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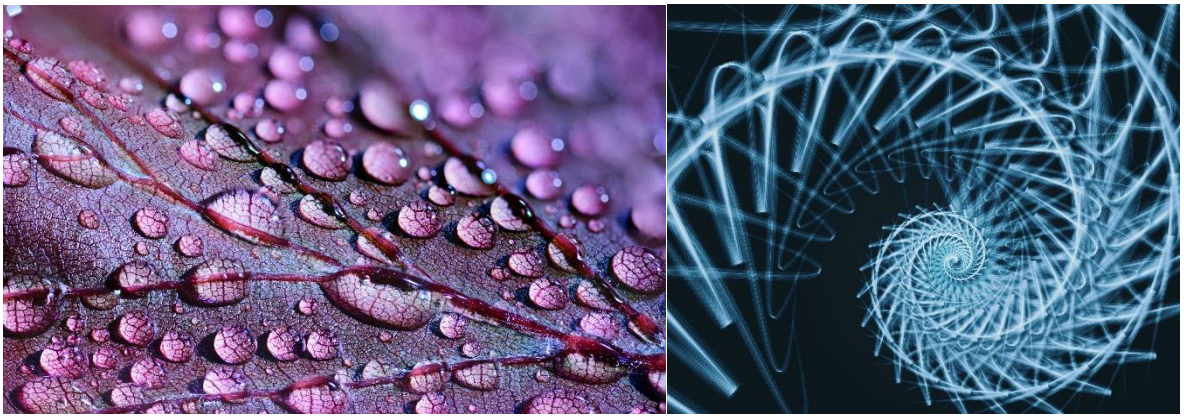

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Adress: Osvobojdenie str. 33 Entr. A, Plovdiv, Bulgaria, 4000
E-mail: journalbiobasedmarketing@gmail.com
Phone number: +35932894627260
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CONTENT

STRATEGIC ANALYSIS FOR IDENTIFYING THE SOURCES OF COMPETITIVE ADVANTAGES OF WINE COMPANIES IN BULGARIA

Petar Borisov[1]

[1]E-mail: peterborisov@gmail.com,Agricultural University of Plovdiv, bul. "Mendeleev" 12, 4000 Trakiya, Plovdiv, Bulgaria

Abstract

The aim of the article is to identify the sources of competitive advantages of wine enterprises through analysis of the business environment and to determine the factors that allow the sustainable development of competitiveness in the sector.

The VRIO - analysis is used to identify the factors that are defined as sources of competitive advantages of wine enterprises. The factors are analyzed, the combination of which leads to the emergence of sustainable competitive advantages in the company in terms of - value, uniqueness and ability to imitate the main competitors.

The application of the "chi-square analysis" method seeks to assess the interaction of the factors determining the sustainability of the competitive advantages of wine enterprises. Sustainability drivers are companies' access to finance, innovation and marketing. They have been studied 155 wine enterprises from all wine-growing regions of Bulgaria. The total amount of assets owned by them is BGN 904.5 million. In the group of enterprises, 97% own vineyards, which are of productive age.

Keywords: strategic analysis, competitive advantages, wine companies

Abstrakt

Das Ziel des Artikels ist es, die Quellen der Wettbewerbsvorteile von Weinunternehmen durch die Analyse des Geschäftsumfelds zu identifizieren und die Faktoren zu bestimmen, die eine nachhaltige Entwicklung der Wettbewerbsfähigkeit in der Branche ermöglichen.

Die VRIO - Analyse wird verwendet, um die Faktoren zu identifizieren, die als Quellen von Wettbewerbsvorteilen von Weinunternehmen definiert werden. Es werden die Faktoren analysiert, deren Kombination zur Entstehung von nachhaltigen Wettbewerbsvorteilen im Unternehmen in Bezug auf - Wert, Einzigartigkeit und Fähigkeit zur Imitation der Hauptkonkurrenten führt.

Die Anwendung der Methode "Chi-Quadrat-Analyse" zielt darauf ab, die Interaktion der Faktoren, die die Nachhaltigkeit der Wettbewerbsvorteile von Weinunternehmen bestimmen, zu bewerten. Treiber

der Nachhaltigkeit sind der Zugang der Unternehmen zu Finanzmitteln, Innovation und Marketing. Es wurden 155 Weinunternehmen aus allen Weinbauregionen Bulgariens untersucht. Der Gesamtbetrag der Aktiva, die sie besitzen, beträgt 904,5 Millionen BGN. In der Gruppe der Unternehmen besitzen 97% Weinberge, die sich im produktiven Alter befinden.

Stichworte: strategische analyse, wettbewerbsvorteile, weinunternehmen

Résumé

L'objectif de l'article est d'identifier les sources d'avantages compétitifs des entreprises viticoles à travers l'analyse de l'environnement des affaires et de déterminer les facteurs qui permettent le développement durable de la compétitivité dans le secteur.

L'analyse VRIO est utilisée pour identifier les facteurs qui sont définis comme des sources d'avantages compétitifs des entreprises viticoles. Les facteurs sont analysés, dont la combinaison conduit à l'émergence d'avantages concurrentiels durables dans l'entreprise en termes de - valeur, d'unicité et de capacité à imiter les principaux concurrents.

L'application de la méthode d'analyse "chi-deux" vise à évaluer l'interaction des facteurs déterminant la durabilité des avantages concurrentiels des entreprises viticoles. Les facteurs de durabilité sont l'accès des entreprises au financement, l'innovation et le marketing. Ils ont été étudiés 155 entreprises viticoles de toutes les régions viticoles de Bulgarie. Le montant total des actifs qu'elles possèdent est de 904,5 millions de BGN. Dans le groupe d'entreprises, 97% possèdent des vignobles, qui sont en âge de produire.

Mots clés: analyse stratégique, avantages concurrentiels, entreprises viticoles

Introduction

In a market economy, companies achieve sustainable competitive advantages by using various competitive factors. Following a certain competitive strategy can lead to lasting market position (Borisov, Marinov, 2013); (Radev and Radeva, 2016); (Popova, 2019) (Borisov, Garabedian, 2020). There are many strategies for achieving competitive advantages based on marketing, organizational, innovation or financial approach in enterprise management (Borisov, Behluli, 2020). The choice of a competitive approach is determined by the entrepreneur's vision of how the business enterprise will establish itself on the market. Rapid market penetration requires the use of large-scale capital through which to implement the strategy of attack on all flanks of competition and rapid conquest of the desired market segments. Attracting and concentrating capital in the business enterprise requires the entrepreneur to guarantee certain levels of return on invested capital, satisfying the requirements of investors. This requires the use of a strategic approach in the management of the enterprise, in which the main central place is occupied by the solution of the question "how to combine the interests of investors (owners of capital invested in the business model) and customers, consumers of products offered by the business

model?". Achieving a balance in these interests is a critical factor for successful competitive development. In these restrictive conditions, company managers must use innovative management approaches that allow the interests of the two stakeholders to be reconciled. Stepping on this basis, managers are looking for different sources of competitive advantage to use in managing the competitiveness of the business model. The next step is to combine these sources to achieve sustainability in competitive advantages, which allows security in the management of corporate competitiveness.

The aim of the article is to identify the sources of competitive advantages of wine enterprises through analysis of the business environment and to determine the factors that allow the sustainable development of competitiveness in the sector.

The VRIO - analysis is used to identify the factors that are defined as sources of competitive advantages of wine enterprises (Borisov, Qerimi and Behluli, 2020). The factors are analyzed, the combination of which leads to the emergence of sustainable competitive advantages in the company in terms of - value, uniqueness and ability to imitate the main competitors.

The application of the "chi-square analysis" method seeks to assess the interaction of the factors determining the sustainability of the competitive advantages of wine enterprises (Kolaj, Borisov, Osmani and Skunka, 2018). Sustainability drivers are companies' access to finance, innovation and marketing (see Table 1).

Table 1. Statistical model of interaction between enterprises' access to finance, innovation and marketing and the sustainability of competitive advantages. Source: own.

Sustainability drivers	**Marker** - "Sustainable competitive advantages"
Access to finance	X
Access to innovation	X
Access to marketing	X

Results

Profile of the surveyed wine enterprises. They have been studied 155 wine enterprises from all wine-growing regions of Bulgaria. The total amount of assets owned by them is BGN 904.5 million. In the group of enterprises, 97% own vineyards, which are of productive age.

In the sample, there are a total of 55 wine enterprises that are corporate companies, 30 wine enterprises that are cooperatives and 70 vine-growing holdings (registered as sole traders and / or farmers).

The group of corporate companies is dominated by wine companies, which are joint stock companies - 58%. The next preferred legal form is the solely responsible company, respectively 20% of the surveyed corporate enterprises in the sample. The smallest number of wine companies are sole proprietorships, respectively they occupy 4% (see Figure 1). The structure of the sample shows that the main form of raising capital in the industry is the joint stock company. This is because starting a wine business requires a large initial capital.

In modern conditions in most of these organizational forms there is a division between ownership and management. They clearly distinguish the following characters - business owners, managers and workers who pursue their own goals. The specific relationships between the three characters in joint stock companies form the competitive advantages of these organizational forms but also place restrictions on their competitiveness. They allow for the accumulation of significant financial capital through the issuance and sale of shares, which is a prerequisite for the construction of large-scale production facilities, enabling economies of scale.

Large financial capital is used to build barriers to new competitors in the industry, thus maintaining and increasing market share, allows to build price leadership and product differentiation of manufactured products, allows for higher incomes of workers, which in other things being equal increases their motivation to work. The presence of a large number of shareholders contributes to the distribution of the risk of the activity of the wine company on a significant number of persons, which determines the choice of high-risk productions, where profitability is higher. There is a possibility to implement a system for total quality of wine production. Despite the large number of competitive factors, joint stock companies have the following disadvantages:

- due to the high specialization, intensification and concentration of production, due to the significant amount of financial capital, they do not have high adaptability to changes in the environment, like other organizational forms;
- their large size complicates their management;
- the high specialization and concentration of capital in these organizational forms limit the elasticity of production. The elasticity of production is greater the higher the relative share of variable costs of total production costs, and these are the costs to be optimized, and respectively, the smaller the share of fixed costs. As the intensification of production in the enterprise increases, the ratio of variables to fixed costs shifts, as higher capital saturation is associated with a higher level of fixed costs, and narrower specialization - with a lower level of variable costs. Therefore, the higher intensification and concentration of production and its narrower specialization lead to a decrease in elasticity.

Analysis of production factors. The analysis aims to identify trends in the quantities of wine produced, the areas in which investments are made, providing the production process with the necessary raw materials and staff, as well as to reveal the factors that according to managers determine the company's success in the market.

From the studied sites 63, 3% say they have increased the quantities of wine produced in the last three years, another 30.3% do not report a change in this indicator and only 6.1% have reduced their production. The data show growth in the sector (by physical volume), which is explained both by the growing consumption per capita in our country and by the increased exported quantities of wine.

At the same time 78, 8% of the enterprises have made investments for improvement of the condition of the technological equipment, 15.2% have not renewed their equipment due to its satisfactory condition, and 6% define their equipment as depreciated. The investments made are due to meeting the requirements of the market - its sensitivity to the quality of the products offered has increased, as well as to the intensified competition in recent years.

According to the indicator, change in the amount of wine holdings owned by the vineyardscompanies fixed assets results are completely identical to the previous ones. This is due both to the investments made in technological equipment (which is part of the fixed assets) and to the created own vineyards.

Although a significant percentage report an increase in wine production, this is not the case with the capacity used. After 33.3% of the surveyed enterprises use up to 50% of their capacity, and 9% even lack 25% capacity utilization. An explanation for the large available unused capacity can be sought in two ways. The first is that some of the enterprises have capacity, part of which is unusable because it is depreciated and its further operation is impossible. The second is that enterprises with built production capacity for processing the amount of grapes obtained from their own vineyards cannot burden it to a higher degree, because the vine culture needs at least 3 ÷ 4 years to start bearing fruit, and most of these plantations have not passed this period.

The next important point in the analysis of the production activity is its provision with the necessary raw material. The condition of the existing raw material base is as follows - 30.3% of the enterprises declare as satisfactory, unsatisfactory quality of the offered raw material for 84.8% of the enterprises, 75.7% of the enterprises define the competition when buying wine grapes as strong, for 45 , 5% of enterprises most of the suppliers are far away, 39.9% of enterprises are hampered by insufficient batch volume and the same percentage share that the concluded preliminary contracts are not fulfilled. The answers received show the alarming state of the raw material base of the wine sector.

In order to reveal the approaches for solving these problems, we asked the next question (how do you solve the problems related to the raw material base), to which 84.6% of the respondents answered that they organize their own production (as 54.5% of them provide for this way over 50% of the raw material they need). Another way to provide the necessary raw material is by concluding preliminary contracts with suppliers, which is used by 53.8% of enterprises. It should be noted that both approaches are used simultaneously by wine companies, and the difference in figures is that some companies use only their own raw material. The approaches used are also explained by the factors that managers identify as key to success in the internal and external market.

The next step in the analysis is to establish the number of staff and the problems associated with wine companies in recruiting the necessary staff.

Regarding the change in the number of permanent employees, 45.4% of enterprises report an increase, 54.5% say that there is no change in their number and no enterprise has reduced the number of its staff in the last few years. These data can be explained by the entry of new companies in the industry, which hire staff gradually until the required number is reached and with the creation of their own vineyards (also a gradual process), requiring the appointment of staff (agronomists; mechanizers) was needed. However, in most companies the status quo on this indicator is maintained due to the optimization of existing staff.

The wine-growing enterprises in the branch most often face problems in recruiting: highly qualified staff - 45.5% of the enterprises; administrative staff - 39.4% of the enterprises; skilled workers - 30.3% of the enterprises; seasonal workers - 30.3%. Among the surveyed enterprises, 24.2% do not experience problems in recruiting staff.

From these data we can summarize that the sector as a whole is provided with the necessary staff and problems in this area are experienced only by individual companies and for a certain type of staff - financial and marketing specialists. The demand for skilled and seasonal workers (related to the growth of areas with their own vineyards and their entry into fruiting) and highly qualified staff (marketers) is expected to increase in the coming years due to the growing quantities of wine that will be available on the market.

The purpose of the next stage of the analysis is to enable managers to make a self-assessment of the factors that lead to market success.

For the domestic market, 90.9% of managers define quality as a key factor for success, 75.5% consider company marketing activities and owning their own vineyards, for 69.7% the rich range of products offered is also such a factor, and the price is set. in 42.4% of the responses.

Regarding the foreign market, the key factors for success are the quality of the product - 84.8%; company marketing activities - 39.4%; market information - 24.2%; the price - 15.1% of the answers.

It is noteworthy that in both markets quality and company marketing activities are dominant as success factors, which explains the investments made by wineries in the renewal of technological equipment (innovative products and new technologies) and the creation of their own vineyards. At the same time, the price is determined with the least importance for market success, again in both markets. It is also interesting that the information is a key factor for only one of the four respondents (for the foreign market), which shows its underestimation.

Despite the difficulties they encounter in their operation, 75 companies identify themselves as competitive in the internal market, 55 companies as weakly competitive, and 25 cannot assess their position. For the external market, 47 enterprises are defined as competitive, 29 cannot judge and 1 is not competitive.

Analysis of market factors. Regarding the serviced markets, all of the surveyed companies operate on the domestic market, and 50% offer their products on the foreign market. In terms of the

foreign market, 77 companies sell in this direction over 50% of their production, which defines it as important for the region as a whole.

The service on the foreign market is performed through intermediary companies in 100% of the cases, and for the domestic market 91% of the wine enterprises use intermediary companies, 60.6% conclude contracts with large retail chains and 48.5% have their own distribution network. The results show that in order to reach the consumer on the domestic market, wine companies use several channels for the sale of their products at the same time.

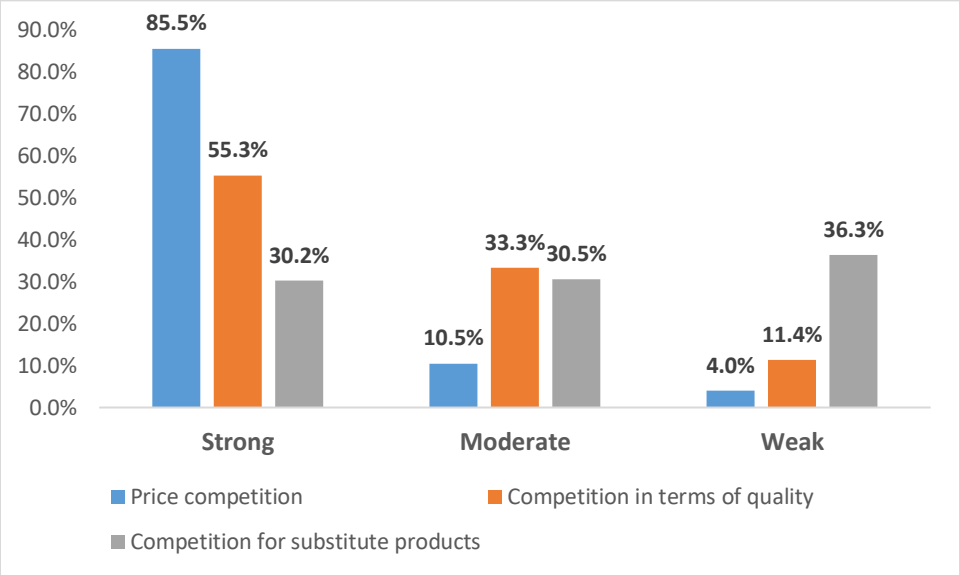

Figure 1. Characteristics of competition in the internal market. Distribution of enterprises according to the answers (in%). Own survey among 155 wine companies, 2016-2018.

The internal market is characterized by high intensity of competition. According to the survey, 85.5% of wine companies say that there is increased price competition in the domestic market (see Figure 2). In the domestic market there is strong competition for wine in terms of product quality, 55.3% of enterprises indicate that wine quality is subject to strong competition in the domestic wine market. It can be concluded that the main market factors on which wine companies compete in the domestic market are the price and quality of the wine offered.

The foreign market is also characterized by a high degree of price competition. Of all 77 wine companies that export wine to foreign markets, 75.5% say that price is the leading factor in competition. The results of the survey show that in the foreign market, in contrast to the domestic market, a stronger factor of competition is the quality of wine (85.5% of the surveyed enterprises are convinced that quality is an important competitor determining factor) (see Figure 2).

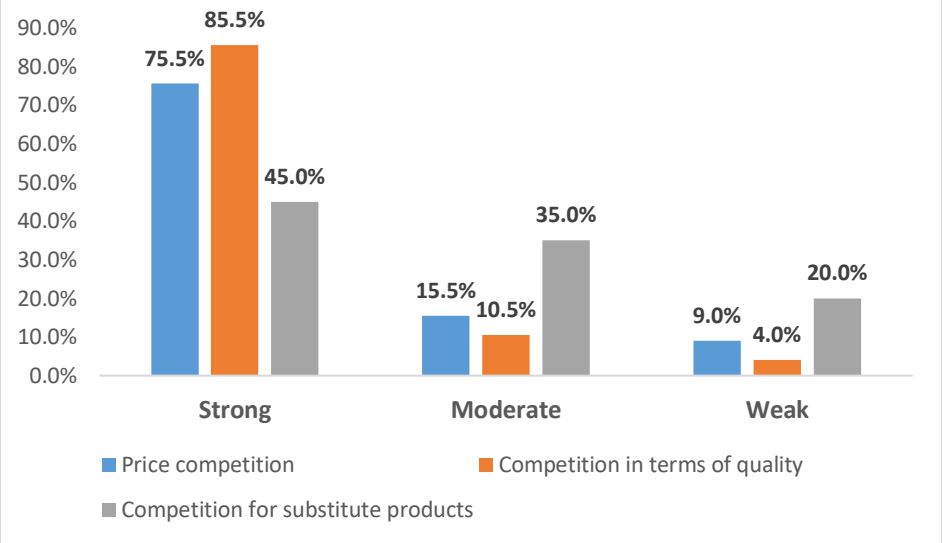

Figure 2. Characteristics of competition in the foreign market. Distribution of enterprises according to the answers (in%). Own survey among 77 wine companies, 2016-2018.

Market needs are one of the important factors determining adequacy of the business strategy of wine companies. In addition to the analysis of competition, it is necessary to study the determinants that determine the demand for wine on the market. A survey conducted among 100 wine consumers identifies the leading determinants of market behavior of consumers in the domestic market. The results of the survey are given in Figure 3. According to the graphical analysis of the survey data - the price is a major determining factor in the demand for wine - 86% of consumers indicated it.

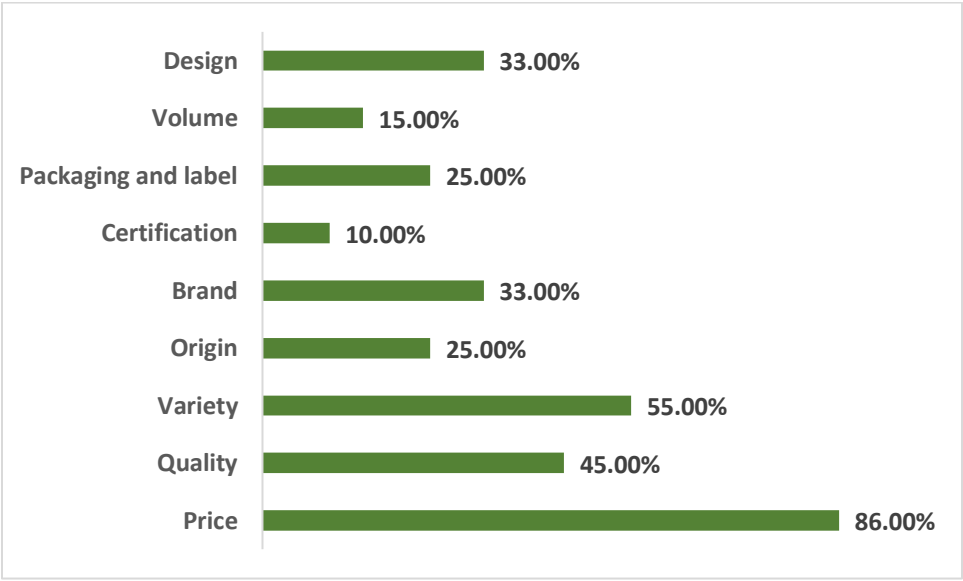

Figure 3. Factors determining the purchase of wine by consumers. Each respondent can give more than one answer in the survey. Own surveyed among 100 users, 2019.

The next most important factor is the grape variety from which the wine is made. Consumers clearly pay attention to the varietal characteristics when choosing wine among the variety offered in the commercial network - 55% indicate this factor as a leader in their choice of purchase. Only in third place is a factor - "quality", as a leading motive in the choice of wine (45% of total consumers surveyed). Design and brand are also important when choosing a wine - almost every third participant in the survey indicates these determinants of purchase choice.

Of low importance in the choice of wine are determined by the factors - certification of wine and volume (expressed as the quantity received for the price paid).

Analysis of financial factors. When studying corporate finance, we used the indicators profitability, liquidity, indebtedness and profit. Based on these data, we report a positive trend in the sector in this direction - 48.5% of enterprises have improved their profitability, 33.3% have no change, and 18.2% have a decrease. Liquidity has increased in 36.4% of wine companies, in 45.4% there is no change, and in 18.2% there is a decrease in this indicator. The indebtedness of the wine enterprises in the sector has increased in 9.1% of them, in another 42.4% there is no change, and in 48.5% it has decreased.

In terms of profit, 51.5% of enterprises reported a profit in the last year, 42.4% ended without a profit and without a loss, and 6.1% were at a loss.

Respondents predict that these trends will continue in the near future due to the expected growth of the market to continue and the planned investments.

This section analyzes the staff turnover, the provision of enterprises with financial management resources and the problems accompanying wine enterprises in their recruitment.

Regarding the change in the number of permanently hired financial specialists, 45.4% of the enterprises report an increase, 54.5% say that there is no change in their number and no enterprise has reduced the number of its financial staff in the last few years. These data can be explained by the entry of financial consultants in the industry, who take over the financial management of wine companies.

