

ECONOMIC ELEMENTS OF THE TOBACCO INDUSTRY IN THE REPUBLIC OF NORTH MACEDONIA

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Abstract. Tobacco as an industrial plant has a significant place in the structure of Macedonian agricultural production, because it implies socio-economic and social effects. The structure of the tobacco economy is expressed through the primary production of tobacco, the processing of tobacco, the processing of tobacco (fabrication) and the turnover of tobacco processing.

The studies will mainly be based on secondary sources of data, and the set goal is dictated by several methods: method of indices, comparative inductive, deductive and other mathematical-statistical methods characteristic of agro-economic research.

The significance and need for studying this complex issue stems from the fact that tobacco is a source of basic and additional income for a population of about 30.000 families, a source of budgetary income, a source of significant export income.

It should also be emphasized that the tobacco economy in R.N. Macedonia. Compared to other economic branches, Macedonia has the best rounded reproductive cycle. The production of tobacco as a labor-intensive activity with its specifics of the technological-production process enables the producers to work almost throughout the year, while ensuring the utilization and profitable valorization of the agricultural lands with a relatively weak creditworthiness.

Through this paper, the need to study this issue will be shown due to the fact that tobacco production plays a key role both for the development of certain municipalities and for the entire national economy.

Macedonian tobacco production is dominated by oriental aromatic types and is mainly a mono-production activity with a limited possibility of replacement with an economic activity that would provide an equivalent level of income due to the lack of alternative employment and mostly unsuitable conditions for another type of agricultural production.

Keywords. Tobacco, tobacco production, tobacco industry, agricultural policy, export, import.

INTRODUCTION

The basic product in the tobacco economy is tobacco and tobacco products. Tobacco as an agricultural product is grown in more than 120 countries in the world. It represents an attractive industrial culture for both developed and developing countries. Therefore, it should be emphasized that tobacco is produced only in poor countries.

Tobacco production occupies a significant place in the national economy, the agricultural economy, but mostly for the tobacco processing industry.

That is why it is said that tobacco is a culture of the new world and its production on a global level for the last 20 years has been between six and seven million tons per

year. According to FAO, in the investigated ten-year period, the highest yield of tobacco was in 2013, when it reached 7.6 million tons, and the lowest was in 2020, when it was 5.88 million tons.

It is especially important to mention that it is also cultivated in conditions where any other crop cannot replace tobacco in terms of its cultivation on soils with poorer quality, where it gives an adequate yield and quality, and thus provides a decent income. These are the rural areas in the country where tobacco cultivation dominates the agricultural activities. It is about the oriental type of tobacco, which is closely related to the Macedonian climate, which has favorable natural, agro-ecological conditions for its production.

Our country does not accept a methodology for reducing tobacco production because it is contrary to the possibility of ensuring the livelihood of producers who would hardly replace tobacco with another crop. In doing so, the climatic conditions and the economic effect should be taken into account. In the regions where tobacco is grown, there are no climatic conditions for other crops because they are dry places. Regarding the economic effect, it is accepted only if a new crop is a profitable substitute, that is, it provides the producers with a livelihood, which is currently unlikely.

The production of tobacco, according to the reached level of agricultural engineering and agrotechnology, takes place on poorly fertile land where there is no economic alternative for the production of other industrial crops.

MATERIAL AND METHOD

Taking into account the problems that this paper deals with, data obtained from regular statistical surveys conducted by the State Statistics Office of R.N. Macedonia, annual accounts from the Central Registry, and data from the Ministry of Agriculture, Forestry and Water Management of the R.N. Macedonia.

From the above data sources, relevant knowledge will be obtained about the areas under tobacco, the average yields, the total production of tobacco in Macedonia, as well as the value indicators for the exported and imported tobacco.

The studies will mainly be based on secondary sources of data, and the set goal is dictated by several methods: method of indices, comparative inductive, deductive and other mathematical-statistical methods characteristic of agro-economic research, supported by tabular and graphical presentation of the data.

