

Article

# Agritourism and Sustainability: What We Can Learn from a Systematic Literature Review

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**Abstract:** Scholars from different perspectives agree that agritourism can be the right tool to balance the needs of tourists with those of rural communities, offering real opportunities for economic and social development, while mitigating undesirable impacts on the environment. This paper aims to provide a holistic outlook of the different perspectives under which scientific literature deals with the topic of agritourism as a means to support the sustainable development of rural areas. To reach this aim, we performed a systematic review of the scientific literature in order to point out the linkages between agritourism and sustainability. We analyzed papers through a text mining solution based on the Latent Dirichlet Allocation (LDA) technique to point out the main topics around which the scientific literature on agritourism and sustainability has grown. Topics are further categorized in themes by means of an agglomerative hierarchical clustering procedure. Results are further analyzed to highlight the strengths and weaknesses of the current streams of the literature.

**Keywords:** sustainable development; Triple Bottom Line; rural development; rural tourism; agriculture; sustainability matrix

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## 1. Introduction

Since the second half of the last century, a series of social, economic, and environmental changes have considerably altered the planetary balances, generating events such as climate change, pollution, and loss of biological diversity [1]. The growing gap between rich and poor countries and the resource crisis in the energy, manufacturing, and agricultural sectors has grown more and more with the years, making essential a new concept of development that “meets the needs of the present without compromising the ability of future generations to meet their own need” [2].

Consequences of continuous economic growth (i.e., high social costs, indiscriminate use of natural resources, generalized pollution, etc.) led to a common understanding that the development pathways are no more sustainable and radical changes are needed [3]. A “*new trajectory for development*” is emerging, highlighting from the one side, the limits, and contradictions of the traditional development paradigm, from the other side, the need to transition to sustainable development strategies able to balance economic growth with cultural and natural resource conservation [4]. Fundamentals of such strategies are the three pillars of sustainability (economic, social, and environmental), which are best known as the Triple Bottom Line (TBL) [5]. Building on

the principle of “leaving no one behind”, in September 2015, the General Assembly of the United Nations adopted the 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs) emphasizing a holistic approach to achieving sustainable development for all [6].

From the industrial revolution on, rural communities have been facing many challenges such as poor commodity prices, rising input costs, environmental pressures, and globalization. Farmers have been increasingly forced to leave their farms and seek other jobs elsewhere, causing a shift of economic activities and population toward urban areas and exposing the rural ones to economic, social, and environmental decline [7–9].

Rural development can be defined as “an overall improvement in the economic and social well-being of rural residents and the institutional and physical environment in which they live” [10]. Nowadays, the concept of rural development is becoming increasingly complex, going beyond the boundaries of the economic sphere and leading to a growing emphasis on the not overexploiting natural resources and landscape, as well as on the stimulation and valorization of existing tangible (e.g., infrastructure, monuments, typical local foods, etc.) and intangible assets (culture heritage, traditions, history). The importance of involving local communities in common development pathways leveraging on territorial specificities of rural areas (e.g., the heritage of natural resources and landscape and the traditions of typical agriculture) is generally understood [11]. Several authors recognized the fundamental contribution of the agrifood sector to the sustainable development of rural areas, indicating evolutionary paths of differentiation and integration able to produce long-lasting development [12,13]. More recent patterns of the agricultural sector evolution highlight structural changes on both the demand and the supply side. On the demand side, consumers become more and more attentive to aspects linked up to the quality and typicality of production, while the supply side is characterized by new supply chain configurations, based on a closer relationship between producer and consumer and on the disintermediation of wholesalers.

To better exploit such evolution patterns, farmers and other organizations have started organizing themselves in rural networks deploying alternative business models aimed to guarantee competitive advantages, to improve farm revenue streams, to resume taking an active role in the agrifood system, and to develop new consumer market niches [14]. Such models are characterized by a re-connection among producers and consumers with these explicit ethical and political goals: revitalization of territory identity and rural community relations to local food and agriculture, linking with sustainable agriculture, economically viable, and socially responsible practices [15]. In fact, consumers are paying more and more attention toward viable practices like the “zero kilometers” approach, where the supply and consumption of food products to consumers occurs in the same location (or nearly) as the production [16]. These networks aim at shortening the physical and social distances between producers and consumers by minimizing the number of intermediaries in the food supply chain, having the potential to positively affect the sustainable development of rural areas along all the three pillars of sustainability (economic, environmental, and social) in agricultural systems [17–19].

In this work, we consider a particular model of agricultural business, namely agritourism, where farms, which deploy tourism activities, represent a touchpoint between a network of rural actors (non-profit organizations, local firms, public administrations) and tourists interested in enjoying the local territory. In fact, rural tourism represents a growing market offering to rural communities’ growth opportunities that arise from the emerging trends in tourism demand, which tend to pay more attention to the values of culture, food, and the countryside. It can bring a valuable contribution to the sustainable development of rural areas. Its contribution can be expressed not only in financial terms, but also in terms of jobs, enhancement and revitalization of community pride, encouragement to the adoption of new working practices, and the injection of new vitality into sometimes-weakened economies [20]. In this sense, agritourism represents an authentic form of rural tourism as it allows tourists to live a real and authentic rural experience on a working farm, participating in agrifood activities (e.g., harvesting, feeding, preserves preparation) being in contact with animals and nature and enjoying the food produced and cooked on the farm [21].