The managers of the enterprises in the sector most often encounter problems in recruiting: highly qualified financial staff - 45% of the surveyed enterprises share this as a problem; and qualified financial staff - 33.3% of the surveyed companies, the remaining 21.7% of the surveyed companies indicate that they do not seek or do not need such staff due to the fact that they use external financial services.

From these data we can summarize that wine companies are generally provided with the necessary financial staff and problems in this area are experienced only by individual units and for a certain period of time.

Figure 4 shows the comparative analysis of the provision of corporate wine enterprises with financial management resources, the other enterprises - cooperatives and agricultural producers do not have a clearly defined financial unit in their organizational and management structure. The comparison is given by legal status of the surveyed enterprises.

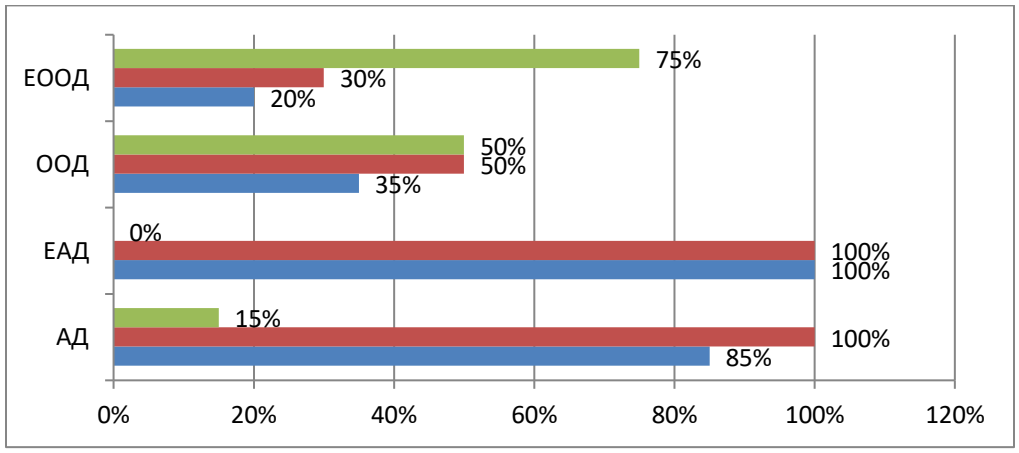

Figure 4. The provision of enterprises with financial organizational and managerial resources (% of enterprises answered "Yes"). Green color - financing outsourcing; red color – financing specialist, blue color – financing unit. Own survey among 55 wine companies

Of the 55 corporate enterprises surveyed, 60% answered that they have a financial unit in their organizational and management structure. Among the wine companies that have given a positive answer are those whose finance department is represented by a single specialist. It is noteworthy that joint stock companies most often have a financial unit and financial staff to perform financial activities. In these enterprises, the financial department has a clearly defined place in the organizational and management structure. In general, in joint stock companies, financial management is carried out with internal resources (see Figure 5). In the case of limited liability companies, financial management is carried out with external resources, 50% of the surveyed enterprises, and 75% of the enterprises - solely responsible companies state,

Access to finance for the activities of wine companies has been examined in terms of the obstacles that these structures face in securing the development of their business models. The main determinants of the credit environment are studied, such as - dynamics of the interest rate, dynamics of the types of crediting, volume and structure of the offered credits by the credit organizations.

According to data from the Bulgarian National Bank, the interest rate credit resource used by the wine sector increased almost 2 times in the period 2016-2019 (see Figure 5).

As noted in a previous section of the study, in recent years there has been an increased interest of wine companies in credit products to expand and modernize their production facilities. This interest was generated by the low levels of the key interest rate, which encouraged banking organizations to offer investment and other loans at very low and attractive interest rates for companies.

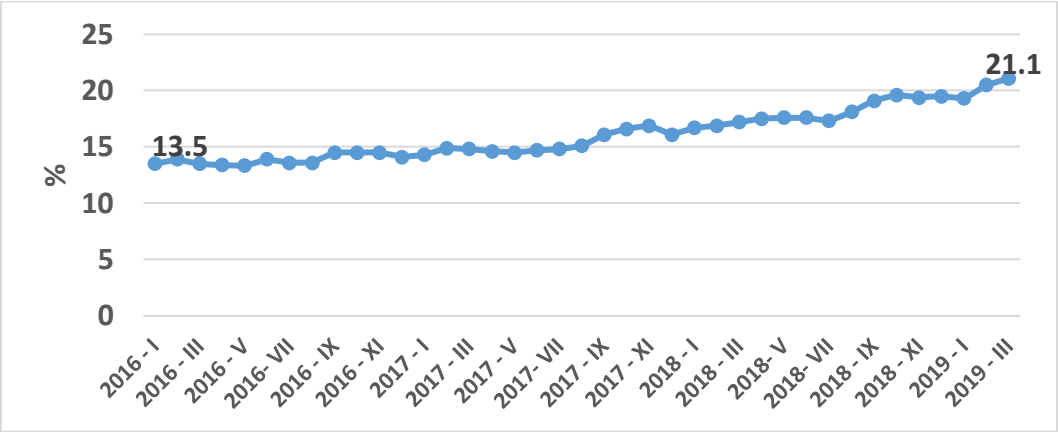

Figure 5. Overdue and systematically non-performing loans from individuals and enterprises in the wine sector (as% of total loans granted). Source: results of own research within the project "Identification of financial needs of agriculture and food industry", funded by the European Investment Bank, 2018.

As a result of this credit boom, significant volumes of overdue loans by companies in the sector began to accumulate. The main reason for the overdue loans is the high levels of intercompany indebtedness in the sector.

In the period 2014 - 2018, the financial needs of the wine sector are increasing, expressed through the indicator amount of long-term and short-term loans. The information in Figure 6 shows that long-term loans are the preferred instrument for financing the activities of wine companies. These are mainly investment loans secured by a pledge of assets. Corporate wine enterprises are the most active in the absorption of credit resources.

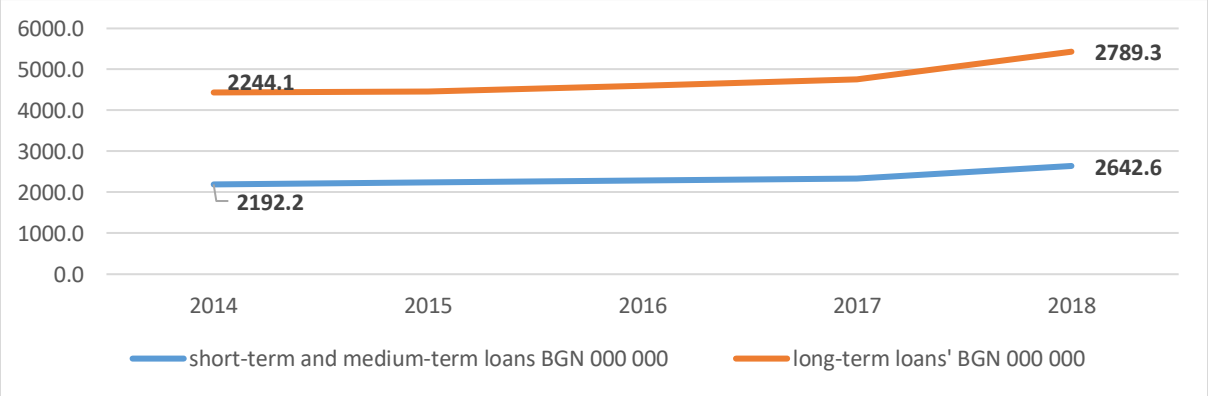

Figure 6. Loans granted for the needs of the wine sector for the period 2014-2018 (in thousands of BGN). Source: results of own research within the project "Identification of the financial needs of agriculture and food industry", funded by the European Investment Bank, 2018.

Short-term and medium-term loans are most often used to cover the financial needs of vine-growing farms and cooperatives. These business structures do not have the "high-value" assets that banks are required to provide on long-term loans (which loans also have more attractive interest rates).

In Figure 7 the main reasons for restricting access to finance in the wine sector are given.

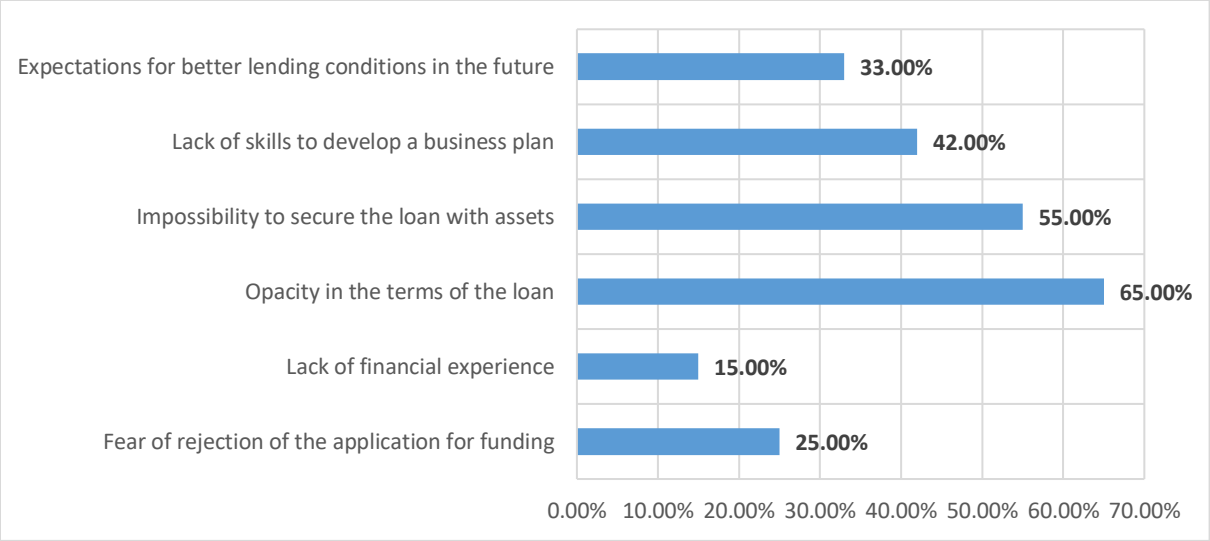

Figure 7. Factors limiting access to finance for wineries. The results of own research among 36 wine companies within the project "Identification of the financial needs of agriculture and food industry", funded by the European Investment Bank, 2018.

In the framework of the project "Identification of the financial needs of agriculture and the food industry", funded by the European Investment Bank, in 2018, 36 wine companies were surveyed. Of all the surveyed enterprises, 65% indicate that the main reason for not applying for a loan is the non-transparency in the conditions of the financing institution. Another significant obstacle limiting access to credit is the inability of the enterprise to secure the requested loan with a valuable asset. Extremely vulnerable in this respect are the vine-growing farms, which cannot offer a valuable asset to guarantee the granting of a long-term (investment loan). These farms suffer from a lack of sufficient working capital and a lack of valuable assets, often resort to the use of consumer loans to cover their financial needs during the year. Consumer loans are determined by higher interest rates, which leads to higher interest costs for growers using a bank loan. Vineyards are often required to provide a business plan when applying for a loan. The preparation of a business plan in this type of farms is not a systematic activity due to the lack of skills or specialists to carry it out. One in three of the surveyed companies stated that they currently refrain from consuming loans, expecting better financial conditions from the financing institutions in the future. In general, companies have a positive attitude towards the development of the credit market in terms of interest rates in the future.

Access to finance, innovation and marketing as factors determining the competitiveness of wine enterprises. By applying chi-square analysis, an assessment of the interaction of the factors determining the sustainability of the competitive advantages of wine enterprises is sought. Sustainability drivers are the access of enterprises to finance, innovation and marketing.

Table 2 shows the results of the tested relationships between the studied indicators in the wine enterprises. The data obtained show that the resilience of competitive advantages in the market (internal and external) is determined by the access of enterprises to finance, innovation and marketing. These resources provide the basis for development and achieving sustainability in market positions.

Table 2. Results of a chi-square analysis to establish the interaction between companies' access to finance, innovation and marketing and the sustainability of their competitive advantages. Own survey among 155 wine companies, 2018.

Sustainability drivers	**Marker -** "Sustainable competitive advantages"
Access of the wine enterprise to finances	**presence of correlation** **Kramer odds value (0.496)**
Access of the wine enterprise to innovations	**presence of correlation** **value of Kramer coefficient (0,391)**
Access of the wine enterprise to marketing	**presence of correlation** **value of Kramer coefficient (0,351)**

Access to finance determines the speed with which a wine company will occupy a certain market niche. With a larger amount of finance, the company can quickly penetrate and control the market niche. This process requires marketing that is adequate to market requirements, which is why marketing resources are also a critical factor for market success. The creation of new business models is a prerequisite for entering new markets, where initially competition is absent or weak. Access to innovation determines the degree of innovation of wine companies. The more innovative an enterprise is, the more competitive it stands out from other market participants. The growth of the enterprise and the creation and / or restructuring of its business model require management to be able to effectively manage changes in the organization. The measurement of deviations as well as the audit of the bifurcation zone in the business development of the enterprise are also critical factors determining the market success.

Analysis of the sources of competitive advantages of wine enterprises. The sources of competitive advantages are analyzed and evaluated qualitatively, through a specially developed module of the questionnaire. The purpose of this module in the survey is to collect qualitative information from the respondents (managers of wine companies) about the main sources of competitive advantages in the surveyed farms. The percentage of the total respondents (155 managers of wine enterprises were surveyed) is used as a qualitative indicator for identifying the sources of competitive advantages. The

VRIO-analysis method is used to identify the competitive advantages of wine companies. Within this method, the competitive advantages of the studied sites are assessed in terms of the following criteria - value, uniqueness and obstacles to operation. The sources of competitive advantage,

Figure 8 shows the results of the survey conducted among wine companies. The results show that the most significant sources of competitive advantage are: (1) the new organization of the business model in the sector; (2) the established brand and (3) the strategy of adding new products to the existing product range.

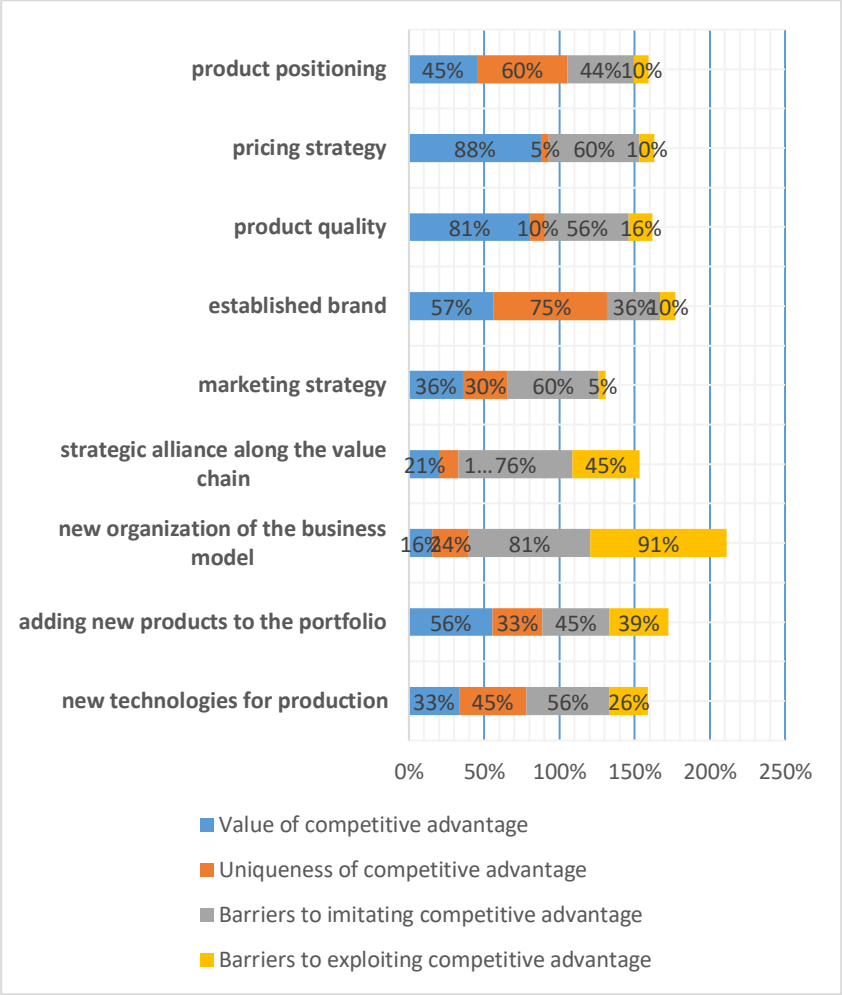

Figure 8. Assessment of the sources of competitive advantages of wine enterprises. Results of a survey among 155 wine companies, 2018. The sum of the percentages is more than 100% due to the fact that the respondents can indicate more than one answer in the questionnaire.

Business organizations in the sector, which seek and apply new business models, seek to strengthen their brand and invest in diversification of the product range stand out as competitive among other participants in the wine sector.

As insignificant (low importance) sources of competitive advantage in the wine sector defines: (1) the marketing strategy that formulates and follows the wine enterprise and (2) the conclusion of strategic alliances along the value chain. These two elements are not important in formulating and developing competitive advantages in the sector. According to managers, the marketing strategy can be easily deciphered and copied by the main competitors in the long run and therefore it cannot be considered a sustainable factor that generates a competitive advantage in the market. The conclusion of strategic alliances along the value chain is also not recognized as a reliable source of sustainable competitive advantage. Joining such unions can lead to a loss of autonomy in making management decisions regarding the development of the business model as well as increase transaction costs at some point,

The results of the study show that the pricing strategy, product quality and product positioning are relatively equal in terms of influencing factors. The wine market is defined as highly competitive in terms of price, which is why wine companies focus their interest on researching, formulating and implementing an adequate pricing strategy that will enable them to occupy lasting market positions in both the domestic and foreign markets. The quality of wine is also an important element, forming a competitive advantage according to the managers of wine companies. Higher quality bottled wines are quoted at a higher price level, which makes it possible to derive more value along the chain from values in the sector. It should be noted that the quality of the wine is a product characteristic, which is attractive in the eyes of consumers who have accumulated experience and knowledge of the factors that determine the quality of wine (ie these are a small number of loyal customers). The mass consumer decides to buy, observing not so much the quality of the wine as the established brand in relation to the price. That is why wineries strive to invest in establishing and developing the prestige of their wine brand, carefully approaching the price. The brand-price relationship is characterized as very fragile, with the price factor playing a dominant role. as much as the established brand in relation to the price. That is why wineries strive to invest in establishing and developing the prestige of their wine brand, carefully approaching the price. The brand-price relationship is characterized as very fragile, with the price factor playing a dominant role. as much as the established brand in relation to the price. That is why wineries strive to invest in establishing and developing the prestige of their wine brand, carefully approaching the price. The brand-price relationship is characterized as very fragile, with the price factor playing a dominant role.

The value of the formulated competitive advantages of the wine enterprises is given in Figure 9. The graphical analysis of the survey data shows that the value of the competitive advantages is guaranteed by relying on (1) the effective pricing (pricing strategy) of the market; (2) the quality of the wine produced and placed on the market; (3) the established brand of the wine offered and (4) the addition of new products to the product range (see Figure 9). The managers of the wine enterprises declare that by using these elements their enterprises achieve and guarantee the value of their competitive advantages.

The next criteria are to achieve sustainable competitive advantages in the market is the uniqueness of the offer that is addressed to customers. According to the data in Figure 10, the uniqueness of the competitive advantages of wine companies is achieved by combining the following elements:

(1) the establishment of the brand and (2) the adequate positioning of the company's products on the market. (see Figure 10).

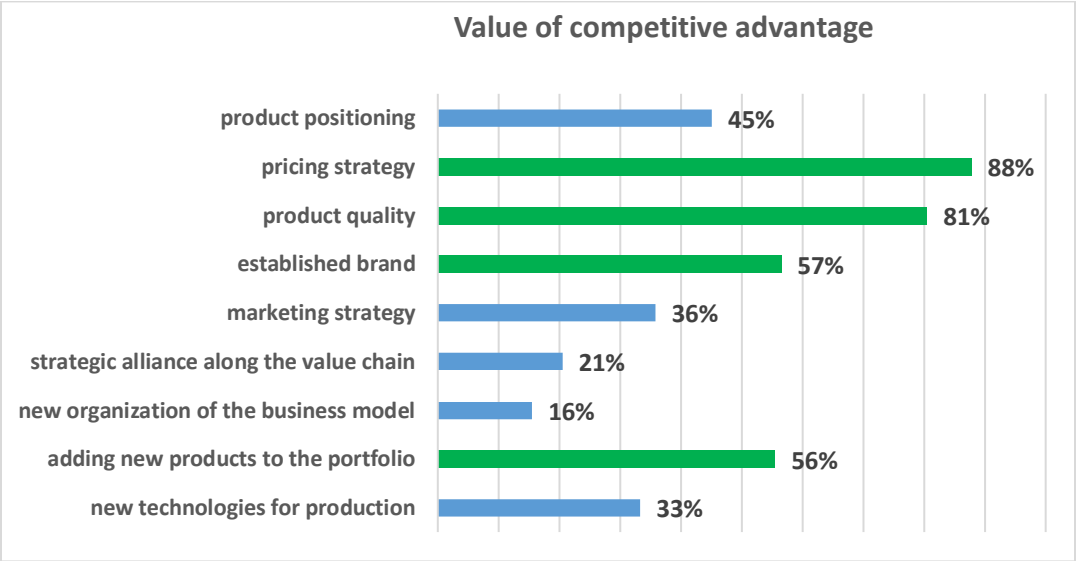

Figure 9. Factors determining the value of the competitive advantages of wine enterprises. Results of a survey among 155 wine companies, 2018

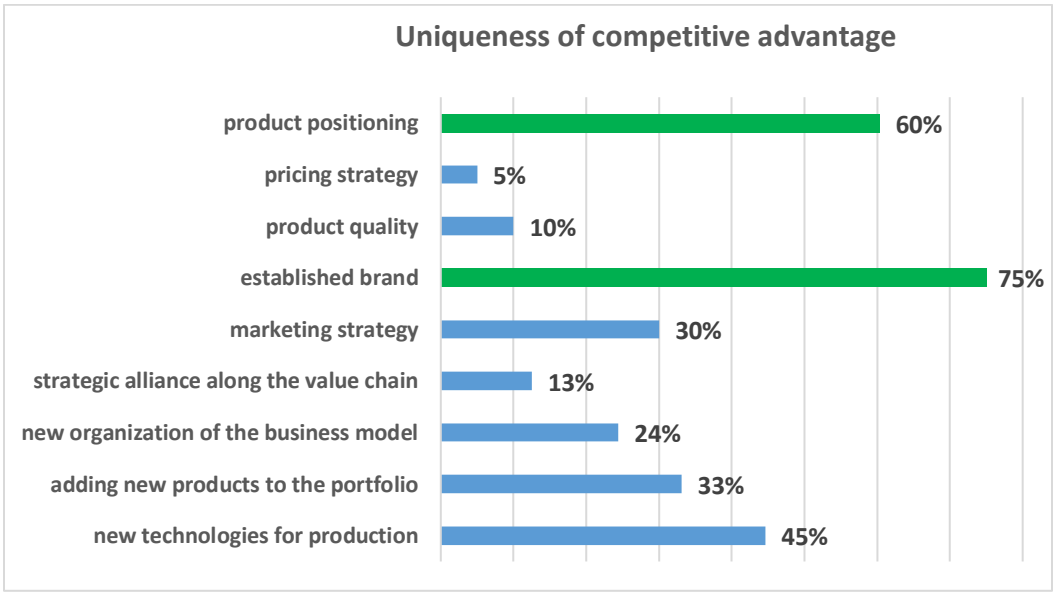

Figure 10. Factors determining the uniqueness of the competitive advantages of wine enterprises. Results of a survey among 155 wine companies, 2018

The way of pricing as well as the quality of the wine are not recognized as factors guaranteeing the achievement of unique competitive advantages on the market.

