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NATIONAL FEASIBILITY STUDY - COMMERCIAL POTENTIAL OF SOME AGRI-FOOD PRODUCTS

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Varna Economic Development Agency

TABLE OF CONTENTS

SUMMARY

This feasibility study analyses the wheat, sunflower, corn and rape cultures in Romania under all aspects, from production systems, yields, sale prices, demand and supply to the threats and opportunities offered by such cultures. Similar aspects have also been studied for the sheep sector (livestock and sale price) and honey sector (bee families, honey production and sale price). The analysis period spans 5 years between 2013 and 2017.

Wheat is one of the products of plant origin for which Romania runs a surplus, since values were positive throughout the analysed period. The highest surplus was registered in 2013, namely over 858 million EUR, due to the massive export of wheat correlated with the low import.

The sunflower export shows an oscillating trend since it is largely influenced by the need of importing countries to purchase sunflower. It must be noted that Romania registered the highest level of imports in 2013, over 553 million EUR, due to the poor yields registered on the continent.

Romania is one of the largest producers of corn in the European Union and has harvested almost 8.5 million tons of corn in 2016, out of which more than 1.5 million tons were exported to countries in the European Union and outside it. The corn export shows an oscillating trend since it is largely influenced by the need of importing countries to purchase sunflower. As for the corn import, the maximum value was reached in 2015, namely over 294 million EUR.

The rape export shows an ascending trend influenced by the higher and higher demand for rape in the international markets. In the period under analysis, Romania registered the highest exports from the value viewpoint, in 2017 the value reached 579.6 million EUR.

Sheep and goats represent one of the sectors for which Romania runs a surplus, since values are positive throughout the analysed period. The highest surplus was registered in 2017, namely over 174 million EUR, due to the massive export of sheep and goats correlated with the low value import.

Honey also runs a surplus since values are positive throughout the analysed period. The highest surplus was registered in 2013, namely over 36.9 million EUR, due to the massive export of honey correlated with the low import.

I. OBJECTIVES OF THE FEASIBILITY STUDY

This study on the export potential of some agri-food products in Romania to other countries starts from an overall analysis of the productions at national level. Consequently, we have analysed the surface cultivated with wheat, corn, sunflower and rape, the sheep livestock, the number of bee families, the total yield for each product separately for a 5-year period (2013-2017) as well as the factors that contributed to the yield, the average yield and the internal sale price.

This study analyses export and import both from value and quantity viewpoints, the establishment of the average price for imports and exports as well as the trade balance of Romania for the selected products.

Following these analyses, we determined the Romanian export potential to other countries from the Black Sea basin in order to identify future opportunities.

II. MATERIALS AND ANALYSIS METHODS

The statistic data used and processed in this study were provided by the National Institute of Statistics (Romania), and by the international Trade Map database as well as by specialized documents and reports. The methodology of this study relies on the quantitative and qualitative analysis of the indicators taken into account such as the cultivated surface, total yield, average yield, import (value and quantity), export (value and quantity), trade balance and export potential.

The potential (or standard) export value of product k supplied by country i to market j in USD is calculated as the demand x supply (corrected for market access) x bilateral trade ease. The export potential value is projected by an economic model based on exporter's characteristics, the target market and the force of the relationship between them. The estimated value of the American dollar serves as reference point for comparison with the real performance of export, and must not be seen as a limited value. In fact, the real commercial value may be below or above the potential value.

III. DATA REGARDING THE SPECIFICITY OF COMMERCIAL ACTIVITIES IN THE BLACK SEA BASIN

The Black Sea is surrounded by 6 countries, two of them being EU members (Romania and Bulgaria). A multitude of commercial activities are taking place inside the Black Sea Basin, from those specific to tourism up to the export of agricultural products via Constanta Port.

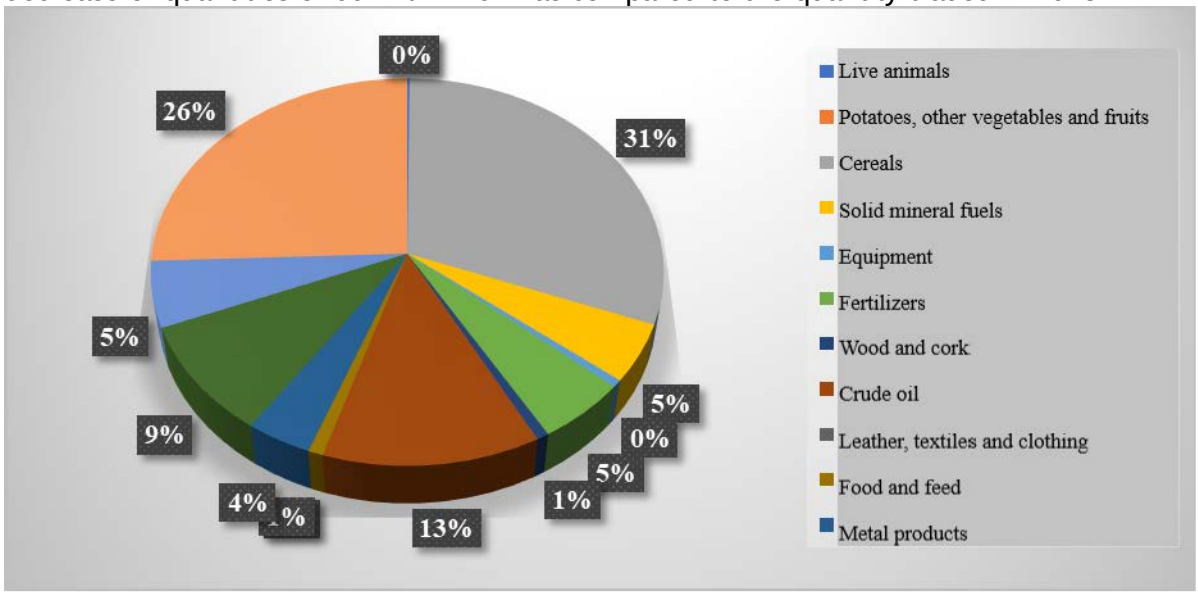
Constanta Port lies at the crossroads of commercial routes connecting the markets of landlocked countries from Central Europe and Eastern Europe to Transcaucasia, Central Asia and the Far East. It is the main Romanian port in the Black Sea and it plays an extremely important role as a transit point for the countries in the Central and South-Eastern Europe. The connection of this port to Danube River is made via Danube-Black Sea Canal representing one of the key points of Constanta Port.

Constanta Port is the place where live animals, objects made from metal, vegetables and fruits, cereals, cellulose, cement, and leather items etc. are traded.

When analysing the evolution of quantities of products traded in Constanta Port in the period 2013-2017, we may notice that the most significant quantities of products that registered a positive trend are represented by live animals whose quantity was in 2017 50.4% higher than the quantity traded in 2013. In the same period, the quantity of potatoes, other vegetables or fresh or frozen fruit registered a decrease by 54.4% in 2017 as compared to the quantity that transited Constanta Port in 2013.

The total quantity of cereals that transited Constanta Port for export purposes increased by 17.2% in 2017 as compared to the quantity traded in 2013. A significant increase of agricultural products was registered for oil seeds, oleaginous fruit and fats where the quantity that transited Constanta Port registered an increase of 66.4% in 2017 as compared to the quantity registered in 2013. Petroleum products registered an increase of the traded quantity of 43.3% in 2017 as compared to the quantity registered in 2013 (Table no. 3.1.).

The most significant decreases of traded quantities in 2017 as compared to 2013 were registered for the categories glass, glassware and ceramic products (63.7% quantity decrease in 2017 as compared to 2013), iron ore, iron and steel scrap, blast furnace slag (59.4% decrease) and wood and cork with a decrease of quantities of 60.4% in 2017 as compared to the quantity traded in 2013.



Source: processing https://www.portofconstantza.com

Figure no. 3.1. Share of goods traded in Constanta Port in 2017

As for the share of categories of products traded in Constanta Port in 2017 out of the total quantity transiting the port annually, we may see in diagram 1 that cereals occupy a percentage of 31%

of the whole quantity, other products 26%, crude oil 13%, oil seeds 5%, potatoes, other fresh or frozen vegetables and fruit 0.01%, wood and cork 0.71%.

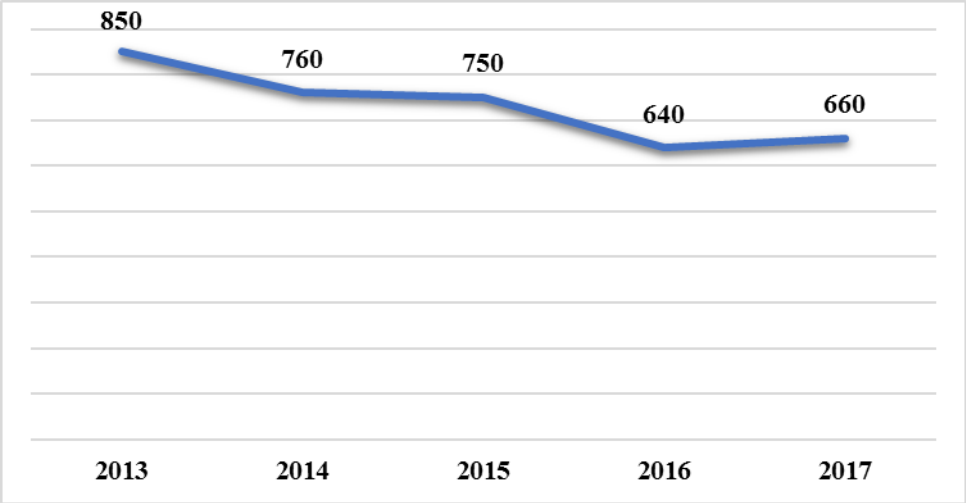
The high percentage of cereals traded in Constanta Port is due to the fact that most cereals are exported to Constanta Port by the main traders operating in the Romanian market. They have built their own storage facilities in Constanta Port so as to put the cereals on the market at the time when there is the best market price (Figure no. 3.1.).

IV. COMMERCIAL PROFILE OF THE SELECTED PRODUCTS

1. Wheat

In 2017 Romania registered a production of more than 10 million of tons of wheat, an increase by 37.5% as compared to the production obtained in 2013, in the context in which the surface used in 2017 was smaller than that used in 2013. This may be explained by a series of factors such as the favourable weather conditions of 2017 which resulted in high yields per hectare. The engineering level including technological equipment and the materials used also contributed to the increase of yields.

When analysing the evolution of the wheat sale price in Romania in the interval 2013-2017, we may notice that a significant decrease of the wheat sale price was registered. Therefore, if in 2013 a ton of wheat was sold for the average price of 850 lei, in 2017 the same quantity of wheat was sold for 660 lei. The lowest sale price for wheat for the period under analysis was registered in 2016 when farmers got 640 lei for ton of wheat, with a decrease of 24.7% of the price obtained in 2013 (Figure no. 4.1.).



Source: data processed by the National Institute of Statistics, data accessed on October 12, 2019;

Figure no. 4.1. Evolution of the wheat sale price in Romania in the period 2013-2017 (lei/ton)

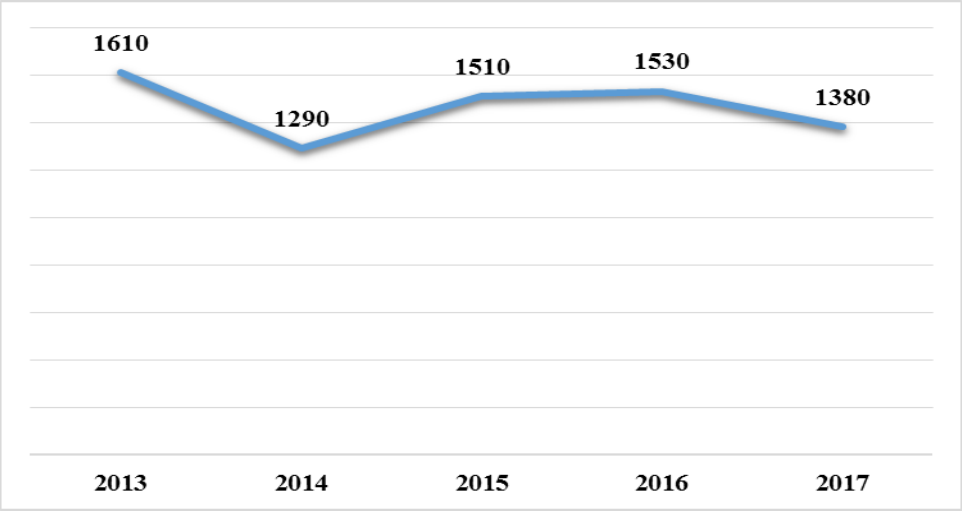
The decrease of the sale price for wheat in the period under analysis may be explained first of all in the light of productions. The market laws stipulate that price is determined by demand and supply. In the case of agricultural productions, in the years when high yields are registered, the sale price decreases quite a lot due to the high supply of agricultural products in the market. Similarly, when the yield registered at national level is low and implicitly the supply is low, the sale price is high. That is the reason why for a wheat yield of 7,296.37 thousand tons in 2013 the sale price was 850 lei/ton while in 2017 for a wheat yield of 10,034.96 thousand hectares the average sale price for wheat was 660 lei/ton. In 2017, Romania had a wheat yield 37.5% higher than the yield of 2013 while the sale price for wheat decreased in 2017 by 22.35% as compared to the price of 2013 (Figure no. 4.4.).

2. Sunflower

In 2017 Romania registered a production of more than 2.9 million of tons of sunflower, an increase by 36% as compared to the production obtained in 2013, in the context in which the surface used in 2017 was smaller than that used in 2013. This may be explained by a series of factors such as

the favourable weather conditions of 2017 which resulted in high yields per hectare. The engineering level including technological equipment and the materials used also contributed to the increase of yields.

The evolution of the sale price has an oscillating trend largely due to the oscillation of yields obtained, thus the minimum price for the sale of a ton of sunflower was 1290 lei in 2014, while the maximum price was obtained in 2013 when the sale price was 1610 lei/ton (Figure no. 4.2.).



Source: data processed by the National Institute of Statistics, data accessed on October 12, 2019;

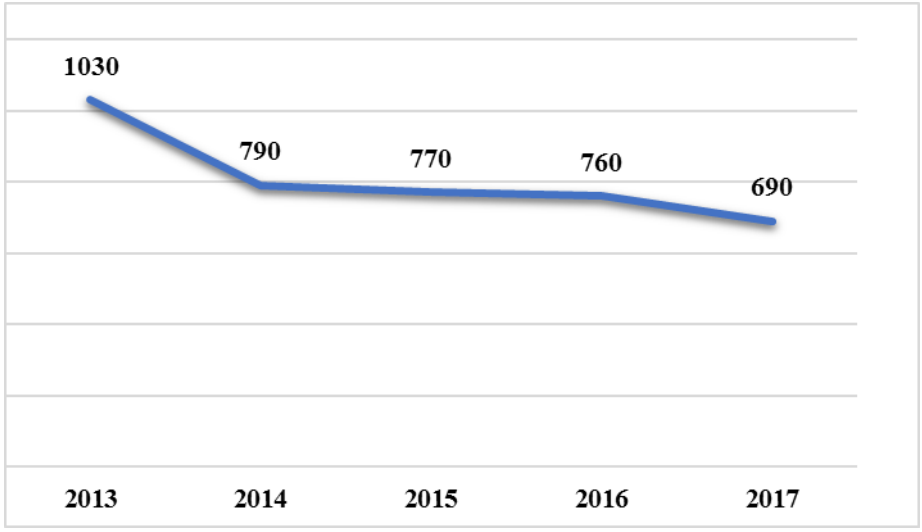
Figure no. 4.2. Evolution of the sunflower seed sale price in Romania in the period 2013-2017 (lei/ton)

3. Corn

In 2017, in Romania a smaller surface by 4.6% was sown as compared to the surface cultivated in 2013. The largest surface of 2.6 million hectares was planted with corn in 2015, 8.4% higher than the surface sown in 2017.

In 2017 Romania registered a production of more than 14 million of tons of corn, an increase by 26.7% as compared to the production obtained in 2013, in the context in which the surface sown in 2017 was 4.6% smaller than the one under corn in 2013. This may be explained by a series of factors such as the favourable weather conditions of 2017 which resulted in high yields per hectare. The engineering level including technological equipment and the materials used also contributed to the increase of yields.

When analysing the evolution of the corn sale price in Romania in the interval 2013-2017, we may notice that a significant decrease of the corn sale price was registered. Therefore, if in 2013 a ton of corn was sold for the average price of 1,030 lei, in 2017 the same quantity of corn was sold for 690 lei. The lowest sale price for corn for the period under analysis was registered in 2017 when farmers got 690 lei for ton of corn, with a decrease of 33% of the price obtained in 2013 (Figure no. 4.3.).



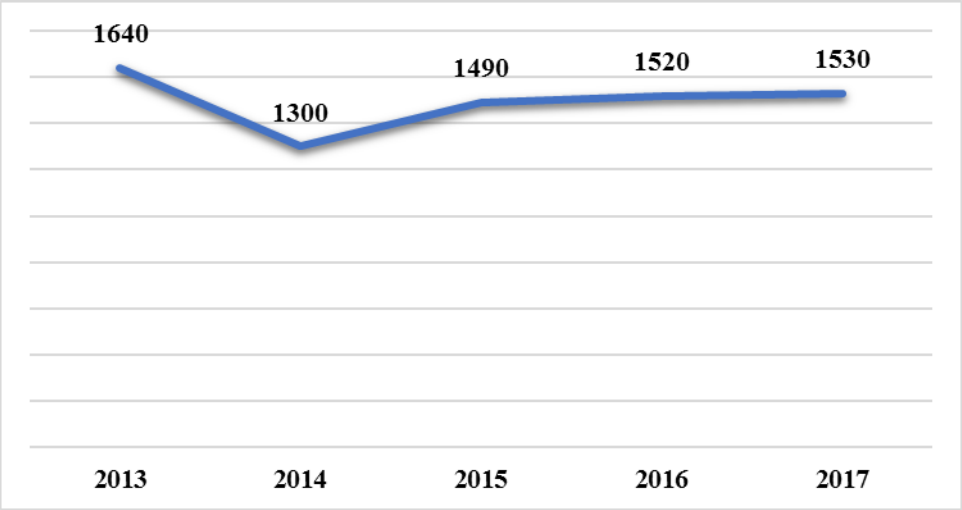
Source: data processed by the National Institute of Statistics, data accessed on October 20, 2019;

Figure no. 4.3. Evolution of the corn sale price in Romania in the period 2013-2017 (lei/ton)

The decrease of the sale price for corn in the period under analysis may be explained first of all in the light of productions. The market laws stipulate that price is determined by demand and supply. In the case of agricultural productions, in the years when high yields are registered, the sale price decreases quite a lot due to the high supply of agricultural products in the market. Similarly, when the yield registered at national level is low and implicitly the supply is low, the sale price is high. That is the reason why for a corn yield of 11,305,095 tons in 2013 the sale price was 1,030 lei/ton while in 2017 for a corn yield of 14,326,097 tons the average sale price for corn was 690 lei/ton. In 2017, Romania had a corn yield 36.7% higher than the yield of 2013 while the sale price for corn decreased in 2017 by 33% as compared to the price of 2013.

4. Rape

When analysing the evolution of the rape sale price in Romania in the interval 2013-2017, we may notice that oscillating evolutions were registered from year to year. Therefore, if in 2013 a ton of rape was sold for the average price of 1,640 lei, in 2017 the same quantity of rape was sold for 1,530 lei. The lowest sale price for rape for the period under analysis was registered in 2014 when farmers got 1,300 lei for ton of rape, with a decrease of 26.15% of the price obtained in 2013 (Figure no. 4.4.).



Source: data processed by the National Institute of Statistics, data accessed on October 21, 2019;

Figure no. 4.4. Evolution of the rape sale price in Romania in the period 2013-2017 (lei/ton)

The decrease of the sale price for rape in the period under analysis may be explained first of all in the light of productions. The market laws stipulate that price is determined by demand and supply. In the case of agricultural productions, in the years when high yields are registered, the sale price decreases quite a lot due to the high supply of agricultural products in the market. Similarly, when the yield registered at national level is low and implicitly the supply is low, the sale price is high. That is the reason why for a rape yield of 666,097 tons in 2013 the sale price was 1,640 lei/ton while in 2017 for a rape yield of 1,673,327 tons the average sale price for rape was 1,530 lei/ton. In 2017, Romania had a rape two times higher than the yield of 2013 while the sale price for rape decreased in 2017 by 26.15% as compared to the price of 2013 (Figure no. 4.4.).

5. Sheep

The evolution of sheep meat production for consumption shows an ascending trend, thus if in 2013 the total production registered 103.6 thousand tons (live weight), in 2017 this registered 116 thousand tons (live weight), about 12% higher than the year of reference, an aspect mainly due to the programmes promoting sheep meat conducted by the state institutions.

