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RICE – IMPACT OF COUPLED SUPPORT ON THE ROMANIAN MARKET

ABSTRACT

Rice is one of the three main crops worldwide next to wheat and maize. Although rice is not a staple food or a main crop in Europe, it is an important crop in socio-cultural and ecological terms in several European countries. Romania is one of the small rice producers in the European Union, and rice growing is supported through agricultural policies, production being regulated through the Common Agricultural Policy of the European Union, through financial incentives for production. Rice supply in Romania is mostly based on imports, and the domestic production covers only a small part of supply. To support domestic rice production in the year 2015, the coupled support for the rice crop was established.

The paper presents the main evolutions of the rice market in the period 2007–2017, focusing on the effects of coupled support on areas, production and yields, exports.

The results reveal the decrease of areas under rice, after setting up the coupled support, with effect upon total production, yet with a strongly increasing trend in yields, as a result of investments in technology, storage facilities, drying and primary processing; in the year 2018, the average yields per hectare were the highest since 1990, in Romania.

Key words: areas, production, consumption, rice, Romania.

JEL Classification: Q110, Q13.

1. INTRODUCTION

Rice is among the three main food crops grown worldwide, maize and wheat being the other two. All three crops cover not less than 42% of the necessary caloric consumption necessary in the world, while 78% of the rice production goes to human consumption. Over 3.5 billion inhabitants, i.e. more than half of the world population consider rice as being their staple food, and hence experts do not expect any decrease in rice consumption in the future, mainly in the African and Asian countries; on the contrary, rice demand will continue to go up in the next years, at least until 2035 (Lanessa, 2017).

The European areas under rice resulted from the drainage of the regions that had been considered swampy areas for a long time (the delta of big rivers and

alluvium plains), which have rich water resources. Rice was introduced, after substantial development works, as a “pioneer crop” filtering the soil, making it suitable for other crops (vine and cereal crops). Nowadays, the rice crop plays an important role in maintaining the ecological balance and the biological richness of these fragile ecosystems (irri.org, 2019).

2. STATE OF KNOWLEDGE

At world level, the Asian countries are the main rice producers, while the countries from Africa, Latin America and Middle East have experienced a considerable increase in rice consumption and demand over the years. The top 10 rice producing countries in the world are: India (43.2 mil. ha), China (30.35 mil. ha), Indonesia (12.16 mil. ha), Bangladesh (12 mil. ha), Thailand (9.65 mil. ha), Vietnam (7.66 mil. ha), Burma (6.8 mil. ha), Philippines (4.5 mil. ha), Cambodia, Myanmar and Pakistan which together cultivate about 132.07 mil. ha. These countries are also among the first world rice consumers and together account for around 90% of the rice consumption in the world. Both figures increased in the last two decades, and experts consider that these figures will not decrease in the next years (C.Lanessa, 2017).

Following an investigation launched in March 2018, the European Commission found that rice imports (Indica variety) increased by 89% in the last five rice growing seasons. Hence, since January 2019, customs duties on rice imports have been re-introduced in these two countries. This measure was taken because the European producers were experiencing serious difficulties in the sale of their own production, due to the very low prices, the market share decreasing from 61% to 29% (European Commission, 2019)

In the countries from other regions of the world, as the Sub-Saharan Africa, rice is considered as the most important staple food, the annual rice consumption per capita almost doubling since the 1970s. A few decades before, both the urban and rural inhabitants in the Sub-Saharan African countries used to eat rice only on special occasions. In the last years, they began to eat rice every day, opting for this crop to the detriment of other domestic crops. Examples of countries featuring this change in their dietary pattern are Niger, Tanzania and Nigeria, where the populations and incomes increased in the last two decades.

In the Caribbean and Latin America, an increase by around 40% in rice consumption was noticed in the last twenty years. Again, this is attributed to the steady increase of incomes, as well as to the continuous population increase. Other regions featuring significant increase in rice consumption are the Middle East, the United States as well as European Union Member States. The increase in the EU is partially attributed to the immigration phenomenon from the countries where rice is frequently consumed, as well as to the increased globalization of food availability and tastes.