RESULTS AND DISCUSSION

The global tobacco industry is driven by the basic economic principles of supply and demand. Tobacco production and consumption are strongly influenced by a number of factors, including government policies, health concerns, cultural norms and individual preferences.

In terms of supply, the largest tobacco producing countries in the world have managed to meet the demand for tobacco products. However, there are fluctuations in tobacco production due to a number of factors such as weather, disease and changes in government policies.

On the demand side, tobacco use is declining in many countries due to public health campaigns, anti-smoking laws, and increased awareness of the health risks associated with tobacco use. However, there are still millions of people around the world who use tobacco, and the demand for tobacco products remains significant.

The global tobacco market is dominated by the production and consumption of cigarettes, which account for about 90% of tobacco sales worldwide. Other tobacco products, such as cigars, smokeless tobacco and electronic cigarettes, have smaller market shares but are still significant.

Overall, the supply and demand for tobacco worldwide continues to be influenced by a complex array of factors, and the industry remains a significant economic and public health issue.

Table 1

Largest producers of tobacco in the period from 2018-2020 (in tons)

State	Production			Average
	2018	2019	2020	
China	2.241.000	2.611.610	2.134.000	2.328.870
India	749.907	757.966	761.335	756.403
Brazil	762.260	769.801	702.208	744.756
Zimbabwe	132.200	184.584	203.480	173.421
Indonesia	181.095	197.250	199.727	192.691
USA	241.870	212.260	176.635	210.255
Mozambique	93.659	142.041	158.532	131.411
Pakistan	106.727	104.355	132.872	114.651
Argentina	104.093	107.573	109.333	107.000
Malawi	95.356	100.327	93.613	96.432
Tanzania	107.009	90.698	91.240	96.316
Bangladesh	89.013	128.579	88.852	102.148

