IRSTI 68.39.43, 71.37.05 https://doi.org/10.26577/JGEM202577210

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CURRENT CONDITION AND DEVELOPMENT PROSPECTS OF APITOURISM IN KAZAKHSTAN

This article discusses apitourism, which is one of the promising areas for the development of tourism in Kazakhstan. Apitourism is a type of tourism associated with bees, with their products and their tasting and consumption. Apitourism is one of the types of tourism that is closely linked to the ecosystem of our world. By developing apitourism, we not only learn and use the wellness potential of bee products, but also instill love and care for nature, as well as develop the qualities of tourists' responsibility to the environment. The purpose of this study was the prospect of the development of this type of tourism, as well as the possibility of its development in Kazakhstan. As a result of the research, a comparative analysis of international experience in apitourism development was conducted, along with a sociological survey, and a SWOT analysis assessing the prospects for the development of apitourism in Kazakhstan. To move beyond general recommendations about adopting international practices, several concrete steps are proposed. First, pilot tourist routes should be developed in regions with strong beekeeping potential, such as East Kazakhstan and Zhetisu. These routes could include the installation of small apiary houses, designated sanitary zones, and informational stands to educate visitors. A key focus should be placed on human capital: launching short-term training courses and certification programs for beekeepers, tour guides, and agro-tourism operators at universities and specialized training centers. Additionally, an online platform could be created to facilitate experience-sharing between beekeepers and travel agencies. Drawing from international best practices, it would also be beneficial to send specialists abroad for practical training in beekeeping and tourism integration.

Key words: beekeeping, honey, apitourism, apiary, Kazakhstan, SWOT-analysis

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Қазақстандағы апитуризмнің қазіргі жағдайы мен даму перспективалары

Бұл мақалада Қазақстанда туризмді дамытудың перспективалы бағыттарының бірі болып табылатын апитуризм қарастырылған. Апитуризм бұл аралармен, олардың өнімдерімен және ол өнімдердің дәмі мен тұтынылуына байланысты туризм түрі. Апитуризм – біздің әлемнің экожүйесімен тығыз байланысты туризмнің бір түрі. Апитуризмді дамыта отырып, біз ара өнімдерінің сауықтыру әлеуетін біліп қана қоймай, табиғатқа деген сүйіспеншілік пен қамқорлықты, сондай-ақ туристердің қоршаған ортаға деген жауапкершілік қасиеттерін дамытамыз. Бұл зерттеудің мақсаты туризмнің осы түрін дамыту перспективасы, сондай-ақ оны Қазақстанда дамыту мүмкіндігі болды. Зерттеу нәтижесінде апитуризмді дамытудағы халықаралық тәжірибеге салыстырмалы талдау, сонымен қатар әлеуметтік сауалнама және Қазақстандағы апитуризмнің даму перспективаларын бағалайтын SWOT талдауы жүргізілді. Халықаралық тәжірибені игеруге қатысты жалпы ұсыныстардан нақты іс-шараларға көшу үшін бірқатар практикалық қадамдар ұсынылады. Ең алдымен, омарта шаруашылығының әлеуеті жоғары өңірлерде, мысалы, Шығыс Қазақстан мен Жетісу аймақтарында пилоттық туристік бағыттарды әзірлеу қажет. Бұл бағыттар шағын омарта үйлерін орнатуды, санитарлық аймақтарды ұйымдастыруды және келушілерді

ақпараттандыруға арналған стендтерді қамтуы мүмкін. Адами капиталға ерекше көңіл бөлінуі тиіс: университеттер мен мамандандырылған оқу орталықтарының базасында омарташыларға, туристік гидтерге және агротуризм операторларына арналған қысқа мерзімді оқыту курстары мен сертификаттау бағдарламаларын іске қосу ұсынылады. Сонымен қатар, омарташылар мен туристік агенттіктер арасында тәжірибе алмасуға арналған онлайн-платформа құру мүмкіндігі қарастырылады. Халықаралық тәжірибеге сүйене отырып, омарта шаруашылығы мен туризмді біріктіру саласында мамандарды шетелге тағылымдамадан өтуге жіберу де ұсынылады.

Түйін сөздер: ара шаруашылығы, бал, апитуризм, омарта, Қазақстан, SWOT-талдау.

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Текущее состояние и перспективы развития апитуризма в Казахстане

В данной статье рассмотрен апитуризм, который является одним из перспективных направлений для развития туризма в Казахстане. Апитуризм это вид туризма связанный с пчелами, с их продукцией и их дегустацией и потреблением. Апитуризм один из видов туризма, который тесно связан с экосистемой нашего мира. Развивая апитуризм, мы не только познаем и используем оздоровительный потенциал пчелиной продукции, но и прививаем любовь и заботу к природе, а также развивать качества ответственности туристов к окружающей среде. Целью данного исследования прослужила перспектива развития данного вида туризма, а также возможность его развития в Казахстане. В результате исследования был проведен сравнительный анализ международного опыта развития апитуризма, а также социологический опрос и SWOT-анализ, оценивающий перспективы развития апитуризма в Казахстане. Чтобы перейти от общих рекомендаций по заимствованию международного опыта к конкретным действиям, предлагается ряд практических шагов. Прежде всего, необходимо разработать пилотные туристические маршруты в регионах с высоким пчеловодческим потенциалом, таких как Восточный Казахстан и Жетысу. Эти маршруты могут включать установку небольших пасечных домиков, обустройство санитарных зон и размещение информационных стендов для просвещения посетителей. Особое внимание следует уделить человеческому капиталу: запуску краткосрочных обучающих курсов и сертификационных программ для пчеловодов, туристических гидов и операторов агротуризма на базе университетов и специализированных учебных центров. Кроме того, возможно создание онлайн-платформы для обмена опытом между пчеловодами и туристическими агентствами. С опорой на международную практику также рекомендуется направлять специалистов за рубеж для прохождения стажировок в области пчеловодства и интеграции туризма.

Ключевые слова: пчеловодство, мед, апитуризм, пасека, Казахстан, SWOT-анализ.

Introduction

Recently, tourism has been responding to the huge interest of people in ecology and agrotourism. Given the specifics of the regions of Kazakhstan, we can say that this is the main motive for organizing the tourist flow. After the pandemic, Kazakhstan has an opportunity to develop domestic tourism. Basically, tourists are looking for active ways to spend their time, but we need to understand that physical activity on tours is not important for all tourists, and the cognitive part of it is also important. Based on this, new and interesting types of tourism appear.