6. Honey

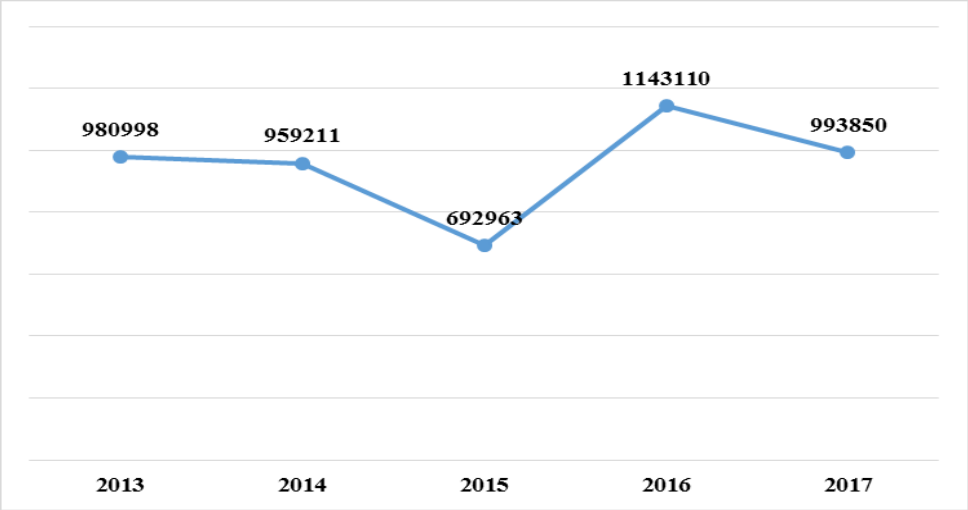
In 2017 Romania registered a production of more than 30 thousand tons of honey, an increase by 13% as compared to the production obtained in 2013, in the context in which the number of bee families had an ascending trend. It must be noted that the evolution of honey production has an oscillating trend due to the multiple factors that may influence the honey production (rainy or too hot periods in the season when nectar is harvested).

The evolution of sale price has an ascending trend largely due to the increase of demand for this product both in Europe and in countries of Asia (e.g. Japan). It must be noted that honey sale price has increased by more than 36% in the period under analysis.

V. PRODUCT DESCRIPTION: ASSESSMENT OF THE EXPORT POTENTIAL BASED ON THE EXPORT POTENTIAL INDICATOR - EPI AND PRODUCT DIVERSIFICATION INDICATOR – PDI BY SEGMENTS OF ANALYSIS OF TRADE

5.1. Wheat export and import

Wheat export has values that vary from year to year, an aspect which is mainly influenced by the yields obtained and the competition affecting the sale price of the wheat ton (Figure no. 1.). In the period under analysis, Romania registered the highest exports from the value viewpoint, in 2016 the value reaching 1.14 million EUR (Figure no. 1.).

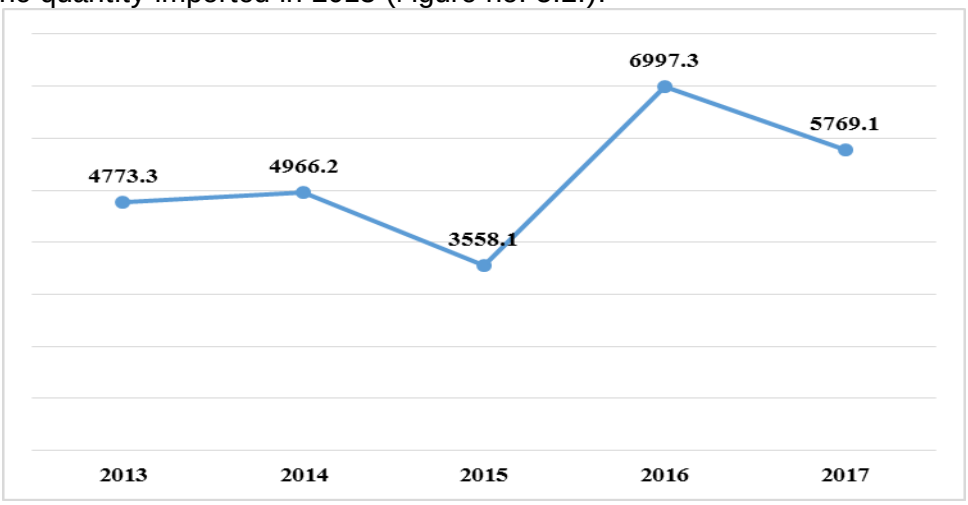


Source: Trade Map database accessed on October 13, 2019;

Figure no. 5.1. Evolution of wheat export (in value terms) in the period 2013-2017 (thousands EUR)

In 2017 the main countries to which Romania exported wheat were Egypt (174 million EUR, a decrease of about 30% as compared to 2013), Jordan (116 million EUR, an increase of more than 57% as compared to 2013) and Spain (92.2 million EUR, an increase of 231% as compared to 2013) (Figure no. 5.1.).

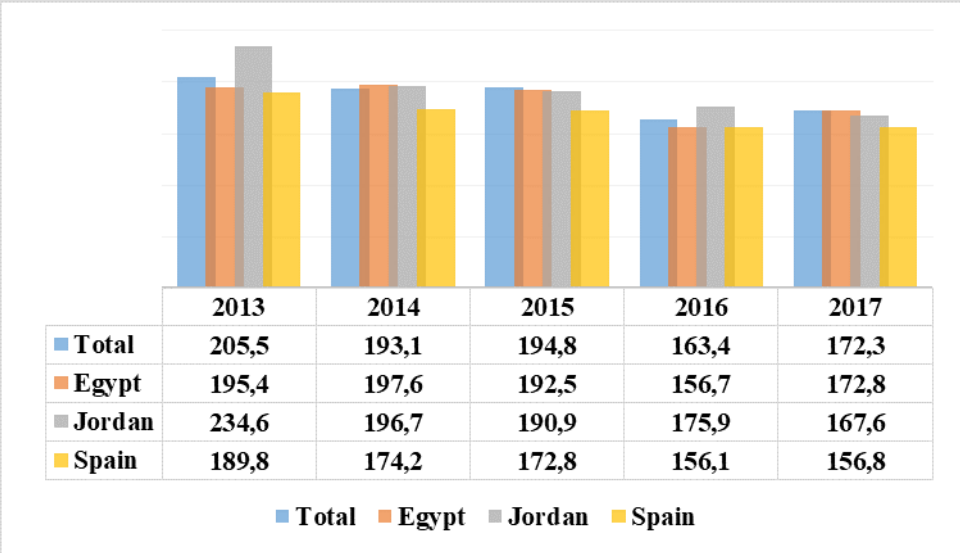
At the same time the wheat export (from the quantitative viewpoint) has significant variations from year to year, an aspect influenced by the yield registered in Romania (Figure no. 5.2.). The first countries in the list of countries which import wheat (quantitatively) from Romania in 2017 are the same countries, namely Egypt, Jordan and Spain. As for Egypt, there was a decrease of about 20% as compared to the quantity imported in 2013 (Figure no. 5.2.).



Source: Trade Map database accessed on October 13, 2019;

Figure no. 5.2. Evolution of wheat export (quantitatively) in the period 2013-2017 (thousands EUR)

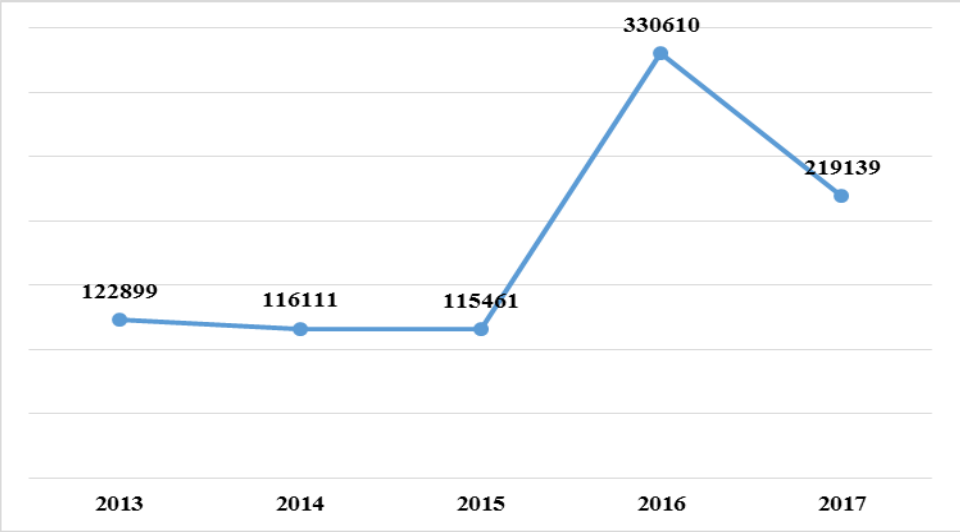
It must be noted that 2016, when the wheat export registered the highest values (in value terms and quantitatively), had the lowest average sale price of only 163.4 EUR/ton, an aspect influenced by the high yields registered in that year (Figure no. 5.3.).



Source: Trade Map database accessed on October 13, 2019;

Figure no. 5.3. Evolution of the wheat export price in the period 2013-2017 (EUR/ton)

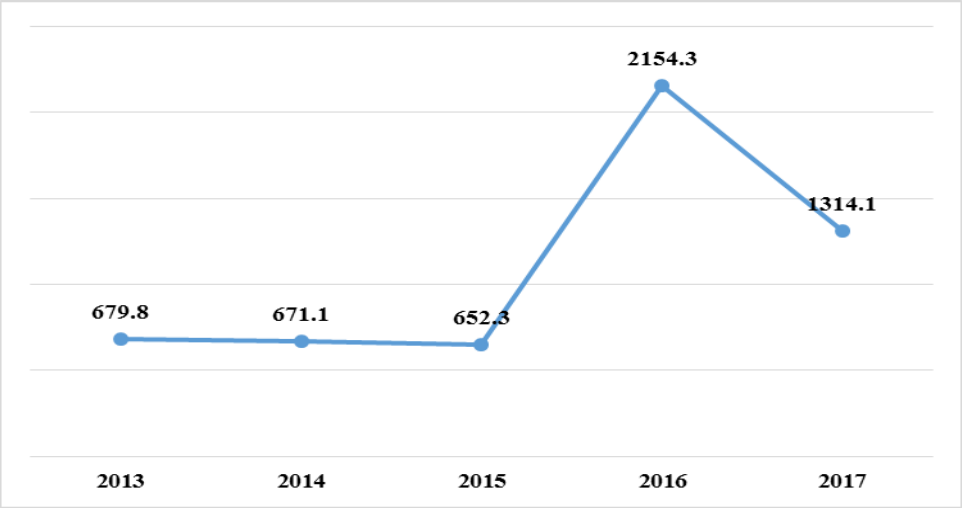
Spain managed to get the most advantageous purchase price, thus in 2017 it was only 156.8 EUR/ton as compared to the average price of 172.3 EUR/ton. This may be explained by the lack of taxes in the non-EU countries (Figure no. 5.3.).



Source: Trade Map database accessed on October 13, 2019;

Figure no. 5.4. Evolution of wheat import (in value terms) in the period 2013-2017 (thousands EUR)

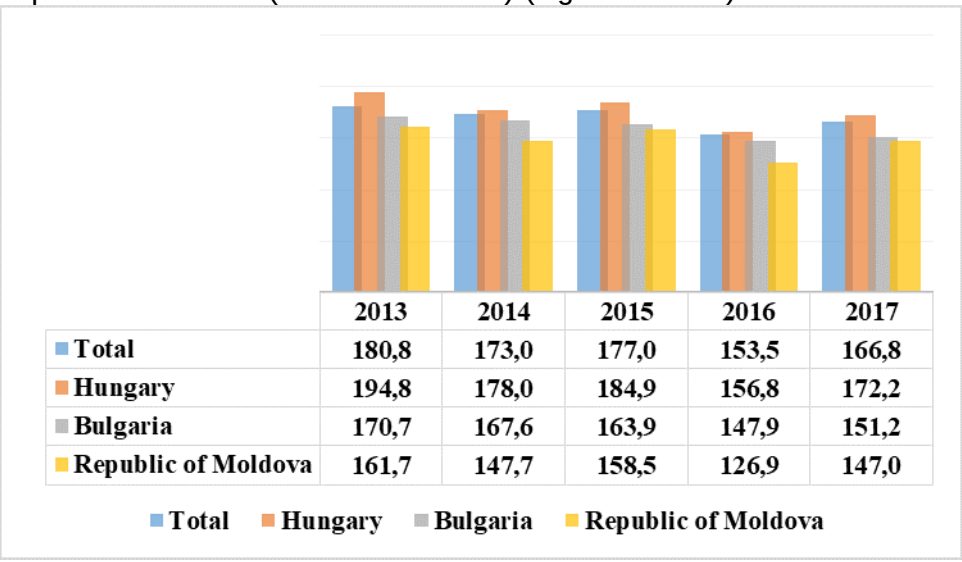
In 2016 Romania imported wheat due to the lower purchase price, counting on the storage and resale of it in the next year or when the sale price would rise. As a rule, wheat import had a linear trend in the period 2013-2015 (Figure no. 5.4.).



Source: Trade Map database accessed on October 13, 2019;

Figure no. 5.5. Evolution of wheat import (quantitatively) in the period 2013-2017 (thousands tons)

Year 2016 registered the highest wheat imports (quantitatively) determined by the low price of wheat, Romania importing from countries such as Hungary (1.14 million tons), Bulgaria (733.6 million tons) and the Republic of Moldova (65 thousand tons) (Figure no. 5.5.).

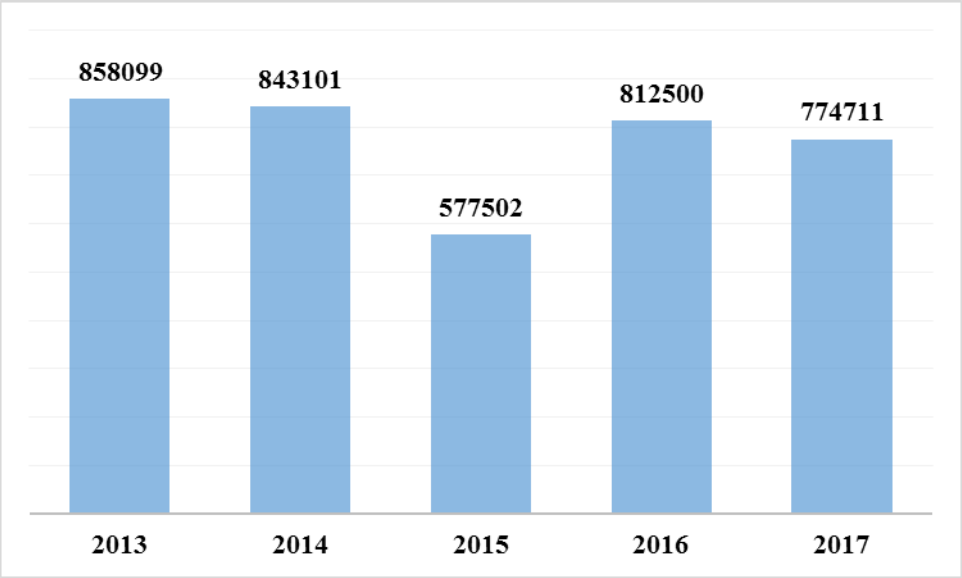


	2013	2014	2015	2016	2017
Total	180,8	173,0	177,0	153,5	166,8
Hungary	194,8	178,0	184,9	156,8	172,2
Bulgaria	170,7	167,6	163,9	147,9	151,2
Republic of Moldova	161,7	147,7	158,5	126,9	147,0

Source: Trade Map database accessed on October 13, 2019;

Figure no. 5.6. Evolution of the wheat import price in the period 2013-2017 (EUR/ton)

It must be noted that 2016 was a year with high wheat yields almost all over Europe what led to a low sale price, Romania purchasing wheat in order to resale it to the partners in the Middle East or to store and sale it subsequently (Figure no. 5.6.).



Source: Trade Map database accessed on October 13, 2019;

Figure no. 5.7. Trade balance for wheat yield in the period 2013-2017 (thousands EUR)

Wheat is one of the products of plant origin for which Romania runs a surplus, since values were positive throughout the analysed period. The highest surplus was registered in 2013, namely over 858 million EUR, due to the massive export of wheat correlated with the low value import (Figure no. 5.7.).

Potential export markets for Romania

In the case of Bulgaria, the current value of exports amounts to 1.1 million USD, in the context in which the export potential might reach 2.6 million USD. As for Georgia, it must be mentioned that it currently does not have any exports for this type of product, but the export potential might be 1.3 million USD (Figure no. 5.8.).

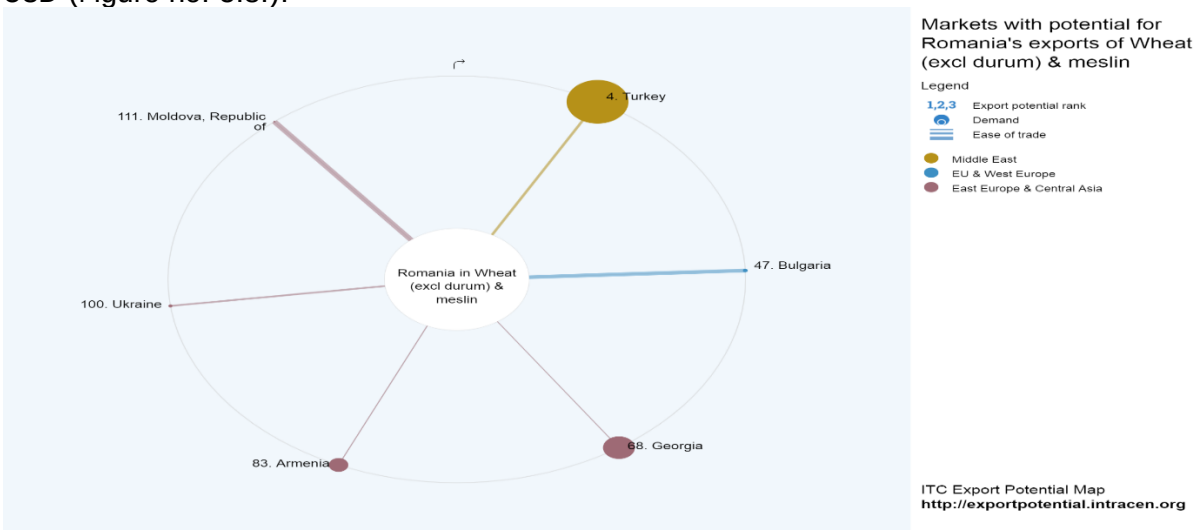


Figure no. 5.8. Potential export markets for Romania in terms of wheat

When analysing the wheat export potential according to demand, the classification has some changes as follows: Turkey, Bulgaria, Georgia, Armenia, Ukraine, the Republic of Moldova (Figure no. 5.9.).

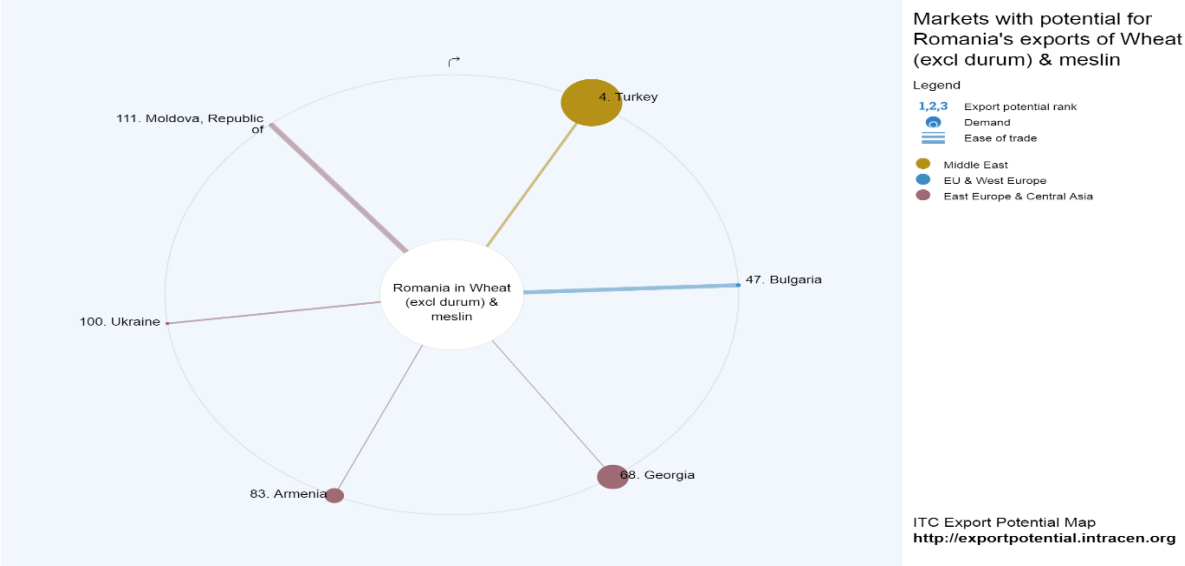


Figure no. 5.9. Potential wheat export markets for Romania in terms of demand

When analysing the export potential in terms of the ease with which trade can be made, the Republic of Moldova stands out. At the same time the classification is completed by Bulgaria, Turkey, Ukraine, Armenia and Georgia (Figure no. 5.10.).