Nowadays scholars from different perspectives agree that agritourism can be the right tool to balance the needs of rural tourists with those of rural communities, offering real opportunities for economic and social development while mitigating undesirable impacts on the environment and other socio-cultural aspects [9,22,23]. This work aims to provide a holistic outlook of the different perspectives under which scientific literature deals with the topic of agritourism as a means to support the sustainable development of rural areas. To reach this aim, we performed a systematic review of the scientific literature in order to point out the linkages between agritourism and sustainability.

## 2. Theoretical Background

### 2.1. The Agritourist Farms

The substantial changes that affected the tourism and the agricultural sectors, as well as the growing competitive pressure, led small farmers to explore the feasibility of complementary economic strategies in the attempt to preserve their business initiatives. Specifically, farmers are continually looking for "new ways" of doing business in order to increase the competitive advantage in the global market, improve their sources of income, expand the activities of farms, "use" agricultural products in new ways and innovative, and develop new customer niches [24]. Agritourism activities are increasingly seen as a diversification strategy for agricultural entrepreneurs and as a form of support for the rural economy [25]. In fact, the EU agricultural policies led to a reorientation from a "productionist" agricultural paradigm toward more complex business models, among which the "agritourism" model stands out [26]. As stated by Sonnino, agritourism should be considered as a sustainable strategy: in its stated objectives, it promotes the conservation of a broadly conceived rural environment through its socioeconomic development [5].

In the scientific literature, the term "agritourism" is understood according to different meanings and often synonymous with the terms "agrotourism", "farm tourism", "farm-based tourism", and "rural tourism". In order to provide a clearer overview, in Table 1 we provide some definitions of "agritourism" adopted in the scientific literature.

**Table 1.** Overview of definitions for agritourism given in the scientific literature.

Definition	Source
"visiting a working agricultural setting—usually a farm or ranch—for leisure, recreation or educational purposes"	[27]
"any activity in which a visitor to the farm or other agricultural setting contemplates the farm landscape or participates in an agricultural process for recreation or leisure purposes"	[28]
"any farm-based business offered for the enjoyment and education of the public, to promote the products of the farm, and thereby generate additional farm income"	[29]
"tourist activities of small-scale, family or co-operative in origin, being developed in rural areas by people employed in agriculture"	[30]
"rural enterprises which incorporate both a working farm environment and a commercial tourism component"	[31]
"activities and services offered to commercial clients in a working farm environment for participation, observation or education"	[32]
"a specific type of rural tourism in which the hosting house must be integrated into an agricultural estate, inhabited by the proprietor, allowing visitors to take part in agricultural or complementary activities on the property"	[33]
"activities of hospitality performed by agricultural entrepreneurs and their family members that must remain connected and complementary to farming activities"	[5]
"tourism products which are directly connected with the agrarian environment, agrarian products or agrarian stays"	[34]

Many authors adopt the term "working farm" where tourism services are provided besides traditional agricultural activities [27,29]. However, agritourism and rural tourism are not properly synonymous since the first represents a subset of the latter activities [35,36]. Both agritourism and rural tourism cannot be defined only in terms of the services provided in a place. The definition must include the availability of resources put in value to satisfy a demand through services. In [5] and [33],

authors emphasize that tourism services provided in a working farm have to be strictly connected and complementary with respect to the activity of the agricultural entrepreneur. The term “connection” means that tourism activities are based on the raw materials and the premises of the farm, while the term “complementary” indicates that the tourism activity cannot exist outside an operating farm, but neither can it prevail in the context of the same over typically agricultural activities. In our intent the term agritourism refers to tourism services provided by agricultural entrepreneurs within their own farm, also allowing visitors to take part, directly or indirectly, in agricultural activities. In particular, agritourism farms may offer services as hospitality, meal provision, farm tour, on-site processing of agricultural goods, pick-your-own activities, and so on [21]. It must be emphasized that the study of agritourism has been dealt with according to different approaches, depending on the scientific discipline of reference. The two perspectives mainly adopted concern tourism and agricultural entrepreneurship, addressing agritourism related issues from an organizational, sociological, and economic point of view [37].

## 2.2. Sustainability Impacts

Since the concept of sustainability was introduced by the Brundtland Report [2], the pillars of the triple bottom line have been successfully used as a framework to holistically investigate the impact of different entrepreneurial activities across the social, economic, and environmental dimensions [22]. In the scientific literature, there are several frameworks to measure the magnitude of such impact on all the possible dimensions and we can briefly refer to these measures as sustainability impacts. Although the indicators used in those frameworks are strictly dependent on the reference industry [38,39], indicators are generally grouped according to the type of measured performance and the extent of the impact. For what concerns the type of performance, such models extend the concept of the economic bottom line (namely, the profit) of traditional accounting frameworks, adding an ecological and social perspective. Social equity, environmental and economic actors are also known under the 3P concept, “People, Planet, Profit” respectively [40]. The extent of the impact relates to sustainability at a micro or a macro level [41]. While the micro-level pertains to business value aspects related to the single enterprise (farm), the macro-level deals with the generation of value for the whole industrial branch or the region (or country) where the company operates [42].

Multidimensional approaches to sustainability are widely adopted also in agricultural and tourism settings. In the case of agriculture, the combination of traditional subsistence and modern farming practices paves the way to new agricultural models such as agroecology, which foster ecologically, culturally, and socially integrated practices and facilitate resilience through diversity [43] [19]. Sustainability and rural tourism are always more intertwined, highlighting the increasing interest of tourists in experiencing the rural environment and being part of the social fabric of the local community [44].

