; 11 mg of magnesium. [5]

There are types of rice, of which:

- Brown rice (paddy) - which keeps all vitamins and minerals;
- White rice - which reduces much of its properties as the outer layer is removed;
- Red rice - specific for the Himalayan and Thailand areas, which have a red coating and the grain, is short and wide;
- Black rice - specific for China, Thailand and

Bali, with a thin and black coating, and the grain is white. [11]

In Romania rice culture is not a traditional culture, but there are several strengths that make this culture possible: the superior quality of the rice made; a reduced number of diseases and pests; performing fewer treatments; Water abundantly and low prices. [12]

It is necessary to recall that the first paddy in Romania was established in the 18th century in Timis county, Partoş locality. [4]

Romania is at the northern limit of the rice growing area. [3]

According to the data provided by the Romanian producers, the investment for one hectare of rice is currently EUR 2,000 per hectare. In this sector, farmers are in a high percentage Italians who first cultivated rice in 2004. At first, the average yield per hectare of rice amounted to 3-3.5 tons. At present, Italian producers get a production of between 5.5-6.0 tons per hectare. This rice production

made by Italian farmers in Romania is lower than that obtained in Italy (9 tons per hectare) and Greece (12 tons per hectare). [12]

In Romania, a specific feature of Romanian rice crops has been identified, namely that they are well suited for the most expensive rice crops. Such a variety is "Arborio rice", which costs 700 Euros per ton, as opposed to 280 euro / ton as the cheaper rice is sold. [12]

MATERIALS AND METHODS

For the purpose of this study, statistical data relevant to the evolution of the rice market in Romania were used. The statistical data was taken mainly from the National Institute of Statistics and also from other specialized websites. A number of specialized materials have been consulted to better capture the evolution of the rice market in Romania. The period analyzed in the paper was 2007-2015. The analysis of the rice market in Romania has been based on several indicators specific to this market, such as: rice areas cultivated at national and macroregional level; Rice production at national and macroregional level; Average yield per hectare of rice at national and macroregional level; Prices on

the rice market; Consumption of rice at national level; Exports and imports of rice. In order to analyze the main indicators used in the paper we used mainly common statistical methods.

RESULTS AND DISCUSSIONS

Worldwide, rice ranks second place after the wheat crop. [8]

In Romania, the areas occupied with rice are very small compared to the wheat crop, which occupies over 2 million hectares. The evolution of the areas cultivated with rice at national level during the period 2007-2015 is presented in Table 1. The surfaces cultivated with rice in Romania have evolved from one period to the next.

The smallest area cultivated with rice was in 2007 (8,434 ha), and the largest cultivated area was registered in 2013 (13,346 ha). In 2015, the area cultivated with rice increased by 31.6% compared to 2007. The data presented in the table shows that the areas cultivated with rice are mostly in the private sector. In 2012, the areas cultivated with rice in the private sector accounted for 99.96% of the total area cultivated at national level.

Table 1. Evolution of rice-growing areas in Romania, between 2007-2015 (Ha)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2015/2010 %
Total	8,434	9,917	13,346	12,403	12,674	11,304	11,930	12,719	11,106	131.6
Of which: private sector	8,416	9,912	13,330	12,392	12,665	11,299	11,919	12,712	11,095	131.8

Source: [9]; own calculation.

In 2015, the area cultivated with rice in the private sector was 11,095 ha, which represented 99.90 of the total area cultivated with rice in Romania.

Nowadays, interest in rice culture in Romania has started to grow on the one hand due to favorable pedo-climatic conditions and on the other hand due to the forms of support for this culture. The main forms of support for rice at national level are:

-Direct payment schemes: Single Area Payment Scheme; Redistributive payment;

Paying for agricultural practices beneficial to the climate and the environment; Payment for young farmers; Coupled support scheme; simplified scheme for small farmers;

-Transitional national Aid1 (ANT1).