Source: FAO, <http://www.fao.org/faostat/en/#data/QC>

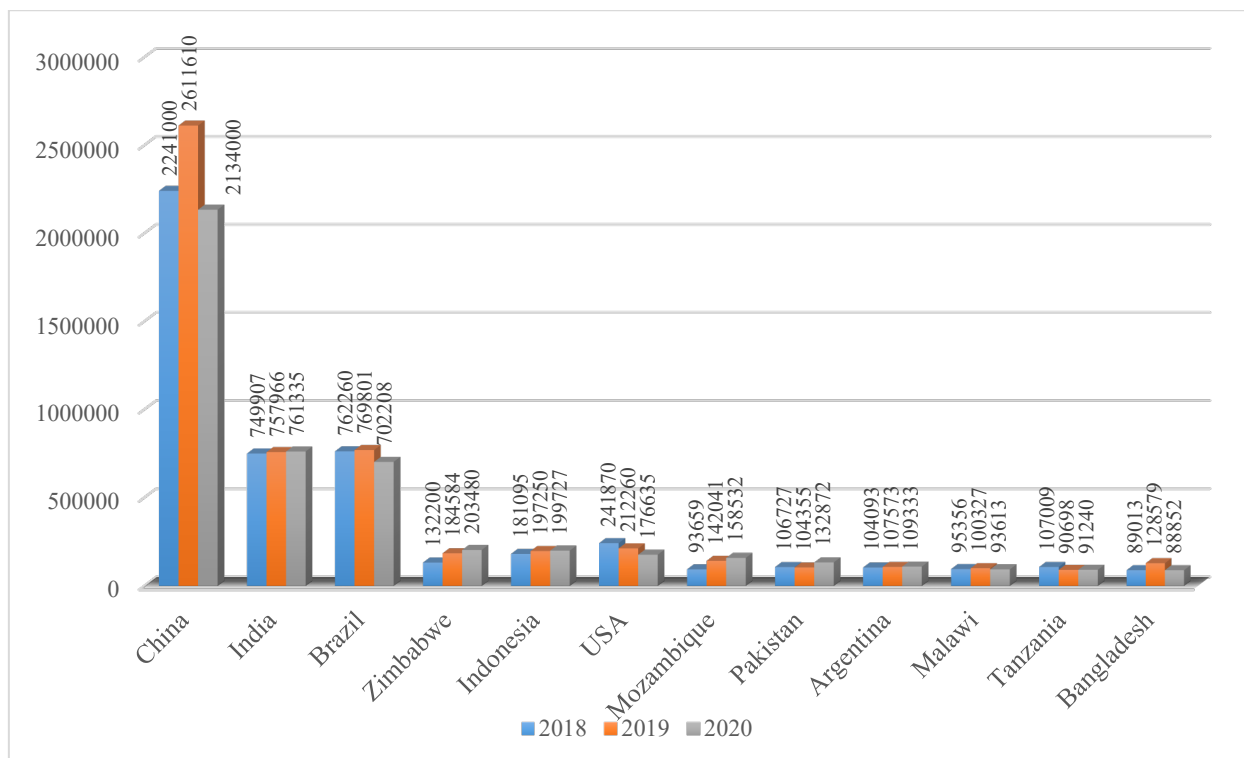


Figure 1. Largest producers of tobacco in the world from 2018-2020

From the attached table, it can be seen that the leading producers of tobacco are: China, India and Brazil. China with the average production in the analyzed period participates with almost one third in the world production. In most countries, variability in tobacco production is noticeable. Statistics for the United States also show a downward trend in tobacco production. That trend has been noticeable since the 60s of the last century. If then the USA produced close to one million tons of tobacco, after 2000 it is reduced to 300.000 to 400.000 tons, and only almost 180.000 tons in 2020. But there are also countries where there is a noticeable trend of increasing tobacco production (Mozambique, Zimbabwe, Argentina...).

A decrease in tobacco production in Europe is also noticeable, although the leading producer country is Italy (in 2020 it produced 38.000 tons), Poland, which in 2019 produced 24.000 tons and Spain, in the same year, produced 28.000 tons of tobacco. It is true that China and India are the largest producers of tobacco, but we should not leave out the fact that they are also the most numerous countries in the world. At the same time, these two countries are also the biggest consumers of tobacco. Therefore, it can be concluded that most of the produced tobacco is consumed in the countries themselves. For these reasons, there are differences when it comes to the ranking of the countries that are in the leading positions in terms of production and export of unprocessed tobacco.

Table 2

Sown and harvested areas in the Republic of North Macedonia

Year	Area in hectares	
	Sown	Harvested
2012	19.656	19.639
2013	19.178	19.178
2014	17.757	17.756
2015	16.128	16.128
2016	16.379	16.376
2017	15.961	15.959
2018	16.582	16.582
2019	16.719	16.679
2020	16.592	16.591
2021	15.457	15.457
Total	170.409	170.345
Average	17.041	17.035

