

## SUSTAINABLE ALTERNATIVES FOR TOBACCO PRODUCTION

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### ABSTRACT

Although the tobacco industry argues that tobacco cultivation can serve as a source of income and a means of decent livelihood for tobacco growers, as well as a contributor to state budgets, the World Health Organization consistently emphasizes that tobacco use (with a particular focus on smoking) is one of the greatest public health threats globally.

Framework Convention on Tobacco Control, as an international treaty aimed at reducing the demand and supply of tobacco, acknowledges that while countries and governments adopt measures to reduce the demand for tobacco products, they must address the consequences of this reduction on tobacco growers who rely on this crop for their livelihoods.

Despite the aggressive campaign against tobacco and smoking, many families still engage in tobacco production as a family business due to the inability to develop alternative ventures, the simplicity of tobacco farming and the need to secure livelihoods and supplement household incomes.

**Keywords:** tobacco production, tobacco growers, cultivated areas, tobacco control, sustainable alternatives, perspectives

### ОДРЖЛИВИ АЛТЕРНАТИВИ ЗА ПРОИЗВОДСТВОТО НА ТУТУН

Иако, тутунската индустрија укажува дека одгледувањето на тутунот може да биде извор на приходи и пристојна егзистенција за тутунопроизводителите, а истовремено и извор на средства за државниот буџет, сепак, Светската Здравствена Организација постојано укажува дека употребата на тутунот (со акцентирање на пушењето) е една од најголемите закани за јавното здравје со кои се соочува светот.

Рамковната конвенција на Светската здравствена организација за контрола на тутунот, како меѓународен договор, кој има за цел да ја намали побарувачката и понудата на тутун, признава дека, додека, земјите и владите усвојуваат мерки за намалување на побарувачката на тутунски производи, тие мора да ги решат последиците на тоа намалување што ќе се одрази врз тутунопроизводителите кои се потпираат на оваа култура за нивната егзистенција.

И покрај агресивната кампања против тутунот и пушењето, сепак поради неможност за развивање на други бизниси и поедноставноста на тутунопроизводствената дејност, како и обезбедување на егзистенција и надопонување на домашните приходи, голем број на семејства се занимаваа со производство на тутун како семеен бизнис.

**Клучни зборови:** тутунопроизводство, тутунопроизводители, засадени површини, контрола на тутунот, одржливи алтернативи, перспективи

## INTRODUCTION

Tobacco cultivation, as an agricultural activity involving approximately thirty thousand individual contract tobacco growers and three times as many engaged individuals in the population of Macedonia, must align with the intentions of the European Union and the global positive policies in this direction.

A significant portion of tobacco growers base the majority of their livelihood on the income generated from the sale of tobacco. Specifically, for most of them, the revenue from tobacco constitutes the largest share of their household income, making it the dominant source of income for their families. This indicates that the majority of tobacco-producing households, with the support of expected subsidies, prioritize tobacco cultivation as their main source of livelihood. Although tobacco farming has traditionally been supported by the

Government of the Republic of North Macedonia, if not properly organized, it is often less profitable for farmers compared to other crops. In this context, North Macedonia ratified the Framework Convention on Tobacco Control (FCTC) in 2006, committing to reducing tobacco production and consumption in the future while undertaking activities to educate and provide guidance on potential alternatives for cultivating other agricultural crops.

This paper attempts to present some aspects of tobacco production, as well as the correlation between tobacco production, the cultivated areas under tobacco and the number of tobacco growers. It also includes overview tables and graphical representations of specific conditions in tobacco production.

## RESULTS AND DISCUSSION

Tobacco cultivation, as a traditional agricultural crop that provides income for over thirty thousand tobacco growers—whether as a means of livelihood, a supplement to the family budget, or the primary activity of a family business—would not be sustainable without the support of the Government of the Republic of North Macedonia through appropriate subsidies. Article 17 of the World Health Organization's Framework Convention on Tobacco Control (WHO FCTC) encourages parties to promote sustainable alternatives to tobacco cultivation (World Health Organization, 2013).

In this regard, many countries support the notion that programs aimed at reducing tobacco production through agricultural diversification can improve farmers' livelihoods.

