

INTERNATIONAL TRADE OF CEREALS: THE CONTRIBUTION OF ROMANIA

Irina CHIURCIU¹, Elena SOARE², Ion CERTAN^{3*}, Aurelia CHEREJI⁴, Dan Marius VOICILAȘ⁵, Paula STOICEA⁶

Abstract: *Benefiting from pedoclimatic conditions favorable to grain cultivation, Romania was an important player in international trades. In the context of the current geopolitical changes, the paper aims to identify the position occupied by Romania in the global trade of maize and wheat in the period 2017-2021. For this purpose, exports and imports of maize and wheat by quantity and value were analysed on the basis of statistical data available on speciality sites such as ITC. Thus, we note that in 2021, Romania ranked 5th in the ranking of corn exporters, in terms of quantity and 9th in terms of wheat exporters. The quantities and values recorded for the imports of maize and wheat indicated that Romania was not in the top positions in the world rankings, although there was an increasing trend in these indicators during the period under study.*

Keywords *cereals trade, maize, wheat, imports, exports, Romania*

JEL classification: Q11, Q13, Q17

INTRODUCTION

The paper presents Romania's contribution to the international trade of cereals (wheat and maize) in the reference period 2017-2021, precisely to highlight whether there have been changes in the context of climate change that have led to variations in the yields obtained on the analyzed crops.

The agricultural sector makes a significant contribution to the Romanian economy, especially when considering its share in the national gross domestic product. Moreover, this industry plays a key role in Romania's international trade and acts as one of the pillars in ensuring food security nationally, as well as in the EU and other countries (Constantin M et al., 2022).

In Romania's external cereal trade, the main items are wheat and maize, with over 40% weight for both exports and imports (Pânzaru R.L. et al., 2018). The structure of Romanian crops or crop production is dominated by cereal production. (Voicilaș M., 2014). Wheat is one of the most important plants grown in the world, with a great deal of food. As a result of its importance, wheat is cultivated on all continents (Smedescu D. et al., 2018).

The international trade with cereals is running by means of the activities carried out by the main "market actors": producers, exporters and importers in the context of the continuous of cereals demand and consumption (Popescu A. et al., 2018). A study conducted for the period 2007-2016 highlights that Romania exported 11 times more maize and 34 times more wheat during the last decade. Also, it imported less maize but more wheat mainly for re-export (Popescu A., 2018).

Climate change affects global land area and agricultural production in a variety of ways, including differences in annual rainfall, average temperature, heat waves, CO₂ emissions, etc. (Jannat A. et al., 2022).

¹ University of Agronomic Sciences and Veterinary Medicine of Bucharest, chiurciu.irina@managusamv.ro

² University of Agronomic Sciences and Veterinary Medicine of Bucharest, soare.elena@managusamv.ro

³ University of Agronomic Sciences and Veterinary Medicine of Bucharest, ion.certan@qlab.usamv.ro

⁴ University of Oradea, Romania, Faculty of Environmental Protection, aurelia.chereji@uoradea.ro

⁵ Institute of Agricultural Economics, Bucharest, Romania, dmvoici@yahoo.com

⁶ University of Agronomic Sciences and Veterinary Medicine of Bucharest, stoicea.paula@managusamv.ro

MATERIALS AND METHODS

In this paper, the bibliographic method is used and the world grain trade is analyzed, highlighting the main importers and exporters of corn and wheat, in terms of quantity and value. Thus, the position occupied by Romania in this ranking is also identified.

The period covered by the study was 2017–2021, and the analyzed indicators, which were processed based on statistical data taken from the International Trade Centre (ITC) website, were: the quantities of maize and wheat exported and imported by Romania, as well as the exports and value imports recorded for these cereals, compared to the main countries involved in the global trade in cereals.

An important element in this analysis is the interpretation of the data represented in tabular and graphical form. Thereby it is presented a clearer overview of the trade flows by year, by product and by quantity that allows us to analyse in detail the main challenges and opportunities.

RESULTS AND DISSCUSION

Figure 1 presents the main exporters of maize worldwide. We note the ranking on the first position of US of America, with a value of maize exports of 19,112,373 thousand \$, in 2021, increasing in comparison to 2017. Argentina ranks second with 9,064,172 thousand \$. Among the most important exporters were Ukraine, Brazil, UAE and France.