Source: Statistical Yearbook of the Republic of North Macedonia, 2012-2022

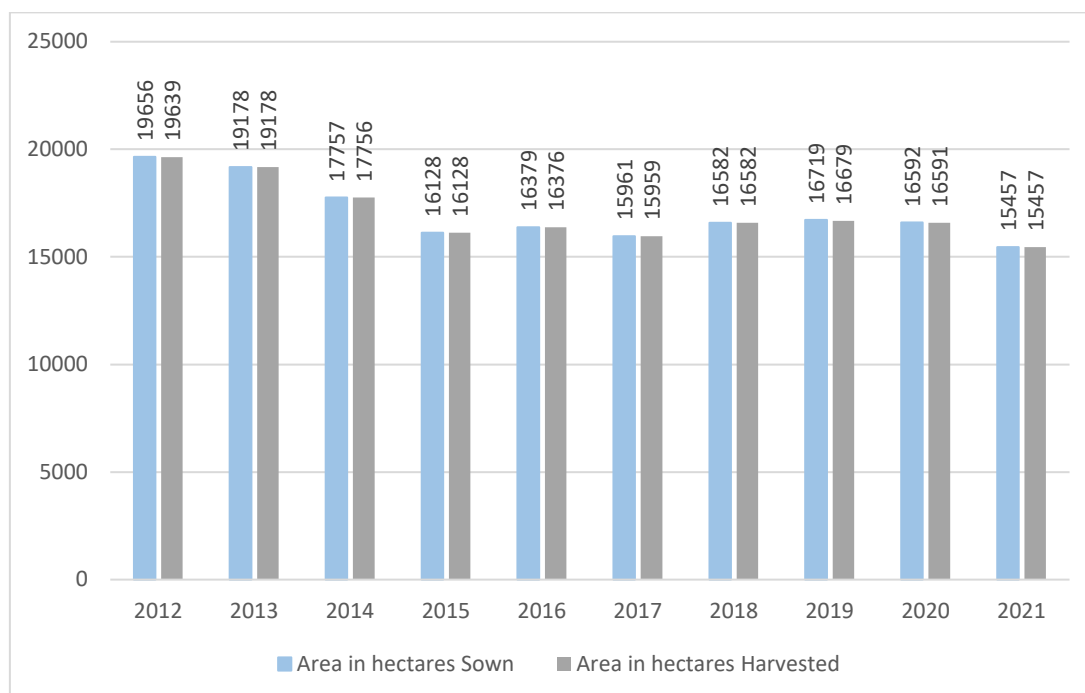


Figure 2. Sown and harvested areas in the Republic of North Macedonia

If we look at the data on planted and harvested areas with tobacco in the ten-year period (2012-2021), we will notice that there is a declining trend in tobacco production in our country. If 19.656 ha were planted in 2012, and 15.961 ha in 2017, then the areas planted with tobacco were reduced by almost 8%. If a comparison is made with the sown areas in 2012 and 2021, then the reduction in sown areas amounts to 21%. As for the harvested areas in relation to the sown, it can be said that the harvest was almost completely harvested.

Table 3

Tobacco production and yield

Year	Tobacco production and yield	
	total, in tonnes	kg, per hectare
2012	27.333	1.392
2013	27.859	1.453
2014	27.578	1.553
2015	24.237	1.503
2016	25.443	1.554
2017	22.885	1.434
2018	25.547	1.541
2019	26.234	1.573
2020	26.112	1.574
2021	24.329	1.574
Total	257.557	15.151
Average	25.756	1.515