Despite the global trend of declining tobacco consumption since the year 2000 and the overall worldwide reduction in tobacco production, tobacco remains a

popular source of income for many farmers, particularly in low- and middle-income countries where tobacco cultivation is most prevalent (Appau et al., 2019).

Tobacco is often grown as part of a production system alongside other agricultural crops or as a supplementary activity within farming operations. This diversification contributes to strengthening the family income portfolio.

Furthermore, tobacco is considered a reliable and important income source, offering financial security to farmers. In addition to earnings from the sale of tobacco, farmers receive government subsidies as a form of support for tobacco production.

According to tobacco industry stakeholders, tobacco cultivation promises high returns on investment and long-term benefits for small-scale farmers. However, it is less profitable for growers cultivating small plots and producing limited

quantities of tobacco compared to those engaged in large-scale farming operations (Vargas et al., 2005).

Research indicates that tobacco growers are often dissatisfied with the income generated from tobacco production. Many state that they would be unable to cover their costs and meet their needs without

government subsidies, as small-scale production tends to be unprofitable. This sentiment is echoed by tobacco growers in other countries as well.

Below is Table 1, which presents the production of oriental tobacco in Balkan countries from 2012 to 2023.

Table 1. Production of oriental tobacco in Balkan Countries, from 2012 to 2023 in tons, (Philip Morris International)

| Year                 | Turkey  | Macedonia | Greece  | Bulgaria |
|----------------------|---------|-----------|---------|----------|
| 2012                 | 70.150  | 27.333    | 24.660  | 16.212   |
| 2013                 | 89.109  | 27.895    | 31.486  | 23.562   |
| 2014                 | 71.729  | 27.578    | 30.881  | 17.207   |
| 2015                 | 65.230  | 24.237    | 26.103  | 11.982   |
| 2016                 | 73.659  | 25.443    | 26.352  | 7.663    |
| 2017                 | 91.107  | 22.885    | 24.830  | 6.690    |
| 2018                 | 72.114  | 25.547    | 15.550  | 4.862    |
| 2019                 | 82.212  | 26.234    | 15.185  | 4.246    |
| 2020                 | 72.850  | 26.112    | 14.290  | 4.824    |
| 2021                 | 69.430  | 24.329    | 11.500  | 5.400    |
| 2022                 | 41.150  | 20.880    | 8.500   | 4.500    |
| 2023                 | 42.800  | 14.763    | 6.520   | 3.200    |
| Total                | 841.540 | 293.200   | 235.857 | 110.348  |
| Average<br>2012-2023 | 70.128  | 24.433    | 19.655  | 9.196    |

For better visualization the previous data is presented in Figure 1. The production in Balkan countries such as Greece and Bulgaria, which were previously larger producers of oriental tobacco compared to North Macedonia, has drastically decreased in recent years. Greece's production now fluctuates around 15,000 tons, while Bulgaria's production has dropped to below 5,000 tons. Based on our analysis, it can be concluded that oriental tobacco production in Turkey, Greece and Bulgaria has decreased by 2 to 2.5 times. However, in North Macedonia, production has remained at an acceptable level and even increased by 30% during the period from 2010 to 2019 compared to the period

from 2000 to 2009 (Pashovska and Miceski, 2019; 2024). The main reason for the decline in tobacco production, and consequently in oriental tobacco production, is the abolition of direct subsidies in Greece and the shift to olive cultivation, which is less labour-intensive. In Turkey, the decline is due to the development of tourism, especially in the Aegean region, which is the largest tobacco-producing area. In Bulgaria, the decrease resulted from production quotas imposed after the country joined the European Union, aligning the Common Agricultural Policy (CAP) with EU regulations. These regulations eliminated direct subsidy payments for tobacco

producers and replaced them with area-based payments. Additionally, a significant portion of Bulgaria's

population, especially the younger demographic, migrated to Western European countries after EU accession.