Agritourism is the business activity that best embodies the aspects just presented, as it represents fully the precepts of sustainable agriculture, as well as those related to sustainable tourism. In fact, Agritourism is seen as a “smart chance” for the sustainable development of rural communities, with multiplier effects on some important parts of economic and social life [45]. Previous research found that agritourism farms act as a stimulus for other local activities (e.g., agrifood producers, handicrafts, restaurants, shops) [4,32] as well as contributing to the preservation of customs and the local culture [46]. Tew and Barbieri [28] put in evidence that farm entrepreneurs are motivated in starting agritourism activities because of the increase in farm’s revenue stream, offering the possibility to capture new customers more than traditional farming, and the improvement of the farmer’s quality of life, promoting a way of life in contact with nature and providing alternative job opportunities with their families. These factors are important in contexts characterized by higher costs of land and input in general, especially for small businesses [3].

Some authors have dealt with the study of the motivations underlying the setting up of agritourism activities, emphasizing the dual role of agritourism for both individual “actors” (rural tourism operators, intermediaries in the tourism sector, and visitors) and the rural community as a

whole [31]. However, the scientific literature lacks a systematic overview of the potential benefits of the agritourism industry for the long-lasting development of rural areas. This limitation is essentially due to the complexity of the set of economic and non-economic objectives associated with agritourism activities. We intend to fill this gap using the methodology described in the next section.

### 3. Methodology

In this paper, we carried out a systematic literature review to provide a complete, exhaustive summary of relevant literature addressing the role of agritourism in supporting the sustainable development of rural areas. Following the principles and the process of a Systematic Literature Review proposed by Denyer and Tranfield [47], our research methodology was organized in three phases: papers location and selection, papers analysis and classification, the definition of themes.

#### 3.1. Papers Location and Selection

We selected Scopus as the scientific database to perform our search. Scopus delivers a comprehensive overview of the world's research output in our domain of reference and it can handle advanced queries. Elsevier Scopus is a citation database containing more than 50 million records from around 5000 publishers, for publications in peer-reviewed journals, omitting books, book chapters, discussion papers, and non-refereed publications.

Based on the prior experience of the review team and previous literature on Agritourism Studies, an initial set of keywords was defined. First, we have considered synonyms of "Agritourism" as search items. We initialized a List A of search keywords with English terms related to agritourism based activities (including "agritourism", "agrotourism", "agri-tourism", "agro-tourism", "Farm based tourism", "Farm tourism", "Rural tourism" [21]. We also initialized a List S of sustainability-related terms (including the terms "sustainability", "sustainable", "development", and related synonymous).

The keywords were constructed into search strings, in order to administer the search to the Scopus scientific database. The following search string was structured: *The search must contain at least one keyword of the Agritourism Domain (A) and one keyword from the Sustainability Domain (S)*. Through this procedure, we identified an initial sample of 212 papers. We manually analyzed metadata (authors, title, source, and year) in order to detect new keywords to add to the lists A and S respectively. We iteratively performed this phase until no newer keywords or new papers were found. Through this procedure, we identified a list of 405 scientific works.

After, the objective of the process was to select papers with high scientific quality. As a consequence, we have kept only those articles in the sample that were published in academic journals, removing conference proceedings as source type. A total amount of 325 entries is indexed as journal papers. In order to assess the quality of scientific publications, we selected only journals with impact factors indexed in the Thompson Reuters Journal Citation Reports. At the end of this cycle, we obtained the final set P of 192 papers (published in 66 journals) to be analyzed. In Figure 1, a graphical representation of sampled papers in P clustered by publication year is shown.

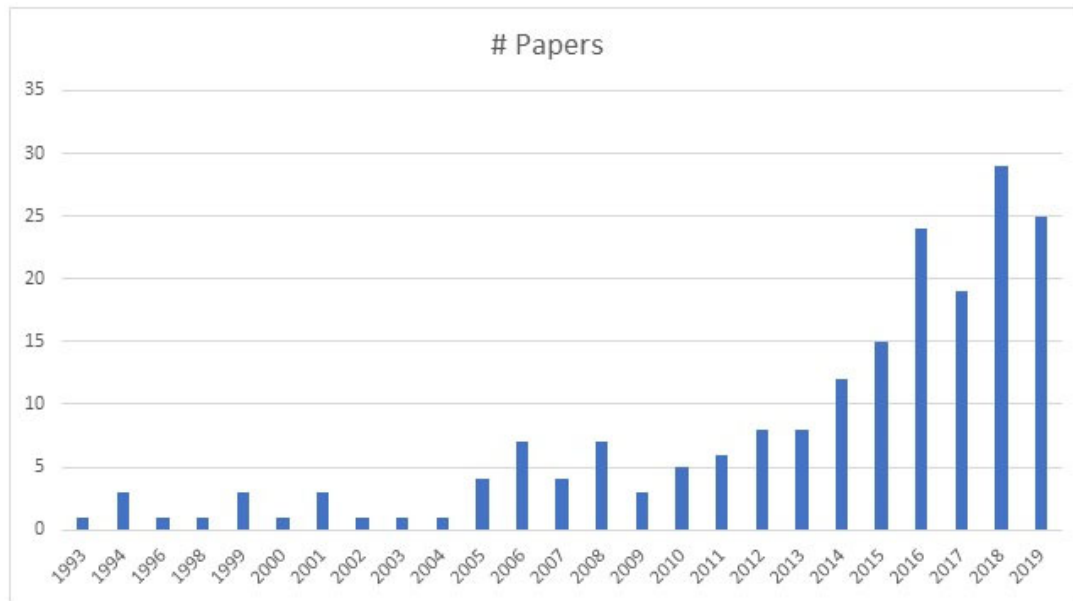


Figure 1. Papers in P by publication year.