Although it is not a staple food or a main crop in Europe, rice has an important socio-cultural significance and an ecological importance in certain Mediterranean countries. The annual consumption per capita ranges from 3.5 to 5.5 kg milled rice in the countries that do not grow rice in Northern Europe up to 6–18 kg in the South. The total area cultivated with rice in the 27 EU Member States is around 450,000 ha, with an annual average production of 3.1 million tons of paddy rice and annual average rice imports of around 1.1 million tons. The EU's self-sufficiency in rice is about 70%. About 80% of the EU's rice production comes from Italy, which is the main European producer with a total of 220,000 ha under rice and from Spain, with 117,000 ha. The remaining production is obtained in countries like Greece (25,000 ha), Portugal (25,000 ha), France (18,000 ha) and Romania, Bulgaria and Hungary that are considered small rice producing countries. Besides the EU, rice is also grown in the Russian Federation (120,000 ha in Krasnodar region and 50,000 ha in the remote eastern region of Vladivostok), as well as in Ukraine (25,000 ha).

In Romania, the rice crop receives support through agricultural policies. Rice production is regulated through the EU's Common Agricultural Policy (CAP). This means financial incentives for production, but also requirements as regards green agricultural practices, for instance as regards water management and use of pesticides and fertilizers.

The number of rice farms decreased dramatically in the last 25 years in all European countries. For instance, the total number of farms decreased to half in Italy and to one-fifth in Valencia, Spain. In the same period, the average area per farm increased proportionally with the diminution of the number of farms (from 20 to 47 ha in Italy and from 1.9 to 4.7 in Valencia region). In France, the areas of rice farms range from 50 to 500 ha, the farms with over 150 ha accounting for more than 75% of the total area under rice. The increasing trend of the average farm size was accompanied by quite a high mechanization level. Despite the increasing work capacity, the production costs (360–410 USD/ha) remain much higher than in most Asian countries and the United States. This difference is largely due to the high costs of inputs: water, fertilizers, crop protection products, seeds, farm equipment, fuels, labour force.

In the implementation of the Uruguay Round agreements, rice market liberalization in Europe came into force in the year 2009.

3. MATERIAL AND METHOD

The paper presents the developments of the rice market in the investigated period, focusing on the effects produced by the coupled support introduced in 2015 upon areas, yields, self-sufficiency, imports and exports. In the paper we used data series for 12 years (2006–2018).

For defining and delimiting the subject, a review of the literature was made to identify specific materials, books, articles and other published documents.

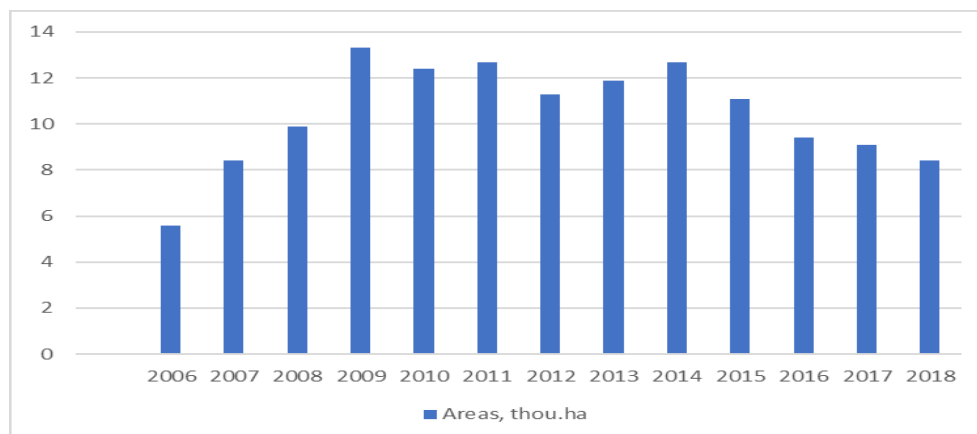
Data on areas, total rice production and average yields, average rice consumption per capita in Romania, self-sufficiency and trade, were taken from the National Institute of Statistics (NIS), the Ministry of Agriculture and Rural Development (MARD) and EUROSTAT. For international comparisons we used and processed data and information from EUROSTAT and FAO and we also used the data from rice database of the International Rice Research Institute.

At the end of the paper, conclusions are drawn on the coupled support effects on the rice sector in Romania.

4. RESULTS AND DISCUSSIONS

4.1. AREAS, PRODUCTIONS AND AVERAGE YIELDS IN THE RICE CROP

In Romania, the rice farmers receive support through agricultural policies, this crop being grown on 8251 hectares at present, although there are areas suitable for rice growing in the entire Danube flood plain. In the year 2018, our country had 8251 hectares under rice, about the same area as in the year 2007, according to NIS data, with a decreasing tendency since 2014 and a maximum area of 13366 hectares in 2009 (Fig.1).



