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Institute for Plant Protection and Environment, Belgrade, Serbia

**13th JEEP INTERNATIONAL SCIENTIFIC AGRIBUSINESS
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**"GREEN TRANSFORMATION OF AGRIBUSINESS: INNOVATION AS THE KEY TO
SUSTAINABLE AGRICULTURE"**

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FORWARD

The Green Transformation of Agriculture is a development strategy aimed at building a modern, resource-renewable, and economically competitive agriculture. By turning contemporary ecological and climate challenges into development opportunities, an innovative “green technology” enables the improvement of agribusiness and self-sustainability. This process encompasses a series of development projects and initiatives focused on modernizing agriculture in less developed regions, strengthening the competitive position of domestic farmers, and connecting them to broader markets. A special emphasis is placed on preserving local plant varieties and indigenous animal breeds, as well as traditional products, while enhancing a cooperation among the scientific community, farmers, and all participants in the food chain.

Today, consumers are largely disconnected from food producers, and agribusiness is increasingly concentrated in the hands of large corporations, leading to population migration from rural areas. Therefore, investments in innovation and the smart integration of new technologies are key prerequisites for the development of small-scale agribusinesses, strengthening their competitiveness, and sustaining rural communities. Sustainability of agricultural production in rural areas and preservation of farmers’ position require the modernization of food production, implementation of new climate-adapted technologies, and establishment of efficient networks of all participants in the food production chain. The scientific community, farmers, policymakers, processors, and consumers must be interconnected and aware that only together can they address the increasingly complex challenges of contemporary agriculture.

Digitalization and green transformation, if implemented thoughtfully and inclusively, can contribute to the development of agribusiness and the production of safe food within a value chain where all participants have clearly defined roles. Innovations must not marginalize farmers or diminish their key role in production; instead, they should serve as tools for empowerment. By caring for human and animal health, preserving the environment, using pesticides and fertilizers rationally, transitioning from conventional to organic and regenerative production, managing natural resources responsibly, and reducing greenhouse gas emissions, we ensure a healthy and sustainable planet for future generations.

In this context, this scientific gathering aims to bring researchers, experts, policymakers, and practitioners together to exchange the latest scientific findings, innovative solutions, and examples of good practice in sustainable agriculture. Special emphasis is placed on an interdisciplinary approach, the application of modern technologies, knowledge transfer, and strengthening the capacities of local communities, while respecting the principles of sustainable development. The papers presented in this collection contribute to a better understanding of the process of green transformation in agriculture and provide relevant scientific and practical guidelines for its further development in both regional and international contexts.

We extend our sincere gratitude to everyone who has contributed to the successful realization of the 13th **JEEP INTERNATIONAL SCIENTIFIC CONFERENCE ON AGRIBUSINESS MAK 2026**, entitled “*Green Transformation of Agribusiness: Innovations as the Key to Sustainable Agriculture.*” We would like to thank the authors of the papers, all the participants who have taken part in constructive discussions, and all collaborators who have offered multiple perspectives on contemporary agricultural challenges, proposed solutions, and encouraged a responsible approach to the environment, food production, and human health.

Danijela Šikuljak, Ph.D. Principal Research Fellow
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CONTENT

PLENARY ARTICLES

1.	Velibor Spalević - SOIL DEGRADATION IN THE WORLD, SERBIA AND MONTENEGRO: CAUSES, CONSEQUENCES, AND POSSIBLE SOLUTIONS	1
2.	Palaiologos Palaiologos, Iliana Malihin - HOW VINEYARDS AND WINE PRODUCTION CAN BE PROTECTED FROM FUTURE WILDFIRES IN GREECE	15
3.	Ahmet Uludağ, Muhamad Shakirin Mispan, Sze-Looi Song - POSSIBILITIES FOR USING eDNA TO DETECT WEEDS AND OTHER PLANTS FROM THE SOIL SEED BANK	29
4.	Carmelo Rapisarda - CLIMATE CHANGE, BIOLOGICAL INVASIONS AND CHALLENGES FOR SUSTAINABLE CONTROL OF PESTS AND DISEASES IN AGRICULTURAL CROPS	36
5.	Yalcin Kaya - UTILIZING FROM MODERN TOOLS IN PLANT BREEDING	43
6.	Necmi Beşer - HERBICIDE TOLERANT PLANT BREEDING IN CEREALS	51
7.	Cosmin Salasan, Carmen Simona Dumitrescu, Cosmina Toader, Cristian Gaina, Raul Pascalau - RESILIENCE TO SHOCKS AND CRISIS BEHAVIOUR IN FEMALE-LED FARMS IN ROMANIA	58
8.	Dragan Perović, Peter Dracatos, Jens Keilwagen, Yu Cai, Claudia Breitkreuz, Robert Hoffie, Jochen Kumlehn, Novo Przulj, Andreas Stahl, Brände B.H. Wullf, Robert Park, Brian Steffenson, Nils Stein, Frank Ordon - OVERVIEW OF PLANT GENETICS AND BREEDING IN THE ERA OF PANGENOMICS AND GENOME EDITING: CONTRIBUTIONS FROM OUR RESEARCH GROUP	67