Achieving a competitive advantage in the market is half the battle. It is necessary for the management of the wine enterprise to be able to protect its competitive advantages from being imitated by the main (direct) competitors. For this purpose, various business tactics can be applied, parrying the

main competitors in this direction. Figure 11 shows the factors (business tactics) that are most often used as barriers to imitation by competitors. As the most common business tactic, managers radically recognize the new organization of the existing business model (81% of all respondents indicate this factor) (see Figure 11). Following this tactic can permanently protect the competitive advantage from imitation. Very often business partners, those who are determined by high market power are involved in the fight against competition by applying the business tactics of allying with them (76% of the total respondents indicate this business tactics as working). The use of strategic alliances along the value chain can push competition out of the market in the long run. Last in order of importance is the tactic of establishing the company brand as an effective tool to fend off competitors not to mimic the achieved competitive advantage (70% of total managers surveyed, indicate this tactic as applicable to solve the problem). can push competition out of the market in the long run. Last in order of importance is the tactic of establishing the company brand as an effective tool to fend off competitors not to mimic the achieved competitive advantage (70% of total managers surveyed, indicate this tactic as applicable to solve the problem). can push competition out of the market in the long run. Last in order of importance is the tactic of establishing the company brand as an effective tool to fend off competitors not to mimic the achieved competitive advantage (70% of total managers surveyed, indicate this tactic as applicable to solve the problem).

Another important issue that needs to be addressed in achieving sustainable competitive advantages in the market is how to exploit most of the value created along the chain. The data from the survey show that the radically new organization of the business model of the wine company is recognized as the most preferred business tactic to control most of the value created (91% of surveyed managers indicate this factor). And in solving this problem, resorting to a strategic alliance is a common solution by the company's management (see Figure 12).

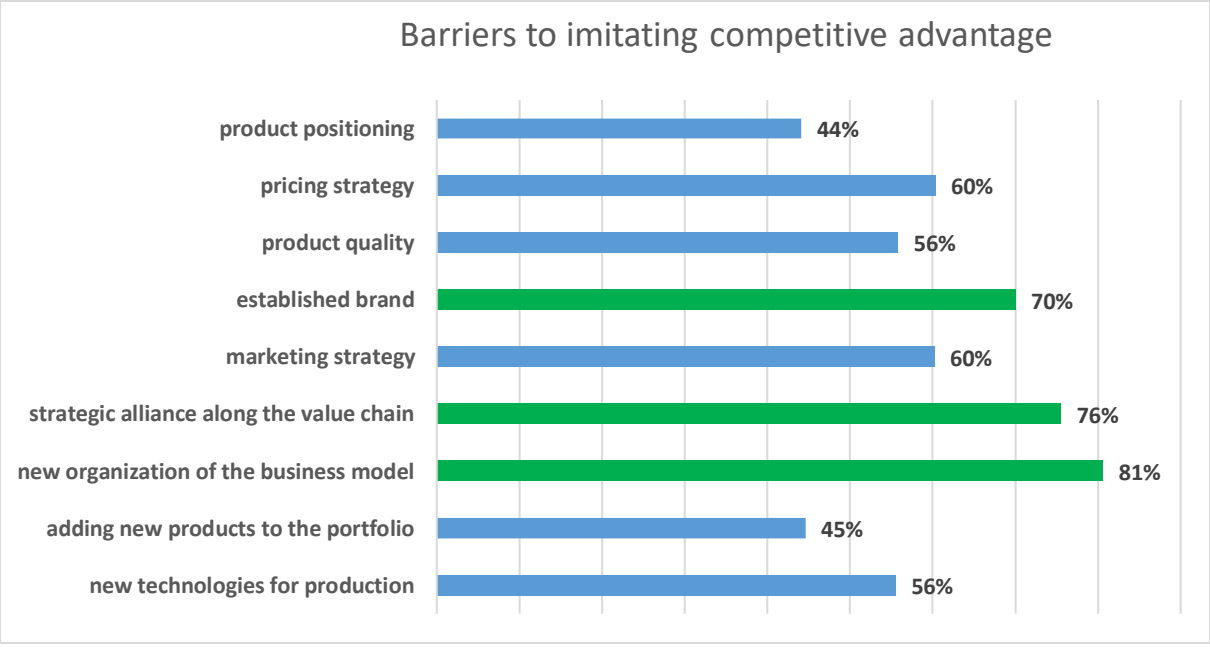

Figure 11. Factors blocking competitors from copying the established competitive advantages in the sector. Results of a survey among 155 wine companies, 2018

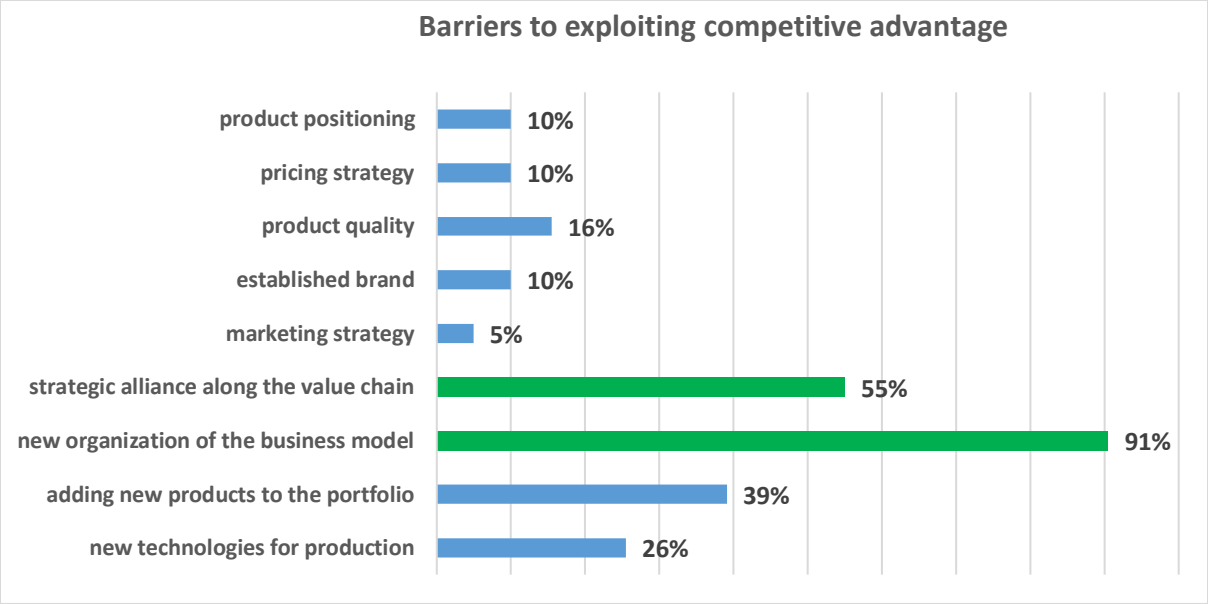

Figure 12. Factors blocking the exploitation of the formed competitive advantages in the sector. Results of a survey among 155 wine companies, 2018

Conclusions

As a result of the analysis of the business environment in which the wine enterprises operate, the following conclusions are formulated:

- The factors guaranteeing market success in the sector are: (1) the quality of the produced products and (2) the diversification of the product portfolio, which explains the investments made in the renewal of the technological equipment and in the creation of own vineyards;
- Wine companies use different sources of funding, mainly due to the fact that investments in the sector in recent years have been significant and would be difficult to finance in only one way, ie. they seek to differentiate financial risk. Most companies say they are looking for finance to invest in technological innovation and in implementing quality systems to increase their competitiveness. This proves that financial planning and management will be even more important in the future to achieve a competitive advantage in the sector;
- Wine companies as a whole face serious problems in finding staff (1/3 of the surveyed companies share this opinion). A significant number of wineries point out that their specialists need training in developing strategic management skills;
- The provision of enterprises with strategic organizational and managerial resources is realized in two ways - (1) through the construction and development of their own strategic unit and (2) through the use of business outsourcing. Basically, joint stock companies have a strategic unit in

their organizational and management structure to implement strategic planning activities, while other wine companies prefer to use outsourcing;

- The concentration of financial capital in joint stock companies defines the financial unit as a leader in the implementation of strategic planning activities. The finance department has priority in the strategic planning of the competitiveness of this type of wine enterprises and its head has a crucial role in the top echelon of management;

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ASSESSMENT OF THE GEODEMOGRAPHIC POTENTIAL OF BULGARIA IN THE COMMON EUROPEAN SPACE BY 2020

Kamen Petrov[1]
[1]E-mail: petrovk@abv.bg, University of National and World Economy, ul. "8-mi dekemvri", 1700 Studentski Kompleks, Sofia, Bulgaria

Abstract

This article provides a demographic description of Bulgaria in terms of its socio-economic development. Problems related to population aging, declining birth rates, migratory mobility and others have been outlined. The aim of the article is to outline a clear demographic picture of Bulgaria in the new century and to be able to draw the appropriate conclusions about the prospects for it. An attempt was made to present a realistic demographic picture of the condition of the settlements and the derivation of the problems from the deterioration of the demographic situation in the country.

Key words: population, territory, space, structure, development, management

Abstrakt

Dieser Artikel liefert eine demographische Beschreibung Bulgariens in Bezug auf seine sozioökonomische Entwicklung. Es werden Probleme im Zusammenhang mit der Alterung der Bevölkerung, dem Geburtenrückgang, der Migrationsmobilität und anderen skizziert. Das Ziel des Artikels ist es, ein klares demographisches Bild Bulgariens im neuen Jahrhundert zu skizzieren und entsprechende Schlussfolgerungen über die Perspektiven ziehen zu können. Es wurde der Versuch unternommen, ein realistisches demographisches Bild des Zustandes der Siedlungen und die Ableitung der Probleme aus der Verschlechterung der demographischen Situation im Lande darzustellen.

Stichworte: Bevölkerung, Territorium, Raum, Struktur, Entwicklung, Management

Résumé

Cet article fournit une description démographique de la Bulgarie en fonction de son développement socio-économique. Les problèmes liés au vieillissement de la population, à la baisse des taux de natalité, à la mobilité migratoire et autres ont été soulignés. L'objectif de l'article est de brosser un tableau démographique clair de la Bulgarie au cours du nouveau siècle et de pouvoir tirer les conclusions qui s'imposent quant à ses perspectives. On a essayé de présenter une image démographique réaliste de l'état des agglomérations et de la dérivation des problèmes de la détérioration de la situation démographique dans le pays.

Mots clés: population, territoire, espace, structure, développement, gestion.

Introduction

In the last 40-50 years, negative demographic trends have been observed within the European space. They are mainly related to population aging, internal migration from rural to urban areas, declining birth rates and emigration to North America. On the other hand, Europe is facing migratory pressures from Asia, Latin America and Africa. In this environment, in this presentation we will consider the demographic situation of Bulgaria as a country with significant political instability over the past 30 years. Demographic problems are largely rooted in the state of the nation state and the pace of socio-economic

development, but we will not give final estimates, but will try to present a clear demographic picture of the country by 2020. It is important to share that our findings and results are based on public data used by the National Statistical Institute and the reference to the expert assessment of researchers working on demographic issues in Bulgaria. The purpose of this assessment is to present the situation as an available population, its territorial location, degree of migratory mobility, which will show patterns for anyone familiar with the analysis and presentation based on our demographic knowledge.

Results

The population of Bulgaria on March 1, 2020 is just over 6.9 million people. After Bulgaria's membership in the European Union, it has decreased by over 416 thousand people in ten years, according to Eurostat data on demographic trends in EU countries. This trend of population decline is visible from the results compared to the population in 2007 in the country lived 7 518 000 people, and in 2017 they were 7 101 859 people (according to the results, the population of the country at the 17th census as of February 1, 2011 was 7,351,234 people. This is more than 580 thousand people less than in 2001, with an average annual rate of decrease of 0.7%. It is assumed that by mid-2018, according to experts, it is just under 7 million). The decrease is mainly due to the negative natural increase. In the last 20 years, the population has decreased by over 600,000 people precisely because of the higher mortality rate at the expense of the birth rate. The impact of natural increase is much greater than that of the other main factor due to population decline - emigration. According to preliminary data, only a third of it is due to external migration (Karakashev, Dokova, Dulevski and Maleskov 2006). A total of 696,378 people went abroad for the period 1992-2018. Another important indicator of the population decline is the declining birth rate in Bulgaria. According to expert estimates, the decrease in the birth rate in Bulgaria began after 1925, when our country entered a "demographic transition". During the 95-year period until 2020, the negative trend persists, which has some compensatory effects after 1950 and fluctuations between 1968, 1974 and in the period 2005-2008. The practice of heredity in fertility is objective training. from influencing many demographic, social and economic factors. As of 2019, about 7,050,034 people live in the country, of which 342,209 are men and 36,27625 are women. Logically, the largest decline was in people of working age - by almost 56 thousand, or 1.3% compared to 2016. The process of reducing this group began in 2011, but now it feels more painful from business given the movement of the economy and the overheating of the labor market in the country. If there is good news, it is that life expectancy is increasing to 74.8 years.

Towards the end of last year, a person from the so-called in dependent ages (under 15 and over 65 years) there are less than two people in active age. This ratio has been deteriorating in recent years with each passing year, or fewer and fewer working people are supporting more and more elderly people and children. The result of the negative natural growth is the strong aging of the population. Only 16% of Bulgarians are under the age of 18, at the expense of 18-64, who are nearly two-thirds of the population. 19% are people over 65 years of age. The proportion of those under 18 has been declining since 1992, while that of adults has been increasing. The forecasts are that this trend will deepen and it will inevitably have a negative impact on the state budget and the pension system - fewer people will pay taxes, and more and more will expect social and health protection. According to expert estimates, if in 2001 per 100 people of working age were replaced by 124 young people, and by 2020 this ratio is 100 to 64. The ratio

of people of active age and unemployed is more favorable in cities than in villages. The worst is in the districts of Vidin, Lovech and Gabrovo, and the best - in the capital. The aging of the population also leads to an increase in its average age, which from 40.4 years in 2001 reached 43.6 years at the end of last year. The share of people aged 65 and over is 21%, which ranks Bulgaria among the six countries with the largest share of the adult population within the European Union. The share of over 65-year-olds at the district level in Bulgaria is the highest in the districts of Vidin, Montana, Gabrovo and Lovech, and the lowest - in Blagoevgrad, Varna and Sofia-city. In 15 districts, the population aged 65 and over is more than one-fifth of those living in the district. The largest share of children and young people under 18 are registered in the districts of Sliven and Burgas, and the lowest - in Gabrovo, Pernik, Kyustendil, Veliko Tarnovo and Smolyan. The aging process is more pronounced among women than among men. The relative share of women over the age of 65 is 20.2%, and of men - 14.7%. This difference is due to higher mortality among men and as a consequence - lower life expectancy among them. The aging process is also characteristic of most EU countries. Austria, Belgium, Estonia, Latvia, Portugal and Sweden have the same relative share of the population aged 65 and over (17-18%) in Europe. This share is higher in Germany - 20.4%, Italy - 20.0%, and Greece - 18.7%. In other countries the share of the elderly population is below 17%. Close to that in Bulgaria (around and below 14%) is the share of the youngest population in Germany, Latvia, Slovenia, Italy, the Czech Republic and Greece, and in other EU countries it is over 15% (according to http://epp.eurostat.ec.europa.eu/)

Table 1. Population breakdown by area. Source: NSI – Bulgaria and own calculation (31.12.2019)

Area	**Total**			**in the cities**			**in the villages**		
	all	men	women	all	men	women	all	men	women
total for the country	**6 951 482**	**3 369 646**	**3 581 836**	**5 125 407**	**2 461 774**	**2 663 633**	**1 826 075**	**907 872**	**918 203**
Blagoevgrad	**302 694**	**147 231**	**155 463**	**182 137**	**87 034**	**95 103**	**120 557**	**60 197**	**60 360**
Burgas	409 265	197 790	211 475	313 132	149 712	163 420	96 133	48 078	48 055
Varna	469 885	228 712	241 173	394 795	191 195	203 600	75 090	37 517	37 573
Veliko Tarnovo	232 568	112 401	120 167	164 538	78 970	85 568	68 030	33 431	34 599
Plovdiv	666 801	320 136	346 665	505 158	240 547	264 611	161 643	79 589	82 05
ruse	215 477	105 026	110 451	168 519	81 932	86 587	46 958	23 094	23 864
Sofia (capital)	1 328 790	637 465	691 325	1 270 169	608 444	661 725	58 621	29 021	29 600
Stara Zagora	313 396	151 611	161 785	226 997	108 952	118 045	86 399	42 659	43 740
Haskovo	225 317	109 971	115 346	162 659	78 735	83 924	62 658	31 236	31 422

The tendency to preserve the population leads to a change in its basic age structure - distribution of the population below, in and above working age. The impact on the coverage of the population in and above the working age shows both the leaving of the population and the legislative changes in determining the

age limits of the population at retirement. Thus, raising the retirement age of Bulgarians to 65 for men and women is one of the legislative changes. Another legislative change is in the field of education, where primary education is already received in seventh grade. In practice, these decisions also have a temporary effect, because they are not accompanied by a series of social measures to improve the socio-economic condition of the population in Bulgaria. With the reduction of the population and its migration to the big cities, another problem related to the territorial organization of the country is emerging (Yankov, R. 2014). it is accompanied by the process of depopulation and the deteriorating quality of the level of public works in a significant part of the municipalities of Bulgaria. Thus, at the end of 2019 the settlements in Bulgaria are 5302, of which 255 are cities and 5047 - villages. There is no population in nearly 200 settlements. With a population of over 100 thousand people are seven cities in the country. Five district centers have increased their population last year. Kardzhali joins Varna, Veliko Tarnovo, Plovdiv and Sofia, which increased their population in 2018 as well. By 2019, Bulgarian cities with a population of less than 1,000 people will increase by one more and become six. Brusartsi is already in the group of Melnik, Madjarovo, Pliska, Kiten and Klisura. The capital has the largest increase in population, the least - in Razlog. According to the data in 2019, the largest increase in population was registered in Sofia. The number of inhabitants in the capital has increased compared to the previous year by 2391 people and reaches 1 238 438 people. After Sofia, the largest increase is in the population of Plovdiv with 1789 people, with which the city under the hills already has a population of 345,213. The third largest city in the country - Varna, increased in 2019 its population by 677, and the total population of the city is 335,854 people. Veliko Tarnovo for the second consecutive year marks an increase in its population. Last year, the old capital increased its population by 302 to 68,780. In 2019, Kardzhali increased its population by 160 people and has 43,182 inhabitants. With a population of over 100 thousand people are only six Bulgarian cities, in which live 33.8% of our people. These are Sofia, Plovdiv, Varna, Burgas, Ruse and Stara Zagora. By 2020, the city of Smolyan remains the smallest regional city, and Asenovgrad - the largest non-regional city in Bulgaria. In 2020, the town of Smolyan has a population of 28,851. In the top 3 for the regional centers with the smallest population are also Razgrad with 30,921 inhabitants and Silistra with 31,891 inhabitants. The largest non-regional town continues to be Asenovgrad with a population of 49,042 people, followed by Kazanlak with 44,760 inhabitants and Dimitrovgrad with 34,614 people.

Emigration and internal migration are important for the movement of the population and the demographic situation in the country. With regard to internal migration, we can deduce the following patterns.В периода 2011-2020 г. продължава тенденцията на урбанизиране на населението. The largest territorial movement is in the direction city - city (35%). Significantly smaller in number and relative share are the migration flows in the direction village - village (15%). The number of migrants from villages to cities (28%) is higher than in the opposite direction city - village (22%). A total of 92,824 people emigrated from the cities and at the same time 82,674 people settled in them. For the villages these data are respectively 45 694 and 43 412 people. As a result of internal migration, the population in the cities increased by 2350 people, the population in the villages decreased by the same amount. However, there is one peculiarity in these transformations and it is related to the change of residence during parliamentary and local elections in the Republic of Bulgaria, when the population is relocated in order to win elections in a given region or municipality (Kazakov, B. 2010).

Another important aspect is the continuing trend of increased internal migration. According to experts, an average of 95,000 people participates in internal migration each year. The most active in the migration within the country are the persons between 20 and 39 years old, followed by the young Bulgarians under 20 years old. In third place are people around the average age between 40-59. Most often, internal migrants change their address from one city to another - 44.4%. On average, nearly 24.7% of those who overcame within the country leave the village for the city. However, about one-fifth of internal migrants have done just the opposite, changing their address from town to village.

Along with the internal migration, 157 settlements in our country are completely deserted and left without a single inhabitant. Another 1,200 settlements are left with a very modest population - between 1 and 49 people. Another 30,570 people packed their bags and went abroad, according to national statistics. On average, every second person who leaves the country is between 20-39 years old, and the youngest migrants - under 20 years old - are 14.3%. However, representatives of the third age have also decided to seek realization outside our country, as 8.7% of all emigrants are 60 years of age or older. The most popular destinations are Germany, the United Kingdom and Spain. According to the calculations of the statisticians, however, the opposite trend is also observed. 21,241 people have moved from abroad to Bulgaria, and nearly half of them - 43.6%, are Bulgarians who have returned to our country (Naydenov Kl., T. Traykov, 2015). On the other hand, the processes of emigration of the population have a more significant impact on the development of the country. In the period 1990-2020, the number of people who left Bulgaria is estimated at about 1,800,000. Of these, 314,000 Bulgarian citizens left for Turkey in 1989. The total number of emigrants to the Republic of Turkey is of the order of 473,000 people, of whom nearly 150,000 return. In practice, after the political changes of 1989, a strong economic emigration developed, including a significant part of the graduates in Bulgaria. This trend continues to this day, but with little change - emigration is now mainly from young people and mainly to Western Europe, Canada and the United States. Emigration is one of the main factors for reducing the Bulgarian population.

In the period 2001-2016 another type of migration was born - to Bulgaria from abroad. This migration to Bulgaria is mainly related to enterprising foreigners who want to invest in the country, as well as elderly people, mainly from Great Britain, the Netherlands, Spain and Ireland, who come to live permanently in the country because of the much cheaper life. here than in their countries. In recent years, Syrian citizens, Arabs, Asians and emigrants from Africa have also settled in the country. According to data from various institutions working on the problems of the census by 2018, about 80,000 people with foreign citizenship live permanently in Bulgaria and they represent a little over 1.5% of the country's population. At the same time, every second person with foreign citizenship living permanently in Bulgaria is from a European country outside the European Union. Russian citizens predominate - 25,000 (63.1%), followed by citizens of Ukraine - 6,064 (16.6%), the Republic of Macedonia - 1,091 (7.2%), Moldova - 893 (4.8%), and Serbia - 569 (3.1%) and 5% others. At the same time, by 2018 in Bulgaria live about 10,000 citizens of the European Union, or about 15% of all foreign citizens in the country. The people who declared that they have dual citizenship by 2018 Bulgarian and other, at the time of the census are about 30,000 people. According to incomplete data from the Bulgarian institutions, it is assumed that by 2020 the number of Bulgarian citizens living abroad is a little over 2.2 million. The reasons for the emigration of Bulgarians abroad are related to the deteriorating political stability, the lack of a clear economic profile,

an unclear economic profile of the settlements in the country, as well as the decent professional realization.

Conclusion

In conclusion, we can emphasize that the demographic picture in Bulgaria by 2020 remains complex with an uncertain future development. Especially in the emerging coronavirus crisis, the demographic situation may worsen further. In the middle of 2020, the Bulgarian state entered a total political instability and institutional crisis, which in the long run may also have a negative impact on our demographic development. Results of internal and external migrations of the population for the period 1990-2020, led to increasing regional disparities and differences in living conditions in different parts of the country (housing, landscaping, level of development of the service sector - health, trade, transport, utilities, etc.), in the levels of employment and in the levels of income in the individual settlements. These are also increasingly serious reasons for intensive emigration from the lagging regions of the country. The remoteness of settlements from large cities, along with the condition of roads and communication networks, are also proving crucial for migration. In conclusion, we can conclude as a regularity that human capital is constantly flowing from the side, and the gap is not filled yet. Above all, improving the demographic picture requires a strong economy with a productive workforce that feels long-term financial security for the generation. In a country where young people do not have faith in the future and in their successful realization, there is no way to have more children.

