

# Supplementary activity of the agricultural business sector and a method for ecological protection of the cultural landscape

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### Abstract

**Introduction and Objective.** The development of agrotourism is based on ecological principles and, in a more narrow sense of the term, it is a matter of green tourism as a way of rediscovering the countryside and agricultural areas. It is an effort to achieve a harmonious combination of leisure activities with awareness of the cultural and natural wealth of the land. It contributes to preserving and expanding cultural and social traditions and to preserving cultivated land.

**Review Methods.** The article is concerned with the problems of agrotourism and rural tourism in the regions of Central Europe. The research and subsequent analysis focuses on analyzing existing knowledge in the field of the environment in the context of activities in the agricultural sector as one of the driving mechanisms of the economy for increasing sustainability as such.

**Brief description of the state of knowledge.** Agrotourism is a real opportunity to restore and maintain the welfare of rural areas, as well as the solution of extremely acute social problems that need to be addressed, primarily the problems of rural employment, health, education, and leisure. Solving these problems through the development of agrotourism will promote the social stability of rural regions. Future research could help identify agritourism best practices, keys to success, or barriers to growth.

**Summary.** Tracking agritourism operations over time would help researchers better understand the characteristics of successful operations and why some enterprises have chosen to participate in agritourism. Research in this area could also help identify the rural economic development benefits of industry agglomeration and how they vary based on the type of agritourism enterprise, regional location attributes, and spill-overs from other local industries.

### Key words

agriculture, biodiversity, environmental performances, multi-functionality, landscape

# INTRODUCTION AND OBJECTIVE

Supplementary activity of the agricultural business sector. The forms of tourism allow us to specify in more detail the essence of tourism from the point of view of the participants, their needs and expectations. This allows better preparation of a product to be offered on the market for a target group of tourism participants. Individual freedom to travel can be protected if rural tourism and agrotourism develop on an ecological basis, in other words, if it develops as green tourism [1]. Rural tourism plays the role of a significant initiator of economic development in towns and villages. The role of villages, towns and regions lies in active involvement in rural tourism and agrotourism, thereby contributing to improving the structure of visit rates, to increasing the volume of visits, to reviving the regional and national economy, and to raising the living standards of the villagers [2]. It follows from the essence of rural tourism and agrotourism that it can have a number of functions, such as health and recreational, cultural and learning, scientific and informational, and social-educational [3].

The roles of towns and villages in promoting and developing rural tourism and agrotourism are crucial in the following areas:

- environmental protection and its integration into tourism activities and into the overall government policy, i.e. preservation of the landscape, implementation of a policy for protecting historical, cultural and rural sites and sites attractive for tourists;
- economic development driven by tourism;
- preservation of the overall appearance of villages, of the material and technical conditions of rural tourism, agrotourism, support of fishing, hunting, etc.;
- promotion of villages within their regions, their presentation at exhibitions and trade fairs, and on the Internet;
- cooperation with information centres, regional agencies, or other institutions;
- promotion of permanently sustainable tourism and agrotourism in an attractive environment;
- obtaining financial resources for the development of a a region and attracting foreign investment [4].

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The idea of developing rural tourism is that humans return to nature, accompanied by a shift away from mass tourism to individual forms of spending holidays and leisure time. Villages in Slovakia and other Central European regions have diverse natural and cultural potential to be exploited in the development of rural tourism and agrotourism. It is therefore important to identify villages with lowland, submountan and mountain environments [5]. This determines their tourism potential and local culture. Villages situated in environments with a recreational value and a suitable urbanistic structure and folk architecture, such as compact settlements, scattered settlements and isolated houses, can be regarded as unused potential for developing rural tourism and agrotourism. The recreational and cultural potential of these villages forms a part of a tourism product offered by most villages and towns [6].

