

RESEARCH ON THE EVOLUTION OF THE GLOBAL BEEF MARKET IN THE PERIOD 2015-2020

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Abstract

This research captures the changes that took place on the global beef market, for the period 2015-2020. The most representative indicators presented and analyzed are: total cattle herds worldwide; beef and veal production obtained worldwide; beef and veal consumption recorded worldwide; imports and exports recorded worldwide for beef meat. Beef contains a series of proteins, minerals, vitamins, fats and amino acids that recommend it for consumption, because it contributes to maintaining the population health. In 2020, Americas achieved 48.6% of the production of meat of cattle with the bone, fresh or chilled. The most significant consumption per inhabitant of beef and veal was highlighted in Argentina of 36.9 kilograms, in 2020. For the year 2029, the largest consumer of beef and veal is expected to remain also Argentina, with only 36.0 kilograms/capita. The basis of this research was, on the one hand, the statistical data taken from the FAOSTAT website, and on the other hand, the data retrieved from various specialized materials and sites.

Key words: beef, cattle herds, beef and veal consumption, beef and veal imports and exports

INTRODUCTION

According to studies, beef is that type of red meat recommended for consumption by nutritionists, because it contains numerous proteins, vitamins, minerals, amino acids, as well as "healthy" fats. All the above-mentioned elements have a key role in terms of ensuring an optimal health status [8, 11,13]. Nowadays, worldwide, cattle are bred for both meat and milk. Farmers all over the world who have as their first objective the raising of cattle for slaughter prefer meat breeds. These breeds have a great advantage, namely, they show a high yield in terms of growth. Another aspect that cannot be neglected in relation to cattle from meat breeds is represented by the lower care costs compared to the costs for dairy cows [4]. In addition to those mentioned above, it is necessary to mention that animal husbandry specialists have highlighted a very important fact in terms of cattle for meat, namely, that they have a very high capacity to convert fodder into meat [1, 5].



Photo 1. Cattle
Source: [6].

MATERIALS AND METHODS

The paper presents the main trends for the world beef market in the period 2015-2020. In order to highlight the evolution of the beef market in the world, several specific indicators were presented and analyzed as follows: cattle herds worldwide; beef and veal production worldwide; beef consumption worldwide; global imports and exports. In

order to elaborate this study, a variety of statistical data were used, which were taken from the FAOSTAT website and from other specialized sites. The main results of the research were presented mainly graphically, but also in a tabular form.

RESULTS AND DISCUSSIONS

Worldwide, in the period under review for the beef market, a number of beneficial changes were visible, which contributed to meeting consumer demand to a greater extent. This was possible, on the one hand, due to the efforts of the actors involved in the production and marketing of beef, and on the other hand, due to the strategies and solutions identified for this important sector of activity. The first milestone from which it is necessary to carry out the analysis of the beef market at a global level is represented by the total bovine population. From the statistical data presented for the period 2015-2020, it is easy to notice that the number of cattle worldwide was on an upward trend (Fig. 1).

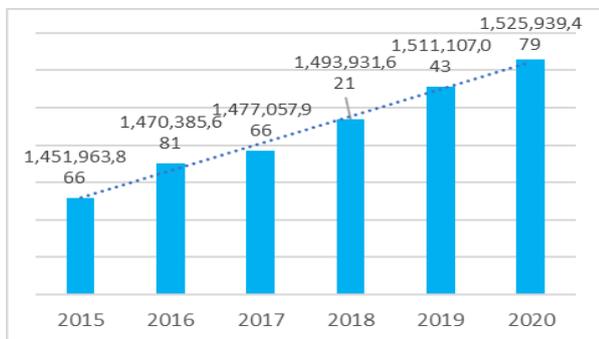


Fig. 1. Cattle herds worldwide, for the period 2015-2020 (heads)

Source: Own design based on FAOSTAT database [7].

The smallest bovine herd was registered in 2015 (1,451,963,866 heads), and the largest had 1,525,939,479 heads (2020). From the analysis of the cattle herd, it resulted that it recorded an increase at global level by 5.09% in 2020, compared to 2015.

Worldwide, in the period 2015-2020, the production of meat of cattle with the bone, fresh or chilled has evolved differently as follows: in the period 2015-2019, it has been on an upward trend. Starting with 2020, it began to decrease compared to the previous year (Fig. 2).