Source: author's processing of NIS tempo online data, 2019.

Figure 1. Area cultivated with rice in the period 2006–2018

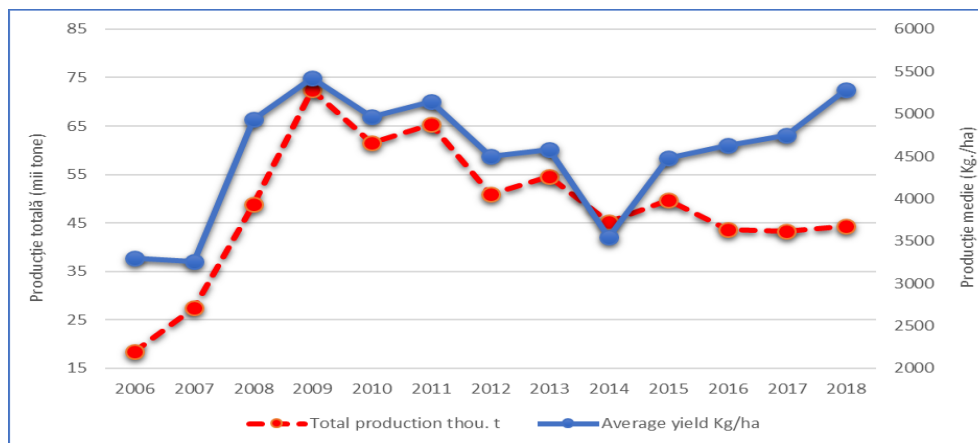
We can notice an increase of the areas under rice until the year 2009; then these areas were maintained at a certain level, around 12.5 thousand hectares, to decrease after 2015. This tendency can be explained by the opening provided by

the accession to the EU and the access to new technologies and markets. The foreign capital inflow, mainly from Italy, led to the development of this sector.

In the period 2009–2014, the areas under rice were maintained at quite constant values, but we can notice a decrease in the rice yields. The areas cultivated with rice decreased in the last period of investigation, having as possible causes the following: the decrease of yields in the previous period, decreasing rice consumption by the population in the same period, possibly the absence of husking-milling units in the proximity of rice farms.

The dynamics of areas under rice followed the trend at the EU level in the same time period.

Rice production continuously decreased in the period 2009–2018, on the one hand due to the decrease of average yields in the first part of the interval; then this trend continued despite the increase of average yields in the context of the decrease of areas under rice (Fig. 2).



Source: author's processing of NIS tempo online data, 2019.

Figure 2. Dynamics of rice production and average yields per hectare

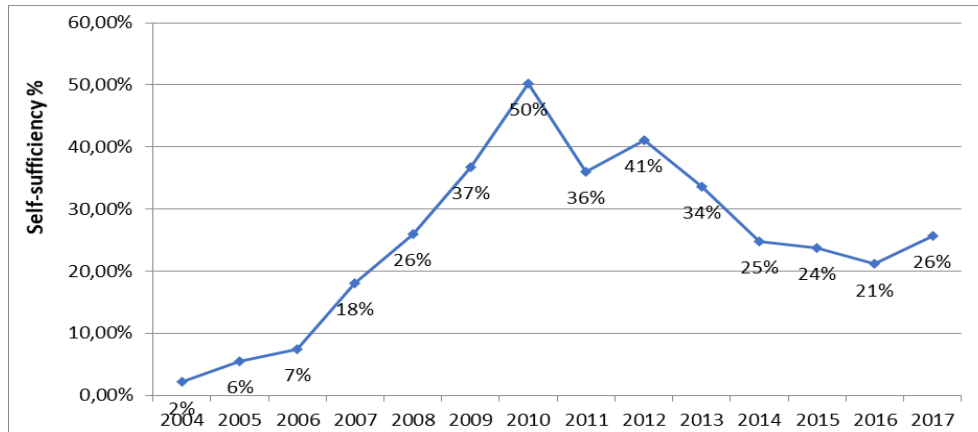
As the coupled support for the rice crop started to be provided in the year 2015, we can notice an increased interest of rice farmers to access this form of support, these using this support to increase the average yields over the level of 4,500 kg/ha, which is one of the requirements for eligibility. Thus, the average rice yield followed an upward trend starting with the year 2015.