Rural tourism is a form of tourism which includes a set of activities focused on satisfying needs associated with people's travel and stay in a rural environment during leisure time. Agrotourism includes specific activities of agribusiness owners, farms and agricultural companies, according to local economic and natural conditions focused on satisfying the needs of visitors in the field of local gastronomy [7]. Agrotourism can be regarded as a supplementary activity of an agricultural business entity. It helps preserve the cultural character of a landscape, conserve and restore settlements, and improve a region's economic performance by producing regional gastronomic specialties, folk craft products, and by offering folk culture [8, 9].

A rural tourism and agriculture product consists of providing services with a special character. The most important priority for Slovakia and other Central European countries for the coming years is integration into the economic structure of the more developed countries in the European Union. A competitive agricultural sector is a prerequisite for successful integration. A significant factor in its development is tourism, and agrotourism in particular [10]. The study of the development of rural tourism and agrotourism in Slovakia and the European Union should not be confined to tourism, rather, it should be studied by considering agricultural production and regional problems [4]. The critical issue of disparities among the individual regions of Central Europe has become a priority in resolving social and economic problems. These disparities are further aggravated by the failure of underdeveloped regions to catchup with those already developed. The deepening problems in agriculture, especially the relatively young retirement age and high unemployment, can be partly solved by the development of agrotourism operated at a specific agricultural business and rural land [11]. This is confirmed by the results achieved in certain countries of the European Union where the development of agrotourism plays a significant role in terms of its impact on harmoniously balanced and stable agricultural development [12, 13].

Three problems concern the relationship between agricultural production and agrotourism and the relationship between agriculture and the domestic market, i.e. between production and execution. Rural tourism is an important source of regional development, particularly in mountain and submontane areas. In this respect, Slovakia has excellent conditions for the development of rural tourism and agrotourism, as forests and mountainous areas cover 62% of the country, making it the fourth most mountainous country

among the 25 European Union members. Rural tourism can only develop in regions with natural conditions for specific recreational activities [14], with mountainous areas being the most suitable for agrotourism operating all year round [15].

International organisations for agriculture. The World Tourism Organization (WTO) is the most significant international organization. Its main goal is comprehensive support of international tourism focused mainly on the economic, social, cultural and political benefits of tourism worldwide [16]. The most important European organization in the field of rural tourism and agrotourism is Eurogites (European Federation of Farm and Village Tourism), which is very important for Slovakia. As for ecotourism, Europe is represented by ECEAT (European Centre for Ecological and Agricultural Tourism) in Holland. Slovakia is a member of all of the above international organizations [17].

Positive aspects of agrotourism. Tourism, like all other social activities, has both positive and negative outputs affecting the human environment. Tourism is closely related to nature and environmental protection. It is a form of rural tourism and targeted business activity provided by an operator (whether it is a farmer, village, region or a physical entity) to tourists for the purpose of relaxation in a rural environment. Agrotourism includes specific activities of agrobusiness owners and agricultural companies, according to local economic and natural conditions focused on satisfying the recreational needs of tourists [18, 19]. It may serve as a supplementary source of income or as the main commercial activity if an operation in a given region has a large number of visitors and is of a high quality (Fig. 1). When providing services, it is necessary to bear in mind what kind of visitors the services are intended for. The visitors in question are mainly the so-called 'green' clientele, who want to stay in an original rural settlement and to learn about the way of life specific to the countryside, require an undisturbed environment, knowledge, and contact with rural inhabitants and local food that does not damage health [20].

There is a whole spectrum of categories of positive aspects of agrotourism. Habán and Otepka [4] are authors who are concerned with these problems from a broader perspective, stating the following positive effects of agrotourism:

- it is an ideal link between tourism services and the agricultural environment;
- respects the natural environment;
- contributes to landscape creation and enhancement;
- allows the discovery of local places of natural beauty, traditions, and their promotion elsewhere;
- enables humans to return to nature:
- is beneficial for tourists' health as they spend time outdoors;
- contributes to the preservation and recovery of biodiversity and ecosystems;
- stimulates the development of other agricultural activities [4].

Mikušáková [21] examines these positive effects from a narrower perspective, dividing them into three main groups: 1) Positive social effects on communities:.