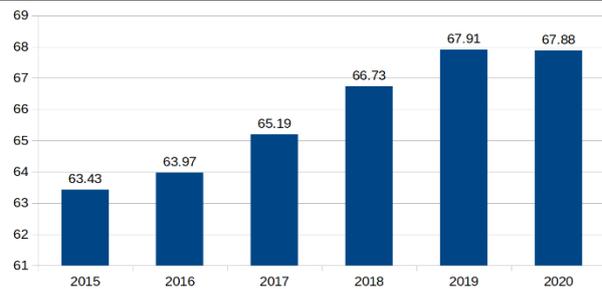


Fig. 2. Production of cattle meat with the bone, fresh or chilled, worldwide, in the period 2015-2020 (million metric tons)

Source: Own processing of FAOSTAT data [7].

From the statistical data presented in Figure 2 it can be observed that the smallest production of meat of cattle with the bone, fresh or chilled worldwide, was obtained in 2015 (63.43 million metric tons), and the highest was of 67.91 million metric tons (2020). According to FAOSTAT data, in 2020, the production of meat of cattle with the bone, fresh or chilled worldwide, decreased by 32.527 tons compared to 2019. Also, in 2020, the production increased by 4,448,744 tons, compared to 2015 [7]. It is important to specify that the production of beef in the analyzed period suffered a series of oscillations that were determined, mainly by: the number of cattle for meat; meat consumption recorded worldwide; the price of feed, the price of labor force and prices for beef on the international market [2].

At continental level, in 2020, America is the largest producer of meat of cattle with the bone, fresh or chilled, achieving 48.6% of the production obtained worldwide. At the opposite pole, the smallest production is obtained by Oceania, with only 4.5% of the world's beef and veal production. In 2020, Oceania achieved only 9.3% of the meat of cattle with the bone, fresh or chilled, obtained by Americas (Table 1, Fig. 3).

Table 1. Production of meat of cattle with the bone, fresh or chilled, at continental level, in 2020

Crt. no.	Region	Production in absolute value (tons)	% of worldwide production
1.	Americas	33,005,224	48.6
2.	Asia	15,310,274	22.6
3.	Europe	10,515,871	15.5
4.	Africa	5,965,965	8.8
5.	Oceania	3,085,763	4.5

Source: [7].

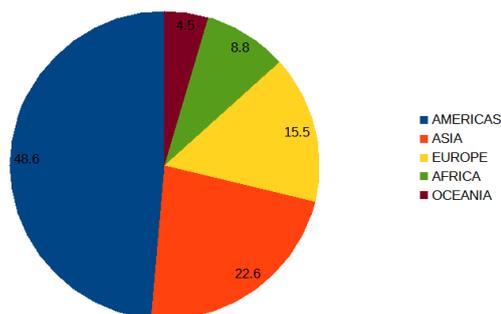


Fig. 3. Production share of meat of cattle with the bone, fresh or chilled at continental level, in 2020
 Source: Own design based on FAOSTAT database [7].

In 2020, according to the official data published, on the first place in the worldwide top of the largest producers of meat of cattle with the bone, fresh or chilled, was the United States of America with a production of 12.3 million metric tons (Fig. 4). The second place is occupied by Brazil with 10.1 million metric tons. It managed to produce 82.1% of the meat of cattle with the bone, fresh or chilled, obtained by the United States. Third place was occupied by China with a production of 6.0 million metric tons.



Photo 2. Beef
 Source: [10].

Argentina ranked 4th, and produced 51.6% of China's obtained production. Australia ranked 5th among the largest producers of meat of cattle with the bone, fresh or chilled, since 2020. It accounted for only 18.3% of the production obtained by the United States. The global consumption of beef and veal in the period 2015-2020 recorded increases from one year to the next. The lowest consumption was recorded in 2015 (66,223 thousand tons), and the highest was of 70,882 thousand tons (2020). The consumption of beef and veal

increased worldwide in 2020, by 7.03% compared to 2015 (Fig. 5).

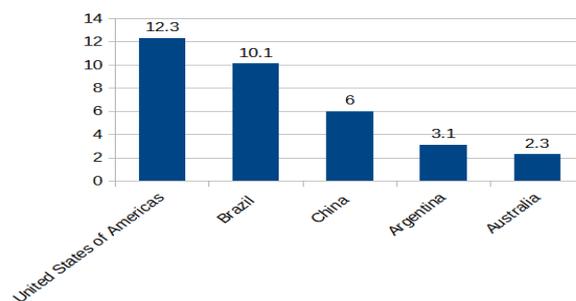


Fig. 4. Top 5 major producers of meat of cattle with the bone, fresh or chilled, worldwide, in 2020 (million metric tons)
 Source: Own processing of FAOSTAT data [7].