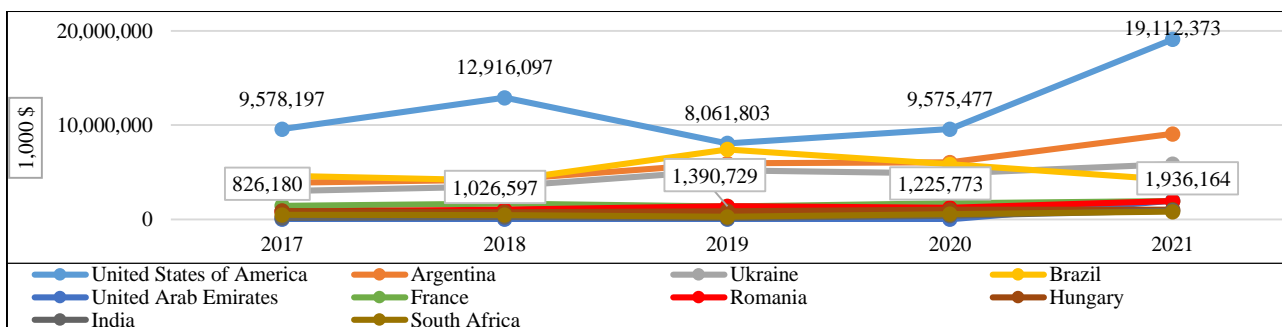


Fig. 1 World's Leading Maize Exporters (1,000 \$)

Source: ITC

Romania ranked 7th in 2021, with an export value of 1,936,164 thousand \$. In the period 2017-2021, the value exports of corn in our country increased by 234.35%. Romania was the second EU country in this top.

In the ranking of quantitative maize exports, the US of America ranked first, registering 70,042,258 tons in 2021 and an increasing trend compared to 2017. It was followed by Argentina (39,947,476 tons), Ukraine and Brazil (Figure 2).

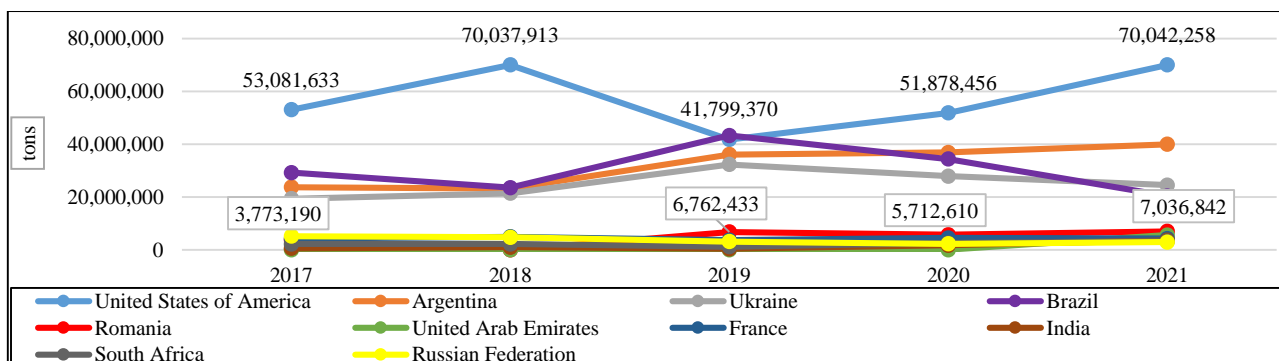


Fig. 2 Main global maize exporters (tons)

Source: ITC

In terms of quantity exports of maize, Romania ranked 5th, with 7,036,842 tons, ahead of established exporters such as UAE and France. We can notice an increase in the quantities of maize exported for the period 2017-2021, by 186.5%, but they are about 10 times lower than the exports of US of America. At the same time, we must mention that for 2018 there are no available data on the quantity exports of maize of Romania on the ITC website.

In the top value exporters of wheat, in 2021, could be found the Russian Federation, with 7,301,689 thousand \$, closely followed by US of America and Australia (Figure 3).