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TRENDS IN THE SPATIAL ECONOMIC DEVELOPMENT OF THE SILISTRAN AREA

Michaela Georgieva[1]
[1]E-mail: miha@abv.bg, Sofia University, "St. Kliment Ohridski" , bul. "Tsar Osvoboditel" 15, 1504 Sofia Center, Sofia, Bulgaria

Abstract

This article is dedicated to the problems facing the regional development in Silistra district. The focus of the study is on spatial and territorial processes through the piss of socio-economic development. Emphasis is placed on agriculture, economic development, infrastructure connectivity and other local issues. The tendency for future development of Silistra district within the national space is also presented. The adopted approach gives us a reason to present
regional potential of Silistra district. The possibilities for implementation of target programs and projects for improvement of the socio-economic one are also considered development of the field.

Key words: population, settlements, regional development, space, territory, district, government, demography.

Abstrakt

Dieser Artikel ist den Problemen der regionalen Entwicklung im Bezirk Silistra gewidmet. Der Fokus der Studie liegt auf räumlichen und territorialen Prozessen durch die Pisse der sozio-ökonomischen Entwicklung. Die Betonung liegt auf der Landwirtschaft, der wirtschaftlichen Entwicklung, der infrastrukturellen Anbindung und anderen lokalen Themen. Es wird auch die Tendenz der zukünftigen Entwicklung des Bezirks Silistra innerhalb des nationalen Raums dargestellt. Die gewählte Herangehensweise gibt uns Anlass zur Präsentation
das regionale Potential des Bezirks Silistra. Die Möglichkeiten für die Umsetzung von Zielprogrammen und Projekten für die Verbesserung der sozioökonomischen sind auch Entwicklung des Feldes betrachtet.

Stichworte: bevölkerung, siedlungen, regionalentwicklung, raum, territorium, bezirk, regierung, demographie.

Résumé

Cet article est consacré aux problèmes auxquels est confronté le développement régional dans le district de Silistra. L'étude se concentre sur les processus spatiaux et territoriaux à travers le piss du développement socio-économique. L'accent est mis sur l'agriculture, le développement économique, la connectivité des infrastructures et d'autres questions locales. La tendance du développement futur du district de Silistra dans l'espace national est également présentée. L'approche adoptée nous permet de présenterle potentiel régional du district de Silistra. Les possibilités de mise en œuvre de programmes et de projets ciblés pour l'amélioration de l'aspect socio-économique sont également considérées comme un développement du domaine.

Mots clés: population, établissements humains, développement régional, espace, territoire, district, gouvernement, démographie

Introduction

In recent years, Bulgaria's membership in the European Union has necessitated an increasing focus of regional policy on peripheral regions. This is an urgent process, because in countries like Bulgaria, regional imbalances and differences in the national territory have begun to come to the fore. Thus, our exhibition is dedicated to the socio-economic development of Silistra district, which is located in northeastern Bulgaria and borders Romania, through the Danube River and the land border, the internal borders are with the districts of Shumen, Dobrich, Silistra and Razgrad. The territory of Silistra district covers 2846 sq. Km or 2.6% of the country's territory. The district includes seven municipalities, which are Alfatar, Glavinitsa, Dulovo, Kaynardzha, Silistra, Sitovo and Tutrakan with 118 settlements - 5 towns and 113 villages. The socio-economic development of the district is one of the great challenges for the state government to overcome the emerging regional imbalances in the national territory. In the last year, according to national statistics, the district registered a relative slowdown in its development.

Table 1. Socio-economic indicators of Silistra district. Source: NSI

Indicator	Item	Number
Population (31.12. 2020) - total	number	108018
Natural growth rate (per 1,000 population)	per mille	-9.5
Average annual salary of employees by employment and official legal relationship	levs	10572
Employment rate - 15 - 64 years of age	percentage	58.2
Produced products	thousands of BGN	1056294

In practice, in the conditions of established membership of Bulgaria in the European Union, regional development should be significantly improved. Moreover, in the national space in the last 10 years the thesis that the government creates a favorable environment for the pulling regional economic development of regions in difficulty. This sets the need at the beginning of the programming period 2021-2027 to pay attention to the problems of regional development and, if possible, to outline strategic guidelines aimed at improving the way of life in the individual areas. In this presentation we will focus on the state of Silistra region and the opportunities for regional development within the new programming period (Bachev, Ivanov, Toteva and Sokolova, 2017). The new moment of the regional development policy is in combination with the municipal development plans with the purposeful spatial policy within the North Central Planning Region. This means for areas such as Silistra to be given the opportunity to promote the processes of regional connectivity and infrastructure of the social sector in order to meet the needs of the local population. On the other hand, it is necessary to reduce the intensity and labor migration and to create conditions for encouraging investments in regions such as Silistra in order to create a competitive environment for the geoeconomic development of the region. Important for the

development of the district is the natural resource potential mostly related to the high share of agricultural land - 2001374 decares or 70% compared to the national average - 58%. The forest territories are 640640 decares or 22.48% of the territory of the district, compared to the national average of 35%, which forms the leading role of the agricultural sector in the region.

Figure 1. Spatial image of Silistra region. Source: District Strategy for Development of Silistra District

It is essential for the effective regional development to combine the goals and tasks of the municipal development plans with the strategic perspectives for realization on the territory of the district, as well as to achieve effective coordination and supplementation of the sectoral goals and priorities for development of Silistra district and the whole Northeast region. According to our observations, the main goal of regional development should be to create conditions for the development of territorial cooperation for the implementation of joint activities between municipalities and individual sectors, including cross-border, interregional and transnational in nature. Such an ambitious goal can be achieved within four main areas - infrastructure, urban, economic and tourism (a combination of cultural and historical heritage and construction of modern tourist facilities). The vision for the development of the region is largely tied to attracting funds and investments for the implementation of regional development policies. In this respect, the role of the state is strategic, as it should provide the necessary conditions for accelerating economic activity and building new production facilities to ensure the sustainable development of the district and the region. This requires highlighting the new profile / specifics of the area, to analyze the state of its economy, the level of human resources development, infrastructure, connectivity and accessibility, as well as the environmental situation and the risks associated with its territorial development. The current level of development of the Silistra region requires a targeted impact on the network of settlements, urban centers and rural areas (Vladev, 2016).

Results

***Assessment of socio-economic development*.** The data show that the changes in the relative share of enterprises according to the number of employees are insignificant. About 92.4% are micro enterprises. Medium-sized enterprises are 43 or only 1.1%. The share of large enterprises remains relatively constant and is about 0.1% of all operating companies in the district. This is currently an unfavorable trend, as

micro-firms are not carriers of technological progress, innovation and competitiveness, and are less likely to contribute to increasing employment. According to national statistics, still in the municipalities of Alfatar, Glavinitsa and Kaynardzha all operating companies are micro and small. In the other municipalities, micro, small and medium-sized companies are represented, as the number of medium-sized companies ranges from 3 (Sitovo) to 26 (Silistra). In the municipality of Silistra, in addition to SMEs, 5 large enterprises also operate. Most enterprises by 2020 operate in the municipality of Silistra - 2514 or 56% of the companies in the district. They are followed by the municipalities of Dulovo and Tutrakan with 21% and 12% of the enterprises, respectively. The least companies operate in the municipalities of Alfatar (76) and Kaynardzha (89), respectively 2.1% and 2.4% of all enterprises in the district. In structural terms, economic activities in Silistra district are dominated by enterprises in the field of services "Trade, repair of motor vehicles and motorcycles" - 39.8% of companies. In second place are enterprises in "Agriculture, forestry and fisheries" - 13.5%, and in third place in "Manufacturing" - 8.6%. From the regional specialization of the enterprises from the medium-high and medium-low technological productions it is noticed that the district of Silistra specializes in the sector "Machinery and equipment". From the regional specialization of the enterprises from the low-tech productions it is noticed that Silistra district specializes in the Food sector. The district does not fall into the regional specialization for the development of high-tech productions and high-tech and knowledge-intensive services. The main challenge for strengthening the innovation potential and the restructuring of the regional economy into sectors intensive in knowledge and high technologies, and sectors with high added value, remains the development of human potential, which requires preparation and incentives for development of highly qualified human resources in science and technology (Dokova and Petrov, 2015). A key problem remains the lack of adequate tools to pull or supplement private funding to new productions that are competitive.

Opportunities in the agricultural sector. Silistra District has a high potential for agricultural development. The primary sector is a leader in the local economy and creates 23% of the gross value added in the district, 31% of the production and 16% of employment. It is a major source of income and employment for a large part of the population and will continue to play an important role in the future development of the region. The territory of Silistra District covers 118 lands with managed land 1 983 814 decares. The agricultural land in the district is a total of 2,001,374 decares, of which 1,797,990 decares for agricultural purposes, including: arable land - 1,515,940 decares, perennial plantations 59,800 decares, pastures and pastures - 182,390 decares and other categories of land - 39,860 decares. Unfortunately, there are a number of constraints that prevent the region from being a powerful agricultural leader. First of all, it is necessary to take steps to build a branch of the Agricultural University-Plovdiv in Silistra, which will train staff for agriculture and increase agricultural culture and knowledge in the population. Currently, there is a shortage of quality staff in the region with the capacity to develop intensive agriculture and the resulting economy. Provided that it has a university center, it will be possible to attract students from Romania, Moldova and Ukraine to exchange experiences and knowledge, and this will also contribute to the transformation of the Silistra region into a leader in Bulgarian agriculture (Petrov, 2014). Of course, such a move must be supported by the state and the mayors of local municipalities. In practice, almost all major agricultural crops are grown in the Silistra region, among which cereals, oilseeds and tobacco are important. In the municipalities of Tutrakan, Glavinitsa, Silistra and partly Sitovo the perennial plantations are traditionally represented, in the municipality of Sitovo - the vegetables, and in the municipalities of

Alfatar and Glavinitsa - the essential oil crops. Tobacco is less common as a crop, mainly in the municipalities of Glavinitsa, Sitovo and Dulovo. At the same time, the agricultural development of the region faces certain problems. In the municipality of Kaynardzha, for example, due to the rugged terrain, low rainfall, strong winds and high frosts, yields are generally lower than in other municipalities. Another major problem is the poor technical condition of the constructed irrigation systems. Thus, the irrigation systems "Popina", "Aydemir" and "Silistra" do not function due to depreciation and partial destruction. The constructed irrigation wells provide water, but its high price is an obstacle for irrigated agriculture. In practice, the resource of shallow groundwater in the Danube terraces is not used, which implies the state to establish a local state enterprise "Karst Irrigation Systems" in Dulovo, where there are enough vacant state buildings, and the city is a key place for effective irrigation management. the districts of Razgrad, Silistra, as well as part of Shumen and Dobrich districts. The region is also losing ground in animal husbandry. It is far from its optimal capacity. Most of its production does not go beyond natural microeconomics. That is, the competitiveness of the agricultural sector is generally low. Farmers bear the risk of market realization and competition. They are the guide and the corrective for the producers of raw materials. There are unrealized reserves for increasing the efficiency of the sector in the areas of scientific services, varietal and breed composition, agrotechnologies and agromanagement. A serious problem for the region is the lack of a market and large markets (Regional Development Plan of the North Central Region for the period 2014-2020). It is high time that new markets were built in Silistra, Dulovo and Tutrakan to play the role of centers of the agricultural sector. In practice, the profile of the districts of Silistra, Dobrich and Razgrad are of the same type, but the district of Silistra is in the most difficult situation for a number of reasons, including the state of infrastructure and especially transport and service. In practice, in none of the big cities in Silistra district there are markets and established markets with sustainable characteristics. The region also needs a targeted approach to its forest resources. Due to its flat nature, the forests are mostly deciduous. Shrub formations are present almost everywhere in the construction of forest ecosystems. The creation of new high-stemmed forests and the transformation of coppice forests into such is one of the most important events in this field (Stoyanova, 2008). An afforestation program and policy is needed, which should be implemented mainly in previously vacated areas, where soil preparation has been carried out, as well as in those which are carried out under the auspices of the plantations intended for conversion into seed in order to improve species composition and enrichment. the species diversity of naturally regenerated plantationsThere are formed islands in the Danube River, some of which are suitable for recreation (beach) and tourist purposes. The Karakuz Game Reserve provides opportunities for hunting tourism, and the Malak Preslavets Nature Reserves (there is a lake with water lilies) and the Srebarna Nature Reserve are convenient places for ecotourism. On the other hand, hunting tourism can be further developed in the region. In DLS "Karakuz", along with forestry, the main activities are to preserve and enrich the species diversity of game. The main directions for the development of the forest territories are determined by the forest management projects of the forestries.

Need for reliable transport accessibility. Here is the place to note that the district does not have quality transport accessibility, especially during the autumn-winter period (November-April), ie. almost half a year. This in turn predetermines its agricultural profile and creates problems in attracting new investments. The reasons can be specified, but the most important (which, incidentally, is also valid for Shumen, Dobrich, Razgrad and 2/3 for Ruse) is the extremely outdated transport system.. The road

network in the municipalities of Glavinitsa and Alfatar is the least developed, which inevitably complicates the development processes. The more limited development of the national road network in the district makes the function of each of the roads more significant, but the directions Silistra-Shumen and Silistra-Tutrakan-Ruse are especially important, the maintenance and modernization of which are crucial for the development of the district.. In practice, in Silistra and the above-mentioned neighboring areas, no new roads have been built, not to mention highways, there is no gasification despite the flat terrain, no electrification of the railway line from Tsar Samuil to Silistra. The service with railway transport in Silistra district is carried out on the line Samuil-Silistra (deviation from the IX main line Ruse-Varna), with a length of 70 km. This is the only railway line in this part of the country that directly serves the Silistra region, without a cross-border crossing of the Danube. The line is single, non-electrified and collects and serves local traffic, mainly of local or regional importance. Silistra District is the worst served by rail transport in the entire North Central region, with a density of 24.6 railway lines, ie. much lower than the national average (36.66) and the region (41.43). The service stations are Silistra, Dulovo and Alfatar. The municipalities of Tutrakan, Sitovo and Glavinitsa do not have rail transport services and it is important for them to have bus transport to the nearest railway station. The modernization of the existing railway line in order to improve its operational capabilities, together with the new combined bridge, will enrich the cross-border communications with another type of transport and will establish Silistra as a serious transport center in this part of the country [6]. This approach requires, first of all, to rethink the territorial spatial-urban scheme for the development of the Silistra region, in order to create conditions for the region to be able to function normally during all 12 months of the year, and not only during part of it. To solve the problem of accessibility by the state, it is appropriate to initiate the establishment of a state company "Traffic Management and Road Infrastructure in the Northeast Region" - Silistra. The subject of its activity should be the management of crises, accidents and disasters, as well as the cleaning and ensuring the transport accessibility of road vehicles throughout the year in the districts of Dobrich, Silistra, Razgrad, as well as in some districts of Shumen and Ruse. Given that in the period from the beginning of November to the end of March every year Northeastern Bulgaria faces serious difficulties in cleaning and maintaining the road infrastructure, in the towns of Kubrat, Dulovo and General Toshevo centers can be built where stores and maintains the transport equipment, as well as the necessary logistics for traffic management. It is also necessary to plan year-round programs for the optimal maintenance of the road infrastructure in the region. In geoeconomic terms, this will play a significant role in the attractive development of the Silistra region, boosting the economy and especially the development of crop, livestock and fruit growing in the region, as well as the creation of small and medium enterprises in the food industry. . Thus, conditions will be created for growth and for attracting domestic and foreign investments. This, in turn, will encourage the faster construction of gasification (which is forthcoming in the Silistra region), the construction of the Danube Bridge 3 (Sibistra-Calarasi) and, in connection with it, the construction of the highway I-7 (Silistra-Shumen). Yambol-Lesovo border checkpoint). It is the large infrastructure projects that will give impetus to overcoming the peripheral location of the district nationally and internationally. To ensure year-round access to the settlements in the heart of Dobrudja, it is vital to design and build a new highway in the direction of Ruse - Kubrat - Zavet - Isperih - Dulovo - Tervel - Dobrich - General Toshevo. This will have a positive impact on the regional economy, moreover, that business and citizens of Silistra expect the implementation of large infrastructure projects, without

which the use of geographical, cross-border and socio-economic advantages of Silistra and the region will be difficult. The construction of the route Ruse - Isperih - Dulovo - Dobrich - General Toshevo and the modernization of the road Ruse-Silistra, as well as the creation of the highway Silistra - Shumen, will shape the district of Silistra as a regional economic power due to the relatively stable demographic potential of the region. young population, compared to other regions in the country. Currently, due to the poor infrastructure and the seasonal nature of a significant part of local industry, the gross value added it creates is lower than that in agriculture and services (Stoyanova2005). That is, more efforts are needed for the development of industry, which is an important factor for the successful functioning of other sectors and economic activities, meeting the needs of various employment opportunities and retaining young people in the field. The improved transport accessibility and electrification of the railway network after Tsar Samuil station, as well as in the direction of Silistra, with opportunities for construction of large logistics centers near Dulovo and Alfatar, will facilitate the development of the mining industry (quarry materials) and the development of kaolin deposits. Dulovo. By the way, even now in the industrial sphere the sector of the processing industry functions best. In the period 2007-2014 there are negative trends in the development of the information sector, hydro-amelioration, telecommunications and hotels and restaurants, while growth is marked by the sectors of construction, transport, storage, human health and social activities. This further demonstrates the need to encourage the construction of large infrastructure sites in the area. As a positive feature of Silistra district we can consider that the volume of production is not affected by the economic crisis - the values of the indicator increase for each of the years, as a short-term decline (in 2008) registered only small enterprises. That is, we can say that the location of the area and the degree of technical and social infrastructure determine the economic situation, and it needs new spatial development and modernization in order to function properly. In this regard, the rural development program can help the region's prosperity. In the period 2021-2027, the rural development policy will work through special thematic sub-programs. Bulgaria has chosen to support small farms through this specific instrument. Competitiveness in the fisheries sector can also have a large reserve in terms of economic development by improving the efficiency of those employed in it and creating added value for fishery and aquaculture products (Updated document of the Regional Strategy for Development of Silistra Region in the period 2007-2013). The need to promote local entrepreneurship and create conditions for sustainable development of the fisheries sector, as well as for capacity building for the implementation of the local development strategy, is especially urgent for the municipalities of Tutrakan, Sitovo, Glavinitsa and Silistra.

The role of the Danube river. The transport function of the Danube is important for the areas adjacent to the river. The length of the Danube as a waterway in Silistra district is 77.64 km, which represents 15.8% of the total length of the river on the territory of Bulgaria. The ports of Silistra and Tutrakan provide the connections of the land transport infrastructure of the district with the Danube (Trans-European Transport Corridor № 7), with all the possibilities that the integration of land and water transport provides. The port of Silistra is located 75 km from the Cherna Voda-Constanta canal and 200 km from the large Ukrainian port of Reni. The port of Silistra is for public transport of national importance, ie. for passenger service and ship bunkering. The construction of a combined Danube bridge for road and rail transport "Silistra - Calarasi" will facilitate transit flows and stimulate the processes of transport and economic cooperation between Bulgaria, Romania, Moldova, Ukraine, Russia and Scandinavia, realizing

the potential of their transport systems (Updated document for implementation of the District Strategy for Development of the District of Silistra 2018-2020). Its construction will lead to qualitative and quantitative changes in the transport scheme in the region. New transport potentials will be formed and existing ones will be restructured. Preconditions will be created for the development of the economy and employment of the population. Important for the region would be the construction of the ferry "Tutrakan-Oltenitsa", which, along with improving the parameters of this road, will realize the specific capabilities of the transport infrastructure of the area to combine different modes of transport. -South and establishing Tutrakan as the second supporting center in the area. The financing of the project should come under the operational programs for cross-border cooperation by providing equipment with the necessary specialized facilities and transport equipment for servicing ships with bulk, palletized and containerized cargo. Of course, the port of Silistra is of paramount importance for the region. It is the only one in the Bulgarian section of the Danube, which is able to handle bunker river, river-sea and sea vessels. After the development of the transport infrastructure and the improvement of the economic environment in the region, tourism will become important for its development. Silistra region needs intensive development of tourism, which may become a fact as a result of improving the transport infrastructure. This will also lead to an increase in employment of the population given its predominantly agricultural profile. Currently, tourism is not a significant economic sector in the municipalities in the district. At the end of 2015, it provided less than 6% of local employment. Regarding the available base, in 2015 on the territory of the whole district of Silistra there were a total of 26 accommodation places, offering 687 beds. The expansion of this base is absolutely necessary given the tourist interest of Romania, Moldova and Poland in Northeastern Bulgaria. Unfortunately, however, the region is oriented mainly to low-intensity destinations and short-term visitors, with low employment and low added value. This, in turn, implies deficits in the available entrepreneurial capacity and skilled workforce, as well as difficulties in the design, implementation and effective promotion of cost-effective tourism products. Another potential barrier to the development of tourism are the traditional problems along the "center-periphery" axis, which all peripheral municipalities in the Silistra region face. An example of this is the sluggishness of the Local Initiative Groups (LAGs), through which projects related to the development of tourism and construction of tourist attractions can be implemented. On the other hand, a serious challenge for the tourist development are the significant transport and communal isolation, the lack of public services and opportunities for up-to-date information, as well as the isolation from modern entertainment services. Unfortunately, in the period 2014-2020, small and almost insignificant projects are being implemented on the territory of the district. There are not enough conditions for tourists to visit most natural and cultural sites - roads, parking lots, bathrooms, and in some places - even electricity and water. Future initiatives for the development of tourism in the Danube region should contribute to the effective overcoming of the listed barriers and to "open" for external visitors the significant natural and cultural heritage of the district. Recently, there has been increased interest in the development of tourism by private entrepreneurs through the construction of accommodation (houses for rural tourism, a new high-end hotel complex in Silistra) or through the renovation of existing ones. A high quality material base, excellent technical and operational characteristics and the possibility to provide various additional services are being built. However, there is no systematic approach to the certification of tourist sites in the region and their classification. This should be the main task of all municipalities (not only in the Silistra region), as

well as to establish at least 7-8 tourist routes, covering more destinations in the district, and not only in it.

That is, tourism in the area should aim at a more rational use of natural, cultural, historical and geographical resources of the region, while emphasizing the attractiveness of areas with tourist potential and the opportunities they offer for the development of specialized forms of tourism. and building a sustainable tourism infrastructure.

Conclusion

The peripheral location of the district and the district center in relation to the national territory to some extent predetermines the more limited development of high-class roads and poor infrastructure. Given the implementation of the new territorial urban structure of Bulgaria's development, the integration processes make the region an important link in the trans-European network and focus with an emerging core in the area Silistra-Alfatar-Dulovo-Isperih-Kubrat-Tutrakan. Its new role is to be the rear of the approaches (through the Rishki, Kotlen and Dyulin passes) to Southern Bulgaria. On the other hand, the district can play an important complementary role as a connecting link in the direction Ruse - Razgrad - Shumen - Varna - Dobrich. At the same time, it has Silistra Airport, which can be important for the economic activity of the region, as well as be used as a peripheral for Bucharest, Shumen, Razgrad and Dobrich.The region's development strategy should take into account its needs for new energy sources. For example, the municipalities of Glavinitsa, Kaynardzha and Sitovo receive a medium voltage supply of 20 kV, which does not always guarantee good parameters of the supplied electricity. There are also problems in the other settlements in the region and this requires looking for opportunities to build large energy highways (minimum 200 km). The gasification and the improvement of the transport infrastructure will create good conditions for investments in the region and its modern and sustainable development. Careful analysis shows that the main difficulties facing the Silistra region are related to the continuation of the crisis processes in the demographic development and depopulation. That is, it is necessary to overcome the economic stagnation, which adversely affects the economic activity of the population. This means, first of all, improving the participation in projects under the operational programs, related to the commitment of the state for their co-financing. Secondly, it is necessary to minimize the interregional contrasts caused by the negative impact of climate change, energy dependence and demographic collapse. The "outflow" of young qualified specialists to the capital or to other more developed EU countries should be stopped. A good solution in this regard would be the construction in Silistra of a technological and innovation zone for cross-border development in various sectors of the economy, through which to overcome the continuing isolation on both sides of the border (Danube) between Bulgaria and Romania. In the history of the Bulgarian state, the Silistra region has always played an important and often a key role. Today, in the conditions of dynamic development of the world and within the new economic model of development of Bulgaria, established in the last quarter of a century, the region has prerequisites for development and construction of a new sustainable urban-territorial model, but it must first to have a clear and substantiated strategy for this, to be supported by the local population, and secondly - to rely on state support for its practical implementation.