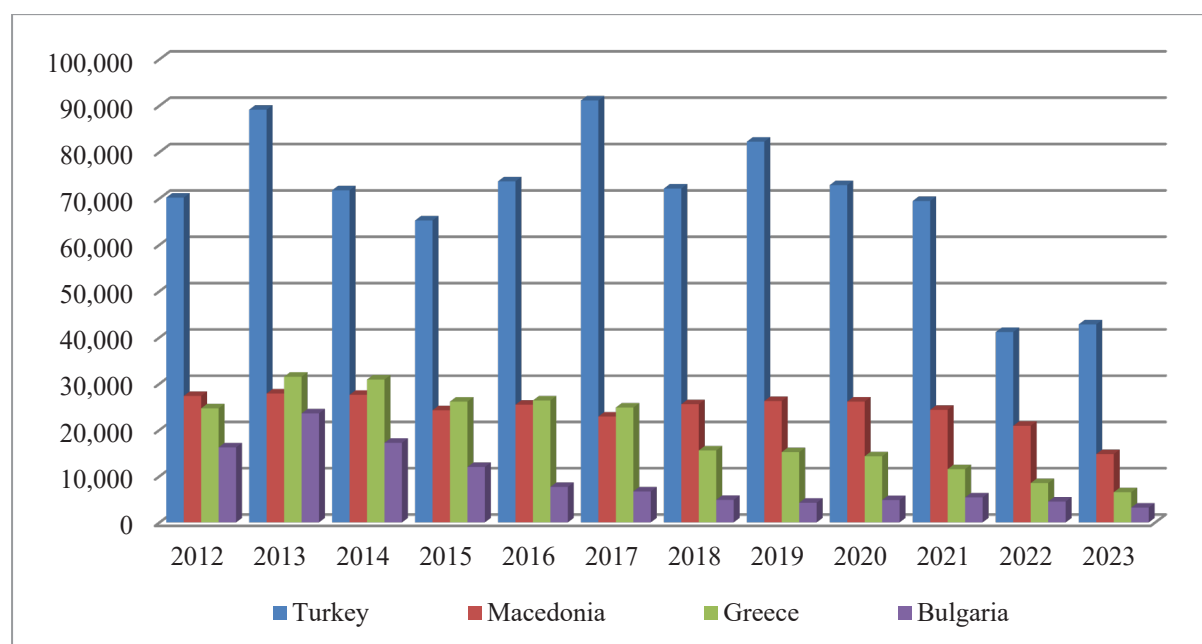


Figure 1. Production of oriental tobacco in Balkan Countries (in tons) from 2012 to 2023

To sustain production in North Macedonia, it is essential to continue the policy of subsidization and incentives provided by the state. Supported by government subsidy policies, North Macedonia should increase oriental tobacco production, as production in Greece, Bulgaria and Turkey is expected to continue declining. The

trend in oriental tobacco production across Balkan countries indicates a further linear decline. Albania and Serbia produce very small and almost insignificant quantities of oriental tobacco.

Table 2 and Figure 2 show the average tobacco production in Balkan countries over the past decade.

Table 2. Average production of oriental tobacco in Balkan Countries, from 2012 to 2023 (in tons)

| Average 2012-2023                                                           | Turkey | Macedonia | Greece | Bulgaria |
|-----------------------------------------------------------------------------|--------|-----------|--------|----------|
| Average tobacco production for Turkey, North Macedonia, Greece and Bulgaria | 70.128 | 24.433    | 19.655 | 9.196    |