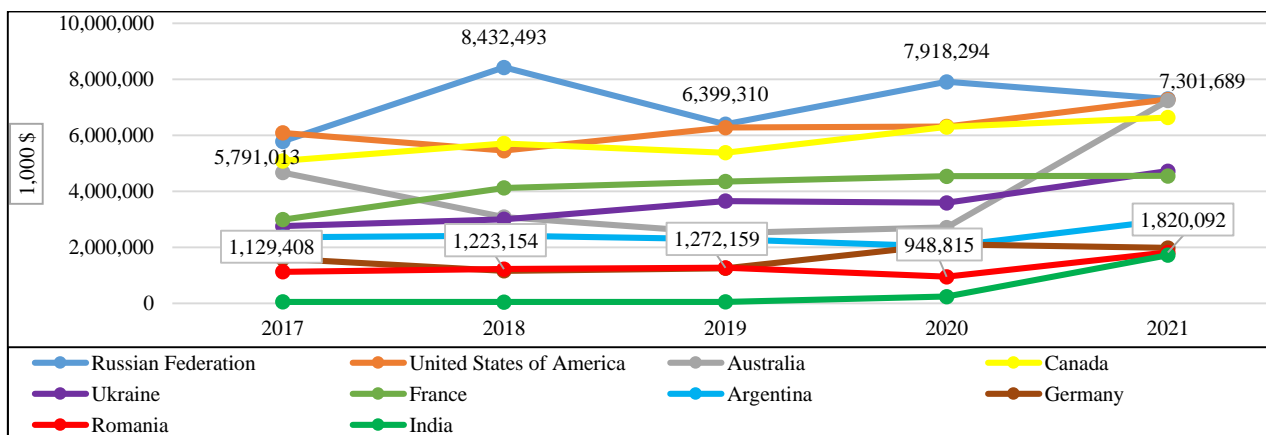


Fig. 3 Main wheat exporters worldwide (1,000 \$)

Source: ITC

The 9th place was occupied by Romania, which recorded an export value of 1,820,092 thousand \$. Romania was the third EU country in this top, after France and Germany. Value exports of wheat increased by 161.15% between 2017 and 2021.

Romania also ranked 9th in terms of quantitative wheat exports, with 6,941,076 tons (Figure 4). Their increase for the period 2017-2021 was of 118.69%.

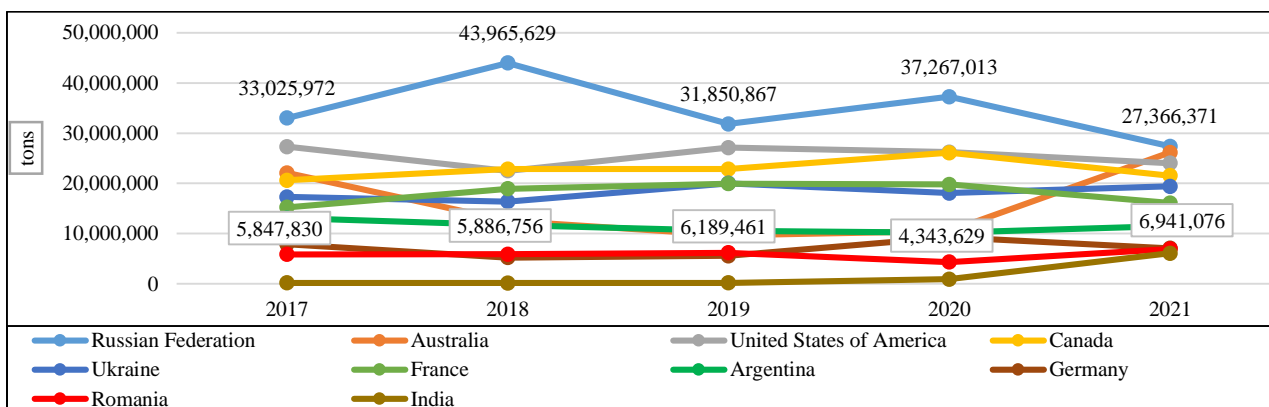


Fig. 4 Main wheat exporters worldwide (tons)

Source: ITC

The three largest exporters of wheat in 2021 were: the Russian Federation, 27,366,371 tons, Australia and the US of America. If the value exports of the Russian Federation registered increases, the quantitative exports decreased by 17.14%.

Figure 5 shows the main importers of maize worldwide, in terms of value, which were, in order, China, Mexico and Japan. There is a 13-fold increase in Chinese imports in 2021 compared to 2017. Spain and the Netherlands were the EU member states in this top, which ranked 8th and 10th.