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THE NATURAL ENVIRONMENT - THE BASIS FOR THE DEVELOPMENT OF BIO-CULTURES AND THEIR RATIO TO THE CONVENTIONAL ONES IN BULGARIA

Petar Marinov[1]

[1]E-mail: tea4er@mail.bg, Instiute of Agrarian Economics, Address: Sofia 1113, 125 Tsarigradsko Shosse Str., Block 1, Bulgaria

Abstract

The environment is the place that combines the various factors of nature that have a direct impact on the formation and development of different types of crops in the context of scientific research. Areas dependent on anthropogenic activity related to the cultivation of areas occupied by organic or conventional crops. In developing the publication were used: statistical, mathematical and comparative method which aims to reveal the relationship between organic and conventional crops. Their place in the economy of the country and the opportunities for future transformations depending on the socio-economic and environmental changes locally and globally. This is the "connection" between the two types of cultures - conventional, without which there is no way at this stage of civilizational development to meet the needs of society and on the other hand, bio-cultures, which claim their place in the future as a product with higher quality. Still, the difference in terms of sown areas and yields is too large between the two types of crops in favor of conventional ones. With the change of the natural and climatic conditions it is possible to transform the paradigm, but at this stage, the society will have to satisfy its nutritional needs through the classical agricultural crops.

Key words: natural environment, bio and conventional crops.

Abstrakt

Die Umwelt ist der Ort, der die verschiedenen Faktoren der Natur, die einen direkten Einfluss auf die Bildung und Entwicklung der verschiedenen Arten von Kulturpflanzen im Rahmen der wissenschaftlichen Forschung haben. Bereiche abhängig von anthropogenen Aktivität im Zusammenhang mit dem Anbau von Flächen, die von ökologischen oder konventionellen Kulturen. Bei der Entwicklung der Veröffentlichung wurden verwendet: statistische, mathematische und vergleichende Methode, die darauf abzielt, die Beziehung zwischen ökologischen und konventionellen Kulturen zu offenbaren. Ihr Platz in der Wirtschaft des Landes und die Möglichkeiten für zukünftige Transformationen in Abhängigkeit von den sozioökonomischen und ökologischen Veränderungen lokal und global. Dies ist die "Verbindung" zwischen den beiden Arten von Kulturen - den konventionellen, ohne die es in diesem Stadium der zivilisatorischen Entwicklung keine Möglichkeit gibt, die Bedürfnisse der Gesellschaft zu befriedigen, und auf der anderen Seite den Biokulturen, die ihren Platz in der Zukunft als ein Produkt mit höherer Qualität beanspruchen. Noch ist der Unterschied in Bezug auf die Anbauflächen und die Erträge zwischen den beiden Anbauformen zu groß zugunsten der konventionellen. Mit der Veränderung der natürlichen und klimatischen Bedingungen ist es möglich, das Paradigma zu verändern, aber in diesem Stadium wird die

Gesellschaft ihre Ernährungsbedürfnisse durch die klassischen landwirtschaftlichen Kulturen befriedigen müssen.

Stichworte: natürliche umwelt, bio- und konventionelle pflanzen

Résumé

L'environnement est le lieu qui réunit les différents facteurs de la nature qui ont un impact direct sur la formation et le développement des différents types de cultures dans le cadre de la recherche scientifique. Les zones dépendantes de l'activité anthropique liée à la culture des zones occupées par des cultures biologiques ou conventionnelles. Dans l'élaboration de la publication ont été utilisés: méthode statistique, mathématique et comparative qui vise à révéler la relation entre les cultures biologiques et conventionnelles. Leur place dans l'économie du pays et les possibilités de transformations futures en fonction des changements socio-économiques et environnementaux locaux et globaux. C'est la "connexion" entre les deux types de cultures: d'une part, les cultures conventionnelles, sans lesquelles il n'est pas possible, à ce stade de développement de la civilisation, de répondre aux besoins de la société et, d'autre part, les cultures biologiques, qui revendiquent leur place dans l'avenir en tant que produit de meilleure qualité. Pourtant, la différence en termes de surfaces ensemencées et de rendements est trop importante entre les deux types de cultures en faveur des cultures conventionnelles. Avec le changement des conditions naturelles et climatiques, il est possible de transformer le paradigme, mais à ce stade, la société devra satisfaire ses besoins nutritionnels à travers les cultures agricoles classiques.

Mots clés: environnement naturel, cultures bio et conventionnelles.

Introduction

Unlike the classical economy, the bioeconomy can perform analyzes and form synergistic models based on ecological attitude to all economic activities of the landscape. In this regard, the natural environment, through the raw materials produced from it can feed the various industries in the bio economy, using already produced clean products (EC - The Bioeconomy Strategy 2012, Falaleeva and et. 2016, Bashev, 2016, Wiezik and et., 2018, Olah and et, 2020). The natural complex of Bulgaria is formed by three components: natural environment, natural resources and natural conditions (Markov, I., 2004, Marinov, 2018, Markov, 2018). The natural environment can be considered as a unit that unites the basic components proposed above. It may include: geographical location, topography, climate, waters, soils, vegetation and fauna. All of them participate in one way or another in the formation and development of economic complexes and territorial units of the country. There is a close connection between the three components, the development of the relief and the structure of the earth's crust. On the other hand, natural resources, as an element of the natural environment, can be grouped according to their use and purpose: means of labor - arable land, irrigation water (hydropower), low-carbon energy sources or high-carbon energy sources. Consumption products - drinking water, biological species from the world's oceans, creation of a genetic bank as a development of genetics in the field of agriculture (Bashev, 2016, Borisov et al., 2020, Shaban et al., 2020, Fidanska, 2020). Natural resources can also be considered from an economic point of view, as this term refers to all-natural resources that directly and indirectly create prerequisites or conditions for economic and social development of society (Nikolov, Borisov and Radev,

2014). Their use is carried out at a certain stage of human development depending on technological progress and the need for them.

Environment - one of the most popular terminology in our time. In literary sources are presented, varieties of interpretation of the pelvis so, mercantile and not yet hitherto “known” set. As a general concept, the Environment in its essence unites - geographical, climatic, biological and anthropogenic factors that have a direct impact on natural organisms. On the other hand, it itself is part of the Noosphere of the planet Earth (1944 год, No. 18, вып. 2, стр. 113 – 120). В.И. Вернадский, Научная мысль как планетное явление, Отв. ред. А.Л. Яншин, Москва, „Наука “, 1991). Entering from the general to the private, reaching the area of agricultural crops necessary for the existence of animals and humans, the environment is a basic element for the future, its exploitation and monitoring will have an increasing impact on society.

According to the author of the publication, without claiming to be exhaustive, this global terminology offers its view: “A set of physical, chemical, biological and anthropogenic factors affecting plant and animal habitats locally and globally”.

The research includes definitions of the specifics and specifics of the development. An overview of the different types of factors related to the environment that have a subjective or objective impact on the processes related to the cultivation of crops in a biological or conventional way. The study applies a statistical-mathematical method for analysis of agricultural land in ha, used in the cultivation of organic and conventional crops in the country for a period of eight years. The comparative analysis of the obtained values is used to determine the percentage ratio between organic and conventional occupied areas of agricultural crops. Table three shows the ratio between bio-cultures and conventional crops over a four-year period. The following formula is used to calculate the areas in ha:

D = A+B

B/ (A+B) * 100

Where:

A - area of conventional crops in (thousand ha)

B - area of organically grown crops (ha)

D - Total area of agricultural crops in (thousand ha)

The statistical information for the publication is taken from "Agrostatistics - Crop production" – MAFF.

Results

The development of bio-cultures as a process is largely a moral choice for making decisions related to the protection of the natural environment and at the same time maintaining the necessary standard of living of the nation. There are factors that directly affect bio-crops and the natural environment. They must be considered individually, as the indicators do not have an exact formula or definition for their application. Conditionally, the factors are similar and are specific to each territory in local or global aspect. Thematically, they can be divided into five main groups: Natural, Social, Economic, Environmental factors and Anthropogenic factors.

According to the Encyclopedia Britannica- "Organic farming, an agricultural system that uses ecologically based pest control and biological fertilizers derived mainly from animal and plant waste and nitrogen-fixing cover crops. Modern organic farming has been developed in response to the environmental damage caused by the use of chemical pesticides and synthetic fertilizers in conventional agriculture, and has numerous environmental benefits" (https://www.britannica.com/topic/organic-farming).

Another type of definition for Organic Agriculture is given by the Ministry of Agriculture, Food and Forestry (MAFF) – "Organic farming is a combined system of agricultural management and food production, which combines best practices in environmental protection, maintains a high degree of biodiversity, protects natural resources, applies high standards of welfare to animals and production methods in accordance with the preferences of some consumers for products produced using natural substances and processes" (https://www.mzh.government.bg/bg/sektori/rastenievadstvo/biologichno-proizvodstvo/.

Table 1. Organically grown areas (ha) in Bulgaria. Source: Information "Agrostatistics - Crop production" – MAFF

Types of crops	2011	2012	2013	2014	2015	2016	2017	2018
Cereals, including rice	6521	7532	7669	12061	22191	15847	16602	21019
Technical cultures	5846	7909	10924	12878	20873	21236	22,998	31273
Perennials	6442	10959	16885	18213	25946	27221	30485	38188
Fresh vegetables, melons and strawberries	670	1421	1037	1445	1866	1954	2894	5527
Permanent meadows and pastures	4491	7957	15476	21831	31796	29548	30485	38188
Fallow	1513	2315	2905	2205	6209	6501	7782	5707
Other arable crops	32	96	45	22	16	35	58	65

According to the author of the publication, without claiming the exhaustiveness of the topic, he offers his opinion – "Organic farming does not respond to the application of pesticides, insecticides, GMO products, fertilizers (in all their varieties), antibiotics and other similar species in the cultivation of various agricultural species. crops and their application in animal husbandry. The main principles of biological development are the creation of a sustainable environment in the sector - agriculture, which in turn contributes to the natural development and protection of plant and animal species in the environment".

According to the MAFF, by the end of 2018 the regulated biological operators on the territory of the country are 6 660, of which 6 214 are producers, 234 are processors of organic products and 212 of all are traders - importers, exporters and traders. wholesale and retail (Georgieva, 2020). In the same year, the organic producers in the country represented nearly 7,2% of the total registered agricultural holdings under Ordinance № 3 from 1999 - register of agricultural holdings (ttps://www.dfz.bg/assets/15042/NAREDBA_3_ot_29011999_g_za_syzdavane_i_poddyrjane_na_registyr_na_zemedelskite_stopani__Zagl_izm_DV_b.pdf.) There is a relative preservation of farms engaged in organic farming, with a minimum decline of 162 from the previous year.

On the table 1 are visualized different types of agricultural crops grown in an organic way on the territory of the country for a period of eight years. In the case of cereals throughout the study phase, a gradual increase in the areas occupied by this type of crops can be seen, or their growth at the end of the period has increased by 31,02%. Areas with industrial crops also report an increase in growth from the initial to the final stage of the analysis or there is an increase of ha by 18,69%. Perennials, the trend during the eight-year period is in an ascending line or an increase of 16,86%. Fresh vegetables, melons and strawberries increased by 12,12% compared to previous crops, there is the least increase due to the specifics of this type of crop. The areas of meadows and pastures increased by 11,76%, as well as of fallow land by 26,51% for the eight-year period. In the category of other crops and arable land, during the study period the values move in different ranges, dictated by objective or subjective factors in the respective territories.

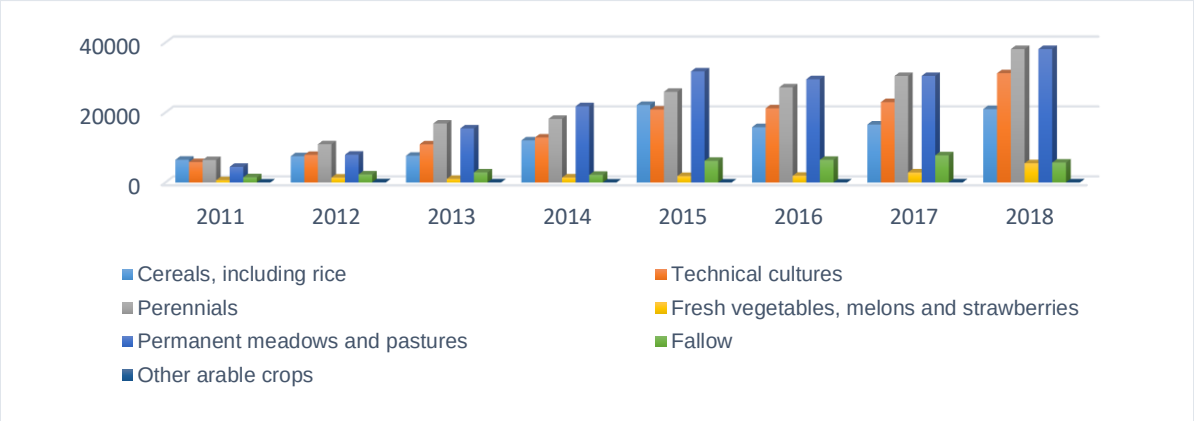

Figure. 1 Areas of organically grown crops in (ha) in Bulgaria. Information “Agrostatistics - Crop production” – MAFF and authors' calculations

In Figure 1 indicates the organically grown crops (ha) in the country for a period of eight years. The upward trend from the first to the last year of ha research is clear - a gradual increase in the area (ha) of organically grown crops, as in 2016 - 2017 there is a slight decline, but the trend remains upward.

Table 2. Areas of agricultural conventional crops in (thousand ha) in Bulgaria. Agrostatistics - Crop production – MAFF

Types of crops	2011	2012	2013	2014	2015	2016	2017	2018
Cereals, including rice	1768,5	1902	1974,7	1960,7	1835,8	1816,6	1729,3	1817,8
Technical cultures	747,1	780	860	834,6	810,8	817,5	898,8	788,7
Perennials	38,6	31,6	32,8	26,7	35,6	37,2	37	39,9
Fresh vegetables, melons and strawberries	25	19,6	21,3	19,9	32,9	49,7	26,5	27
Permanent meadows and pastures	1678,3	1647	1381	1364	1368,7	1384,1	1392,4	1399,1
Fallow	22,5	22,2	16,8	17	15,6	15,3	15,2	14,8
Other arable crops	59,9	60,1	60,2	40,5	47,6	42,9	44,8	43,5

The study of the areas of conventional agricultural crops in Bulgaria for a period of eight years is visualized in table 2, for cereals, from the initial to the final stage of the study there is no major change in ha used for the production of these types of crops or the area coverage is 2,71%. For industrial crops there is a relatively minimal increase of ha in 2016 and 2017 at the end of the period compared to the initial stage, ha has an increase of 5,27%. For perennials during the years of study there are insignificant changes in ha of arable land. Fresh vegetables, melons and strawberries with the highest growth of ha of arable land are reported in 2016, in the period from the initial stage to the final, the growth of ha has increased by 3,25%. In the meadows and pastures during the eight-year study period a decrease in ha by 279,2 thousand ha or by 19,95% was observed. For the areas sown with set-aside, there is also a decrease in the areas from the initial to the final stage of the study by 7,7 thousand ha or by 52,02%. For other crops in conventional agriculture there is also a decrease in the area from the initial to the final stage of the study by 16,4 thousand ha or 37,70%.

Table 3. Percentage ratio between biological to conventional crop production sown areas (ha) in the period 2011-2018. Information "Agrostatistics - Crop production" – MAFF

Types of crops	2011	2014	2016	2018
Cereals, including rice	0,37	0,62	0,86	1,14
Technical cultures	0,78	1,54	2,53	3,81
Perennials	14,30	68,21	42,25	48,90
Fresh vegetables, melons and strawberries	21,14	7,26	3,78	67,18
Permanent meadows and pastures	0,27	16,01	2,09	2,66
Fallow	6,30	12,97	29,82	27,83
Other arable crops	0,05	0,05	0,08	0,15

Based on the European Strategy for 2012 and its continuation from 2018, on the territory of the country, the areas for organically grown crops have insignificant growth compared to those of conventional agriculture, table 3. The four years (2011-2014) included in the study give the clearest idea of the relationship between these two types of areas. The first year is the base year (2011), which gives an idea of the state of the ratio, the second (2014) has the largest increase in the percentage of agricultural land in ha - due to the entry of the bioeconomy as a strategy in the EU. For the next years (the last two) there is a preservation and increase of the status of the lands occupied by organic crops.

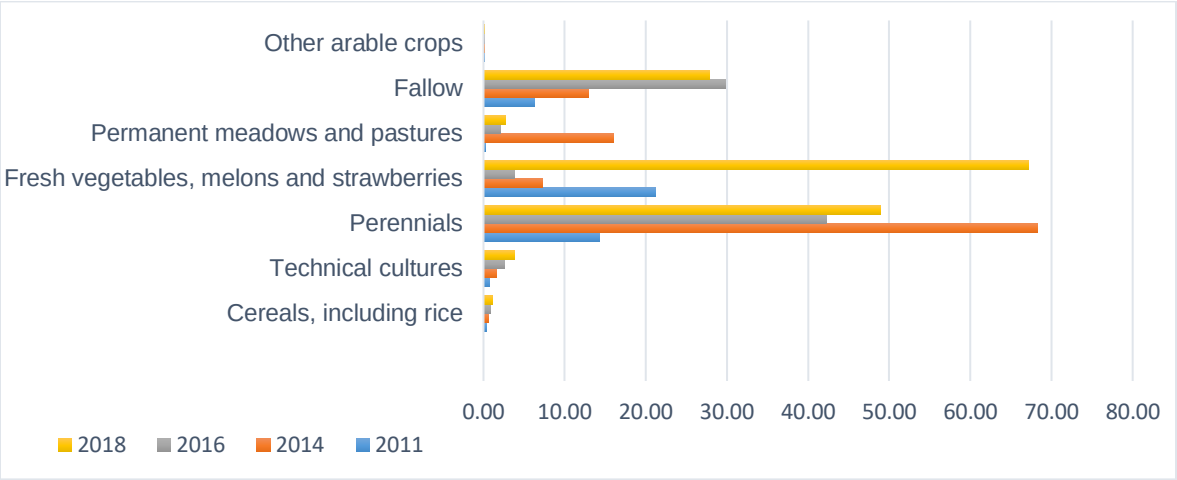

Figure 2. Sown areas (ha) as a percentage of organic to conventional crop production for the country in the period 2011-2018. Information "Agrostatistics - Crop production" – MAFF and authors' calculations

The ratio between conventional crops and biological crops in ha on the territory of the country is in favor of the former due to a number of Socio-economic factors. The visualization of the trend in fig. 2 clearly expresses the upward movement, the increase of the areas in ha of the cultivated biological crops. In cereals from the initial study period until 2018 there is an increase in ha by approximately 1%. The reason for the slight increase is the "classical attitude" towards conventional cultures or the slow change, which largely depends on, as we have already mentioned, a number of Socio-economic factors. Technical crops during the study period (2011-2018) increased as areas in ha by approximately 3%. In the case of perennials as seen in fig. 2 have the largest growth trend in ha compared to other crops. The basic reason is that this type of crops is not so much related to food nutrition and it is possible to apply a higher percentage of organic farming and expansion of the areas in ha. Fresh vegetables, melons and strawberries, their trend is very different, but retain their upward development. Meadows and pastures also maintain the upward trend, with an increase of approximately 2% from the beginning to the end of the study. In acne, there is again a clear upward trend in the study period. The category of other and other crops in ha retains its values below one percent and does not affect the whole picture of the ratio between conventional and bio cultures in ha area.

Conclusion

The natural environment appears as a basis for the development of different types of crops, specifically for the country. The geographical location of an area also has a direct impact on the quantity and quality of future productions. Each region of the country is specific in this respect, which allows the cultivation of endemic agricultural species. The very geographical location of the country is favorable for the development of different types of organic crops. The natural resource potential is part of the natural environment, which is also suitable for the cultivation of organic crops in all varieties. The combination of different types of factors (mentioned in the development) are the basis of high yields of different types of crops - organic or conventional. Organic crops appear as an alternative to conventional ones, but at this stage of the development of society, despite the higher quality of production, they cannot be substitutes. The latter are the basis of the food supply of the population. The ratio between the two types of crops is

in favor of the traditional ones, regardless of the higher quality of the bio-raw materials. With the change of the climatic picture locally and globally and the change of the paradigm of the society in connection with its nutrition, it is possible to change the types of crops, from conventional to organic.

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OPPORTUNITIES FOR IMPLEMENTATION OF INTELLIGENT SYSTEMS FOR THE DEVELOPMENT OF THE SETTLEMENTS IN BULGARIA

Kamen Petrov[1]

[1]E-mail: petrovk@abv.bg, University of National and World Economy, ul. "8-mi dekemvri", 1700 Studentski Kompleks, Sofia, Bulgaria

Abstract

This report is dedicated to intelligent territorial management systems, which are increasingly used in urban governance with the introduction of the term "smart city". In this presentation, we present a new approach to implementing smart governance systems in the form of a smart region. The exhibition examines the possibilities for applying smart approaches to the development of the territory and improving the spatial development of the administrative-territorial units in Bulgaria. An attempt has been made to analyze and compare smart policies in the European area and their implementation in our country. The main trends and opportunities for smart management of the regions in Bulgaria are outlined.

Key words: smart region, regional development, governance, territory, system, city, space

Abstrakt

Dieser Bericht ist intelligenten territorialen Verwaltungssystemen gewidmet, die mit der Einführung des Begriffs "Smart City" zunehmend in der städtischen Verwaltung eingesetzt werden. In dieser Präsentation stellen wir einen neuen Ansatz zur Umsetzung intelligenter Verwaltungssysteme in Form einer intelligenten Region vor. Die Ausstellung untersucht die Möglichkeiten für die Anwendung von smarten Ansätzen zur Entwicklung des Territoriums und zur Verbesserung der räumlichen Entwicklung der administrativ-territorialen Einheiten in Bulgarien. Es wurde der Versuch unternommen, intelligente Politiken im europäischen Raum und ihre Umsetzung in unserem Land zu analysieren und zu vergleichen. Die wichtigsten Trends und Möglichkeiten für eine intelligente Verwaltung der Regionen in Bulgarien werden skizziert.

Stichworte: intelligente region, regionale entwicklung, governance, gebiet, system, intelligente stadt, raum

Résumé

Ce rapport est consacré aux systèmes intelligents de gestion territoriale, qui sont de plus en plus utilisés dans la gestion urbaine avec l'introduction du terme "ville intelligente". Dans cette présentation, nous introduisons une nouvelle approche de la mise en œuvre de systèmes administratifs intelligents sous la forme d'une région intelligente. L'exposition explore les possibilités d'application d'approches intelligentes au développement du territoire et à l'amélioration du développement spatial des unités administratives-territoriales en Bulgarie. Une tentative a été faite pour analyser et comparer les politiques intelligentes dans l'espace européen et leur mise en œuvre dans notre pays. Les principales tendances et opportunités de la gestion des régions intelligentes en Bulgarie sont décrites.

Mots clés: région intelligente, développement régional, gouvernance, territoire, système, ville intelligente, espace.