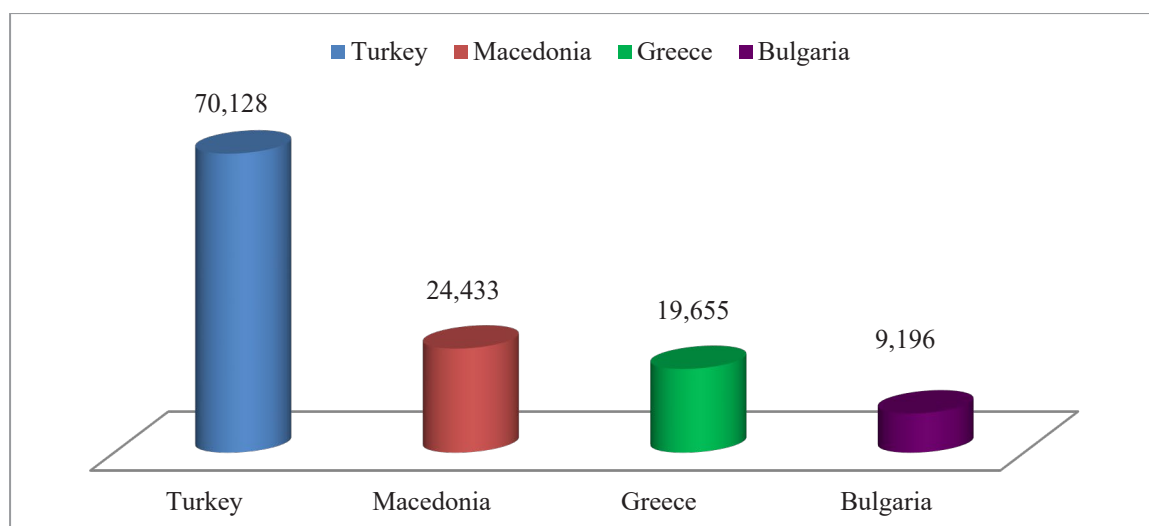


Figure 2. Average production of oriental tobacco in Balkan Countries, from 2012 to 2023 (in tons)

The comparative data on tobacco production by country in the world for 1961 and 2022, published by the FAO (Food and Agriculture Organization of the United Nations) (FAO, 2024), focusing solely on oriental tobacco production in

Turkey, North Macedonia, Greece and Bulgaria, show a significant decrease, particularly in Turkey, Greece and Bulgaria. These comparative data are presented below in Table 3 and Figure 3.

Table 3. Production of oriental tobacco in Turkey, North Macedonia, Greece and Bulgaria comparatively in 1961 and 2022

| Year | Turkey  | Macedonia | Greece | Bulgaria |
|------|---------|-----------|--------|----------|
| 1961 | 101.407 | 14.100    | 74.245 | 55.866   |
| 2022 | 82.250  | 25.978    | 13.910 | 3.820    |

The trend of decline is also noticeable in the number of tobacco-planted hectares and the number of contracts signed with tobacco buyers. Additionally, the number of tobacco producers has decreased. In 2020, the number of tobacco producers was 19,702, which is less than half of the number in 2010 (42,622). Around two-thirds of tobacco households in North Macedonia are aged 45 or older, while the average age of the entire population in the country is 40.1 years, according to the 2021 census (Spasova Mijovic et al., 2023). Tobacco cultivation occupies about

3.2% of the total arable land in North Macedonia, which is the second-largest producer of oriental tobacco leaf after Turkey. In 2021, total tobacco production amounted to 24,329 tons from 15,457 hectares of land, with an average yield per hectare of 1,574 kilograms. Tobacco production is primarily in the Pelagonia and Southeast regions, together accounting for 87.9% of total tobacco production in 2021. Figures 4 and 5 present tobacco production (in tons) in relation to the number of tobacco producers and the area planted with tobacco, respectively.

