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The Role of Marketing Strategies in Enhancing the Economic Development of Beekeeping Enterprises

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Abstract: This article examines the role of historical traditions and the economic, social and legal conditions that influence the development of beekeeping enterprises. Particular attention is given to effective marketing strategies that can enhance the sector's competitiveness and sustainability. The study reviews the views of domestic and international scholars, explores the global honey production and export landscape, and analyses the Republic of Uzbekistan's regional performance in this field. Furthermore, the volume and dynamics of honey production are assessed, and the author presents their conclusions based on analytical findings and economic evaluation.

Keywords: beekeeping, honey, market conjuncture, export, marketing strategies, natural conditions.

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1. Introduction

Nowadays, activities of organizations – participants in beekeeping business include researching the past traditions, economic and social legal regulations, as well as marketing situation on honey and other apian products. Beekeeping products production and commercialization contain special features that have substantial consequences on efficiency and competitive capacity of companies in this market. These are affected by production seasonality, natural and weather related factors, regional suppliers' organization and behaviour in the market of the exporters [1].

The beekeeping has been practicing in the Republic of Uzbekistan for several thousand years. The sustainability and development of the sector is based on favorable natural and climatic factors in the country, extensive forest areas as well as meadows and steppes with abundance of nectariferous plants (Yusyanova et al) and it's difficult work of local beekeepers. The success of this sector depends directly on the presence of nectar and pollen plants, that are fundamental foraging resources for bee colonies [2].

Apiculture is integral to the agricultural sector. Honey is considered to be extremely useful for human health and the substances of royal jelly and propolis refer material which may have commercial values. Nearly 70 different bioactive compounds, particularly enzymes, vitamins, hormones and many other chemicals have been described in bee products that are used for treatment of a number of diseases [3].

Bee keeping is also important for higher yield of agriculture. The earth's ecology system is comprised of approximately 80 per cent flowering plants in the biosphere which are reliant on cross-pollination, and bees carry out virtually all of it. This renders them an important component for ecosystem sustainability and enhancement of crop production [4].

Literature review.

A.A. Aleksandrov, one of the founders of this trend in bee breeding, published his vision of the development beekeeping in the cities Kattakurgan, Samarkand, Khujand and Tashkent in *Turkestan Agriculture (Turkestanskoe selskoje hoziajstvo)* magazine. He stressed that the mild climate and rich vegetation of the area was significantly important for the development and advancement of beekeeping [5].

As it was reported by N. N. Shilina, at that time in Central Asia there were 1,844 beekeepers and 83,907 bee colonies (in the tree-bark shelters and natural forest refuges included) [6].

With the direct participation of G. Khamidov, researcher R. Mukhamatzianova studied melliferous flora which is a main fodder base for bees in the Surkhandarya region. Her research discovered 487 species of honey plants in the region. She further addressed the issue of the formation and development of bee-keeping in almost all regions of the Republic of Uzbekistan, as well as its bordering territories– Kyrgyzstan, Tajikistan and Kazakhstan, especially in terms of ecologic-economic importance for apiculture of honey productive flora [7].

They also argued that bees play a crucial role in the farming and agro-industrial systems, as was pointed out by A. Ponomareva, S. Glukhov, I. Krivsov and other scientists. Cross-pollination by bees will also enhance yields of alfalfa and other legumes by 35–40%, sunflowers by 50–60%, melons as well as vegetable crops up to 100–150%.

2. Materials and Methods

The article employs the methods of empirical and theoretical economic research, in particular: analysis and synthesis, abstraction and logical reasoning, statistical analysis and comparative analysis. These conventional methods are employed to consider the main economic influence factors of the beekeeping industry development, and to assess marketing strategies performance in relation to production efficiency and market competitiveness.

3. Results and Discussion

Nowadays beekeeping is known as one of prospective agricultural sectors. The first one of this aspect is: as some research works have pointed up, high precision analysis and strategic management are required to develop the apiculture sector. The study supports that the development and specialisation of apiculture has been influenced by climatic and ecological conditions, distribution bee species and nectar producing flora.

Climatic condition of an intermediate type, programs of systematic selection and breeding and adaptation to agro-climatic pre zonal levels through own made bees species has allowed the stablishment of profitable economic models. It covers the value of apicultural potential in Surkhandarya Watershed that introduces more opportunities than other regions. This is mainly because of the mild climate, which allows hives to come out of dormancy 20-45 days ahead of other regions in the nation. This leads to an increased forage time and higher honey production.

