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SEGMENTATION OF THE MARKETS FOR BULGARIAN BEE PRODUCTS

The main product markets of the beekeeping sector – honey, pollen, beeswax, propolis, bee bread, royal jelly, bee venom, queen bees, sucker grubs, bees, pollination and api-tourism are identified through macro-segmentation. Subsequently, their customer segments have been identified through micro-segmentation of national and international markets. The national markets for bee products are differentiated into organizational and consumer markets. The organizational markets of honey and other bee products are segmented by applying various criteria. Perspective target markets are the online and offline auctions for bee honey and the segments for pollen, royal jelly and queen bees. The consumer markets are also segmented in a way that the segments for direct sales and farmer markets are determined as customer target markets for conventional honey, and for organic honey – the online markets. The consumer target markets are similar for bee pollen and royal jelly. The segmentation of the international markets for Bulgarian bee products is based on economic, geographical, demographic, cultural and price factors. The target markets are subdivided into markets in European countries – Group 1: Germany and the UK, Group 2: France, Italy, the Netherlands, Belgium and Switzerland, and Group 3: Greece and Austria, as well as target markets in the so-called "third countries" – Group 4: Saudi Arabia, the United States of America, and Japan. Conclusions on target markets and market niches are synthesized.
JEL: M31; Q13

Segmentation is a process of segregating the market into separate parts (segments) where users have similar product needs. If beekeeping farms do not segment the markets for bee products, they will not be able to fulfil the main task of marketing – the complete satisfaction of a particular group of consumers. The evolution of segmentation has led to a deeper penetration in the market segment – the market niches. The market segment is, as a rule, a significant group of consumers, while the market niche is a narrower group. Customers in the niche have specific combinations of needs for which they are willing to pay a higher price to these beekeeping farms that satisfy their needs best.

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Market niches can provide good profits as a result of a good knowledge of the specific needs of customers and their optimal satisfaction. Based on this, the beekeeping farms have good opportunities to limit the competition within market niches. Undoubtedly, there are also significant risks – a change in consumer demand, and large investments aiming closer adaptation to the specifics of consumers. The market niches are a typical phenomenon in the practice of small and medium-sized enterprises, and such are the beekeeping farms. The latter can achieve remarkable results as a result of closer relationships with the customers from the niches, and by modifying bee products in line with changes in demand.

The target markets are market segments that are promising, sustainable and providing the main part of farms' income. They meet several requirements – In line with the objectives of beekeeping farms and do not require large investments, easily accessible, low-risk and growing, profitable and have high consumption for bee products, the competition is not strong and can be overcome. Bulgarian beekeepers have to define their target markets, whether they operate on national and international markets, consumer and organizational markets, because they will assure most of their profits. Practically, segmentation expands the markets for bee products and is a prerequisite for developing the potential of Bulgarian beekeeping.

The theory and practice lag significantly in relation to the segmentation of national and international markets for Bulgarian bee products. On the one hand, there is a very limited amount of specialized literature in Bulgarian in the field of agricultural markets and their segments, as well as about the markets for bee products. On the other hand, Bulgarian agribusiness, including the beekeeping industry, does not segment its markets. This significantly limits the opportunities for better sales of Bulgarian bee products on national and international markets. Therefore, this study enriches theory and practice, as well as in the area of Bulgarian beekeeping, and allows the development of the strategic planning in respect to the most promising market segments - its target markets.

Bulgarian bee products encounter serious difficulties in the realization on the national and international markets. Wholesalers – exporters monopolize the national organizational markets and demand on consumer markets is relatively low. International markets are characterized by intense price competition and the availability of many substitutes. This requires segmenting and defining their target markets in order to achieve the best realization. There is a big discrepancy between the needs for segmenting the Bulgarian markets for bee products and the lack of such studies by Bulgarian and foreign authors. Furthermore, the market segmentation paves the way for future research regarding the positioning of Bulgarian bee products on such markets.

The macro-segmentation is the first step in the segmentation of Bulgarian beekeeping markets because its aim is to identify "product markets" (Lamben, 1996; Karakasheva, 2007; Boeva, Vasileva, 2010). Then, through micro-segmentation, one can also identify the national markets of the defined macro-segments. As more than 80% of Bulgarian honey is exported, its international markets will also be segmented. The criteria used for segmentation are tailored to the specificities of the various markets – organizational, consumer, national, international. The purpose of this research is to segment the national and international markets of Bulgarian bee products and to define their target markets.

The basic bee products are formed as a result of beekeeping. They are: bee honey, bee pollen, beeswax, propolis, bee bread, royal jelly, bee venom, queen bees, sucker grubs, and bees. Every bee product has unique characteristics that differentiate it considerably from other bee products. Nowadays, bee honey dominates significantly in the product structure, having more than 90% of the volume and value compared to other bee products. Honey and beeswax have many substitutes, whereas the other bee products are unique and have no substitutes, and their markets are also significantly smaller than those of bee honey. The aforementioned products of the beekeeping sector form product markets (Figure 1), i.e. the macro-level.

Figure 1

Product markets of the beekeeping sector

<table>
<tr><td rowspan="9">Honey</td><td>Beeswax</td></tr>
<tr><td>Propolis</td></tr>
<tr><td>Bee pollen</td></tr>
<tr><td>Bee bread</td></tr>
<tr><td>Royal jelly</td></tr>
<tr><td>Bee venom</td></tr>
<tr><td>Queen bees</td></tr>
<tr><td>Sucker grubs</td></tr>
<tr><td>Bees</td></tr>
<tr><td colspan="2">Pollination</td></tr>
<tr><td colspan="2">Api-tourism</td></tr>
</table>

In collaboration with other sectors, beekeeping forms services and many other more complex products than the already mentioned purely material bee products. The beekeeping sector is in symbiosis with some sub-sectors of the plant growing – technical crops, fruit growing, growing of vegetables, orcharding, etc., to which it provides the eco-system service called pollination which results in a significant increase in yields. Beekeeping, in collaboration with tourism, forms api-tourism, which is still in its infancy, but has positive prospects for development. The beekeeping sector serves as a basis for its emergence, as is viticulture for wine tourism. Beekeeping provides very good opportunities for developing rural, wellness and other types of tourism, and respectively for api-tourism.