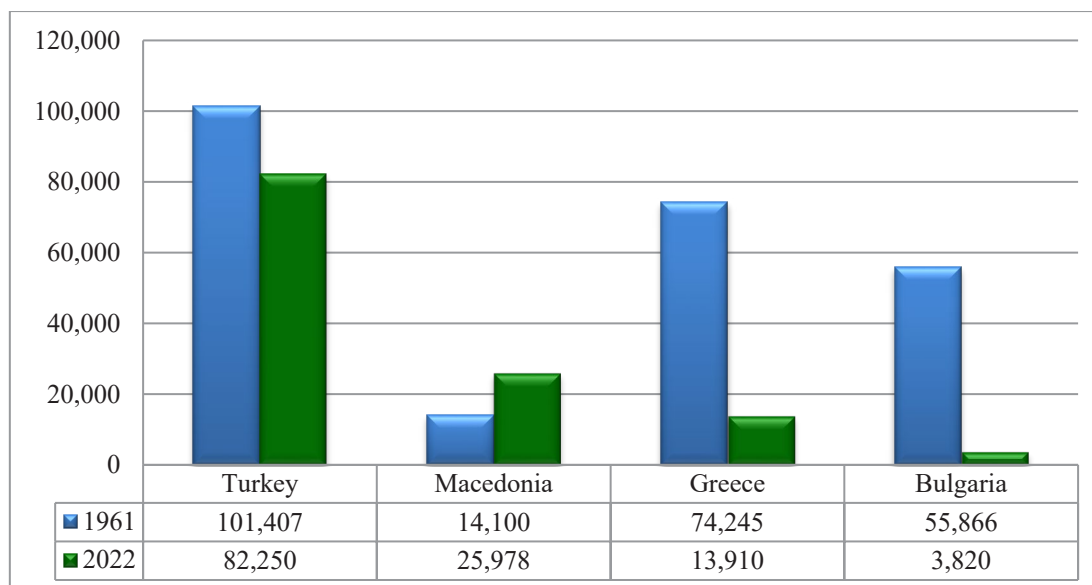


Figure 3. Production of oriental tobacco in Turkey, North Macedonia, Greece and Bulgaria comparatively in 1961 and 2022

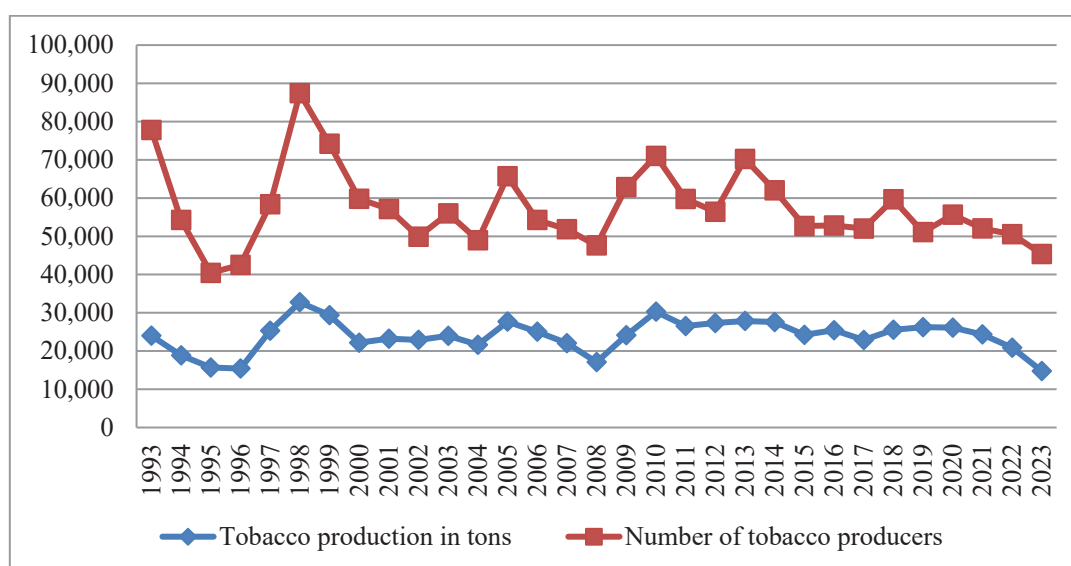


Figure 4. Tobacco production in tons and the number of individual tobacco producers (signed contracts) from 1993 to 2023

From the analysis of tobacco production in tons, the number of individual tobacco producers (or tobacco production entities) and the signed contracts for tobacco

production from 1993 to 2023, it is evident that there are annual fluctuations and a notable downward trend is observed.