- job creation;
- patriotism in the local community;
- strengthening social bonds in the local community;
- increasing incomes for household budgets;
- reduces migration of the rural population to cities.

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# 2) Positive cultural effects on communities:

- increased awareness of visitors of the local culture;
- development of local art;
- revived cultural life in villages;
- contact between different cultures and tolerance.

# 3) Positive effects on the quality of life in general:

- enhanced village infrastructure;
- improved standard of environmental protection;
- improved promotion of regions [21].

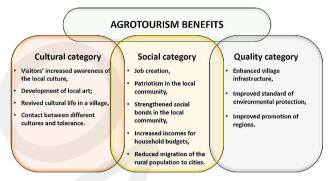


Figure 1. Positive aspects of agrotourism in the context of socio-economic aspects

The development of agrotourism in Slovakia is at its beginning, but the positive experience to date can already be seen in agricultural business sectors, villages and regions in different parts of the country. The physical appearance of cultivated land is affected by natural and anthropogenic elements [22]. Natural elements include, for example, relief, waters, natural vegetation or climate. Anthropogenic elements include, for example, spatial distribution of arable land, pastures and forest land in relation to uncultivated soils, agricultural buildings, gardens, etc. Lowlands, basins or mountains with conditions which are heterogeneous in terms of their climate and soil, diversify the use of agricultural land [23]. Land covered by plants, even though created and shaped by humans, imparts a specific character and appearance to these regions. Central European countries (Slovakia, Czech Republic, Poland, Hungary and Austria, among others) are known for their particularly suitable conditions for rural tourism and agrotourism, especially in mountain and submountain areas [24]. These areas make up around 60% of the total agricultural soil wealth, which agrotourism and rural tourism as a supplementary activity can contribute to the social and economic aspects of agricultural business sectors, and hence to entire territorial units.

In addition to natural geographical features, such as mountains, caves, water bodies, and medicinal and mineral water springs, folk architecture and various folk crafts are also attractive [25]. For example, since 1994. the development of rural tourism and agrotourism in Slovakia has been supported every year by the Ministry of Agriculture of the Slovak Republic. Considering the rapid development of rural tourism and agrotourism in Western European countries, it may be supposed that it also has strong prospects for growth in the region, due to the specific conditions and an abundance of skilled, creative and hospitable people [26]. If the aforementioned factors are exploited and managed flexibly and rationally, these activities in rural tourism and agrotourism can soon be expected to produce positive results [27]. The priorities should be to revive basic agricultural production, especially cattle farming and farming of native

species of animals specific to a given region, to develop the production of goods which are more labour-intensive and more difficult to process, such as fruit, vegetables, industrial crops and medicinal plants, or grapes, to support the processing of agricultural products for local markets, and for producing local specialties, to support non-agricultural activities, such as traditional crafts, to cooperate with industry and provide civil services, and finally, to develop all types of rural tourism [28].

Thus, the main principle of the relationship between agritourism and consumers lies in alignment of the needs and interests of consumers with the values and offerings that agrotourism activities and entities provide. This relationship creates a mutually beneficial connection in which consumers gain authentic experiences and agritourism entities gain support and interest from visitors. In this area, certain incentives in agritourism are also important, which can be linked in parallel with factors that motivate consumers to choose a specific form of activity. These incentives can be different and influence consumer decision-making, and can also be understood in connection with support for entities operating in agritourism. These incentives are fundamentally dependent on local, i.e. national policies of specific states or in accordance with transnational interests, for example, within the framework of European regulations.

### Agrotourism in the context of protecting biodiversity.

The Central European regions have excellent conditions for developing rural tourism products and possess ample potential for growth. However, the results of the current state of rural tourism and agrotourism suggest that in order for this tourism sector to be successful, it cannot be left to self-develop [29, 30]. One of the most serious problems is insufficient promotion of new and existing rural tourism and agrotourism products [31, 32]. This fact undermines the prospects of more effective utilization of the countryside's potential, possibly hindering its development [33, 34]. Agroculture constitutes a significant portion of the country's economy [35], employing 6% of the economically active population. It contributes to industrial production and plays an important role in providing nutrition for the population [36]. Besides its production function, it has an increasing number of non-production functions, such as landscapeforming, social and recreational.