Source: Statistical Yearbook of the Republic of North Macedonia, 2012-2022

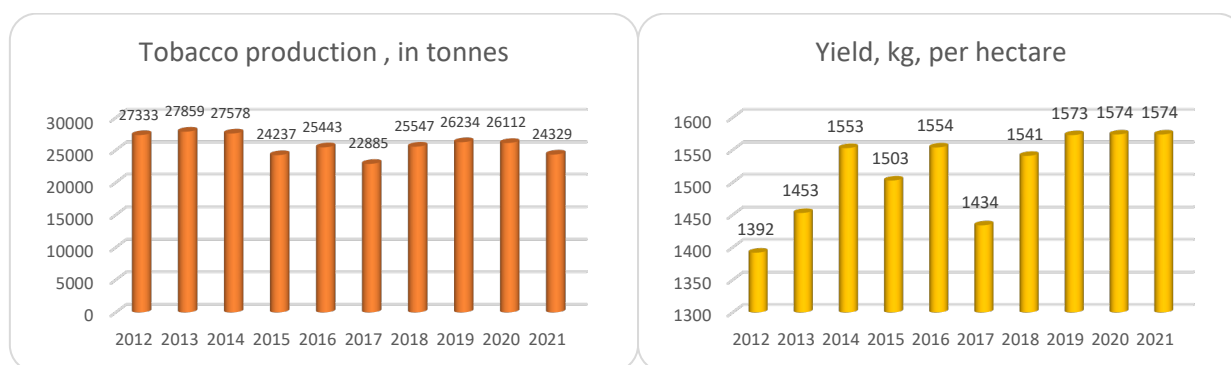


Figure 3. Tobacco production and yield

We have already mentioned that in the analyzed ten-year period, the areas sown with tobacco are continuously decreasing. Accordingly, the production of tobacco, from year to year, is also decreasing. For this period, a total of 257.557 tons were produced, or an average of 25.756 tons per year, which is the closest to the amounts obtained in 2018. From the tabular representation of the returns, it is evident that, despite the oscillations, the returns have been growing in recent years. If we compare the production obtained in 2021 in relation to 2012, it has decreased by as much as 11%. And if we compare yields, for the same two years, then we are talking about an increase of 13% per ha.

Table 4

Exports of unprocessed tobacco (in tons) of tariff number 2401

State exporter	2016	2017	2018	2019	2020	2021	Просек
World	2.460.676	2.467.530	2.436.108	2.381.875	2.233.022	2.314.982	2.382.366
Brazil	466.286	442.921	440.755	527.394	485.115	434.184	466.109
Belgium**	161.035	186.767	228.184	226.396	217.324	206.108	204.302
China	172.324	205.979	186.599	194.015	185.649	191.767	189.389
India	217.859	191.006	194.280	185.946	176.700	190.184	192.663
Zimbabwe	155.227	157.337	185.281	173.559	177.606	177.171	171.030
Malawi	150.104	150.533	139.844	136.411	112.439	124.670	135.667
USA	173.883	158.723	150.976	105.033	97.764	105.472	131.975
Italy	66.909	68.059	74.136	67.214	58.860	59.813	65.832
Germany**	57.716	69.546	56.924	53.075	41.902	52.404	55.261
Argentina	90.948	85.264	57.922	48.492	54.723	51.954	64.884
Turkey	50.735	48.899	60.625	46.665	48.243	51.679	51.141
Mozambique	52.786	68.001	64.701	80.288	61.198	48.880	62.642
Philippines	26.250	59.455	39.603	44.419	36.162	45.219	41.851
Greece**	48.250	36.905	34.957	28.509	32.043	42.102	37.128
Tanzania	74.341	49.203	73.103	42.581	42.558	37.705	53.249
N.Macedonia	27.692	27.622	23.327	24.898	22.511	30.915	26.161
Indonesia	28.005	29.134	32.310	33.267	31.132	27.411	30.210
Poland	26.197	32.499	29.916	30.607	24.489	25.299	28.168
Bulgaria**	41.170	29.816	27.260	25.708	22.933	22.745	28.272
Spain	26.928	25.191	28.293	23.772	n.d	21.451	25.127

Извор: ITC <http://trademap.org/Country>

The table attached above shows the export of unprocessed tobacco at the national level and the 20 exporting countries for the period from 2016-2021, including our country. Initially, what is noticeable is that exports at the world level also vary, but mostly decrease. If the national export in 2016 amounted to 2.460.676 tons of tobacco, then in 2021 it decreased by 6% and amounted to 2.314.982 tons. As previously mentioned, Brazil is not only among the three largest tobacco producing countries, but is also the largest exporter. If we make a comparison between the average world export and the average Brazilian export, we will see that Brazil participates on average with a little more than 19% (19.56%).

Although the USA also appears as an exporting country, there is a noticeable decline in exports, as it is in most other countries. In the analyzed period in 2016, they exported 173.883 tons, but in 2021, the export decreased by as much as 39.3% and

amounted to 105.472 tons. The USA with the average export in the analyzed period participates with 5.5% in the world's average export.

