

STUDY ON THE DYNAMICS OF POTATO PRODUCTION AND WORLDWIDE TRADING DURING THE PERIOD 2012-2019

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Abstract

The paper presents a series of aspects regarding the evolution of potato production and trade worldwide, for the period 2012-2019. In the present study were analyzed a series of benchmarks for the world sector of potatoes production and trading. The main indicators that have been presented and analyzed are: areas cultivated with potatoes worldwide; total potato production; average production per hectare of potatoes; consumption of potatoes; potatoes world trade. The world potato production sector has undergone substantial changes, but it remains one of the important sectors of activity, as the potato occupies a key place on the scale of important foods for the world's population food. According to statistics, China is the leader in the ranking of potato production. Data taken from the FAO website were used in the paper.

Key words: potato, potato production, average production per hectare of potatoes, import, export.

INTRODUCTION

The potato originated in the Andes of South America, and in the eighteenth century the potato crop for food became important for the rural population and for those on low incomes from Europe and North America [13].

Globally, the potato is grown for its tubers, because they are widely used to obtain various preparations [2, 11].

Sweet potato tubers have been used to feed people since ancient times [10, 12]. Currently, we find the potato culture all over the globe, from the Equator to the polar regions. This culture is possible up to latitudes of 70-72° and altitudes of 1,000-1,500 m.

It is necessary to specify an important aspect, namely that the potato, in addition to providing food to the population, is a valuable raw material for various industries.

The potato has a special nutritional value, as follows: carbohydrates 12.0-33.9%; protein 1.88%; lipids 0.14%; mineral salts-Ca, K, Na, Fe, P, vitamin C (20-25 mg/100g sp); vitamin B₁ (0.1 mg/100g s.p.); vitamin B₆ (0.2-0.3 mg/100g s.p.); pantothenic acid (0.3-0.63 mg/100g s.p.); folic acid (0.1 mg/100g s.p.) [2].

Currently, worldwide, the potato is on the fourth position in the top of food production after: wheat; corn and rice [13].



Photo 1. Potato culture

Source: [9].

Worldwide, the leaders in the ranking in terms of potato production are: China; India and Russia. They are interested in producing potatoes because it is a more profitable crop compared to other crops [12].

Worldwide, according to published data, only 2/3 of the potato production obtained is consumed by the world's population, and the rest is used in various sectors of activity [1, 8, 12].

As for the consumption of potatoes worldwide, it has undergone a number of

changes. Currently, there are two consumption trends, namely:

- in less developed countries the consumption of potatoes is on an increasing trend;
- in the developed countries the consumption of potatoes is on an decreasing trend [3, 7, 12].

Potato culture has a number of advantages for farmers, namely:

- has no pretensions to the weather conditions;
- does not require large investments;
- substantial average yields per hectare can be obtained;
- it is also suitable for small surfaces, etc [12].



Photo 2. Flowering potato crop
Source: [5].

MATERIALS AND METHODS

The paper presents the evolution of potato production and trade worldwide, for the period 2012-2019. In order to point out as well as possible the dynamics manifested on the world potato market, the analysis of the following indicators was imposed: the surfaces cultivated with potatoes worldwide; worldwide potato production; average production per hectare of potatoes worldwide; worldwide consumption of potatoes; and also quantitative and value imports and exports for the category „Potatoes“. For the accomplishment of the present work, statistical data taken from the FAOSTAT site were used. The research results are presented in the paperwork in graphic form.

RESULTS AND DISCUSSIONS

FAO data on the area cultivated with potatoes worldwide show that it varied from one year to another during the analyzed period (Fig.1).

The most significant area cultivated with potatoes was registered in 2012 (18,698,323 ha), and the smallest area was cultivated in 2018 (17,164,096 ha). In 2019, the area cultivated with potatoes worldwide decreased by 7.26%, compared to 2012.

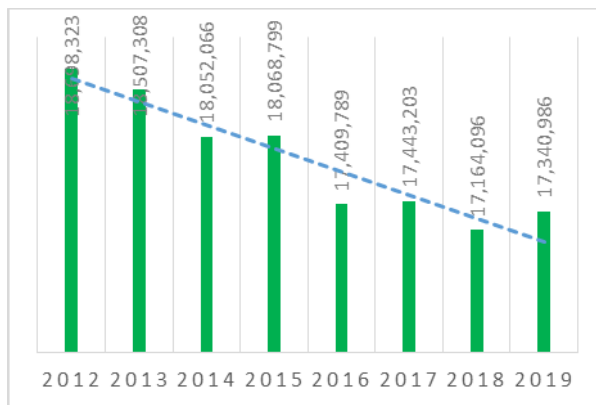


Fig. 1. Area cultivated with potatoes worldwide, for the period 2012-2019 (hectares)

Source: Own design based on FAOSTAT database 2021 [4].

