

Research Paper: Agritourism: A Strategy in the Tourism Sustainable Development of Rural Communities (Case Study: Dulab Village, Kurdistan, Iran)

Sara Soleimani^{1*}, Sara Momeni²

1. Assistant Professor, Department of Architecture, Faculty of Art and Architecture, University of Kurdistan, Sanandaj, Kurdistan, Iran.

2. MSc., Department of Architecture, Faculty of art and architecture, University of Kurdistan, Sanandaj, Kurdistan, Iran.



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ABSTRACT

Purpose: Several studies have shown that different forms of rural tourism can have positive and negative economic, social, and environmental effects on the region they occur in. This study aimed to evaluate the economic, social, and ecological effects of agritourism on the development of rural areas. Dulab village in Iran was selected as one of the tourism target villages.

Methods: First, the local community's economic, social, and environmental needs (n=97) were extracted from the heads of households qualitatively. Then, agritourism was introduced to the local community as a development plan, and tourism's positive and negative effects were assessed by factor analysis.

Results: According to the present study, most villagers had economic incentives, including job creation, income increase, poverty reduction, creating complementary jobs, selling products without intermediaries, the welfare of the local community, and Empowering rural women to accept tourism and tourism development.

Conclusion: According to the results, since agriculture was the main source of income and occupation of rural people, agritourism was identified as a solution for sustainable development in rural communities, emphasizing the necessity of local community participation.

1. Introduction

Decreased activity in the agricultural sector and other traditional rural activities in most regions have had extreme economic, social, and environmental effects on these

areas (Marsden, 1995, 1998; Van Der Ploeg, 2018). This significant decline in agriculture has considerably affected the economic sector in rural communities. There have been new visions in the development of rural areas that have encouraged farmers and villagers to perform a set of complementary activities in line with the provision of new products and services alongside the agricul-

* Corresponding Author:

Sara Soleimani, PhD

Address: Department of Architecture, Faculty of Art and Architecture, University of Kurdistan, Sanandaj, Kurdistan, Iran.

Tel: +98 (912) 3131523

E-mail: s.soleimani@uok.ac.ir

tural sector (Marsden, 1995, 1998; OECD, 2006; Silva et al., 2016; Rivera et al., 2018; Szumelda, 2019; Dinis et al. 2019). In this regard, one of the visions is sustainable rural tourism, which is growing suitably in rural areas with a multifunctional nature (Dinis et al., 2019). Rural tourism is considered a sustainable development strategy for rural areas in many developing and developed countries (Lee et al., 2015; Hoefle, 2016). Not only is this type of tourism used as a development strategy in villages in line with agricultural economic growth, but it is also considered a method to preserve the traditional structure of local communities. Today, rural tourism is supported by local communities as a solution to the economic and social problems of the agriculture industry (Su, 2011; Ayhan et al., 2020).

Many developing countries have witnessed rapid tourism growth in agricultural communities, and tourism has become a primary or secondary resource for revenue generation. For instance, the economy of 20 out of 48 developed countries (LDCs) has been based on agriculture and tourism (UNWTO, 2015). Therefore, it is necessary to pay special attention to these sectors, especially the economic opportunities that emerged from the relationship between tourism and agriculture. According to Torres and Mamsen (2011), there is the establishment of a relationship between agriculture and tourism through tourism markets a necessity, but also it creates opportunities for generating new shapes of marketing, aiming at increasing demand for tourists and quality, sustainable food (MAFSC, 2015; Sanches-Pereira et al., 2017).

Rural communities have faced a growing development trend owing to rural tourism's development in both the demand and the supply sectors (Long & Lane, 2000). In this approach, rural tourism is no longer a partial factor in the economic development of local communities. It is now a regional and national policy aligning with these communities' social, cultural, and environmental actions (Hall et al., 2005). Rural tourism integrates the economic, social, cultural, natural, and human structures of the place it occurs (Saxena et al., 2007; Saxena & Ilbery, 2008) and can help diversify farmers' incomes (especially on small family farms). In addition to economic advantages, rural tourism has other benefits, such as deprivation, increasing cultural exchanges between urban and rural areas, strengthening the traditional values of rural life, and helping diversify the rural economy (Roberts & Hall, 2001; Canoves et al., 2004). From the classical point of view, tourism in rural areas is divided into two categories: "rural tourism," which is directly related to rustic space, the proximity to nature and several types of entertainment, and "farm tourism," which is associ-

ated with the visit of tourists from active farms (Rendelli & Martellozo, 2019). The European Union (EU) has described agritourism as a holiday in rural areas (Marcotte et al., 2006). Many EU countries see agritourism and rural tourism as the same terms, which has led to the limited development of the phenomenon in certain areas (Vogt, 2013) with a long history of rural tourism (Lesauvage, 1995). Nonetheless, a general reference to rural tourism implies low participation in farms and mostly tourism in rural environments that do not do farming (Lupi et al., 2017).

The present study focuses on farms and agritourism gardens. This study aims to identify the indicators of sustainable development of agritourism from the perspective of local people. Attempts are made to recognize the priorities and potentials for attaining necessary strategies for sustainable rural development. Evaluation of negative and positive economic, social, physical, and environmental factors as an important part of applicable planning to adopt the method and turn it into a component for sustainable agritourism management is paramount. Lack of assessment of the needs of local people in tourism target villages of Iran and performing projects based on library studies and evaluation with a top-down approach was considered an important challenge. Therefore, the local people's opinions about the economic, social, physical, and environmental aspects of Dulab village were collected and analyzed to determine the indicators for assessing the sustainability of tourism development as well as the sustainability of rural settlements in the mentioned village, which is a target tourism region. By doing so, we attempted to make future developments possible based on the desires of the local people. These indicators, which may or may not be in the direction of stability, can be used to evaluate the development trend of rural communities. Determining these indicators can help realize whether tourism development has been stable and whether they support the stability of rural settlements in the studied region. To date, a similar study has been carried out in the villages of this region to accurately determine whether the current development of tourism is in the sustainable range and whether the development of tourism contributes to the sustainable development of rural settlements. Another objective is to determine the prospects for sustainable tourism development in rural areas of this region. This highlights the importance of surveying the local community in a context with natural resources and unique architecture.