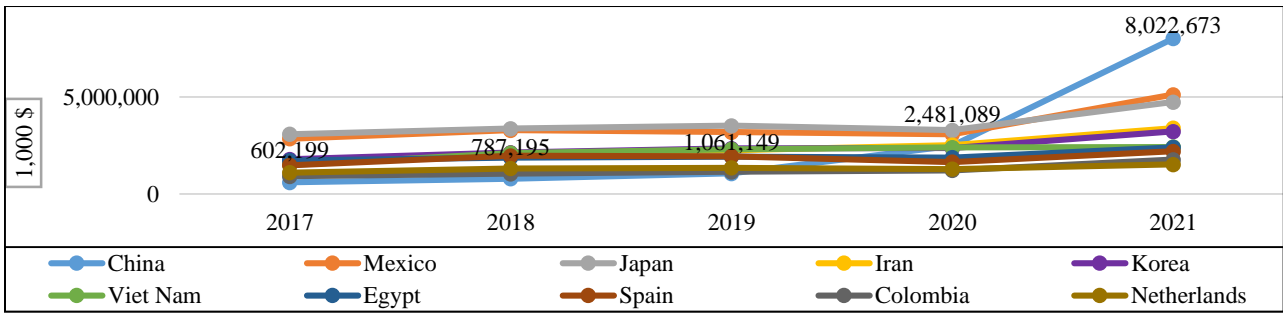


Fig. 5 Major Importers of Corn Worldwide (1,000 \$)

Source: ITC

Trinidad and Tobago imported the largest quantity of maize in the analyzed period, which reached 83,433,259 tons in 2021. Other major importers were: China, Japan, Korea and Viet Nam (Figure 6). Among the EU member states, Spain was the first country in the top and ranked 7th.

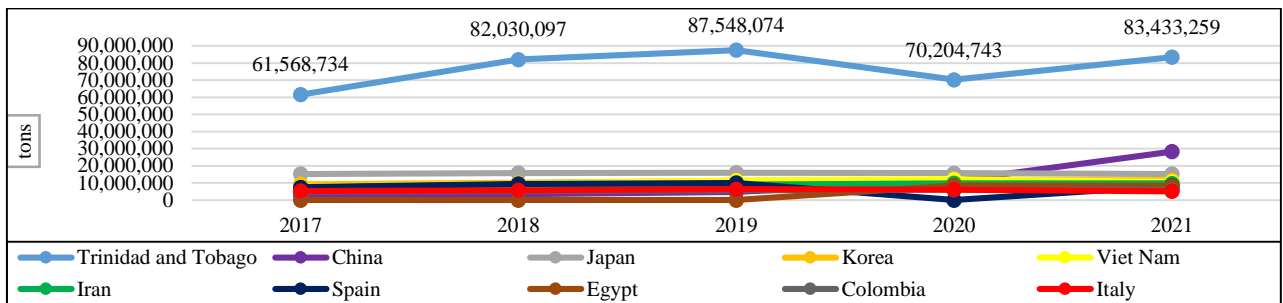


Fig. 6 Main importers of maize worldwide (tons)

Being an important exporter of corn, Romania was not in a leading position in the category of imports. Thus, it occupied the 30th position, recording in 2021 imports of wheat amounting to 361,254 thousand \$ (Figure 7 A). Compared to 2017, imports registered an upward trend, with an increase of 252.68%.

The data available for the period 2017-2020 also showed that the quantities of maize imported by Romania increased, from 463,117 tons in 2017 to 1,338,839 tons in 2020, which placed it on the 198th place (Figure 7 B).

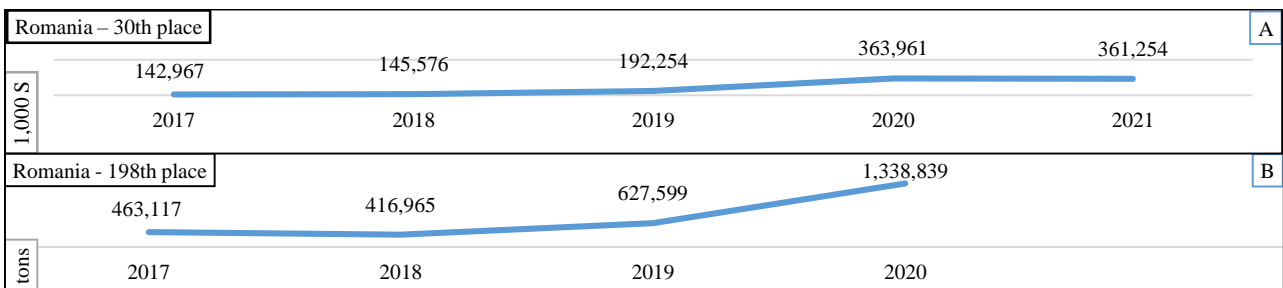


Fig. 7 A. Value imports of maize for Romania (1,000 \$);
B. Quantitative imports of maize for Romania (tons)

From the analysis of the data presented in Figure 8 results that Indonesia was the main importer of wheat worldwide, registering a value of 3,548,356 thousand \$ in 2021, being followed by China and Nigeria. Italy was the first of the EU countries in the top and ranked 8th.

