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**Conference Paper**

## Study on the production and marketing of sunflower seeds worldwide in the period 2015-2020

**Provided in Cooperation with:**

The Research Institute for Agriculture Economy and Rural Development (ICEADR), Bucharest

*Suggested Citation:* Soare, Elena et al. (2022) : Study on the production and marketing of sunflower seeds worldwide in the period 2015-2020, In: Rodino, Steliana Dragomir, Vili (Ed.): Agrarian Economy and Rural Development - Trends and Challenges. International Symposium. 13th Edition, The Research Institute for Agricultural Economy and Rural Development (ICEADR), Bucharest, pp. 96-105

This Version is available at:

<https://hdl.handle.net/10419/301711>

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# STUDY ON THE PRODUCTION AND MARKETING OF SUNFLOWER SEEDS WORLDWIDE IN THE PERIOD 2015-2020

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**Abstract:** *This study highlights important aspects regarding the production and marketing of sunflower seeds worldwide for the period 2015-2020. In order to achieve this study, a series of indicators specific to the sector of production and marketing of sunflower seeds were analyzed, such as: the area cultivated worldwide with sunflower; the production of sunflower seeds achieved worldwide; the average production per hectare of sunflower; the imports and exports of sunflower seeds worldwide. Sunflowers are cultivated on all continents, but on different surfaces. Europe is the leader of the ranking at continental level, regarding, on the one hand, the areas cultivated with sunflower, and on the other hand, the production obtained for sunflower seeds. Sunflower seeds have a number of uses, which places them in the area of the most important oilseeds crops. Nowadays, worldwide, the production and marketing of sunflower seeds is given a special importance. The statistical data presented and analyzed in the study were taken from the FAOSTAT website.*

**Keywords:** *areas cultivated with sunflower; average production per hectare of sunflower; imports and exports of sunflower seeds worldwide*

**JEL classification:** Q11, Q13, Q17

## INTRODUCTION

According to the specialized literature, the sunflower (*Helianthus annuus* L) is classified in the family Compositae. The sunflower comes from Central and North America, being spread across the globe. In general, sunflower is used to obtain oil (<https://www.agro.basf.ro/ro/stiri/basf-in-camp/cultura-de-floarea-soarelui-toate-informatiile-de-care-ai-nevoie.html>, Popescu et al., 2019, Sher et al., 2022).

It is well known that sunflower oil is obtained by industrialization, and the remaining part that is represented by the pellets which are used for animal feeding. Unlike other oil plants, according to the studies conducted, the sunflower is able to provide a maximum of oil per unit area (<https://www.agro.basf.ro/ro/stiri/basf-in-camp/cultura-de-floarea-soarelui-toate-informatiile-de-care-ai-nevoie.html>).

According to reports Mordor Intelligence, sunflower represents one of the most significant oilseed crops in the world, because it has a number of uses, such as: for bird feeding; for industry and for the growing snack market (<https://nuseed.com/ro/cererea-mondiala-si-de-diversificare-de-floarea-soarelui-creeaza-opportunitati/>, Medelete et al., 2019).

It is necessary to specify that sunflower seeds have a high nutritional value, because they contain a significant amount of: protein; polysaturated fats, monounsaturated fats and vitamin E (Cuzino, 2022, <https://www.industryarc.com/Research/Global-Sunflower-Seeds-Market-Research-513241>, <https://www.gminsights.com/industry-analysis/sunflower-seeds-market>).

Another characteristic of sunflower seeds is that they have a high content of magnesium, a mineral that is involved in over 300 different physical functions. Sunflower seeds, as well as other

categories of seeds show a significant combination of healthy fats, vitamins, fiber, minerals and phytonutrients, which recommends them for their inclusion in the human diet (<https://www.eva.ro/dietafitness/nutritie/cat-de-sanatoase-sunt-semintele-de-floarea-soarelui-articol-195269.html>).

Currently, the sunflower seed market is a market that is of particular importance, on the one hand for farmers, because some of them secure their income from the sale of sunflower seeds, and on the other hand, for consumers who use sunflower oil, but also other products based on sunflower seeds. The world market for sunflower seeds is projected to reach \$2,599 million by 2027 (<https://www.industryarc.com/Research/Global-Sunflower-Seeds-Market-Research-513241>).