Introduction

Modern technology is rapidly changing our lives. With the help of a computer you can do literally everything: to work, to buy goods and services, to communicate, to have fun. We can say that a new way of life is being formed today. In today's world, intelligent management systems focus on urban planning concept for the integration of many information for urban infrastructure management: transport, education, healthcare, housing and communal services, security and more. The aim is to create conditions for the creation of a "smart city" and then a smart region, which will provide a better quality of life for residents in different areas. The definition of a smart city is interpreted ambiguously by experts. However, their wording converges in one thing: the smart city is driven by data, and data management allows municipal services to improve the quality of life of the population (Batty, M. et al. 2012). The data cover such areas of citizens' lives as safety, transport, medical services, utilities, beautification, etc. The data sources are video cameras, various sensors, sensors and information systems. This model of change in humanity is related to the spatial development of our national territory and the need to introduce the concept of a "smart region". In practice, the smart region model goes beyond the innovative development of cities by adding to it the opportunity for innovative development of rural areas, post-urban spaces, suburban areas, holiday villages, resorts and villages in the Republic of Bulgaria. Thus, the intelligent system at the regional level is based on the introduction of information and communication technologies in various spheres of life, which can accelerate the economic development of the territories and improve the quality of life of citizens. In practice, the smart region is primarily a platform that applies the basic principle of smart development of the individual territory and especially the reuse of data and infrastructure (Correia, L.M. 2011). For example, thanks to an integrating system, the same surveillance camera can be used by different services and departments for their purposes such as traffic monitoring, public safety, quality control of street cleaning, etc. n. In the same way, different services can use data from the information systems of others for their own needs. This is what brings real efficiency, ensures the availability of information and reduces duplication of costs. The introduction of an innovative way of governing the territories of the country is caused by a continuing negative demographic trend.

Results

In practice, the process of population decline and aging is deepening, regional imbalances are clearly outlined, the number of live births and the total birth rate are decreasing, the overall mortality rate is increasing, and the number of Bulgarians returning to Bulgaria continues to be much lower. who leave it. The men in Bulgaria are 3 369 646 (48.5%) and the women - 3 581 836 (51.5%). The aging process is more pronounced among women than among men. The relative share of women over the age of 65 is 25.1%, and of men - 17.9%. This difference is due to higher mortality among men and, as a consequence, lower life expectancy among them. The aging of the population leads to an increase in its average age, which increased from 40.4 years in 2001 to 43.9 years at the end of 2019. The aging process of the population is manifested both in the villages and in the cities, as in the cities the average age of the population is 43.0 years, and in the villages - 46.5 years. The aging trend of the population leads to changes in its basic age structure - below, in and above working age, and these sets are also affected by legislative changes on the retirement age (61 years and 4 months for women and 64 years and 2 months for men in

2019). This process greatly complicates the modernization of our territorial development.

Figure 1. Administrative map of Bulgaria with an image of the larger cities by 2019. Source: NSI, 2019

On the other hand, the global trends for the implementation of intelligent territorial management systems are one of the challenges that can create a condition for overcoming certain deficits in the regional development of our national territory. Thus, through the model of a smart region, the concept of scaling the technical solutions, management methods and social practices of a smart city for all municipalities in Bulgaria can be achieved. This is a concept for the development of the digital economy, the production and use of innovations within the regional specialization, which includes the creation of the necessary infrastructure for this and the cultivation of competencies required in the information society among residents of municipalities and settlements.

European experience and the development of intelligent systems in the individual regions. After 2015, the countries of the European Union are moving from a strategy for smart cities to a strategy for smart regions, which covers not only the municipal but also the regional and inter-municipal level of planning and policy. Globally, national and municipal strategies for the development of smart cities have been developed and are functioning. These are programs and initiatives for smart cities in the European Union and in the United States. At the same time, a number of departmental and interdepartmental initiatives standardizing the development of smart cities in the People's Republic of China have been implemented in recent years.

Also, nearly 100 smart city programs are implemented in India. As of 2020, there are several hundred smart cities around the world. It must be understood that the smart region is such a thing that, firstly, you cannot implement it "from above" and, secondly, you cannot implement it "in one". Without the participation of business and the population in the project, as well as without the cooperation of a large number of very different specialists, the project for a smart region will be doomed to failure.

It should also be borne in mind that rapid urbanization creates an excessive burden on services such as transport communications, emergency rescue and municipal services of cities and, above all, the

area of gravity of urban systems. To address these problems, the concept of a 'smart region' is becoming more widespread around the world. Its main goal is to increase the efficiency of all services through the use of information and communication technologies. It should be emphasized that all Smart Region projects involving video surveillance, public services, intelligent transport system and others should not be isolated. In intelligent systems, we must have interconnectedness within a single concept for the region. The main subsystems include the Intelligent Transport System (ITS), the Geographic Information System (GIS), the security system, e-education and e-health. Each project, as a rule, is a deeply integrated system consisting of many subsystems, which include different functional components, each of which can be used simultaneously in many subsystems (Santova, 2019).

Smart regions scale the practices of smart cities and determine their smart economic specialization. The main concept for the regional development of the Bulgarian regions should be the development of elements of e-government and the introduction of digital government mechanisms that use big data for management decisions in the system of state and municipal administration. In the field of regional economy achieving digitalization of sectors and clusters of the economy, as well as various spheres of public life at the level of district, region, municipality and settlement, the use of big data as a factor for economic development, social sphere, state and municipal management.

The application of smart city technology is evolving in order to improve the management of urban flows and respond quickly to complex tasks. Therefore, the "smart city" is better prepared to solve problems than with a simple "operational" connection with its citizens. Nevertheless, the term itself remains unclear in its specificity and therefore includes many interpretations and discussions. Thus, among the sectoral technologies that influence the development of smart cities, include those technologies that simultaneously cover several trends or industries, in this case from the point of view of city management.In Bulgaria in the last few years in the field of regional development began to implement partial projects to create a smart regional specialization. This is measured in the adoption of strategies for the development of a regional economy, based on the identification and selection of a limited number of priority areas for investment in research and innovation, which are the strengths and comparative advantages of the region (Shishmanova, 2015).

The first focus of this type of strategy rests on defining an urban environment to build a smart city. It is assumed that this should be a city that implements a number of technical solutions and organizational measures aimed at achieving the highest possible quality of management of urban resources and infrastructure and the provision of services in order to create sustainable favorable living conditions, stay and business activity in the city. But the city itself needs to have its own zone of gravity, which brings to the fore the need to develop the concept of a smart region. This concept should be based on the creation of a regional practice, which consists in scaling up intelligent urban technologies for urban agglomerations and areas with a low share of urban population, as well as for the formation of intelligent specialization of the region. This process is related to the need to achieve a high level of digitalization of the economy. As a regional economy should be a key factor in production are digital data, processing large volumes and the use of analytical results, which compared to traditional forms of management can significantly increase the efficiency of various types of production, technology, equipment, storage, sales , delivery of goods and services (Townsend, 2013).

The needs of regional development to create an intelligent environment. In the intelligent management of the regional development it is necessary to use new terminology, which will fill with content the spatial development of the processes of innovative development of the separate territorial communities. In the first place, there is the concept of 'big data', which characterizes digital data sets, large size, the rate of increase or complexity of which requires significant processing power for processing and special software tools. Also for analysis and presentation in the form of human-perceived results. Another concept related to the development of regional technologies is the Internet of Things (IoT). It is a computer network that connects physical objects equipped with built-in information technology to interact with each other or with the external environment without human intervention. Another variety is cyberphysical systems (CPS), which are intelligent network systems with built-in sensors, processors and devices that are designed to interact with the physical environment and support the operation of computer information systems in real time. Cloud computing, which is a model of information technology for providing ubiquitous and convenient access via the Internet information and telecommunications network to a common set of configurable computing resources ("cloud"), storage devices, can also be important for supporting regional development. data, applications and services that can be immediately provided and released from the cargo with minimal operating costs or almost without the involvement of the supplier. Thus, in regional development, there is a need to create a network of open data. It creates conditions for the use of information created by state bodies, their territorial bodies, local self-government bodies or organizations subordinated to state bodies, local self-government bodies, or received by these bodies and organizations, which must be published in Internet in a format, providing its automatic processing for reuse without prior change by a person (machine readable format) and can be freely used by any person for any purpose in accordance with the law. In this way, conditions are created for the promotion of e-government at the regional level (Correia, 2011). The next step at the local level is to move to building an industrial Internet, (IIoT). This means building an information and communication infrastructure based on Internet connection of industrial devices, equipment, sensors, sensors, process management systems, as well as the integration of data from hardware and software with each other without human intervention. In recent years, the European Union has been implementing a "Strategy for Research and Innovation for Smart Specialization" (RIS3). Regional and national smart specialization strategies are supported through participation in the Smart Specialization Platform (S3). A similar example is the introduction of an electronic document management system that brings together regional authorities, district administrations and other institutions.

In Bulgaria, opportunities can be sought for building smart regions in the presence of a city with opportunities for effective implementation of smart systems. The formation of intelligent regions can be realized through the development of the following agglomeration areas such as Sofia-Pernik-Radomir, Veliko Tarnovo-Gorna Oryahovitsa-Lyaskovets, Varna-Devnya-Provadia, Burgas-Pomorie-Saint Vlas, Sliven-Yambol, Haskovo-Dimitrovgrad, Stara Zagora-Kazanlak, Lukovit-Cherven Bryag, Plovdiv-Asenovgrad, Vratsa-Mezdra, Montana-Lom and Ruse-Svishtov. In these areas it is necessary to create an opportunity to increase the number of services provided in electronic form. Next, it will be necessary to work on the provision of integrated services, as well as to reduce the time for the provision of public services. In addition, it will be necessary to significantly expand the list of information requested through inter-agency communication channels. This will outline the spatial profile of the respective agglomeration

area, and hence the project opportunities for intelligent specialization at the regional level. Based on the accumulated experience, three types and three ways of developing smart regions based on agglomeration areas can be identified.In the first place, such as the introduction of smart systems in the infrastructure of existing cities, the creation of smart infrastructure for large mass events, as well as the construction of new high-tech areas or residential cities ("green field" projects). The main problems in the implementation of the concept of a smart region is the presence of "smart cities", provided that a significant part of the country as of December 31, 2019 live in cities 5,125,407 people - 73.7 percent, and in villages - 1 826,075 people or 26.3 percent of the country's population.

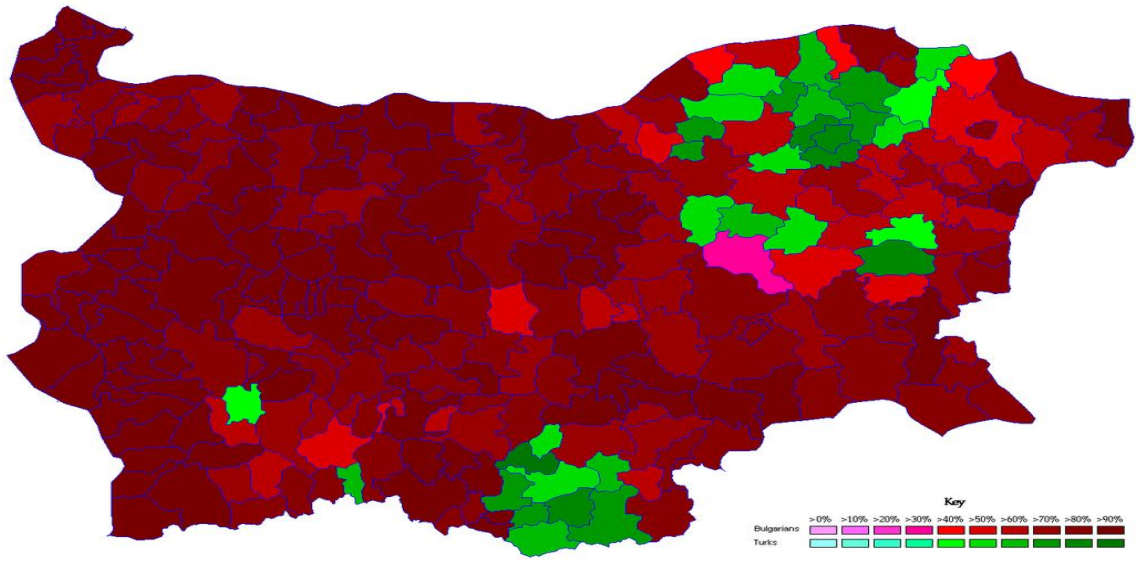

Figure 2. The population in Bulgaria by 2019. Source: NSI, 2019

At the end of 2019, the settlements in Bulgaria are 5,257, of which 257 are cities and 5,000 – villages. There are 171 settlements without population. The largest number is in the districts of Gabrovo, Veliko Tarnovo and Kardzhali - 63, 58 and 11, respectively. By 2020, the country is divided into 6 statistical regions, 28 districts and 265 municipalities. Half of the country's population (50.4 percent) lives in the Southwest and South Central regions, and the smallest in population is the Northwest region - 728 thousand people, or 10.5 percent of the country's population. According to data from the National Register of Settlements of the NSI for the number of inhabitants by settlements as of December 31, 2019, it also shows that a total of 1,753 settlements, including Klisura and Rila Monasteries, which have the status of settlements, have a population below 100 souls. If the villages with zero population are added to them - 171, the total number of settlements with less than 100 inhabitants become 1,924 or more than one third of all settlements in the country, including cities. On the other hand, the ten largest villages start with the village of Lozen / region. Sofia-city / with a population of 6168 people. The report shows that Lozen is larger than 145 cities, or in other words, more than half of the cities in the country. The next largest village is Aydemir / region. Silistra / with a population of 5465 people. The list in the ten largest villages is from Bistritsa / region. Sofia-city / with 5116 people, Draginovo / region Pazardzhik / with 4667 inhabitants, Kazichene / region Sofia-city / with its 4545 inhabitants, Rosino / region Plovdiv / with 4233

inhabitants, Gradets / region Sliven / with 4153 inhabitants, Trud / region Plovdiv / - 3961, Malo Konare / region Pazardzhik / with 3849 people and Bukovlak / region. Pleven /, which with its 3763 inhabitants is ahead of Kalipetrovo / region. Silistra / - 3709 inhabitants.

Provided that we see the serious decline of the Bulgarian village, we can deduce that the most numerous is the group of villages in which live between 101 and 200 people inclusive - 713. Next is the group of villages with a population of between 201 and 300 people, which include 509 settlements. The third largest group is the villages with inhabitants between 301 and 400 people, which includes 406 villages. In 266 villages the number of inhabitants is between 401 and 500 people, and in 211 - between 501 and 600. In 177 villages the population is between 601 and 700 inhabitants. Between 701 and 800 inhabitants have 132 villages. In 113 villages the population is between 801 and 900 inhabitants, and in 77 live between 901 and 1000 people, as one settlement - the village of Bliznatsi, municipality. Avren, Varna region has exactly 1000 inhabitants. In 374 settlements the permanent inhabitants are between 1001 and 2000. A total of 75 villages fall into the group with a population between 2001 and 3000 inhabitants. In another 18 villages live between 3001 and 4000 people. In 4 villages the population is between 4001 and 5000 people. Two villages fall into the group between 5001 and 6000 inhabitants and another into the group of over 6000 inhabitants. Also, 34 cities are between 10 and 20 thousand people, and 169 cities are less than 10 thousand people. This whole picture shows that we have a contrast in the development of the national territory and in order to overcome the regional imbalances it is necessary to rely on the model of a smart region. This means making efforts for the intelligent development of nearly 200 cities, grouped as regions, so as to create opportunities to form at least 20,000 urbanized people. In practice, the experience gained in the construction of intelligent systems can form the first group of 27 large cities in Bulgaria and apply the experience in the construction of intelligent systems in Sofia, Plovdiv, Varna and Burgas. Of course, an important step in this direction is to develop and implement strategies for the development of smart cities and regions. Although a good example may be the formation of agglomerations of a lower class. This can be done by transforming areas with low urbanization into a smart region (example Dulovo-Alfatar-Silistra, Chernoochene-Kardzhali-Momchilgrad, Sandanski-Petrich-Parvomay, Dupnitsa-Sapareva Banya-Samokov, Kostenets-Ihtiman-Vakarel, Nikolae -Tvarditsa, Karlovo-Sopot-Kalofer and others.) In practice, the individual regions can have opportunities in this direction by encouraging the development of small and medium enterprises that are actively involved in the development of "smart cities".This process can be encouraged by the state through the implementation of programs, implementation of ideas and solutions, as well as the provision of grant schemes for the preparation and implementation of a national strategy for smart cities. Another solution is the implementation of corporate projects to provide free support for small and medium enterprises, building business incubators, open innovation centers and parks and identify "champions" working in the segment of smart city development. It is important to note that integrated solutions are often needed in regional development. This involves solving several problems simultaneously or providing services throughout the life cycle of the city's construction, including infrastructure, industrial and partial solutions. Moreover, partial solutions are technological solutions within any narrow specialization (ICT, telecommunications, energy, security, automation and building management systems, etc.). In this regard, at the regional level it is necessary to increase the role of public, expert and research organizations, as well as companies, is to create various ratings and partnerships for the development of smart cities and regions. An effective

mechanism for open innovation is "living laboratories" ("living laboratories"), which allow companies, start-ups and proactive citizens to test different solutions for smart cities in practice in a real urban environment. Crowdsourcing and hackathon projects are used to attract a wide range of citizens. In countries such as Bulgaria, the problems of regional development are integral and so far many policies and projects related to targeted impact have been implemented, but high-tech projects with smart governance systems are not perceived as a possible factor to promote regional development (Marinov, R 2009).

***Policies for development of information infrastructure in the regions*.** The construction of intelligent management systems undoubtedly goes through the development of the information infrastructure in the regions of Bulgaria. These are the development of new model communication networks, data centers, the introduction of digital data platforms to meet the needs of data collection and transmission and the provision of data storage and processing services. The main objectives of the development of the information infrastructure within the implementation of the concept of a smart region are the development and implementation of a plan for providing broadband Internet access to the population. Modernization of the material and technical base and information infrastructure of the institutions and organizations of education, healthcare, culture, social services, public transport, as well as public authorities and local authorities is a necessary condition for the revival of the country's regions. This can be done by creating a single situational center at the settlement level by integrating a large number of information systems based on a single information platform for the situational center (usually in a settlement of 5 to 10 thousand people).Also the degeneration of an information panel (board) at the municipal level on the Internet, which shows real-time information about the situation in the respective municipality and the settlements in it.

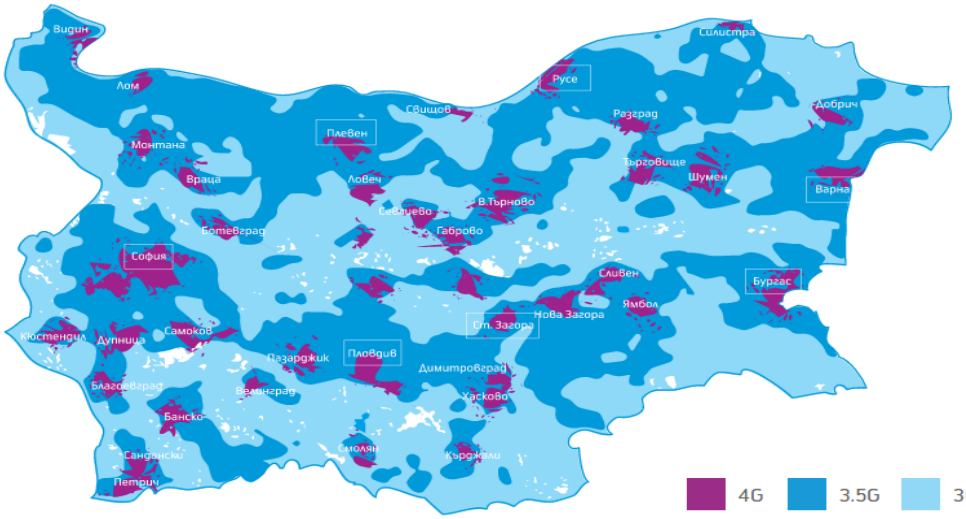

Figure 3. Coverage with 3G and 4G of the space in Bulgaria. Sources: The Communications Regulation Commission (CRC)

Another possibility is the introduction of an electronic card of a citizen at the level of municipalities and settlements in them with the possibility of personal identification with it, access to services to premises, loyalty programs, payment for travel in public transport and others. Another novelty is the use

of citizens' smartphones as devices on the Internet of things for collecting information in a single regional geographic information system and subsequent analysis of the obtained large data.

This should go hand in hand with increasing the amount of open state and municipal data available to the public, companies and stakeholders. Another important part is the creation at the municipal level of a narrowband network using LPWAN technology for the collection and processing of telematic information. All this should encourage the process of attracting investors to less developed areas and creating conditions for the development of industries specializing in the creation of cyberphysical systems. This will provide support for pilot projects for investors to test solutions for urban areas in rural areas of Bulgaria.

Also creating a connection between all schools in each municipality to the unified information system in the field of education "Network City". By introducing an electronic system for admission to educational organizations and services to inform parents about their children who are in class, which will lead to the development of the infrastructure of further education through the creation of new platforms for self-realization of representatives of educational and scientific organizations (children's technology parks, centers for youth innovative creativity, coworking, incubators). The key to improving competitiveness and increasing the share of the digital economy, as well as training qualified staff for it. The main goals of this direction: improvement of the educational system, which should provide the digital economy with competent staff, development of a career guidance system, additional education for children and youth and identification of talents in the field of information technologies. The main objectives of the training within the application of the concept of "smart region" are the introduction of a system of competencies that reflects the digital reality of the activities of citizens, including the competencies of teachers. Creating opportunities to ensure an increase in the number of graduates of schools and organizations of secondary vocational education who have passed the exam in computer science. The purpose of this direction is to achieve a state of security of the individual, society and the state from internal and external information threats by ensuring the unity, stability and security of the information and telecommunications infrastructure.The main tasks for ensuring information security in the framework of the implementation of the concept of smart region are raising the awareness and literacy of the population and organizations on information security issues as part of the open programs for informing the citizens about the risks of information security. The main goal of the introduction of digital intelligent technologies in the field of construction and housing and communal services is to increase the efficiency of design, construction and operation of real estate, to ensure high quality planning of settlements, housing and services provided in the housing and communal services sector. The aim is to increase the transparency of the housing and communal services market for end-users of services (Nikolova and Klisurova 2015). The tasks for the introduction of digital intelligent technologies in the field of construction and housing and communal services within the concept of "Smart Region" are to create conditions for the transition of the regional construction complex to the technology for information modeling of buildings and structures (BIM). technologies). The transition to the mandatory use of information modeling technology in the construction of buildings and structures commissioned by government agencies and organizations, as well as companies with state participation. Creating conditions for equipping systems for monitoring, analysis and forecasting of damages in the infrastructure of the house (elevators, pipelines, etc.) of residential projects under construction with the help of information

modeling technology (Nikolova, 2017). As well as for the installation of devices for remote measurement of heat, energy and water resources consumption during the construction of new buildings and structures and the replacement of old measuring devices. Ensuring the integration of capital construction projects by entrepreneurs with the existing regional and / or municipal solutions of System-112 and the Complex Emergency Warning System for the population for the threat of emergencies or emergencies (KSEON). Also expanding the opportunities for citizens and organizations for remote and electronic documents related to the construction, operation, rental and cool sale of real estate. The main objectives of this area are to improve the quality of state and municipal services, the efficiency of the performance of state functions, including control and supervision, as well as to ensure the effective functioning of state bodies and local self-government. The tasks for introduction of intelligent digital technologies in the field of state and municipal government are to increase the share of residents receiving state and municipal services in electronic form to over 70%, to increase the number of regional and municipal services and provided in electronic form. Introduction of a mechanism for public-private partnership in the development of digital governance, in particular in the field of the functioning of the state information systems. The main goals of this area are to improve the quality of information of citizens and their participation in management processes at the municipal level. The tasks for the introduction of intelligent digital technologies in the field of interaction between the authorities and the citizens are to create a special regional portal and a pilot city portal for discussing proposals and voting on the most important issues in the life of the region. Including creating an opportunity to make proposals to the development strategy of the region and municipalities. Regular monitoring of the satisfaction of the inhabitants of the municipalities with the quality of life, taking into account the use of digital channels for interaction with the citizens and the use of digital services for monitoring the public opinion.