### 3.2. Papers Analysis and Classification

The set P was analyzed through quantitative techniques with the aim to identify relevant topics in the investigated knowledge domain and to group them in macro themes. In particular, we applied a text mining solution based on the Latent Dirichlet Allocation (LDA) technique [48]. This allowed us to build a Document–Term Matrix, that is, a matrix describing the relative presence of keywords in a corpus of documents. The LDA technique leverages Bayesian Estimation Techniques to infer a vector representing the degree of membership (topic proportion) of each document to each topic. The LDA technique takes as input the documents to be analyzed (192 papers) and the number of topics  $k$  to be extracted. As suggested by Chang et al. [49] and Blei [48], we selected  $k$  using a reasonable practice of evaluation among alternative values in such a way that the interpretation of the machine-generated model results becomes as easy as possible from the point of view of a human reader. We have evaluated multiple outputs of the LDA with  $k$  ranging from 2 to 30 and have consensually agreed that the most meaningful set of topics is reached with  $k = 10$ .

The LDA procedure gave as output (Table 2) a group of significant keywords associated with each topic and the document–term matrix.

Table 2. Keywords grouped by topics (LDA output).

<b>Topic 1</b>	“visit”	“festiv”	“collab”	“event”	“particip”
<b>Topic 2</b>	“product”	“livelihood”	“sell”	“food”	“market”
<b>Topic 3</b>	“touris”	“farm”	“cost”	“valu”	“profit”
<b>Topic 4</b>	“invest”	“territor”	“region”	“infrastructur”	“system”
<b>Topic 5</b>	“land”	“natur”	“protect”	“pollut”	“mountain”
<b>Topic 6</b>	“resource”	“responsib”	“waste”	“landown”	“natur”
<b>Topic 7</b>	“heritag”	“touris”	“territor”	“tradition”	“cultur”
<b>Topic 8</b>	“job”	“farmer”	“increas”	“famil”	“resid”
<b>Topic 9</b>	“lifestyle”	“activit”	“educ”	“farm”	“touris”
<b>Topic 10</b>	“women”	“motiv”	“incom”	“household”	“independen”

### 3.3. Definition of Topics

In order to deduce meaningful descriptions of each topic, we implemented a human-based review of a restricted, representative, and relevant subset  $Q \subseteq P$  of high-quality papers.  $Q$  consisted of those articles in  $P$  that match ALL the following criteria [50]:

- Were published in academic journals ranked at a “C” level or higher of the German Academic Association for Business Ranking or equivalent values of ISI Impact Factor ( $IF \geq 0.7$ ) or ABS Academic Journal Quality Guide (higher than 2° category).

- Have a topic proportion (TP) value of 0,25 or higher.

- Papers included in the subset  $Q$  are 34 and are listed in Appendix A.

The 10 topics detected with the LDA procedure are named and discussed according to the 34 selected papers.

## 4. Results

In this section, we provide a state-of-the-art review basing on the description and the analysis of topics emerged as the output of the LDA procedure. We assume that the keywords associated with each topic represent a synthesis of the main points discussed in the literature. In any case, to build a reliable interpretation of each topic, we provide a discussion considering relevant papers to confirm and integrate the interpretations derived from the analysis of the keywords. The 10 topics detected with the LDA procedure, are named and discussed according to the 34 selected papers. In particular, the discussions are developed based on the papers’ main concepts which are the original proposals by the papers’ authors or reformulations of studies they cited.

### 4.1. Topic 1: Stimulus for Other Local Activities and Boosting Local Economies

Several authors consider agritourism a potential means for economic development and regeneration of rural areas, especially for territories with limited options for development [8]. Agritourism activities act as a stimulus for other local activities (suppliers of touristic service, crafts, shops, museums) and for the promotion of the rural area. Agritourism farms often represent a hub for agritourism rural networks where agrifood products and tourism services meet consumers' demand for relocalization, acting as a trigger to motivate further direct business opportunities between tourists and other rural community actors [4]. Agritourism represents a contact point between what the rural network offers and the tourist/customer demand. Local suppliers, through their long-term contracts with the farm, offer agritourists their goods and services having indirect contact with them (mediated by the farm) [4]. In fact, tourists hosted in agritourism, usually visit rural areas and purchase agricultural products and village handicrafts. The positive effect of agritourism on the rural area is shared among several economic activities, as tourist spending does not relate only to agritourism services, but also to restaurants, crafts, commerce, and other firms located in the rural region. In this sense, agritourism supports economic development by contributing to the generation of demand for the products produced locally and other related rural goods and services. [51]. Tregua et al. [52] emphasize the relationship between agrifood products and tourism, considering agritourism to be a useful tool in increasing local economic development through mutual enhancement and territorial promotion. Several authors agree that the positive impacts of agritourism extend beyond the farm gates, highlighting that the increased revenues in agritourism farms can boost local economies through increased sales taxes, generation of local employment, and stimulation of local businesses [22,53]. Rural areas can exploit agritourism to activate positive network externalities, encouraging other types of commercial activities or complementary services, thus generating a “virtuous” circle [54,55].

### 4.2. Topic 2: Alternative Source income for the Farmer/Business Diversification

Much research has addressed economic motives as important drivers of agritourism development from a service provider perspective [27,56]. Such studies are mainly based on survey research investigating benefits deriving from agritourism activities for farmers in specific rural

contexts, for example, Montana [57], Virginia [30], Australia [31], Northeastern England [58], and Missouri [59].

It has been observed that agritourism offers many opportunities to small and medium farms. The opportunities include increased farm gross income, the generation of cash flow, and a chance for economic diversification, expanding marketing and farm brand awareness, and smoothing seasonal fluctuations in farm revenue that are customary among many forms of agriculture [53,60].

