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## PRODUCTION AND CONSUMPTION OF FOOD PRODUCTS: CONTEMPORARY DIMENSIONS AND ISSUE

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### ABSTRACT

One of the sources for the formation of Bulgaria's food resources is the production of food products from agriculture and the food industry. It provides raw materials for the processing industry, for export and for meeting the food needs of society. The extent to which national production can meet these needs in terms of quantity, quality and range largely determines national food security. The level and structure of food consumption is in turn important for the health status of both the individual and the nation as a whole. In recent years, the production and consumption of food products in the country have been evolving in a complex and dynamically changing environment, linked to challenges posed by overlapping crises (pandemic, economic). The aim of this paper is to examine the production and consumption of staple food products in the context of national food security and in the context of crises. For its realization, changes in the parameters of their production and consumption are consistently assessed, problems are highlighted on this basis and recommendations for their future development are substantiated. Special attention is paid to the competitiveness and sustainable development of Bulgarian agriculture as an important prerequisite for the country's food security.

**Key words:** agricultural production, food consumption, national food security

### INTRODUCTION

Guaranteeing national food security is essential for every country, including Bulgaria. The "food security-food resources" relationship is expressed in the fact that food security depends to a large extent on what food resources a country has, and hence what the possibilities are for meeting national food needs. If we accept the interpretation of the concepts of resources as sources of living and of sustenance as sustenance, then food resources could generally be understood as sources of sustenance. The problems of the sources of formation, the ways of distribution and their rational use are extremely important and for this reason of permanent relevance. The quantitative and qualitative parameters of food resources determine the food security of each country and the world as a whole. This is sufficient reason to consider the problems related to them as

global problems of modernity. According to their purpose, they are divided into resources for internal consumption and for export; according to the period of use - for current consumption or for stocks, according to the degree of sufficiency - we talk about provision or deficit, etc. (1). The production of food raw materials and products in agriculture and the food industry is the main core of domestic food resources, and in this role has a direct relationship to national food security. It supplies the processing industry with raw materials, the internal consumption of the population with products diverse in quantity, assortment and quality, and forms resources for export. The level and structure of food consumption, in turn, is important for the health status of both the individual and the nation as a whole. In recent years, the production and consumption of food products in the country has developed in a complex and dynamically changing environment, associated with challenges caused by overlapping crises (economic, pandemic, etc.). The aim of the report is to examine the production and consumption of staple food

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products in the context of national food security and in crisis situations.

### MEASUREMENTS AND TRENDS

The report examines the dimensions and trends in the development of the production of basic food products from agriculture (of plant and animal origin) and the food industry, as well as the consumption of some of them, for 2000, 2010 and 2020 year.

#### *Production*

In 2000, the following cereals were produced in Bulgaria (wheat - 2,781 thousand tons, barley - 674 thousand tons and corn for grain - 804 thousand tons), sunflower 425 thousand tons, potatoes - 398 thousand tons, beans - 9 thousand tons, vegetables (tomatoes - 410 thousand tons, pepper - 182 thousand tons and cucumbers - 131 thousand tons), fruits (apples - 89 thousand tons, plums - 62 thousand tons, cherries - 28 thousand tons, peaches - 42 thousand tons, apricots - 13 thousand tons), strawberries - 9 thousand tons, wine grapes - 377 thousand tons and dessert grapes - 49 thousand tons. (2).

In 2010, compared to 2000, the changes in the production of the observed food products from crop production are expressed in the fact that only in 4 (24 % of their total number) the obtained quantities increased, and these are cereals and sunflowers. The increase compared to the base is several times for sunflower and corn for grain. In the remaining 13 crops (76% of their total number), the quantities produced decreased the most in dessert grapes, beans and tomatoes. They are respectively: 16.3%, 22.2% and 27.3% of the produced quantities in 2000.

A similar trend is observed in 2020, when again 4 are the agricultural crops where the production increases compared to the year 2000. These are from cereals - wheat, corn for grain; sunflower and cherries. In the case of other crops, production continues to decrease, which has the consequence of food deficits in relation to food products, important for agriculture and for the food security of the population, and the country also has favorable conditions for their cultivation.

In 2000, the following were produced: meat (total) - 479.9 thousand tons, milk - 1,655.2 million liters and eggs - 1,553.0 million pieces. In terms of meat, the largest quantities are pork - 242.9 thousand tons, and in milk - cow's milk - 1,368.2 million liters.