In recent years, with the development of new trends in tourism, apitourism has become an increasingly popular activity in Kazakhstan. Agriculture continues to be one of the key sectors of Kazakhstan's economy. The development of rural tourism is particularly relevant due to its significant impact on both economic growth and social development. Among the emerging areas of tourism demand is rural tourism, with promising opportunities for growth, including niche segments such as apitourism.

Beekeeping plays a crucial role in maintaining biodiversity, supporting ecosystems through pollination, and contributing to national economies. In many countries, including Kazakhstan, the beekeeping sector supports rural livelihoods and helps reduce poverty by generating new employment opportunities and providing additional, stable income sources for local communities. As such, apitourism

has the potential to become a catalyst for socio-economic development in rural areas while promoting environmental awareness and cultural preservation (Ilasheva et al., 2014).

Theoretical Framework

Apitourism is a type of tourism related to beekeeping. It is known that beekeeping appeared and developed since ancient times, starting with the rock paintings of the Stone Age in Europe, where it can be clearly seen the drawing of people and bees. Bees existed a long time ago and existed without human involvement. Scientists have proved that bees lived with dinosaurs about 135 million years ago (Frisch, 1980). In Kazakhstan, the development of beekeeping began in the Ural Mountains. As it is known, there was no beekeeping further than the Ural Mountains at all. The beginning of the development of beekeeping is considered to be 1786. This date is indicated by many researchers. S. Baryshnikov, V. Vorozhbitov, R. Vakhitov, V. Danilin, E. Pankratieva and S. Chernykh played an important and main role in the development of beekeeping. They were researchers of the history of beekeeping in the Southern Altai.

The first person who was the founder of beekeeping was Arshenevsky Nikolai Fedorovich. But the idea to start bees and develop beekeeping in the Eastern region of the country belonged to Academician Pallas, who worked in the Rudny Altai for a long time. He believed that this particular area was ideal for breeding bees and was surprised by the abundance of honey-bearing vegetation. And for the first time bees were brought to the village of East Kazakhstan, in Bobrovka. However, it was not possible to deliver the first deck of bees on the first attempt. The first attempts failed because of the cold weather. And subsequent attempts due to excessive honey collection. After the successful importation of bees, which gave several swarms, the development of beekeeping began to develop rapidly in Eastern Kazakhstan. Thus, since the beginning of the XIX century, the beginning of the development of collective beekeeping in Kazakhstan has been connected (Temirbayeva et al., 2023).

As already known, the stages of beekeeping development are divided into several classes: wild (collecting honey from wild bees in tree hollows) beekeeping, kolodnyi beekeeping (keeping bees in non-collapsible logs) and framework beekeeping.

Currently, the main problem of the development of beekeeping is the incidence and death of bees, which directly affects the maintenance of the entire ecosystem of the country. In addition, uncontrolled importation of bees from abroad is a problem, which leads to hybridization of the local bee population. This affects the purity and strength of healthy bees. For sustainable development, it is important to take into account the resolution of urgent problems in order to ensure environmental safety in Kazakhstan.

Globally, there is a growing concern about the mass mortality of bees, a phenomenon that has become increasingly evident in recent years. The causes of this decline are multifaceted and include a range of biological, environmental, and anthropogenic factors. Among the most significant contributors are diseases such as varroatosis, caused by the Varroa mite, as well as viruses like the wing deformity virus and chronic paralysis. Other health threats to bee populations include filamentovirosis, acarapidosis, nosematosis, critidiosis, ascospherosis, and amoebiosis, as well as braulosis and European foulbrood.

In addition to these diseases, the widespread use of pesticides and the cultivation of genetically modified honey plants have been identified as major stressors on bee health. These factors, in combination with habitat loss and climate change, contribute to the alarming decline in bee populations, which in turn poses a significant threat to biodiversity and agricultural productivity (Klochko and Lugansky, 2011).

Based on the factors discussed, apitourism emerges as a promising solution to the challenges faced by the beekeeping industry. By promoting awareness of the importance of bees and supporting sustainable practices, apitourism not only offers an educational and engaging experience for visitors but also contributes to the preservation of bee populations and the overall health of ecosystems.

Table-1 presents the relevance of the development of apitourism is several main aspects.

The picture of the development of apitourism in Kazakhstan consists of a promising opportunity to improve the country's economy, preserve nature and culture, and improve the quality of life of the local population.

It is also worth paying attention to the factors in Figure 1 that affect the development of apitourism and beekeeping in general.

Table 1 – Aspects of apitourism development

Aspect	Description
Natural conditions	A diverse ecosystem and a rich honey-bearing flora, which has a beneficial effect on the development of beekeeping and product productivity
Cultural heritage	Kazakh beekeeping traditions can attract tourists to rural areas, supporting the development of agricultural tourism
Environmental sustainability	Apitourism contributes to the conservation of biodiversity and the maintenance of environmental sustainability
Healthy lifestyle	Apitourism helps to popularize healthy lifestyle among tourists and the local population
Economic development	The development of apitourism stimulates small businesses, creates jobs, which has a positive effect on the country's economy
Medicinal properties	Apitourism combines apitherapy and other therapeutic procedures based on bee products
A variety of travel services	The inclusion of apitourism in tourist programs offers new activities such as beekeeping workshops, honey tasting, beauty treatments, meditation and relaxation in apiaries, contributing to the spiritual and physical rest of tourists