4.2. SELF-SUFFICIENCY DEGREE IN RICE

At present, there is no self-sufficiency as regards rice consumption. The highest self-sufficiency level was noticed in the year 2010, when it reached 50% (Fig. 3). Nevertheless, rice is not considered a staple food, and this can be also seen

from the population's consumption, which presents a tendency to decrease in the interval 2006–2018.

At present, rice consumption is 4.2 kg/capita/year, with a minimum of 2.8 kg/capita/year in 2010. Consumption fluctuated very much in this period, with a variation coefficient of 0.69.



Source: Food Balance Sheet Data, NIS, 2004–2019.

Figure 3. Self-sufficiency degree in rice

4.3. FOREIGN TRADE IN RICE

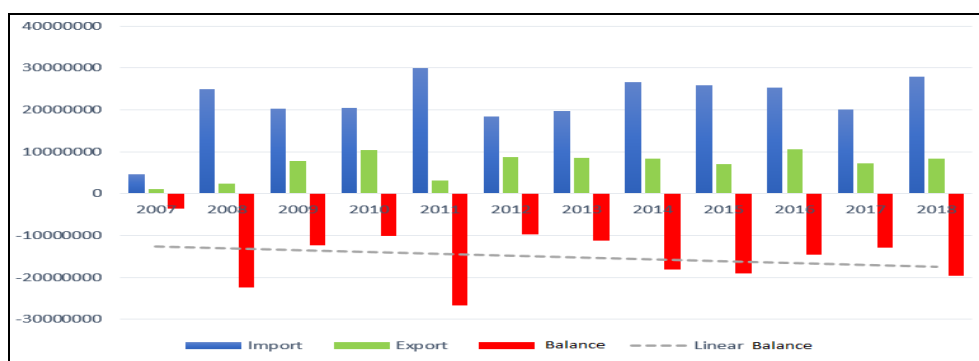
With Romania's accession to the EU, the international trade in rice largely followed the trend of the trade in the other agri-food products, i.e. trade reorientation from the extra-EU markets to the intra-Community market.

While in the year 2007 Egypt and China were the main rice exporters to Romania, accounting for almost 94% of Romania's rice imports, the importance of these two countries decreased constantly afterwards.

The share of rice imports from Bulgaria increased instead, to reach 64% of total rice imports in the year 2018, next followed by imports from Italy, Greece and Hungary. Among the extra-community countries, we can notice a significant increase in the foreign trade with rice from Myanmar and Cambodia, this also due to the EBA (Everything But Arms) initiative, adopted by the EU in 2001.

However, in Romania's case, the customs tariffs introduced by the EU in 2019 for the rice produced in the above-mentioned countries will not have any major impact, as their market share is only 6.2% of total rice imports.

The international trade balance is negative, with a consolidation trend.



Source: Eurostat, Comext

Figure 4. Foreign trade balance in rice

4.4. SECTOR FINANCING

The (EU) Regulation no. 1.306/2013 of the European Parliament and of the Council of December 17, 2013 on the financing, management and monitoring of the Common Agricultural Policy established the implementation framework for the measures stimulating farm production and the implementation of the Common Agricultural Production. Thus, the Emergency Ordinance 3/2015 approved the payment scheme applied to agriculture in the period 2015–2020.

The scheme provides for direct payments (single area payment scheme, redistributive payment, payment for agricultural practices beneficial for the climate and the environment, payment to young farmers, coupled support scheme, simplified scheme for small farmers) and transitional national aids granted in the crop and livestock production sectors.

In the direct payment scheme, the coupled support has an important share in stimulating farmers to improve their farm performance, leading to average yields above a certain reference threshold, which was determined for each category. In rice, the minimum requirements for receiving coupled support are: an average yield higher than 4,500 kg/ha, use of certified seeds and complying with the requirement to use minimum 120 kg seeds per hectare, as stipulated in the applicant's guide.

Table 1

Situation of areas cultivated with rice and areas benefiting from coupled support

Growing season	Total area cultivated with rice – ha –	Area accepted for payment that benefited from coupled support – ha –	% of total area benefiting from coupled support
2015	11106	8795.21	79.19
2016	9435	7170.57	75.99
2017	9125	7027.91	77.02
2018	8251	7754.19	93.98

Source: author's processing of MARD data, 2019.