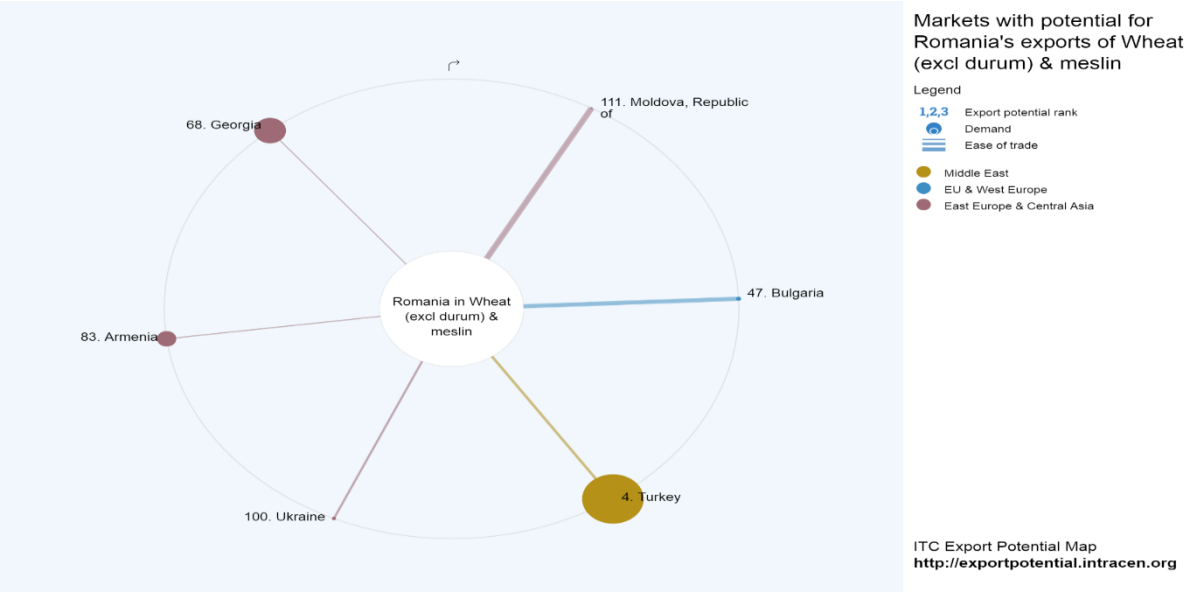
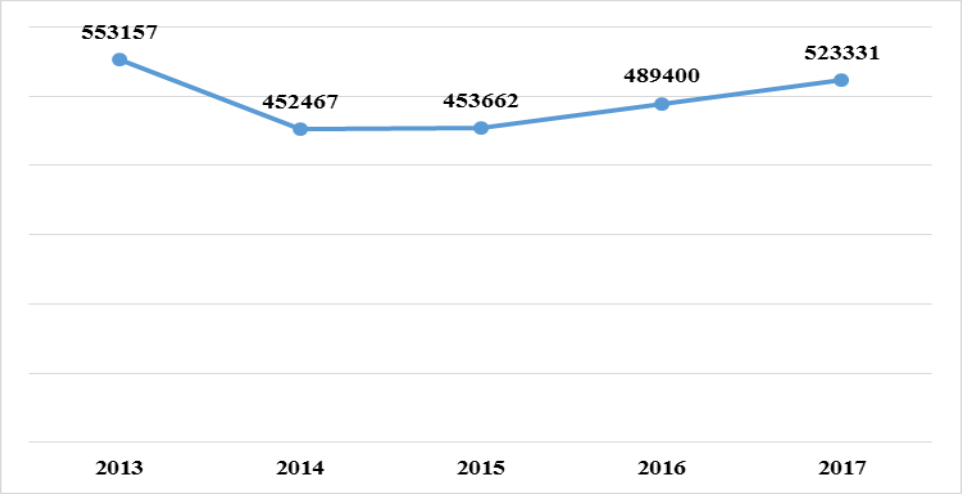


Figure no. 5.10. Potential wheat export markets for Romania in terms of trade ease

5.2. Sunflower export and import

The sunflower export shows an oscillating trend since it is largely influenced by the need of importing countries to purchase sunflower. It must be noted that Romania registered the highest level of imports in 2013, over 553 million EUR, due to the poor yields registered on the continent (Figure no. 5.1.).

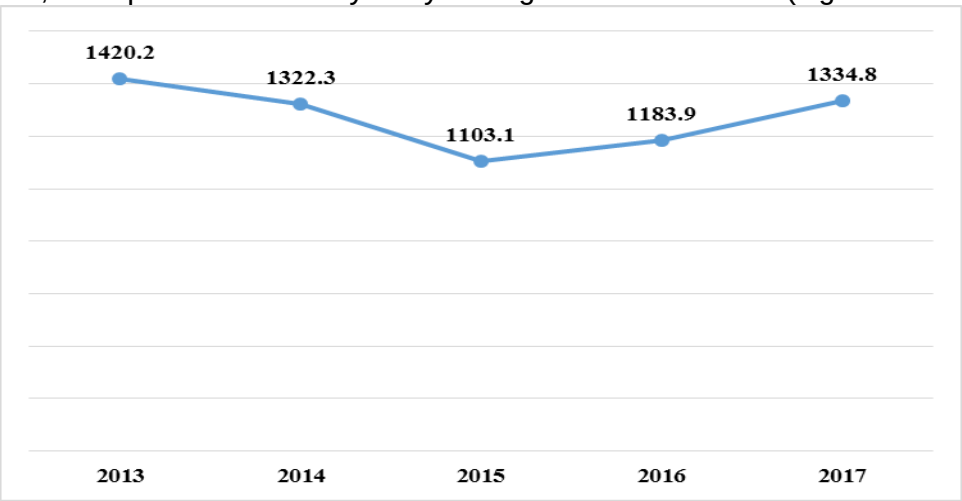
In 2017 the main countries to which Romania exported sunflower were the Netherlands (90.36 million EUR, a decrease of about 5.4% as compared to 2013), France (85.8 million EUR, an increase of 27% as compared to 2013) and Portugal (65.4 million EUR, an increase of 31% as compared to 2013).



Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.1. Evolution of sunflower seed export (in value terms) in the period 2013-2017 (thousands EUR)

At the same time the sunflower export (from the quantitative viewpoint) has significant variations from year to year, an aspect influenced by the yield registered in Romania (Figure no. 5.2.).

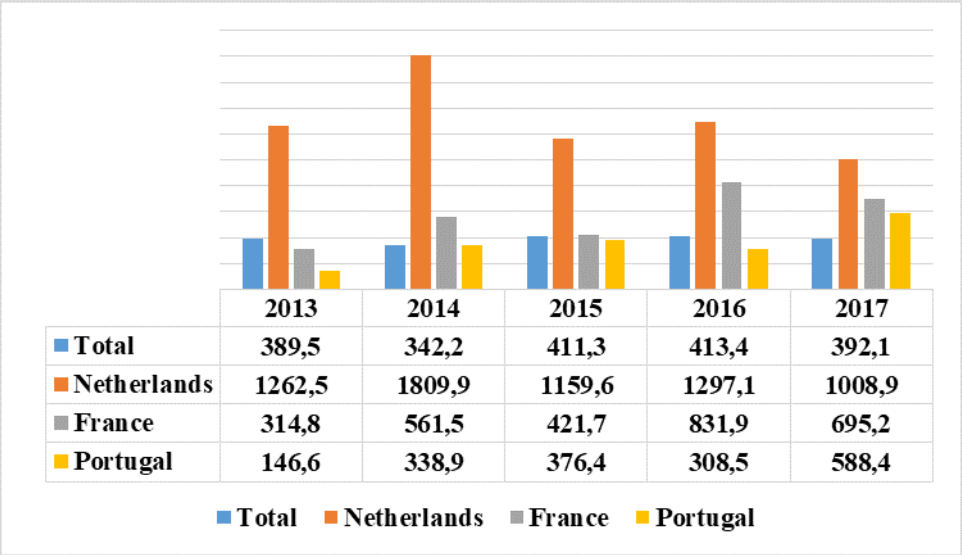


Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.2. Evolution of sunflower seed export (quantitatively) in the period 2013-2017 (thousands EUR)

The first countries in the list of countries which imported sunflower (quantitatively) from Romania in 2017 are the same countries, namely the Netherlands, France and Portugal. Please note the Netherlands which managed to get a better purchase price for the sunflower seeds (Figure no. 5.2.).

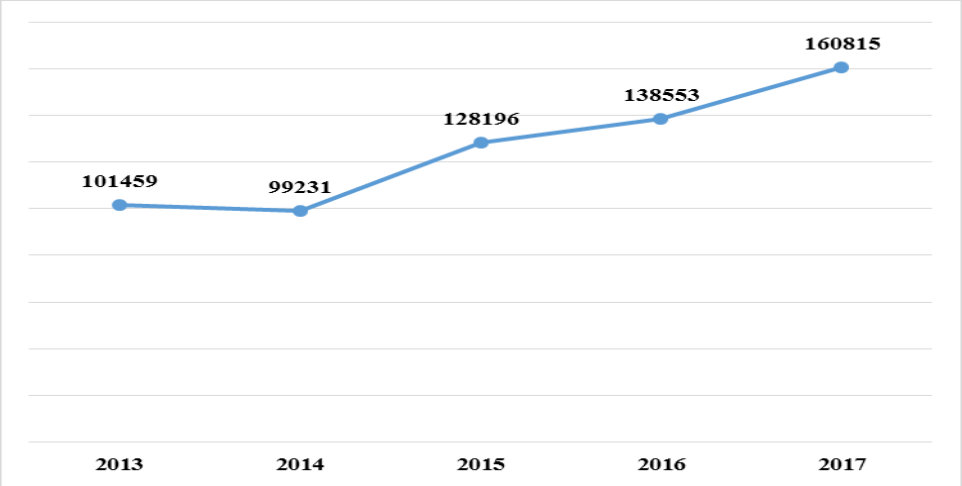
Significant price variations may be seen from one country to another determined by a series of aspects such as the distance for delivery, the power of negotiation and the quality of the purchased product. It must be noted that among the first 3 sunflower importing countries Portugal managed to get the best purchase price, so that in 2017 it purchased the sunflower ton for 588.4 EUR, about 15% less than the purchase price of France (Figure no. 5.3.).



	2013	2014	2015	2016	2017
Total	389,5	342,2	411,3	413,4	392,1
Netherlands	1262,5	1809,9	1159,6	1297,1	1008,9
France	314,8	561,5	421,7	831,9	695,2
Portugal	146,6	338,9	376,4	308,5	588,4

Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.3. Evolution of the sunflower seed export price in the period 2013-2017 (EUR/ton)



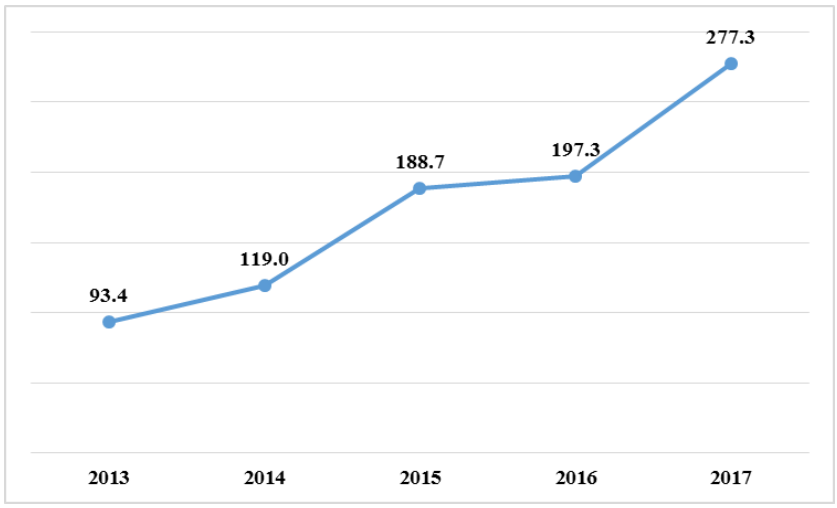
Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.4. Evolution of sunflower seed import (in value terms) in the period 2013-2017 (thousands EUR)

As for the sunflower import, we may notice an ascending trend following the increase of demand for sunflower, but especially for the trading thereof, since the purchase price is lower. In 2017 Romania imported sunflower from countries such as the Republic of Moldova (62.8 million EUR), Bulgaria (30.1 million EUR) or Hungary (14.7 million EUR) (Figure no. 5.4.).

The sunflower import from the Republic of Moldova increased by more than 5 times in value terms from 2013 to 2017 (Figure no. 5.4.).

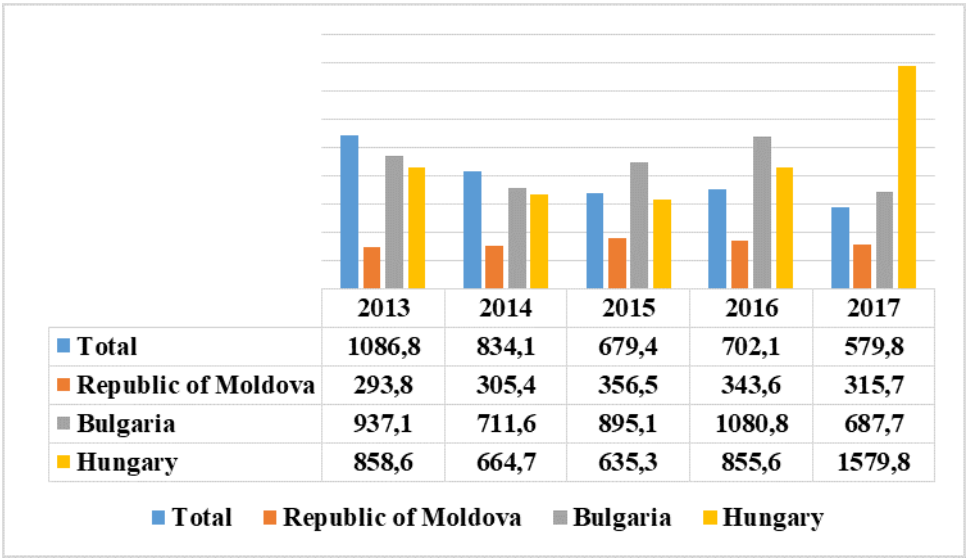
The ascending trend may also be noticed in terms of sunflower import (quantitatively) since it reached the maximum value in 2017, namely more than 277 thousand tons, an increase of more than 197% as compared to 2013. (Figure no. 5.5.).



Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.5. Evolution of sunflower seed import (quantitatively) in the period 2013-2017 (thousands tons)

It must be noted that the average import price for sunflower seeds is much higher than the export price. Following the contracts concluded before harvest, they were forced to buy it from somewhere else in order to meet their engagement, since the production obtained did not measure up to the expected level (Figure no. 5.6.).

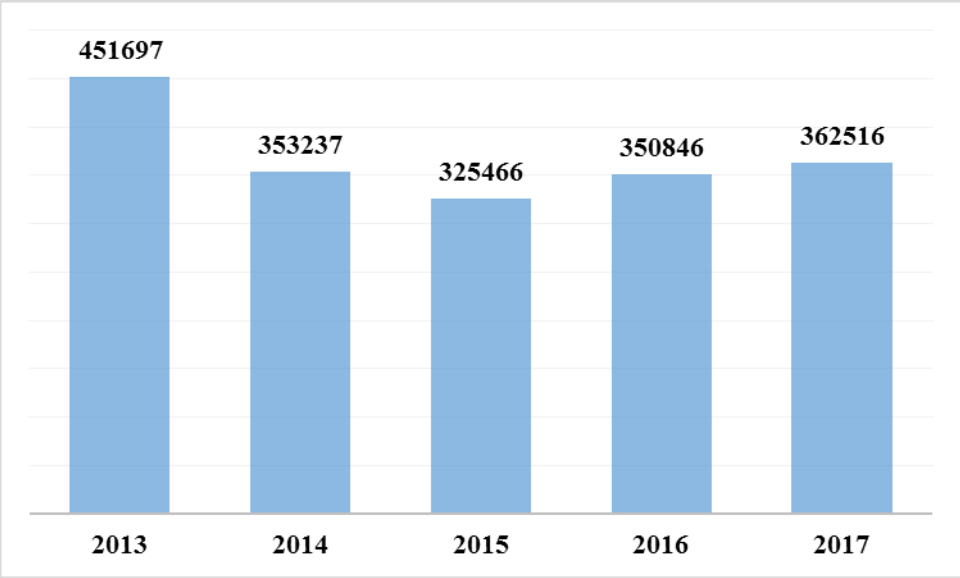


	2013	2014	2015	2016	2017
Total	1086,8	834,1	679,4	702,1	579,8
Republic of Moldova	293,8	305,4	356,5	343,6	315,7
Bulgaria	937,1	711,6	895,1	1080,8	687,7
Hungary	858,6	664,7	635,3	855,6	1579,8

Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.6. Evolution of the sunflower seed import price in the period 2013-2017 (EUR / ton)

Sunflower is one of the products of plant origin for which Romania runs a surplus, since values were positive throughout the analysed period. The highest surplus was registered in 2013, namely over 451,697 million EUR, due to the massive export of sunflower correlated with the low value import (Figure no. 5.7.).



Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.7. Trade balance for sunflower in the period 2013-2017 (thousands EUR)

Potential export markets for Romania

Among the main countries bordering the Black Sea that have a high export potential there are Turkey, Bulgaria, Ukraine, the Republic of Moldova, Armenia and Georgia (Figure no. 5.8.).

The current value of exports to Turkey amounts to 40.3 million USD, in the context in which the export potential might reach 133.6 million USD. In the case of Bulgaria, the current value of exports amounts to 40.9 million USD, in the context in which the export potential might reach 89.5 million USD (Figure no. 5.8.).

Also, in the case of Ukraine, the current value of exports amounts to 10 million USD, in the context in which the export potential might reach 52.9 million USD (Figure no. 5.8.).

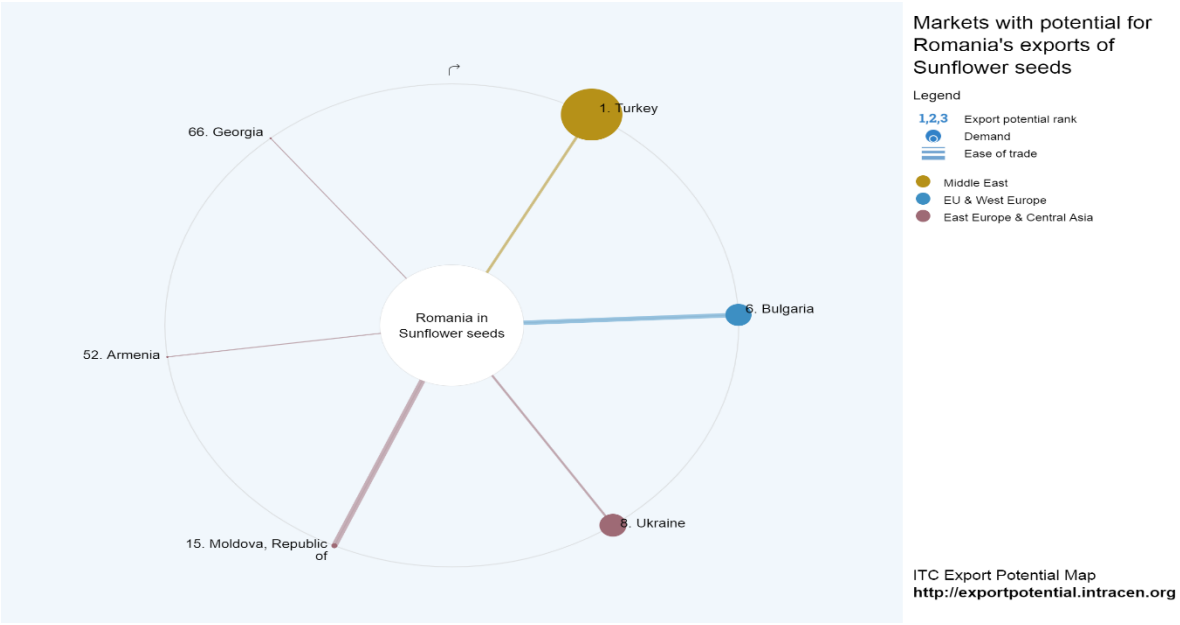


Figure no. 5.8. Potential export markets for Romania in terms of sunflower

When analysing the export potential for sunflower seeds in terms of demand, we may notice the reversal of positions between Bulgaria and Ukraine. Georgia's export potential might also rise to more than 380 thousand USD (Figure no. 5.9.).