Although it is not always able to general high profits, in many cases, agritourism generates enough revenue to enable farms to survive during periods of poor production [7,55]. Veeck et al. [61] found that the majority of agritourism operations serve as supplemental sources of income while agricultural production remains the primary focus. Farmers are looking for “new ways” of doing business, exploring the viability of alternative economic strategies [62]. Agritourism, as a form of on-farm entrepreneurial diversification, has been frequently promoted to face this challenging agricultural context. Diversification strategies have been suggested to create a more stable, and often higher, income for the producer or to supplement farm incomes in times of economic distress such as a poor harvest or depressed prices [63].

#### *4.3. Topic 3: Distribution Channel for Farm Product/Developing New Tourism Market Niches*

Agritourism represents an important opportunity in particular for small and medium farms, usually unable to compete with big farms on large-scale production and to face the bargaining power of mass retail channels [64]. Agritourism may represent an alternative distribution channel for farm production, creating cross-marketing opportunities for farm household products [65].

#### *4.4. Topic 4: Infrastructural Investments*

The diversification of economic activities increases the value of properties in a territory, creating a ready infrastructure and opportunities for the economic development of other activities in a rural area [66]. The direct boost of agritourism-based activities not only generates multiplying effects in the local economic system as a whole but generates indirect positive effects in the entire local economic structure in terms of public investments and attraction of capital from outside the rural area [67], stimulating the development of physical infrastructure and strengthening the local structure.

#### *4.5. Topic 5: Natural and Landscape Resources Maintenance/Biodiversity and Environmental Protection*

The role of agricultural activities in contributing to the creation and modification of rural landscapes is widely recognized [68]. Over the centuries, agriculture has configured the current European landscape as a unique semi-natural environment, often endowed with a wide variety of habitats and species, whose livelihood depends on the continuation of agricultural activity.

The landscape is certainly a very important element in territorial competition and agritourism has excellent growth potential in rural areas characterized by the high quality of the landscape.

The need to address the tourist demand for a greater variety of products that agritourism farms are able to directly sell results in a minor presence of monoculture production, generating a different mosaic of landscapes.

According to Mastronardi et al. [69], the presence of agritourism farms in farming systems falling in forests and protected areas has positive impacts on biodiversity and natural resources since they develop more sustainable practices. Several works found that agritourism plays a relevant role in soil protection and in hydrogeological disaster prevention [70,71]. Hence, agritourism represents a form of sustainable tourism able to conserve and develop rural landscapes and biodiversity.



#### *4.6. Topic 6: Responsible Use of Raw Materials and Natural resources/Waste Reduction*

Few studies emphasize the role of agritourism as a means to promote the responsible use of natural resources. According to Giurea et al [72], agritourism is a link to redesign the terms of consumption and waste for non-renewable energy sources. Re-using, recovering, re-developing, regenerating, and valorizing resources, must be considered as a frame of reference for sustainability in agritourism. Carlsen et al. [73] and Choo and Jamal [74] found a very strong inclination of farmers toward environmentally friendly practice adoption, including water conservation procedures, recycling programs for materials, and guest's education on conservation matters.

Many agritourism entrepreneurs are developing greater sensitivity in the exploitation of natural resources to produce energy with zero environmental impact [75]. Moreover, agritourism represents an opportunity to reduce food waste and reuse unsold products. Composting at the farm is usually done with some leafy leftovers from the garden, and the food leftovers can be safely used to feed animals. Agricultural products unsold through traditional channels can be used in restaurant services or to produce marketable foodstuffs (e.g., fruits turned into jam, vegetables preserved in oil) [76].

#### *4.7. Topic 7: Recovery of Roots, Folklore, and Traditions*

Agritourism represents a fundamental element in safeguarding the cultural heritage of rural areas [67]. It is mostly agreed that agritourism represents a key factor for local development, for rural marginal areas where the environmental and cultural heritage are strongly appreciated by tourists [77,78]. Agritourism was regarded as a form of rural tourism, which is rooted in rural areas with rurality as the dominant attraction. Agricultural landscape, rural vernacular landscape, and cultural heritage can be presented as an open-air museum displaying culture on the land by local people. Agritourism engages elements of community participation, heritage resource management, and strength rural tourism development plans [79]

#### *4.8. Topic 8: Provide Alternative Job Opportunities to Family Members*

Agritourism represents an important job opportunity, especially for young farmers [64]. In fact, several authors suggest that agritourism represents a means to provide employment for family members and an opportunity to plan farm succession, in order to preserve the business for future generations [53]. Transgenerational continuity of the family farm is imperative for agribusiness activity [80]. According to Brandth and Haugen [81], agritourism represents a great opportunity to maintain and renew the farm and its assets. Authors found that taking care of the farm resources and improving them for successors is a typical characteristic of farmer mentality: farm owners continue to take care of and build on local traditions and continuity, albeit for commercial reasons.

#### *4.9. Topic 9. Educate Visitors on Agriculture and the Rural World*

Agritourism offers visitors the opportunity to enjoy and reinforce the atmosphere of the agricultural life by staying at a real working farm, while the farmers can promote the conservation of the rural context [5]. Pastoral life, rural lifestyle, and eno-gastronomy are some aspects encouraging tourists to visit rural farms with the purpose of education, recreation, and active involvement in farm-based activities [82,83]. This form of tourism experience is particularly appropriate for tourists who seek traditional rural hospitality and access to nature, outdoor activities, and cultural experiences while helping farmers to maintain agricultural viability and to diversify rural economies [8].