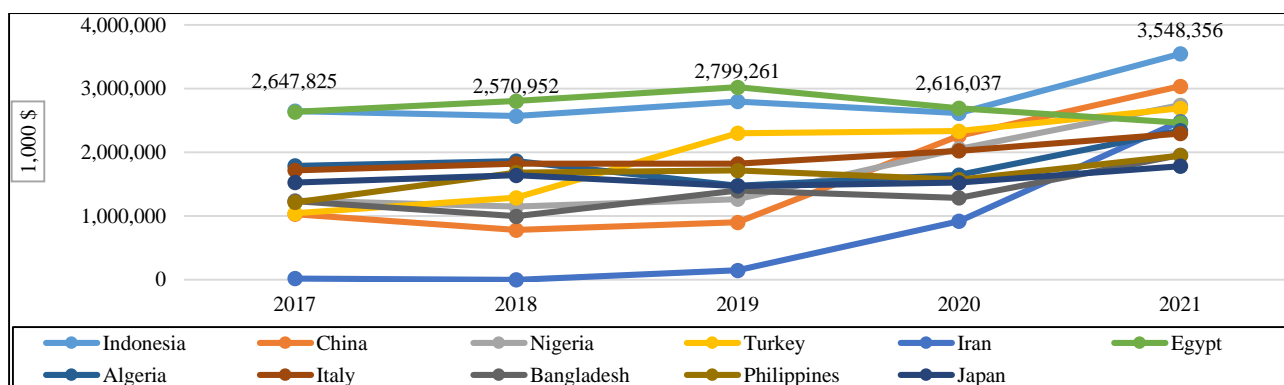


Fig. 8 Major Importers of Wheat Worldwide (1,000 \$)

Source: ITC

Romania ranked 50th, with wheat imports amounting to 257,186 thousand \$ in 2021, with an increase of 112.23% compared to 2017 (Figure 9).

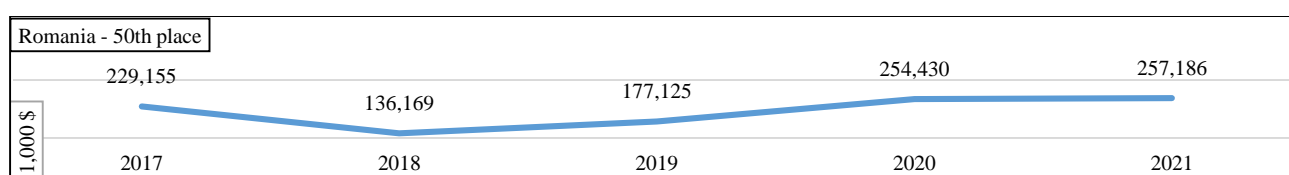


Fig. 9 Romania's Wheat Value Imports (1,000 \$)

Source: ITC

Quantitative imports of wheat worldwide are shown in Table 1. Burkina Faso ranked first in 2021 and recorded the largest increases in wheat imports. It was followed by Indonesia and China.

For Romania were presented data available until 2019, which placed it on the 186th place.

Table 1

Main wheat importers worldwide (tons)

	Importers	2017	2018	2019	2020	2021	2021/2017 %
1	Burkina Faso	159,605	150,829	132,741	149,874,175	199,012,216	124,690.46
2	Indonesia	11,434,134	10,096,299	10,692,978	10,299,699	11,481,354	100.41
3	China	4,296,486	2,876,127	3,204,806	8,151,217	9,711,384	226.03
4	Turkey	4,990,864	5,781,059	10,008,146	9,659,191	8,877,309	177.87
5	Italy	7,430,202	7,453,384	7,368,558	-	7,298,494	98.23
6	Bangladesh	6,639,761	4,839,307	6,879,079	6,027,570	7,152,727	107.73
7	Iran	73,862	360	548,621	3,284,650	7,075,228	9,578.98
8	Brazil	6,022,221	6,817,138	6,575,607	6,159,925	6,225,072	103.37
9	Philippines	5,294,054	6,695,010	6,647,558	6,138,664	6,036,242	114.02
10	Japan	5,705,950	5,652,151	5,331,434	5,373,855	5,126,074	89.84
...	...						
186	Romania	1,249,985	695,333	880,290	-	-	-

Source: ITC

The quantities of wheat imported by Romania varied, but after the decrease in 2018, there was a slight increase in the following period.

