

**Diana-Maria DRIGĂ**

*Institute of Agricultural Economics, Romanian Academy, Bucharest  
dianadriga@yahoo.com*

## THE IMPACT OF COUPLED SUPPORT ON THE DEVELOPMENT OF THE ROMANIAN SOYBEAN MARKET – A REGIONAL APPROACH

### ABSTRACT

The paper presents the evolution of the Romanian soybean market in the period 2015–2019, in regional profile, in terms of the effects produced by the coupled support to this crop on areas, productions, yields, average purchase prices and trade. After Romania's accession to the European Union, the cultivation of genetically modified soybeans was banned, which led to significant decreases in cultivated areas. As a result of CAP implementation, the soybean crop benefitted from more support forms (direct payment schemes, national transitory aids and state aids for diesel oil utilised in agriculture) and the domestic soybean production increased, yet this increase was relatively low compared to imports. To boost domestic soybean production, starting with the year 2015, Romania has introduced the coupled support for this crop. For the analysed period, the results show significant increases, both of cultivated areas with soybeans (by 98% in the year 2019 compared to 2014) and of harvested productions (by 105% in the year 2019 compared to 2014), as well as of soybean exports. Nevertheless, the soybean trade balance has continued to remain mainly negative.

**Key words:** coupled support, areas, yields, consumption, trade.

**JEL Classification:** Q110, Q13.

### 1. INTRODUCTION

The Common Agricultural Policy measures also target the sectors or subsectors facing difficulties, which can receive dedicated support. This form of support is known as voluntary coupled support. The voluntary coupled support scheme was introduced to prevent the aggravation of difficulties in certain sectors, thus avoiding production abandonment, which could affect other parts of the supply chain or the associated markets (European Commission).

Since 2015, Romania has granted coupled support to active farmers in the crop production sector, according to Order no. 619 of April 6, 2015 of the Ministry of Agriculture and Rural Development. Soybean farmers have also benefitted from this form of support.

The present paper analyses the impact produced by the coupled support on the evolution of areas under soybean, on yields, average purchase prices, as well as on the soybean trade in the period 2015–2019.

## 2. STATE OF KNOWLEDGE

For the period 2015–2020, the voluntary coupled support scheme has been applied in all countries of the EU, except for Germany. The amounts granted and the range of targeted sectors largely vary from country to country. In order to finance the voluntary coupled support, the EU countries can: utilize up to 8% of the total budget allocated to income support, to increase this ceiling up to 13 %, if certain previous conditions have been met, to increase the ceiling above 13 %, if certain strict criteria are met and the Commission has approved this measure, to further increase the ceiling by 2 % to support the protein crop production (European Commission).

If EU member states decide to use at least 2% of their annual ceiling foreseen in Annex II to the basic act to support the protein crop production (Article 53 paragraph (3) of the basic act), these can increase their annual national ceiling for the coupled support by up to 2%. Within the “initial support decisions”, 16 EU member states decided to grant coupled support for protein crops for the application year 2015. In the year 2017, only 15 EU member states granted coupled support for protein crops, while in the year 2019 their number increased again to 16 member states to grant this support. Following the September 2019 review, the allocated amounts increased from 469 million euros to 474.3 million euros for the application year 2019 and to 481.1 million euros for the application year 2020. The protein crop sector is the fourth beneficiary of the coupled support, with 11% of total coupled support, which represents about 1.1% of the annual national ceiling for all direct payments (European Commission).

Following the Common Agricultural Policy Reform of 2013, the area under soybean in the European Union increased by 86% in the year 2019 compared to 2013, and the EU soybean production totalled 2.8 million tons in the year 2019. The main soybean producers in the EU are Italy, Romania and France.

Across the EU, the self-supply level in oilseeds is relatively low, varying by the three types of oilseeds: 79% for rapeseed, 42% for sunflower and 5% for soybean. Thus, in order to cover the consumption needs, EU imports 17 million tons crude protein each year (out of which 13 million tons are based on soybean), mainly from Brazil, Argentina and the USA. The European Union imports 1.5 million tons crude protein from sunflower and up to one million tons crude protein from rapeseeds, both being mainly imported from Ukraine (European Commission). The largest part of these imports is used in the livestock sector.