INVITED ARTICLES AND ARTICLES

1.	Stanković Slađan, Trajković Bogdan, Janković Snežana, Tomić Vedran, Simić Divna, Salasan Cosmin, Jakab Agnes - FINANCIAL SUSTAINABILITY OF NATURA 2000 IMPLEMENTATION IN SERBIA	74
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2.	Marija Bajagić, Biljana Šević, Jelena Stojiljković, Vojin Cvijanović, Aleksandra Ivetić, Miloš Stanković, Zorica Golić - THE FUTURE OF INTEGRATED PLANT PROTECTION IN THE CONTEXT OF CLIMATE CHANGE	81
3.	Predrag Brković, Mirela Matković Stojšin, Violeta Mickovski Stefanović, Jelena Damnjanović, Kamenko Bratković, Veselinka Zečević, Svetlana Roljević Nikolić - EVALUATION OF WHEAT GENOTYPE STABILITY THROUGH GGE BI PLOT ANALYSIS	91
4.	Gorica Cvijanović, Vojin Cvijanović, Nenad Đurić, Marija Bajagić, Danica Mićanović, Vojin Đukić, Biljana Šević - EM BIOTECHNOLOGY - THE FUTURE IN SUSTAINABLE AGRICULTURAL PRODUCTION	98
5.	Danijela Mirjanić - WOMEN'S EDUCATION AND ECONOMIC INCLUSION IN BRICS+: TREND ANALYSIS 1991-2022	107
6.	Marija Stevanović, Miloš Milovančević - IDENTIFICATION OF OPTIMAL WASTEWATER SYSTEM PARAMETERS AIMED AT MAXIMIZING ECONOMIC PERFORMANCE	116
7.	Adisa Tufo - EMOTIONAL INTELLIGENCE AND PSYCHOLOGICAL FLEXIBILITY AS FACTORS OF SUSTAINABLE DEVELOPMENT	126
8.	Boris Pisinov, Zoran Ž. Sekulić, Tanja Keškić, Maja Petričević, Sanja Đurović, Marijana Maslovarić, Snežana Janković - KEY ASPECTS OF INSTRUMENTAL COLOUR FOR COMPOSITE BUCKWHEAT EMULSION-TYPE CHICKEN SAUSAGES	133
9.	Snežana Janković, Zoran Ž. Sekulić, Boris Pisinov, Tanja Keškić, Danijela Šikuljak, Rade Jovanović, Jela Ikanović - STATISTICAL MODELING AND PREDICTION OF THE INFLUENCE OF STORED BUCKWHEAT ON THE COLOR OF THE FINAL PRODUCT	140
10.	Ivan Tupajić, Đorđe Moravčević, Biljana Šević, Marija Čosić, Dragana Stevanović, Milan Ugrinović, Jelena Stojiljković - REDUCED IRRIGATION NORM AS A SUSTAINABLE AGROTECHNICAL MEASURE IN SWEET CORN PRODUCTION	151
11.	Dragana Marisavljević, Vera Stanković, Ana Andđelković, Danijela Šikuljak - SPREAD OF INVASIVE PLANT <i>HERACLEUM SOSNOWSKYI</i> IN SERBIA	158
12.	Marina Hovjecki, Mira Radovanović, Jelena Miočinović, Ana Šatrić - APPLICATION OF PEA PROTEIN ISOLATE IN THE PRODUCTION OF LACTOSE-FREE GOAT MILK KEFIR	165