All bee products can be conventional and organic according to the production environment and the technologies used which determine their quality and quantity. They can be offered in different packages, shapes and types, according to user preferences. By using the extraction and sorting technologies, different types of honey can be formed – acacia, linden, sunflower, bouquet, etc. Appropriate mixes can be created between different bee products, and between bee products and other products and services. Users' demand actually defines the quality, the quantity, the shape and the combination of bee products. Thus, it becomes logical to use the aforementioned product characteristics at a market level, i.e. at a micro-level.

1. Segmentation of national markets for bee products

According to the criterion ‘purpose of the product’, the Bulgarian markets for bee products can be divided into two main segments – organizational and consumer. Various organizations trade on the organizational markets- producers, traders, processors, state, municipal and public organizations, that buy bee products for resale, direct use in production, or use in day-to-day operations. Consumer markets for bee products consist of buyers whose primary purpose is not to make profits but mainly to satisfy their particular needs and desires (Lyubenov L. 2016). In general, the behaviour of the individual consumer is more irrational than that of organizations which use bee products.

1.1. Segmentation of organizational markets for bee products

In the 1980s in Bulgaria, there were about 770,000 beehives, producing about 15,000 tons of honey per year, 300-400 tons of beeswax, 8 tons of bee pollen, 4 tons of royal jelly, 3 tons of propolis, 10 kilograms of bee venom, 120 000 queen bees (Panchev, et al., 2014). Then, honey had more than 97% share of bee products in kind and Bulgarian beekeeping was the sixth largest producer of honey in the world. Today it produces about 10-15 thousand tons of honey per year, but no other official data is available for the other bee products. Bulgarian apiculture reaches the 12th place in the world in the export of honey in 2013 (MAI, 2017a). Table 1 determines the national organizational products, i.e. macro segments of Bulgarian bee products.

The criteria for segmenting the organizational markets are the type of organization, the consumer size, the use of the product (Pride, Ferrell, 1995), etc. Their natural continuation and addition are the capital share, organization of transactions, use of technologies (conventional, biological), market environment (offline and online), the regulatory framework (Lyubenov, 2016). As a result of their features, they form different market segments with different size, access, environment, product quality, trading rules, etc. Different bee products treated as food fall under specific regulations – for example, access to the organizational online markets requires individual company registration for any honey processing facility under Ordinance No. 9 for control and traceability guidelines.

Table 1

Bulgarian organizational markets for bee products

Bee products	Quantities, kg, (piece)*	Prices, BGN/kg. (BGN/pc.)*	Markets, mln. BGN/yr.
Honey	1 000 000*	5	75
Beeswax	500 000	10	5
Bee pollen	100 000	25	2.5
Propolis	3 000	50	0.15
Royal jelly	3 000	1000	3
Queen bees	100 000*	20*	2

1.1.1. Segmentation of the organizational markets for bee honey

Bulgarian beekeeping produces about 10,000 tons of bee honey, of which about 1/4 is realized as organic and 3/4 as conventional honey. The Bulgarian honey is about 1% honeydew honey and 99% nectar, the latter being mostly acacia, linden, sunflower, rapeseed and poly-floral. The market prices of these types of honey and the total market size (Lyubenov, 2017a) allow the formation of segments of a specific size. Rapeseed and poly-floral honey in kind occupy about 30%, but because of their low price, they account for about 20% in value. Acacia honey has the highest price, and linden and sunflower are in greater quantities, so each of them has about 25% in value. Although the quantity of the honeydew honey is the smallest, because of its high price it occupies about 5% in value (Figure 2).

Figure 2

Segments of bee honey by technology and raw materials

<table>
<tr><td rowspan="6">Conventional
Honey</td><td rowspan="6">Organic
honey</td><td>Acacia honey</td></tr>
<tr><td>Linden honey</td></tr>
<tr><td>Sunflower honey</td></tr>
<tr><td>Poly-floral honey</td></tr>
<tr><td>Rapeseed honey</td></tr>
<tr><td>Honeydew honey</td></tr>
</table>

Bee honey can be framed and bulk (centrifuged), the latter accounting for more than 99% in different packages – 25 kg, 50 kg, etc. The Bulgarian organizational markets for honey are mostly offline and 100% non-organized. The latter are mainly formed by wholesalers who buy out more than 85% of the honey produced and export it to international markets. Wholesalers also re-export foreign honey from Bulgaria because its average import price is about twice lower than the average export price of Bulgarian honey. The remaining honey (about 15%) is bought by enterprises operating in the Bulgarian industry. The Bulgarian organizational markets are mainly markets for bulk honey, offline, non-organized and dominated by wholesale exporters (Figure 3).

Figure 3

Segments of bee honey by types of organizations and packages

<table>
<tr><td rowspan="2">Wholesalers-Exporters</td><td rowspan="2">Industrial users</td><td>Bulk honey</td></tr>
<tr><td>Honey in frames</td></tr>
</table>

The current market segments of the organizational markets (Figure 2 and 3) are dominated by an offline, non-organic market for bulk bee honey, of which wholesale exporters account for more than 85%. This organizational market has two main segments – organic honey (about 25%) and conventional honey with about 75%. Although they are current target markets for Bulgarian beekeepers, they do not provide them with good prices and risk reduction. The prices of organic honey are very close to the prices for conventional honey. This requires beekeeping farms to form new target markets from the group of organized markets. They can create offline and online auctions and producers' market segments for organic and conventional honey to improve their liquidity and profitability (Figure 4).

Figure 4

Prospective organizational target markets for bee honey

Offline auction	Online auction	Producers' Market	Online wholesale platform	Own
				Foreign

The defined target markets can be segmented according to the criterion “size of the consumer organization” because small and large buyers of bee honey have different needs. Under the criterion of “equity participation of beekeeping farms” in them, they can be own and foreign ones, i.e. without equity from the beekeeping farms. According to the rules and procedures for making purchases, there are organized markets with strictly defined and standardized trading rules (exchanges, auctions, markets, producers' markets, tenders) and non-organized online wholesale platforms[2] and others. In Bulgaria, such markets for bee honey have not yet been formed, which requires that beekeeping farms are created as their own.