The problem of dependence on imported feed proteins could be solved by increasing the areas under protein crops in the EU Member States. A complementary solution could be to invest in animal genetics to obtain hybrids with higher adaptability to diverse conditions and a very good conversion of feed obtained on grasslands and pastures (Grodea, Mariana, 2017).

### 3. MATERIAL AND METHOD

To assess the effects of coupled support on the soybean market development in Romania, we analysed the following indicators:

- soybean areas, production and yields per hectare at national and regional level; the obtained results were compared to those of the developed countries from the European Union;
- average purchase prices;
- soybean imports and exports.

At the same time, we analysed the evolution of areas determined for payment, the number of farmers authorized for payment, the amounts authorized for payment, as well as the value of coupled support per hectare in the period 2015–2018.

For the purpose of the study, the databases of the National Institute of Statistics – tempo online, EUROSTAT, FAOSTAT, MARD, APIA, as well as different studies and publications by Romanian and foreign authors were used.

### 4. RESULTS AND DISCUSSIONS

#### 4.1. THE EUROPEAN CONTEXT

In 2019, the soybean production in EU-28 totalled 2813 thousand tons, and the area cultivated with soybean 908 thousand ha. In the European Union, Italy is the main soybean producer, followed by Romania and France.

As we can see from Table 1, the first 3 countries together account for 65% of the area under soybean and 68% of the soybean production in the EU.

*Table 1*

Romania's position in the European context in the year 2019

| Country | Area      |          | Production |          |
|---------|-----------|----------|------------|----------|
|         | Share (%) | Position | Share (%)  | Position |
| Italy   | 30%       | 1        | 37%        | 1        |
| France  | 18%       | 2        | 15%        | 3        |
| Romania | 17%       | 3        | 16%        | 2        |

*Source:* author's calculations based on Eurostat data, 2020

EU remains the greatest importer of soybean meal in the world. More than 80% of total imports come from Argentina and Brazil. Imports account for more than 60% of soybean meal consumption in the EU. The soybean meal produced locally is increasing due to the incentivising policies under CAP, but still has a limited share in total EU market. Soybean meal is used as feed for livestock and poultry.

Since 2011, the EU has been a net exporter of soybean oil, as a result of implementing the *Renewable Energy Directive* on the promotion and use of energy from renewable sources, which made it more difficult to use soybean oil as raw material for biodiesel.

#### 4.2. SUPPORT MEASURES

Since 2007, the soybean crop has benefited from several support schemes. The following support forms have been identified for the soybean market in Romania:

- direct payment schemes (Single area payment scheme, Redistributive payment, Payments for agricultural practices beneficial for the climate and the environment, Payment for the young farmers, Coupled support scheme, Simplified small farmer scheme.
- Transitional National Aid 1 (TNA 1);
- state aids for diesel oil used in agriculture.

Coupled support has been granted to soybean farmers in Romania since 2015. In order to receive coupled support, farmers must comply with certain requirements, as it results from the *Applicant Guide for direct payments and transitional national aids in the crop production sector* (APIA, 2016):

- to obtain a minimum annual production of 1300 kg soy beans /ha;
- to sell a minimum production of 1300 kg soy beans /ha by signing a contract with a soybean processing unit to obtain the soybean meal and oil or the extruded full-fat soybean, or on commercial contract basis for merchandise sale; the production can be also used for feeding the animals registered in the National Farm Register and the poultry raised on the farm, by processing the harvest with own processing equipment or on the basis of contract for providing services;
- in the case of seed lots, the minimum quantity of 1300 kg/ha certified seed is delivered to the keeper or owner of the variety on delivery note basis and/ or it is delivered to third parties on the basis of invoice or sheets in the marketing notebook of products in the agricultural sector and/ or are used for one's own needs;
- to use, for the established crop, officially certified seed according to Law no. 266/2002.

Farmers must also submit certain supporting documents to APIA.

From the table below, we can see that the number of farmers authorized for payment increased by 52% in the year 2016 compared to 2015, by 114% in 2017 compared to 2015 and by 77% in 2018 compared to 2015.