And in Italy there is a visible decline in exports. If in 2016 the export amounted to 66.909 tons, in 2021 it will decrease by more than 10% and amount to 59.813 tons. The average Italian export, which is 65.832 tons, represents 2.8% of the world's average export. Spain is the smallest exporter at the world level, with an average export of 25.127 tons, which represents only 1% of the world average export of unprocessed tobacco.

Our country is one of the few (Belgium, China, Philippines...) that has increased its exports. Although Macedonia participates in world exports with only 1.1% since 2016, when the export was 27.692 tons, it increased by 11.6% in 2021, when it was 30.915 tons.

Tobacco has been an important export crop for Macedonia for many years. According to the World Bank, in 2019 tobacco accounted for approximately 9% of Macedonia's total exports. The country has a long history of growing tobacco, and tobacco production is an important source of income for many farmers and workers.

The tobacco industry in Macedonia is largely focused on the production of high-quality tobacco for export to other countries, especially Europe. The country has a reputation for producing premium tobacco with a distinctive flavor and is known for its high-quality oriental tobacco.

Table 5

Export-import of tobacco in the Republic of North Macedonia
from tariff number 2401

Year	EXPORT			IMPORT		
	Quantity in tons	Export price in US\$ per ton	value in US \$	Quantity in tons	Import price in US\$ per ton	value in US \$
2012	22.954	5.286	121.339.862	5.356	4.325	23.163.185
2013	25.864	5.925	153.244.833	5.437	3.846	20.910.151
2014	23.996	5.329	127.875.709	3.010	3.408	10.257.623
2015	22.775	4.209	95.855.989	2.998	4.154	12.453.689
2016	27.692	4.265	118.119.734	5.945	3.863	22.963.886
2017	27.622	5.160	142.531.331	4.803	3.942	18.934.611
2018	23.327	5.908	137.816.042	4.703	4.594	21.606.459
2019	24.898	5.758	143.366.634	3.663	4.193	15.359.772
2020	22.511	6.053	136.252.966	1.872	4.804	8.993.395
2021	27.431	5.283	144.919.653	2.299	5.133	11.800.081
Total	249.070	53.176	1.321.322.753	40.086	42.261	166.442.852
Average	24.907	5.318	132.132.275	4.009	4.226	16.644.285