The agricultural sector is the most common form of land use. It has an irreplaceable role in terms of biodiversity which depends on these activities [37] and ensures overall and biological balance of land [38]. Loss of biodiversity is a globally described problem, and as a result of human activity, species of plants and animals are disappearing, while the resilience and productivity of ecosystems is being reduced [39]. Among the causes of its decline is the loss of biotopes, excessive and unsustainable exploitation of natural resources, climate change, invasive species of fauna and flora, and environmental pollution [40]. The European strategy reflects all concepts, strategies, plans and programmes approved and applicable in the European Union that are related to the protection and use of biodiversity in any way. In the areas where interests regarding biodiversity and the interests of other policies and sectors overlap, it is necessary to achieve mutual integration and implementation of objectives in order to cover the interests of all public policies [41]. The intensification of agricultural production is seen as the main Terézia Pošiváková, Jozef Švajlenka. Supplementary activity of the agricultural business sector and a method for ecological protection of the cultural landscape

cause of reduced agrobiodiversity of cultivated land [42, 43]. Numerous scientific studies provide evidence for this claim based on specific groups of organisms, with entomofauna and ornitofauna being frequently studied groups. The diversity of an ecosystem in relation to agriculture is affected by various factors, such as changes in land management practices and systems, or changes in the ways an agrosystem interacts with an adjacent ecosystem. Transitions from one type of agricultural soil use to another are a negative factor affecting biodiversity [44, 45]. The level of genetic and cultural biodiversity, understood as the range of varieties of agricultural plants grown in a country, is increasing in Slovakia in the case of most such plants [46]. Old landraces occupy a prominent position within the preserved gene pool and are rightly seen as a significant part of genetic diversity, natural wealth and cultural heritage in any country [9]. The problems of climate change, environmental and biodiversity protection and reduction of energy-intensive industrial production, as well as strengthening the focus on the so-called green economy, have been declared priorities of the European Union, and are included in the principal conceptual documents of the relevant government departments [47]. One of the main instruments for protecting biodiversity is agrotourism and its development in the interest of social protection and development in order to protect human health and life.

The term biodiversity is a shortened form of the term biological diversity and was first introduced at a conference organized by the US National Academy of Sciences in 1986. The report of this meeting explains the emergence of the concept of biodiversity, which is prompted by data on deforestation and species extinction in the tropics, and that the loss of forests accompanied by short-term gains was followed by local economic decline [48]. The concept of biodiversity is therefore a fundamental prerequisite for a sustainable economy and society in line with all the socalled levels of social society from individuals, stakeholders, actors and policymakers [49, 50]. In the last three decades, considerable efforts have been made to bring the importance of nature for human well-being to the forefront of the international political agenda and context. The influential Millennium Ecosystem Assessment [51] and The Economics of Biodiversity [52] highlighted a phenomenon known as the ecosystem services cascade, where biological diversity underpins a range of cultural, regulatory and provisioning ecosystem services that, in addition to the intrinsic values of biodiversity, provide benefits and values for human populations, including in non-monetary terms.

### CONCLUSIONS

Agrotourism has an impact on the development of regions and leads to the recovery of traditions, an increase in cultural level, and an increase in income. The wide development of agrotourism makes it possible to study, classify and identify the main directions of development. However, there are difficulties in developing tourism in rural areas, due to the insecurity of investors and local producers. Despite these difficulties, agrotourism increases the economic potential of a region and has positive effect. Besides, agrotourism is a real opportunity to restore and maintain the welfare of rural areas, as well as a solution to extremely acute social problems that need to be addressed, primarily the problems

of rural employment, health, education, and leisure. Solving these problems through the development of agrotourism will promote to the social stability of rural regions.