Table 2

Coupled support for soybean in the period 2015–2018

| Years | No. of farmers authorized for payment | Amount authorized for payment – euros | Area determined for payment – ha |
|-------|---------------------------------------|---------------------------------------|----------------------------------|
| 2015  | 1,736                                 | 28,606,681                            | 108,694                          |
| 2016  | 2,638                                 | 30,397,766                            | 121,976                          |
| 2017  | 3,711                                 | 30,464,953                            | 150,960                          |
| 2018  | 3,075                                 | 24,934,332                            | 123,253                          |

Source: APIA

The coupled support was granted to soybean farmers to increase the areas under this crop, so as to cover the domestic consumption needs to the greatest extent possible. The coupled support scheme is addressed to the sector of protein crops nationwide, and it is applied to all soybean crops, both under conventional and organic farming system, to all types of farms, both for irrigated and non-irrigated crops (MARD).

The value of the effective coupled support for the year 2015 was 269 euros/ha, to decrease to 254.62 euros/ha in the year 2017 and to 186 euros/ha in 2018.

The area determined for payment had a very high share in total area under soybean in the period 2015–2018.

Table 3

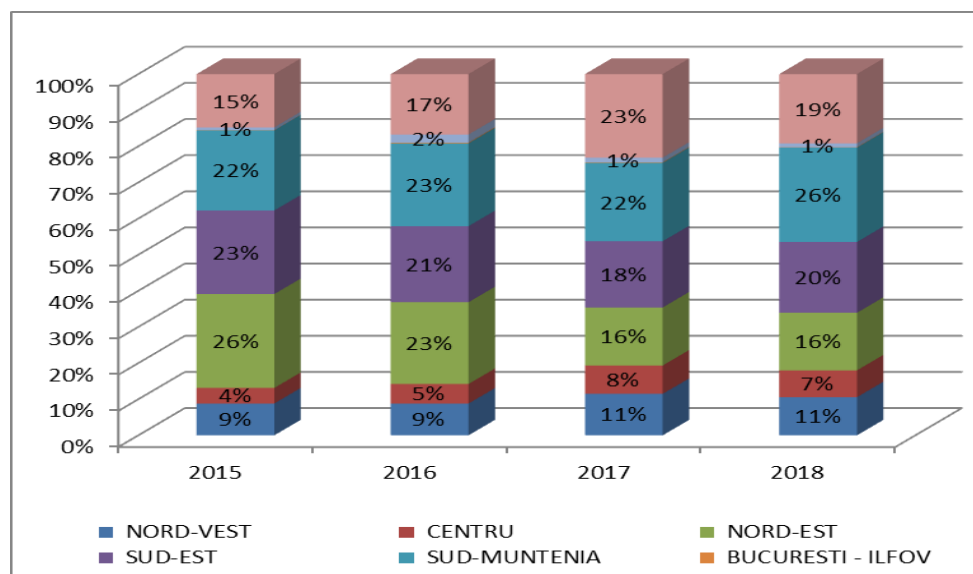
The area determined for payment in total area cultivated with soybean – %

|   | 2015       | 2016       | 2017       | 2018       |
|---|------------|------------|------------|------------|
| Area determined for payment – ha            | 108,694.40 | 121,975.84 | 150,960.00 | 123,253.00 |
| Total area                                  | 128,156.00 | 127,266.00 | 165,143.00 | 169,422.00 |
| Area determined for payment in total area % | 85%        | 96%        | 91%        | 73%        |

Source: author's calculations based on APIA and tempo online data

The coupled support received by soybean farmers have impacted the evolution of areas, production, prices and trade. These effects will be next shown in the paper.

The regions South-Muntenia, North-East and South-East received the largest amounts for soybean cultivation.