-State aid for diesel used in agriculture. [10]

According to specialty studies published in Romania, over 50,000 ha of rice could be cultivated in high profitability conditions. Approximately half of this land area cultivated with rice could provide domestic consumption for the domestic market, and

production made on the rest of the surface could be exported to the European Union. This is possible due to the fulfilment of the essential conditions for the rice crop: land plan; Source of water near the surface of the land and warm weather. [6]

The main rice growers in the European Union are: Italy, Spain, Greece, Portugal and France. Romania ranks the sixth place in the top of rice growers in the European Union. [7]

Table 2 presents the evolution of land areas cultivated with rice in the macroregions of Romania in the period 2007-2015. From the data presented in Table 2 it can be noticed that in Macroregion 2 the largest surface with rice is cultivated. In 2015, this macroregion accounted for 47.7% of the total area

cultivated with rice at national level. In 2015, we witnessed a reduction in rice grueling, comparing to 2007.

The surface cultivated with rice decreased from 5,499 ha (2007) to 5,306 ha (2015). In Macroregion Three, there is an increase in the area cultivated with rice, from 2,526 (2007) to 4,560 (2015). During the analyzed period, there was a substantial increase in the rice surface in Macroregion four, from 387 ha (2007) to 1,240 ha (2015).

According to published statistical data, in Macroregion one was grown rice, during 2007-2010. The smallest area cultivated with rice was 9 ha (2010), and the largest area was cultivated in 2008 (25 ha).

Table 2. Evolution of areas cultivated with rice, by macroregions of Romania, 2007-2015 (Ha)

Specification	Year									2015/2010 (%)
	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Macroregion 2	5,499	6,102	7,104	6,233	6,685	5,715	7,073	6,911	5,306	96.4
Macroregion 3	2,526	2,290	3,948	3,598	3,590	4,149	4,567	4,678	4,560	216.1
Macroregion 4	387	1,500	2,275	2,563	2,399	1,440	290	1,130	1,240	320.4

Source: [9]; own calculation

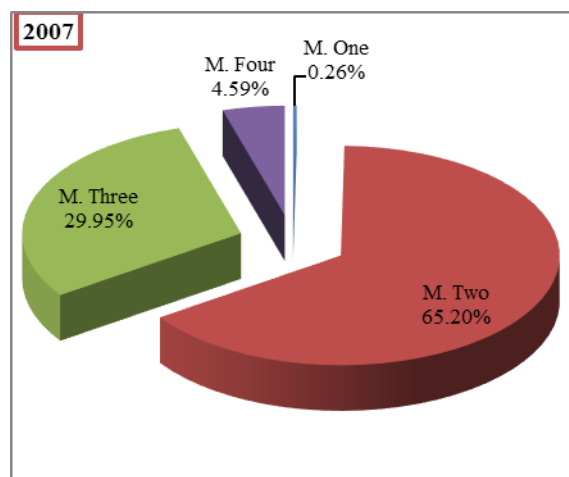


Fig. 1. The share of rice areas by macroregions, in 2007
 Source: [9]

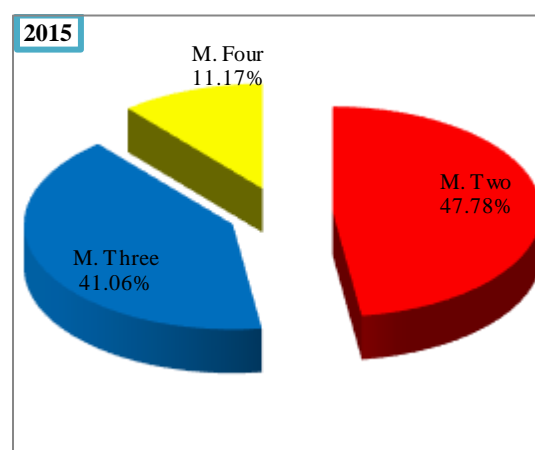


Fig. 2. The share of rice areas by macroregions, in 2015
 Source: [9]

Macro-region 2 occupies the highest share of the total area of rice-cultivated land at national level (Fig. 1 and 2).

At the national level, during the analyzed period it was found that in the cereal sector the production increased. This situation is also true for rice production. [1]

The evolution of rice production in Romania for the period 2007-2015 is presented in Table 3.

Rice production in the analyzed period had a differentiated evolution from one year to the next. The smallest production was achieved in 2007 (27,518 tons). On the opposite side, the largest rice production was recorded in 2009 (72,418 tonnes). In 2015, rice production at national level increased by 80.8%, compared to 2007. This increase is explained, on the one hand, by the increase

of the area of land cultivated with rice, and, on the other hand, by the increase of the

yield at hectare. More than 99% of production is made in the private sector.