In 2010, the production of all three products of animal origin continued to decrease and reached 44.6% for meat, 74.9% for milk and 92.6% for eggs of the amounts obtained in 2000. In 2020, compared to 2000, the highlighted trend continues, with the amounts being 43.3%, 58.9% and 89.0% of the base year, respectively. The report examines 9 products produced by the country's food industry, representative of the industry and with an important place in providing food for the population. In 2000, the following were produced in Bulgaria: bread and pasta products - 464.7 thousand tons, meat - 46.4 thousand tons, meat products - 43.4 thousand tons, yogurt - 86.8 thousand tons, cheese - 45.9 thousand tons, cheese - 23.4 thousand tons, oil - 101.8 thousand liters, canned fruit - 39.5 thousand tons and canned vegetables - 49.3 thousand tons. In 2010, unlike the observed food products from the country's agriculture, production in the food industry was characterized by an increase in quantities compared to 2000 at 6 (67% of their total number), which can be rated positively. This is most pronounced in the case of meat (2.3 times), meat products (1.4 times) and yogurt (with 75 %) and at the other pole - in cheese (85.0 %) compared to 2000. Since the analysis of the production of livestock products shows a clearly delineated tendency to decrease the production of raw materials, it is probably the use of imported raw materials and milk substitutes. A decrease in production was observed for three products - yellow cheese (85%), cheese (93.2%) and oil (96.4%) from the level in 2000.

In 2020, only the production of bread and pasta decreased and reached 81.5% of the quantities produced in 2000.

#### *Consumption*

What are the changes in the consumption of basic food products by households (on average per person) in Bulgaria for the years considered in the study? In 2000, the quantitative parameters of some of them were as follows: bread and pasta products - 134.8 kg, meat - 22.1 kg, local products - 11.4 kg, yogurt - 22.1 kg, cheese - 9, 2 kg, cheese - 1.9 kg, oil - 13.0 l, fruits - 34.6 kg and vegetables - 57.4 kg. In 2010, depending on the direction of the changes compared to 2000, food products can be tentatively divided into two groups: a) the produced quantities increased - 8 (89% of their total number) - in half of them the increase was

between 20% and 30% (meat products, yogurt, cheese and fruit), the smallest increase is for oil (8.5%) and the largest - for cheese (80.5%) and b) the produced quantities decrease – this refers to bread and pasta (80.1% of the level of consumption in 2000). In 2020, the changes in consumption are characterized by the fact that for two of the products their consumption decreased compared to 2000. These are apart from bread and pasta (59.86%) and oil (92.3%). We could define this trend as positive, from the point of view of the requirements of a healthy diet. For the rest of the food products 7 (78% of their total number), there is an increase in the produced quantities, between meat products (by 17.5%) and cheese (more than 1.4 times).

#### *Population*

The population of Bulgaria, according to the average annual number indicator, decreased from 8,170,200 in 2000 to 7,534,300 in 2010 and to 6,934,000 in 2020, which is respectively 92.2% and 84.7% of the base level.

#### *Degree of dependences*

An attempt was made to determine the possibilities of the production of basic food products from agriculture and the food industry to satisfy the consumption of food products in Bulgaria. For this purpose, the indicator "Degree of dependence" is used, calculated as a relative share (in %) of produced to consumed food products, based on the average annual number of the population in Bulgaria and the consumption of products by households (on average per person). This indicator was calculated for the years 2000, 2010 and 2020, and 9 products were selected from the food industry and 6 from agriculture (from crop production), which are essential in providing the population with food.

In 2000, the production of 6 (40.0% of their total) products was able to cover the food needs of the population: canned vegetables (131.6%), apples (178.7%), potatoes (185%) and vegetables (cucumbers – 236.6%, pepper – 253.1% and tomatoes – 257.1%). In the case of the remaining 9 (60% of their total number), production cannot fully ensure their consumption. The distribution is as follows: 0-10% - canned fruit, 11-20% - none, 21-30% - cheese and beans, 31-40% - bread and pasta and cheese, 41-50% - meat and meat products, 51-60 - none, 61-70% - none, 71-80% - none, 81-90% - yogurt and 91-100% - oil.

In 2010, production exceeded the required quantities in 3 (20% of their total number) and these are: meat products (101.6%), potatoes (106.8%) and pepper (118.7%). There is an increase in the number of products where production is in short supply compared to the quantities consumed: 0-10% - beans, 11-20% - meat, 21-30% - none, 31-40% - fruit preserves, 41-50 % - cheese and apples, 51-60% - none, 61-70% - bread and pasta and yogurt, 71-80% - cheese, canned vegetables and tomatoes, 81-90% - oil and cucumbers, 91-100 % - none.