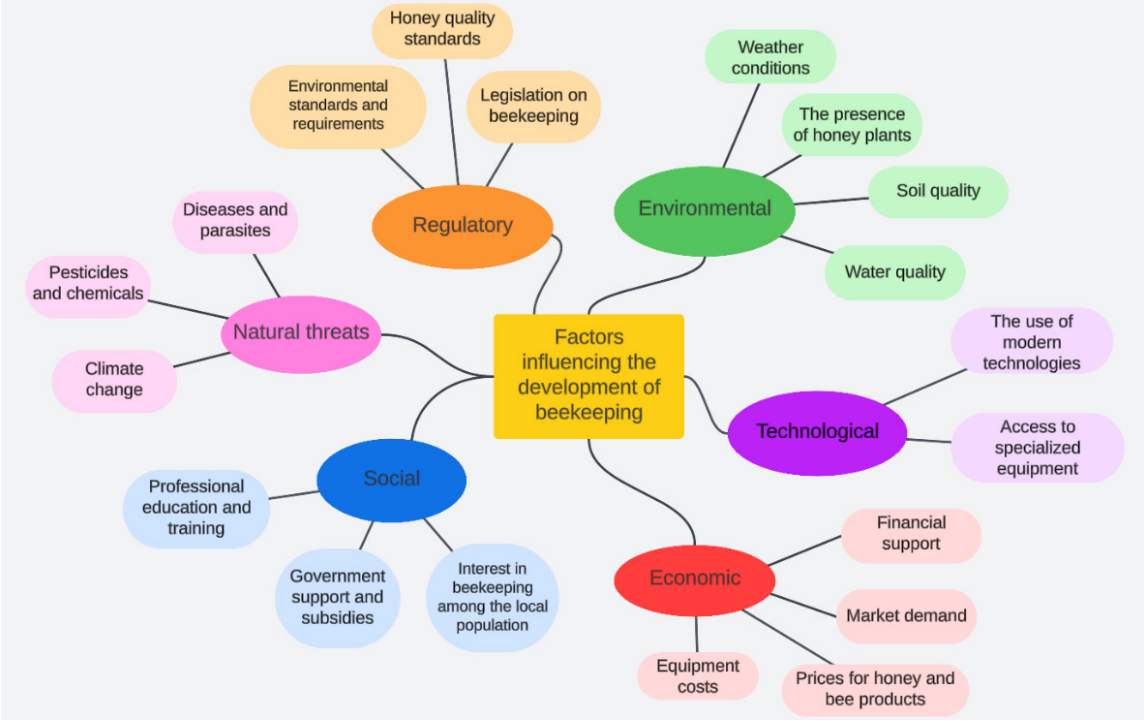

Figure 1 – Factors influencing the development of beekeeping

Kazakhstan has a continental climate with sharp temperature fluctuations (Karymsakov et al., 2022). This can have a negative impact on beekeeping, especially in winter. For example, severe frosts can lead to freezing of bee colonies. Kazakhstan is also rich in a variety of honey plants, such as saffron, turnip, sweet clover and clover. However, in some regions (for example, in steppe zones), a lack of flora may limit the collection of honey.

If we talk about the soil of the country, the soils in Kazakhstan differ in their properties, which affects the growth of honey plants. In some regions, such as Zhetisu (Semirechye), the soils are more fertile, which contributes to a higher yield of honey. Since water is a critically important resource for bees, Kazakhstan has problems with water quality in some regions due to pollution and lack of sources. This can negatively affect the health of bees.

Kazakhstan has various government support programs aimed at the development of agriculture, including beekeeping. For example, in Kazakhstan there are several programs to support beekeepers, such as Bastau Business, organized by the National Chamber of Atameken, the Enbek program, which provides grants, loans for businesses in rural areas, the business roadmap 2025 (Nacional'naja palata predprinimatelej Respubliki Kazahstan «Atameken»), supporting the export of products, including honey and bee products. However, the level of financing may not be sufficient for large farms.

The demand for honey in Kazakhstan is growing, especially for organic products. However, competition with imported goods and low honey prices may limit the income of local beekeepers. Honey prices in Kazakhstan vary depending on the region and the quality of the product. In recent years, there has been an increase in prices for organic honey, which can be an incentive for beekeepers.

The use of sufficient equipment is an important factor for the development of beekeeping. Investments in modern beekeeping equipment can be significant. The lack of financial resources for small-scale beekeepers may limit access to high-quality equipment.

Beekeeping has historically developed in specific regions of Kazakhstan, forming part of the country's rural and agricultural traditions. In recent years, however, there has been a notable resurgence of interest in apiculture, especially among young people, driven by a growing awareness of ecological sustainability, entrepreneurship, and rural development opportunities.

Also, there is a lack of educational programs in the country aimed at teaching modern beekeeping methods, which makes it difficult for novice beekeepers to access knowledge. Such training programs are provided by the Beekeeping Union of Kazakhstan Bal-Ara. All training programs can be found on the official website of the Beekeeping Union.

Level of knowledge and skills: The education and experience of beekeepers vary. Lack of access to information and training can be an obstacle to professional development. Also, Kazakhstan has legislation regulating beekeeping, but its implementation may be ineffective due to lack of control.

The country has environmental regulations regarding the use of pesticides and other chemicals. However, monitoring compliance with these standards may not be sufficient. This is indicated in the law on the approval of technical regulations on the safety of plant protection products (pesticides). Due to incorrect compliance with this law, the death of bees from pesticides is recorded in Kazakhstan. The use of pesticides in agriculture can threaten the health of bees. There is growing concern about the impact of chemicals on the ecosystem. Also, diseases such as nosematosis and varroatosis are common in the country, which negatively affect the health of bees. Measures are needed to control and prevent these diseases (QazaqGeography, 2023).

In this study, the following works by Sarafanov A.G., Sarafanov A.A. were important, related to the study of apitourism as a promising type of rural recreation and business (Sarafanov and Sarafanov, 2015), the work of the hereditary beekeeper of Kazakhstan Guslyakov M., who described how the development of beekeeping in Kazakhstan began (Guslyakov, 2012). The work of Ilasheva et al. (2014) and Aliyeva et al. (2019) talks about the current state of beekeeping in Kazakhstan, which helps to understand the prospects for the development of apitourism in general.

The presented study examines the current state and prospects of apitourism development in Kazakhstan. The main focus is on identifying the factors contributing to and constraining the development of this area of tourism, as well as assessing its potential as an innovative form of rural tourism. The purpose of the study is to comprehensively analyze the current situation and determine the directions for further development of apitourism, taking into account domestic demand, infrastructural opportunities and international experience.

Materials and methods

The materials for the study were collected and studied from various sources, as well as from research reports of the Beekeeping Department of the Kazakh Research Institute of Livestock and Fodder Production (Almaty, Kazakhstan).

The theoretical basis of the research is based on existing scientific approaches to the study of apitourism and related areas – ecotourism, agrotourism and sustainable tourism. The text substantiates the application of an interdisciplinary approach, including environmental, economic and socio-cultural aspects. The analysis of the literature made it possible to identify the main scientific positions, as well as to identify the research niche in which the present study is located.

The empirical part presents the results of a sociological survey aimed at studying the perception

and interest in apitourism among the population. The sample included respondents from various regions of Kazakhstan, mainly urban and rural residents aged 20 to 60 years. The target sampling method was used. Data processing was carried out using Microsoft Excel, frequency distributions and relative indicators were calculated, which allowed us to obtain a clear picture of the preferences of target groups.