According to the statistical data presented and analyzed regarding the potato production achieved worldwide during the period under analysis, it was observed that it changed from one year to another (Fig. 2).

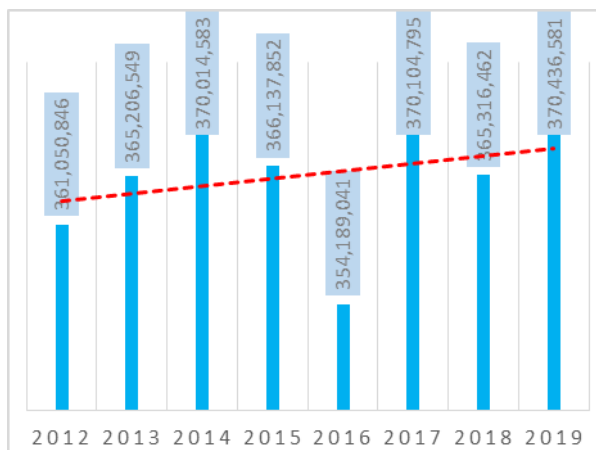


Fig. 2. Worldwide potato production, for the period 2012-2019 (tons)

Source: Own design based on FAOSTAT database 2021 [4].

The most representative potato production achieved worldwide was 370,436,581 tons (2019), and the lowest production was 354,189,041 tons (2016). In 2019, world potato production increased by only 2.59%, compared to 2012.

At the continental level we find a differentiated potato production determined by a series of significant factors. In 2012, Asia achieved the largest potato production of 170,295,511 tons (47.2% of the total world production). In the top of the potato producing continents, on the 2nd place is Europe with a production of 116,656,731 tons (32.3% of the total world production). At the opposite pole, it can be easily seen that Oceania is positioned with a production of 1,854,674 tons, which represents only 0.5% of the world potato production.

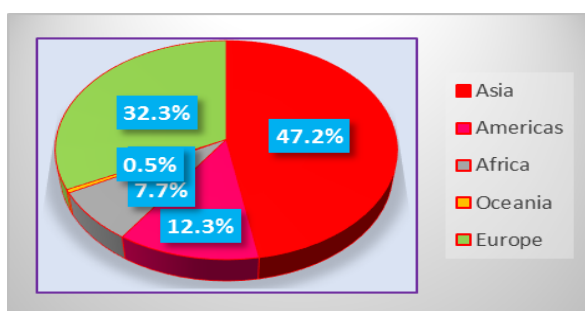


Fig. 3. The share of potato production by regions in 2012 (%)

Source: Own design based on FAOSTAT database 2021 [4].

In 2019, at regional level, the leader in the ranking of production also remained Asia, but with a higher production compared to the potato production registered in 2012. In 2019, the potato production achieved in Asia was 189,810,377 tons (51.1% of the world potato production), 11.4% higher than in 2012. In this ranking, Europe ranks 2nd, with a potato production of 107,264,935 tons (29% of the world potato production). In 2019, potato production in Europe decreased by 8.1%, compared to 2012. On the third place is America with a production of 45,083,546 tons (12.2% of the world potato production). In 2019, for America there is a 1.4% increase in potato production, compared to 2012. The fourth place in this ranking is held by Africa with a potato production of 26,534,489 tons (7.2% of the world potato production). The lowest production was recorded by Oceania, namely 1,743,234 tons (0.5% of the world potato production), which places it in the 5th place. In 2019, potato production in Oceania decreased by 6.1%, compared to 2012.

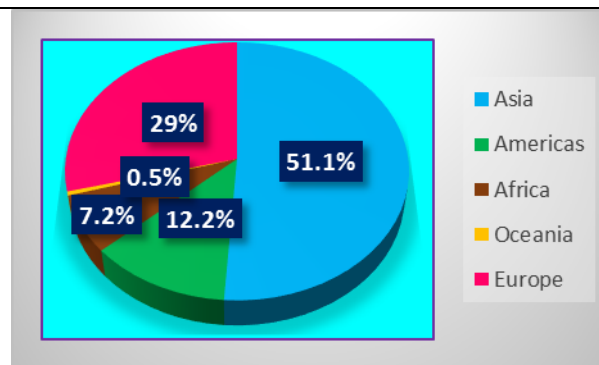


Fig. 4. The share of potato production by regions in 2019 (%)

Source: Own design based on FAOSTAT database 2021 [4].

In 2019, the three world leaders in potato production were: China (91,818,950 tons, respectively 24.78% of the world potato production); India (50,190,000 tons, respectively 13.54% of the world potato production) and Russia (22,436,581 tons, respectively 5.95% of the world potato production). The three major potato-producing countries in 2019 together accounted for more than 44% of the world potato production [12].