13.	Jovan Lazarević, Dragana Stevanović, Isidora Knežević, Aleksa Đukić, Helena Todorović - THE EFFECT OF SELECTED WEED CONTROL MEASURES IN ANGELICA (<i>ANGELICA ARCHANGELICA</i> L.) CROP ON SOIL pH	175
14.	Violeta Mickovski Stefanović, Predrag Brković, Svetlana Roljević Nikolić, Stanka Pešić, Biljana Grujić Vučkovski - THE PRESENCE OF HEAVY METALS IN THE WHEAT STEM AND INFLUENCE ON THE GROWTH AND HEIGHT OF THE STEM	181
15.	Ljubica Šarčević-Todosijević, Kristina Vojvodić, Marija Perić, Nikola Đorđević, Janko Pejović - BIOCHEMICAL ACTIVITY, SIGNIFICANCE, PROTECTION AND POSSIBILITIES OF APPLICATION OF NATURAL MATERIALS IN PHARMACY AND MEDICINE	188
16.	Kristina Tomska, Viktorija Stojkovski - INTEGRATING UV-VIS SPECTROPHOTOMETRY INTO FOOD QUALITY MANAGEMENT SYSTEM	198
17.	Saša Vujović, Vera Popović, Vesna Gantner, Aleksandar Stevanović, Vladimir Filipović, Gordana Kulić, Dragan Dokić, Jela Ikanović - ECONOMIC MILLET PRODUCTION, FUNCTIONAL FOOD AND HEALTH BENEFIT	206
18.	Zlatko Miličević, Anja Milosavljević, Danijela Šikuljak, Ana Andđelković, Nenad Trkulja, Snežana Janković, Miloš Rajković - NON-HERBICDE SOLUTIONS AS A POSSIBLE ALTERNATIVE IN WEED CONTROL	218
19.	Zorica Sredojević, Ljubinko Rakonjac, Bojana Ćendić, Bratislav Ćirković - RASPBERRY PRODUCTION AS THE BASIS OF SUSTAINABILITY OF FAMILY HOLDINGS IN SOME REGIONS OF SERBIA	227
20.	Sara Stanić Jovanović, Mića Mladenović, Jasmina Knežević, Nevena Miletović - APITOURISM IN THE CONTEXT OF THE ECONOMIC DIMENSION AND OPPORTUNITIES FOR SUSTAINABLE AGRIBUSINESS	239
21.	Demir Sačirović, Elvir Muslić, Fadil Novalić - APPLICATION OF GIS AND REMOTE SENSING FOR AGRICULTURAL LAND SUITABILITY ASSESSMENT: A CASE STUDY IN SERBIA	249
22.	Jovana Brdar, Svetlana Roljević Nikolić, Milan Miroslavljević, Jasmina Oljača, Snežana Đorđević, Željko Doljanović - INFLUENCE OF SEEDING DATE AND TYPE OF FERTILIZER ON SPELT GRAIN YIELD	258

23.	Igor Hrovatić, Urban Hrovatić - THE ROLE OF THE SEASN NETWORK IN STRENGTHENING AKIS DEVELOPMENT IN EU AND NON-EU COUNTRIES: A COMPARATIVE REVIEW	265
24.	Olivera Nikolić, Zorana Srećkov, Vesna Vasić, Zorica Mrkonjić - PLANT GROWING IN HYDROPONIC SYSTEM: CASE OF STUDY	276
25.	Vojislav Stojanović, Vahid Ibulj - DEVELOPMENT OF AN INTELLIGENT DECISION SUPPORT SYSTEM FOR WASTE RECYCLING	286
26.	Vojislav Stojanović, Novak Randjelović - APPLICATION OF RANDOM FOREST IN THE ANALYSIS OF BIODIVERSITY CONSERVATION	291
27.	Stefan Gordanić, Miloš Rajković, Jelena Goljan-Pantović, Milan Lukić, Brankica Babec - EFFECTS OF SOWING DENSITY ON GROWTH AND YIELD OF LEMON BALM (<i>Melissa officinalis</i> L.) MICROGREENS	296
28.	Vladimir Pejanović, Goran Zarić, Radovan Pejanović - SMART AGRICULTURE - TECHNICAL AND ECONOMIC FACTORS OF DEVELOPMENT	303
29.	Sanja Đurović, Boris Pisinov, Snežana Janković, Zoran Ž. Sekulić, Gordana Kulić, Bogdan Nikolić, Danijela Šikuljak - BUCKWHEAT AS A HIGH-QUALITY RAW MATERIAL: NUTRITIONAL AND TECHNOLOGICAL PROPERTIES UNDER DIFFERENT STORAGE CONDITIONS	311
30.	Marko Vojvodić, Kristina Vojvodić, Suzana Pavlović, Marija Stevanović - THE IMPORTANCE OF AGROBIODIVERSITY FOR AGROECONOMY UNDER THE INFLUENCE OF CLIMATE CHANGE	318
31.	Gordana Kulić, Jelena Goljan Pantović, Boris Pisinov, Snežana Janković, Jela Ikanović, Vera Popović, Zoran Ž. Sekulić - CHEMICAL COMPOSITION AS AN INDICATOR OF THE CALORIFIC VALUE OF PLANT BIOMASS	325
32.	Biljana Grujić Vučkovski, Julija Lola Stanković, Ksenija Vukićević, Dragana Stevanović - ECONOMIC JUSTIFICATION OF DIFFERENT TILLAGE SYSTEMS IN AGRICULTURAL PRODUCTION	333
33.	Mirjana Dejanović, Sanja Jelisavac Trošić, Dragica Luković Jablanović - PROJECT MABAGEMENT IN THE BIOECONOMY AND CIRCULAR ECONOMY	343