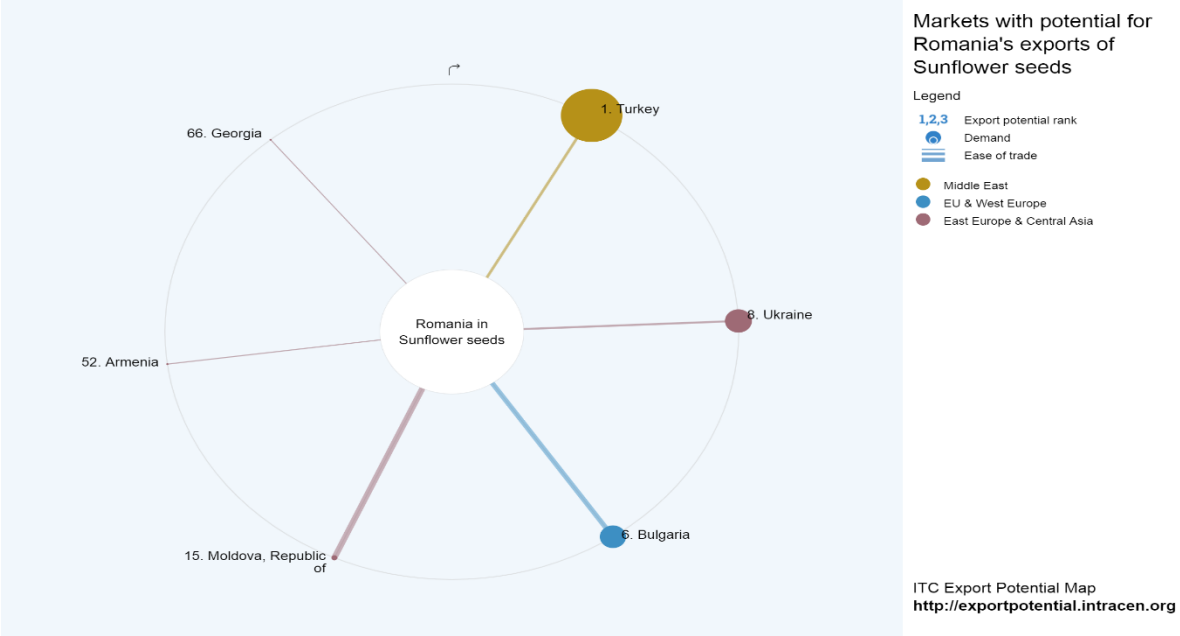


Figure no. 5.9. Potential sunflower export markets for Romania in terms of demand

When analysing the export potential in terms of the ease with which trade can be made, the Republic of Moldova stands out whose export potential might reach 21.6 million USD, in the context in which current exports amount to 9.6 million USD. (Figure no. 5.10.).

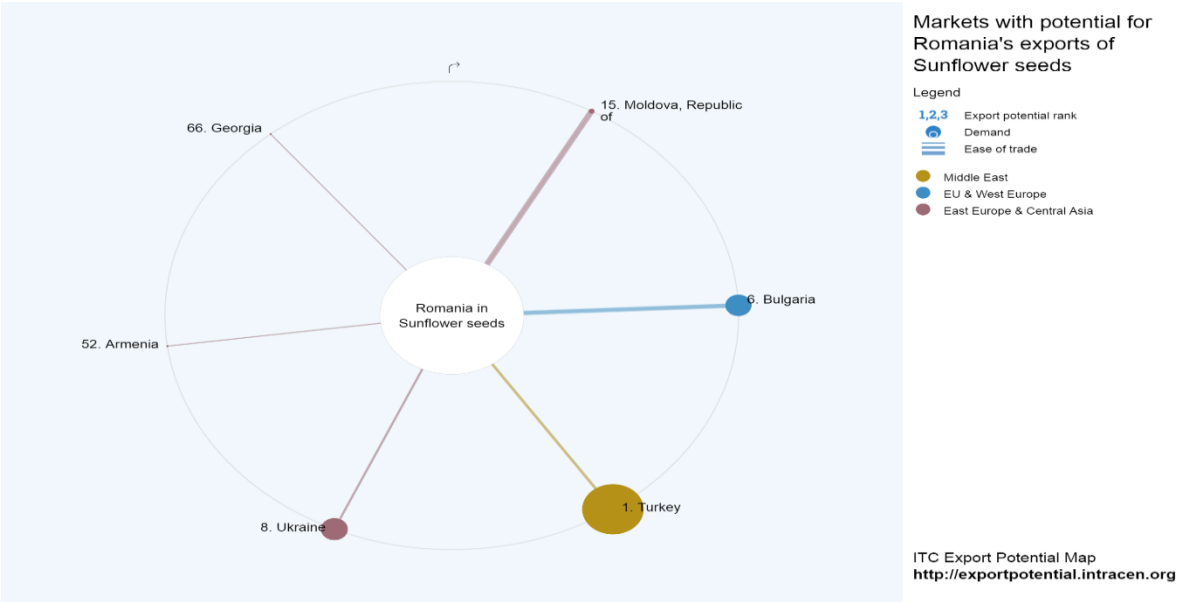
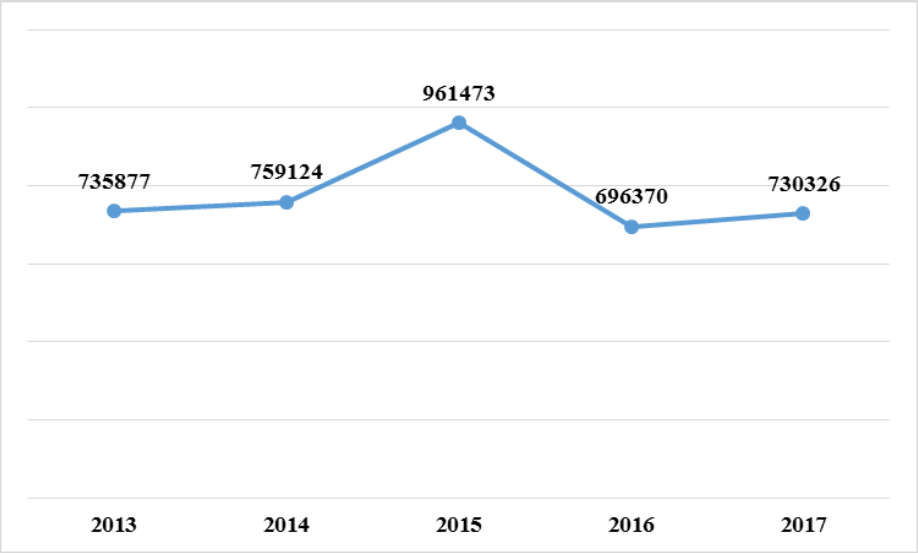


Figure no. 5.10. Potential sunflower export markets for Romania in terms of trade ease

5.3. Corn export and import

The corn export shows an oscillating trend since it is largely influenced by the need of importing countries to purchase sunflower. It must be noted that Romania registered the highest level of exports in 2015, over 961 million EUR, due to the poor yields registered on the continent (Figure no. 5.1.).

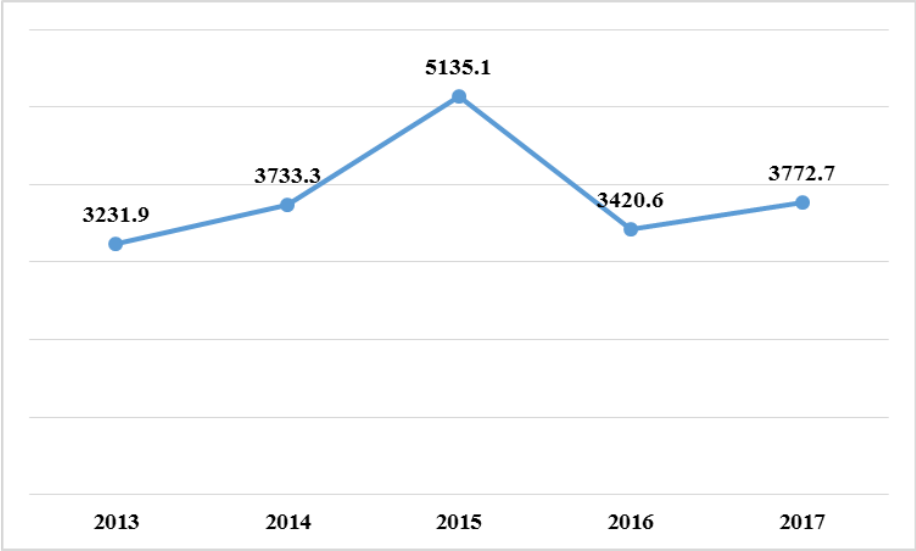


Source: Trade Map database accessed on October 21, 2019;

Figure no. 5.1. Evolution of corn export (in value terms) in the period 2013-2017 (thousands EUR)

In 2017 the main countries to which Romania exported corn were Spain(104.8 million EUR, an increase of 80.3% as compared to 2013), Italy (89 million EUR, an increase of 130% as compared to 2013) and Turkey (76.5 million EUR, an increase of 209% as compared to 2013).

At the same time the corn export (from the quantitative viewpoint) has significant variations from year to year, an aspect influenced by the yield registered in Romania (Figure no. 5.2.). The first countries in the list of countries which import corn (quantitatively) from Romania in 2017 are the same countries, namely Spain, Italy and Turkey. Please note Turkey whose corn imports from Romania increased by 270% in 2017 as compared to 2013 (Figure no. 5.2.).

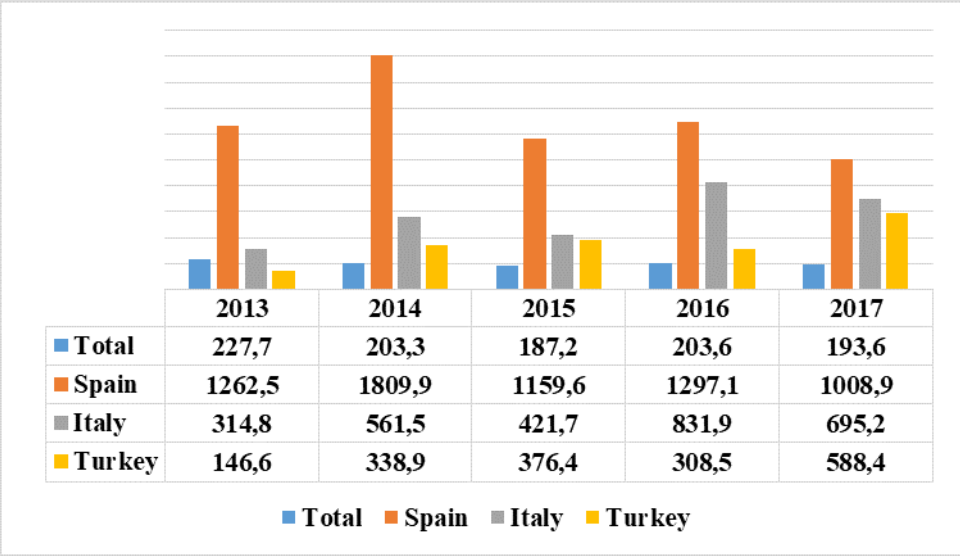


Source: Trade Map database accessed on October 21, 2019;

Figure no. 5.2. Evolution of corn export (quantitatively) in the period 2013-2017 (thousands EUR)

Significant price variations may be seen from one country to another determined by a series of aspects such as the distance for delivery, the power of negotiation and the quality of the purchased product.

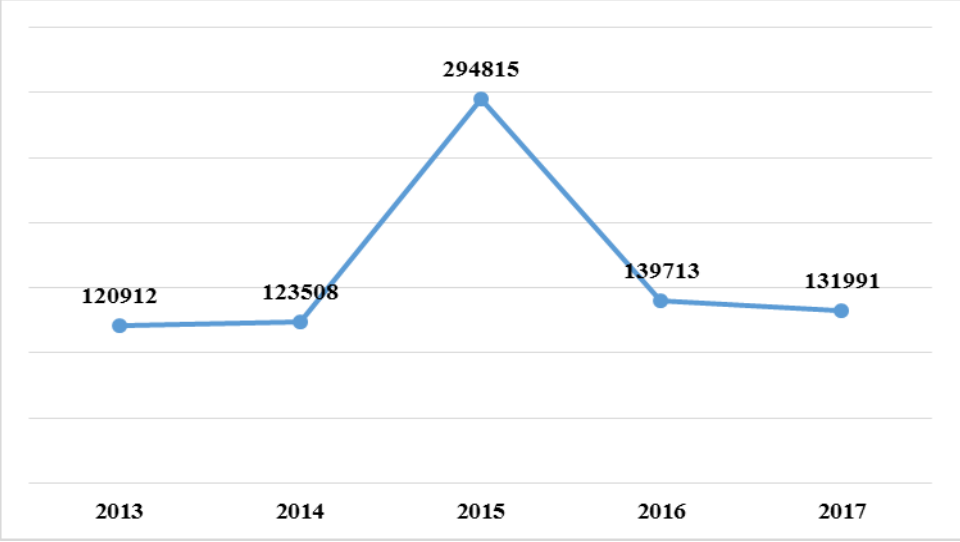
Among the first 3 corn importing countries, in 2017 Spain purchased corn from Romania for the approximate price of 1,000 EUR per ton, a decrease of about 20% as compared to the price in 2013 (Figure no. 5.3.).



	2013	2014	2015	2016	2017
Total	227,7	203,3	187,2	203,6	193,6
Spain	1262,5	1809,9	1159,6	1297,1	1008,9
Italy	314,8	561,5	421,7	831,9	695,2
Turkey	146,6	338,9	376,4	308,5	588,4

Source: Trade Map database accessed on October 21, 2019;

Figure no. 5.3. Evolution of the corn export price in the period 2013-2017 (EUR/ton)

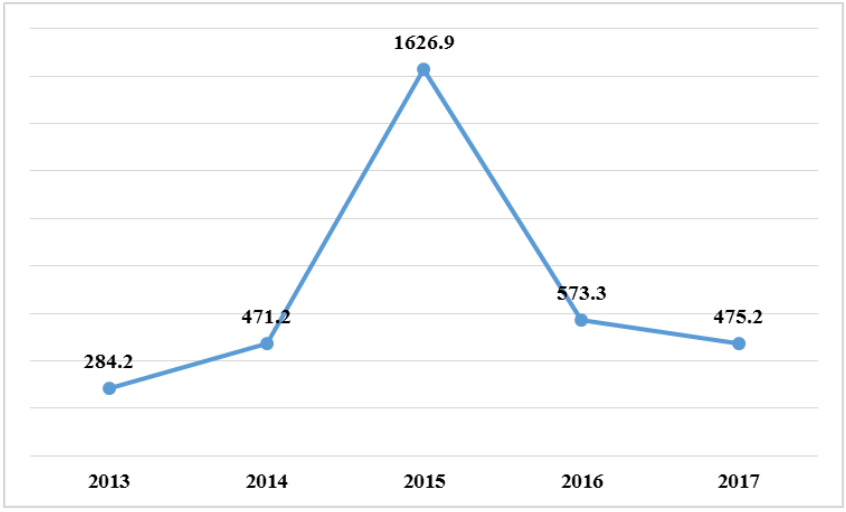


Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.4. Evolution of corn import (in value terms) in the period 2013-2017 (thousands EUR)

As for the corn import, we may notice an oscillating trend with a maximum value in 2015, namely over 294 million EUR. In 2017 Romania imported corn from countries such as Hungary (83.8 million EUR), France (21.4 million EUR) or Bulgaria (6.9 million EUR) (Figure no. 5.4.).

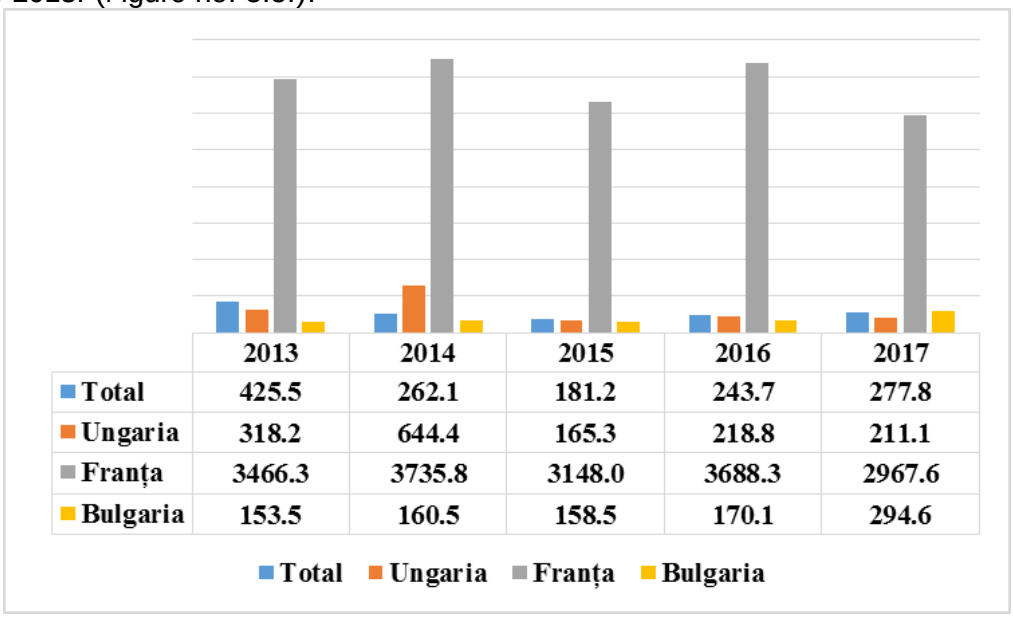
At the same time the corn import from Hungary increased by 137% in 2017 as compared to 2013 (Figure no. 5.4.).



Source: Trade Map database accessed on October 21, 2019;

Figure no. 5.5. Evolution of corn import (quantitatively) in the period 2013-2017 (thousands tons)

The oscillating trend may also be noticed in terms of corn import (quantitatively) since it reached the maximum value in 2015, namely more than 1.6 million tons, an increase of more than 472% as compared to 2013. (Figure no. 5.5.).

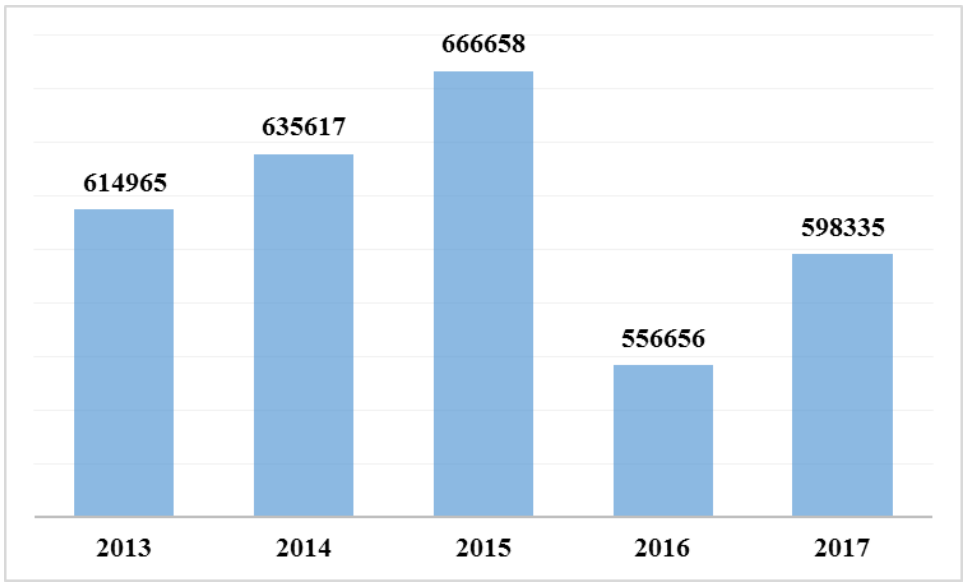


	2013	2014	2015	2016	2017
Total	425.5	262.1	181.2	243.7	277.8
Ungaria	318.2	644.4	165.3	218.8	211.1
Franța	3466.3	3735.8	3148.0	3688.3	2967.6
Bulgaria	153.5	160.5	158.5	170.1	294.6

Source: Trade Map database accessed on October 21, 2019;

Figure no. 5.6. Evolution of the corn import price in the period 2013-2017 (EUR/ton)

It must be noted that the average import price for corn is much higher than the export price. Mention must be made of the high price for which corn is imported from France, so that in 2017 it was 2967 EUR/ton (Figure no. 5.6.).



Source: Trade Map database accessed on October 21, 2019;

Figure no. 5.7. Trade balance for corn in the period 2013-2017 (thousands EUR)

Corn is one of the products of plant origin for which Romania runs a surplus, since values were positive throughout the analysed period. The highest surplus was registered in 2015, namely over 66,658 million EUR, due to the massive export of corn correlated with the low value import (Figure no. 5.7.).

Potential export markets for Romania

Among the main countries bordering the Black Sea that have an export potential there are Turkey, Bulgaria, Georgia, Armenia, Ukraine and the Republic of Moldova. (Figure no. 5.8.).