Future research could help identify agritourism best practices, keys to success, or barriers to growth. Tracking agritourism operations over time would help researchers better understand the characteristics of successful operations and why some enterprises have chosen to participate in agritourism. Future research could also help identify the rural economic development benefits of industry agglomeration, and how they vary based on the type of agritourism enterprise, regional location attributes, and spill-overs from other local industries.

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# **REFERENCES**

- 1. Hjalager AM. Agricultural diversification into tourism: Evidence of a European Community development programme. Tourism Management. 1996;17(2):103–111. https://doi.org/10.1016/0261-5177(95)00113-1
- 2. Wijijayanti T, Augustina J, Winarno A, Istanti LN. Rural Tourism: A Local Economic Development. Australasian Accounting Business Finance J. 2020;14(1):5–13. https://doi:10.14453/aabfj.v14i1.2
- 3. Li Y, Ismail MA, Aminuddin AM. How has rural tourism influenced the sustainable development of traditional villages? A systematic literature review. Heliyon. 2024;10(4):e25627. https://doi.org/10.1016/j. heliyon.2024.e25627
- 4. Habán M, Otepka P. Agroturistika. Nitra. VES SPU; 2004.
- Mura L, Kljucnikov A. Small businesses in rural tourism and agrotourism study from Slovakia. Econ Sociol. 2011;11(3):286–300. https://doi:10.14254/2071-789X.2018/11-3/17
- Ivanová E, Masárová J. Assessment of innovation performance of Slovak regions. J Inter Stud. 2016;9(2):207–218. https://doi:10.14254/2071-8330.2016/9-2/16
- 7. Ivanova E, Cepel M. The impact of innovation performance on the competitiveness of the Visegrad 4 countries. J Compet. 2018;10(1):54–72. https://doi:10.7441/joc.2018.01.04
- 8. Habáník J, Kordoš M, Hošták P. Competitiveness of Slovak economy and regional development policies. J Inter Stud. 2016;9(1):144–155. https://doi: 10.14254/2071-8330.2016/9-1/10
- Juríčková Z, Lušnáková Z, Hallová M, et al. Environmental Impacts and Attitudes of Agricultural Enterprises for Environmental Protection and Sustainable Development. Agriculture. 2020;10(10):440. https:// doi.org/10.3390/agriculture10100440
- 10. Michalcová Z. Priklad modifikovaneho metodickeho postupu určovania potencialu uzemia pre rozvoj rekreačnych činnosti. Acta Environ Univ Comenianae. 2011;19,(2):36–46.
- 11. Europarat. European Rural Heritage Observation Guide. 2003. Council of Europe https://books.google.com.my/books?id=Sm6jNQAACAAJ (access: 2024.11.10).
- Su L, Huang S, Huang J. Effects of destination social responsibility and tourism impacts on residents'support for tourism and perceived quality of life. J Hospit Tourism Res. 2018;42:1039–1057. doi:10.1177/1096348016671395
- Anabestani A, Saeidi A, Darvishi H. Evaluation of socio economic, physical and ecological of tourism development in rural areas from villagers and tourist's points of view. Spatial Planning. 2012;2:1–20.
- 14. Prčík M, Kotrla M. Possibilities of rural tourism in relation to the natural conditions of region Tekov in the Slovak republic. Scientific Papers Series Management. Economic Engineering in Agriculture and Rural Development. 2012;14(4). https://doi/pdf/10.5555/20153025808
- 15. Ciolac R, Adamov T, Iancu T, et al. Agritourism-A sustainable development factor for improving the Health of rural settlements. Case study Apuseni mountains area. Sustainability. 2019;11(24). doi:10.3390/su11051467
- 16. Khizara HMU, Younasa A, Kumarb S, et al. The progression of sustainable development goals in tourism: A systematic literature