The auctions and the markets of the producers can be mainly listed in their quality as own organized markets. The latter are a market for available agricultural commodities, which is why they cannot have an online segment, according to the Commodity Exchange and Marketplace Act. Auctions are not subjected to this law, which allows the formation also of an online segment. Beekeeping farms can also establish a non-organized offline and online market. The auction, as an organized target market (online and offline), allows the sale of large quantities of honey at equilibrium market prices with a high degree of control, but requires investment and new competencies and can therefore be created mainly by branch organizations and cooperatives of beekeeping farms.

1.1.2. Segmenting organizational markets beyond honey

In the near future, in kind bee honey will maintain its relative share of more than 80% in the structure of Bulgarian bee products. The absorption of the market potential of the other bee products may reduce its share to about 20% in value, but not considering the potential of the environmental service of pollination. Under the same conditions, bee pollen can take about 20%, royal jelly about 25%, and bee venom about 35% of the structure of bee products, but only if they have appropriate marketing strategies to develop their potential. It should also be considered that, in the long run, the potential of the pollination market may go beyond national organizational markets for honey and bee pollen, i.e. also their relative shares (Lyubenov, 2017b).

Today there is a lack of sufficiently reliable and accurate official data on the production of bee pollen, beeswax, propolis, bee bread, royal jelly, bee venom, queen bees, sucker grubs, bees, and the eco-system pollination service. This hampers the segmentation of these

[2] The access to organizational online markets requires the registration of a physical object for the processing of honey according to Ordinance No 9, legally enforced for control and traceability.

markets (Figure 5), but their size can be determined based on market prices, potential and expert assessment of the quantities produced at a national level (Table 1). Organizational markets still have only off-line segments of bee products beyond the group of honey, but at the same time have a great potential for growth, which is not absorbed. Such are also the environmental pollination service and the queen bees, considering the global decline in the bee population.

Figure 5

Target markets beyond the bee honey category

<table>
<tr><td rowspan="9">Organic</td><td rowspan="9">Conventional</td><td>Beeswax</td><td rowspan="9">Offline</td><td rowspan="9">Online</td></tr>
<tr><td>Royal jelly</td></tr>
<tr><td>Bee pollen</td></tr>
<tr><td>Queen bees</td></tr>
<tr><td>Propolis</td></tr>
<tr><td>Bee bread</td></tr>
<tr><td>Bee venom</td></tr>
<tr><td>Sucker grubs</td></tr>
<tr><td>Apis totale</td></tr>
<tr><td colspan="5">Pollination – environmental service</td></tr>
</table>

Still, the production, respectively the organizational markets for pollination, bee venom, bee bread, sucker grubs and bees are relatively small and irregular. The pollination market is sporadic, and still in the early stages of its growth. Bee venom requires specific conditions for harvesting, processing and market realization. Its production is very small and there is no national market for it. Bee bread is produced in small quantities and is extracted relatively hard, the most common method being involving the destruction of the honeycombs. Sucker grubs and bees, which are used for other purposes rather than as offspring to queen bees, have very small amounts and relative share, also markets. The organizational markets for these bee products are still very small and for specific market niches.

Beeswax is produced by almost all beekeepers who use it mainly to obtain beeswax bases, which is why it is not their target market. Bee pollen has good prospects with growing volumes and stable prices, which is why it is a real target market. Royal jelly is under strong price competition from China, which is the largest producer who determines prices, but it is a target market on a national scale. Propolis has a smaller and more specific market because it is mainly traded on national beekeeping exhibitions, which makes it more of a niche segment. Queen bees are also a real target market, given the declining population of bees globally. Access to these target markets requires investment in new competencies and processing technologies.

1.2. Segmentation of consumer markets for bee products

Consumer markets for bee products are characterized by a significantly larger assortment and a relatively narrower price range, with a relatively high share of bee products at relatively low prices. The technological development has little impact, but trends towards a healthier lifestyle and consumption of healthy bee products have a strong impact. Demand is subject to fashionable trends in nutrition and diets, which makes it less sustainable and more elastic than organizational markets, with some exceptions for well-established brands. Personal preferences and emotions are often leading in decision-making. Consumer markets are more fragmented than organizational ones, making it difficult to segment them.

1.2.1. Segmentation of consumer markets for bee honey

Traditional markets dominate tangibly in the purchase of honey and account for 93% of all segments. Direct sales by producers account for 54%, the segment of purchases from relatives is 24%, and from agricultural markets 15%. Only 7% of Bulgarian consumers rely on modern trade (hypermarkets, supermarkets, discounters) for the purchase of honey (Ministry of Agriculture, Forestry and Food, 2017a). The HoReCa segment (hotels, restaurants, catering, confectionery, cafes, and fast-food restaurants) is very poorly developed, but is promising. Bulgarian consumers prefer conventional liquid honey, which they buy off-line from producers in one-kilogram glass containers. By its value, the share of honeydew honey is more than 5%, the acacia honey is about 45%, the poly-floral honey is about 25% and the rest is for linden, sunflower and rapeseed honey (Figure 6).

Figure 6

Segments of honey by markets and raw materials

<table>
<tr><td rowspan="6">Direct sales by producers</td><td rowspan="6">Relatives and acquaintances</td><td rowspan="6">Agricultural markets</td><td rowspan="6">Modern trade</td><td>Acacia honey</td></tr>
<tr><td>Poly-floral honey</td></tr>
<tr><td>Linden honey</td></tr>
<tr><td>Sunflower honey</td></tr>
<tr><td>Rapeseed honey</td></tr>
<tr><td>Honeydew honey</td></tr>
</table>

The current segments of consumer markets (Figure 6) are predominantly offline. Today, the national online markets for bee honey are negligible, but they have great potential and development prospects. The HoReCa segment also has significant potential that is not absorbed yet. Other promising segments with positive development trends are the municipal and farmer markets, direct sales and apparatus (Figure 7). These segments are promising due to the mass penetration of the Internet in all spheres of life and the growth of different types of tourism – rural, api-tourism, etc., the increase in consumption of organic and local products. The engine for the development of these segments is the ongoing processes of globalization, regionalization and localization.