#### *4.10. Topic 10. Enabler of Emancipation of Women*

Some authors recognize the role of agritourism as an element for independence and empowerment for women in rural communities, from a psychological, social, political, and economic point of view [84]. Agritourism contributes to rebalancing the gender dynamics determined by the participation of women in agricultural settings. Several studies emphasize that agritourism initiatives are often carried out by women [85]. Agritourism creates the need for an additional workforce, creating employment opportunities for women outside their households [30].

According to Brandth and Haugen [81], “engaging in farm tourism implies a change that not only demands new skills and competencies but may also influence the conditions under which gender relationships, power, and identities are enacted”. The opportunity to manage a business and the assumption of a leadership role, allows women to go beyond the purely operational tasks carried out in the agricultural sector. This gives women a voice and decision-making power, even if limited by the scope of agritourism activities. According to Annes and Wright [86], agritourism allows women to develop self-confidence and challenge dominant representations portraying farm women as “incomplete farmers”. In fact, agritourism gives them the opportunity to craft a professional image by demonstrating specialized knowledge and authority to the public.

## 5. Discussion

In the previous section, we showed how the methodology used in this research was able to detect the 10 topics around which clusters the scientific literature of agritourism and sustainable development. In this section, we show that further groupings are possible that give other interesting significance to the proposed topics.

### 5.1. The Three Themes

The 10 topics were further grouped into  $t$  themes by means of an agglomerative hierarchical clustering procedure. The degree of relationships among topics was calculated considering the Pearson Correlation Coefficient across the topic proportion for all paper, deriving from the Document Term Matrix obtained as the output of the LDA procedure.

Let  $p_{ij}$  (with  $i, j \in 1, k$ ) the Pearson Correlation Coefficient across the topic  $i$  and  $j$ , and  $D^{k \times k}$  a Dissimilarity Matrix where each element  $D(i,j) = 1 - p_{ij}$ . We performed a hierarchical clustering procedure to obtain  $t = 3$  groups of topics. We decided to cut the dendrogram where the gap between two successive combination similarities is the largest [87].

The evaluation of results coming from the LDA procedure, based on a subjective analysis of the authors, led to the identification of the three main themes in the analyzed literature and their relationship with the topics. We can state that the three themes, analytically calculated after an agglomerative hierarchical clustering procedure, can overlap the three dimensions of sustainability as reported in Barbieri [22]. According to the aim of this study, we describe the themes as follows.

#### 5.1.1. Theme 1: Economic Perspective

This theme includes all papers that look at agritourism as a means to stimulate other local activities and to contribute to the economic growth of the rural community. Indirect positive effects can be generated for the entire local economic structure in terms of attraction of investments for common infrastructure. Agritourism activities are mainly established to favor business diversification, creating an alternative source of income to the farm. Agritourism activities represent an effective distribution channel for farm products and, if well managed, a way to develop new market niches. As a result of the subjective analysis, the authors retrieved that 107 papers in  $P$  addressed an economic perspective (even if not always exclusively).

#### 5.1.2. Theme 2: Environmental Perspective

To this theme belong all papers dealing with the ability of agritourism to contribute to preserving the original landscape and maintaining natural resources in order to protect the rural environment and its biodiversity. In this sense, all papers that report about the responsible use of raw materials and natural resources, as well as waste reduction, belong to this theme. In total, 46 papers in  $P$  addressed an environmental perspective (even if not always exclusively).

#### 5.1.3. Theme 3: Social Perspective

From the one side, all papers that inform readers about the rural traditions belong to this theme (e.g., dealing with the recovery of roots, folklore, and local traditions). From the other side, papers

that aim to “educate” readers to avail fruition from the rural world belong to the theme as well. Furthermore, papers which highlight benefits of agritourism as a means to providing alternative job opportunities to family members also belong to this theme as well as papers highlighting the role of agritourism activities in increasing women emancipation. Also, in this case, the subjective analysis found that 96 papers in P addressed a social perspective (even if not always exclusively).

### 5.2. The Agritourism Sustainability Matrix

As already stated, the LDA procedure lets us identify a grouping of the 10 topics in three themes that can be easily overlapped with the three dimensions of sustainability.

According to [42], another grouping can be proposed here for papers in P considering the level of analysis (focus and aims) of each study. After a subjective analysis by the authors, each paper was classified as “micro-level paper”, when the research focus was a single agritourism farm, or as “macro-level paper”, which studied the effects of sustainability on a region or the industry. This clustering led the authors to identify 53 papers in P that can be clustered as primarily micro-level studies, 91 papers as macro-level analyses while 48 examined both levels.

In the end, it is possible to relate the two clusterings of topics introduced in this section in the matrix showed in Table 3 that we name “the agritourism sustainability matrix”.

In Table 4, for each matrix dial, the number of papers in P which primarily dealt with that level of analysis and type of perspective is reported.

What we can learn from the results reported above can be summarized as follows:

The importance of setting up agritourism activities to reach sustainable development for rural areas is always more understood by scholars who authored both theoretical studies and empirical research on this topic. As shown in Figure 1, the number of papers dealing with agritourism and sustainability is constantly growing with the years, highlighting an increasing interest from the scientific community.

As reported in Table 3, studied topics cover all the three dimensions of sustainable development, according to the 3P concept in [40], at different extents of the impact [42]. It is worth noting that while the economic and social perspectives are dealt with in four topics each, only two research topics present an environmental perspective.

What emerges from Table 4 is that scholars adopted mainly mono perspectives in their works with more than 60% of papers adopting a purely economic or social perspective. Multidisciplinary approaches are much less diffused and generally are studies combining the social perspective with the economic ones as showed in Tew and Barbieri [28] and [45].