As we can see in Table 2, in the year 2018, from the total area cultivated with rice, i.e. 8251 ha, 7754.17 ha received coupled support, on 10 farms in 4 counties, namely: Brăila (4904.46 ha), Dolj (154.14 ha), Ialomița (1543.7 ha) and Olt (1151.89 ha).

Table 2

Coupled support in the crop production sector – rice

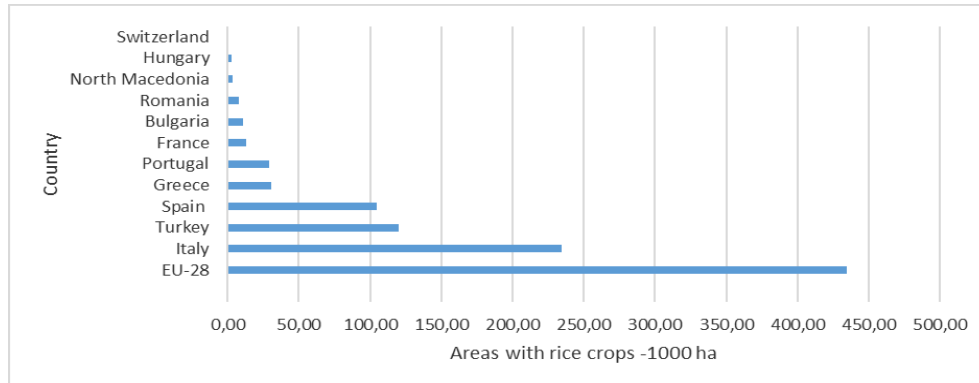
		Brăila	Dolj	Ialomița	Olt	Total
Growing season 2015	Number of farmers entitled to payment	3	0	3	1	7
	Payment amount – euro –	3454693	0	1458816	761635.9	5675144
	Area determined for payment – ha –	5319.55	0	2246.29	1229.37	8795.21
Growing season 2016	Number of farmers entitled to payment	3	0	3	2	8
	Payment amount – euro –	3864778	0	776712.4	1027996	5669486
	Area determined for payment – ha –	4905.4	0	975.98	1289.19	7170.57
Growing season 2017	Number of farmers entitled to payment	3	0	5	2	10
	Payment amount – euro –	2962059	0	763815.6	865916.5	4591791
	Area determined for payment – ha –	4533.89	0	1164.52	1329.5	7027.91
Growing season 2018	Number of farmers entitled to payment	3	2	4	1	10
	Payment amount – euro –	3181863	100315.1	1004526	749535.4	5036240
	Area determined for payment – ha –	4904.46	154.14	1543.7	1151.89	7754.19

Source: author's processing of MARD data, 2019

Correlating the payments diagram for the coupled payment scheme with the average yields obtained in the period 2014–2018, we could conclude that by the continuous increase of the average yield from 3550 kg/ha in the year 2014 up to 5280 kg/ha in the year 2018, i.e. a 48.7% increase, this measure to stimulate farm performance has reached its goal. Thus, the historic maximum of 4930 kg/ha of the year 2008 was exceeded.

4.5 THE EUROPEAN CONTEXT

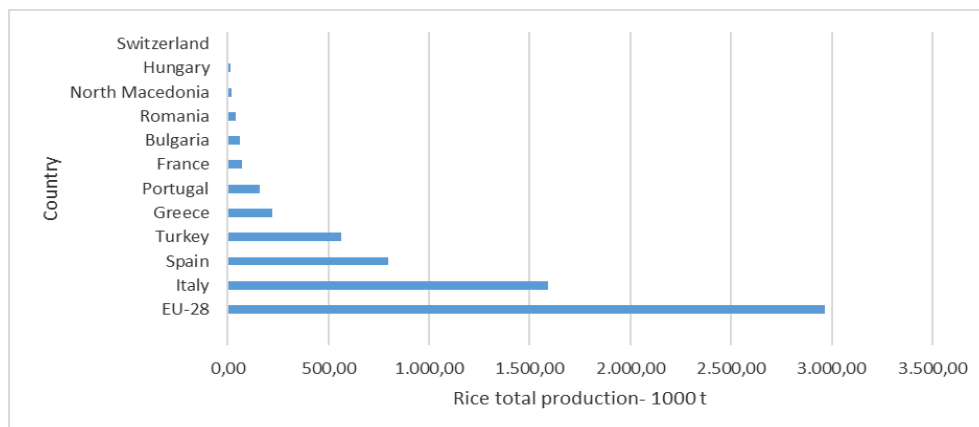
Romania ranks 7th in the 10 rice producing countries in Europe, which also include Turkey and North Macedonia (we also included Turkey and North Macedonia in the graph, as they are the only European rice producers outside the EU-28, so all the rice producers from Europe were taken into account). Our country grows rice on 1.9% of the total area under rice in Europe (Fig. 5) and produces 1.45% of total rice production in EU-28 (Fig. 6).