The analysis of the results showed that the greatest interest in apitourism is shown by young and active consumers interested in environmentally friendly recreation and educational tourism. The SWOT analysis allowed to systematize the internal and external factors influencing the development of apitourism. Strengths (e.g. availability of natural resources, cultural heritage of beekeeping), weaknesses (weak infrastructure, low awareness), as well as potential opportunities and threats were identified.

Data collection through an online survey was conducted between February and April 2024. Literature analysis and SWOT analysis were performed in the spring of 2024.

Survey – the study involved 150 respondents from different regions of Kazakhstan representing the potential target audience of apitourism. The questionnaire includes questions about awareness of apitourism, motives for attending the fair, preferences and expectations from apitourism programs.

The survey was conducted online using Google Forms and distributed by word of mouth: The participants sent the link to each other via messengers and social networks. This led to the use of the convenience sampling method. The survey was conducted among various social groups, including young people, working professionals, families with children and pensioners. The data were processed using methods of statistical analysis, which allowed to reveal the key trends and barriers in the development of apitourism.

The questions presented in the survey help identify a potential target audience and help raise awareness about apitourism. The first 3 questions of the survey include data on the age and gender of the respondents. In the first question, we determined the age of the respondents. The percentage of respondents aged 16-25 was 15%. The number of respondents aged 26-35 years was 35%. The majority of respondents, i.e. 39%, were respondents aged 35 to 45 years, and 11% were a group of respondents aged 46 years and older (Fig.2).

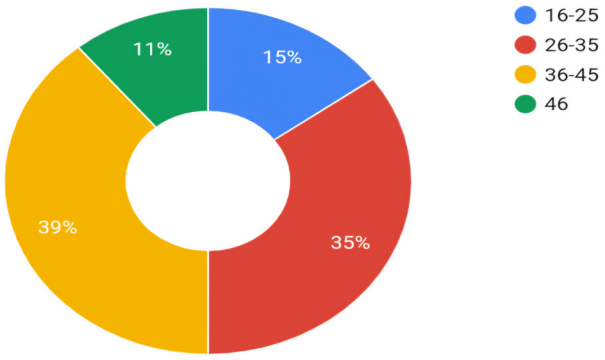

Figure 2 – Age of target groups of consumers

In the next question, we determined the gender of the respondents. Women took part in the survey the most, i.e. 75%. The remaining 25% were men. Based on this, women show more interest than men (Fig.3).

In the next part of the questionnaire, respondents were asked the question: “are you familiar with the new and young direction of tourism, that is, with apitourism?” Most of the respondents, that is, 78%, did not know what apitourism was, and 22% of these people were aware (Fig.4).

To the question “How often do you visit apiaries or beekeeping farms?”, 90% of respondents answered never, 7% replied that they visited the apiary once, 2% visited several times a year, and only 1% of respondents visit monthly (those who are closely associated with beekeeping), (Fig.5).

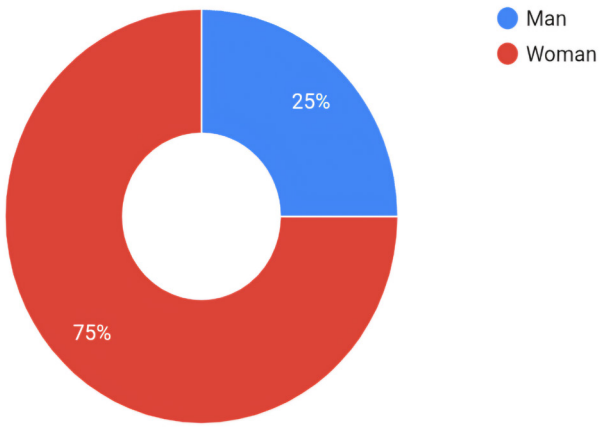

Figure 3 – Gender of possible target groups of consumers

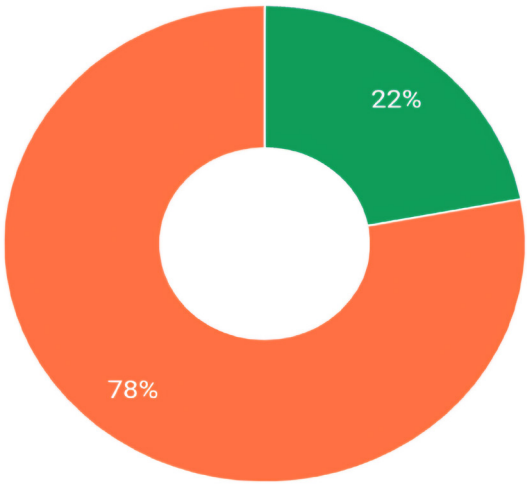

Figure 4 – Respondents' responses on awareness of apitourism

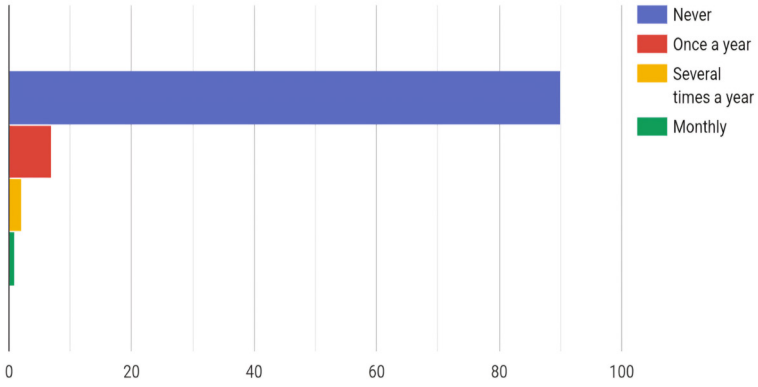

Figure 5 – Frequency of tourists visiting apiaries

To the question "What are your expectations from visiting the apiary?" 32 people replied that they would like to gain new knowledge, 26 people replied that it was important for them to relax and enjoy nature, 19 people are interested in tasting bee products and the remaining 73 people would like to participate in the beekeeping process themselves (Fig.6).