Conclusion

In the modern regional development the necessity of the application of innovations becomes more and more necessary. In this direction, the search for solutions to promote regional development with the implementation of the concept of "Smart Region" will create conditions in spatial terms throughout the national territory of Bulgaria to develop the digital economy**.** Of course, the introduction of smart systems as a factor in promoting regional development needs to be conceptualized and developed by developing a three-year plan for the implementation of the concept and roadmaps in certain areas, projects and areas to be included as various government agencies and local self-government, and business and citizens. The interaction of the authorities and local self-government, as well as the institutions for the development of the region will play an important role in the realization of the concept of "smart region". In the planning, implementation, monitoring and evaluation of results, the views of all stakeholders must be taken into account when implementing the concept of a smart region.. The financing of projects within the concept of "Smart Region" should be included in the state budget and municipal budgets. Also, investments, funds of companies and residents at the level of municipalities and districts related on a voluntary basis and within the framework of public-private partnership will be attracted for the implementation of projects. It is necessary to implement the concept of "smart region", which should be developed in accordance with municipal plans and strategies for regional development. Roadmaps will be developed in some municipalities and districts for the implementation of the concept. As part of the concept, both existing and new priority projects of regional development will be implemented. It is

necessary to apply a project approach to implement the concept of a smart region. In order to manage the implementation of the Smart Region concept, a system of indicators and methodology should be developed to assess the effectiveness of the development of the digital economy and smart regions in Bulgaria.

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MODELING OF AGGLOMERATION AREAS IN THE SOUTH CENTRAL PLANNING REGION IN BULGARIA

Tsvyatko Tolev[1]
[1]University of National and World Economy, ul. "8-mi dekemvri", 1700 Studentski Kompleks, Sofia, Bulgaria

Abstract

This presentation examines the agglomeration areas in the South Central Planning Region. Territories that have the potential for sustainable development have been brought to the fore. The concentration of the regions, the slider position of Plovdiv is considered as a priority, and those of Pazardzhik, Haskovo and Kardzhali through the prism of their socio-economic development. To a large extent, the agglomeration regions in the South Central Planning Region determine the necessary centrifugation and are integrated in the policy for spatial development of our national territory.

Keywords: area, development, management, region, space, economy, vision

Abstrakt

In dieser Präsentation werden die Agglomerationsräume in der Planungsregion Südmitte untersucht. Die Gebiete, die das Potenzial für eine nachhaltige Entwicklung haben, wurden in den Vordergrund gestellt. Die Konzentration der Regionen, die Schiebeposition von Plovdiv wird als Priorität betrachtet, und die von Pazardzhik, Haskovo und Kardzhali durch das Prisma ihrer sozio-ökonomischen Entwicklung. Die Agglomerationsgebiete in der Südzentralen Planungsregion bestimmen weitgehend die notwendige Zentrifugation und werden in die Politik der räumlichen Entwicklung unseres nationalen Territoriums integriert.

Stichworte: gebiet, entwicklung, management, region, raum, wirtschaft, vision

Résumé

Cette présentation examine les zones d'agglomération de la région de planification du Centre-Sud. Les territoires qui ont un potentiel de développement durable ont été mis en avant. La concentration des régions, la position de glissement de Plovdiv est considérée comme une priorité, ainsi que celles de Pazardzhik, Haskovo et Kardzhali à travers le prisme de leur développement socio-économique. Dans une large mesure, les régions d'agglomération de la région de planification du Centre-Sud déterminent la centrifugation nécessaire et sont intégrées dans la politique de développement spatial de notre territoire national.

Mots-clés: zone, développement, gestion, région, espace, économie, vision

Introduction

The ongoing socio-economic processes in Bulgaria over the last quarter of a century have led to the structuring of a new spatial-territorial model of the country. This model is characterized by clearly defined regional differences and formed imbalances in the socio-economic condition of the regions (Borisov and Marinov, 2013). Thus, the main centers of economic development in Bulgaria are the urban areas. Based on the concept of spatial development of the country we can assume that in spatial and

territorial terms these centers should be built as agglomeration cores that can have an impact on the surrounding settlements in the range of 100-110 kilometers. An agglomeration is also called a settlement formed as a result of the merger. Moreover, from a historical point of view, urban agglomerations are spatial forms of urbanization. Inherent in urban agglomerations is the greater increase in population in the periphery than in the center. In our country, however, the processes develop differently. First, urban agglomerations are limited in size compared to those in Europe. They develop on the basis of cities located among flat and fertile lands, which limits their growth. Secondly, the formation of agglomerations is accompanied by restrictive settlement measures in large and largest cities. Inherent in urban agglomerations is the greater increase in population in the periphery than in the center. In our country, however, the processes develop differently. First, urban agglomerations are limited in size compared to those in Europe. They develop on the basis of cities located among flat and fertile lands, which limits their growth. Secondly, the formation of agglomerations is accompanied by restrictive settlement measures in large and largest cities. Conditions for the process are the territorial proximity and the existing various production, transport and cultural connections. The emergence and development of urban agglomerations is mainly based on two main models. In the first model, the dynamic development of the city forms a need for new territories and new infrastructure, and within the city limits almost all possibilities for this are exhausted. The city is growing at the expense of urbanization of neighboring territories by building new satellite settlements or turning previous independent settlements into satellite ones (Brown and Dixon, 2014). They are a place for localization of various activities - industrial enterprises, production and commercial warehouses, science centers and technology parks, new residential areas, new recreation areas, etc. In the second model, independent neighboring settlements, through their expansion and involvement of new territories, are brought closer and connected into an interconnected whole, in which a new core is formed.

Results

Formation of urban areas in Bulgaria. The main prerequisites for the formation of urban agglomerations are different, but most often these are: uniform construction; the built-up areas are more than the agricultural lands; there are mass daily trips from one settlement to another in the agglomeration (trips to work, study, trade, culture, etc.). In Bulgaria, the most urbanized areas are the regions around the largest cities. Such are the Plovdiv-Pazardzhik field, the Sofia valley, the Pernik valley, the Stara Zagora field, the Burgas and Varna bays and others. Ludogorie, Strandzha, Sakar, Kraishteto, the Rhodopes and other agricultural regions are poorly urbanized. In Bulgaria, according to the Environmental Noise Protection Act, the Minister of Regional Development and Public Works is expected to organize the creation and maintenance of a register of agglomerations. The latter is made in order to document the main characteristics of the agglomerations (Bachev, Ivanov, Toteva and Sokolova, 2017). According to this law, settlements with a population of over 100,000 are considered agglomerations. Currently, the settlements meeting this requirement are Sofia, Plovdiv, Varna, Burgas, Ruse, Stara Zagora and Pleven. In practice, however, at least another 30 municipalities, combined in two and three, form an agglomeration area of at least 100,000 or more. These criteria could be the following. First of all, the agglomeration area is a network of stable settlements with a population of not less than 50 thousand people. The population of the individual settlements retains their place of residence, but the connections between them are intensifying (Dokova and Petrov, 2015). The settlements in the agglomeration area are located within a 60-minute isochrons around the center of the agglomeration. This will enable the larger cities of the country to strengthen their ties with the surrounding settlements. On the other hand, it will displace the natural boundaries of cities and impose a new system of infrastructural connectivity. The geo-economic

effect should be sought mainly in the direction of the formation of settlement systems as forms of urbanization, and not as grassroots administrative units. When they are united, functional urban areas (FURs) are formed (Dokova and Petrov, 2015).The third level of this structure (FUR) is revealed on the basis of daily labor migrations, population density, the structure of economic employment, the intensity of social travel, the degree of construction of the housing stock and the settlement area, the level of service, etc. The more developed functional urban areas have the character of settlement agglomerations.

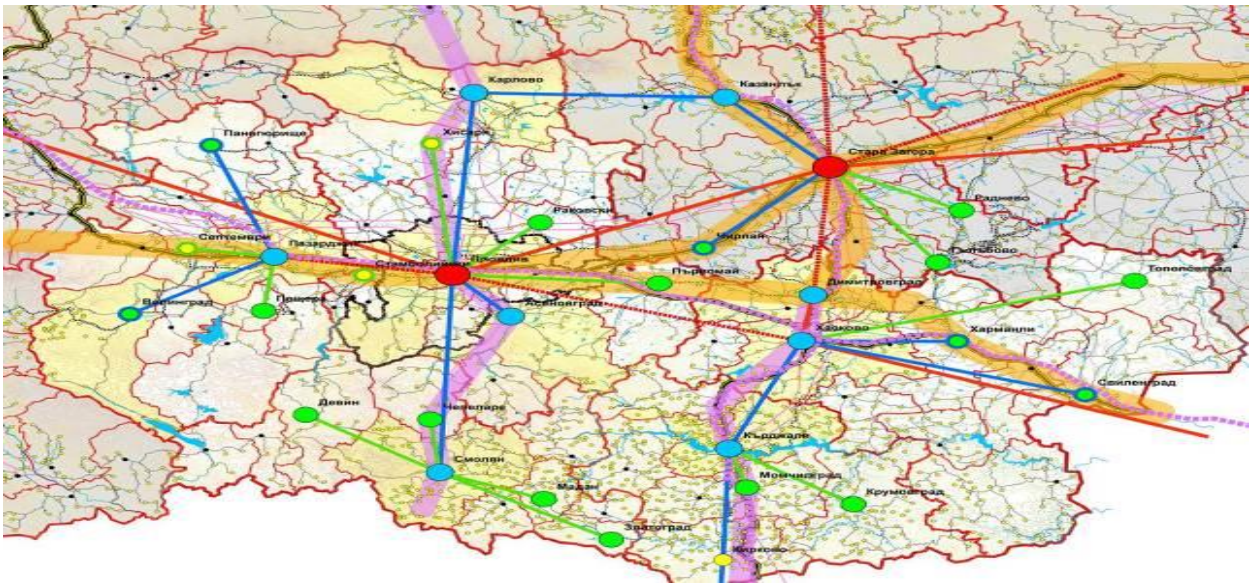

Figure 1. The territorial-urban structure of the South Central region. Source: Following the model of the National Center for Territorial Development (NCTR)

Structures and development of agglomeration areas in the South Central Region (SRC). The main potentials for territorial development of the South Central Region (South Central Region) are considered in several main directions.

First of all, opportunities for development of the road, railway, communication and infrastructure networks through forthcoming large infrastructure projects at national level. In this regard, it is necessary to achieve a rational use of the insufficiently realized potential of environments with preserved biodiversity, with concentration of cultural values and mineral waters of the region as a resource for the development of cluster tourism. This means that regional development should focus on the model of territorial systems. An indisputable strength of the region are the cultural values, which are a stimulator for economic growth. The integration of heritage with tourism links this process with infrastructures and the polycentric network of settlements. In this sense, even at level 2 Plovdiv, Pazardzhik, Haskovo and Kardzhali can be considered not only as large cities in the region, but also as a portal to the network of regional economic development.

Mainly the cities of Pazardzhik, Plovdiv, Haskovo and Kardzhali form the real agglomeration areas in the planning region, and cities like Smolyan, Karlovo, Parvomay, Peshtera, Velingrad, Rakovski, Panagyurishte as regional centers with a population of less than 30 thousand people, which categorizes them into another type. settlement formations. Only the town of Asenovgrad has the potential for an agglomeration area, but due to its proximity it falls in the sphere of gravity of the Plovdiv area.Spatially, two of the cultural corridors of Southeast Europe (the Diagonalis Road) and the Eastern Trans-Balkan Road intersect on the

territory of the South Central Republic. Thus, the three cities will be competitive because their population potential will be about 200 thousand people and will have a higher competitive environment.

Role of the agglomeration direction Pazardzhik-Plovdiv-Haskovo-Kardzhali. Moreover, when moving to level 3 - Plovdiv district - as the most developed district in the South Central region is the territory with high consumer potential. According to statistical data, by 2020 9.3% of the country's population live in Plovdiv district. According to this indicator, it is in second place after Sofia district (capital). The population of the district is distributed in 19 municipalities. The largest in terms of population is the municipality of Plovdiv, in second and third place are the municipality of Asenovgrad and the municipality of Karlovo. All other municipalities have a population of less than 5% of the district's population. The population of the district lives in 18 towns and 197 villages. Nearly half of the district's population (49.5%) lives in the district center.

Second in importance is the area covering the territory of a municipality with the administrative center of Pazardzhik and the 31 small settlements (villages) entering it. The territory of the area is 637 sq. Km, which is 0.57% of the country's territory. The average annual population for the period is 117 thousand people, of which men are 57,500 and women - nearly 60 thousand. Their relative shares are 49 and 51% respectively. The population of the area is 1.6% of the country's population. The population density is 184 people per 1 square kilometer. The city center is home to 73,000 people, or 64.4% of the area's population. The ratio between men and women in the city is approximately the same as in the area - men are 35,400 and women - 37,780. The average birth rate for the three years is 9.80 ‰, which is higher than for the country - 9.68 ‰. The total fertility rate is 1.57 children. The overall mortality rate is lower (10.07 ‰) than the overall rate for the country -14.72 (. For the three years the average annual natural population growth is negative with a size of minus 2.89 ‰. On average, about 760 people settle in the area annually and 1,260 people emigrate. The intensities of the two migration flows are 6.51 and 10.78 ‰, respectively. As a result of migration, the area decreases its population by an average of 500 people per year, or the mechanical growth is minus 4.27 ‰. Third in importance is the agglomeration with the leading town of Haskovo. It is the twelfth largest city in Bulgaria and is located in South Central Bulgaria. It is located not far from the borders with Turkey and Greece, which determines its key geographical location. The town of Haskovo is an important economic core of the South Central Region with established industrial traditions and potential for new development. Even more important is the importance of the city for the economy of the municipality and the district. The city determines the economic results of the municipality of Haskovo by forming over 95% of the revenues from activity. The municipality of Haskovo and in particular the town of Haskovo are characterized by the development of a diversified economy. The main economic sectors of development in the district are industry, services (more than 50% of the registered small and medium enterprises work in the trade sector) and agriculture. For the most part, industrial production is concentrated in the town of Haskovo. The city of Haskovo does not have an approved General Development Plan and no General Communication and Transport Plan. The current and future development of the regional center is closely related to the state, trends and opportunities for development of the communication and transport infrastructure of Haskovo. To this end, it is necessary to implement an integrated approach, looking at the transport sector as a whole and in conjunction with the urban development of the city. By improving and developing the transport and communication infrastructure, as part of the urban environment, not only the economic parameters of its functioning and operation will be optimized, but also the sanitary and hygienic conditions for the inhabitants of the city will be improved (Markov, 2019).

By improving the organization of traffic in general and its individual components in particular, the number of traffic accidents will be reduced, the parameters of noise load and environmental pollution will be improved. The Pan-European Transport Corridor №9 "Ruse - Veliko Tarnovo - Stara Zagora - Haskovo - Kardzhali - Makaza" connects the countries of Northeast Europe through Romania and Bulgaria with the port of Alexandroupolis on the White Sea. In the section of the town of Haskovo from corridor №9 to the Greek border two branches are formed: one is towards Svilengrad - Kapitan Petko Voyvoda quarter, the other - through Kardzhali to the Makaza pass. The intersection of this corridor with the direction of Corridor №4 provides a direct connection to the markets in the Middle East and Asia. It will play an increasingly important role in restoring and stabilizing economic ties between Eastern European countries and is a priority. Its future development in the Dimitrovgrad-Podkova area depends on the opening of a new border crossing to the Hellenic Republic in the Makaza region. The first class road I-5 (E 85) "Ruse - Veliko Tarnovo - Haskovo - Kardzhali - Makaza" has a two-lane gauge 7.5 / 12 m in the Haskovo region, and the section from Dimitrovgrad to Haskovo is a highway with two separate lanes. The area includes only one municipality with the administrative center of Haskovo and the other 36 small settlements included in it. The territory of the area is 740 sq. Km and makes up 0.67% of the country's territory. The average annual population for the observed period is 94,560 people, of which 45,422 are men and 49,137 are women. The relative shares of men and women are 48 and 52%, respectively. The population of the area makes up 1.3% of the country's population. The population density in the area is 128 people per 1 sq. Km. 76 thousand people live in the town of Haskovo, or 80.5% of the population of the area (Regional development plan for the South central planning area 2020).

The fourth agglomeration area is formed around the town of Kardzhali. The municipality of Kardzhali is located in the northern part of the eastern Rhodopes, occupying an area of 624 km2. Administratively, the municipality is part of the South-Central region, and the town of Kardzhali is the administrative center of Kardzhali district. To the northeast and east the municipality of Kardzhali borders with municipalities from Haskovo district - Stambolovo and Haskovo. The urban structure of the municipality is characterized by 1 city center and 117 small, scattered settlements. Urbanized territories occupy 5.01% of the territory of the municipality. The urban population in the municipality is 64.94% (2012), and the distribution of population by population places shows that more than one fifth of the population in 2019 live in settlements with a population of 101 to 500 inhabitants. The predominant part of the settlements is located on the three exit arteries from the town of Kardzhali to Haskovo and on the road to Ardino. The administrative center of the municipality is the town of Kardzhali, where the administrative structures of the central government are concentrated. The city is a center of economic development, combining different industries and services. Town of Kardjali is a settlement of 2nd category, with a population of 43 880 inhabitants1. The total area of the city according to the urban plan is 1078.71 ha. Areas near the Kardzhali dam are actively used for recreation. A key role for the unification is played by the urbanization of the water-green diameter of Arda and the related park and open spaces and communications, the spatial orientation of the different parts of the city towards the river. The villages are small, with a significant part having a population of less than 200 people.

By crossing the three trans-European corridors, Plovdiv dominates and controls the main urbanization triangle in the Plovdiv-Stara Zagora region and the Haskovo-Dimitrovgrad agglomeration. The Plovdiv agglomeration is becoming increasingly important for the regional development of the country. It is formed by several urbanization nuclei, which are Plovdiv - Asenovgrad - Kuklen, Sadovo, Maritsa, Rhodopes and gravitating to Pazardzhik - Belovo - September. The urban model of Plovdiv district is a combination of the national urban model of the type "extreme polycentrism" and the factors

determining the agglomeration area of Plovdiv municipality. The micro-regional level is an intersection zone between the spatial development of the municipality of Plovdiv and the group of municipalities treated in the Regional Development Scheme, especially of the municipalities of Maritsa and Rodopi. This level also covers the strategies of the General Development Plan of Plovdiv, insofar as it contains a scenario involving territories in these municipalities in the spatial model of Plovdiv (Information system for monitoring the EU structural instruments). The micro-regional level also includes components of the Regional Development Scheme, which is an intermediate spatial concept between the micro-regional level and the district level. The General Development Plan of Plovdiv defines the "urban gravitational field", which covers the territory in which the urban system Plovdiv operates, these are the boundaries within which the life cycle is closed daily: "work, living, recreation and service". These limits are determined in compliance with the following criteria: 10-12 km / 20-25 min. Transport isochron; over 50 thousand labor and cultural trips daily; demographically stable settlements with a population of around and over 2,000 people and available intensive economic relations with a high degree of economic interdependence (Petrov, 2019).

When applying these criteria, the "urban gravitational field" of Plovdiv includes 32 settlements from the municipalities of Maritsa, Rodopi, Kuklen and the village of Katunitsa (Sadovo Municipality). Their residents receive services (education, healthcare, culture, sports, recreation, trade) in the city. A significant part of their jobs are also in Plovdiv. The communication and transport connections of these settlements with the city are provided by car and g. n. transport [8]. Transport areas are becoming axes of urbanization - new economic zones are being formed around them. This deviation of the national parallel urban axis of development causes expansion and linearization of the industrial complexes in the northern part of the city and creates conditions for economic zones common to the municipalities of Plovdiv and Maritsa. In fact, the parallel axis passes through a ring of settlements, in the center of which is the city of Plovdiv, and stabilizes this ring, which is sustainable both demographically and economically. On the secondary axis of urban development at the micro-regional level is the international airport near Krumovo and the future intermodal terminal (reserved compared to the currently proposed terminal near Zlatitrap). The airport also specializes in servicing charter tourist flights to Bulgarian alpine ski resorts during the winter season. Thus, Plovdiv is a portal not only for cultural routes in the micro-region, but also a portal for other types of tourism. Linking the airport with the planned passenger rail transport will further strengthen the physical realization of the southeastern section of this secondary axis of urban development. Regarding the polycentric model at the micro-regional level, the intra-regional urbanization axis Sadovo - Plovdiv - Pazardzhik - Septemvri - Belovo, brings Stamboliyski as a settlement falling within the micro-regional network, without at this stage falling into the agglomeration area. The proposed agglomeration area and its zoning divides the settlements around Plovdiv into three stages. In the zone with the strongest urban connections (20 settlements): Rogosh, Skutare, Trud, Zhelyazno, Voyvodinovo, Tsaratsovo, Benkovski, Radinovo, Kostievo, Orizari, Kadievo, Zlatitrap, Yagodovo, Brestovitsa, Parvenets, Markovo, Brani Pole, Brestnik and Krumovo. In this area, formed by the most sustainable urban areas of the municipalities of Maritsa and Rhodopes, there is an expansion of three of the functional subsystems of Plovdiv - high-category housing, economic activities and recreation. The area is characterized by a comparative balance of bilateral connections with a predominance of connections to the compact city. This and the previous area are also attractive destinations for moving micro-enterprises from the compact city to the agglomeration area. In the area designated mainly for recreation (13 settlements): Hrabrino, Izvor, Dedovo, Boykovo, Skobelevo, Sitovo, Lilkovo, Churen, Tsar Kaloyan, Galabovo, Dobralak, Yavrovo and Ruen.

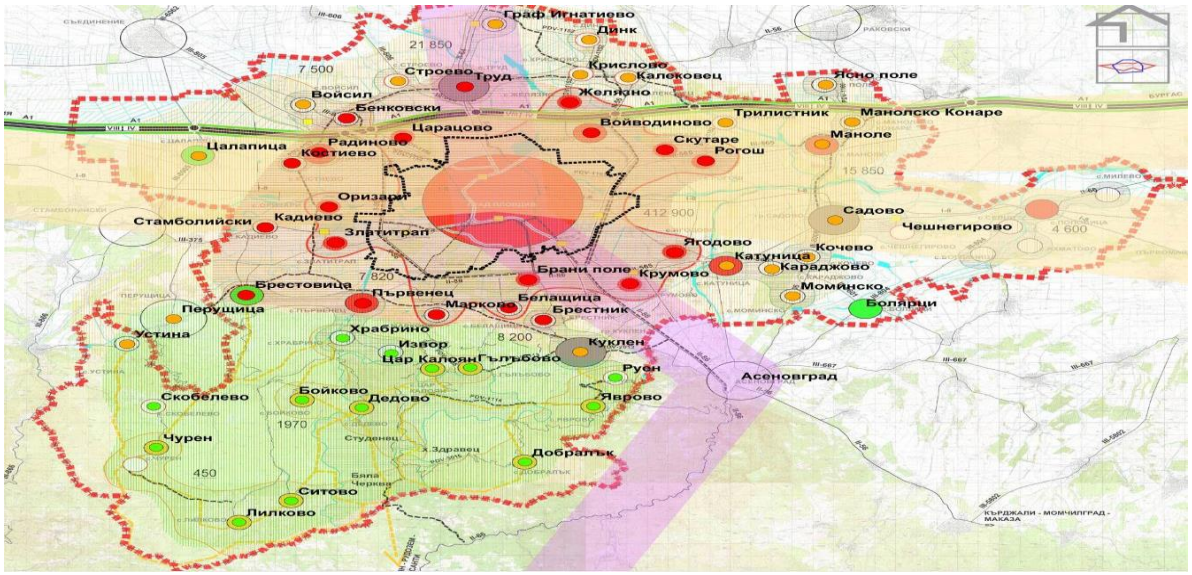

Figure 2. Location of the agglomeration area of Plovdiv. Source: Following the model of the National Center for Territorial Development (NCTR)

Future planning should offer joint municipal projects within the agglomeration area, as well as synchronization of the general development plans of the municipalities of Plovdiv, Maritsa and Rodopi, Asenovgrad as a close goal, and subsequently of the municipalities of Kuklen, Perushtitsa, Sadovo and Stamboliyski.