Although surveyed papers covered both the two levels of analysis, macro and micro, an in-depth look at Table 4 highlights that scholars were more interested in studying sustainability impacts at a macro-level. Comprehensive studies that analyze the effects of agritourism activities at both the two analysis levels are present as well, thus confirming the interest already shown in [31] to analyze the dual role of agritourism for both individual actors and rural community as a whole.

Overall, two main gaps emerge in the scientific literature to be filled in order to delineate a holistic view of agritourism and sustainable development:

The environmental dimension, which is the less covered by literature, both in mono and multi-perspective studies, should be addressed much more by scholars.

Few studies are present which have a comprehensive and multidisciplinary view capable of evaluating the impact of agritourism activities on all the dimensions of sustainable development for rural areas.

**Table 3.** The agritourism sustainability matrix.

	Economic Perspective	Environmental Perspective	Social Perspective
<b>Macro Level</b>	Topic 1: <i>Stimulus for other local activities and Boosting local economies</i>	Topic 5: <i>Natural and landscape resources maintenance/Biodiversity and environmental protection</i>	Topic 7: <i>Recovery of roots, folklore, and traditions.</i>
	Topic 4: <i>Infrastructural investments</i>		Topic 9: <i>Educate visitors toward agriculture and the rural world</i>
<b>Micro Level</b>	Topic 2: <i>Alternative source income for the farmer/Business diversification</i>	Topic 6: <i>Responsible use of raw materials and natural resources/Waste reduction</i>	Topic 8: <i>Provide alternative job opportunities to family members</i>
	Topic 3: <i>Distribution channel for farm product/Developing new markets niches</i>		Topic 10: <i>Enabler of emancipation of women</i>

**Table 4.** Paper classification.

	Economic Perspective	Environmental Perspective	Social Perspective	Economic and Social Perspective	Economic and Environmental Perspective	Environmental and Social Perspective	Economic, Environmental and Social Perspective	TOT
<b>Macro Level</b>	27	14	25	19	3	2	1	91
<b>Micro Level</b>	23	9	18	2	1	0	0	53
<b>Macro &amp; Micro Level</b>	14	3	12	6	2	2	9	48
<b>TOT</b>	64	26	55	27	6	4	10	192

## 6. Conclusions

In this paper, we provided a holistic outlook of the different perspectives under which scholars deal with the joint topics of agritourism and sustainability.

We performed a systematic literature review to reach a systematization, in topics and themes, of the scientific literature dealing with agritourism as a means to support the sustainable development of rural areas. Moreover, we provided a deeper analysis of the results of the literature review, highlighting the strengths and weaknesses of the current streams of the literature with respect to the definition of a comprehensive body of knowledge really able to depict a big picture of agritourism as a sustainable rural development strategy.

Our research highlights that the scientific literature has a very positive vision of agritourism. This vision is in line with the goals of the UN's 2030 Agenda for Sustainable Development [6]. Agritourism could lead to the reduction of poverty through tourism, generating employment opportunities, creating synergies with agriculture and local service provider sectors, achieving gender equality, and stimulating the development of basic infrastructures such as roads, ports, and airport facilities.

We found that scholars emphasize the importance of setting agritourism activities, both for farms and for the rural community, to revitalize the rural communities through a sustainable development strategy. According to a recent report provided by Fortune Business Insights [88], the global agritourism market is anticipated to exhibit astonishing growth soon. Starting from a market size of USD 69.24 billion, the report forecasts it reaching USD 117.37 billion by 2027, exhibiting a CAGR of 7.42% during the forecast period. Nevertheless, agritourism still represents a niche market if compared to the whole tourism industry. Evidence from empirical studies suggests some limitations and barriers to agritourism development, including fragmentation of tourism promotion efforts among involved farmers and destination management organizations [89], lack of entrepreneurial farsightedness among farmers [90], and the lack of financial resources [91]. The analysis of motivations limiting the exploitation of agritourism in supporting rural development goes beyond the scope of this research. We aimed to provide an outlook on how the scientific literature dealt with the topic of agritourism to support the sustainable development of rural areas. In any case,

the potential benefits of agritourism activities in rural settings and barriers to agritourism development deserve to be holistically deepened and generalized.

Some limitations affect this research. Methodological choices made in the paper, including the selection criteria of the papers for detailed analysis, dealt with relevant sources in previous literature. However, these restrictions could lead to the exclusion of interesting works. Despite the Scopus database being probably the world's largest one, this study is limited to the scientific papers available in this single one. Moreover, inclusion criteria adopted for the human-based review of representative and relevant papers limited the number of selected papers by excluding some interesting articles. However, although these works were excluded from the human-based analysis, these were nevertheless considered in the LDA procedure.