World potato production was directly influenced by the cultivated area and the average production achieved per hectare. According to data provided by FAO, the average potato production obtained worldwide in the period 2012-2019 has varied (Fig. 5). The highest average production per hectare of potatoes was achieved in 2019 (21,361.9 kg/ha), and the lowest average production was 19,309.3 kg/ha.

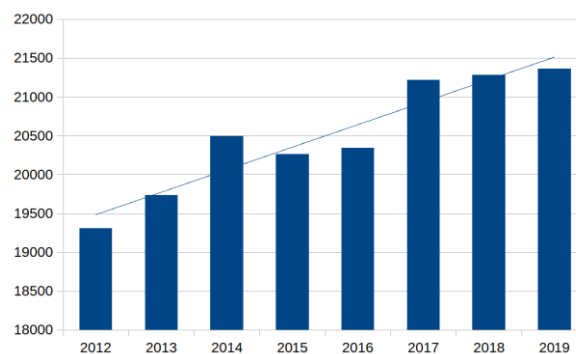


Fig. 5. Average production per hectare of potatoes worldwide, for the period 2012-2019 (kg/ha)

Source: Own design based on FAOSTAT database 2021 [4].

Worldwide, the average consumption of potatoes per capita according to statistical data published by Faostat for 2018, was of 32.93 kg. Per capita consumption decreased in 2018, compared to 2014, by 3.97%. Regarding the average consumption of potatoes per capita from a historical point of view, it reached a maximum in 1961 (35.7 kg), but also a historical minimum in 1991 (26.0 kg) [6].

In 2018, according to Faostat data published in 2019, Belarus (182 kg) ranked first in the world in terms of per capita potato consumption. At the opposite pole, Cambodia had the lowest consumption (0.062 kg).

Quantitative imports of potatoes worldwide varied between 2012-2015, and starting with 2016 they were on an upward trend (Fig. 6).

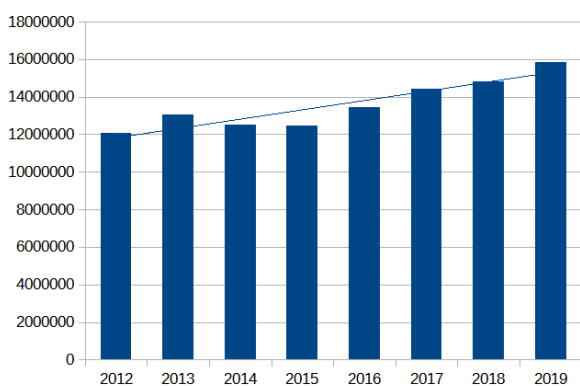


Fig. 6. Quantitative imports of potatoes worldwide, for the period 2012-2019 (tons)

Source: Own design based on FAOSTAT database 2021 [4].

The smallest quantitative imports of potatoes worldwide were registered in 2012 (12,083,168 tons), and the most significant were made in 2019 (15,821,372 tons). Quantitative imports of potatoes worldwide in 2019, increased by 30.39% compared to 2012. At regional level, in 2019, the quantitative imports of potatoes were: Europe (10,803,179 tons); Asia (3,091,559 tons); Americas (1,088,552 tons); Africa (810,254 tons) and Oceania (27,828 tons).

From the data presented it can be seen that Europe is the leader in terms of quantitative imports of potatoes. In 2019, Europe accounted for 68.28% of potato imports worldwide. The lowest quantitative imports of potatoes were recorded by Oceania,

accounting for only 0.17% of the imports recorded worldwide in 2019.

The top 5 potato importers for 2019 consisted of: Belgium (3,141,332 tons); the Netherlands (1,907,297 tons); Spain (838,183 tons); Germany (749,772 tons) and Italy (640,284 tons) [4].

Belgium in 2019 accounted for 19.85% of the quantitative imports of potatoes registered worldwide and 29.07% of the quantitative imports achieved in Europe.

The value imports for the "Potatoes" category registered worldwide have changed from one year to another (Fig. 7). The most significant value imports were registered in 2019 (5,360,452 thousand \$). They increased by 39.54% in 2019, compared to 2012. The smallest value imports were registered in 2015 (3,823,958 thousand \$). At continental level in 2019, the value imports for the "Potatoes" category were presented as follows: Europe (3,498,059 thousand \$); Asia (966,208 thousand \$); Americas (503,153 thousand \$); Africa (376,170 thousand \$) and Oceania (16,862 thousand \$).