34.	Nataša Tolimir, Slavica Čolić, Marijana Maslovarić, Vedran Tomić, Snežana Janković, Slađan Stanković, Divna Simić - KNOWLEDGE TRANSFER ON ORGANIC PRODUCTION FOR SUSTAINABLE AND ECOLOGICAL AGRICULTURE IN SERBIA	351
35.	Nevena Čule, Ljiljana Brašanac-Bosanac, Ilija Đorđević, Goran Češljar, Aleksandar Lučić, Ljubinko Rakonjac - NATIONAL BIOECONOMY ROADMAP AS A DRIVER OF GREEN AGRIBUSINESS TRANSFORMATION	361
36.	Stanka Pešić, Danica Mićanović, Dragan Božović, Igor Vukelić, Gordana Racić - INFLUENCE OF NPK REGIMES ON WHEAT AGRONOMIC AND SOIL MICROBIOLOGICAL PARAMETERS	371
37.	Siniša Mitrić, Biljana Kelečević, Zlatan Kovačević, Dragoslava Bjelošević - <i>AMBROSIA ARTEMISIIFOLIA</i> AS A PUBLIC HEALTH CONCERN	380
38.	Darko Jovanović, Biljana Šević, Ana Andđelković, Ivan Tupajić, Jelena Stojiljković, Danijela Šikuljak, Sladana Savić - SELECTIVITY AND EFFICACY OF FLUROCHLORIDONE WITH OTHER HERBICIDES IN WEED CONTROL IN PROCESSING TOMATO (<i>Solanum lycopersicum</i> L.)	391
39.	Slađana Vujičić, Miroslav Nedeljković, Biljana Dimitrić, Mersida Jandrić - QUALITY AND SAFETY OF AGRICULTURAL PRODUCTS AS A SOURCE OF COMPETITIVENESS OF FARM HOLDINGS	397
40.	Slađana Vujičić, Zoran Punoševac, Gordana Gavrić - WOMEN'S ENTREPRENEURSHIP IN AGRICULTURE AND RURAL DEVELOPMENT IN SERBIA	407
41.	Prijić Željana, Dragumilo Ana, Đukić Nikola, Ivetić Aleksandra, Milan Lukić, Mikić Sara, Mrđan Snežana, Marković Tatjana - THE ROLE OF MEDICINAL PLANT SPECIES IN THE GREEN TRANSFORMATION OF AGRICULTURE: LINKING BIODIVERSITY CONSERVATION WITH ECONOMIC VALUE	416
42.	Maja Meseldžija, Milica Vranešević - INVASIVE WEEDS AT THE INTERFACE OF PLANT, ANIMAL AND HUMAN HEALTH: A ONE HEALTH PERSPECTIVE	421
43.	Aleksandra Ivetić, Bo Wu, Blažo Lalević, Vesna Gantner, Radmila Beskorovajni, Marija Bajagić, Vojin Cvijanović - CARBON DIOXIDE WASTE UTILIZATION IN AGRICULTURE	432

	Vesna Gantner, Zvonimir Steiner, Vera Popović, Boris Ljubojević -	
44.	INTEGRATING AGROFORESTRY AND LIVESTOCK FOR CLIMATE-RESILIENT AGRIBUSINESS	439
	Dinçer Akal, Yalçın Kaya - DETERMINATION OF THE EFFECTS OF SAFFLOWER BIODIESEL BLEND RATIOS ON THE PERFORMANCE AND EMISSIONS OF A SINGLE-CYLINDER INDUSTRIAL DIESEL ENGINE	
45.		448
	Mirjana Bartula, Snežana Janković, Ivan Šekler, Dušica Ćirković, Sladan Stanković, Divna Simić, Vera Popović - CLIMATE CHANGE RISKS AND CHALLENGES IN GLOBAL AGRICULTURE	
46.		456
	Aleksandra Ivetić, Milivoje Čosić, Bojan Stojanović, Stamen Radulović, Željana Prijić, Zvonimir Steiner, Renata Relić, Zorica Golić - INFLUENCE OF CLIMATE CHANGE ON ENSILING	
47.		463
	Marijana Jovanović Todorović, Jone Subić, Danijela Mirjanić, Marijana Joksimović - REGENERATIVE AGRICULTURE: CURRENT STATE, GOALS, AND FUTURE PERSPECTIVES	
48.		474
	Slađan Stanković, Rade Jovanović, Snežana Janković, Dušan Nikolić, Marija Gavrilović, Divna Simić, Žaklina Stanković - REDUCING PESTICIDE USE IN VITICULTURE AND NEW PERSPECTIVES FOR THE IMPLEMENTATION OF INTEGRATED PEST MANAGEMENT – AN EXAMPLE OF GB4IPM PROJECT	
49.		482
	Dragan Dokić, Vera Popović, Marko Popović, Vesna Ganter, Dragana Popović - CONSEQUENCES OF THE TRANSFORMATION OF REGIONAL SPATIAL PLANS IN THE REPUBLIC OF CROATIA ON INVESTMENT IN AGRICULTURE, VIEWED THROUGH THE PRISM OF THE LAW OF THE FIFTH DISCIPLINE	
50.		491