Source: Eurostat

Figure 5. Area cultivated with rice, by countries, in the year 2018

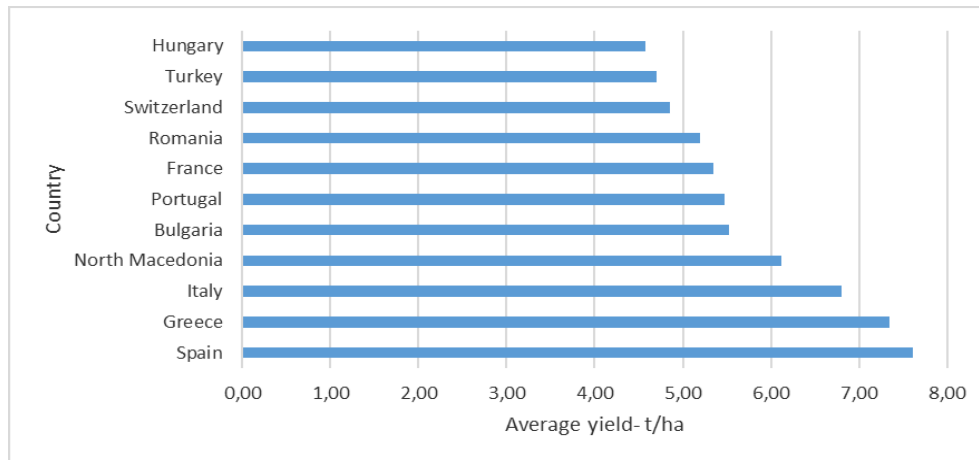
The main rice producers in the EU-28 are Italy and Spain, which together obtain 72.7% of total production, followed by Greece and Portugal.



Source: Eurostat

Figure 6. Total rice production by countries in the year 2018

As regards the average yields, Romania's average rice yield was 5.19 t/h in the year 2018, getting close to the European average of 5.78 t/ha (Fig.7), higher average yields being obtained with Japonica variety (5.25 t/ha).



Source: Eurostat

Figure 7. Average yields in rice in the year 2018

5. CONCLUSIONS

Rice is one of the three main crops worldwide, next to wheat and maize. Although not being a staple food, or a major crop in Europe, rice has an important socio-cultural significance and an ecological importance in several countries in Europe.

Romania is one of the small rice producing countries in the European Union, and the rice crop is supported by agricultural policies, production being regulated through the EU Common Agricultural Policy, through financial incentives for production respectively.

The rice supply in Romania largely comes from imports, and the domestic production covers only a small part of the demand. To support the domestic rice production in the year 2015, the coupled support for the rice crop was set up.

The main developments of the rice market in the period 2007–2017 presented in the paper have focused on the effects produced by the coupled support upon areas, yields, import, export, so that through the continuous increase of the average yield from 3550 kg/ha in the year 2014 up to 5280 kg/ha in the year 2018, i.e. by 48.7%, this measure to stimulate farm production has reached its goal. Thus, the historic maximum of 4930 kg/ha of 2008 was exceeded. Starting with the year 2015, more than 75% of the area cultivated with rice was accepted for payment to benefit from coupled support, and at present 94% of the area cultivated rice benefits from coupled support, concentrated on 10 farms from 4 counties of the country: 3 farms in Brăila, 2 in Dolj, 4 in Ialomița and 1 in Olt.

The results show the decrease of the area cultivated with rice, after setting up the coupled support, from 8795 ha in 2015 to 7754 ha in 2018, with effect upon total production, which has also decreased; yet we can notice a strong tendency to increase the average yield, at around 5300 kg/ha, as a result of investments in technology, warehouses, drying centers and primary processing, and as a result, in the year 2018, the average yields per hectare reached the highest values ever recorded in Romania, since 1990.

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