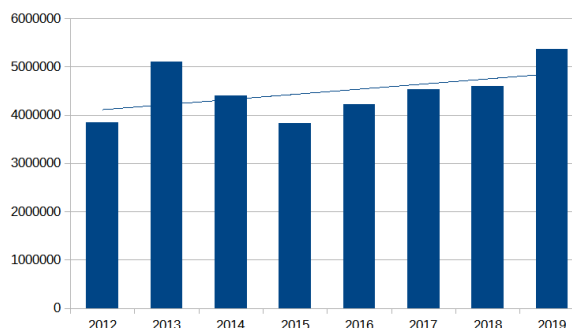


Fig. 7. Value imports for the category "Potatoes" achieved worldwide between 2012-2019 (thousand \$)

Source: Own design based on FAOSTAT database 2021 [4].

Worldwide, quantitative potato exports fluctuated during the analyzed period (Fig. 8). The most substantial quantitative exports for the "Potatoes" category were registered in 2019 (14,748,559 tons), and the lowest quantitative exports were 11,104,513 tons (2012). In 2019, the quantitative exports for the "Potatoes" category increased by 32.81%, compared to 2012.

Quantitative exports for the "Potatoes" category at regional level for 2019 were:

Europe (9,506,642 tons); Asia (3,018,729 tons); Americas (1,135,981 tons); Africa (1,010,363 tons); Oceania (76,844 tons).

Europe in 2019 accounted for 64.45% of the potato exports worldwide.

It is necessary to specify for 2019 the top 5 exporters of potatoes registered worldwide included the following countries: France (2,323,364 tons); the Netherlands (2,282,985 tons); Germany (1,875,696 tons); Belgium (998,672 tons); Egypt (684,735 tons);

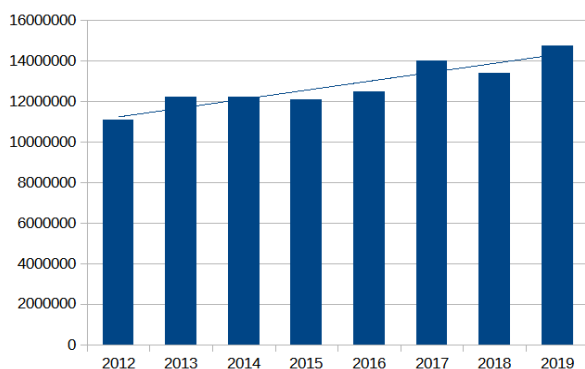


Fig. 8. Quantitative exports of potatoes worldwide, between 2012-2019 (tons)

Source: Own design based on FAOSTAT database 2021 [4].

Value exports for the "Potatoes" category achieved worldwide varied in the period under analysis (see Fig.9). The highest value exports were highlighted in 2019 (5,147,224 thousand \$).

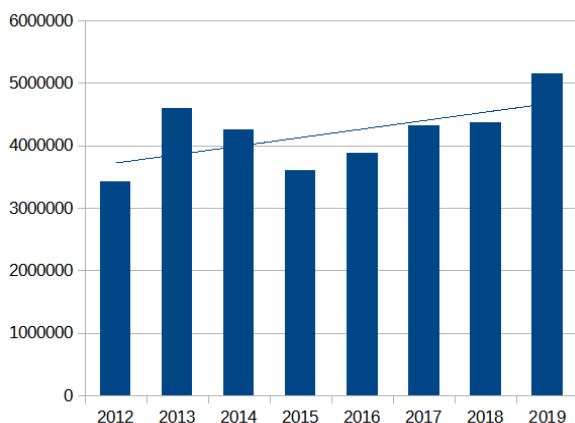


Fig. 9. Value exports for the category "Potatoes" between 2012-2019 (thousand dollars)

Source: Own design based on FAOSTAT database 2021 [4].

The value of exports increased in 2019 by 50.24%, compared to 2012. The lowest value of exports was achieved in 2012 (3,425,990 thousand \$).

CONCLUSIONS

The analysis of the main indicators related to the potato production and marketing sector worldwide, in the period 2012-2019, highlighted the following aspects:

- the largest area cultivated with potatoes was of 18,698,323 ha (2012);

- in 2019, the world's largest potato production of 370,436,581 tons was achieved;

- at the regional level in 2012, Asia obtained the most significant potato production of 170,295,511 tons;

- in 2018, the average world consumption of potatoes per capita was of 32.93 kg;

- in 2019, the largest quantitative imports of potatoes of 15,821,372 tons were achieved;

- the highest value of imports was 5,360,452 thousand \$ (2019);

- the highest quantitative exports were of 14,748,559 tons (2019);

- Europe, achieved over 60.0% of the quantitative exports of potatoes registered worldwide for 2019;

- the value of exports increased by 50.24% in 2019, compared to 2012.

Currently, the global potato production and marketing sector is in full development because, on the one hand, the potato is one of the most important food for the planet's population, and on the other hand, we are witnessing an increase in the demand for potatoes for industrial processing.

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