Figure 7

National customer target markets for bee honey

<table>
<tr><td rowspan="4">Online markets for organic honey</td><td rowspan="4">Online markets for conventional honey</td><td>Direct sales</td></tr>
<tr><td>Municipal and farmer markets</td></tr>
<tr><td>HoReCa</td></tr>
<tr><td>Apparatus</td></tr>
</table>

The online segment of organic honey[3] deserves special attention because both the online and the organic markets are growing, and they blend very well in terms of consumer trends for a dynamic and healthy lifestyle. The size of the organic market in Bulgaria is estimated at 16 million BGN/yr., but this assessment is very conservative and inaccurate due to the lack of representative data. Considering its growth of about 20% per year, it will exceed 32 million BGN/ yr. by the end of 2019. The Bulgarian online market for food, beverages and commodities for daily use is about 60 million BGN/yr. and grows by about 15% per year. The online segment for organic honey has an even greater growth potential because bio-certification builds confidence that supports its growth.

As potential customers of the online segment for organic honey, all internet users are oriented towards healthy nutrition, with limited mobility and time. These are healthy-oriented and dynamically working residents of large cities who have little free time. Pregnant women and mothers with young children who find it difficult to shop offline. Older people ordering online by themselves or through their children living abroad. People with reduced mobility and the disabled, to whom online channels provide the opportunity for individual shopping. This segment covers more than 5% of 1.1 million e-buyers in Bulgaria in 2016, which accounts for more than 55,000 potential customers with significant and stable prospects for growth.

Direct sales and farmer markets are leaders as consumer target markets for beekeeping farms which today account for about 70% of offline bee honey markets, and 93% of them are mediated by close relatives. The HoReCa segment, which has considerable potential, is underdeveloped, because agricultural raw materials make up about 1/4 and food and beverages about one-third of it (Lyubenov, 2017c). The segment of apparatuses for supplying small packages of bee honey is in its beginning stage, but with great potential because of the growth of dynamic and health-oriented customers. The growth of rural and other types of tourism further increase their potential. Access to them requires beekeeping farms to register under Ordinance 26 and to invest in processing and commercial areas.

Bee honey is a well-known product for thousands of years and is consumed by a very wide range of consumers. Therefore, many variables such as age, gender, education, profession, etc. are not applicable as segmentation criteria. Appropriate for further segmentation of defined target markets are consumer incomes and their standard of living. Consumers with high-income and standard of living are sensitive to quality, but not to the price of bee honey. Therefore, they will dominate the online segment of organic honey, the direct sale segment, farmer markets and the HoReCa segment, while lower-income consumers will dominate the online segment of conventional honey, apparatus and modern trade.

1.2.2. Segmenting consumer markets beyond the bee honey category

There are no official statistics on the retail trade of bee pollen, propolis, bee bread, royal jelly, sucker grubs and bees (apis totale) (Figure 8). They are not subject to modern trade

[3] Access to consumer online markets requires registration of a physical object for bee honey according to Ordinance No 26 imposed by the control and traceability regulatory framework.

because their markets are relatively small. They are realized directly from beekeeping farms to end customers, as well as through farmer markets and online platforms. The largest segment is the segment of bee pollen, which is conventional, but it also has a smaller organic segment. The rest of the products are available in small packages, and are mostly niche products. Their demand is sporadic and seasonal because they are not traditional foods and beverages. Consumers look for them mainly because of their application in apitherapy, for treating various diseases and prophylactics.

Figure 8

Segments of bee products beyond the bee honey category

<table>
<tr><td rowspan="6">Conventional</td><td rowspan="6">Organic</td><td>Bee pollen</td></tr>
<tr><td>Propolis</td></tr>
<tr><td>Bee bread</td></tr>
<tr><td>Royal jelly</td></tr>
<tr><td>Sucker grubs</td></tr>
<tr><td>Apis totale</td></tr>
</table>

Organic bee pollen and royal jelly have very good prospects for online realization and are therefore promising target markets. The segments of direct sales and farmer markets are now real target markets, given the consumer's confidence in their producers. In the future, bee pollen and royal jelly have the potential to penetrate the public catering (HoReCa) and non-market (automated) segments, given their refrigeration chain capacities, as required by royal jelly, when it is less processed (Figure 9). Their segments will continue to grow both absolutely and relatively at the expense of bee honey because consumers want to live healthier and to reduce the consumption of sugars.

Figure 9

Consumer target markets beyond the bee honey category

<table>
<tr><td rowspan="4">Royal jelly</td><td rowspan="4">Bee pollen</td><td>Direct sales</td><td rowspan="4">Offline</td><td rowspan="4">Online</td></tr>
<tr><td>Municipal and farmer markets</td></tr>
<tr><td>HoReCa</td></tr>
<tr><td>Apparatus</td></tr>
</table>

1.2.3. Segments of mixes of bee products and other products

Based on the compatibility between different bee products, some combinations have been established between them, including bee honey, as it combines successfully with most bee products and increases their shelf life. Successful examples are the combinations of honey with pollen (50% - 80% honey with pollen), honey with royal jelly (99% honey with royal jelly), honey with bee bread (more than 80% honey with bee bread), honey with pollen and royal jelly (honey 79%, pollen 20% and royal jelly 1%), honey with extract of sucker grubs, i.e. apilarinyl (more than 60% honey with apilarinyl). Mixtures of honey products without honey such as apilarinyl with pollen, apilarinyl with propolis and others are also possible. (Figure 10). They form new market segments as they offer combined bee products with new taste, nutritional and health properties.

Bee products can also be combined with many other products beyond their group. Established and proven as good combinations are honey with tahini, honey with cinnamon, honey with turmeric and cloves, pollen with yoghurt, propolis with alcohol, etc. (Figure 10) These mixes form new products with a different taste, nutritional and health properties, i.e. also new segments. It should be noted that bee venom is used as a medicine in apitherapy, and different mixes are also used in spa procedures, cosmetics, medicine, technology, etc., as well as in culinary. Beekeeping also forms a solid base for the emergence of a special branch of tourism – api-turism. In perspective, innovations in different mixes will increase, forming new segments.