In 2020, again with 6 products, the production covers the required quantities, three of the products are the same, but with a tendency to reduce production possibilities in this direction: pepper (100.8%), potatoes (101.8%) and canned vegetables (124.6 %), and new products included in this group: meat products (110.0 %), fruit preserves (111.0 %) and oil (181.8 %). For the rest of the products, the distribution is: 0-10% - beans, 11-20% - none, 21-30% - meat, 31-40% - none, 41-50% - apples, 51-60% - none, 61-70% - bread and pasta products and cucumbers, 71-80% - yogurt, 81-90% - cheese, yellow cheese and tomatoes and 91-100% - none.

## **RESULTS**

1. Permanently reduces the production of basic food products from agriculture. This is characteristic both for crop production, except for cereals and sunflowers, and for the three livestock products. It leans toward monoculture development of agriculture, with a focus on intensive cereals and sunflowers at the expense of reduced production of other crops - vegetables, perennial crops, vineyards, etc.
2. The increase in the quantities of products from the food industry, with the limited supply of raw materials from national production, means the use of those from imports or other sources.
3. The consumption of basic food products by the country's population is increasing, which requires additional resources from other sources (imports, household production, etc.).
4. The population of Bulgaria is decreasing, but this trend is less pronounced compared to the production of agricultural products.
5. It can definitely be said that the possibilities of the production of basic food products to cover the food needs of the population in the

country are severely limited to only a few products.

#### *Problems*

The contraction of the quantities produced leads to the emergence of food deficits, both in terms of raw materials and in terms of quantities for consumption and for export. The role of imports as a source of resources to cover deficits is growing. Hence the emergence of a number of problems related to increasing dependence on imports, with the quality of imported raw materials, undermining the activity of farmers in Bulgaria, etc. Bulgaria has favorable natural and climatic conditions for the production of various agricultural crops and the breeding of farm animals. The highly limited ability of domestic production to cover the food needs of only a few products means that it cannot be a guarantor of national food security. The pandemic crisis COVID-19 showed how important the place and role of the national production of food products are for the food supply of the population and for the food security of the country, when in the conditions of crisis, the connections are broken both at the entrance and at the exit of the production activities carried out in agricultural holdings, and receipts of products through imports are disrupted.

#### *Perspectives*

In Bulgaria, conditions should be created for the production of food products while overcoming the long-term trend of reducing their quantities and making full use of the potential (natural, technical, technological, infrastructural, etc.). Along with the quantitative dimensions of production, the qualitative characteristics of food products intended for processing, consumption and export are also important. This means compliance with accepted standards, the introduction of new technologies, innovations and other novelties, subordinated to the idea of increasing the competitiveness of agricultural holdings and sustainable development of the industries in which food products are produced as raw materials, for domestic consumption and for export. Organic production will gain more and more importance. A very important factor influencing the growth of organic farming is the growth of the market value of organic production and especially the demand for organic products. In general, it is evident that organic farming represents a specific market niche in the global and European agricultural market. Its development is related especially to new trends in consumption, as well as to the growth of the economy of individual countries and especially to the growth of per capita income in individual

countries. (3). Building a more balanced structure of Bulgarian agriculture, through development not only of cereals, but regaining the positions of other sectors in crop production. One such sector is vegetable production, with an important place in both the production and consumption of vegetables, with extensive experience and long-standing traditions in their cultivation. (4). Quality characteristics also include compliance with environmental requirements along the entire food chain: production-processing-storage-transportation-sale. At the beginning of the chain is the production, and it is essential to comply with the environmental requirements at the entrance, during the production itself and at its exit, in order to protect the environment. Also, farmers should know well those factors that influence the application of agrotechnical practices in farms. (5).

#### **CONCLUSION**

The summary that can be made is to strengthen the role of the production of basic food products from agriculture and the food industry to ensure the food security of the country, which in turn should be an important priority in the national agrarian and food policy.

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#### **REFERENCES**

1. Ruscheva D., P. Todorov, S. Grozdanova. (2010). *Prodovolstvenite resursi na Balgariya pri osashtestvyavane na Obshtata selskostopanska politika na ES*, Izd. Roll Kampani, s. 151, ISBN 978-954-92236-2-0.
2. *Statisticheski godishnik na Balgariya*, NSI, for the respective years.
3. Branzova, P. (2019). Organic Farming in Bulgaria and EU- Comparative Dimensions, *Economic Studies Journal*/ 1: 183-187.
4. Dimitrova, A. (2022). Vegetable Production as a Part of Bulgarian Agriculture. *Economic Studies*, 31 (8), pp.132-145.
5. Blagoev, A. (2020). Faktori, okazvashti vliyanie varhu prilaganeto na agroekologichni praktiki ot zemedelskite stopanstva. *Sbornik ot konferentsiya: Biznesat v HHI vek*. Proektirane na badeshteto: novo obshtestvo – nova ikonomika. Sofiya, Izdatelski kompleks na UNSS.