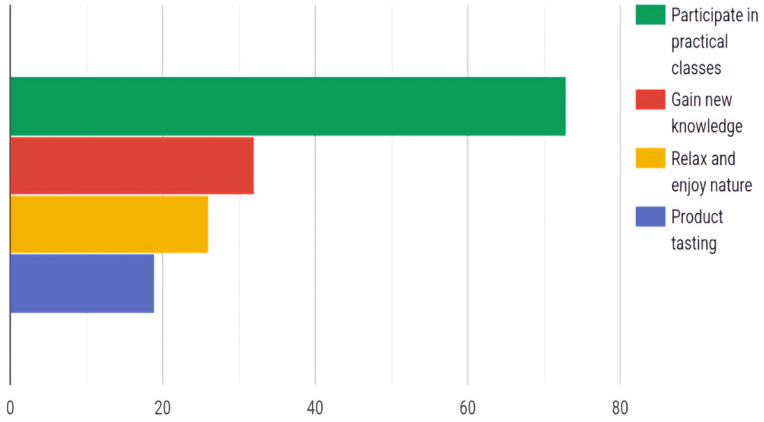

Figure 6 – Possible interests of respondents during visits to apiaries

Thus, we can draw a conclusion based on the survey. Therefore, it is necessary to take into account the directions that are more interesting to people, in which direction to move when solving problems with the development of apitourism in Kazakhstan. Knowing that women are mainly interested in such excursions, it is necessary to take into account that they will be interested in the beneficial properties of bee products and their use in the therapeutic aspect.

Age structure of the target audience – The majority of respondents (39%) are people aged 35 to 45 years, which indicates that apitourism may be in demand among working adults who strive for health and environmentally friendly recreation. Young people (16-25 years) show less interest (15%), which may be due to lack of information and emphasis on other types of active recreation.

Gender differences – Women made up 75% of the total number of survey participants, which may indicate a high interest in health and cosmetic properties of beekeeping products. This opens up prospects for the development of the wellness direction in apitourism, including apitherapy procedures, honey SPA programs and health tours.

Awareness of apitourism – 78% of respondents heard about apitourism for the first time during the survey, which confirms the need to actively promote this direction among the population through marketing campaigns, social networks and collaboration with tour operators.

These data testify to the need to include interactive programs in apitourism tours, such as beekeeping master classes, tastings of various types of honey, lectures on the ecological importance of bees. 90% of the respondents have never been to apiaries, which demonstrates a great potential for the development of apitourism. To attract tourists, it is possible to organize trial excursions, thematic honey festivals, and also cooperate with agricultural cooperatives.

Comparative analysis of international experience – studied examples of successful development of apitourism in Germany, Slovenia, Canada and other countries for adaptation to the Kazakh market.

Methodological approaches (SWOT analysis, sociological survey) were developed within the framework of grant No. BR21882122 and initially tested in the West Kazakhstan region. In this work, they were adapted and expanded to assess the prospects of apitourism throughout Kazakhstan.

Results and discussion

Apitourism destinations. Apitourism, as a type of tourism and a young tourist destination associated with beekeeping, with bee products, which are known for their medicinal properties (Klyap, 2011).

Apitourism is rapidly gaining momentum in many countries, such as Germany, France, Italy, Canada, Slovenia, USA, Australia, New Zealand, China, Spain, Turkey, Georgia.

In Germany, bees are given special importance. 80% of beekeepers have about 10-12 beehives, but only 2% of them are on a professional basis. Apitourism is a special form of ecotourism associated with the observation and study of bees. This particular area is developing in Germany, given the growing interest of tourists and locals in a sustainable lifestyle. In Germany, it is especially important to note the long history and tradition of beekeeping, which dates back several centuries. The country has seen an increase in the number of beekeepers and a growing interest in bee products. Due to problems with the extinction of bee colonies in 2018, Germany supported the decision of the European Union to ban the use of neonicotinoids, a group of pesticides harmful to bees. Next, in 2021, the government of the country decided that by 2024 the use of herbicides to control weeds, which negatively affect the health of bee colonies, should be completely stopped (Bogdanova and Bazhin, 2021).

Germany takes care of the health of bees, thereby developing programs to protect them. For example, "Deutschland summt!" ("Germany is buzzing!"), which seeks to raise awareness of the problem of bee extinction so that more and more people begin to take measures to save them. "Bienenretter" ("Bee Saviors") is a project designed to inform the public about the importance of bee survival (Kak Germanija zabotitsja o pchelah, 2021).

Many farms in Germany have started offering tours and workshops related to apitourism. There are also different approaches to the development of apitourism in different regions of the country. For example, tours of well-kept apiaries are popular in Bavaria, while in the northern part of Germany honey production is carried out from various local plants. Festivals and fairs related to honey and beekeeping are held in Germany on a regular basis, which contributes to an increase in the tourist flow. There are about 130,000 beekeepers in Germany, caring for about 870,000 bee colonies. Most apiaries are small and medium-sized, with no more than 25 beehives, and only 1% of beekeepers own more than 50 beehives. The annual honey production is about 20-30 kg per hive, which gives a total of about 15,000 – 25,000 tons of honey. This covers only about 20% of the national demand for honey, as Germans consume about 1.1 kg of honey per person per year. Germany imports the rest of the honey.

The country also actively supports the protection of both honeybees and wild bees, of which there are about 550 species. Local residents and organizations are often involved in initiatives to create flower strips in fields and install "bee hotels" to enrich the habitat of these insects.

Slovenia is considered to be the European capital of apitourism. There are more than 12 thousand apiaries located here. Slovenia is famous for the variety of apitourism services provided. starting from a relaxing honey massage and inhalation of the hive air and ending with an overnight stay in one of the bee farms. This country is known for its rich beekeeping heritage, which makes it more attractive for tourists. Slovenia also has many projects related to beekeeping. This country is famous for its high-quality honey and apitourism services. Festivals dedicated to honey, bees and ecology are held in Slovenia. There is also a Baroque manor house in the old part of Radovljica, where the Beekeeping Museum is located, where you can learn about the rich history of beekeeping in Slovenia, about the life of the autochthonous breed of bees "carnica", about the phenomenon of Slovenian craft – painted front boards for beehives. This type of excursion will be interesting not only for adults, but also for children. Children will enjoy classes in various workshops, they will be happy to watch how bees work in the hive (Pchelovodstvo Slovenii – primer dlja pchelovodnyh derzhav, 2020).