Source: APIA

Figure 1. The amount authorized for payment for soybean by regions

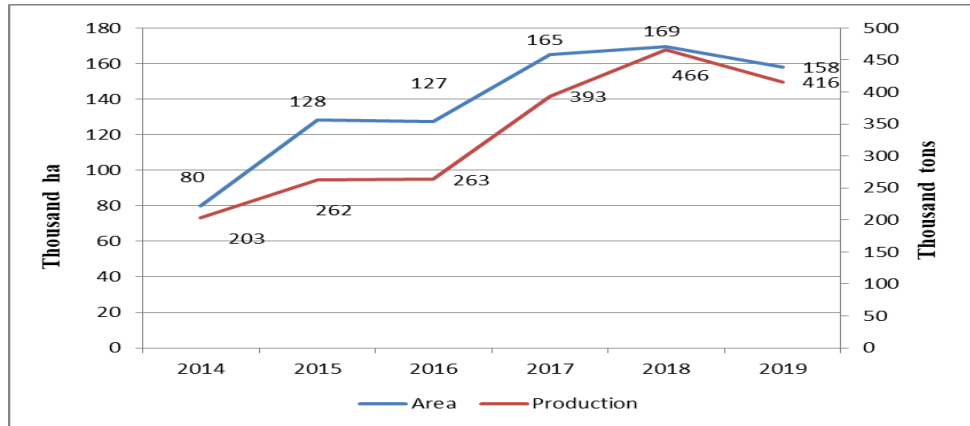
### 4.3. AREAS AND PRODUCTIONS

In the year 2019, the area under soybean was 158 thousand ha, which represented 17% of the area cultivated with soybean in the EU-28, Romania ranking third next to Italy and France. In Romania, soybean is one of the main oil crops, accounting for 9.3% of the total area under oilseeds.

Since 2007, following Romania's accession to the European Union, the areas cultivated with soybean decreased significantly, mainly due to the ban on genetically modified soybean. In the year 2008, the area cultivated with soybean had decreased by 62.5% compared to 2007, next following a slightly increasing trend, yet not significantly higher, until 2014, when we can see higher increases of areas under soybean. These increases are due to the coupled support to soybean crops granted starting with the year 2015. In the year 2015, the area cultivated with soybean was by 60% higher than in 2014, to increase by 112% in 2018 compared to 2014.

In the year 2019, soybean production totalled 416 thousand tons. The minimum value of the soybean production was reached in the year 2009 (84.2 thousand tons), down by 38% compared to 2007. In the year 2015, following the

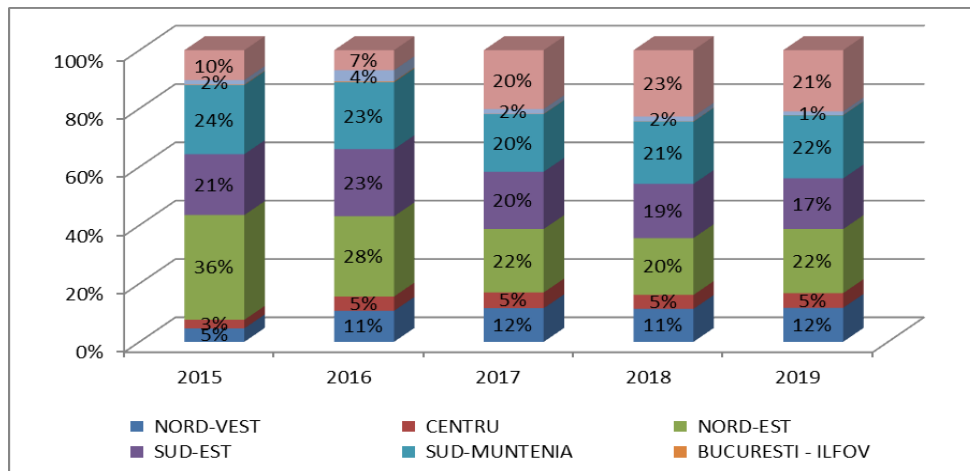
introduction of coupled support, soybean production increased by 29% compared to 2014, while in the year 2018 it increased by 129% compared to 2014.