In areas with high agricultural intensity, bees' role as pollinators is successfully exploited to increase crop yields. These places often include the land with perennial forage crops such as plants that produce nectar such as sunflowers, cotton, fruit trees and berries as well as melons other fruits that rely on pollination which are essential food sources for bees. Breeding-orientated apiculture thrive in the southern desert areas, where bees and honey colonies develop quickly due to the beneficial early-spring conditions and an earlier collection of honey.

As it has already been indicated earlier, the mild climate of Surkhandarya region in winter provides conditions for achieving a successful overwintering of bees with low consumption of feed and this has beneficiary to beekeeping in terms of high vitality. There is, however, no well-distinguished specialization by type of production within the beekeeping organization as a whole — the basic apian products usually contribute approximately equally to total output.

Beekeeping in Surkhandarya's forest-steppe is implemented as an enterprise by the pollination, honey and gene pool. Every local farm business can support more hives of bees, and do its part as well to turn up the productivity. Pollination-honey producing beekeepers are primarily established in highly arable regions because insect-pollinated crops are those with which they can produce the most surplus nectar and pollen.

" 239 Cabinet of Ministers Resolution 'On Measures to Support the Beekeeping Sector and Additional Measures for the Pollination of Agricultural Crops by Bees') attached to (Ibid.), related to forecast indicators for bee-pollination agro-technology taken place in cotton-textile clusters in 2023.

In particular, agro-technology 'bee pollination' will be implemented in 20 thousand hectares of cotton fields of Surkhandarya region with placing around 40 thousand bee families. The objective of this initiative is to improve crop yields and support environmentally friendly agricultural practices, as well as to promote the integration of apiculture into the agro-value chain.

As of 2023, there were approximately 1.4 million bee colonies in Uzbekistan contributing to the production of some 31,500 tons of natural honey across the country. An easy explanation cannot lie in high productivity of honey producing hives at apiaries, because mostly bees at apiaries are provided by amateur beekeepers and agriculture-bases formations occupy infrequent interest (no more than 3–4%).

Still, Uzbek beekeepers are not as efficient as those in other world-leading honey-producing nations. For instance, in Canada honey production averaged 50 kg/colony whereas in Uzbekistan this was between 26.7–28.4 kg for the period (2010–2023). This can be explained by a reliance on industrial-scale production systems and state-resourced apiculture in Canada, in contrast to primarily small-scale, semi-professional beekeeping activities conducted at the household level across Uzbekistan.

Accordingly, a thorough analysis of the honey and beekeeping products market in Uzbekistan is a precondition for efficient marketing activities. This is one of the necessary conditions to improve efficiency in the sector, stimulate market competitiveness and sustain economic development at bee-keeping firms.

Demand and supply is one of the main features of this industry's product markets. Changes in this association, and other variables on profitability and cost recovery, can greatly influence investment decision. As a result, capital flows between different branches of industry in the honey and apicultural product sector, various enterprises and regions in this subsector (price levels and market processes are affected directly).

Thus, the key drivers of production in this sub-sector are demand trends in relation to honey and beeswax sub-sectors by income status for both beekeepers and traders trading such products domestically and internationally.

Market conjuncture is the economic climate of a market with respect to products, services and labor and can be described in terms of demand–supply balance, price levels and trends, inventory levels as well as other economic factors. The situation in the honey market characterizes a conjuncture of its economic activity and is necessary to estimate efficiency of operation of the market on honey and other bee products in Republic Uzbekistan.

These measures constitute an analytical framework to implement efficient marketing strategies, increase market attractiveness and guide managers on sector development. Love also factors into the future prospects for the industry It involves consideration of such things as demand and supply volumes, inventory levels, price dynamics, producers' interests and sellers' and buyers' or consumers' behaviour in primary products and VAP. To have a comprehensive overview of the present status and future prospects of the beekeeping sector, a detailed market analysis is also required for products like honey and other high-value apicultural products. This analysis should focus mainly on the honey and bee-products production dynamics and key achievements in Surkhandarya, as the situation of this region reflects the state, needs, difficulties and opportunities for the whole sector.