**Photo 1. Sunflower field**

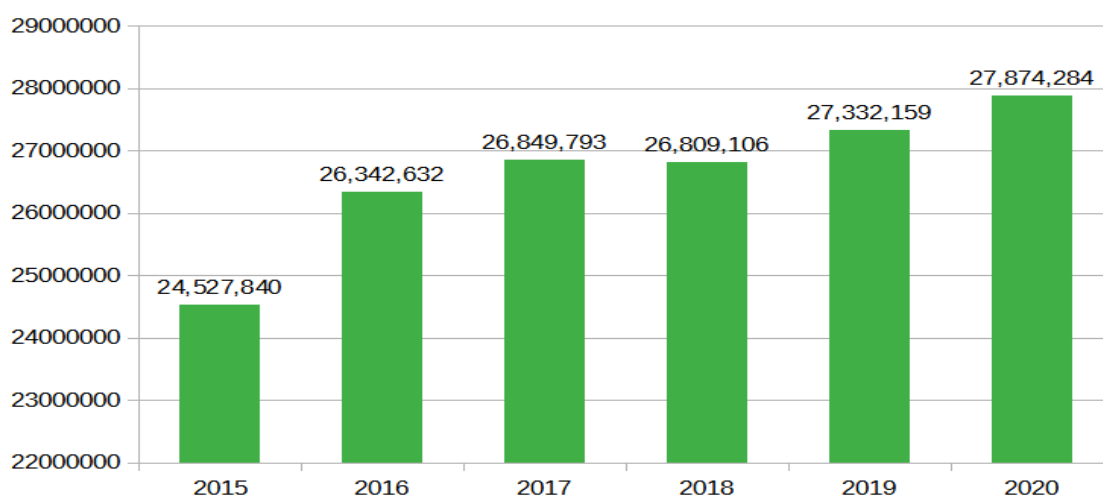
Source: ([http://www.gradinamea.ro/P-camp\\_cu\\_floarea\\_soarelui-988-4096.html](http://www.gradinamea.ro/P-camp_cu_floarea_soarelui-988-4096.html))

## **MATERIALS AND METHODS**

The study presents a series of trends regarding the production and marketing of sunflower seeds worldwide for the period 2015-2020. In the paper were highlighted and analyzed a number of representative indicators, such as: the area cultivated with sunflower worldwide; global production of sunflower seeds; average production per hectare of sunflower recorded worldwide; imports and exports of sunflower seeds worldwide. Faostat website was the main provider of statistical data underlying the achievement of this study. It is necessary to specify that the results of the analysis were presented in graphic form.

## **RESULTS AND DISCUSSION**

Between 2015 and 2020, a number of changes were highlighted worldwide regarding the sector of production and marketing for sunflower seeds. During the period under analysis, the surface cultivated with sunflowers recorded a series of variations. From the data published by Faostat it can be seen that, in 2020, the largest surface cultivated with sunflower was registered worldwide, of 27,874,284 ha (see Fig. 1).

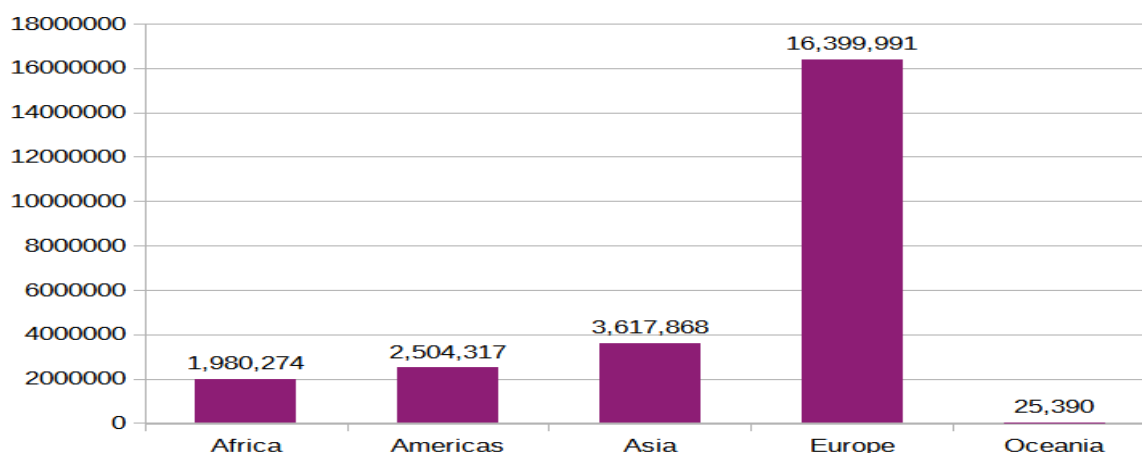


**Figure 1. Sunflower area cultivated worldwide, in the period 2015-2020 (ha)**

Source: Own design based on FAOSTAT database 2022

In 2015, the smallest surface of only 24,527,840 ha of sunflower was cultivated worldwide. The surface cultivated with sunflowers worldwide increased in 2020, by 3,346,444 ha, respectively 13.64%, compared to 2015. At the continental level there were significant differences in terms of areas cultivated with sunflowers.