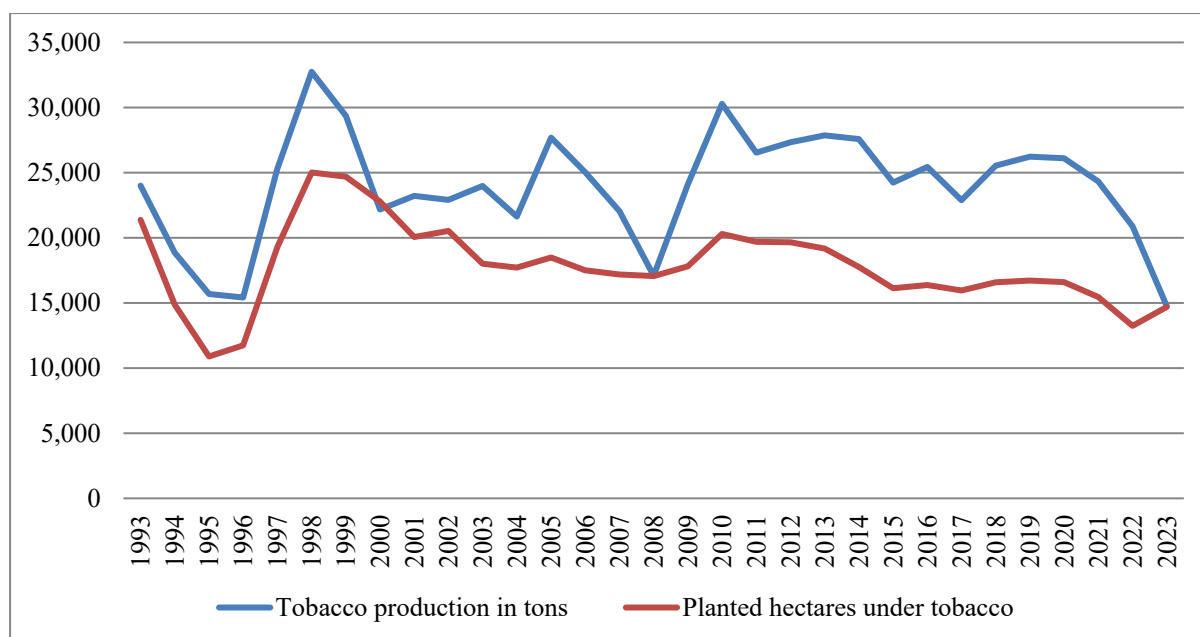


Figure 5. Tobacco production in tons and planted hectares under tobacco

Similar trends are observed in the analysis of tobacco production in tons and the number of hectares planted with tobacco from 1993 to 2023 (Figure 5). It can be said that a greater fluctuation is noted in the achieved tobacco production, while smaller fluctuations are observed in the

hectares planted with tobacco. Despite the recorded decrease, these fluctuations do not significantly affect the produced quantities, due to modern agronomic measures, appropriate protection and the application of strategic management principles.

## CONCLUSIONS

Tobacco, as an agricultural-industrial crop in North Macedonia, is significantly important for the livelihood and additional income of tobacco producers' households, as well as for its role as a traditional activity.

Considering its type as a fine-leaf and aromatic tobacco used in the production of high-quality cigarettes, it can be said that there is a perspective for its continued production.

The research points to the following simplified observations:

- Tobacco cultivation (production and processing) is a traditional activity in which more than 10% of the population of North Macedonia can freely engage.

- Its cultivation occupies only a relatively small part of agricultural land, particularly where the yield of other crops is lower.
- It is believed that quality tobacco cultivation on a larger area can generate significant income to meet subsistence needs and modernize and develop tobacco producers, complemented by the use of free time for additional activities.
- The purchasing prices of tobacco must be adequate to the cost of all activities in the tobacco production process, including labour and investment activities of the producers.

- Subsidization of tobacco production should continuously occur in accordance with the costs of the production process.
- There should be an option for advancing loans to tobacco producers, i.e., "taking loans" up to a certain amount based on signed contracts and tobacco-planted areas.
- A system should be developed for informing, training and ensuring the health safety of tobacco producers, with attention to environmental risks from the use of protective chemicals.
- Tobacco production, particularly fine-leaf oriental tobacco, does not require the destruction of forests for drying purposes; instead, drying is directly done by solar heat.
- Overall, there is no evidence that tobacco cultivation leads to drastic negative effects on the labor of the individuals engaged in tobacco production.
- There are no reports of health risks or adverse health outcomes directly related to involvement in tobacco cultivation.
- There are real opportunities for quality and increased tobacco production per producer, through the development of modern tobacco farming techniques.

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