- review of past achievements and future promises. J Innov Knowledge. 2023;8:100442. https://doi.org/10.1016/j.jik.2023.100442
- Panasiuk A, Wszendybył-Skulska E. Social Aspects of Tourism Policy in the European Union. The Example of Poland and Slovakia. Economies. Land. Basel Switz. 2021;9(16). https://doi.org/10.3390/economies9010016
- Derco J, Štrba L. Social tourism in the Slovak Republic: Notes on selected aspects. Current Iss Tourism. 2020;23:2503-6. https://doi.org/10.1080/13683500.2019.1685472ñ
- Czyżewski B, Trojanek R, Dzikuć M, Czyżewski A. Cost-effectiveness of the common agricultural policy and environmental policy in country districts: Spatial spillovers of pollution, bio-uniformity and green schemes in Poland. Sci. Total Environ. 2020;726:138254. https://doi. org/10.1016/j.scitotenv.2020.138254
- Bakhmatova G. Development Prospect of Agro-Tourism and Positive Effects of Tourism Activities in Rural Regions. Interagromash. 2021;273:09001. https://doi.org/10.1051/e3sconf/202127309001
- 21. Mikušová J. Agroturistika a ekoturistika. Progressus Slovakia; 2010.
- 22. Habán M, Macák M, Otepka P. Rural tourism and agro-tourism in Slovakia. Roczniki ekonomii rolnictwa i rozwoju obszarów wiejskich. 2021;99(3):34–40. https://doi.org/10.22630/RNR.2012.99.3.28
- Hutárová D, Kozelová I, Špulerová J. Tourism Development Options in Marginal and Less-Favored Regions: A Case Study of Slovakia's Gemer Region. Land. 2021;10(3):229. https://doi.org/10.3390/land10030229
- Nagy H, Nagy A, Káposzta J. The role of tourism types in the context of rural development in Hungary. Conference: International Scientific Days. 2016;516–527. https://doi.10.15414/isd2016.s7.11
- Stoličná R. Agrotourism in Slovakia. The analysis of the issue and two examples. Academia. 2011;155–168. https://www.academia. edu/12041369/
- 26. The European Environment State and Outlook 2020 European Environment Agency. https://www.eea.europa.eu/publications/soer-2020 (access: 2024.11.10).
- 27. Svoboda J, Šalgovičová J, Polakovič A. Religion and Tourism in Slovakia. Eur J Sci Theol. 2013;9(6):125–132.
- Izakovičová Z, Špulerová J, Raniak A. The Development of the Slovak Agricultural Landscape in a Changing World. Sec Front Sustain Food Syst. 2022;6. https://doi.org/10.3389/fsufs.2022.862451
- Jaszczak A, Žukovskis J. Tourism business in development of european rural areas. Management Theory Stud Rural Busin Infr Develop. 2010;20(1):35–42.
- Ciolak R, Iancu T, Brad I, et al. Agritourism Activity A Smart Chance for Mountain Rural Environment's Sustainability. Sustainability. 2020;12(15):6237. https://doi.org/10.3390/su12156237
- 31. Andayani NLH, Trianasari T, Nugraha GP. Sustainable Agritourism Based on Resource Based Theory. International Conference on Tourism, Economics, Accounting, Management and Social Science. Adv Econ Business Manag Res. 2021;6:462–466. https://doi.10.2991/ aebmr.k.211124.065
- 32. Belliggiano A, Cejudo GE, Labianca M, et al. The Eco-Effectiveness of Agritourism Dynamics in Italy and Spain: A Tool for Evaluating Regional Sustainability. Sustainability. 2020;12(17):7080. https://doi.org/10.3390/su12177080
- Ivon A. Sustainability of Rural Tourism and Promotion of Local Development. Sustainability. Basel Switz, 2021. https://doi.org/10.3390/ books978-3-0365-1947-0
- 34. Baby J, Kim DY. Sustainable Agritourism for Farm Profitability: Comprehensive Evaluation of Visitors' Intrinsic Motivation, Environmental Behavior, and Satisfaction. Land. 2024;13(9):1466. https://doi.org/10.3390/land13091466.