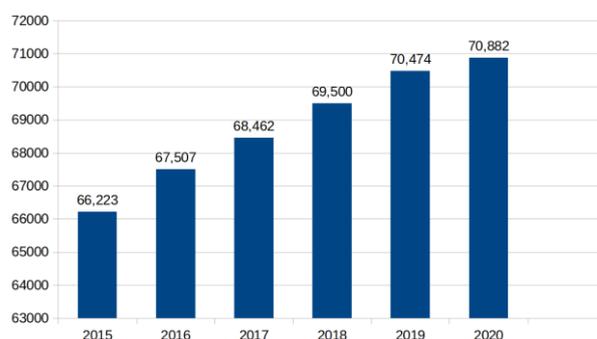


Fig. 5. Beef and veal consumption, for the period 2015-2020 (thousand tons)
 Source: [9].

For the period 2023-2029, the total consumption for the "Beef and Veal" category at global level will be on a positive trend. It will increase from 72,149 thousand tons (2023) to 75,728 thousand tons (2029) (Fig. 6). The consumption of beef and veal in 2029 will increase by 4.96% compared to 2023. The increase in consumption will be influenced, on the one hand, by the population growth, and on the other hand, by the characteristics of this type of meat so appreciated by consumers.

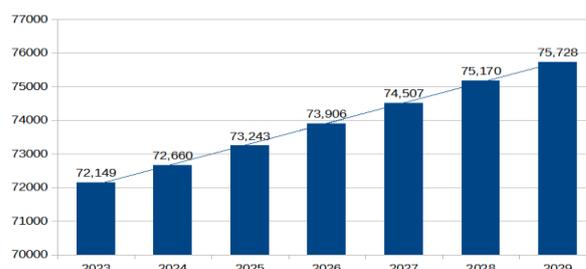


Fig. 6. Forecasts regarding the consumption of beef and veal, in the period 2023-2029 (thousand tons)
 Source: [9].

Regarding the consumption of beef and veal per capita, worldwide, in 2015, according to the official data published, it was of 6.3 kilograms/capita, and in 2020, it increased insignificantly reaching 6.4 kilograms/capita [9].

In 2020, the highest per capita consumption of beef and veal was recorded in Argentina, with 36.9 kilograms (Fig.7). Argentina occupies the first position in terms of beef and veal consumption per capita, among the top 5 countries registered worldwide. The second place in this ranking is occupied by the United States with 26.2 kilograms/capita. Here, the amount of beef and veal consumed per inhabitant represents only 71.0% of the consumption recorded in Argentina. The third place is occupied by Brazil with a consumption of 24.4 kilograms/capita (66.1% of the per capita consumption of Argentina).

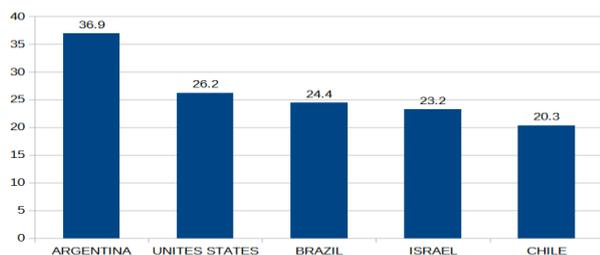


Fig. 7. Top 5 major consumers of beef and veal recorded worldwide, in 2020 (kilograms/capita)
 Source: Own graphics after the data taken from OECD [9].

The 4th place is occupied by Israel, with 23.2 kilograms per capita. The 5th place in the ranking mentioned above is occupied by Chile, with 20.3 kilograms/capita (55.0% of the consumption per capita highlighted in Argentina).

For the year 2029, a world consumption of beef and veal of 6.3 kilograms/capita is expected. The estimated consumption for 2029 will be equivalent to the consumption in 2015, and will decrease by 1.6% compared to 2020 [9].