In 2015, Europe cultivated the largest surface with sunflowers, of 16,399,991 ha, approximately 67% of the world's registered surface. At the opposite pole, the lowest surface cultivated with sunflowers in 2015 was attributed to Oceania, with 25,390 ha, respectively 0.1% of the area cultivated worldwide.



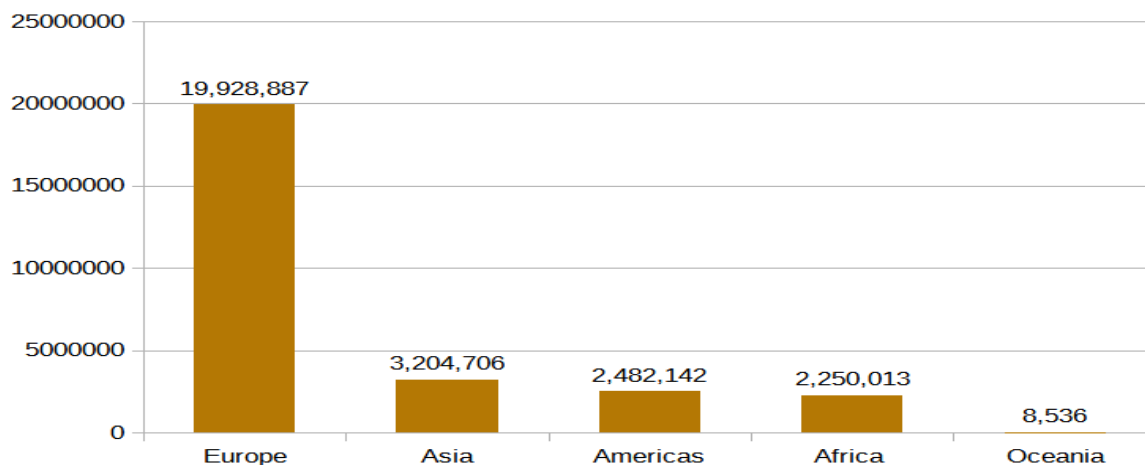
**Figure 2. Sunflower area cultivated at continental level in 2015 (ha)**

Source: Own design based on FAOSTAT database 2022

In 2020, at the continental level, it is found that the same ranking was maintained regarding the areas cultivated with sunflower. The data presented shows the following:

- Europe is the leader of the ranking, with an area of 19,928,887 ha, respectively 71.49% of the area cultivated worldwide in 2020;
- Asia is on the second position, with a cultivated area of only 3,204,706 ha, respectively 11.49% of the cultivated area worldwide;

- Americas occupies the third place, with an area of 2,482,142 ha, respectively 8.90% of the area cultivated worldwide;
- Africa occupies the 4th position, with an area of 2,250,013 ha, respectively 8.07% of the area cultivated worldwide;
- Oceania is on the 5th position, with the smallest area of 8,536 ha.