- 35. Khan M. A, Pattnaik D, Ashraf R, Ali I, et al. Value of special issues in the Journal of Business Research: a bibliometric analysis. J Business Res. 2021;125:295–313. doi:10.1016/j.jbusres.2020.12.015
- Giannakis E, Bruggeman A. The highly variable economic performance of European agriculture. Land Use Policy. 2015;45:26–35. https://doi. org/10.1016/j.landusepol.2014.12.009
- 37. Brady M, Kellermann K, Sahrbacher C, Jelinek L. Impacts of decoupled agricultural support on farm structure, biodiversity and landscape mosaic: some EU results. J Agric Econ. 2009;60:563–585. https://doi.org/10.1111/j.1477-9552.2009.00216.x
- 38. Weyland F, Colacci P, Cardoni A, Estavillo C. Can rural tourism stimulate biodiversity conservation and influence farmer's management decisions? J Nature Conservation. 2021;64:126071. https://doi.org/10.1016/j.jnc.2021.126071
- Alegre EA, Ortiz DM. The 'Southern Model' of European agriculture revisited: continuities and dynamics. Res Rural Sociol Dev. 2013;19:37– 74. https://doi.org/10.1108/S1057–1922(2013)0000019005
- 40. Bennett EM, Peterson GD, Gordon JL. Understanding relationships among multiple ecosystem services. Ecology Letters. 2009;12:1394–1404. doi:10.1111/j.1461-0248.2009.01387.x
- 41. Alblas E, Zeben J. Farming out biodiversity: Implementing EU nature law through agri-environmental schemes. Earth System Governance. 2023;17:100180. https://doi.org/10.1016/j.esg.2023.100180
- Malanski PD, Dedieu B, Schiavi S. Mapping the research domains on work in agriculture a bibliometric review from Scopus database. J Rural Stud. 2021;81:305–314. https://doi.org/10.1016/j.jrurstud.2020.10.050
- 43. Kyriakopoulos P. Revisiting research on firm level innovation in rural areas: A systematic literature review and future research directions. J Rural Stud. 2021;111:103437. https://doi.org/10.1016/j.jrurstud.2024.103437
- 44. Alblas E, Zeben J. Public participation for a greener Europe: the potential of farmers in biodiversity monitoring. Land Use Pol. 2023;127:106577. https://doi.org/10.1016/j.landusepol.2023.106577
- 45. Blicharska M, et al. Contribution of social science to large scale biodiversity conservation: a review of research about the Natura 2000 network. Biol Conservation. 2016;199:110–122. https://doi.org/10.1016/j. biocon.2016.05.007
- 46. Weiskopf SR, Rubenstein MA, Crosier LG, et al. Climate change effects on biodiversity, ecosystems, ecosystem services and natural resource management in the United States. Sci Total Environ. 2020;733:137782. https://doi.org/10.1016/j.scitotenv.2020.137782
- 47. Hermoso V, Carvalho SB. Giakoumi S, et al. The EU Biodiversity Strategy for 2030: Opportunities and challenges on the path towards biodiversity recovery. Environ Sci Policy. 2022;127:263–271. https:// doi.org/10.1016/j.envsci.2021.10.028
- Wilson EO, editor. Biodiversity. Washington, D.C.: National Academy Press; 1988. https://doi.org/10.17226/989
- Stephenson PJ, Damerell A. Bioeconomy and circular economy approaches need to enhance the focus on biodiversity to achieve sustainability. Sustainability 2022;14(17):10643. https://doi.org/10.3390/ su141710643
- 50. D'amato D, Korhonen J. Integrating the green economy, circular economy and bioeconomy in a strategic sustainability framework. Ecol Econom. 2021;188:107143. https://doi.org/10.1016/j.ecolecon.2021.107143
- TEEB 2010. The Economics of Ecosystems and Biodiversity Ecological and Economic Foundations. Earthscan: London and Washington.
- 52. MEA 2005. Ecosystems and human well-being. Millennium Ecosystem Assessment, Island Press, Washington DC.