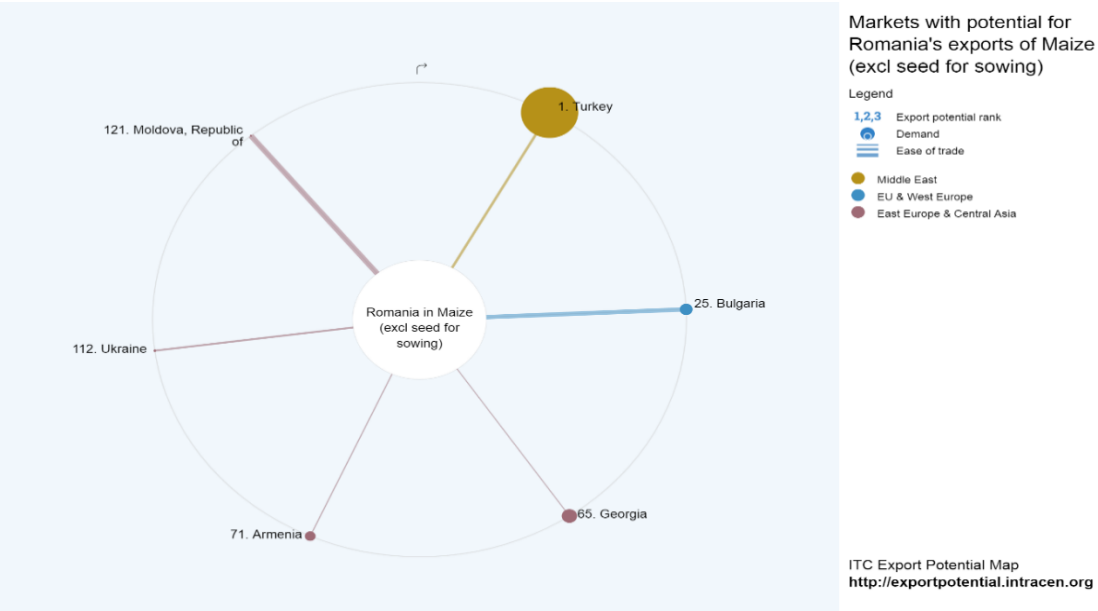


Figure no. 5.8. Potential export markets for Romania in terms of corn

The current value of exports to Turkey amounts to 54.4 million USD, in the context in which the export potential might reach 121.8 million USD. In the case of Bulgaria, the current value of exports amounts to 5.8 million USD, in the context in which the export potential might reach 9.2 million USD (Figure no. 5.8.).

When analysing the export potential for corn in terms of demand, we may notice the reversal of positions between Bulgaria and Georgia. Georgia's export potential might also rise to more than 300 thousand USD (Figure no. 5.8.). (Figure no. 5.9.).

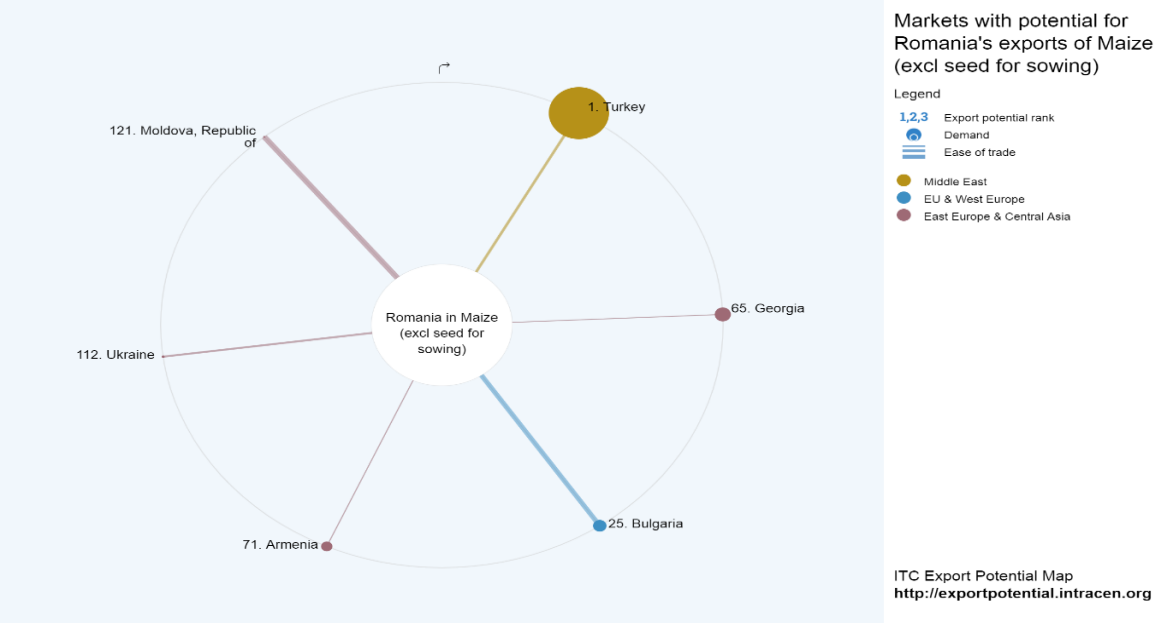


Figure no. 5.9. Potential corn export markets for Romania in terms of demand

When analysing the export potential in terms of the ease with which trade can be made, the Republic of Moldova stands out whose export potential is insignificant, namely only 21 thousand USD (Figure no. 5.10.).

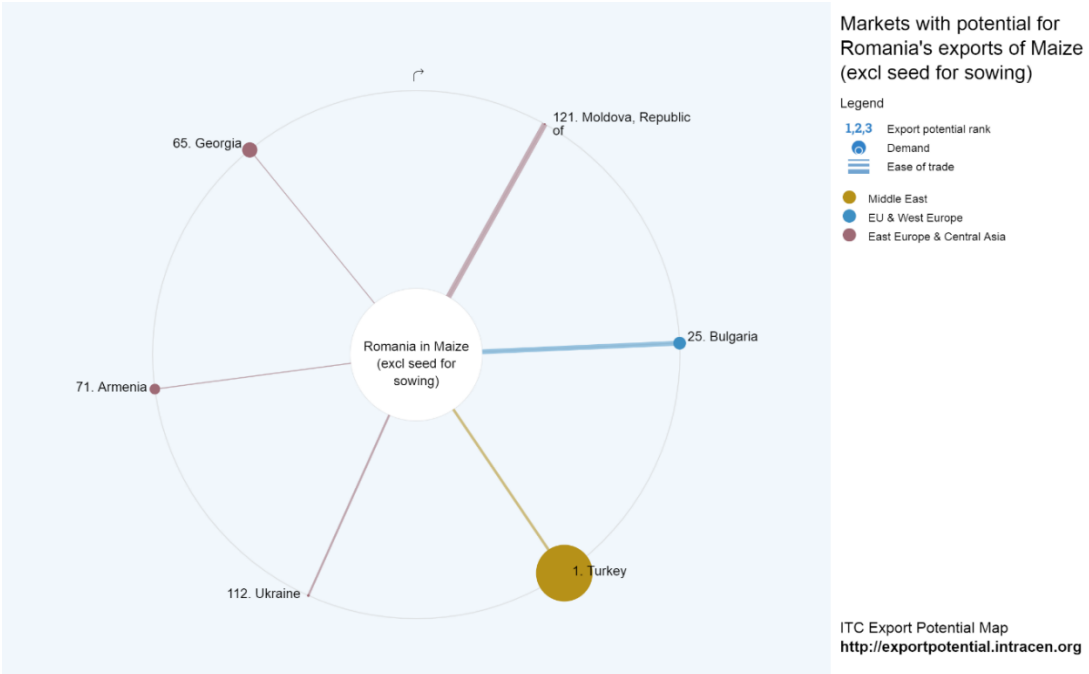
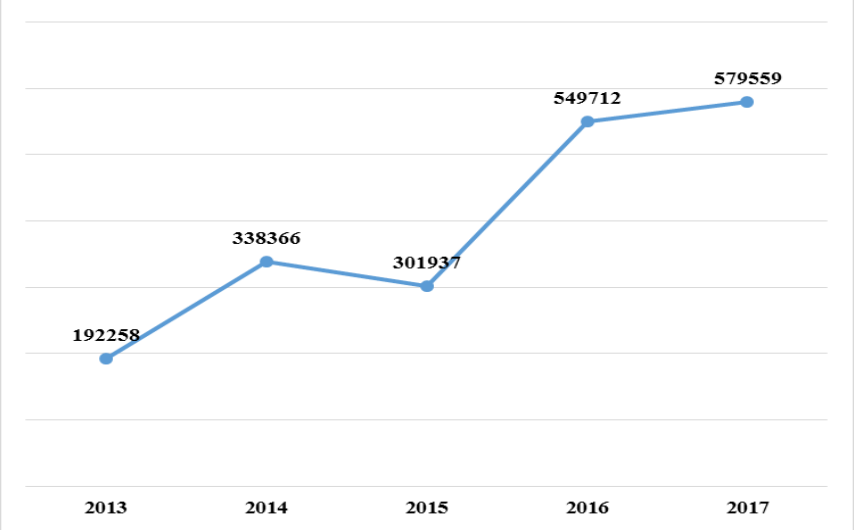


Figure no. 5.10. Potential corn export markets for Romania in terms of trade ease

5.4. Rape export and import

The rape export shows an ascending trend influenced by the higher and higher demand for rape in the international markets. In the period under analysis, Romania registered the highest exports from the value viewpoint, in 2017 the value reaching 579.6 million EUR (Figure no. 5.1.).



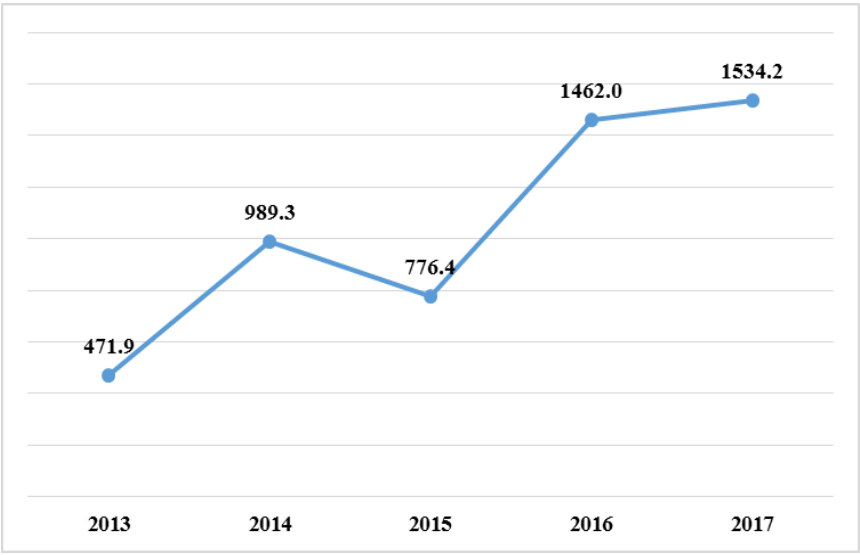
Source: Trade Map database accessed on November 1, 2019;

Figure no. 5.1. Evolution of rape export (in value terms) in the period 2013-2017 (thousands EUR)

In 2017 the main countries to which Romania exported rape were Belgium (177 million EUR, an increase of 140% as compared to 2013), the Netherlands (172 million EUR, an increase of more than 206% as compared to 2013) and Germany (84.4 million EUR, an increase of more than 550% as compared to 2013) (Figure no. 5.1.).

At the same time the rape export (from the quantitative viewpoint) has an ascending trend, an aspect influenced by the yield registered in Romania (Figure no. 5.2.).

The first countries in the list of countries which imported rape (quantitatively) from Romania in 2017 are the same countries, namely Belgium, the Netherlands and Germany. As for Belgium, there was an increase of about 160% as compared to the quantity imported in 2013 (Figure no. 5.2.).

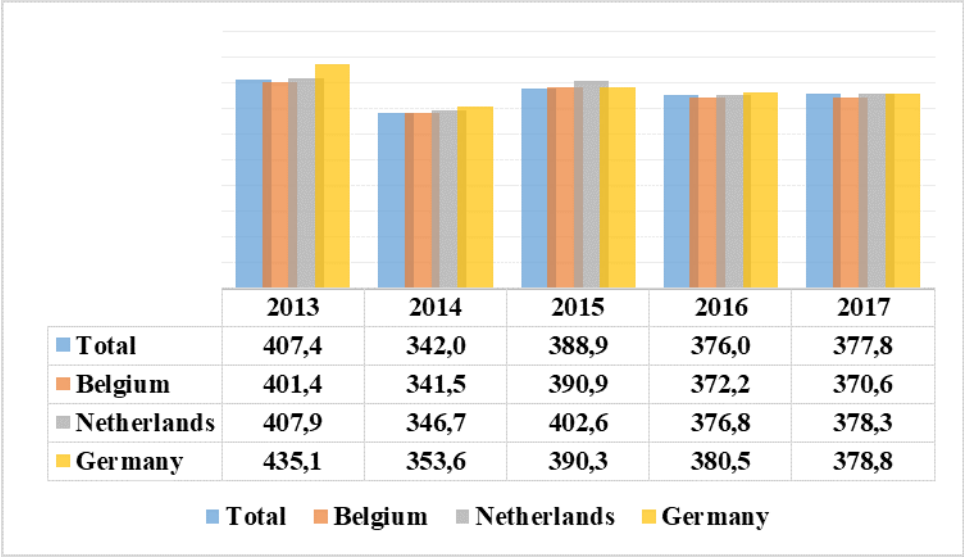


Source: Trade Map database accessed on November 1, 2019;

Figure no. 5.2. Evolution of rape export (quantitatively) in the period 2013-2017 (thousands tons)

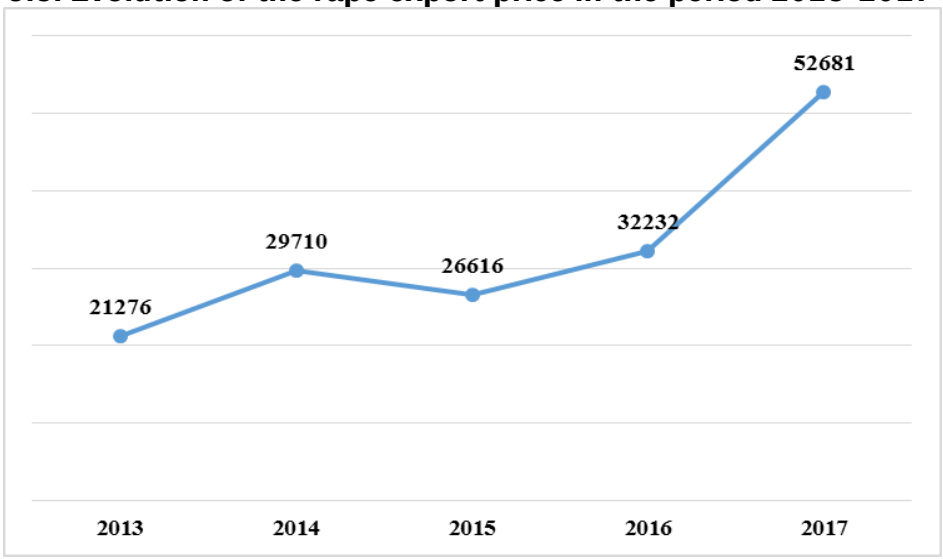
It must be noted that in 2014 the lowest export price for rape was 342 EUR/ton as compared to 2013 when it was registered the highest export price of 407.4 EUR/ton for the period under analysis (Figure no. 5.3.).

In 2017 the purchase price was somehow steady, with insignificant variations ranging between 370.6 EUR/ton and 378.8 EUR/ton (Figure no. 5.3.).



Source: Trade Map database accessed on November 1, 2019;

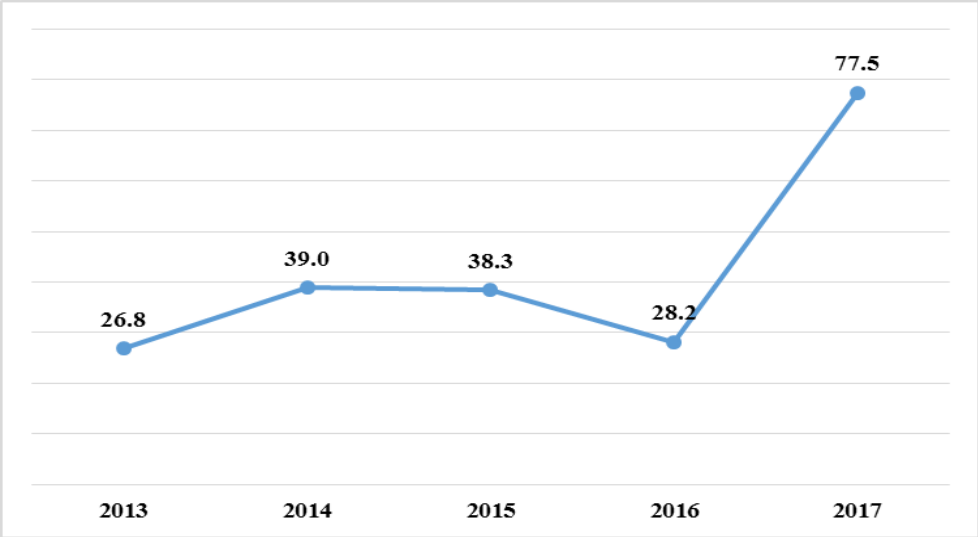
Figure no. 5.3. Evolution of the rape export price in the period 2013-2017 (EUR/ton)



Source: Trade Map database accessed on November 1, 2019;

Figure no. 5.4. Evolution of rape import (in value terms) in the period 2013-2017 (thousands EUR)

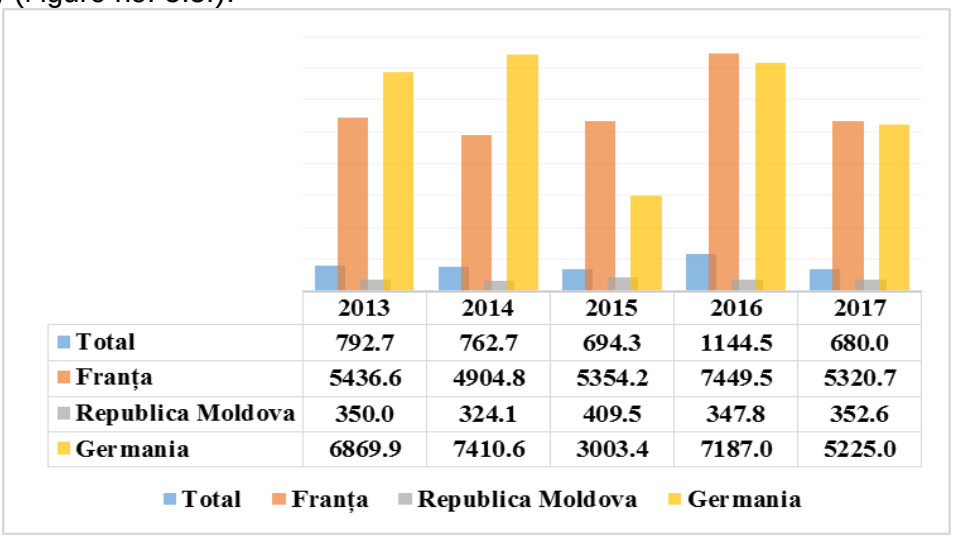
As for the rape import, it had an ascending trend, except for 2014, the maximum value being reached in 2017 when the total value of imports exceeded 52.6 million EUR, an increase of 147% as compared to the value of imports of 2013 (Figure no. 5.4.).



Source: Trade Map database accessed on November 1, 2019;

Figure no. 5.5. Evolution of rape import (quantitatively) in the period 2013-2017 (thousands tons)

Year 2017 registered the highest rape imports (quantitatively), Romania importing from countries such as France (3.8 thousand tons), the Republic of Moldova (34.4 thousand tons) and Germany (1.1 thousand tons) (Figure no. 5.5.).

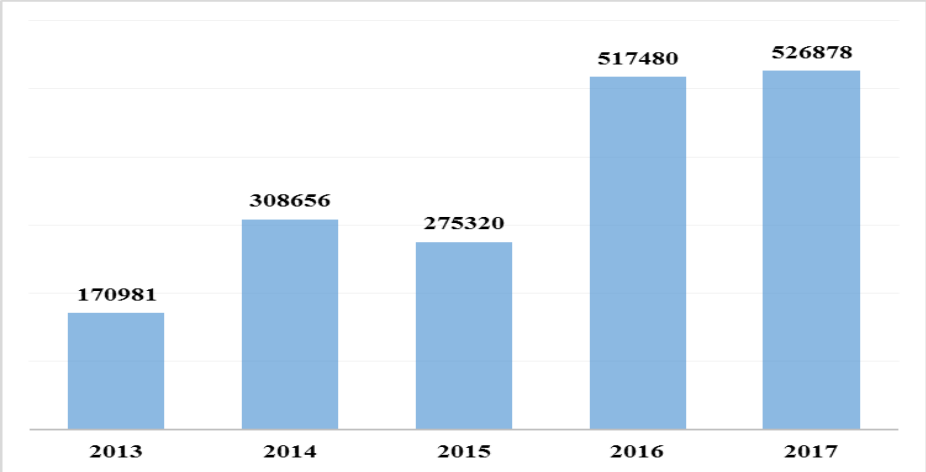


	2013	2014	2015	2016	2017
Total	792.7	762.7	694.3	1144.5	680.0
Franța	5436.6	4904.8	5354.2	7449.5	5320.7
Republica Moldova	350.0	324.1	409.5	347.8	352.6
Germania	6869.9	7410.6	3003.4	7187.0	5225.0

Source: Trade Map database accessed on November 1, 2019;

Figure no. 5.6. Evolution of the rape import price in the period 2013-2017 (EUR/ton)

We must mention that the average import price for rape was almost double as compared to the Romanian export price, in the context in which in 2017 Romania imported rape from France for a price of 5320 EUR/ton (Figure no. 5.6.).