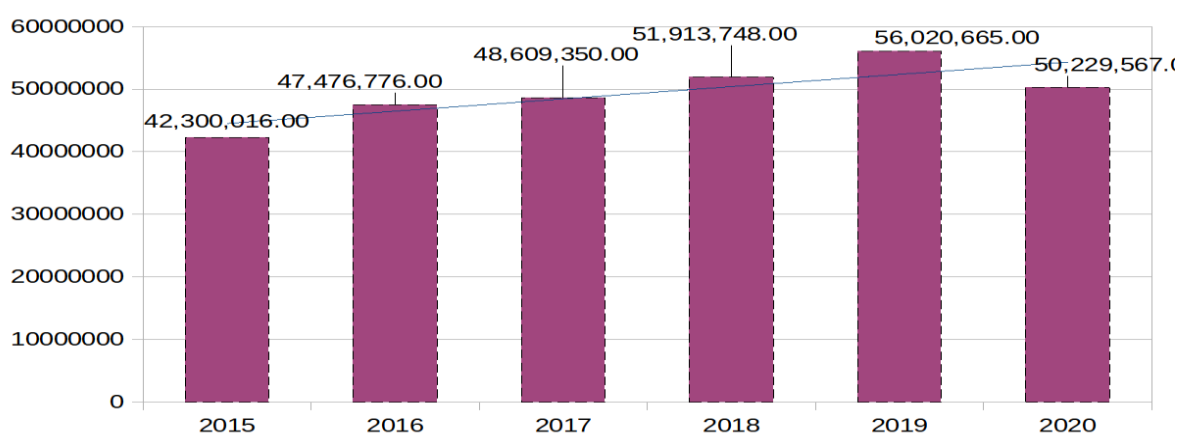


**Figure 3. Sunflower area cultivated at continental level in 2020 (ha)**

Source: Own design based on FAOSTAT database 2022

In 2020, the surface cultivated with sunflowers in Europe increased by 21.18% compared to 2015. In Oceania, a situation was highlighted diametrically opposite to that in Europe, because the surface cultivated with sunflowers in 2020, decreased by 66.39% compared to 2015.

The production of sunflower seeds is firmly linked to the cultivated area on the one hand, and to the average yield per hectare achieved for this crop on the other hand. In the period 2015-2020, the total production of sunflower seeds worldwide recorded a number of changes (see Figure 4). From the statistical data regarding the production of sunflower seeds achieved worldwide, it can be seen that the most significant production was made in 2019 (56,020,665 tons).

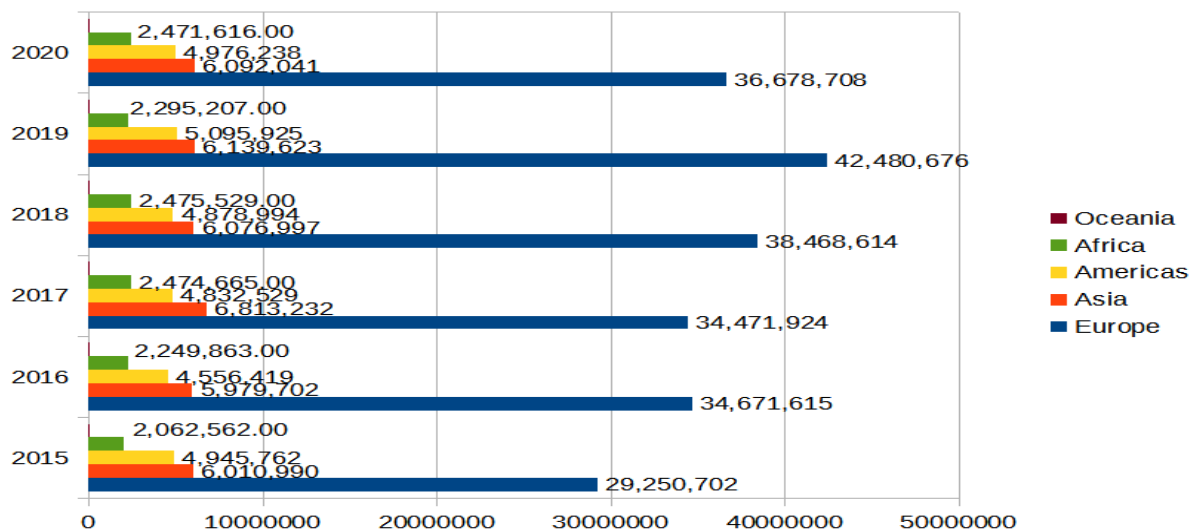


**Figure 4. Total production of sunflower seeds worldwide, in the period 2015-2020 (tons)**

Source: Own design based on FAOSTAT database 2022

The world's smallest production of sunflower seeds was of 42,300,016 tons in 2015. In 2015, there was a strong correlation between the total surface cultivated with sunflower and the total

production of sunflower seeds obtained. In 2020, the production of sunflower seeds increased by 18.74% compared to 2015. At continental level, the production of sunflower seeds has recorded oscillations from one year to another and from one region to another.