Table 3. Evolution of rice production in Romania, 2007-2015 (tons)

Specification	Year									2015/2010 (%)
	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Total	27,518	48,917	72,418	61,588	65,261	50,862	54,646	45,159	49,773	180.8
Of which: private sector	27,494	48,907	72,377	61,557	65,238	50,842	54,583	45,134	49,738	180.9

Source: [9]; own calculation

The main rice producers in the European Union are: Italy, Spain, Greece, Portugal and France. Romania ranks the sixth place in the top of rice producers in the European Union. [7]

Table 4 presents the evolution of rice production in Romania's macro-regions in 2007-2015. From the data presented, it can be noticed that, in Macroregion 4, in the analyzed range was achieved the smallest rice

production. The largest rice production was achieved in Macroregion 2. In 2015, in this macroregion, production increased by 51.9% compared to 2007. Macro-region 3 produced in 2015 33.7% of the national production. According to the data published by the National Institute of Statistics, Macroregion 1 produced rice production in 2007-2010. This production oscillated between 35-95 tons.

Table 4. Production of rice in macroregions of Romania, 2007-2015 (tons)

Specification	Year									2015/2010 (%)
	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Macroregion 2	17,467	31,631	38,094	32,069	27,895	17,998	23,344	21,050	26,547	151.9
Macroregion 3	8,831	10,191	20,467	17,976	23,647	26,265	31,131	19,078	16,778	201.9
Macroregion 4	1,156	7,000	13,778	11,508	13,719	6,599	171	5,031	6,448	557.7

Source: [9]; own calculation

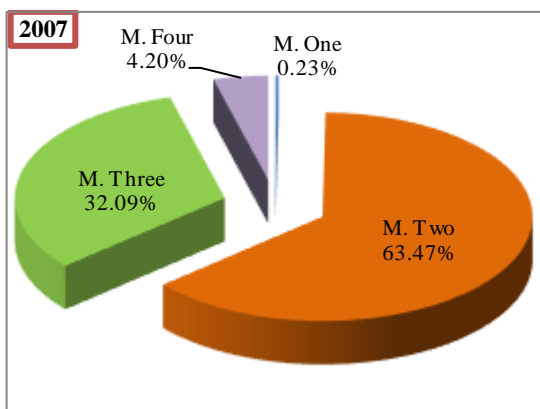


Fig. 3. Share of rice production by macroregions in 2007

Source: [9]

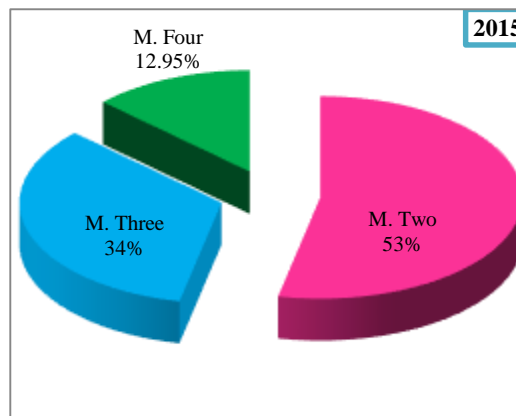


Fig. 4. Share of rice production by macroregions in 2015

Source: [9]

From Figures 3 and 4, it is very easy to see that both in 2007 and in 2015 the largest share of rice production is attributed to Macroregions 2.

Table 5 presents the average output per hectare of rice produced nationwide over the period 2007-2015. At national level, average rice production has fluctuated from one year to the next.

The highest average production was achieved in 2009 (5,426 kg/ha) and the lowest of 3,263 kg/ha (2007). In 2015, average yield per hectare of rice increased by 37.3%, comparing to 2007.

For the same period, the private sector recorded the following values: the highest average yield of rice 5,430 kg / ha (2009) and

the lowest average yield of 3,267 kg/ha (2007).

The average production per hectare of rice produced in Romania is reduced compared to the average yield per hectare in the countries

with tradition in rice cultivation.