Source: Trade Map database accessed on November 1, 2019;

Figure no. 5.7. Trade balance for rape in the period 2013-2017 (thousands EUR)

Rape is one of the products of plant origin for which Romania runs a surplus, since values were positive throughout the analysed period. The highest surplus was registered in 2017, namely over 526 million EUR, due to the massive export of rape (Figure no. 5.7.).

Potential export markets for Romania

As for Romania's export potential to the Black Sea region, we may notice that our country does not have an export potential for Armenia and Georgia.

Among the countries in the Black Sea region where Romania might export rape having a low content of erucic acid there are Turkey, Bulgaria, Ukraine and the Republic of Moldova (Figure no. 5.8.).

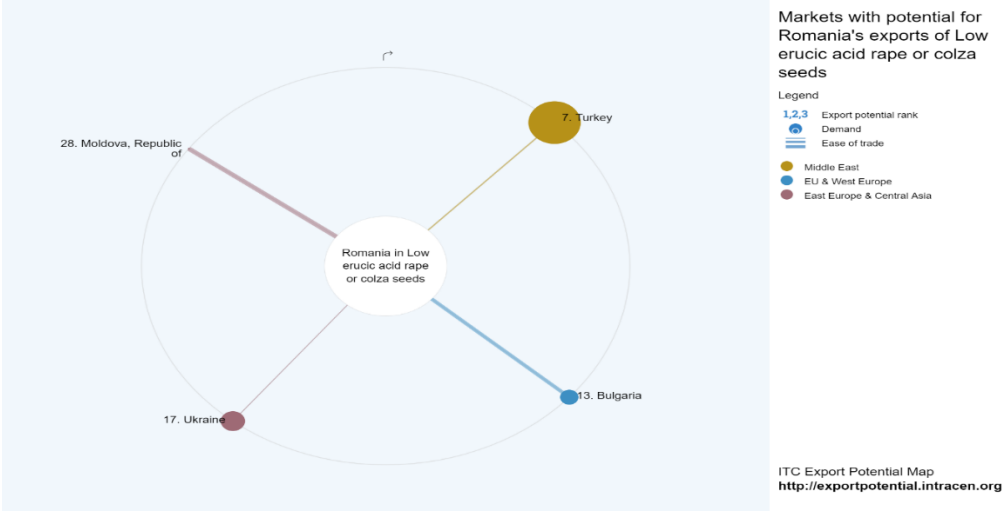


Figure no. 5.8. Potential export markets for Romania in terms of rape with a low content of erucic acid

The current value of exports to Turkey in terms of rape with a low content of erucic acid amounts to 20.6 million USD, in the context in which the export potential might reach 24.8 million USD. In the case of the Republic of Moldova, the current value of exports amounts to 164.1 million USD, in the context in which the export potential might reach 659.8 million USD (Figure no. 5.8.).

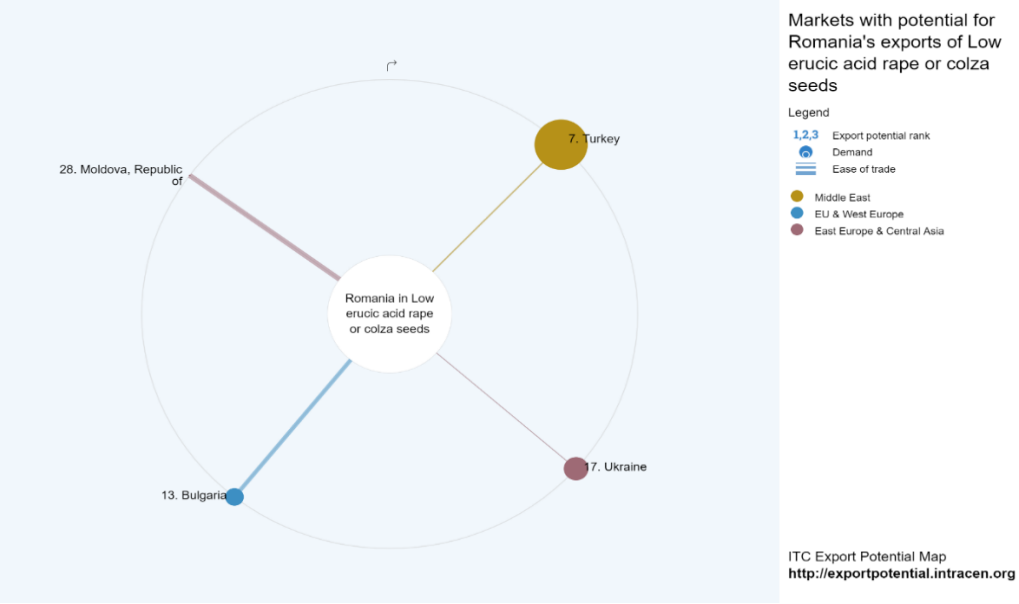


Figure no. 5.9. Potential export markets for Romania in terms of rape with a low content of erucic acid according to demand

Also, in the case of Ukraine, the current value of exports amounts to 4.1 million EUR, in the context in which the export potential might reach 1.2 million EUR (Figure no. 5.8.).

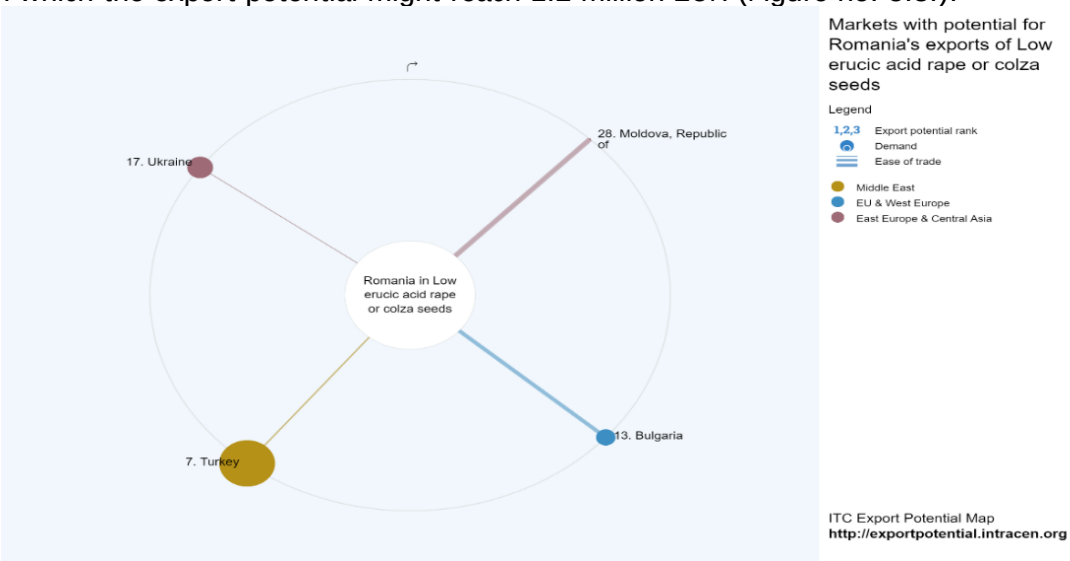


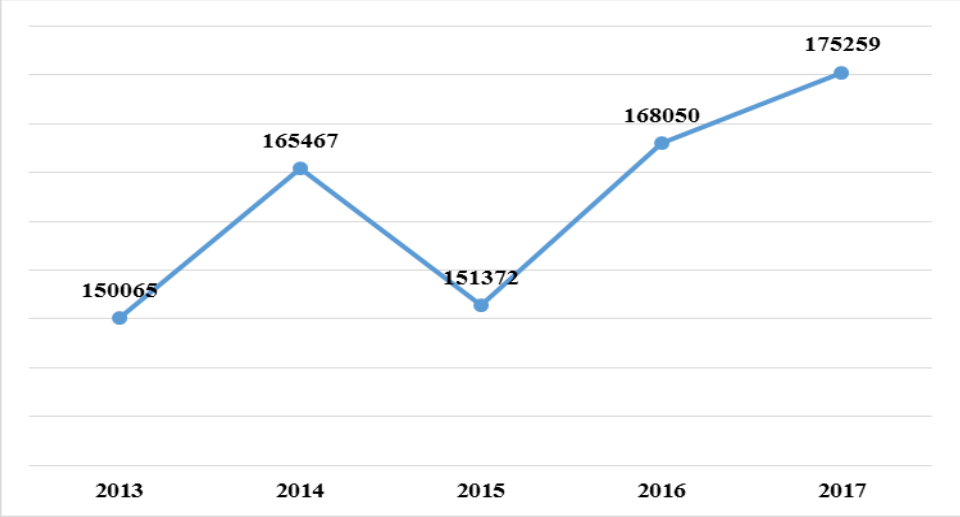
Figure no. 5.10. Potential export markets for Romania in terms of rape with a low content of erucic acid according to trade ease

When analysing the export potential for rape with a low content of erucic acid according to demand, we may notice a change of classification, the countries being positioned as follows: Turkey, Ukraine, Bulgaria, and the Republic of Moldova (Figure no. 5.9.).

Rape export potential must be put to best use in terms of the trade with Bulgaria where a maximum rape export potential amounting to 8.8 million EUR may be reached (Figure no. 5.10).

5.5. Sheep and goats export and import

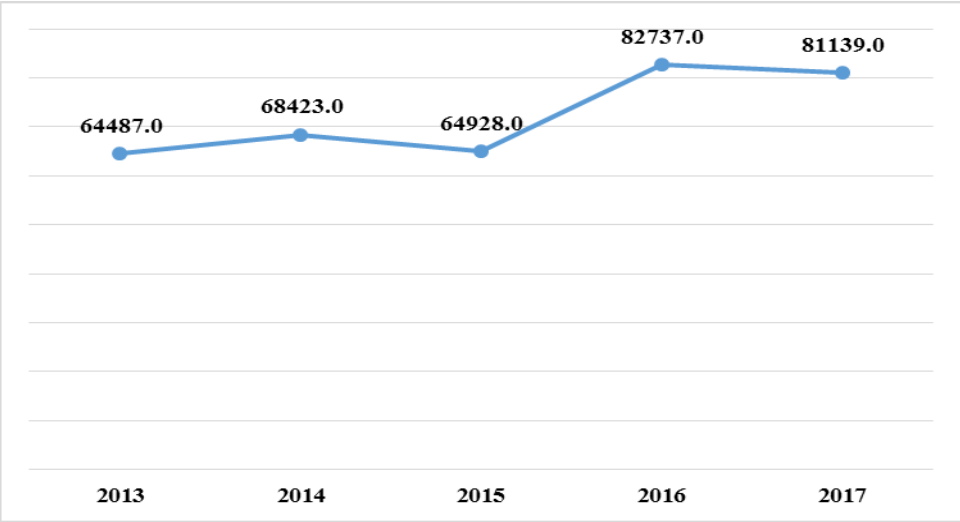
Sheep and goat export had an oscillating trend, with a minimum value registered in 2013 (150 million EUR) and a maximum value in 2017 (175 million EUR) representing an increase of 16.8% (Figure no. 5.1.).



Source: Trade Map database accessed on November 3, 2019;

Figure no. 5.1. Evolution of sheep and goat export (in value terms) in the period 2013-2017 (thousands EUR)

In 2017 the main countries to which Romania exported sheep and goats were Libya (52.7 million EUR, a decrease of 35.6% as compared to 2013), Jordan (45.4 million EUR, an increase of 43% as compared to 2013) and Greece (20.7 million EUR, an increase of 32% as compared to 2013) (Figure no. 5.1.).



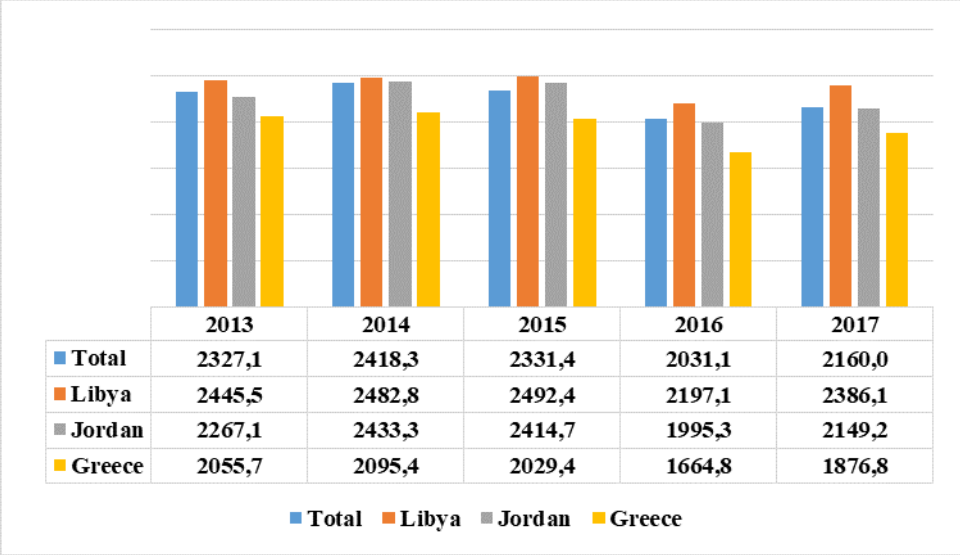
Source: Trade Map database accessed on November 2, 2019;

Figure no. 5.2. Evolution of sheep and goat export (quantitatively) in the period 2013-2017 (tons)

The first countries in the list of countries which imported sheep and goats (quantitatively) from Romania in 2017 are the same countries, namely Libya, Jordan and Greece. Please note Greece which imported sheep and goats, in the context in which it is one of the largest producers, an aspect that may be due to the honouring of their commitments (Figure no. 5.2.).

Significant price variations may be seen from one country to another determined by a series of aspects such as the distance for delivery, the power of negotiation and the quality of the purchased product.

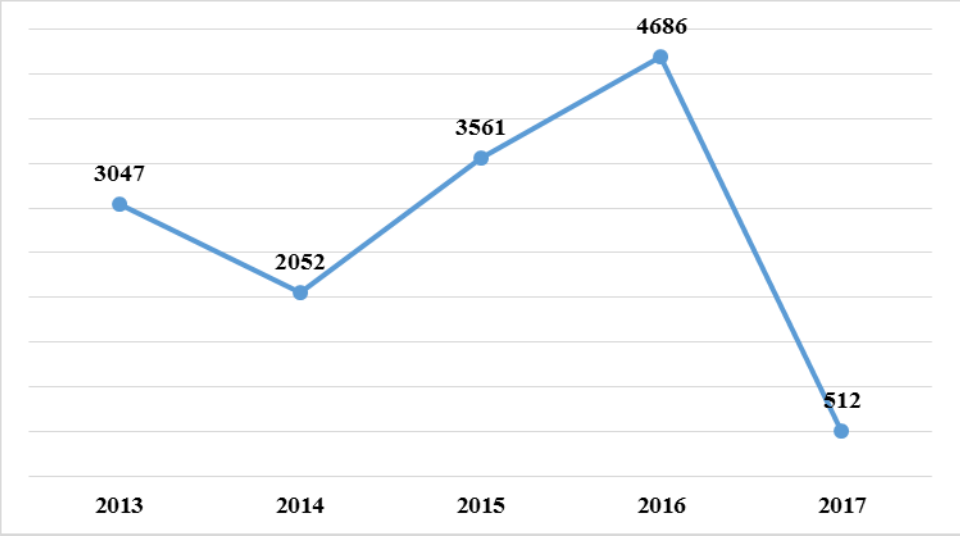
It must be noted that among the first 3 countries importing sheep and goats, Greece got the best purchase price for sheep and goats, an aspect that may be explained by the short transport distance with low risks in terms of mortality (Figure no. 5.3.).



Source: Trade Map database accessed on November 3, 2019;

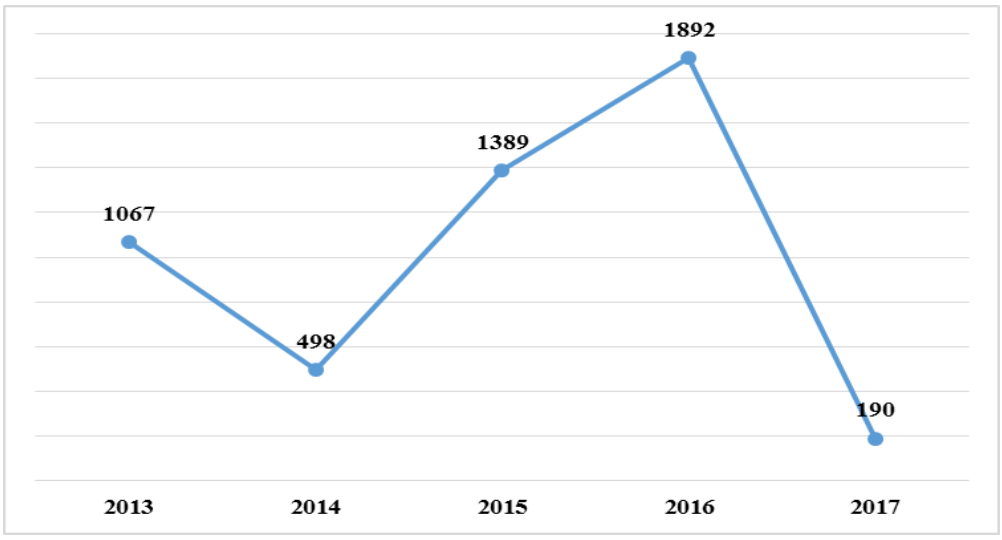
Figure no. 5.3. Evolution of sheep and goat export price in the period 2013-2017 (EUR/ton)

As for the sheep and goat import, it had an oscillating trend, but we may notice that 2017 registered the lowest imports amounting to only 512 thousand EUR, a decrease of more than 83% as compared to the imports of 2013. In 2017 Romania imported sheep and goats from countries such as Poland (150 thousand EUR), Hungary (137 thousand EUR) or Turkey (73 thousand EUR) (Figure no. 5.4.).



Source: Trade Map database accessed on November 3, 2019;

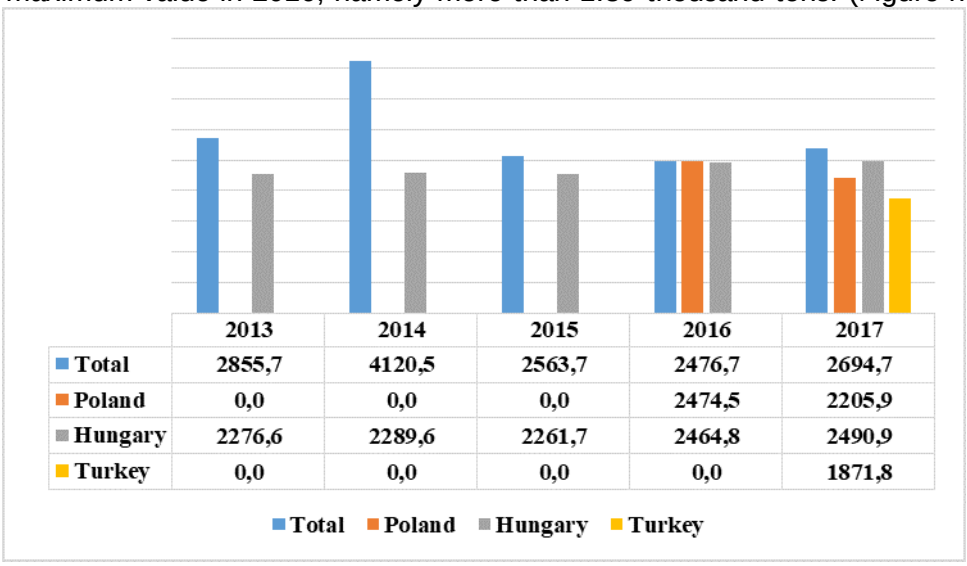
Figure no. 5.4. Evolution of sheep and goat import (in value terms) in the period 2013-2017 (thousands EUR)



Source: Trade Map database accessed on November 3, 2019;

Figure no. 5.5. Evolution of sheep and goat import (quantitatively) in the period 2013-2017 (thousands tons)

The oscillating trend may also be noticed in terms of sheep and goat import (quantitatively) since it reached the maximum value in 2016, namely more than 1.89 thousand tons. (Figure no. 5.5.).