According to the forecasts for 2029, the ranking of the first 5 major consumers of beef and veal will consist of the following countries: Argentina (36.0 kilograms/capita); United States (26.0 kilograms/capita); Brazil (24.4 kilograms/capita); Israel (25 kilograms/capita) and Chile (21.8 kilograms/capita)

kilograms/capita) (Fig. 8). This ranking has not changed compared to the ranking obtained for 2020, in terms of the place occupied by the top 5 countries that consume beef and veal. Changes occurred in terms of beef and veal consumption per inhabitant in the countries mentioned above, in 2029, compared to 2020, as follows:

- Argentina - beef and veal consumption per capita will be reduced by 2.5%;
- United States - consumption will decrease insignificantly, by only 0.2%;
- Brazil - consumption will remain constant;
- Israel - consumption will increase by 3.8%;
- Chile - consumption will increase by 7.3%.

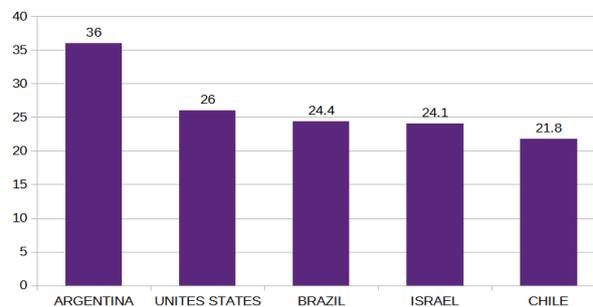


Fig. 8. Top 5 major consumers of beef and veal recorded worldwide, in 2029 (kilograms/capita)
 Source: Own graphic using the data from OECD [9].

In the period 2015-2020, global quantitative imports for the "Beef" category recorded a number of changes. The most significant imports of beef worldwide were obtained in 2018 (2,910,517.00 tons), and the lowest were of 1,882,174.26 tons (2019) (Fig. 9). From the data presented, it is found that imports of beef recorded worldwide, increased from 2,435,018.00 tons (2015) to 2,673,865.14 tons (2020).

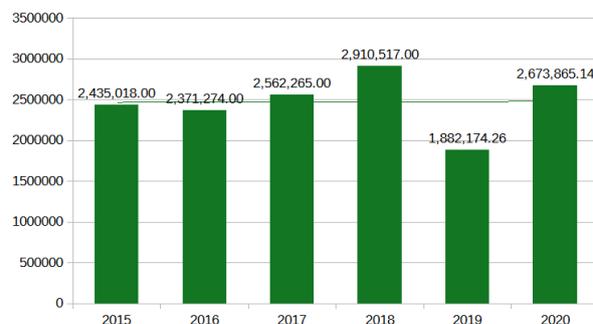


Fig. 9. Quantitative imports of beef at global level, in the period 2015-2020 (tons)
 Source: Own graphics according to the data taken from Faostat [7].

In 2020, global beef imports decreased, compared to 2018, when the peak was reached, by 8.2%.

Worldwide, according to the data provided by Faostat, in 2020, the most significant importers for the category "Meat of cattle with the bone, fresh, or chilled" were: China (297,017 tons, respectively 11.1% of world imports); The Netherlands (229,062 tons, respectively 8.5% of world imports); Italy (200,080 tons, respectively 7.4% of world imports); Republic of Korea (155,081 tons, respectively 5.7% of world imports) and The United States of America (125,604 tons, respectively 4.6 of world imports). In 2020, the first 5 importers for the category "Meat of cattle with the bone, fresh, or chilled" presented above accounted for 37.3% of the imports obtained worldwide (Fig. 10).

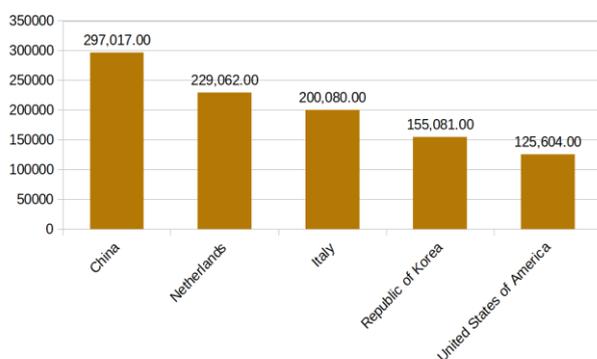


Fig.10. The top 5 major importers registered worldwide for the category "Meat of cattle with the bone, fresh, or chilled" in 2020 (tons)

Source: Own graphics according to the data taken from the Faostat [7].