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APITOURISM IN THE CONTEXT OF THE ECONOMIC DIMENSION AND OPPORTUNITIES FOR SUSTAINABLE AGRIBUSINESS

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Abstract: Apitourism represents a specific form of tourism that can be classified as an innovative segment of rural, that is, agritourism. Its accelerated development on the tourism market has emerged over the past decade through the integration of beekeeping with tourism services, thereby creating additional economic value for agricultural holdings. In this context, this paper analyzes apitourism from the perspective of its economic dimension and the opportunities it offers for sustainable agribusiness, with particular emphasis on income diversification, the preservation of rural communities, and the promotion of the sustainable use of natural resources. By considering not only economic but also social and environmental aspects, the paper highlights the significant potential of apitourism to contribute to local development, stimulate employment-especially among economically vulnerable groups in rural areas-and promote environmentally friendly practices, including the enhancement of the competitiveness of agritourism products and the long-term sustainability of agribusiness.

Keywords: Apitourism, Opportunities, Sustainable agribusiness, Economics

INTRODUCTION

Green transformation, along with numerous innovations, represents both the contemporary environment and the future of agribusiness. In this context, one of the innovative forms of rural tourism, namely agrotourism, is the increasingly popular apitourism. Apitourism, or beekeeping tourism, may represent either a primary or a supplementary activity of an agricultural holding, enabling additional income generation and thereby emphasizing the economic dimension as well as the diverse opportunities agribusiness possesses within the tourism market. In recent years-particularly following the 2020 pandemic period-a significant increase has been observed in public interest in the consumption of healthy and organic food, as well as in concern for health preservation and prevention.

The pandemic influenced the reassessment of everyday habits, attitudes toward physical and mental health, and the overall improvement of quality of life, while also intensifying the need to strengthen immunity and focus on combating stress as a global contemporary challenge. Consequently, health has become one of the key priorities of modern society, not only in the context of treatment but also through preventive and holistic approaches.

Digital media, along with the accessibility and rapid dissemination of information, have further contributed to strengthening individual responsibility for maintaining personal well-being. This has been largely driven by global health challenges and increased awareness of the importance of disease prevention. These changes are also reflected in the development of new market trends in tourism, including the growing interest in health, rural, and agrotourism, as well as in functional and healthy food and sustainable forms of agribusiness. As a result, health is increasingly positioned as an important factor of social and economic development. In this regard, apitourism stands out as one of the future sustainable models of agribusiness that integrates economic, environmental, and social aspects of development, in line with contemporary health trends and changes in the global tourism market. By connecting beekeeping, tourism, and health-educational content, apitourism has emerged as a significant segment of agribusiness.

Through the offer of natural bee products, apitherapy services, educational workshops, and stays in predominantly preserved and unspoiled natural environments, apitourism meets modern tourist demands and their need for a healthy lifestyle during travel. At the same time, apitourism enables income diversification for agricultural holdings, encourages biodiversity conservation, influences the touristic development of rural households, and contributes to the creation of supplementary tourism products and content for various tourist segments, which altogether positively affects the development of rural areas.