Figure 10

Segments of bee products with other bee and various different products

Honey – Pollen	Honey – Tahini	Honey – Walnuts	Honey – Cinnamon	Honey – Turmeric	Honey – Cloves	Honey – Ginger	Pollen – Yoghurt	Propolis – Alcochol
Honey – Royal Jelly								
Honey – Bee bread								
Honey – Pollen – Royal Jelly								
Honey – Apilarinyl								
Apilarinyl – Pollen								
Apilarinyl – Propolis								

Although today most of consumers prepare such mixes themselves, the mixes have a good potential to penetrate the HoReCa segment, where they can be combined and offer a variety of variants. The segment of direct sales by customer demand is also promising because it allows to meet a specific mix of needs. Different mixes of bee products with other bee products or bee products with non-bee products can form nutritional supplements, medicines, cosmetics, etc. to be offered on the market by pharmacies and apparatuses. Today, the segments of different mixes of bee and non-bee products are very small and have a predominantly niche character. However, their online segments have good prospects for growth (Figure 11).

Figure 11

Prospective target markets for mixes of bee products

Mix bee products- bee products	Mix bee products – non-bee products	Direct sales	Offline	Online
		Farmer markets		
		Pharmacies		
		HoReCa		
		Apparatus		

2. Segmentation of international markets for Bulgarian bee products

Honey production in the world for the period 2013-2016 fluctuates from 1.6 to 1.8 million tons per year. China plays a decisive role on the world market as a major producer and exporter. China is a world leader with a production of over 450-500 thousand tons, and in 2016 its share in the world production of honey is 28.1%. Turkey is second in the world with an average annual amount of 102 000 tons. Turkey's in world bee honey production is 6%. Iran ranks third with an annual production of 78 000 tons. In 2016 the country's share in honey production was 4.5%. The United States are placed fourth with a production share of 4.1% and an average annual production of 73 000 tons. Russia has about 4% of world production (Bulletin 9, 2018) – 70 000 tons of honey per year.

Following the top five countries in honey production in the world, the Ukraine's average for the period 2013-2016 is 66 000 tons, then India with 61 000 tons, Argentina with 59 000 tons, Mexico with 58 700 tons (Bulletin 9, 2018) and Ethiopia with about 45,000 tons. The EU is the second-largest producer with about 240 to 270 thousand tons of honey after China. The largest producers of honey in the EU in 2015 are Romania – 35 000 tons, Spain – 32 000 tons, Hungary – 30 000 tons, Germany – 24 000 tons, Italy – 23 000 tons, Greece with 22 000 tons, France with 18 000 tons, Poland with 14 000 tons, Portugal and Croatia- both with 10 000 tons, and Bulgaria with 9 000 tons (Brussels, 7.12.2016, COM (2016) 776 final). Although the EU is the second-largest producer, it is also the world's largest bee honey consumer with about 350,000 tons/yr.

The total imports of honey in the EU in 2015 are 197,545 tons worth 498,027 euros. The main supplier is China, which accounts for 50% of imports, followed by Mexico and Ukraine. Exports from the EU are negligible compared to imports – about 8% of total production, mainly for the high-quality bee honey markets such as Switzerland, Saudi Arabia, Japan, the USA and Canada (Brussels, 7 December 2016, COM (2016) 776 final). The largest importers of Bulgarian honey in the EU for 2016 are Germany, which imports more than half of Bulgaria's exports, followed by Greece, Poland, Belgium, France, Spain, Italy, Austria, Denmark, Great Britain, Romania and Cyprus (MAE, 2017a). Bulgaria's export to "third countries" is mainly to the USA, Japan, China, and the Republic of Korea, and is only 400 tons, about 5% of the total.

According to Eurostat data, by 2011, the production of organic honey in the EU Member States was 5,341 tons and in 2012 it increased by over 48% to about 8,000 tons. The assessment of the market share of organic honey in Europe is about 10,000 tons per year, equivalent to about 2.5-3% of the market for honey, but today the European organic market exceeds 15,000 tons and is one of the most developed on a global scale. Given the average growth rate of sales of organic products, the annual consumption in Europe alone is expected to exceed 20,000 tons by 2020 (Lyubenov, 2019). The demand for conventional and organic honey and bee products in Europe is significantly greater than its own production, which will continue as a trend in the next decade.

Since 2014 Bulgaria is one of the world's leaders in the number of certified organic bee colonies. In 2015 Bulgaria ranked first in the world with 179,106 organic bee colonies (Lyubenov, 2018), and in 2017 it was second in the world with about 230,000 certified bee colonies (https://www.dnes.bg/business/2017/03/01/). In 2016, in Bulgaria, 21% of bee colonies are certified, and nowadays, they are 33% (MAFF, 2018). This places Bulgaria at the forefront as a producer of organic bee honey, but Bulgaria's organic beekeeping faces serious problems related to: certification, the realization of honey as a low-priced raw material, and the declining amounts of subsidies that slow down the development of this sector.

The segmentation of national markets for bee products has revealed that despite of the relatively low consumption of honey and bee products, consumers have a variety of preferences which in turn forms different segments. Unlike the national markets for bee products, the international markets cover an extremely large and heterogeneous group of consumers located on a vast area. This necessitates identifying the main segments and identifying those that are of interest. The segmentation of the international markets for bee products can be done by using several indicators as segmentation criteria, some of the most appropriate in this respect being the economic, geographical, demographic and cultural factors.

Among the economic indicators, the gross domestic product (GDP) is the most commonly used measure of economic development of the countries. Since it may lead to some misconceptions and categorization in a group of countries with a very different level of overall development, it is good to combine the GDP with other indicators such as purchasing power parity (PPP) per capita. Often, countries with the highest PPP per capita have a relatively lower GDP. This discrepancy is essential for the segmentation of the international markets for bee products because they do not classify in the basic foodstuff group; therefore their demand is highly dependent on the consumers' available income.

In countries where the incomes are low, the demand for honey and bee products will be more limited in volume and will be located only in the low-price segment. In countries where the incomes are higher, albeit with a smaller population, the total demand may be several times higher, while both quality expectations and prices will increase. It can be seen from the economic indicators of the most developed countries that only a few of them have both a high GDP and high PPP per capita (https://www.imf.org, 2017) – Switzerland, the USA, Saudi Arabia, the Netherlands and Germany, followed by Canada, Great Britain, Japan and France. These segments of the international markets are promising target markets for Bulgarian bee products.