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## Appendix A

**Table A1.** List of the top-ranked papers for each topic.

#	Authors	Year	Title	Source	Topic
1	Yang, L.	2012	Impacts and challenges in agritourism development in Yunnan, China	Tourism Planning and Development	1
2	Tregua, M., D'Auria, A., and Marano-Marcolini, C.	2018	Oleotourism: Local Actors for Local Tourism Development	Sustainability	1
3	Barbieri, C., and Mahoney, E.	2009	Why is diversification an attractive farm adjustment strategy? Insights from Texas farmers and ranchers	Journal of rural studies	1
4	Barbieri C.	2013	Assessing the sustainability of agritourism in the US: A comparison between agritourism and other farm entrepreneurial ventures	Journal of Sustainable Tourism	1
5	Broccardo, L., Culasso, F., and Truant, E.	2017	Unlocking value creation using an agritourism business model	Sustainability	1
6	Tew, C., and Barbieri, C.	2012	The perceived benefits of agritourism: The provider's perspective	Tourism Management	2
7	Phelan, C., and Sharpley, R.	2011	Exploring agritourism entrepreneurship in the UK	Tourism Planning and Development	2
8	Kim, S., Lee, S. K., Lee, D., Jeong, J., and Moon, J.	2019	The effect of agritourism experience on consumers' future food purchase patterns	Tourism Management	2
9	Lupi, C., Giaccio, V., Mastronardi, L., Giannelli, A., and Scardera, A.	2017	Exploring the features of agritourism and its contribution to rural development in Italy	Land Use Policy	3
10	Valdivia, C., and Barbieri, C.	2014	Agritourism as a sustainable adaptation strategy to climate change in the Andean Altiplano	Tourism Management Perspectives	3
11	Contini, C., Scarpellini, P., and Polidori, R.	2009	Agri-tourism and rural development: The Low-Valdelsa case, Italy	Tourism Review	4
12	Melendez-Pastor I., Hernández E.I., Navarro-Pedreño J., Gómez I.	2014	Socioeconomic factors influencing land cover changes in rural areas: The case of the Sierra de Albarracín (Spain)	Applied Geography	4
13	Briedenhann J.	2007	The role of the public sector in rural tourism: Respondents' views	Current Issues in Tourism	4
14	Sgroi, F., Di Trapani, A. M., Testa, R., and Tudisca, S.	2014	The rural tourism as development opportunity or farms. The case of direct sales in Sicily	American Journal of Agricultural and Biological Sciences	5
15	Mastronardi, L., Giaccio, V., Giannelli, A., and Scardera, A	2015	Is agritourism eco-friendly? A comparison between agritourisms and other farms in Italy using farm accountancy data network dataset.	SpringerPlus	5
16	Alves-Pinto H.N., Latawiec A.E., Strassburg B.B.N., Barros F.S.M., Sansevero J.B.B.,	2017	Reconciling rural development and ecological restoration: Strategies and policy	Land Use Policy	5

	Iribarrem A., Crouzeilles R., Lemgruber L., Rangel M.C., Silva A.C.P.		recommendations for the Brazilian Atlantic Forest		
17	Kupidura A., Łuczewski M., Home R., Kupidura P.	2014	Public perceptions of rural landscapes in land consolidation procedures in Poland	Land Use Policy	5
18	Sayadi S., González-Roa M.C., Calatrava-Requena J.	2009	Public preferences for landscape features: The case of agricultural landscape in mountainous Mediterranean areas	Land Use Policy	5
19	Carlsen, J., Getz, D., and Ali-Knight, J.	2001	The environmental attitudes and practices of family businesses in the rural tourism and hospitality sectors	Journal of sustainable tourism	6
20	Choo, H., and Jamal, T.	2009	Tourism on organic farms in South Korea: a new form of ecotourism	Journal of sustainable tourism	6
21	Bonadonna, A., Matozzo, A., Giachino, C., and Peira, G.	2019	Farmer behavior and perception regarding food waste and unsold food	British Food Journal	6
22	Ciolac, R., Iancu, T., Brad, I., Popescu, G., Marin, D., and Adamov, T	2020	Agritourism Activity—A “Smart Chance” for Mountain Rural Environment’s Sustainability	Sustainability (Switzerland)	7
23	Songkhla, T. N., and Somboonsuke, B.	2013	Interactions between agro-tourism and local agricultural resources management: A case study of agro-tourism destinations in Chang klang District	<i>Journal of Agriculture and Food Sciences</i> , 1(3), 54–67	7
24	LaPan C., Barbieri C.	2014	The role of agritourism in heritage preservation	Current Issues in Tourism	7
25	Muresan I.C., Oroian C.F., Harun R., Arion F.H., Porutiu A., Chiciudean G.O., Todea A., Lile R.	2016	Local residents’ attitude toward sustainable rural tourism development	Sustainability (Switzerland)	8
26	Garau C.	2015	Perspectives on cultural and sustainable rural tourism in a smart region: The case study of Marmilla in Sardinia (Italy)	Sustainability (Switzerland)	8
27	Park D.-B., Nunkoo R., Yoon Y.-S.	2015	Rural residents’ attitudes to tourism and the moderating effects of social capital	Tourism Geographies	8
28	Suess-Reyes, J., and Fuetsch, E.	2016	The future of family farming: A literature review on innovative, sustainable and succession-oriented strategies	Journal of rural studies	9
29	Idziak W., Majewski J., Zmyslony P.	2015	Community participation in sustainable rural tourism experience creation: a long-term appraisal and lessons from a thematic villages project in Poland	Journal of Sustainable Tourism	9
30	Sonnino, R.	2004	For a ‘piece of bread’? Interpreting sustainable development through agritourism in Southern Tuscany	Sociologia Ruralis	9
31	Yang, L.	2012	Impacts and challenges in agritourism development in Yunnan, China	Tourism Planning and Development	9
32	McGehee, N., Kim, K., and Jennings, G. R.	2007	Gender and motivation for agri-tourism entrepreneurship	Tourism Management	10
33	Brandth, B., and Haugen, M. S.	2011	Farm diversification into tourism—implications for social identity	Journal of rural studies	10
34	Gil Arroyo, C., Barbieri, C., Sotomayor, S., and Knollenberg, W.	2019	Cultivating Women’s Empowerment through Agritourism: Evidence from Andean Communities	Sustainability (Switzerland)	10

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