The definition of the term "market for beekeeping products" may observance that it is a set of economic subjects dealing with production, processing and use of food

commodities and raw materials as well as supply and demand thereto related services. In this perspective, pollination services of food and ornamental species can be considered commodities. The singularity of this market is the necessity to evaluate and forecast the demand of pollination, as well as analyse producers' needs in this service.

Comprehensive research on all types of apicultural products requires reliable data on indicators such as the number and dynamics of bee colonies, honey and wax production and sales volumes, colony productivity, and the monetary and physical values of honey and wax output [8]. These indicators provide an empirical basis for analysing the functioning and market performance of honey as the beekeeping sector's core product (Table 1).

Table 1. Volume of Honey Production in the Republic of Uzbekistan and the Global Economy (thousand tons)

Countries	2010	2015	2020	2021	2022	2023	Change in 2023 Compared to 2010 (+ / -)
Uzbekistan	11,7	15,47	21,41	25,08	27,12	31,53	19,83
World	2620	2590	2430	2370	2270	2196,7	-423,33
Share in Global Production, %	0,45	0,60	0,88	1,06	1,19	1,44	

According to the data presented in Table 1, the Republic of Uzbekistan's share of global honey production increased from 0.45% in 2010 to 1.44% in 2023, demonstrating its growing significance in the global apiculture market [9].

However, between 2010 and 2023, global honey production declined by 3.3%, with an average decrease of 73.3 thousand tonnes. In contrast, Uzbekistan's honey market is one of the few supply chains that is predominantly formed by household producers, with industrial enterprises contributing relatively little. Specifically, between 2010 and 2023, approximately 98.2% of the total honey produced in Uzbekistan came from individual households rather than large agricultural enterprises.

This positive trend reflects the outcomes of the targeted measures defined in the 2022–2026 National Programme for the Development of the Livestock Sector and its Sub-branches of the Republic of Uzbekistan, which are aimed at achieving strategic growth objectives for beekeeping and related agricultural industries. [10].

Expanding the volume of apicultural production by applying intensive beekeeping technologies;

Implementing measures to improve breeding practices in the beekeeping sector, including importing and reproducing “Carpathian” and “Carnica” bee breeds adapted to Uzbekistan's climate as part of the “Protected Zones for Breeding Queen Bees” programme [11].

Commercialising the industry by systematically introducing agro-technological methods of crop pollination by bees;

Aligning honey quality standards with international requirements and developing measures to minimise the negative impact of agricultural chemicals used in crop farming on the beekeeping sector [12].

(4) Developing an 'Apiary Mapping Programme' to regulate the seasonal placement and migration of bee colonies in forestry and agricultural lands, thereby improving the coordination and efficiency of beekeeping operations.

It is also considered appropriate to recognise the effectiveness of ongoing efforts to review and abolish existing standards for artificial honey products, as well as to develop normative regulations that promote consumer awareness of the health benefits of natural honey and strengthen a culture of responsible consumption [13].

In terms of production dynamics, the Republic of Uzbekistan has recently achieved a total honey production volume of 31,530 tonnes. According to FAO statistics, Uzbekistan has consistently been ranked among the world's top twenty honey producers since 2020 (Table 2).

Table 2. Honey Production of the Republic of Uzbekistan Among Other Countries (thousand tons)

Countries	2010	2015	2020	2021	2022	2023	Change in 2023 Compared to 2010 (+ / -)
China	401	473	458,1	472,7	461,9	468,03	67,03
Turkey	81,12	108,13	104,1	96,34	118,3	120,45	39,33
Argentina	59	52,6	72,2	70,72	70,44	69,36	10,36
Russia	51,54	67,74	66,4	64,53	67,01	66,59	15,05
Uzbekistan	11,7	15,47	21,41	25,08	27,12	31,53	19,83

China have been keeping its first place in honey output of the world for many years, and has a total output of 468.03+10³t. in the meantime, Turkey is another country that has increased honey production drastically by 39.33 thousand tons between 2010 and 2023 from 81.12 to 120.45 thousand tons respective. In the same way, honey production in Argentina went up some 59 thousand tonnes in 2010 to 69.36 thousand tonnes in 2023 [14]. In the Republic of Uzbekistan, good dynamics are shown – honey production is raised from 11.7 thousand ton in 2010 to 31.53 thousand tons in 2023. Although this number is still roughly half as much as in Russia and Argentina, Uzbekistan moves to be progressively listed in the top 10 honey pr