**Figure 5. Total production of sunflower seeds achieved in the continental area, in the period 2015-2020 (tons)**

Source: Own design based on FAOSTAT database 2022

As expected, Europe is the leader of the continental classification regarding the production of sunflower seeds. The most significant production of sunflower seeds was achieved in 2019 (42,480,676 tons), and the lowest production was recorded in 2015 (29,250,702 tons). In 2020, in Europe, the production of sunflower seeds increased by 25.39%, compared to 2015. Europe accounted for 73.00% of the world's production of sunflower seeds in 2020. Asia is on the second position of the ranking with the highest production of sunflower seeds, of 6,813,232 tons (2017). In 2020, the production here increased by 1.34% compared to 2015. Asia accounted for 12.10% of the world's sunflower seed production in 2020. America occupies the 3rd position in the ranking of the production of sunflower seeds obtained at continental level. In 2019, it obtained the highest production of sunflower seeds, of 5,095,925 tons. In 2020, Americas accounted for 9.90% of worldwide production. Americas. In 2020, the production of sunflower seeds increased insignificantly by only 0.6%, compared to 2015.

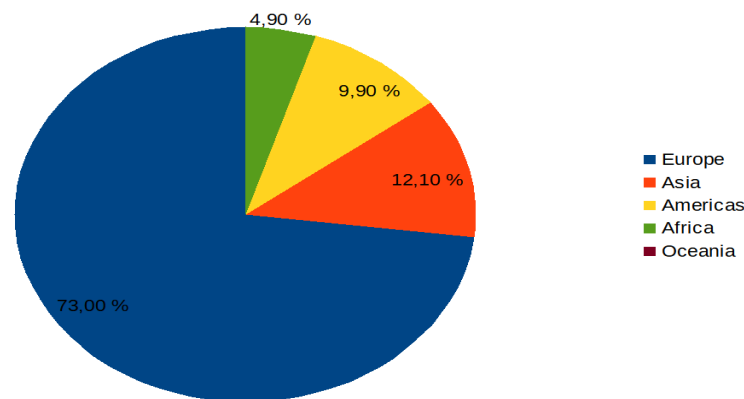


**Photo nr.2. Sunflower seeds**

Source:(<https://www.eva.ro/dietafitness/nutritie/cat-de-sanatoase-sunt-semintele-de-floarea-soarelui-articol-195269.html>)

Africa is on the 4th position, with the highest production of sunflower seeds in 2018, of 2,475,529 tons. In 2020, Africa accounted for 4.90% of the worldwide production of sunflower seeds. The production of sunflower seeds in Africa increased by 19.83% in 2020 compared to 2015. Oceania ranks 5th in this ranking, with the most significant production made in 2015 (30,000 tons).

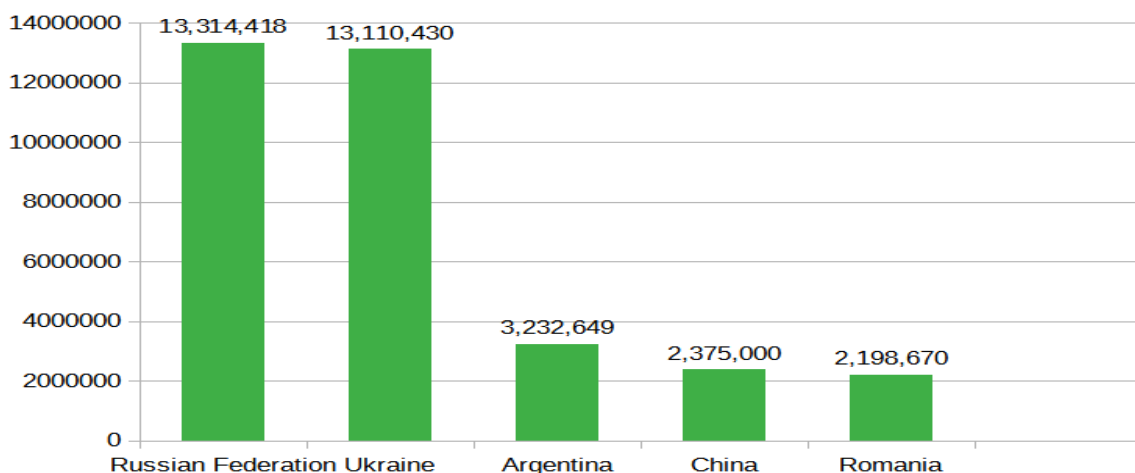
In 2020, Oceania achieved only 0.02% of the worldwide production of sunflower seeds. At the continental level, Oceania was the only one to record in 2020 a decrease in the production of sunflower seeds, by 63.46% compared to 2015.