An apiary located in the Slovenian resort town of Laško offers visitors unique wellness experiences, including relaxation and detoxifying massage sessions, accompanied by the calming ambient sound of buzzing bees – an example of how apitourism can integrate health, ecology, and education. There is also a New Place in the city where tourists will be treated to homemade apiproducts – including mead and gingerbread. In addition to goodies, people can visit the pottery workshop, watch how clay pots for honey are made in the shape of a bear and a bee. About 250 species of medicinal herbs grow in Slovenska Gorica, among which there are many honey plants. A place where people can try the healing properties of these plants.

Beekeeping has significant cultural and economic importance in Slovenia. As of 2022, there are more than 11,000 beekeepers in the country, who maintain over 200,000 bee colonies. These beekeepers are members of 206 registered beekeeping societies. There are about 30 registered queen breed-

ers among beekeepers, who produce about 40,000 queens annually. In Slovenia, bee breeding control is actively practiced, which helps to preserve the unique characteristics of carnica, a local subspecies of bees known for their peacefulness and high productivity. It is also worth noting that beekeeping in Slovenia has been included in the UNESCO Intangible Cultural Heritage List, which underlines its importance for the country's culture and support for the sustainable development of ecosystems. Statistics will continue to be generated for 2023 and 2024, but the number of beekeepers and families is expected to remain stable as interest in sustainable beekeeping and honey production in Slovenia continues to grow. If you need more recent data or specific information by year, I recommend contacting official sources such as the Association of Beekeepers of Slovenia (Smirnova, 2020).

Apitourism is becoming a more popular destination in Canada. In Vancouver, apiary tours, honey production workshops, and beekeeping courses are held. Fairs of honey and other bee products are often held in Toronto. Interestingly, there are guided tours on the roofs of buildings where bees are kept. Excursions to apiaries in the suburbs and a seminar on the role of bees in the ecosystem are held in Quebec City. Visits to local farms are popular in Ontario. Each of these cities emphasizes the importance of beekeeping and apitourism. There are 8,400 registered beekeepers in Canada, who maintain a total of 672,000 bee colonies producing 34,241 tons of honey annually. The cost of the collected honey is an average of 176 million dollars. Half of the "liquid gold" produced is exported abroad, mainly to the United States. The most interesting thing is that it is in Canada that there is an opportunity to try varieties of honey (cypress and maple), which are most likely not found in European countries.

Beekeeping is actively developing in Canada, and the statistics of this sector are impressive. There are about 10,000 beekeepers in the country who manage more than 600,000 bee colonies. The average number of hives per beekeeper is about 60, but this number also includes hobbyists who may have only a few hives.

Canadian beekeepers annually harvest about 30-40 thousand tons of honey, and a significant part of this volume, about half, is exported to the United States. The average cost of honey on the market has been growing in recent years, which contributes to the interest of new beekeepers in this activity (Statistical Overview of the Canadian Honey and Bee Industry, 2023).

Kazakhstan can learn a lot from the beekeeping experience of countries such as Germany, Slovenia and Canada. First, it is important to pay attention to hive management methods, which include optimizing conditions for bees, which helps to increase productivity. In these countries, modern technologies are widely used, such as monitoring the condition of hives and automating processes, which can improve the care of bees and improve their health.

Secondly, the development of educational programs and the exchange of experience between beekeepers contributes to professional development. For example, seminars and practical classes are actively held in Slovenia, which allows local beekeepers to introduce new methods and technologies.

In addition, it is important to develop marketing and promotion of bee products based on the experience of Canada, where attention is focused on the quality of honey and other products, which helps to find new markets. The introduction of quality standards can also play a key role in increasing the competitiveness of Kazakhstani honey in the international arena.

Finally, it is worth considering environmental aspects such as biodiversity support and sustainable agriculture, which is an important part of beekeeping in Germany and Slovenia. The introduction of these practices will help Kazakhstan develop beekeeping more efficiently and sustainably.

The development of agriculture in Kazakhstan accounts for about 2.5% of the country's GDP in 2024, and apitourism can become a driver of its growth. Compared to 2023, the share of agriculture in the country's GDP has decreased. In 2023, the GDP for the agricultural sector amounted to about 2.8% (Subsidirovanie konechnogo produkta pchelovodstva, 2023).

In Kazakhstan, most of the support is provided by the state, for example, a law was adopted in 2002. This Law regulates relations in the field of production of bee products, protection, use and reproduction of bees, their effective use for pollination of crops and all pollinated flora, creation of conditions for increasing the productivity of beekeeping, as well as crop production, ensuring guarantees of respect for the rights and interests of individuals and legal entities engaged in beekeeping (O pchelovodstve, 2024).

Kazakhstan has great potential for the development of beekeeping, with the subsequent development of capitalism. Table 2 shows the natural potential for the development of beekeeping in the regions of Kazakhstan.

Table 2 – Potential for the development of beekeeping in the Kazakhstan regions

Name of the region	Information about the area
South Kazakhstan	There are many honey-bearing plants (goose onions, willows, curly aardvark, red cherry, later – tanned eremurus, wild onions, ferula, Semenov maple, hawthorn, ash, Turkestan motherwort.), the climate is favorable for bees. The mountains and the valley provide a variety of vegetation. Tugai honey lands of the Syrdarya River floodplain give bribes to bees from April to October. Alluvial soil deposits and excessive soil moisture, high temperatures and the associated strong evaporation create conditions for the growth of rich moisture-loving vegetation.
Western Kazakhstan	Deserts, semi-deserts, and steppes are located in the western part of the country. There are relatively few honey plants in this region. For the further development of beekeeping, it is necessary to sow honey crops. Most of the apiaries in Western Kazakhstan are gradually switching to nomadic beekeeping. For apiaries in this region, they are first taken to gardens, then to mustard. Bee colonies are placed in a forest belt.
East Kazakhstan	This region has a rich flora for the development of beekeeping. The nature of the East and Altai is also diverse. Most of the territory is occupied by forests, honey bushes and herbs that can produce from 4 to 6 thousand tons of honey. It can be noted that the main honey collection is provided by large thickets of acacia. The foothills and mountains are covered with various grasses, but there are thickets of willow bushes. The peculiarity and advantages for the development of beekeeping are that there are no strong winds here, the winter is warmer than in the steppe zone, but it is long. There is a lot of precipitation, which has a beneficial effect on the flora. There are many streams and rivers in the mountains.
Central Kazakhstan	In this part of Kazakhstan, the low Ulutau Mountains and the Central Kazakhstan melkosopochnik are located. Several beehives should be located at beekeeping points, if there is a lot of precipitation, then you can get from 5 to 10 kg of honey. Pasture-based animal husbandry is mainly developed in this area, but cultivated honey plants grow little.
Northern Kazakhstan	There are a lot of meadows and fields in the North Kazakhstan region, which provide a huge food supply. Especially for bees, there are good areas where grasses and flowers grow.