Among the geographical indicators, the most frequently used one is to divide the world market by regions and countries. Frequently, data about global trade is divided into two main groups – "EU countries" and "Third countries". The first group includes Belgium, Germany, France, Italy, Luxembourg, the Netherlands, Denmark, Austria, Hungary, Poland, Spain, Sweden, Great Britain,[4] Ireland, Portugal, the Czech Republic, Slovenia, Slovakia, Romania, Lithuania, Latvia, Bulgaria, Estonia and Croatia. The second group – the so-called "third countries" encompasses the remaining countries around the world. This regional division emphasizes the geographical proximity to these countries, combined with the relative commercial freedom that EU members have in trading with each other.

[4] According to this criterion, it is integrated into the EU, although it does not wish to be a member of the EU.

The demographic indicators are important for defining the number of users as they determine the potential of a given market. The size of the countries does not fully reflect their market potential, so it is good to also consider employment and population density. In 2018, the country with the largest population in the EU is Germany – 82.9 million, followed by France – 67.3 million, Great Britain – 66.3 million, Italy – 60.5 million, Spain – 46.7 million, Poland – 38 million, Romania – 19.5 million, Netherlands – 17.2 million, Belgium – 11.4 million, Greece – 10.7 million, Czech Republic – 10.6 million, Portugal – 10.3 million, Sweden – 10.1 million, Hungary – 9.8 million, Austria – 8.8 million, Bulgaria – 7 million (https://bg.wikipedia.org/wiki, April 2019). The employment rate and population density in the EU are the highest in the Netherlands, Belgium, the UK, Germany and Italy.

In 2019, the largest countries in the world by population are: China – 1.4 billion, India – 1.3 billion, EU – 0.53 billion, USA – 0.33 billion, Indonesia – 0.27 billion, Pakistan – 0.21 billion, Brazil – 0.2 billion, Nigeria – 0.19 billion, Bangladesh – 0.16 billion, Russia – 0.15 billion, Japan – 0.13 billion, etc. Switzerland has the largest share of employed. The highest population density is in the Republic of Korea, followed by Japan and Switzerland (https://bg.wikipedia.org/wiki, April 2019). The analyzed indicators outline the perspective segments for Bulgarian honey and bee products. For Europe, these are the Netherlands, Belgium, the United Kingdom, Germany and Italy, and in the so-called "third countries" – Switzerland, the Republic of Korea and Japan. Out of these potential target markets, Bulgarian bee honey is not yet realized in the Netherlands and in Switzerland.

Cultural factors are related to the traditions of the consumption of honey and bee products in different countries. For example, European countries have deep historical roots and traditions in the production and consumption of honey and bee products. The largest consumers of bee honey in the EU are Germany, Great Britain, Belgium, Spain, Poland, Italy, and the Netherlands. European consumers have a positive attitude towards purchasing honey and bee products, produced in a country different than theirs. Although European markets have a solvent and stable demand for bee honey, they are characterized by intensified competition and are dominated by several large companies. European consumers are very demanding in respect to the quality of bee products and especially for organic products.

There are an established culture and customs in the consumption of honey and bee products in the USA, Canada, Russia, Japan, Saudi Arabia, etc. The global consumption of honey is steadily increasing because honey is considered not only as a natural sweetener, but also because of its prophylactic and healthy qualities. The largest importers of honey from the EU are Germany, the United Kingdom and the Netherlands, and from the so-called "third countries" – the USA and Japan. The consumption of honey per capita on average worldwide is about 150 grams per year and steadily increases, but it varies widely between countries. Western European countries which are also members of the EU have an average consumption (per person) of honey of 2.5-2.7 kg, Hungary – 0.7 kg (EU, 2017/2115 (INI)), Bulgaria – 0.5 kg, Greece – about 2 kg, Ukraine – 1 kg, USA – 1.2 kg.

The economic, geographic, demographic and cultural factors used as criteria for segmentation of the international market for bee honey, determine two main groups of target markets for Bulgarian honey – European and EU countries, and other countries. The

EU target markets clearly that stand out clearly are Germany, France, Italy, the Netherlands and Belgium, and the non-EU countries – Switzerland and the UK. Other target markets are Saudi Arabia, the USA, Japan, Canada, and the Republic of Korea. Of the abovementioned target markets, there is no data on the realization of Bulgarian honey in the Netherlands and Switzerland, but it is likely that they get some quantities as re-exports. On these target markets, there is a very strong competition by the countries that are the largest producers of honey.

Greece has good prospects as a target market because it is a neighbouring country with a large consumption of bee honey per capita, and Austria is similar in this regard. Because of the great international competition in the domain of bee honey, Bulgarian beekeeping should specialize in the production of other bee products, for which there are potential competitive advantages such as: bee pollen, royal jelly, bee venom and bee colonies, given the declining population of bees in the USA and in other countries. A prospective target market is the organic honey segment and other organic bee products. Nowadays, the export of Bulgarian bee products beyond the honey category is very small, which is why there is no official data on them and they are mostly niche markets.

The regional principle, e.g. by counties, plays the leading role in the segmenting of international markets. However, applying segmentation based solely on geographical or quantitative factors will lead to unilateral development. This imposes the use of a combination of indicators, as well as their complex reporting. Therefore, inter-segmentation is also applied, i.e. division of the formed segments based on other indicators. Though, here comes the problem, that the formation of too many segments is inappropriate and costly, and should be avoided. The choice of an international market (Karakasheva, 2007; Boeva, Vasileva, 2010) is based on grouping the countries into homogeneous groups, elaborating the characteristics of each group and determining their advantages and disadvantages.

The determined international target markets for Bulgarian bee products can be divided into two main groups:

A) Target markets in European countries:

- Group 1 – Germany and the UK;
- Group 2 – France, Italy, the Netherlands, Belgium and Switzerland;
- Group 3 – Greece and Austria.