**Figure 6. Production share of sunflower seeds at regional level in 2020 (%)**

Source: Own design based on FAOSTAT database 2022

In 2020, according to the statistical data published, the first position in the top of the most significant producers of sunflower seeds was the Russian Federation, with a production of sunflower seeds of 13,314,418 tons, respectively 26.50% of the total world production obtained for this category. The second position is occupied by Ukraine with a production of 13,110,430 tons, respectively 26.10% of the world production achieved. The 3rd place is occupied by Argentina, with 3,232,649 tons, at a significant distance from the Russian Federation and Ukraine. It achieved in 2020, representing 6.43% of the world production of sunflower seeds. Position 4 is held by China with 2,375,000 tons, namely 4.72% of the world's production of sunflower seeds. The 5th place is occupied by Romania with 2,198,670 tons, namely 4.37% of the world production of sunflower seeds.

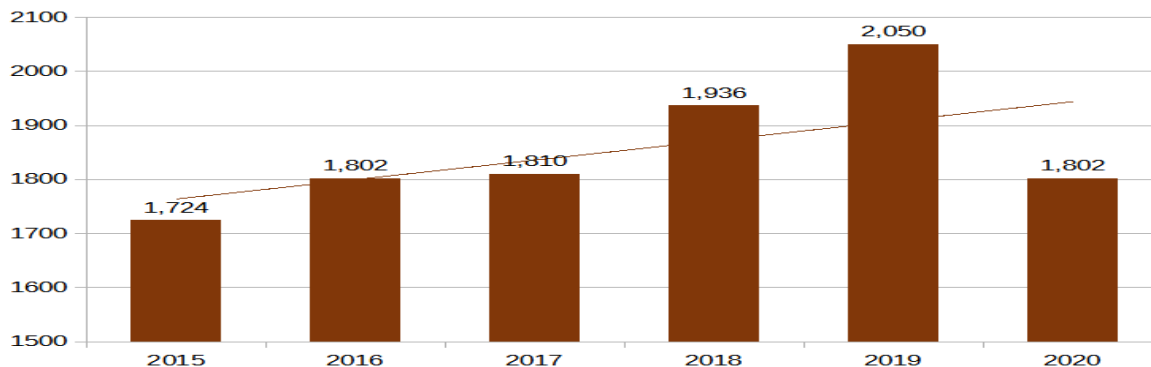


**Figure 7. Top 5 largest producers of sunflower seeds in the world, in 2020 (tons)**

Source: Own design based on FAOSTAT database 2022



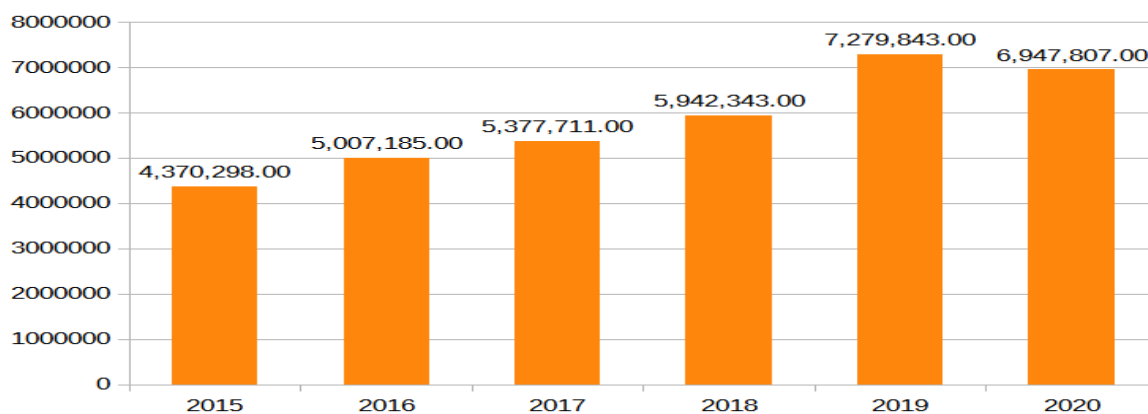
The average production of sunflower seeds per hectare worldwide varied from one year to the other in the analyzed period. From the data presented it can be easily observed that the most significant average production per hectare was of 2,050 kg/ha (2019), and the lowest was in 2015 (1,724 kg/ha). In 2020, the average production of sunflower seeds per hectare worldwide increased by 4.52% compared to 2015, but decreased compared to 2019, by 12.10%.



**Figure 8. Average production of sunflower seeds per hectare worldwide, in the period 2015-2020 (kg/ha)**

Source: Own design based on FAOSTAT database 2022

The quantitative exports of sunflower seeds worldwide recorded variations from one year to the next during the period under analysis. The most significant quantitative exports were recorded in 2019 (7,279,843 tons), and the smallest were in 2015 (4,370,298 tons). In 2020, the quantitative exports of sunflower seeds worldwide increased by 58.97% compared to 2015, but decreased by 4.57% compared to 2019.