As mentioned earlier, Kazakhstan has great potential and natural resources for the development of beekeeping and apitourism. According to the Bureau of National Statistics of the Republic of Kazakhstan, as of the end of 2022, there were 218.4 thousand bee colonies in the republic, which is 10% more than in 2021, when there were 198.6 thousand. In 2023, there is an increase in the number of breeding bee colonies, which amounted to 66.8 thousand, compared with 58.1 thousand in 2022. Of the total number of breeding bee colonies, 32.3 thousand are Carpathian bees (*Apis mellifera carpathica*), 12.2 thousand are Central Russian bees (*Apis mellifera mellifera*), and 22.3 thousand are carnic bees (*Apis mellifera carnica*). As a rule, statistics show great results every year, but unfortunately this may not affect the beekeeping industry. Firstly, it has now become difficult to export honey to neighboring countries due to the excess of pesticides and herbicides, as well as antibiotics in honey as a result of attempts to cure unhealthy bees (Ministerstvo sel'skogo hozjajstva Respubliki Kazahstan, 2024).

According to the Kazakh entrepreneur, beekeeper Mikhail Kuznetsov, who has been engaged in beekeeping since 2000 in the East Kazakhstan and Almaty regions, the trend is that bees are dying all over the world. There are many factors that work together. That's why farmers are interested in us. But it takes a very long time for politicians to understand this. They think bees are just about honey. And honey is a secondary product, because the most important benefit from bees is pollination. If there are no bees, then there will be much less products on the shelves, this will worsen people's lives. Since bees pollinate about 80% of agricultural crops. If bees stop pollinating, the harvest of vegetables and fruits will be significantly reduced (Saurov, 2023).

Due to the treatment of plants with pesticides and herbicides, local beekeepers and their apiaries are forced to move to forested areas. According to Mikhail Kuznetsov, apiaries located near the place where locusts were poisoned lost their farms. The legislation stipulates that people who are going to use vegetation protection products must inform beekeepers about these 5 days before the start of work, who have apiaries located within a radius of 7 km.

Among other things, there is a huge problem with the country's climate change. If earlier beekeepers could predict weather conditions in 2-3 days, now weather conditions change instantly. It has warmed up in the Almaty region, if this contin-

ues and Lake Balkhash dries up, beekeeping in the region will become impossible.

Based on foreign experience in the development of beekeeping and apitourism, we can say that the key factors in the development of a successful type of tourism are the improvement of bee genetics, the timely introduction of modern technologies, etc., as well as the introduction of tourist services. But, there may be some difficulties in implementing certain methods for the development of apitourism. In order to identify strengths and weaknesses, opportunities and threats in Kazakhstan, a SWOT analysis was conducted (Tab.3). A SWOT analysis was also performed based on the results of a questionnaire survey and a study of literature on apitourism and beekeeping in Kazakhstan and abroad.

Table 3 – A SWOT analysis of the development of apitourism in Kazakhstan

Strengths	Weaknesses
S1. State support for beekeeping in Kazakhstan; S2. The unique natural wealth of the country, which contributes to a favorable development environment; S3. The country has a rich culture and traditions, history, customs. Thanks to this, apitourism can become part of tour routes, combining not only an active, but also an instructive part; S4. Apitourism is a direct way to educate the population and strive for environmental protection. Since bees play a huge role in the conservation of nature and the ecosystem of the country; S5. The country's export potential, as Kazakhstan begins to gain popularity in international markets.	W1 Insufficient infrastructure for the development of beekeeping and apitourism activities; W2. Marketing is poorly developed at the place of beekeeping development. Active advertising and promotion of apitourism as a new direction is needed; W3 Unfortunately, apitourism services are not suitable for everyone, someone may have allergic reactions to products and other services; W4. There is little awareness among tourists and locals. Because of this, many people do not know about the existence of this type of tourism; W5. One of the important weaknesses of apitourism is directly related to the seasonality of the country; W6. Shortage of specialists in the field of beekeeping, lack of courses and training programs or their small number.
Opportunities	**Threats**
O1. The possibility of maintaining natural resources; O2. The development of beekeeping, the training of beekeepers will lead to the organization of new apiaries, new jobs and a workforce that will help solve the problem of unemployment; O3. Popularization of bee products, to present master classes, tour routes; O4. The possibility of acquiring new knowledge; O5. The integration of apitourism into rural tourism provides an opportunity for the development and promotion of rural tourism. The possibility of an interesting experience in nature combined with apitherapy services. O6. With the increasing demand for natural products and a healthy lifestyle, there is an opportunity to promote bee products and their services.	T1. The main threat in the development of beekeeping is the incidence of bee colonies. This will entail serious consequences for the ecosystem, the conservation of the beekeeping sector; T2. Environmental threats (climate change, environmental pollution), Lack of programs to combat vegetation cultivation, which affects the health of bees; T3. Incorrect awareness and fear of bees can cause a negative experience among tourists and cause unattractiveness.

Having conducted a SWOT analysis of the development of apitourism in Kazakhstan, one can clearly see the gaps in the further development of this field of activity. Therefore, it is important to adopt the foreign experience of different countries for a clearer understanding.

For example, Kazakhstan has several programs to support beekeepers, such as Bastau Business, organized by the National Chamber of Atameken, the Enbek program, which provides grants, loans for businesses in rural areas, the business roadmap 2025, which supports the export of products, including honey and bee products. Also, the country's unique natural wealth contributes to a favorable development environment. Kazakhstan has a unique landscape that encompasses steppes, mountain ranges, forests and deserts, creating a diverse flora and fauna. These are a variety of honey plants – clover, sweet clover, linden, sage, sunflower. In the North of the country, forests are rich in wild flowers and shrubs, and there are different climatic zones that prolong the honey harvest season. Altai and Tien

Shan are famous regions with unique flora and valuable honey.

Kazakhstan has a rich culture, traditions, history, and customs. The historical traditions of Kazakhstan are closely connected with nature and beekeeping. The integration of these cultural aspects into tourist routes will enrich the apitouristic programs, making them not only informative, but also authentic. Tourists will be able to learn more about the role of bees in the life of the Kazakh people, which will make their visit instructive and unforgettable.