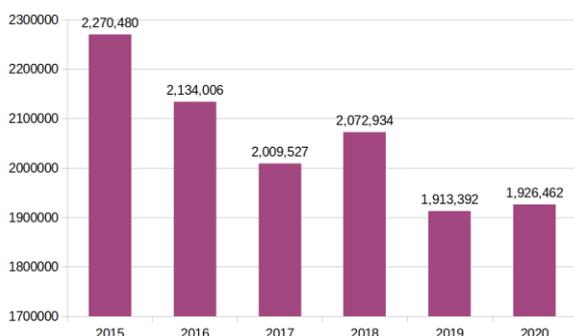


Fig.11. Quantitative exports of beef produced worldwide, in the period 2015-2020 (tons)

Source: Own graphics according to the data taken from Faostat [7].

Worldwide, during the analyzed period, it was found that global quantitative exports for the

"Beef" category have changed from one year to another. The largest exports of beef recorded worldwide were in 2015 (2,270,480 tons), and the lowest were of 1,913,392 tons (2019) (Fig. 11). In 2020, world beef exports decreased by 15.2% compared to 2015. This situation was mainly due to the global health crisis.

According to the data provided by Faostat, in 2020, the most significant exporters registered worldwide for the category "Meat of cattle with the bone, fresh, or chilled" were: Poland (196,825 tons, respectively 10.2% of world exports); The Netherlands (162,975 tons, respectively 8.4% of world exports); France (148,182 tons, respectively 7.6% of world exports); Spain (143,253 tons, respectively 7.4% of world exports) and Germany (136,524 tons, respectively 7.0% of world exports) (Fig.12). At the level of 2020, the first 5 major exporters for the category "Meat of cattle with the bone, fresh, or chilled" presented above recorded 40.6% of the worldwide exports.



Fig. 12. The top 5 major exporters registered worldwide for the category "Meat of cattle with the bone, fresh, or chilled" in 2020 (tons)

Source: Own graphics according to the data taken from Faostat [7].

From the data presented it is easy to notice that the first 5 major exporters are part of the European Union. This fact proves that the European Union is a significant producer of beef and veal, with livestock of about 78 million cattle. It is necessary to remember an important aspect, namely, that in the European Union farmers are helped through income support payments [12].

The value of imports for the "Beef" category recorded worldwide, increased from

8,962,804 thousand dollars (2015) to 9,372,034 thousand dollars (2020) (FAOSTAT). Regarding the value of imports for beef, they increased in 2020 by 4.5%, compared to 2015.

Regarding the value of exports for the "Beef" category, they decreased from 8,604,054 thousand dollars (2015) to 8,459,361 thousand dollars (2020). The value of exports decreased in 2020 by 1.7%, compared to 2015.

According to official data, the global beef market is expected to grow from 414.98 billion dollars (2022) to 604.34 billion dollars by 2029 [3].

CONCLUSIONS

Following the analysis of the main indicators related to the beef market worldwide for the period 2015-2020, the following results emerged:

- In 2020, the most significant cattle herd was registered, 1,525,939,479 heads;
- The highest production of meat of cattle with the bone, fresh or chilled, obtained worldwide, was registered in 2020 (67.91 million metric tons);
- Americas, in 2020, was the first ranked at the continental level, in terms of meat of cattle with the bone, fresh, obtaining 48.6% of the total beef production;
- The largest producer of meat of cattle with the bone, fresh or chilled, worldwide, was represented by the United States of America with 12.3 million metric tons (2020);
- The highest consumption of beef and veal in the world was of 70.882 thousand tons (2020);
- The highest consumption of beef and veal per capita in the world was of 6.4 kilograms (2020);
- Argentina in 2020 registered the highest consumption of beef and veal per capita, of 36.9 kilograms;
- In 2018, the highest imports of beef were recorded worldwide, of 2,910,517.00 tons;
- China, in 2020, was the largest importer of cattle with the bone, fresh or chilled, registered worldwide, with 297,017 tons;

-In 2015, the most significant exports for the "Beef" category of 2,270,480 tons were highlighted worldwide;

-In 2020, Poland was the largest exporter for the category "Meat of cattle with the bone, fresh or chilled", with 196.825 tons;

-The value of imports for beef worldwide increased by 4.5% in 2020, compared to 2015;

-Value exports for beef worldwide decreased by 1.7% in 2020, compared to 2015.

According to official estimations, in the year 2029, the global beef market is expected to grow to 604.34 billion dollars.

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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