**Figure 9. Quantitative exports of sunflower seeds worldwide, in the period 2015-2020 (tons)**

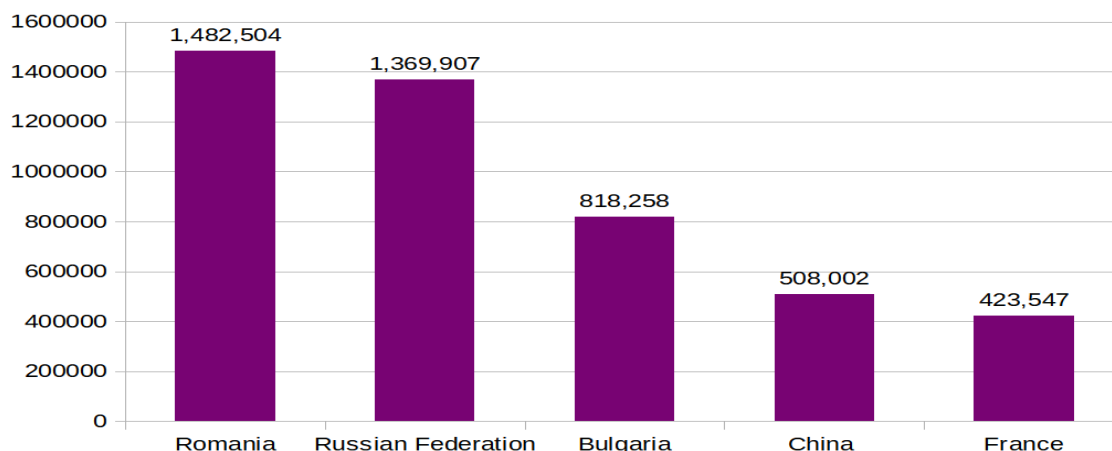
Source: Own design based on FAOSTAT database 2022

In 2020, a number of exporters of sunflower seeds were noticed worldwide, and among them the presentation of the first 5 was required, as follows:

- Romania -1,482,504 tons, respectively 21.33% of the total quantitative exports achieved worldwide;
- Russian Federation -1,369,907 tons, respectively 19.71% of the total quantitative exports achieved worldwide;



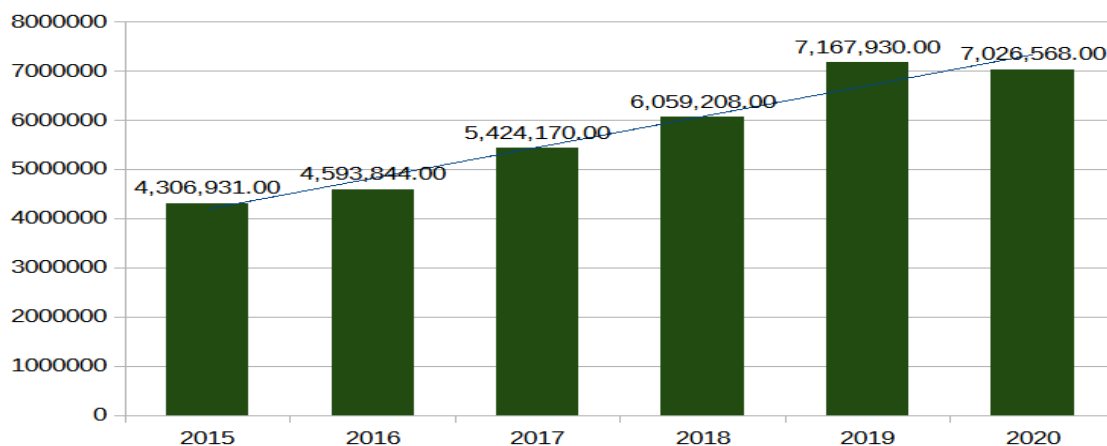
- Bulgaria -818,258 tons, respectively 11.77% of the total quantitative exports achieved worldwide;
- China -508,002 tons, respectively 7.31% total quantitative exports achieved worldwide;
- France -423,547 tons, i.e. 6.09% of total worldwide quantitative exports.