CONTRIBUTION OF TOURISM TO RURAL DEVELOPMENT

Tourism plays a significant role in the development of rural areas, as it represents one of the key factors for the economic empowerment of local communities and the improvement of the quality of life of the indigenous population. The development of rural tourism, particularly agrotourism, enables the diversification of economic activities in rural areas, reduces dependence on traditional agriculture, and creates new opportunities for the agriculturally active population through the generation of additional income sources for rural households, including accommodation, catering, recreational, and educational services. Through the economic strengthening of local communities and the improvement of living standards in rural areas, tourism can be positioned as one of the main drivers of rural development. Specifically, the development of rural tourism creates additional income opportunities for agricultural holdings through the provision of accommodation, food services, recreational activities, participation in everyday farm work, as well as the direct sale of local agricultural products to consumers. In this way, economic dependence on agricultural production alone is reduced, while resilience to market and climate changes is increased. In addition to economic benefits, tourism also has a significant social and cultural contribution to rural development. The creation of new jobs contributes to the reduction of unemployment and poverty, as well as to limiting rural-to-urban migration, particularly among younger generations, thereby creating conditions for the survival and economic revitalization of rural areas. At the same time, tourism encourages the preservation and valorization of cultural heritage, traditions, customs, folklore, handicrafts, traditional crafts, and local identity, which become an important segment of the tourism offer in rural destinations. The development of tourism in rural areas also plays an important role in environmental protection and the sustainable use of natural resources. The promotion of environmentally responsible tourism contributes to biodiversity conservation and the preservation of natural assets, while simultaneously raising awareness among local

residents and tourists about the importance of sustainable development. In this way, tourism contributes to integrated rural development by linking economic, social, and environmental dimensions in support of the long-term sustainability of rural areas. Numerous benefits of tourism development in the context of sustainable rural development have been highlighted by various tourism theorists, who have identified some of the most significant among them.

Tourism has been a key strategy for revitalizing rural areas facing depopulation, land abandonment, and economic decline (Izquierdo-Gascón and Rubio-Gil, 2023). The development of wine and food tourism can reinforce local economies by attracting visitors and new inhabitants to small and picturesque rural areas (Tomay and Tuboly, 2023). Using rural tourism as a revitalization strategy is beneficial to nonurban communities in terms of their economic, socio-cultural, environmental, and leisure and educational development. The contribution from the economic perspective is particularly important (Liu et al., 2023). Tourism can play an important role in diversifying the rural economy and its expanding in rural areas contributes to the sustainability of the population and the economy of these areas and provides the basis for achieving sustainable rural development (Nooripoor et al., 2021).

Tourism, especially rural tourism, is one of the factors of sustainable economic development in the world and one of the characteristics of tourism development in a country. According to the economic approach to tourism development, tourism is now known as an industry because of the inclusion of material and financial income, so it can be used as a means to achieve economic development (Mohammadi et al., 2022).

Rural tourism is a vital means of rural development. There is a great deal of interdependence and complementarity between the two. Rural tourism offers an alternative attraction of rurality as a diversification and regenerative strategy to bring about socio-economic development with minimal adversity (Singhania et al., 2022).

Both the expansion of tourism land use and the mass removal of settlements have played a role in the decline of traditional villages. Several instances demonstrate that profit-driven tourism development has intensified the transformation of traditional villages into mere museums, rather than promoting sustainable development. Furthermore, the heavy dependence on a solitary tourism-based source of income renders traditional communities exceedingly susceptible to unforeseen circumstances, such as the outbreak of the Covid-19 pandemic. Preserving traditional livelihoods and diversifying livelihoods enhances the ability of traditional villages to maintain their rural character and sense of place, while also strengthening the authenticity of rural tourism (Yanan et al., 2024).

CONCEPT AND DEVELOPMENT OF APITOURISM

In recent years, apitourism or beekeeping tourism has become a modern trend in the tourism market, as well as a development opportunity in the field of agro-business. Originating less than a decade ago in the Republic of Slovenia, after the Government of this country adopted a strategy for integrating beekeeping and tourism, it can be classified as selective, that is, specific or special forms of tourism. Due to the health benefits in the field of apitherapy, it is often associated with health tourism, while its characteristics are inevitably connected to rural tourism (Stanić Jovanović, 2025).

Apitourism is a form of tourism that deals with the culture and traditions of rural communities and can be considered one of the most sustainable methods of development and tourism (Fathi et al., 2022). Apitourism is becoming more popular internationally and internally. It is a niche that if used properly, can be a powerful catalyst for beekeeping in the country (Grigorova et al., 2016). Apitourism combines sustainable beekeeping, niche, historical heritage, and health tourism as an intersection between tradition, alternative medicine, and the sustainable income-generating activity of the beekeeper (Beigi, 2018; Tišler and Šuligoj, 2020; Wos, 2014). Apitourism is a key segment of the green economy, as it significantly promotes the economic efficiency of beekeeping and follows the principles of the strategy for the development of sustainable tourism (<https://sca.kis.si/en/>).

Apitourism is an innovative form of agritourism where tourists learn about the life and work of bees, bee products, and everything related to beekeeping. It also offers special services such as inhaling air from the beehive, honey massages, honey baths, cosmetics based on bee products, and more. In short, apitourism focuses on raising awareness about the importance of bees in the ecosystem, beekeeping, and educating visitors about the life and work of bees, the functioning of the bee community, and the production of bee products. Currently, apitourism is becoming increasingly popular due to the growing interest in apitherapy and wellness, which includes bee products (Škarlo, 2021).