Conclusion

Overcoming regional imbalances requires the mobilization of serious institutional and organizational resources aimed at optimizing housing policy, urban plans and infrastructure. In the considered period the process of settlement agglomeration intensifies. Daily migrations of a labor and service nature are becoming more and more important. This in turn leads to the development of sustainable, dynamic local centers, interconnected and contributing to the well-being of the less urbanized areas around them. In practice, a high level of agglomeration can be achieved in the South Central Planning Region, which will promote the complex and integrated planning of the territory, but also to encourage the regional development of the main agglomeration areas. The better functional characteristics of the agglomeration areas in the South Central Planning Region allow the development of new economic activities that diversify the local economy and reduce the risk in terms of unemployment and income and improve the basic conditions for economic activity.

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IDENTIFICATION OF STRENGTHS AND WEAKNESSES, OPPORTUNITIES AND THREATS FOR THE DEVELOPMENT OF BEEKEEPING IN BULGARIA

Haik Garabedian[1]

[1]E-mail: haik.t.garabedian@gmail.com, Agricultural University of Plovdiv, bul. "Mendeleev" 12, 4000 Trakiya, Plovdiv, Bulgaria

Abstract

Favorable natural and climatic conditions are one of the important factors for achieving competitiveness of the sector. Thanks to the influence of the Common Agricultural Policy in recent years, Bulgaria has become a leader in the production and export of honey as a member of the EU. This proves that the favorable natural and climatic conditions are only a prerequisite for successful development of the sector. In order to achieve lasting competitive advantages, it is necessary to implement an adequate policy to promote the development of the sector, identifying the main obstacles to the future development of the sector.

The aim of the study is to identify the main obstacles to the sustainable development of beekeeping farms in Bulgaria through the SWOT application. It can be summarized that the future development of beekeeping farms cannot take place without the active financial support of the CAP. This support is necessary due to the fact that these farms are the backbone of rural economic development. Farmers have a strong motivation to develop their farms, which is determined by the desire to ensure a better way of life. In the present study, the realization of these opportunities is based on the strengths of beekeeping.

Key words: SWOT, beekeeping, development

Abstrakt

Günstige natürliche und klimatische Bedingungen sind einer der wichtigen Faktoren für das Erreichen der Wettbewerbsfähigkeit des Sektors. Dank dem Einfluss der Gemeinsamen Agrarpolitik in den letzten Jahren ist Bulgarien als Mitglied der EU führend in der Produktion und im Export von Honig geworden. Dies beweist, dass die günstigen natürlichen und klimatischen Bedingungen nur eine Voraussetzung für die erfolgreiche Entwicklung des Sektors sind. Um dauerhafte Wettbewerbsvorteile zu erreichen, ist es notwendig, eine adäquate Politik zur Förderung der Entwicklung des Sektors umzusetzen, wobei die Haupthindernisse für die zukünftige Entwicklung des Sektors identifiziert werden müssen.

Das Ziel der Studie ist die Identifizierung der Haupthindernisse für die nachhaltige Entwicklung der Bienenzuchtbetriebe in Bulgarien durch die Anwendung der SWOT-Methode. Es kann zusammengefasst werden, dass die zukünftige Entwicklung der Imkereibetriebe ohne aktive finanzielle Unterstützung der GAP nicht stattfinden kann. Diese Unterstützung ist notwendig, da diese Betriebe das Rückgrat der wirtschaftlichen Entwicklung im ländlichen Raum sind. Die Landwirte haben eine starke Motivation, ihre Betriebe zu entwickeln, die durch den Wunsch bestimmt wird, eine bessere Lebensweise zu gewährleisten. In der vorliegenden Studie stützt sich die Realisierung dieser Möglichkeiten auf die Stärken der Bienenzucht.

Stichworte: SWOT, wienenzucht, entwicklung

Résumé

Des conditions naturelles et climatiques favorables sont un des facteurs importants pour atteindre la compétitivité du secteur. Grâce à l'influence de la politique agricole commune au cours des dernières années, la Bulgarie est devenue un leader dans la production et l'exportation de miel en tant que membre de l'UE. Cela prouve que les conditions naturelles et climatiques favorables ne sont qu'une condition préalable au développement réussi du secteur. Afin d'obtenir des avantages compétitifs durables, il est nécessaire de mettre en œuvre une politique adéquate pour promouvoir le développement du secteur, en identifiant les principaux obstacles au développement futur du secteur.

L'objectif de l'étude est d'identifier les principaux obstacles au développement durable des exploitations apicoles en Bulgarie à travers l'application SWOT. On peut résumer que le développement futur des exploitations apicoles ne peut avoir lieu sans le soutien financier actif de la PAC. Ce soutien est nécessaire en raison du fait que ces exploitations sont l'épine dorsale du développement économique rural. Les agriculteurs ont une forte motivation pour développer leurs exploitations, qui est déterminée par le désir d'assurer un meilleur mode de vie. Dans la présente étude, la réalisation de ces opportunités s'appuie sur les atouts de l'apiculture.

Mots clés: SWOT, apiculture, développement

Introduction

Bulgaria has a long tradition in the production of honey and bee products, a prerequisite for which are the diverse and rich honey vegetation of the Balkan Peninsula, creating excellent conditions for beekeeping. The favorable natural, climatic and ecological conditions, which contribute to the gradual increase of the yield of these products over the years, also have a favorable influence.

Favorable natural and climatic conditions are one of the important factors for achieving competitiveness of the sector (Borisov, Kolaj, Yancheva and Yancheva, 2019). Thanks to the influence of the Common Agricultural Policy in recent years, Bulgaria has become a leader in the production and export of honey as a member of the EU. This proves that the favorable natural and climatic conditions are only a prerequisite for successful development of the agricultural sectors (Borisov and Marinov, 2013). In order to achieve lasting competitive advantages, it is necessary to implement an adequate policy to promote the development of the sector, identifying the main obstacles to the future development of the sector.

The aim of the study is to identify the main obstacles to the sustainable development of beekeeping farms in Bulgaria through the SWOT application.

The identification of strengths and weaknesses as well as opportunities and threats for the development of beekeeping is carried out using the SWOT-analysis method. This method is among the most popular in the scientific literature, which is used in defining strategic goals and choosing a strategy for the development of the organization (Nikolov, Borisov, Radev 2014); (Stoeva and Marinov, 2015); (Popova, 2019). The technique of SWOT-analysis requires knowledge of all specific factors that have a direct and indirect impact on the business organization in order to analyze them in detail so that the organization can easily adapt to their requirements (Borisov and Behluli, 2020). The present study defends

the hypothesis that farmers are those who fully know the internal factors (agriculture) of the business environment that determine the future development of their business (Petrov and Borisov, 2021). Therefore, farmers are used as the main source of information to identify the strengths and weaknesses of small farms. Opportunities and threats arising from the external environment are defined in advance by an expert council (composed of experts who know the environment) and are the subject of discussions by farmers in specially designed focus groups.

As a result of the derived focus groups, the strengths, weaknesses, opportunities and threats to beekeeping are defined. Table 1 lists the identified factors of the SWOT analysis. Farmers point to a total of 12 strengths, 12 weaknesses, 9 opportunities and 12 threats to the development of their farms.

Results

STRENGTHS

Flexibility in business management. Due to the small size of production, bee farms adapt more quickly to the requirements of market conditions. The smaller size of production makes it easier to impose effective control over the activities of the farm and facilitates the decision-making process of the farmer. As the size of the farm increases, farmers say that the management and organization of their activities is becoming more complicated, which prevents them from expanding their farms. The larger size of the farm also implies a higher level of fixed costs, which forces the farmer to comply with them and limit their development. Despite these obstacles, 81% of farmers say they want to restructure their farm. The restructuring process affects not only the specialization of the holding, but also its size. The majority of honey producers - 83% of the total interviewed, want to increase the size of their farms without significantly changing the production specialization. The main factors that limit the specialization of production is the experience of the owner and market requirements.

High degree of control over the activity. The small size of the beekeeping farm allows a higher degree of control over the activity. On the other hand, the farm is the main source of income for 90% of the surveyed producers who took part in the survey. This naturally determines a higher motivation of the owner to control the income and expenses from the activity in order to achieve higher profitability during the year. The control function of the owner is not formalized and is expressed mainly as self-control. The personal property that the farmer uses in the production is another reason for imposing effective control over the functioning of the beekeeping.

High motivation for farm development. The combination of the owner, the entrepreneur and the worker in one person (of the owner) is a main factor determining his motivation to develop his farm. Honey producers want to make their own decisions regarding the management of the farm without sharing the risk with another (95% of the interviewees express this opinion). The clearly expressed individualism in the entrepreneurial activity shows that the honey producer completely independently determines the goals of the farm and the strategy for its development.

They use mainly manual labor, which allows for better performance of labor operations (harvesting, weeding, pruning, spraying, etc.). Farmers say that the small size of the farm is the main reason for the low degree of mechanization of production. The lack of equipment is compensated by the use of more manual labor in carrying out agro-technical activities.

In general, honey producers provide production with their own labor force. All other things being equal, this is a prerequisite for higher quality of the labor processes performed on the farm. The end user is willing to pay a higher price for products that use mostly manual labor.

Table 1. SWOT matrix - results from focus groups of 99 farmers, own study - 2020.

Strengths 1. Flexibility in managing the business 2. High degree of control 3. Motivation for the development of farm 4. Used mainly manual labor 5. Backbone of the rural economy 6. Diversity 7. Own funds in financing activities 8. Social function 9. Individualism in entrepreneurial activity 10. They apply production practices aimed at obtaining high-quality production 11. Quality production 12. They restore the natural resources	**Opportunities** 1. Upward trend in food prices 2. Governmental support 3. Promoting local food brands 4. Trend of increasing demand for organic products in the market 5. Promote innovation and technology transfer 6. Direct sales 7. Support for cooperation initiatives 8. Demand for quality agricultural products 9. Creation of local markets through the active participation of LAG
Weaknesses 1. Weak market power 2. High production costs 3. Production of diverse types and quality production in small volumes 4. No willingness for cooperation 5. Lack of experience in management of administrative documents 6. Low level of mechanization 7. Lack of skilled labor force 8. Low creditworthiness 9. Lack of operative capital 10. Lack of risk management experience 11. Low awareness of market trends 12. Weak investment activity	**Threats** 1. Unstable market prices 2. Competition from large farms in the country and the EU 3. Increase in resource prices 4. Legal restrictions and unstable legislation 5. Loss of skilled labor due to migration and immigration processes 6. Global climate change 7. Strong market power of supermarkets and distributors 8. Lack of future contracts 9. Underdeveloped credit market for agriculture 10. Delay in state payments 11. Increase in administrative expenses 12. Limited access to market information

Small beekeeping farms are the backbone of the rural economy and perform certain social functions. Beekeeping is one of the main sources of income in some rural areas and one of the main buffers hindering the increase in regional unemployment. Farmers are of the opinion that small bee farms provide opportunities for seasonal employment of the local population, as well as are a prerequisite for the development of related industries such as tourism, trade, social services and others.

Variety of manufactured products. In small beekeeping farms there is a clear desire to add value to the products produced. The small size of the production does not allow economies of scale, which is why the efforts are concentrated in providing high value to the consumer. Honey producers strive to observe good production. The high costs of veterinary referrals and services, as well as materials, are another major reason for the higher production costs in the industry. The greater variety of manufactured products is a major tool for stabilizing operating revenues and minimizing market risk.

Bee farms use their own funds to finance the activity. The honey producers state that the financial support of the activity of the farm they own is based mainly on their own funds. This determines the low level of indebtedness of these farms as well as the high autonomy in making investment decisions

concerning their structural development. The use of own financial resources is a limiting factor for development, but gives a high degree of security to the farmer, which is of paramount importance for him because his activity often makes a major contribution to the welfare of the household.

Clearly expressed individualism in entrepreneurial activity. The owners of the beekeeping farms are defined as independent entrepreneurs in their activity. The use of the personal property and finances of the owner in the production activity as well as the desire for independence in the management of the farm prove this. The results of the focus groups give grounds to form the following opinion, namely that in general the honey producer is unwilling to sacrifice his full independence in the management of the farm at the expense of cooperating with other producers. This is the main motivating factor that determines the way the economy develops in the future.

Apply production practices aimed at obtaining high quality products. Due to the small size of production, beekeeping farms follow a strategy of intensification of production, as the main intensive factor is labor. The expansion of the production volume is achieved by following the good production practices and by controlling the quality of the production. There is a clear desire to produce quality products, which, other things being equal, can more easily find a market at more favorable prices for the farmer.

Protect natural resources . The close dependence between the available natural resources and the achieved production and economic results in the beekeeping farms is the main reason for the farmers to claim that they manage to preserve the natural resources in the region. They point out that the role of natural resources in the overall process of farm management is important. On the one hand, farmers maintain natural resources in optimal condition, as they can hardly compensate for the deterioration of their quality with additional costs. On the other hand, the low degree of mechanization and the use of manual labor are not a prerequisite for their depletion.

WEAKNESSES

Weak influence on the purchase price. The main weakness of beekeeping farms is their weak influence on the purchase price of bee products. The small size of production in these farms does not allow the formation of large batches of quality products, which loses the competitive advantage in serving the market. In general, the marketing function is not performed (or at least too partially performed) by the owner and he fully delegates the problem of marketing the products to the trader. According to farmers, direct sales to the final consumer have a small share of total sales and do not have a significant impact on their income. Strong individualism in sales is a critical factor hindering joint marketing, which is one of the opportunities for honey producers to have more power in negotiating purchase prices.

High production costs. Despite the small size of the farm, farmers believe that they fail to effectively plan and control their costs and be competitive in terms of market prices. Deliveries of raw materials are made at high prices, as quantities are small, and the lack of timely information about price trends does not allow them to optimize their costs. Beekeepers define the following as the main (structure-determining) costs: the costs of materials, and the costs of veterinary medicines and services. At the same time, the quality of the preparations used is assessed as low, which forces farmers to treat the hives more often in order to achieve better production results. Farmers point out that control is not effective over the activities of resource providers. Due to the small size of the production.

Production of heterogeneous in type and quality products, in small volumes. The small size of the production, the poor quality control over the use of harmful to the bee RH - preparations in the surrounding grazing, determine difficulties in the formation of batches of honey of uniform quality. The high costs of packaging, packaging and labels further increase the cost of bee production and farmers are reluctant to standardize their production.

There is no desire to cooperate. In general, honey producers do not want to cooperate - 86% of the participants in the focus groups indicate that they are not members of a cooperative and do not want to do so. The main reason for this is that they do not trust this organizational form of doing business. They prefer to make individual management decisions by being responsible for them with their own property.

There is a lack of experience in applying for structural funds and inability to work with administrative documents. In general, farmers lack experience in managing the administrative documents accompanying their activity. 85% of them state this as a fact accompanying their activity. The main reasons for this are: unwillingness to complicate the management of the farm; low awareness of the required administrative documents; lack of time to administer the documents; the presence of numerous consulting companies providing this service, which causes confusion and mistrust in the services provided. The main problems in this area are: the preparation of project proposals for application under the measures of the Program and the subsequent management of the project documentation.

Low degree of mechanization of production. The small size of the farm is the factor that most hinders investment in the purchase of equipment. Despite the funds available under the individual measures, the low profitability of this type of agricultural activity and the reluctance of the banking sector to lend to honey producers hinder investment in this sector. The income is insufficient to provide co-financing for this type of investment in the farm. The use of entirely own funds in the provision of operating capital does not allow for large investment costs. Farmers say they would increase mechanization of production (75% of them are willing to do so) if they could forecast market prices for bee products.

Insufficient provision of skilled labor. Farmers identify finding a skilled seasonal workforce as a major problem. Mainly own labor is used, which limits the attraction of qualified staff. The low profitability of the activity is also restrictive. Small beekeeping farms cannot meet their need for financial and risk management specialists.

Low creditworthiness and insufficient working capital. The seasonality of production is a reason for uneven cash inflows in beekeeping farms. This determines their weak financial stability during the year. The low levels of income and the low value of fixed assets that can serve as collateral are the main reasons why farmers find it difficult to obtain credit to secure their business. Another reason for the low creditworthiness and the delay in government payments, which makes the financial management of the farm even more difficult. Farmers in these conditions secure production by using entirely their own funds (80% of them state this as a fact). The main source of working capital in beekeeping farms is the accumulated income from previous years. The inability to attract external capital to the farm limits its development.

Insufficient risk management skills. Farmers are of the opinion that risk management is not a top priority in the management of their farms. This is the main reason why they do not develop skills and gain experience in this field. Although small farms operate at higher levels of risk, their farmers are reluctant

to apply risk management. The reason for this is the distrust of insurance organizations; the high costs of insurance, which cannot be easily covered by the operating capital of the holding, as well as the low awareness of risk management mechanisms and the lack of traditions of their implementation.

Poor awareness of market trends. Lack of awareness of market conditions is the main reason for reducing the ability of farmers to respond quickly and adequately to market trends. Reasons for this lack of awareness are: not enough time is set aside for market research, due to the fact that the farmer invests more effort and time in the operational management of the farm; no investments are made in the collection of market information; the farmer mainly sells the bee products on the local market, which does not reflect the trends on the market of bee products in the country.

Weak investment activity. The investment activity of bee farms is weak due to limited access to credit; the established routine in the management of the farm, giving security in the planning of the small volume of production; insufficient income, which under these conditions is the main source of financing investment decisions; further complication of the management of the farm as well as the not provided market for the additional production, which is obtained as a result of the made investment.

OPPORTUNITIES

Trend of rising food prices. Globally, there is a trend of steady rise in food and beverage prices. This defines beekeeping as an attractive industry for investment. Beekeepers need to add more value to their products in order to take advantage of this market situation.

Financial support from the state. The financial support from the state for the development of the beekeeping sector is a major factor in increasing the competitiveness of both small and large farms in the sector. It is necessary to apply a cluster approach in the management of the competitiveness of the industry. Creating a cluster for the production of organic products or products under a common brand is an opportunity that will facilitate technology transfer, build lasting links between science, business and government, increase the competitiveness of beekeeping farms and their suppliers and to provide a market.

Establishment of local brands of high quality bee products. The specific traditions in the production in the different rural areas of the country are the basis for the imposition on the market of local brands of bee products. In this way, beekeeping farms can use their main competitive advantage, which is the production of quality bee products and easy adaptation to market requirements.

Trend of increasing demand for organic products on the market. The potential of the Bulgarian market of organic products is much greater than the supply. Bee organic products do not have a large presence on the domestic market. For the most part, these products are intended for export. Bee as well as meat products are characterized by the presence of an extremely small number of participants, which determines this type of market with a low degree of competition. Bee farms have the potential to take advantage of this opportunity. Due to the low mechanization of production, most of the farms perform the production activities exclusively through manual labor. The routine in the application of these practices allows farmers to easily switch from conventional to organic production.

Encouraging innovation and technology transfer by increasing the capacity of NAAS. Agriculture is at the heart of the food supply chain, but it is very fragmented and not well enough structured. The small size of farms as well as insufficient working capital hinder the introduction of innovations. To

strengthen the position of farmers, the EU through Regulation 1698/2005 requires the establishment of direct links of cooperation between universities, producers and consumers. By promoting technology transfer, farms are looking for opportunities to increase their competitiveness.

Direct sales. One of the main opportunities to increase the income of beekeeping farms is direct sales. Clearly expressed individualism in the entrepreneurial activity of farmers can be used to realize this opportunity. More opportunities need to be created for honey producers to access local markets in order to make direct sales.

Support for farmers' cooperation. In order to strengthen the position of beekeeping farms in negotiating the prices of production resources as well as bee products, their cooperation is necessary. The promotion of cooperative organizational forms in beekeeping can be done through tax relief as well as financial preferences from the state.

Creating local markets through the active participation of LAGs and municipalities. Achieving more direct sales, establishing local brands of bee products and improving the quality of manufactured products will be achieved if there are more real functioning local markets. Their construction can be achieved with the active participation of local initiative groups. Various associations, local authorities and other active non-profit associations can also contribute here. The creation of such markets will also lead to side effects such as the creation of more employment, the creation of preconditions for the development of related industries, the achievement of balanced prices and greater access of households to native bee products.

THREATS

Unstable market prices. The market of bee products is determined by high price dynamics for a relatively short period of time. This is the main reason for the more difficult management of revenues from sales of bee products. The main reason for the low incomes and the unwillingness to increase the size of production for small farms are the unstable market prices.

Unfair competition. The following practices are defined as unfair competition in the industry: unregulated import of bee products (or imitating them) with deteriorating quality and low market prices; receiving subsidies from "fictitious" agricultural holdings; sales of bee products on unregulated markets; costs are not taken into account, both by farmers and by their suppliers of resources and customers (traders of bee products). All these practices make the real farms operating on the market uncompetitive.

Rising resource prices. The prices of basic production resources have increased dramatically in recent years. Structural costs for small farms are the cost of materials and the cost of combating varroasis. The reduction of these costs is limited due to the small size of production, which does not allow farmers to negotiate better prices for these resources. Frequent droughts as well as deteriorating irrigation infrastructure also determine higher inaccessibility of the pasture feeding the bee colonies. These factors put bee farms in conditions of survival and strong dependence on natural disasters.

Regulatory restrictions and unstable regulations. Frequently changing regulations as well as numerous regulatory restrictions limit the investment activity of beekeeping farms. On the other hand, they cause an increase in the administrative costs of beekeeping farms and complicate their management.

Loss of specialized labor due to migration and emigration processes. Labor migration from rural areas to urban areas as well as the deteriorating demographic picture in our country determine difficulties

in finding specialized labor needed during seasonal field work. The difficult working conditions in the industry as well as the low incomes are the main reasons why young people do not go to beekeeping. This determines the aging of the workforce on the farm as well as the management staff.

Global climate change. Our country falls into the zone of drought and risks associated with natural disasters. The trend of increasing global temperature will lead to a change in the specialization of bee farms; to increase production costs; to increase the losses of bee colonies, and hence of bee production and increase marriage; to labor migration in related industries.

Strong market power of supermarkets and distributors. Most of the risk in the production of bee products is borne by beekeepers, who instead receive the lowest margin in the raw material-end product chain. Distributors of bee products have stronger market power due to the lack of real competition in this unit in the supply chain. The inability of farmers to aggregate batches of produce to market through co-operation puts them at a disadvantage in trade negotiations.

Insufficiently developed elements of the system for trade in bee products and goods. The system of agricultural markets in the country is not active enough. The other elements of the system for trade in agricultural goods have not been developed - futures contracts, auctions, etc., which hinders the sales of agricultural products, as well as the competition of agricultural producers and traders in concluding transactions. There are established agricultural markets that do not function as such and do not favor trade in agricultural products.

Underdeveloped credit market for the needs of agriculture and in particular beekeeping. The banking sector has low activity in the market of loans needed by agriculture. On the other hand, the few banks that offer credit resources to farmers want high bank collateral for loans and impose high interest rates. This limits the investment activity of agricultural holdings and makes it difficult to raise the operating capital needed to cover operating costs.

Delay in government payments. The state is delaying payments to the agricultural business. This makes it difficult to manage the farm's finances and impairs solvency.

Conclusion

It can be summarized that the future development of beekeeping farms cannot take place without the active financial support of the CAP. This support is necessary due to the fact that these farms are the backbone of rural economic development. Farmers have a strong motivation to develop their farms, which is determined by the desire to ensure a better way of life. In the present study, the realization of these opportunities is based on the strengths of beekeeping. However, it is pertinent to point out that the imposition of its own brand, the conversion of production into organic creates business activities that require large investments, which are accompanied by high risk. The weak influence of small producers on the purchase price, high production costs, determined by the rapid rate of increase in the prices of veterinary medicinal products and services and the reluctance to cooperate among these circles make significant the organic for the future development of beekeeping farms. That is why the number of these farms will remain large in the future and the decisions for their survival are difficult to give. One of the opportunities for development on farms in the field of organic production of bee products is the so-called joint investments, which are provided for in the new rural development program. Under this program, conditions will be created to encourage joint investments for the needs of small farms, which for the most

part include beekeeping farms, and the implementation of investment decisions does not require the prior establishment of associations and cooperatives. If this condition becomes part of the new program, farmers will have another alternative to share investment risk in the organizational development of their farms.

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Adress: Osvobojdenie str. 33 Entr. A, Plovdiv, Bulgaria, 4000
E-mail: journalbiobasedmarketing@gmail.com
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