Source: NIS-tempo online, 2020

Figure 2. Evolution of soybean area and production

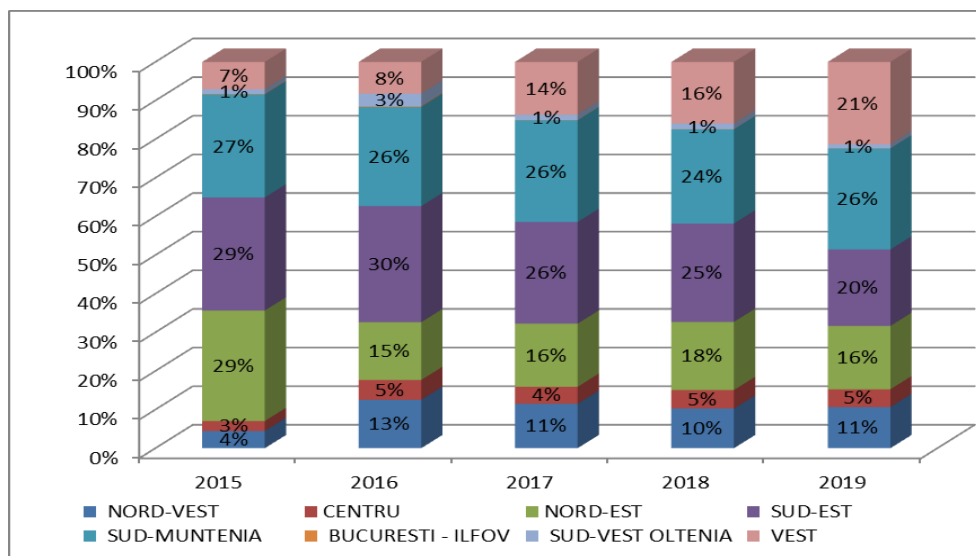
By regions, the largest areas cultivated with soybean are found in the regions North-East, South-Muntenia and South-East.



Source: tempo online

Figure 3. Areas cultivated with soybean by regions

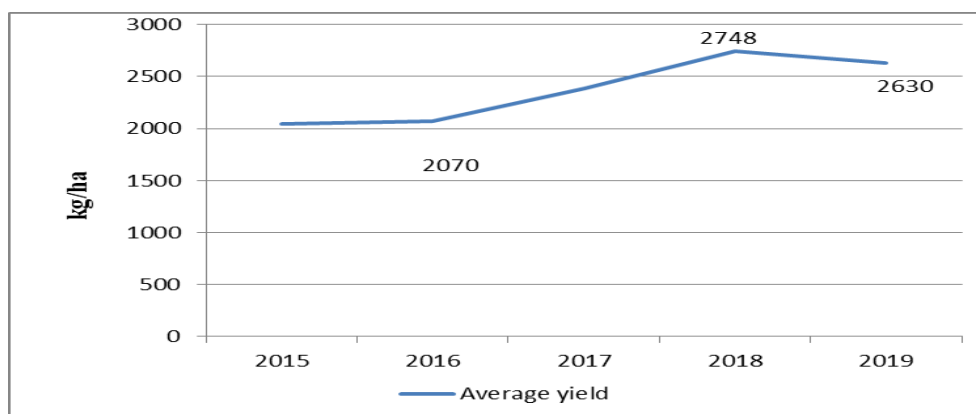
As regards production, the same three regions have the highest shares in total soybean production.



Source: tempo online

Figure 4. Soybean production by regions

The average soybean yields followed a generally increasing trend in the period 2015–2019, ranging from minimum 2070 kg/ha in the year 2016 to maximum 2748 kg/ha in the year 2018.



Source: NIS – tempo online, 2020

Figure 5. Evolution of soybean yields in Romania

In the table below, one can see the effects of coupled support on soybean areas, production and yields.



Table 4

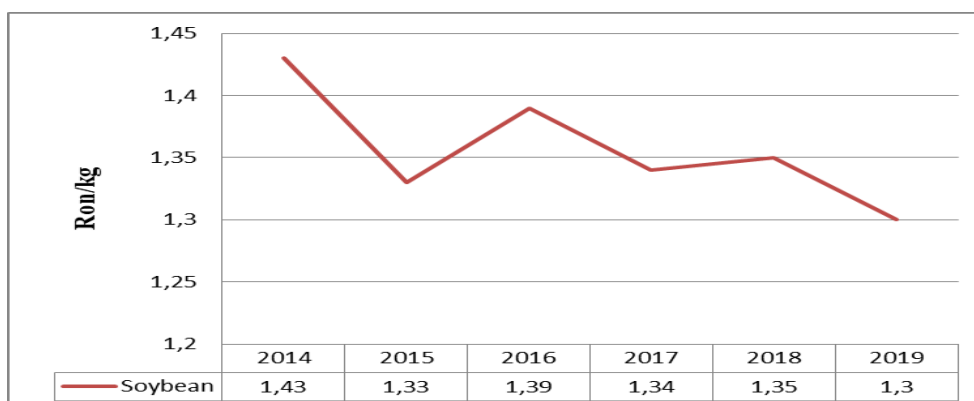
Impact of coupled support on soybean areas, production and yields

|                     | 2015/2014 | 2016/2014 | 2017/2014 | 2018/2014 |
|---------------------|-----------|-----------|-----------|-----------|
| Area under soybeans | 60%       | 59%       | 107%      | 112%      |
| Soybean production  | 29%       | 30%       | 94%       | 129%      |
| Soybean yield       | -19%      | -18%      | -6%       | 8%        |