Apitourism is not yet fully utilized and has significant potential for growth and development. It requires a great deal of effort and knowledge, as well as attracting a large number of people who will recognize the importance of apitourism and the healing properties of bee products. Apitourism holds much more potential. Through apitourism, visitors can relax, unwind, have fun, and even learn something new. First and foremost, visitors can participate in a small workshop organized by the local tourism community. After the workshop, they learn how honey is extracted, and at the end, they reap the fruits of their labor, enjoying them through food, massage, wellness treatments, and similar experiences (Bakavić, 2020).

Apitourism was born in Slovenia in 2016, after the Slovenian government, at the suggestion of the beekeeping association, became the first to adopt a strategy for integrating beekeeping and tourism. Slovenia is the world's leading destination for beekeeping, or apitourism, with over 10,000 beekeeping farms and more than 17,000 beekeeping colonies and is one of the first countries to offer certified apitourism services. The Slovenian Tourist Organization and the Slovenian Beekeeping Association have jointly developed a series of initiatives for a sustainable approach to apitourism. They provided support to travel agencies in creating packages that offer tourists interesting combinations of rich eco-content, such as wellness vacations combined with local honey tastings. This trend spread globally, and api-centers began to develop in many countries, from Croatia, Bosnia and Herzegovina, and Serbia to Greece and the United States. Apitourism experienced a boom in Serbia and the region after the outbreak of the COVID-19 pandemic, when people began to turn to nature and a healthier lifestyle. Following the proposal of the Slovenian Beekeeping Association, the United Nations General Assembly declared 20 May 2017, as World Bee Day (Jovanović et al., 2023).



Figure 1. Apitherapy Chamber, Temerin, Serbia
Source: www.utnv.org/api-komora-temerin/

Slovenia was the first in the world to develop apitourism - an innovative tourist product that is a combination of tourism and beekeeping. It is a unique travel experience and a form of sustainable and responsible tourism linked to the tradition of beekeeping. Currently, there are already 45 certified providers of apitourism services in Slovenia. We are the only ones in the world to have beekeeping tourist guides. Slovenia took the initiative in 2014 to make 20 May World Bee Day. As part of the initiative, Ministry of Agriculture, Forestry and Food representatives travelled around the world with the Bee World pavilion, actively promoting and raising awareness about the initiative and other support projects. In doing so, they held numerous bilateral meetings with representatives of other countries and international organizations and organized professional events. The response of the Slovenian and international public was positive, the initiative was supported by top Slovenian politicians, the world beekeeping organization Apimondia, the United Nations Food and Agriculture Organization (FAO), the European Union and many other organizations. After more than three years of efforts, a resolution to declare World Bee Day was adopted on 17 November 2017 by the UN Economic and Financial Committee. The resolution was then unanimously approved by the UN General Assembly in New York on 20 December 2017, declaring 20 May as World Bee Day. It was supported by all UN countries, with 115 countries co-sponsoring it, including some of the largest countries, such as the United States, Canada, China, Russia, India, Brazil, Argentina, Australia and all European Union countries (<https://sca.kis.si/en>).

OPPORTUNITIES FOR THE DEVELOPMENT OF APITOURISM IN THE CONTEXT OF SUSTAINABLE AGRIBUSINESS

Tourism has been a key strategy for revitalizing rural areas facing depopulation, land abandonment, and economic decline (Uldemolins et al., 2025). A significant role in improving rural tourism and agribusiness, with considerable development effects, is played by apitourism or beekeeping tourism, which is becoming an increasingly popular trend in the tourism market (Stanić Jovanović, 2025). Experiencing apitourism activities creates a more positive opinion in tourists. It is understood that apitourism guides are knowledgeable about bee biology, fun, hospitable, passionate about their job and proficient in foreign languages. Visitors described the guides' expertise in this field with expressions such as "bee apologist", "walking encyclopedia", "bee doctor", "bottomless wealth" and "bee wizard" (Dönmez, 2024).

Beekeeping encourages the socio-economic revitalization of rural areas, diversifies agricultural production, and offers new opportunities for both beekeepers and tourists (Topal et al., 2021). Hosts, through rural tourism services, have the opportunity to sell surplus agricultural products, often at significantly higher prices than market rates. The development of rural tourism is gaining increasing importance due to its potential contribution to the social and economic renewal of rural areas and the revitalization of villages. This form of tourism is based on sustainability principles, offering tourists elements of rural life, nature, and traditional hospitality (Stanić Jovanović et al., 2025).