Table 3. Honey Production Levels Across the Regions of the Republic of Uzbekistan (tons)

№	Regions	2010	2015	2020	2021	2022	2023	Change in 2023 Compared to 2010 (-, +)
1	The Republic of Karakalpakstan	500,7	703,2	916	1000	1265	1470	969,3
2	Andijan Region	757,1	925,9	1385	1550	1631	1896	1138,9
3	Bukhara Region	1186,1	1450,7	2170	2400	2495	2900	1713,9
4	Jizzakh Region	945,1	1155,8	1729	1876	2010	2336	1390,9
5	Qashkadarya Region	1113,4	1361,7	2037	2200	2349	2730	1616,6
6	Navoiy Region	804,1	983,4	1471	1650	1726	2006	1201,9
7	Namangan Region	1351,8	2685,9	2473	4500	4832	5617	4265,2
8	Samarkand Region	1047,3	1280,9	1916	2000	2216	2576	1528,7
9	Surkhandarya Region	981,2	1200,0	1795	1950	2083	2421	1439,8
10	Syrdarya Region	311,6	414,1	570	600	745	866	554,4
11	Tashkent Region	789,8	966,0	1445	1550	1697	1973	1183,2
12	Fergana Region	953,3	1165,9	1744	1900	2027	2356	1402,7
13	Khorezm Region	960,9	1175,2	1758	1900	2042	2378	1417,1

According to the data in the table, Namangan Region indeed has the highest indicator, having increased by 4,265.2 tons since 2010 to reach 5,617 tons in 2023. Bukhara Region is in second place, reaching 1,186.1 tons in 2010 and increasing by 1,713.9 tons compared to the base year to reach 2,900 tons in 2023. Focusing on honey production in the Surkhandarya Region, which was selected as the object of study, it can be seen that it was at a medium level compared to all regions. Specifically, production was 981.2 tons in 2010 and 2,421 tons in 2023, representing an increase of 1,439.8 tons compared to 2010 [15].

Increasing the volume of production of such goods will facilitate the export of surplus products beyond local consumption in future, thereby enhancing honey export potential.

4. Conclusion

Commercial honey enterprises tend to be highly competitive and efficient, well positioned to - 102- challenge the world's leading exporters of honey in international markets but a number of critical barriers exist.

This present study highlighted honey market as a high, standard raw material and similarly between 2010–2023 the global prices for honey systematically decreased significantly. From 2010-15 very little honey was bought for export relative to total production, yet between 2020-23 the purchase price will more than double.

Salaries for local official: This could also be due to low prices for honey which has caused a low government income. Addressant ce problème il est nécessaire d'augmenter les ventes au détail du miel et des petits producteurs de suivre l'exemple sur la construction de marques. It would be nice to see some marketing on honey production and sales. And it should be noted that now the Surkhandarya honey has a certain plus in the minds of consumers about quality. Without a clear strategy to enter new markets with pre-packed product, many opportunities would be redundant.

Furthermore, the market for organic honey is growing and demand is increasing each year – it's a market too significant to ignore.

If so, it could cause the two canola products of the same grade to have a very different market price and may at that time greatly enhance the export capability and product pricing power for local honey producers under natural traits and high standard product, while at global category fall down sharply in terms of market price. These studies have indicated a novel approach in the collection of honey. In this model, the idea is that wild bees collect honey from hectares where an industrial apiary would be unfeasible.

At the model level bees keep a quarter of their honey output and three quarters are kept to grow the hive. This halts bee migration. This is a solution that is consistent with target markets sensitive for animal welfare.

The stiff competition on the honey market and sometimes beekeepers are forced to sell their products at rock bottom prices. This seems to be the reason why honey is actually cheaper than sugar on a wholesale level

State support for beekeeping should also include the following: scientific research; conservation and improvement of bee genotypes; veterinary and sanitary protection; tax benefits, soft loans, investments for the development of apiculture as a branch of industry; targeted subsidies and other financial tools aimed at supporting this area summing up to train professionals specializing in apitherapy that systematic measure stimulate production.

Beekeepers in developed countries are said to rely less on honey sales and more on fees from pollinating industrial crops, some researchers say. For example, bees

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