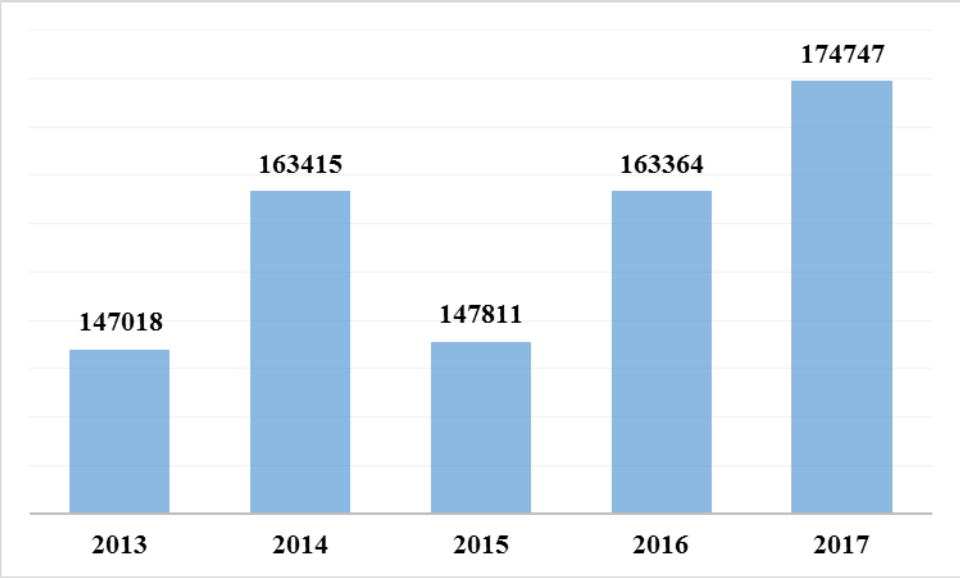


	2013	2014	2015	2016	2017
Total	2855,7	4120,5	2563,7	2476,7	2694,7
Poland	0,0	0,0	0,0	2474,5	2205,9
Hungary	2276,6	2289,6	2261,7	2464,8	2490,9
Turkey	0,0	0,0	0,0	0,0	1871,8

Source: Trade Map database accessed on November 3, 2019;

Figure no. 5.6. Evolution of sheep and goat import price in the period 2013-2017 (EUR / ton)

It must be noted that the average import price for sheep and goats was much lower than the export price, except for the purchases from Turkey where the ton of sheep and goats was in 2017 of 1871.8 EUR (Figure no. 5.6.).



Source: Trade Map database accessed on November 3, 2019;

Figure no. 5.7. Trade balance for sheep and goats in the period 2013-2017 (thousands EUR)

Sheep and goats are one of the products of animal origin for which Romania runs a surplus, since values were positive throughout the analysed period. The highest surplus was registered in 2017, namely over 174 million EUR, due to the massive export of sheep and goats correlated with the low value import (Figure no. 5.7.).

Potential export markets for Romania

Among the countries in the Black Sea region having an export potential for sheep to Romania there are: Bulgaria, Turkey, Ukraine and Georgia. (Figure no. 5.8.).

There are countries in the Black Sea Region where the export potential for sheep coming from Romania is insignificant such as: the Republic of Moldova and Armenia.

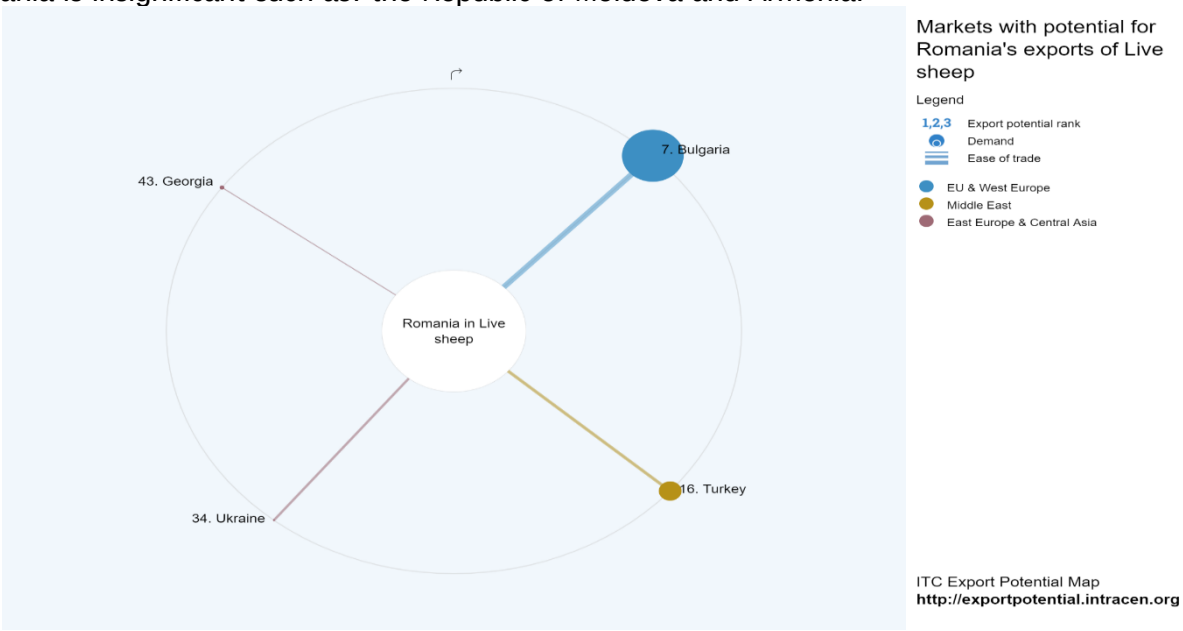


Figure no. 5.8. Potential export markets for Romania in terms of sheep

The current value of exports to Bulgaria amounts to 9.7 million USD, in the context in which the export potential might reach 17.4 million USD. In the case of Turkey, the current value of exports

amounts to 2.9 million USD, in the context in which the export potential might reach 5.5 million USD (Figure no. 5.8.).

Georgia also has a quite significant export potential for sheep, the sheep market having an export potential of 80.2 million USD. Romania does no currently export sheep to Georgia (Figure no. 5.8.).

When analysing the sheep export potential in terms of demand, we may notice a repositioning of the classification, the most important countries having a high export potential in terms of demand being Bulgaria, Turkey, Georgia and Ukraine (Figure no. 5.9.).

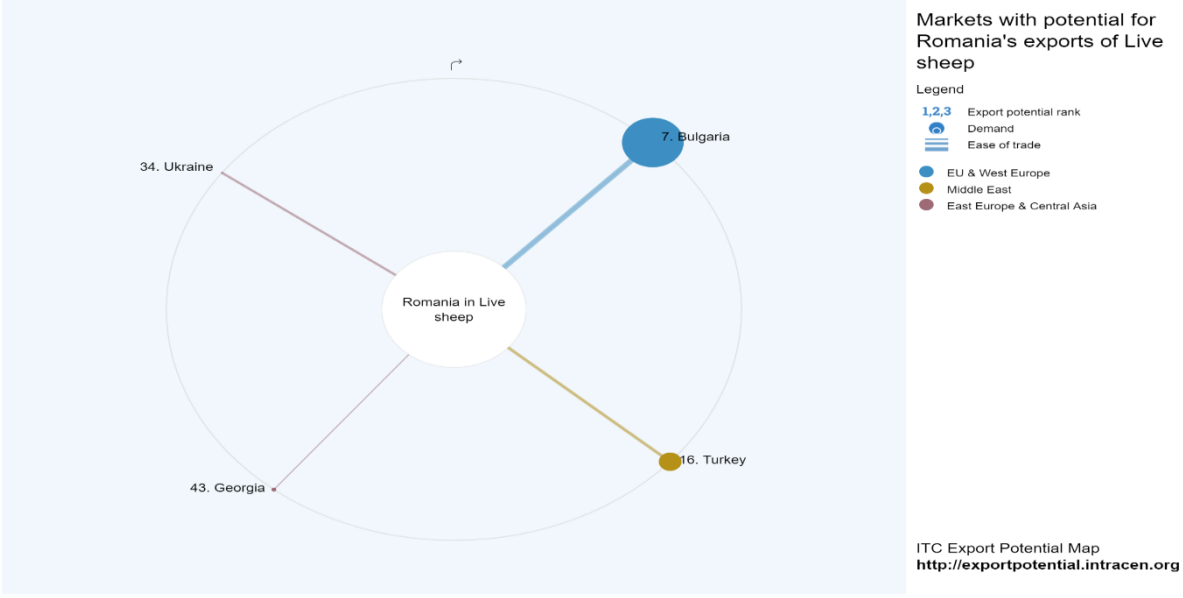


Figure no. 5.9. Potential sheep export markets for Romania in terms of demand

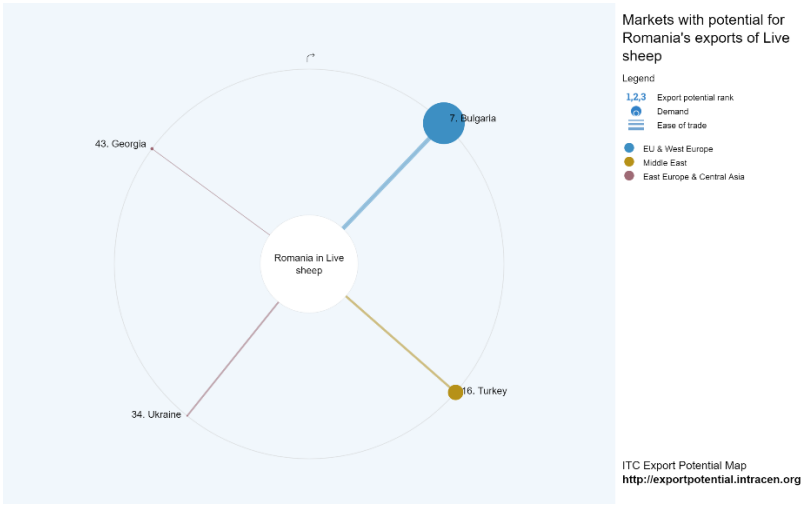


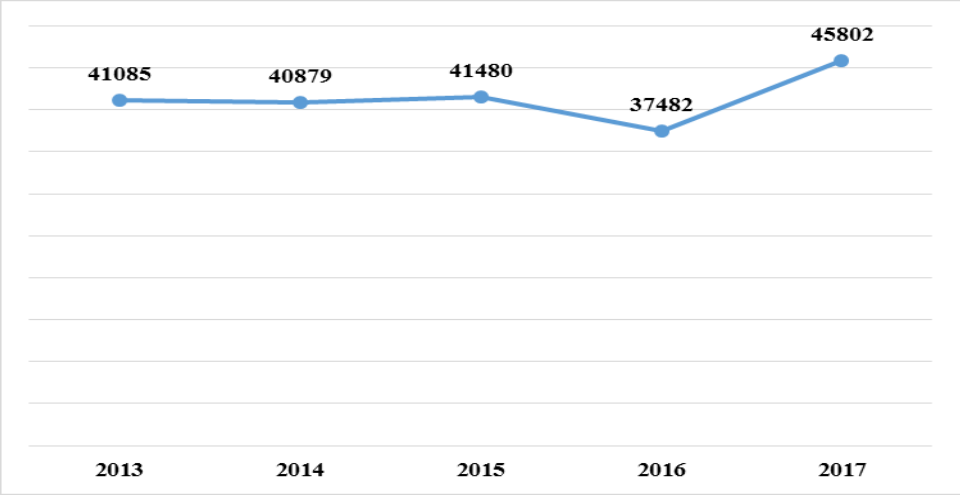
Figure no. 5.10. Potential sheep export markets for Romania in terms of trade ease

When analysing the export potential in terms of the ease with which trade can be made, Ukraine stands out whose export potential might reach 222.7 million USD, in the context in which current exports amount to zero (Figure no. 5.10.).

Georgia is also a country with a significant export potential while the sheep trade between Romania and Georgia might amount to 80.2 million USD. Romania does no currently export sheep to Georgia (Figure no. 5.10.).

5.6. Honey export and import

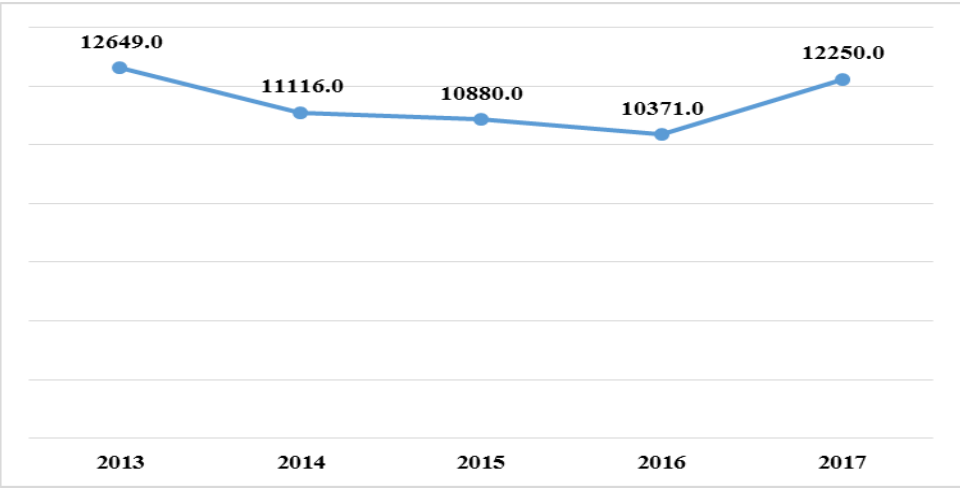
Honey export had a linear trend, except the last two years of the period under analysis. It must be noted that Romania registered the highest level of imports in 2017, over 45.8 million EUR, due to the increase of demand for apiculture products (Figure no. 5.1.). In 2017 the main countries to which Romania exported honey were Germany (14.35 million EUR, a decrease of 35.5% as compared to 2013), Italy (7.9 million EUR, an increase of 55% as compared to 2013) and Japan (5.5 million EUR, an increase of 360% as compared to 2013) (Figure no. 5.1.).



Source: Trade Map database accessed on November 2, 2019;

Figure no. 5.1. Evolution of honey export (in value terms) in the period 2013-2017 (thousands EUR)

The first countries in the list of countries which imported honey (quantitatively) from Romania in 2017 are the same countries, namely Germany, Italy and Japan. Please note Japan which doubled the quantity of honey imported from Romania as compared to 2016 (Figure no. 5.2.).

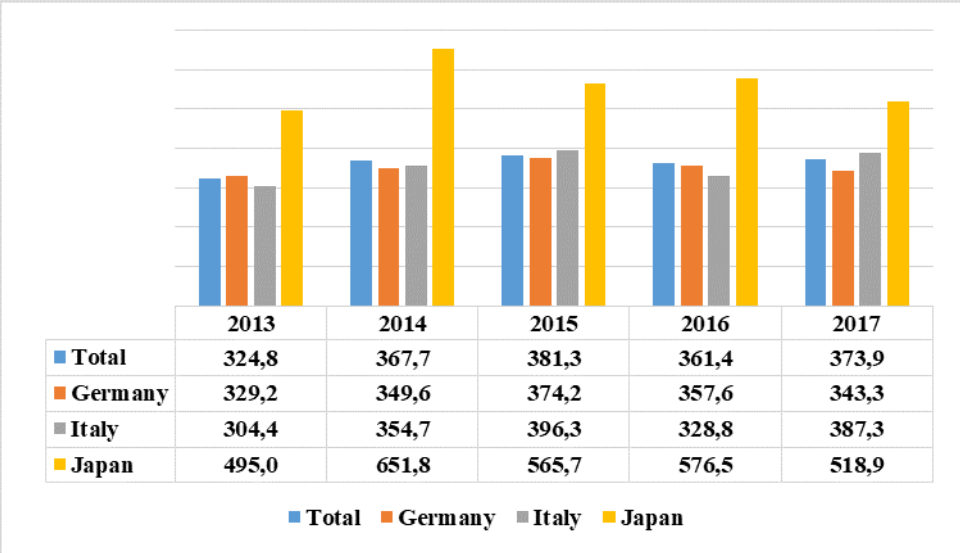


Source: Trade Map database accessed on November 2, 2019;

Figure no. 5.2. Evolution of honey export (quantitatively) in the period 2013-2017 (tons)

Significant price variations may be seen from one country to another determined by a series of aspects such as the distance for delivery, the power of negotiation and the quality of the purchased product.

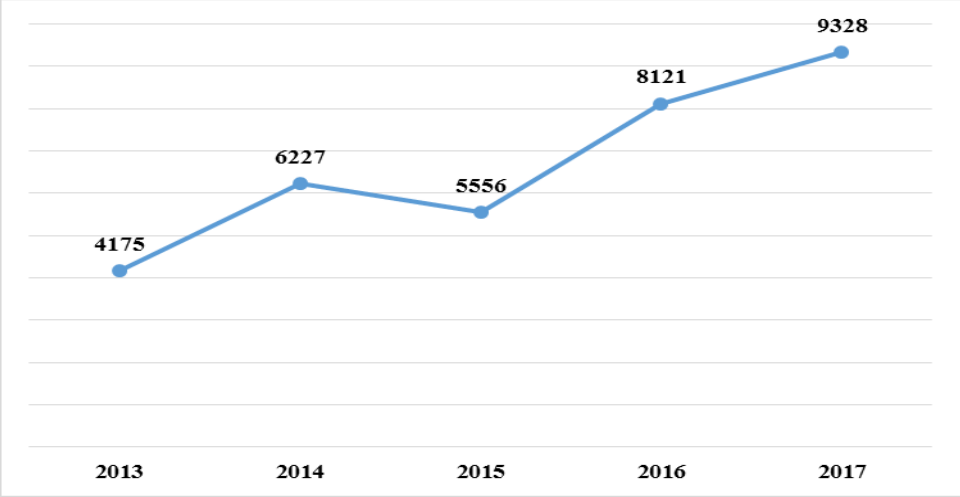
It must be noted that among the first 3 countries importing honey, Japan got the worst purchase price for honey, an aspect that may be explained by the long transport distance of apiculture products (Figure no. 5.3.).



	2013	2014	2015	2016	2017
Total	324,8	367,7	381,3	361,4	373,9
Germany	329,2	349,6	374,2	357,6	343,3
Italy	304,4	354,7	396,3	328,8	387,3
Japan	495,0	651,8	565,7	576,5	518,9

Source: Trade Map database accessed on November 2, 2019;

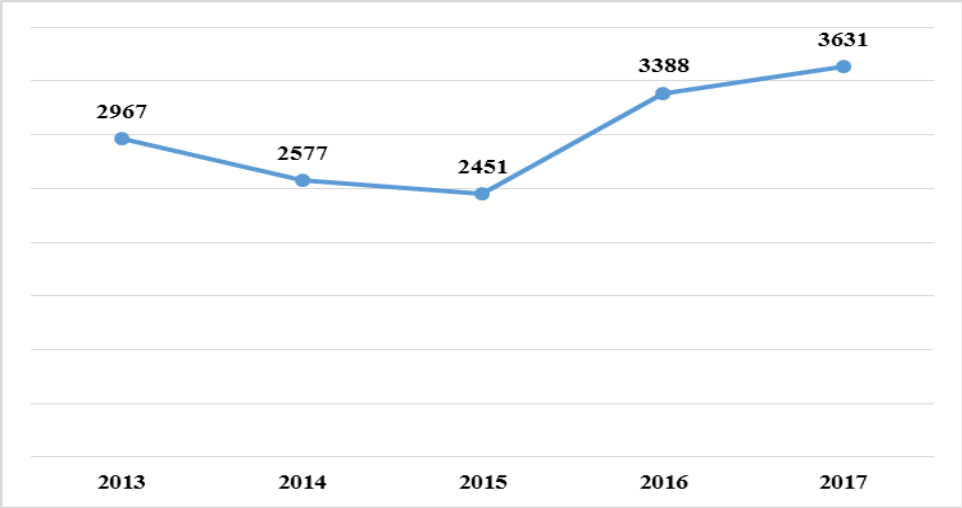
Figure no. 5.3. Evolution of honey export price in the period 2013-2017 (EUR/100 kg)



Source: Trade Map database accessed on November 2, 2019;

Figure no. 5.4. Evolution of honey import (in value terms) in the period 2013-2017 (thousands EUR)

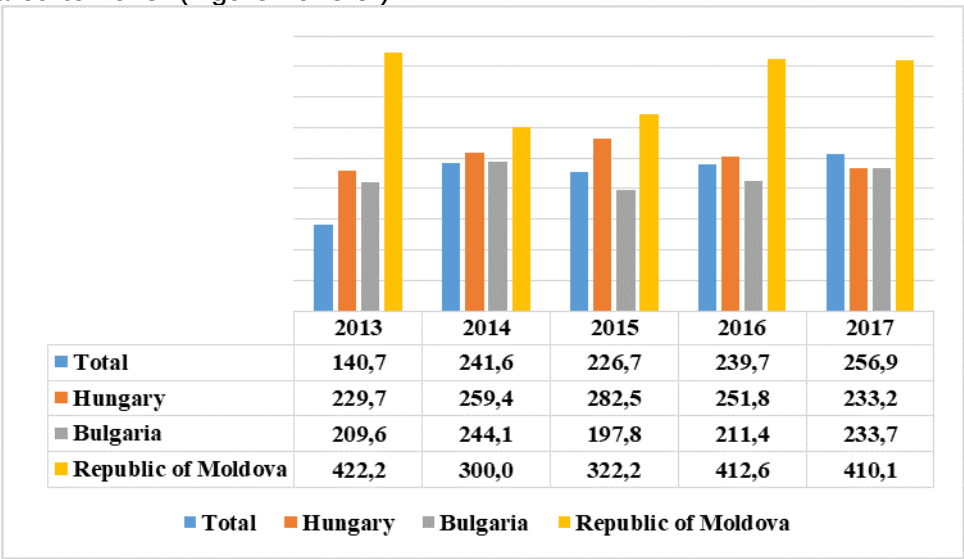
As for honey import, we may notice an ascending trend following the increase of demand for honey, but especially for the trading thereof, since the purchase price is lower. In 2017 Romania imported honey from countries such as the Republic of Moldova (3.45 million EUR), Poland (1.4 million EUR) or Hungary (1.2 million EUR) (Figure no. 5.4.).