In terms of average production per hectare, the top places are: Italy, Spain, Portugal, Greece and France. Romania ranks sixth in this ranking. [7]

Table 5. Evolution of average production per hectare of rice at national level in the period (Kg / ha)

Specification	Year									2015/2010 (%)
	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Total	3,263	4,933	5,426	4,966	5,149	4,499	4,581	3,551	4,482	137.3
Of which: private sector	3,267	4,934	5,430	4,967	5,151	4,500	4,579	3,551	4,483	137.2

Source: [9]; own calculation

Table 6 shows the average production per hectare of rice in the macroregions of Romania in 2007-2015. Average production per hectare of rice at macroregional level recorded fluctuations from one year to the

next. In 2015, the highest average yield per hectare of rice was recorded in Macroregion 4 (5,200 kg/ha), and the smallest was produced in Macroregion 3 (3,679 kg/ha).

Table 6. Average yield per hectare in macroregions of Romania, in the period 2007-2015 (kg / ha)

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Macroregion 2	3,176	5,184	5,362	5,145	4,173	3,149	3,300	3,046	5,003
Macroregion 3	3,496	4,450	5,184	4,996	6,587	6,330	6,817	4,078	3,679
Macroregion 4	2,987	4,667	6,056	4,490	5,719	4,583	590	4,452	5,200

Source: [9]

Figure 5 shows the annual average per capita consumption of rice at national level over the period 2007-2015. From the data presented, it is observed that the low consumption of rice was registered in 2010 and 2012 and (3.0 kg / inhabitant), and the highest consumption was of 5.2 kg / inhabitant (2015).

In the sanitized period, the average annual consumption of rice per capita varied from one year to the next.

In 2015, consumption increased by 49% compared to 2007. The average annual consumption of rice per inhabitant in

Romania was about 4.0 kg/inhabitant. Compared to other countries in the world, a small amount of rice is consumed in Romania. For example, in Egypt the average annual rice consumption per capita is 50 kg, in China 100 kg and in southern and south-eastern Asia between 120-150 kg. [2]

At European level, in Portugal, the highest annual average consumption recorded per capita is 18 kg. The lowest average annual consumption of rice is recorded in the Baltic countries (2.5 kg / inhabitant). [13]



Fig. 5. Dynamics of the annual average consumption of rice per inhabitant at national level, 2007-2015

Source: [9]

Figure 6 shows the price dynamics of rice producers in Romania in the period 2007-2015.

From the data presented, it can easily be noticed that the prices for rice recorded fluctuations from one year to the next.

The lowest price was 770.00 lei/ton (2009),

and the highest was 1,320.00 lei/ton (2012). In 2015, prices increased by 89.5% compared to 2007.

Over a period of time, rice has not shown a category of interest, especially on the FMCG market in Romania.

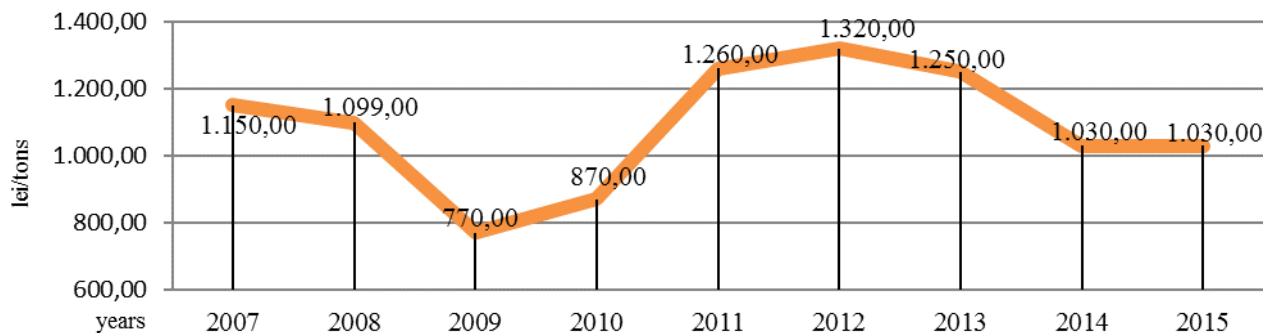


Fig. 6. Dynamics of rice producer prices in Romania, 2007-2015

Source: [9]

As new players entered the market, as well as due to the diversification of the assortments, we witnessed a variety of changes on this market. [11].

Table 7 presents the situation of intra and extra-Community trade in rice during the period 2007-2015.