Source: NIS – tempo online

#### 4.4. AVERAGE PURCHASE PRICES

There is a great price volatility in the main oilseed crops cultivated in Romania. Weather conditions play a decisive role in this situation, which leads to an unstable supply on the domestic market, but also to price instabilities on the international markets. In the analysed period, the average purchase price of soybean decreased compared to 2014. Thus, in the year 2015, the average purchase price decreased by 7% compared to 2014, while in the year 2018, the average purchase price of soybean decreased by 6% compared to 2014.

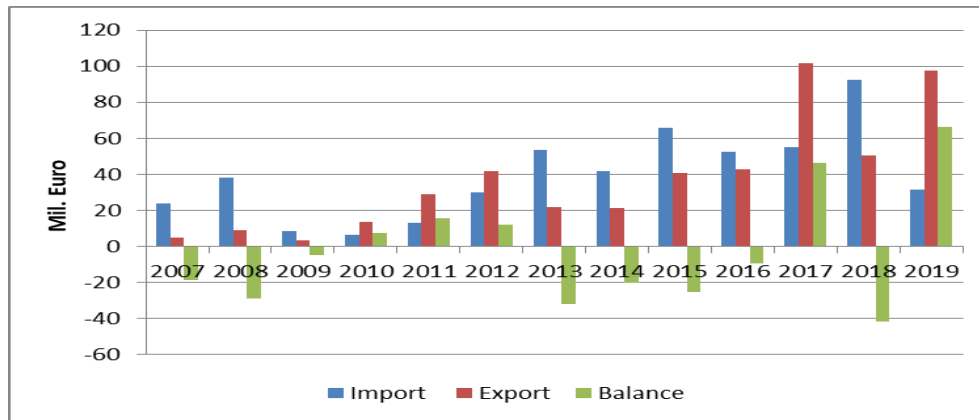


Source: tempo online

Figure 6. Evolution of average purchase prices of soybean

#### 4.5. SOYBEAN TRADE

In the period 2007–2019, an improvement of soybean exports could be noticed, yet the trade balance remained mainly negative. From the analysis of the evolution of soybean imports, it results that in the year 2017 imports increased by 95% compared to 2007 and decreased by 21% compared to the year 2015. As regards soybean exports, a significant increase was noticed in the year 2017 compared to 2007, the soybean export volume increasing 12 times.



Source: Eurostat, 2020

Figure 7. Trade balance in soybean

## 5. CONCLUSIONS

In the year 2019, soybean production in EU-28 totalled 2813 thousand tons, while the area under soybean was 908 thousand ha. In the European Union, Italy is the main soybean producer, followed by Romania and France.

At EU level, several countries have provided coupled support to soybean farmers in the period 2015–2020. The coupled support was granted to soybean farmers to increase the area cultivated with this crop, to cover the domestic consumption needs to the greatest extent possible.

In Romania, the value of the effective coupled support for the year 2015 was 269 euros/ha, down to 254.62 euros/ha in 2017, and to 186 euros/ha in 2018.

The coupled support granted to soybean crops in Romania impacted the evolution of areas, production, yields, prices and trade.

In the year 2019, the soybean area totalled 158 thousand ha, which represented 17% of the area cultivated with soybean in the EU-28, Romania ranking third in the EU, next to Italy and France.

As a result of coupled support implementation for the soybean crop, the situation was the following:

- the area under soybean increased by 98% in the period 2014–2019, to reach 158 thousand ha;
- total soybean productions increased by 105% in the period 2014–2019;
- trade balance in soybean is still negative, although exports have increased significantly;
- the regions that benefited from the largest amounts authorised for payment were North-East, South-East and South-Muntenia.

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