Source: <https://comtradeplus.un.org/>

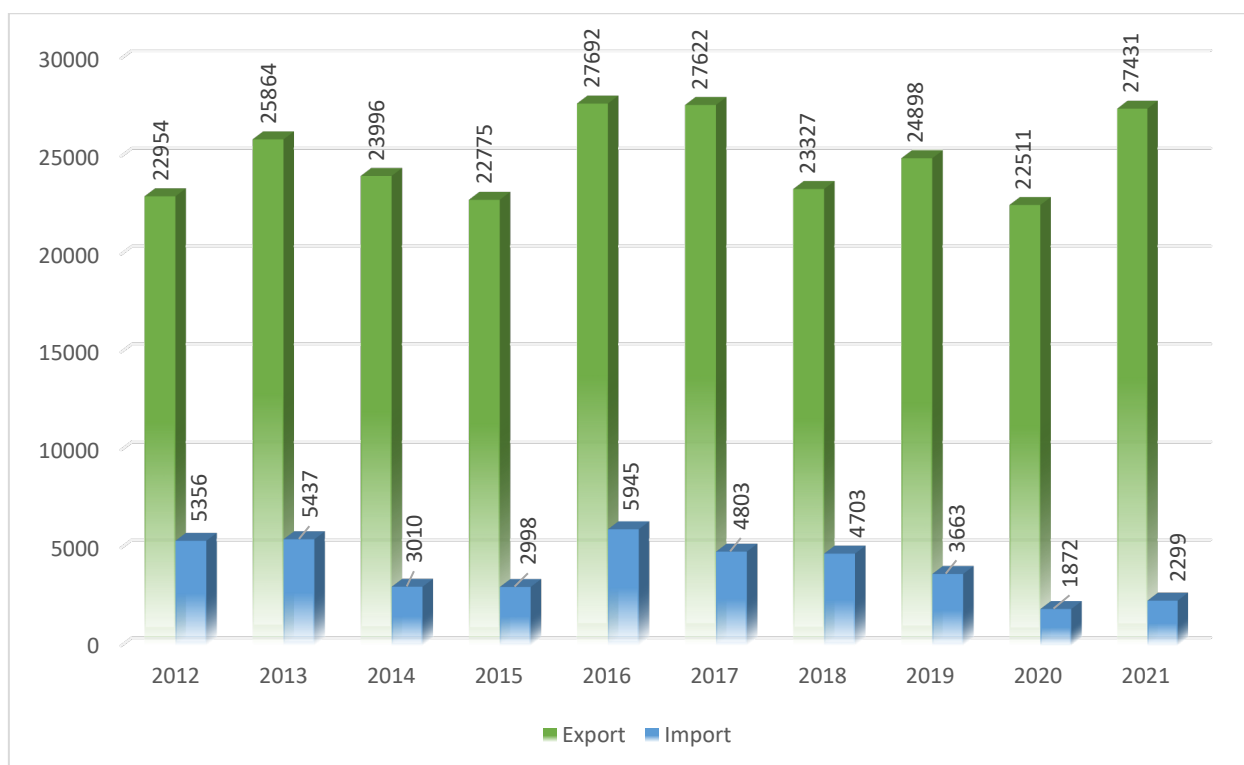


Figure 4. Export /import (quantity in tones)

Tobacco production results not only in processing, but also in exports and imports. Like other tobacco-producing countries, our country also exports a part of the annual production, making a profit. For their needs, producers, as well as our country, need to import certain quantities of unprocessed tobacco. The attached table shows the export and import of the Republic of North Macedonia for the ten-year period (2012-2021). Also shown are revenues and expenses from exported and imported quantities of unprocessed tobacco, shown in US dollars.

From the tabular presentation, it can be observed that both during export and import there are increases and decreases in exported and imported quantities, as well as decreases and increases in prices per ton/quantity. In the analyzed period, R.N. Macedonia exported an average of 24.907 tons at an average price of US \$5.318 per ton. Comparatively, exports in 2021 compared to 2012 grew by 19.5%. An average inflow of US \$132.132.275 was realized from exports. The largest export in the ten-year period was made in 2016, when it amounted to 27.692 tons, and the highest price per ton was achieved in 2020 and was 6.053 US \$. When it comes to imports, R.N. Macedonia has a downward trend. For example, if 5.356 tons were imported in 2012, 2.299 tons were imported in 2021, which represents a decrease of 57%. The largest quantities of unprocessed tobacco were imported in 2016 (5.945 tons), and the highest import price of US\$ 4.804 per ton was paid in 2020.