The development of agriculture in Kazakhstan accounts for about 2.5% of the country's GDP in 2024, and apitourism can become a driver of its growth. Compared to 2023, the share of agriculture in the country's GDP has decreased. In 2023, the GDP for the agricultural sector amounted to about 2.8% (VVP metodom proizvodstva za janvar'-ijun' 2024 goda, 2024). Tourist flows stimulate the development of local infrastructure, supporting agricultural producers, creating new jobs and increasing incomes in rural regions. This can be an important factor for the sustainable development of rural areas. One of the main advantages of the country's agriculture is its vast territory with a low population density, where wide agricultural land is available.

Insufficient infrastructure for the development of beekeeping and apitourism activities. The development of capitalism requires the availability of basic infrastructure: convenient roads, recreation areas, information centers, sanitary conditions and places for tourists to stay. However, in many rural regions of Kazakhstan, such infrastructure is underdeveloped, which limits comfort and accessibility for tourists. The availability of convenient and high-quality infrastructure can increase the attractiveness of capitalism and expand its capabilities.

Weak marketing and lack of advertising to promote apitourism. Despite the potential, marketing in the field of apitourism remains at a low level. Without active promotion and advertising, many potential tourists may not even know about this type of vacation, and as a result, the industry may not develop properly. The development of advertising campaigns, the organization of fairs and cooperation with travel agencies would help to raise awareness and popularity of apitourism.

Apitourism services may be contraindicated due to possible allergic reactions. One of the significant limitations of apitourism is that bee products can cause allergic reactions. Some tourists, especially those who are allergic to bee venom or pollen, may refuse to visit apiaries or participate in apitherapy procedures. Therefore, it is important to take into account medical contraindications, offering visitors safe alternatives and detailed information about possible risks.

In Kazakhstan, apitourism has significant potential due to its unique natural conditions, cultural traditions and growing interest in eco-friendly and wellness tourism. However, for its sustainable development, it is necessary to overcome infrastructural, environmental and educational problems, as well as raise awareness among tourists. Strengthening the beekeeping sector and the introduction of environmental protection measures will create the basis for the successful development of apitourism, which can support the economy of rural regions and improve the quality of life of the population.

Conclusion

To summarize, this study on the development of beekeeping and apitourism in Kazakhstan highlights important and relevant aspects of the current state and potential of beekeeping. In addition to the fact that beekeeping in Kazakhstan has deep roots since the end of the XIII century, this industry is becoming more relevant nowadays. Despite the global problems that concern beekeeping, the demand for products and services is not falling.

One of the key aspects that were considered in the work is the natural and biodiversity of Kazakhstan. Diverse landscapes, mountain and steppe ecosystems offer diverse sources of nectar for bee colonies and for their development. After analyzing each region of the country, it can be understood that the potential for the development of beekeeping is high. But, with its huge potential, there are many factors that delay the development of this industry. This is due to global climate change not only in Kazakhstan, but also around the world. Also, this is due to the extinction of bee colonies. Due to excessive treatment with plant protection products, entire bee colonies and beekeepers suffer. To solve this problem, beekeepers are forced to roam the regions in search of the best conditions for breeding bees. Unfortunately, the regional authorities and local residents do not always understand the depth of the whole problem associated with the extinction of bees. This can lead to the destruction of the ecosystem and significantly reduce the yield of rural areas. Looking at all these problems through the eyes of the beekeepers themselves, we understand the severity of the consequences. For this, it is important to develop apitourism in our country. This will give

a huge boost to the promotion of rural tourism, cultural enrichment of the population, awareness in the industry, and teach people to take care of the environment.

Apitourism is by all signs a sustainable form of tourism, does not deplete resources, but contributes to their enrichment. Its development contributes to the socio-economic revival of rural areas, ensures the diversification of agricultural production, and creates new jobs. Today, one of the most popular types of tourism is apitourism. This is due to the growing interest of tourists of all ages, social and national categories who want to relax in the apiary, try bee products (honey, propolis, royal jelly, etc.), study the procedure for making honey, make sure that the technology and high quality of beekeeping products are followed. Apiaries are becoming tourist attractions. Especially attractive for tourists are the products that they produce themselves.

Some specific solutions are proposed beyond general statements about the importance of adopting international experience: to organize pilot tourist routes in regions with high beekeeping potential (for example, East Kazakhstan, Zhetisu). Set up small apiary houses, sanitary areas and information stands. First of all, it concerns education and human resources. To launch short-term courses and certification programs for beekeepers, guides and agrotourism operators at universities and centers. It is also possible to create an online platform for the exchange of experience between beekeepers and travel agencies. Based on international experience to send specialists in the field of beekeeping to other countries for training.

Another equally important solution to this problem may be awareness through social media and information campaigns. Launch an SMM promotion (Instagram, TikTok, YouTube) with a demonstration of a "day at the apiary", interviews with beekeepers, and master classes. To hold an annual honey and apitourism festival in Almaty, with the participation of farmers, tourism companies and the media. State support, including the inclusion of apitourism in the list of priority areas of rural tourism within the framework of the state program "Auyl – el besigi". Also, start developing a system of grants or vouchers for farmers who want to adapt apiaries to the needs of tourism. Also, one of the solutions is to launch more apiary tours for private entrepreneurs, such as Pavel Konovalov, who, in turn, currently has a license to conduct excursions to his apiary in the Almaty region.

Acknowledgments

This research was carried out with the financial support of the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. BR21882122 "Sustainable Development of Natural-Industrial and Socio-Economic Systems of the West Kazakhstan Region in the Context of Green Growth: A Comprehensive Analysis, Concept, Forecast Estimates and Scenarios"). Despite the fact that the main territorial focus of this grant is focused on the West Kazakhstan region, the applied methodological approaches and developed analytical tools within the framework of the grant were successfully adapted and used by the authors to assess the prospects for the development of apitourism throughout Kazakhstan. In particular, the methodology of SWOT analysis, methods of conducting sociological surveys, as well as approaches to comparative analysis of international experience have been tested and confirmed their effectiveness not only in the western region, but also in a broader territorial context, including the central, eastern, southern and northern regions of Kazakhstan. Thus, the study demonstrates the possibility of extrapolating and scaling the methods developed under the grant to the national level.

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Received: Feburary 03, 2025
Accepted: May 27, 2025