The above data show relatively clearly the areas of interest for Romanian exporters – Asian and African states that are major consumers and importers of cereals. Competition is also represented in particular but not limited to countries such as Ukraine, the Russian Federation, Germany etc., in general states with strong agriculture. We thus have a series of highlights on the areas where we need to focus our attention and the competitors.

ACKNOWLEDGMENTS

This work was supported by a grant of the University of Agronomic Sciences and Veterinary Medicine of Bucharest Project number 1060/15.06.2022,” Propuneri de măsuri strategice în agricultura din România în contextul instabilității geopolitice / Proposals for strategic measures in Romanian agriculture in the context of geopolitical instability”, Acronym AgRoMaS, within IPC 2022; co-financier PRO-AGRO Federation.

CONCLUSIONS

Given the geopolitical instability in the last period, Romania must take advantage of its position in the grain trade, especially with maize and wheat.

We are dealing with a window of opportunity that must ultimately lead both to the consolidation of its position on the international market and especially to the consolidation of its own food security. Romania is currently facing difficult choices that need to be made in order to be in a position to choose and not to be put on an undesirable path.

To this end, the funds available at European level must be used to their fullest potential in order to catch up with other European countries. Massive investment is required in both new technologies and the development and retention of the relevant agricultural workforce.

At the same time, the importance of infrastructure emerged. We are talking on the one hand about the infrastructure necessary for the safe storage of cereal products and in the desired quantities and volumes. On the other hand, the conflict in Ukraine has demonstrated the need for a functioning transport infrastructure, capable of taking over large volumes quickly and resilient in the face of various shocks.

One final conclusion concerns the importance of an active diplomatic network to support the grain trade. We need an active network of agricultural attachés and diplomats who actively support trade in agricultural products of all kinds and who are able to create the necessary economic alliances.

REFERENCES

1. Constantin, M., Sacală, M.-D., Dinu, M., Piștalu, M., Pătărlăgeanu, S. R. & Munteanu, I.-D. (2022). Vegetable Trade Flows and Chain Competitiveness Linkage Analysis Based on Spatial Panel Econometric Modelling and Porter's Diamond Model. *Agronomy* 12, 2: 411. <https://doi.org/10.3390/agronomy12020411>
2. ITC, International Trade Centre, <http://www.intracen.org/itc/market-info-tools/trade-statistics>, Retrieved on 11.09.2022
3. Jannat, A., Ishikawa-Ishiwata, Y., & Furuya, J. (2022). Does Climate Change Affect Rapeseed Production in Exporting and Importing Countries? Evidence from Market Dynamics Syntheses. *Sustainability* 14, 10: 6051. <https://doi.org/10.3390/su14106051>
4. Pânzaru, R. L., Vladu, M., Medelete, D. M., & Bodescu, D. (2018). Romania's cereal external trade between 2014 and 2016. *Scientific Papers. Series" Management, economic engineering in agriculture and rural development*, 18, 1, 319-324
5. Popescu, A., Dinu, T. A., & Stoian, E. (2018). The comparative efficiency in Romania's foreign trade with cereals, 2007-2016. *Scientific Papers. Series "Management, economic engineering in agriculture and rural development"*, 18, 1, 371-384
6. Popescu, A. (2018). Maize and wheat-top agricultural products produced, exported and imported by Romania. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, 18, 3, 339-352
7. Smedescu, D. I., Fintineru, A., Tudor, V. C., Carbarau, C., & Vasile-Tudor, B. (2018). The development of trade with wheat at the global level. *Economic and Social Development: Book of Proceedings*. 488-495.
8. Voicilaș, D. M. (2014). Cereal market in Romania-regional competitiveness. *Agrarian Economy and Rural Development-Realities and Perspectives for Romania*. 5th Edition of the International Symposium, November 2014, Bucharest. 94-103