Figure 2. Interior View of the Api Chamber
Source: www.turizambackipetrovac.rs

The increasing interest in beekeeping has led to one of the most sustainable forms of travel. The knowledge of this millenary art and its determining role in the preservation of biodiversity leads to current diverse educational experiences such as: attending the different talks and workshops offered globally, becoming a beekeeper for a day, seeing the live honey collection, acquiring knowledge of local gastronomy, supporting artisan crafts, and taking part in flora and honey routes. These activities are part of Apitourism, a growing concept that thanks to successful and long-lasting examples, such as the case of Slovenia, encourages local and proximity tourism (Izquierdo-Gascón and Rubio-Gil, 2023).

Apitourism is a form of tourism associated with beekeeping as a traditional profession and bee products in ecological, nutritional, and medical aspects. Activities related to beekeeping tourism include visits to apiaries, open-air museums, and bee museums where tourists can learn about the local characteristics of apiculture. Although apitourism in Bosnia and Herzegovina is most often identified with api chambers, i.e., the application of air from beehives to treat various diseases and other states, most often respiratory problems, this term has a much broader meaning. Apitourism as a branch of health tourism has a much wider potential than the use of api chambers. At the same time, this tourist branch can be a part of sustainable rural tourism (Sinanović and Santrač, 2022).

Providers of apitourism do not only sell bee products and crops, but their own story. Through their story of specialization and niche tourism, they have the opportunity to create added value to their products. By offering apitourism as competitive advantage, they create experiences. Customers and visitors not only buy their products, but they hear the story of bees, why they are important to humanity, why bee products have so much positive effects on humans, especially through personal presentation in an authentic environment they see, experience and learn about the importance of bees for the existence of humanity. Providers

of apitourism differ from each other in terms of their offer. It is important that the provider specializes and develops a complete story about its offer. The offer of apitourism is interesting for almost all target groups: children, teenagers, adults, elderly, families, students, businessmen, associations, domestic and foreign visitors. The additional offer opens up new markets and opportunities for the provider to increase sales as well as an additional source of income from tourism (Korošec, 2022).

CONCLUSION

Following contemporary trends in the global tourism market, numerous changes in tourist demand can be observed. The modern tourist is generally educated and experienced, often knowing precisely what they expect from their travel experience. In this context, the foremost needs include active leisure activities, stays in preserved natural environments (except in urban tourism, although even there is a growing tendency to organize excursions in nearby natural areas), participation in immersive and interactive activities, as well as the availability of healthy, typically organic food and handcrafted local products that do not pose health risks. Tourism providers are making dedicated efforts to respond to these evolving demands and preferences. The significant popularity of apitourism serves as a prime example of good practice in addressing these contemporary tourist expectations.

Apitourism connects beekeeping as a primary activity with tourism and can be classified as a special or selective form of tourism. This relatively young form of tourism has been actively developing for nearly a decade and, due to its significance in terms of economic dimensions and opportunities for agribusiness, represents an essential development potential for all rural destinations within the tourism market. Although it is most commonly associated with api chambers and their health benefits—particularly for respiratory conditions and the prevention of various psycho-physical disorders, including widespread stress and so-called “managerial disease”—apitourism can encompass a much broader range of tourist products and services. In addition to the sale of local bee products, tourists are also interested in honey-based foods and beverages (e.g., honey cakes, mead, etc.), alongside the ever-present accommodation services in rural households. Furthermore, specific opportunities for sustainable agribusiness include: organizing beekeeping-related events and festivals; designing creative supplementary content for visitors (especially families with children, through animation and games); as well as storytelling and educational activities (offering beekeeping experiences through immersive stays on apiary farms and educating visitors about honey and beekeeping). Networking with the local tourism offer and designing mini-tours in the form of half-day trips or excursions also present additional opportunities. In this regard, both natural and anthropogenic tourist resources in the immediate vicinity of agricultural and beekeeping holdings may present a challenge for hosts, as tourists often seek to familiarize themselves with rural tourism destinations, local customs, traditions, handicrafts, legends, and other forms of intangible cultural heritage.

From the foregoing, the significant potential of beekeeping tourism, or apitourism, can be clearly observed, particularly in terms of the opportunities it offers local hosts for sustainable agribusiness. In this way, the economic dimension of apitourism is highlighted, as it can contribute to the sustainability of rural and agrotourism through increased income generated by the sale of apitourism-related products. However, apitourism requires

knowledge across various fields, including economics, marketing, management, consumer psychology, tourism studies, beekeeping, and even medicine (such as providing first aid in cases of anaphylactic shock). Therefore, the education and training of hosts in apitourism is a priority, alongside the quality of the tourism services provided and the standard of apitourism products, which are essential for attracting both domestic and international visitors and for securing a competitive position in the tourism market.

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