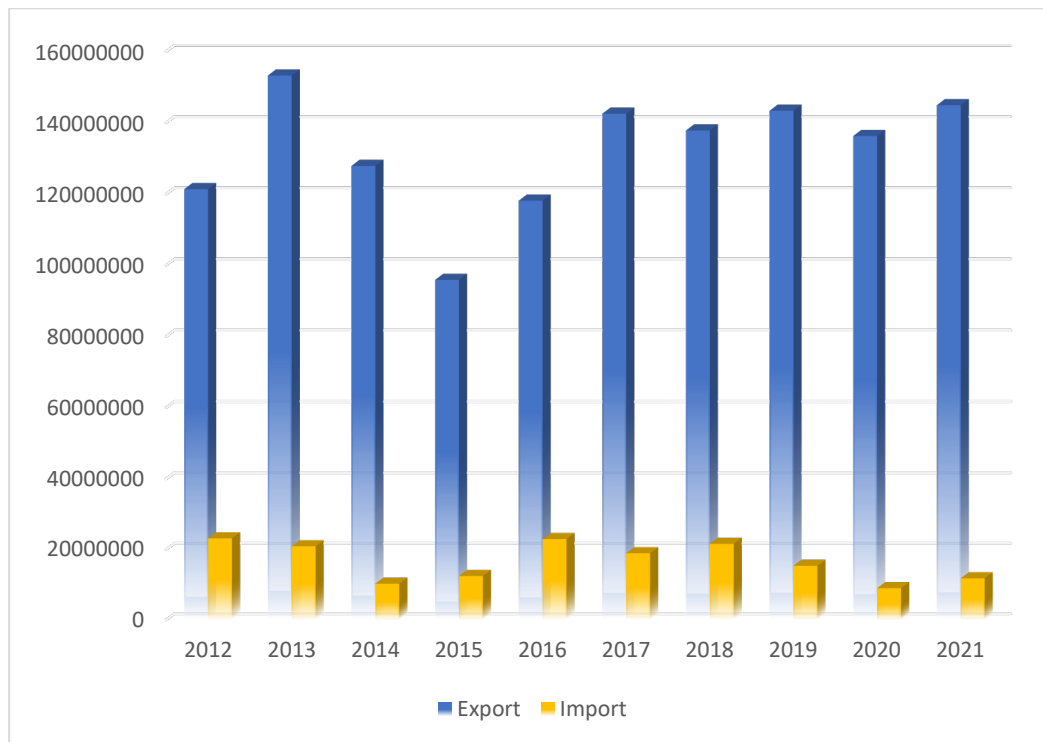


Figure 5. Export/ import (value in \$)

In the end, the conclusion is that during the period of analysis, the Republic of North Macedonia had much greater exports than imports, or 6 times greater exports than imports.

It should also be emphasized that the Macedonian government has taken steps to support the tobacco industry, including providing subsidies to farmers and investing in research and development. The tobacco industry has also faced a number of challenges, including declining demand for tobacco products in some markets and increasing competition from other tobacco-producing countries.

Although tobacco production is an important part of the Macedonian economy, there are concerns about the health risks associated with tobacco use and the environmental impact of tobacco cultivation. Some stakeholders are calling for more sustainable and ecological agricultural practices and efforts to promote alternatives to tobacco cultivation, but despite this tobacco remains the number one industrial crop in the R. N. Macedonia territory.

Conclusion

In general, in modern conditions of agricultural functioning, the prospective development of the sector of industrial crops in the future would take place through the application of modern agrotechnical measures, selection of tobacco as a labor-intensive crop, modernization of the mechanization for its production, direct payments that are paid through an already defined "calendar of subsidies", greater certainty during the purchase, etc. So, the country's agricultural policy would be about the internal market, incentives, measures, increased quality, tobacco promotion and foreign trade. It also follows the conclusion that tobacco cannot be replaced by another economic non-agricultural or agricultural activity that would provide an equivalent level of income, due to the limitation of alternative employments, or due to unsuitable natural conditions

for another type of agricultural production in the existing productive agricultural capacities. .

While tobacco production is a controversial topic with many negative consequences, several positive aspects can be mentioned, including:

- Economic benefits: Tobacco production can be a major source of income and employment for farmers and workers in many countries. Tobacco is a labor-intensive crop and can contribute significantly to the local and national economy.

- Technological advances: Growing and processing tobacco has benefited from technological advances in agriculture and production, leading to improved efficiency and productivity.

- Traditional cultural significance: In some cultures, tobacco is a significant part of traditional practices, such as in R.N.M.

- Tax revenues: Governments can collect significant tax revenues from the sale of tobacco products, which can be used to finance public services such as health, education and infrastructure.

- Alternative uses: Tobacco plants have potential uses beyond smoking products. For example, some research has shown that tobacco plants can be used to produce biofuels, which could be a more sustainable and environmentally friendly alternative to fossil fuels.

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