Source: Trade Map database accessed on November 2, 2019;

Figure no. 5.5. Evolution of honey import (quantitatively) in the period 2013-2017 (thousands tons)

The oscillating trend may also be noticed in terms of honey import (quantitatively) since it reached the maximum value in 2017, namely more than 3.6 thousand tons, an increase of more than 22% as compared to 2013. (Figure no. 5.5.).

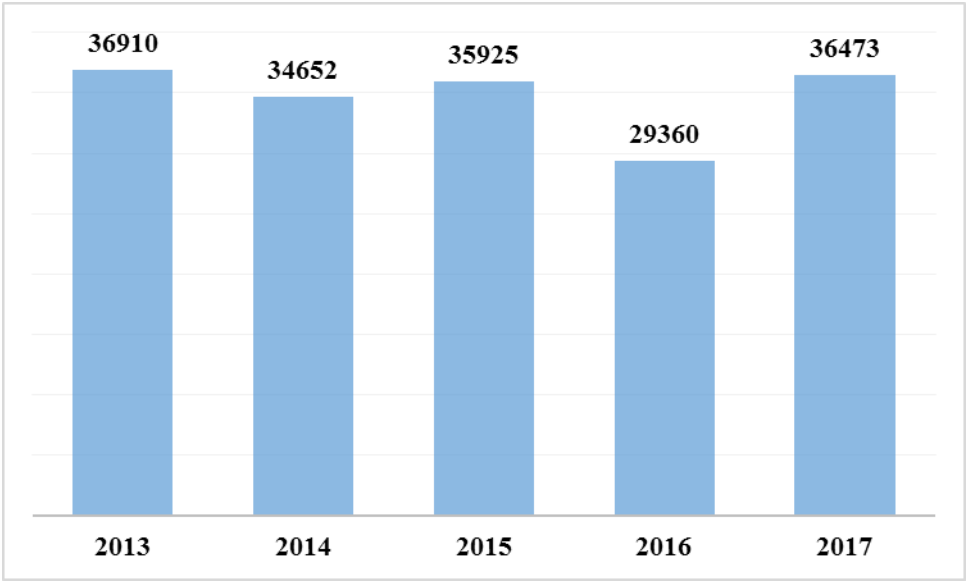


	2013	2014	2015	2016	2017
Total	140,7	241,6	226,7	239,7	256,9
Hungary	229,7	259,4	282,5	251,8	233,2
Bulgaria	209,6	244,1	197,8	211,4	233,7
Republic of Moldova	422,2	300,0	322,2	412,6	410,1

Source: Trade Map database accessed on October 20, 2019;

Figure no. 5.6. Evolution of honey import price in the period 2013-2017 (EUR/100 kg)

It must be noted that the average import price for honey was much lower than the export price, but despite all that the import price registered an increase of more than 82% as compared to the import price in 2013 (Figure no. 5.6.).



Source: Trade Map database accessed on November 2, 2019;

Figure no. 5.7. Trade balance for honey in the period 2013-2017 (thousands EUR)

Honey is one of the products of animal origin for which Romania runs a surplus, since values were positive throughout the analysed period. The highest surplus was registered in 2013, namely over 36.9 million EUR, due to the massive export of honey correlated with the low value import (Figure no. 5.7.).

Potential export markets for Romania

All the countries forming the Black Sea Region (Bulgaria, the Republic of Moldova, Turkey, Ukraine, Georgia and Armenia) have a quite significant export potential for honey. (Figure no. 5.8.).

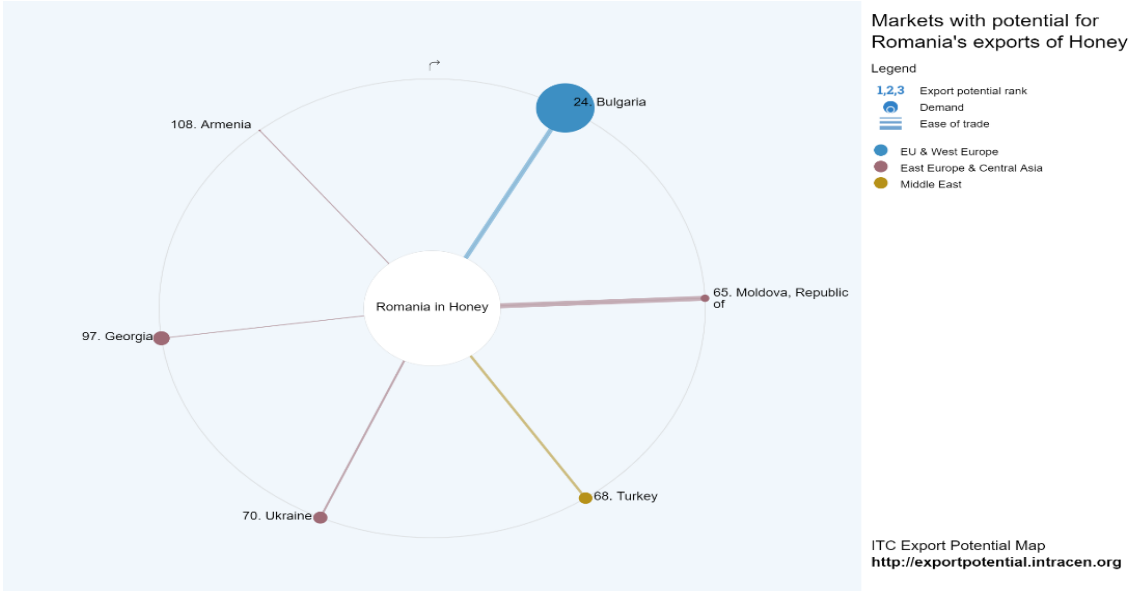


Figure no. 5.8. Potential export markets for Romania in terms of honey

The current value of exports to Bulgaria amounts to 30 million USD, in the context in which the current export potential might reach 717.8 million USD. In the case of the Republic of Moldova, the current value of exports amounts to 2.5 million USD, in the context in which the export potential might reach 33.3 million USD (Figure no. 5.8.).

Armenia also represents an important market for Romanian honey. Despite that Romania currently does not export honey to Armenia, the export potential for this country is 886.1 million USD (Figure no. 5.8.).

When analysing the honey export potential in terms of demand, we may notice that the most significant demand is registered by countries such as Bulgaria, Georgia, Ukraine, Turkey, the Republic of Moldova and Armenia (Figure no. 5.9.).

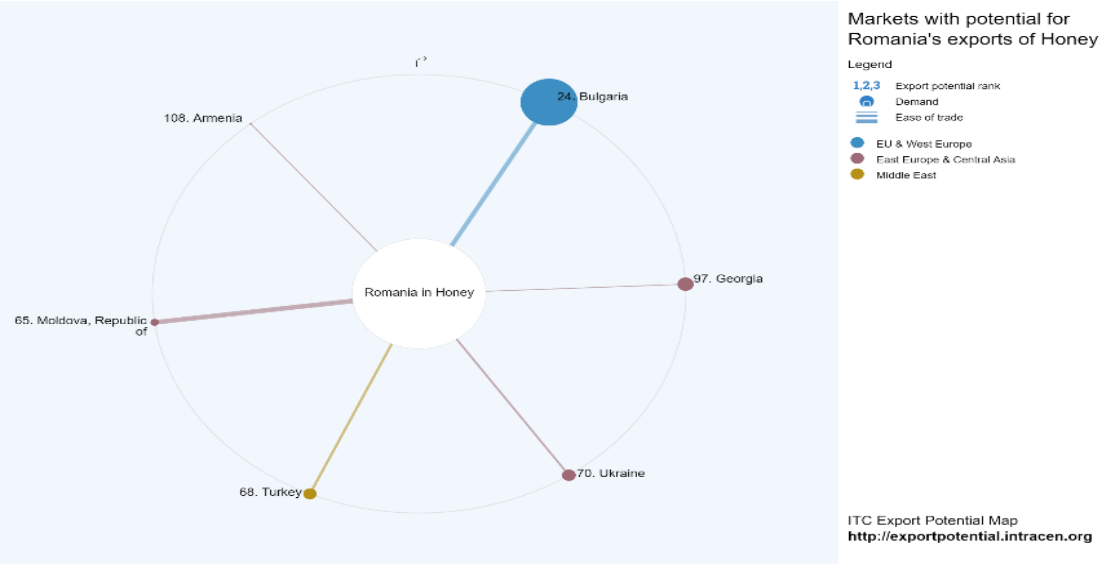


Figure no. 5.9. Potential honey export markets for Romania in terms of demand

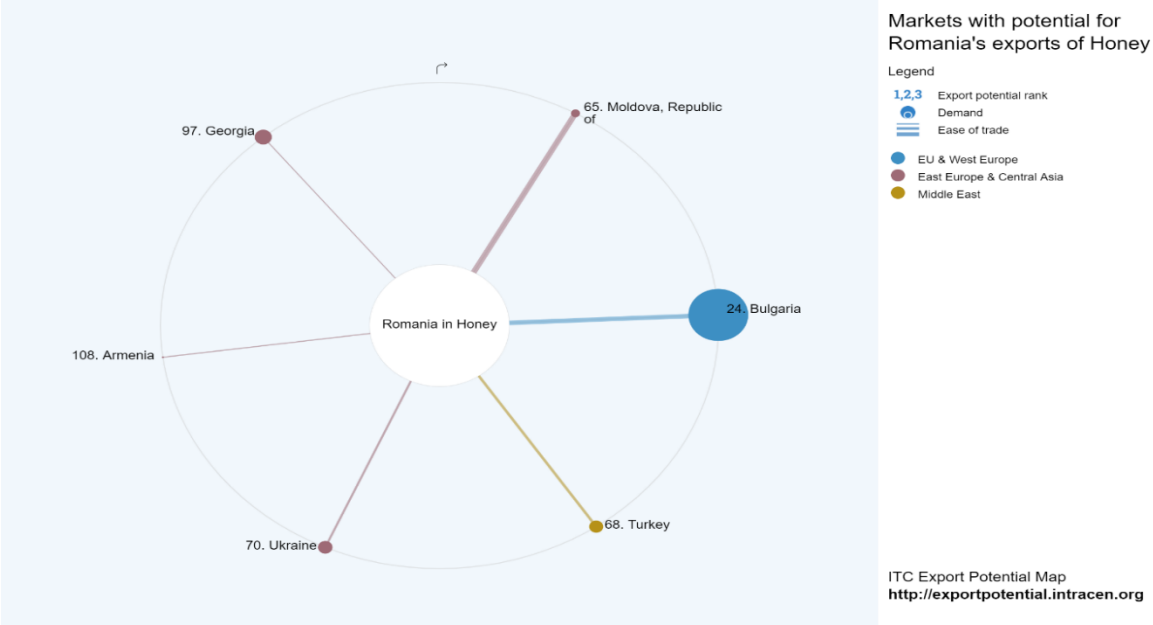


Figure no. 5.10. Potential honey export markets for Romania in terms of trade ease

When analysing the export potential in terms of the ease with which trade may take place, the Republic of Moldova, Bulgaria and Turkey stand out with a total export potential amounting to 776.8 million USD, whereas the honey trade currently amounts to the total value of 34.3 million USD for all 3 countries, 22 times less than the real export potential for honey (Figure no. 5.10.).

VI. MARKETING STRATEGIES

Apiculture product marketing means the identification of needs of consumers of any gender and age, the obtaining of a profit while meeting such needs and the maintaining of these consumers or intermediate users in the long term. Marketing includes all the activities and services involved in the transfer of a product from the production point (farm or rural household) to the consumer. This is the value chain connecting the farmer to the consumer. The marketing activities specifically refer to the selection of the distribution channel, the business decisions (investments, purchases, etc.), what and how it will be produced (e.g. conventionally, organically, bio-dynamically or a combination thereof), in what way the products and the business will be presented, advertising, promotions, price strategy, etc.

Unlike other activities resulting in the obtaining of final products, the agricultural activity focuses on the obtaining of the raw materials necessary to produce the final products. Thus, farmers act as raw material suppliers for the zootechnical activities and also for the baking and milling units.

In Romania, agricultural farms do not focus a lot on the identification of those marketing strategies that may help them produce better, according to market needs, or sell better. Without a well-developed marketing strategy, the Romanian farmer sells their production directly from the field. Since this is the strategy practiced by most Romanian farmers, the sale price upon harvest is the lowest one in the market. The storage facilities may represent a solution in order to get a better price for the agricultural production, but these are quite few in Romania, and private storage does not represent a viable solution for a farmer.

Agricultural marketing must be designed before sowing. Farmers must provide the products the consumers want, in the adequate form (fresh, dried, processed ...), at the right time of year, in the adequate quantities, with the quality and packaging requested, in the right place and for the price that the consumers are ready to pay.

An efficient marketing strategy for the Romanian farmers would be to enter the process of conversion towards organic farming. High quality organic wheat may be used in bread making to obtain some high added value bakery products, while the feed wheat may be used to feed the animals in the farms specialised in the organic production.

More and more EU consumers buy foodstuffs that are produced with natural substances and by natural processes. Organic foodstuffs are no longer a marker niche, though they represent only a small segment of the EU total agricultural production.

The EU organic product market has expanded constantly and now has a value of about 30.7 billion EUR per year. Although the EU organic agricultural lands have expanded over years, they use only 7% of the total agricultural surface. The difference between demand and production is covered by the increase of imports.

To cope with the price pressure at the time of harvest, farmers should invest financial and human resources in building storage facilities and store their harvest, and the sale should take place at the moment when the market offers the best price.

The storage capacity for cereals in Romania has registered an ascending trend in most regions of the country, mainly after our country's accession to the European Union (2007). Starting from this important moment in the evolution of Romanian agriculture, farmers found themselves for the first time face to face with the European farmers, and they tried ever since the beginning to recover, in small steps, the gaps in relation to the European farms consolidated from the viewpoint of material and human capacity.

At the level of the counties situated in the centre of the country, they need a 4 times higher storage capacity for cereals in order to store the production of 2,937,209 tons of cereals registered in 2018. The SOUTH-WEST Oltenia region is in a similar situation since significant investments are necessary. This region needs a 3 times higher storage capacity for cereals in order to store the production of 7,590,196 tons of cereals registered in 2018.

VII. POTENTIAL RISKS AND WAYS TO MINIMIZE THEM

Potential risks in cereal crops are very diverse, from the occurrence of diseases and pests to the lack of rainfall in the critical moments, and up to the lack of a market where to sell the production obtained. At the same time, the depreciation of cereal quality following the inadequate storage of cereals is another risk.

A potential risk the farmer cannot fight against is represented by the ***soil and climate conditions*** manifested in the period between sowing and harvesting. Romania has a considerable risk in terms of climate changes, their effects clearly reflecting in the changes of temperature and rainfall regime, especially as of 1961 to date, the most affected areas, according to relevant international reports and the analyses of climatological data strings for the period 1901-2010 made by the National Meteorological Administration, being situated in the southern, south-eastern and eastern parts of the country.

The main risks Romania is facing in the short and medium term consist in the significant increase of the average annual temperature, the reduction of rainfall and the general occurrence of extreme climate events. The agricultural sector would be mostly affected by floods, droughts or other adverse ***climatic events***. Extreme meteorological models will trigger a higher volatility in the agricultural production, food prices and farms' revenue.

The Romanian irrigation systems were built before 1990 while the surface arranged for irrigations occupies about 22% of country's agricultural surface and about 34% of the arable surface.

Romania currently has a surface arranged for irrigations of about 2.9 million hectares. It is estimated that about 11% of country's agricultural surface is covered by irrigation networks viable or marginally viable from the economic viewpoint. Investments in the irrigation secondary infrastructure that may be made by farmers would reduce the soil and climate risks associated to culture.

Another potential risk refers to the ***price*** the farmer gets when selling their production. As we have already shown, price is dictated by demand and supply. Thus, in the years when the soil and climate conditions are favourable for the respective crop and good yields are obtained, the price upon harvest is significantly lower than in the years when supply is lower.

Getting a fair price for the quality and quantity of wheat obtained may take place by investments in storage facilities for cereals.

To avoid the negative effect of diseases and pests in crops, we recommend the application of treatment to the seeds that are going to be seeded. The treatment is preventive in order to protect plants against the pathogen agents transmitted through the seeds.

In recent year, Romanian farmers have been faced with a series of negative effects caused by the ***climate changes***. These changes have caused the reduction of periods necessary for treatment application, and also the reduction of the time necessary to prepare the land for a successful sowing. These factors represent a risk for crops.

The Romanian ***road and rail infrastructure*** also poses risks associated to cereal production and trade. Without a sufficiently well sized infrastructure farmers cannot transport their cereals to Constanta Port, and they sell their production directly in the field thus obtaining a much lower price. This is how the price differences between different regions of the country are explained. Price is also set according to the distance from Constanta Port, the main place from where internal production leaves to countries such as Egypt, Jordan and Spain. Maritime and river transport comprises the transport of goods by sea and river through the design of an initial route and the use of afferent means.

Since they are one of the main goods transported by sea, cereals drew our attention due to their importance and the special problems they pose. Cereals' tendency to drift, when they are transported as such in bulk, in the ship storehouse during the voyage represents a potential risk for the ship and the crew.

Sheep breeding has a series of risks that may occur during their exploitation as well as during the breeding of any animal. In this respect, one of the most expensive problems is represented by mortality that may be due to multiple causes.

Mortality may be determined by the occurrence of some diseases that may affect the product or even lead to animal's death.

A significant share in the death of sheep is represented by the maritime transport to the countries situated at a long distance from Romania. Knowing that the Arab countries are among the most important sheep importers, and that they want to purchase live sheep, following their traditions and the long distance to these countries, the percentage of mortality is quite high. For this purpose, animals' wellbeing conditions must be provided during their transport which largely depends on carriers' daily conduct.

The national legislation has transposed certain requirements from the European legislation in terms of animals' protection and wellbeing during transport defined by three phrases, namely it is mandatory, they shall always, and they shall never.

It is mandatory:

- that animals have water, feed and a rest period of 24 hours before starting a journey;
- that animals should be able to travel;
- that the means of transport, including the ones with a trailer, should not cause useless injuries and suffering;
- that the persons handling the animals should have the necessary competence and training;
- that the vehicles should meet the design standards and be adequate for each species and journey;
- that the cleaning and disinfection rules should be complied with;

They shall always:

- elaborate a travel plan in order to avoid useless delays;
- check whether the animals are able to travel before their loading;
- check the vehicle for any potential failures and clean it before loading;
- load, transport and unload animals calmly and slowly;
- use separating walls when it is necessary to divide the vehicle or separate the animals into groups in order to prevent their fall;
- provide enough space for animals on the floor of the means of transport and some space above the animals;

They shall never:

- transport animals that are not able to travel;
- use force to make the animals move;
- allow unqualified and unexperienced personnel to load, unload and transport animals;
- overload the vehicle;
- brake, accelerate and take curves with high speed if this may be avoided;
- leave the animals unsupervised inside the vehicle for a long period of time;

CONCLUSIONS AND RECOMMENDATIONS

The Romanian cereals currently go to countries such as Egypt, Jordan and Spain. The main countries having a high export potential are Algeria, Morocco, Italy, Turkey and Spain. The African export market represents a potential market in the context of increase of the population in these areas.

Wheat export should be also oriented towards countries situated closer to Romania such as those in the Black Sea Basin, countries bordering the Black Sea, an aspect that may facilitate the transport of agri-food products. Current exports amount to 21.7 million EUR, in the context in which the export potential might reach 90 million EUR.

In order to make crops profitable, investments in storage facilities are recommended so that the farmer should not be forced to sell their products upon harvest, but store them for sale at the time when they may get the best price.

The diversification and integration of production, and the passage from cultivation to processing are also recommended so that the farmer should not be forced to sell raw materials but value added final products. They should not also neglect the selection of varieties and hybrids that may adapt the best to the climate conditions on the farm, so that the yield should be superior.

Sheep and goats are one of the products of animal origin for which Romania runs a commercial surplus, since values were positive throughout the analysed period. The highest surplus was registered in 2017, namely over 174 million EUR, due to the massive export of sheep and goats correlated with the low value import.

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