B) Target markets in the so-called "third countries":

- Group 4 – Saudi Arabia, the USA and Japan;
- Group 5 – Canada and the Republic of Korea.

The formed groups of target markets have internal similarity and clear differences between them.

Group 1 covers European countries with a large population and excellent economic performance indicators. These are countries with traditions in honey consumption. They have established taste preferences and attitude towards honey and bee products. In

Germany and in the UK, despite some fluctuations in demand for honey, it remains at a relatively constant level, which is why they are world market leaders in terms of imports. About 1/2 of Bulgarian exports are for Germany, and only about 1% is for the UK- one of the smallest among the EU member states. Direct competitors of Bulgaria in this group are: China, Ukraine, Turkey, India, Argentina, Mexico, Ethiopia, Romania, Spain, Hungary, etc. Bulgarian honey is exported as a raw material, which results in strong price competition.

Group 2 covers five countries that need to be divided into two micro-segments:

- Segment 2.1. includes the Netherlands, Belgium and Switzerland, which are smaller in size but with excellent economies, high standards of living and high available income per capita. The smaller population of these countries impacts the volume of imports but, in terms of value, it surpasses the imports of some of the larger countries. This fact is indicative of the types of honey that are realized there – from the high price class and the upper half of the average price class, which is also linked to the demand for a honey of higher quality. These three countries, just like the countries in Group 1, have established taste preferences and attitudes. They are not large producers and imports are a major way to meet the demand for their domestic markets. Direct competitors to Bulgaria in this segment are Germany, as a re-exporter, and the abovementioned EU leaders in production.
- Segment 2.2. includes France and Italy, which are significantly larger in terms of size and number of employed in the economy but with relatively lower available income than the previous micro-segment. Both countries have solid traditions in the consumption of honey and bee products. Although they are among the largest producers of honey in the EU – Italy is 5th, and France is 7th, they cannot satisfy their domestic consumption. The lower share of employed and available income versus segment 2.1 is the main reason for the consumption, being oriented in the group of honey, produced by them. The relative share of France in the export of Bulgarian bee honey is 5.4%, and Italy's share is about 3% (MAFF, 2017a). Direct competitors to Bulgaria in this segment are Germany and its neighbours.

Group 3 covers two European countries – Greece and Austria. Although they are among the global leaders with the highest consumption of honey per capita, they can be divided into two distinct micro-segments due to some significant differences between them:

- Segment 3.1. Austria produces about 5,000 tons of honey per year, which does not satisfy its large domestic consumption and is, therefore, a traditional importer. It accounts for about 2.5% of Bulgarian exports (MAFF, 2017a), which is very little, given the relatively high solvency of this target market. Consumption in Austria is oriented towards higher quality honey, including organic honey, which is in the higher price class. Competition in this segment is strong and dominated by large and well-established merchants exporting honey, such as the German merchants, who are further helped by linguistic and cultural similarities. This requires that Bulgarian bee honey be oriented towards organic markets with higher quality segments and prices.
- Segment 3.2. Greece ranks 6th in the EU for production of honey equaling 22,000 tons. Its population is about 2 million more than Austria, and also has a large per capita

consumption. Another difference from segment 3.1 are the lower consumer incomes, which, coupled with larger national honey production, are driving consumption to the lower price segment. Greece consumes about 11% of Bulgarian exports, which is second only to Germany on Bulgaria's export list (MAFF, 2017a). The main competitors to the Bulgarian honey in this segment are the largest producing countries of cheaper honey – China, Turkey, Ukraine, and the Eastern European leaders in honey production.

Group 4 covers three countries – the United States of America, Japan and Saudi Arabia, which form two micro-segments:

- Segment 4.1 covers the USA and Japan. These are two of the largest countries in the world when it comes to very good economic results. In both countries, the bee honey market is being developed by leading countries in the area of its export. Japan imports about 38,000 tons of honey per year, as its own production satisfies only 6.6% of consumption. Consumption is stable, despite high prices. China provides about 1/2 of imports followed by New Zealand, Canada, Argentina, Hungary, etc. When it comes to the EU, in 2015, Hungary provided about 1/2 of the exports, followed by Romania and Spain, with less exports being France, Italy and Bulgaria. In this segment, Bulgarian honey is in a good price niche (MAFF, 2017b) – 6.88 dollars/kg, with an average export price of 3.51 dollars/kg.

The USA is one of the largest bee honey markets in the world; the USA imports 165,000 tons worth nearly 400 million USD. Leading suppliers of honey for the USA are Canada, India, Brazil, Argentina and Vietnam. Anti-dumping duties have been introduced against Chinese bee honey because of its dumping prices and unfair competition in respect to domestic producers. The average wholesale price of the best-paid American honey is 2.5 dollars/kg (Embassy of Bulgaria in the USA, 2014), which is why the Bulgarian honey on this market is profitable mainly as a quality product to be sold by the organic retailer markets. In this segment, price is not critical, and no huge quantities are required; of utmost importance are the quality, origin, type, colour and packaging of the honey.

- Segment 4.2. Saudi Arabia produces less than half of the honey demand in the country, which is why it needs large quantities of imported honey of about 15,000 tons. The average import price is 3.73 dollars/kg. The largest market share in the country occupies Mexico with almost 1/4 of imported quantities and an average import price of 3.73 dollars/kg and quantities of 3.4 thousand tons. The applicable duty is 5% of the invoice value of the imports; only the rates for Egypt and Yemen are zero. As of 2015, the symbolic 25 tons are exported from Bulgaria, which are in the average price niche – 4.76 dollars/kg (MAFF, 2017в). Despite the presence of strong competition, this segment is attractive, and Bulgarian honey has the potential to increase its market share.

Group 5 covers Canada and the Republic of Korea, which can be considered as potential target markets, as a very small part of Bulgarian exports is made to the Republic of Korea – 0.7% (MAI, 2017a), and Canada is still not an export destination for Bulgarian honey. Canada has a steady increase in demand for organic and high-quality bee products as a result of consumer desires to reduce sugar consumption. Therefore, in recent years, there has been a growing interest from Canadian companies to import natural Bulgarian honey.

There is similar interest from the Republic of Korea, which is becoming a growing consumer of honey. Exports to both countries would be related to significant administrative and logistic costs, given the great distance from Bulgaria.