In 2011, the largest imported rice quantity (114,720.9 tons) was registered, and in 2012 the lowest imported quantity (43,358.0 tons), which corresponds to the highest and the lowest import value.

The imported quantity increased by 6.42% in 2015 compared to 2007.

Table 7. Situation of intra and extra-Community trade in rice during the period 2007-2015

Year	Amount imported (to)	Value of imports (thousands Euros)	Exported quantity (to)	Exports value (thousands Euros)
2007	53,962.3	16,854.2	1,995.4	1,140.9
2008	57,789.2	32,783.7	3,774.1	2,791.1
2009	45,635.8	23,766.7	12,653.6	6,705.3
2010	49,637.8	22,179.2	49,401.8	17,359.9
2011	114,720.9	45,921.7	54,613.5	19,724.6
2012	43,358.0	20,688.6	28,727.0	12,854.8
2013	47,480.4	23,153.4	24,727.2	11,473.2
Year	Amount imported (to)	Value of imports (thousands Euros)	Exported quantity (to)	Exports value (thousands Euros)
2014	54,241.3	27,268.2	15,925.3	10,908.8
2015	57,428.6	30,707.5	11,957.8	9,308.7
2015/2007 (%)	106.42	182.1	599.2	815.9

Source: [10]; own calculations

The lowest exported quantity was recorded in 2007 (1,995.4 tons), with a value of 1,140.9 thousand Euros. The largest exported quantity is in 2011 (54,613.5 tons), with the value of 19,724.6 thousand Euros.

Quantitative rice exports have increased substantially. In 2015, there was an increase of 499.2% compared to 2007. The value of exports increased in 2015 by 715.9% compared to 2007.

CONCLUSIONS

Following the analysis of the rice market at national and macroregional level in 2007-2015, the following were found:

- In 2015, at national level, the area cultivated with rice increased by 31.6% compared to 2007;
- Macro-region 2 occupies the first position on

the surface of cultivated rice;

-The most significant rice production was made in 2009 (72,418 tons);

-Macroregion 2 made the largest rice production;

-The Average production per hectare of rice increased by 37.3% in 2015, comparing with 2007;

-Average production per hectare of rice at macroregional level recorded variations from year to year;

-Average annual consumption per inhabitant of rice at national level was approximately 4.0 kg / inhabitant;

-In 2015, producer prices recorded an increase of 89.5% compared to 2007;

-At the national level, in 2011, the largest imported rice (114,720.9 tons) was registered;

-In 2011, the largest quantity of exported rice was recorded (54,613.5 tons), amounting to 19,724.6 thousand Euros.

REFERENCES

[1]Dona Ion, Rural Economy, Economic Edition, 2015, p.309.

[2]Medelete, D.M., 2016, Rice Balance Sheet in Romania. Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development", Vol. 16 (1) 285-290.

[3]Roman, Gh. V. et al., 2011, Crop production, vol. I, University Publishing House, Bucharest, Chapter 2, p 42-291.

[4]adevarul.ro/locale/timisoara/prima-plantatie-orez-romania-functioneaza-300-ani-vezi-pleaca-orezul-produs-banat-galerie-foto-1_50acdd2a7c42d5a6638acbaef/index.html;

[5] adevarul.ro/sanatate/dieta-fitness/orezul-prelungeste-viata-1_50ad06497c42d5_a6638db0a2/index.html;

[6]<http://www.agro-business.ro/romania-ar-putea-fi-unul-dintre-principalii-producatori-de-orez-din-uniunea-europeana/2012/07/30/> - Ion Mantu, 2012, România ar putea fi unul dintre principalii producători de orez din Uniunea Europeană;

[7] Eurostat, <http://appsso.eurostat.ec.europa.eu>;

[8]<https://www.gazetadeagricultura.info/plante/cereale/665-orezul-o-cereala-medicinala.html>;

[9] INS, www.insse.ro, 2017;

[10]<http://www.madr.ro/culturi-de-camp/cereale/orez.html>, 2017;

[11] <http://www.magazinulprogresiv.ro/articles/orez>;

[12]<http://romanalibera.ro/special/reportaje/romania-orezaria-de-lux-a-europei-articol-integral-237540>- România, orezăria de lux a Europei, Daniel Befu, 2011;

[13]<http://www.revista-ferma.ro/articole/agronomie/romania-orezaria-de-lux-a-Europei>.