**Figure 10. Top 5 exporters of sunflower seeds worldwide, in 2020 (tons)**

Source: Own design based on FAOSTAT database 2022

Regarding the quantitative imports of sunflowers, they recorded changes in the analyzed period. The largest quantitative imports were obtained in 2019 (7,167,930 tons), and the lowest were in 2015 (4,306,931 tons). In 2020, the quantitative imports of sunflower seeds worldwide increased by 63.14% compared to 2015, but decreased by 1.98% compared to 2019.



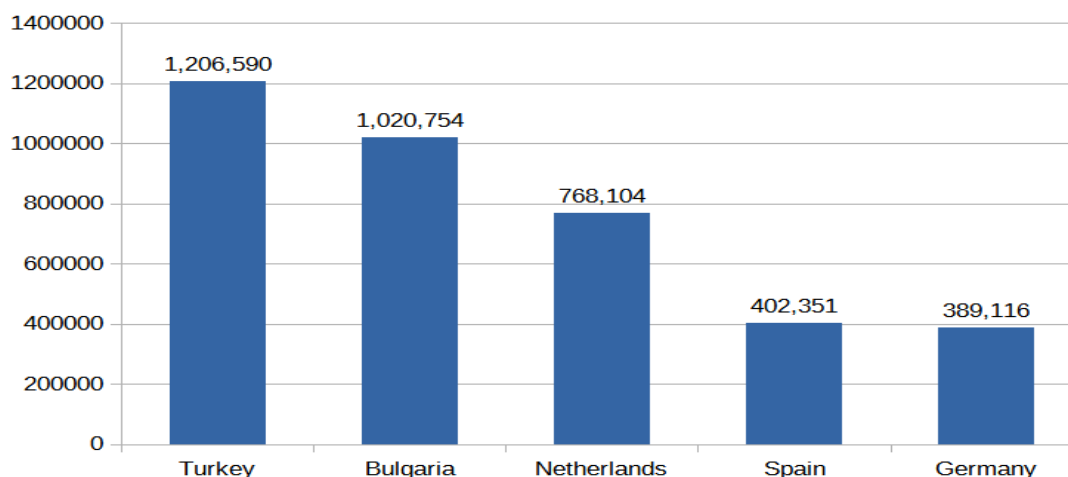
**Figure 11. Quantitative imports of sunflower seeds worldwide, in the period 2015-2020 (tons)**

Source: Own design based on FAOSTAT database 2022

According to the worldwide statistical data, several importers of sunflower seeds were highlighted in 2020, and the first 5 are the following:

- Turkey -1,206,590 tons, respectively 17.17% of the total quantitative imports recorded worldwide;
- Bulgaria -1,020,754 tons, respectively 14.52 % of the total quantitative imports recorded worldwide;

- Netherlands -768,104 tons, respectively 10.93% of the total quantitative imports recorded worldwide;
- Spain -402,351 tons, namely 5.72% of the total quantitative imports recorded worldwide;
- Germany-389,116 tons, namely 5.53% of the total quantitative imports recorded worldwide;



**Figure 12. Top 5 importers of sunflower seeds worldwide, in 2020 (tons)**

Source: Own design based on FAOSTAT database 2022

In the coming years the top of importers and exporters of sunflower seeds may change depending on the economic interests of each country.

## CONCLUSIONS

Following the analysis of the main indicators related to the sector of production and marketing of sunflower seeds worldwide for the period 2015-2020, the following results emerged:

- The significant surface cultivated with sunflowers was highlighted in 2020 (27,874,284 ha);
- At continental level, the most significant surface with sunflowers was cultivated in Europe, and increased from 16,399,991 ha (2015) to 19,928,887 ha (2020);
- In 2019, the largest production of sunflower seeds was achieved worldwide, of 56,020,665 tons;
- Europe has achieved the highest sunflower production recorded at continental level, reaching a maximum production in 2019 (42,480,676 tons);
- The largest quantitative exports of sunflower seeds recorded worldwide were of 7,279,843 tons (2019);
- In 2020, Romania was the most representative exporter of sunflower seeds with 1,482,504 tons;
- In 2019, the highest quantitative imports of sunflower seeds were of 7,167,930 tons;
- In 2020, Turkey stood out as the first importer of sunflower seeds recorded worldwide, with 1,206,590 tons;

In the medium and long term, the sunflower seed production sector will remain one of the important sectors related to agriculture worldwide, because on the one hand, sunflower seeds are a

significant raw material for industry, and on the other hand, they are an important source in animal nutrition.

## ACKNOWLEDGEMENTS

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.

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