Overall, the target markets of Group 5 and Group 4 (Saudi Arabia, the USA and Japan) are less attractive than EU countries and other European countries. The main reasons for this are the greater logistic, administrative and other costs, tariff and non-tariff barriers and strong price competition from the largest honey-producing countries. In order to access these segments, Bulgarian exporters of bee products shall establish contacts with their local intermediaries and meet the requirements for trading with honey, bee products in each country in respect to safety, traceability, etc. Bulgarian beekeeping products shall be directed to specific segments – organic bee honey for Japan, offspring for the USA, creamy honey for Canada, etc.

The formation of too many segments is inappropriate and is linked to significant marketing and other costs. Thus, the author suggests using the criterion "price of honey", which allows the unification of some of the segments. According to this criterion- the highest price in USD/ ton – the first position is for Japan – 5355, followed by Denmark – 5093, Saudi Arabia – 4760 and Belgium – 4026. Next are Germany – 3829, France – 3506, USA – 3434 and Italy – 3315 (MAFF, 2017a). The Netherlands and Switzerland, as well as Sweden (19th PPP per capita) and Finland (23rd place) can also be added to this group because they allow for realization in a high and middle price range. At an average price of 4165 USD/ton Bulgarian honey falls in the average price class. These segments are also suitable for the realization of organic bee honey.

Statistical information (MAFF, 2017) shows that the countries of Group 3 (Austria, Greece) and the UK are export destinations for Bulgarian honey in the middle and lower price range. Poland can join them because it is the third largest consumer of Bulgarian honey at a price of 3015.75 USD/ton. Although the UK is one of the largest consumers of honey in the EU, in this segment, Bulgarian honey has the lowest average price – 2405.3 USD/ton. It is higher for Austria (3088.86 USD/ton) and Greece (2794.69 USD/ton), which are also countries with high consumption per capita. The average price for these segments is 2826.15 USD/ton, and the price in Bulgaria is 3581 USD/ton. The disadvantage of these segments is their lower profitability compared to the other segments.

Conclusion

As a result of the segmentation of the markets for Bulgarian bee products, conclusions can be drawn in two main directions:

Firstly regarding the segmentation of national markets for bee products:

- The current organizational target markets of Bulgarian beekeeping farms are offline, non-organized markets for bulk bee honey dominated by wholesalers who buy out about 85% of it. These target markets do not provide beekeeping farms with equilibrium prices and risk reduction. The organic honey is bought at prices very close to the conventional prices. Therefore, beekeeping farms have to establish their own target markets – offline and online auctions, and producer markets for organic and conventional honey that will improve their liquidity and profitability.

- The organizational target markets of Bulgarian beekeeping farms beyond the honey bee category are pollen, royal jelly and queen bees. The segment of dried and bulk pollen is an offline non-organized market of wholesale merchants. The queen bee segment is mainly an offline, non-organized market negotiated between licensed producers and consumer beekeeping farms. The organizational markets of pollination, bee venom, bee bread, sucker grubs and the bees are very small and have a niche character.
- Current consumer markets for bee honey are dominated by traditional markets, covering 93% of all segments – direct sales by producers occupy 54%, the segment of purchases by relatives 24%, and agricultural markets – 15%. A prospective target market is the online segment of organic honey, which will grow steadily. Today, the public catering (HoReCa) and apparatus trade segments have niche character, but their prospects for development are positive.
- Consumer target markets beyond the bee honey category are bee pollen and royal jelly, which are mainly conventional, with potential for organic segments. They are realized in the segments of direct sales and farmer markets. The prospective target markets are the public catering (HoReCa) segments and the non-shop automated trade. The other bee products are mostly niche. The segments of all bee products will continue to grow at the expense of honey, because consumers want to live healthier, with less sugars.
- Today the segments of mixes of bee products with other bee products and other different products have the character of very small niches. The bee honey is the main ingredient in these mixes because it combines successfully with most bee honey and non-honey products, increasing their shelf life – honey with pollen, honey with royal jelly, honey with bee bread, honey with tahini, honey with walnuts, honey with cinnamon, etc. The mixes have good potential to penetrate the HoReCa segment, where they can be combined and offer a variety of variants. Segments of direct and online sales by orders are also promising.

Secondly on the segmentation of international markets for Bulgarian bee products:

- EU Member States – Denmark, Belgium, Germany, France and Italy are real target markets for Bulgarian bee honey, where it is mainly realized in the lower interval of the average price range of about 5-3.5 thousand USD/ton. Prospective target markets in Europe and the EU that have not yet been penetrated are the Netherlands, Sweden, Finland and Switzerland. For the so-called "third countries" such as Japan and Saudi Arabia, Bulgaria sells at about 5000 USD/ton. The lower prices in the USA – 3434 USD/ton, make Canada a good alternative.
- From the list of potential target markets are eliminated the most accessible neighbouring countries and those from the EU, which are major producers of bee products such as: Turkey, Romania, Spain and Hungary. The UK, which is in the process of leaving the EU, is also a segment in which Bulgarian bee honey is realized at the lowest average price – 2405.3 USD/ton. With respect to Austria, Greece and Poland, where prices are

some of the lowest and fluctuate about and below 3000 USD/ton, repositioning to higher prices is required, which also applies to the UK.

- Due to the high quality, nutritional, prophylactic and medicinal value of Bulgarian bee honey, it is necessary to re-orientate to new target markets – organic honey for Denmark, Belgium, Germany, Japan and Saudi Arabia, creamy honey for Canada and Northern Europe. The development of the potential of Bulgarian beekeeping requires the definition of target markets of the other bee products – queen bees and bee colonies for the USA, organic royal jelly for Japan, bee venom for Germany, etc.
- Today Bulgarian bee products, such as beeswax, propolis and queen bees, are mainly realized on the national markets. Potential opportunities for realization on the international markets include bee pollen, bee venom and royal jelly. Bee pollen has good opportunities due to larger production and developed national organizational market. Bee venom and royal jelly do not have developed national organizational markets and are under strong price competition from world leaders – China, Turkey and others, and therefore have a niche character. The other bee products are less represented and have a more pronounced niche character.

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