2. Literature Review

According to experimental results, diverse forms of rural tourism can positively and negatively affect the environment (Daugstad et al., 2002) and the socio-economic areas in which it is developed (Tew & Barbieri, 2012; Vogt, 2013; Srisomyong & Meyer, 2015). Most studies have shown that agritourism is a success factor for the development of local communities (Saxena et al., 2007; Flanigan et al., 2015), especially for rural marginal areas (Mastronardi & Cipollina, 2009), where cultural and environmental heritage is highly welcomed by tourists (Garrod et al., 2006; Mastronardi et al., 2015; Lupi et al., 2017).

Agritourism has redefined rural community performance and agricultural production manufacturing systems, the exploitation of rustic space, and the importance of agriculture in modern societies. In this sense, it plays a considerable role in economic and social changes in rural communities and the formation of new models in the manufacturer-consumer relationship. These models are based on the sustainable development of societies in the economic, social, and environmental direction with a commitment to organic agriculture, creating job opportunities for local people, and changing the diet of consumers (Carbone & Senni, 2010; Guirado et al., 2017).

Agritourism is associated with multifunctional activities through the development of agricultural activities. The multifunctional activities integrate different aspects of rural development, such that farming remains the dominant and main activity (Armesto, 2005) while new businesses are created to increase awareness of new values and methods in food production, processing, and marketing (Vivas, 2010; Guirado et al., 2017). In addition to compensating for low agricultural returns, agritourism is recognized as a method to attract tourists in rural areas (Dubois et al., 2017). The past two decades have witnessed increased demand for leisure and connection to open spaces with traditional lifestyles among health-conscious tourists (Flanigan et al., 2015; Lane, 2009). Moreover, agritourism can help meet demands in remote outskirts and in the vicinity of large urban centers (Evans & Ilbery, 1992; Gartner, 2004; Dubois et al., 2017).

Previous studies' results indicate the facilitation of women's participation in the tourism business (Brandth & Haugen, 2011; Dubois et al., 2017). Agritourism allows agricultural entrepreneurs to remain in their local areas. Because of the increase in agricultural product sales rates, prices have declined so much that they are no longer profitable. Agritourism provides employment opportunities for farming families whose members are

unemployed or have never worked. Moreover, agritourism provides services in rural areas for people seeking to stay or serve (Sgroi et al., 2018).

Agritourism has the potential to generate additional revenue with low investment in existing assets and minimal impact on environmental factors and rural heritage (Barbieri, 2013; McGehee, 2007). Moreover, it leads to sustainable agricultural products, increased life quality of farmers, and increased direct access to sales markets (Kim et al., 2019). In addition to economic advantages (Sharpley & Vass, 2006; Weaver & Fennell, 1997), agritourism is associated with social benefits, including decreased migration, return to rural areas, living in a suitable environment, enjoying the rural lifestyle (Getz & Carlsen, 2000), maintaining rural lifestyle, preserving local identity and customs, enabling cultural exchanges between local communities and tourists (Tew & Barbieri, 2012), educating guests (McGehee & Kim, 2004), engaging tourists in activities, participating in entertainment, maintaining and improving environmental protection, and developing local services including education, health care and public transport (Canovi, 2019).

3. Methodology

Study area

One of the main approaches of the Iranian government in recent years has been utilizing the power of less developed areas, especially villages, in the category of tourism to eliminate deprivation and create incentives for development and achieve the goals set in the 20-year vision plan of the country. Meanwhile, Kurdistan is an agriculture-dependent province and is recognized as one of the important tourism targets because of its unique and beautiful nature and unique landscapes. There are 43 tourism target villages in this province. In this study, Dulab village, located in the northern part of the Oramanat region, was selected as one of the new tourism destinations. With an approximate area of 5120 km², the Oramanat region includes large parts of Iran's Kermanshah and Kurdistan provinces and a part of Iraq (Figure 1). The stepped texture of these villages distinguishes them from other parts of Iran and makes them one of the most important strengths of this region of Iran to attract tourists.



Figure 1. From left to right: Dulab village in the Sirvan section- Sanandaj, Sanandaj city in the Kurdistan province, Kurdistan province location in the Iran country

JSRD

The architecture of Dulab village is directly related to the life and culture of the people and has been established under the southwest topography. Affected by the climate, the general architectural pattern of this village is very dense and intertwined. Further, there are no empty spaces or playground areas in the village since the roof of each house is the yard of the upper house (Barban), part of the pedestrian zone, or even the center of the neighborhood. In this village, access is provided by narrow, parallel stairways. Given the emphasis on the area's original architecture, the villages of this area are mainly divided into three categories in terms of topography: 1. a mountainous area with a steep slope, 2. a foothill area with a medium slope, and 3. plain with a gentle slope. Accordingly, the village has different textures, each having its own specific features (Molanaei & Soleimani, 2016). Classified in the first class, Dulab has a temperate mountainous climate, cold winters, and mild summers. Special climatic conditions (e.g., temperate climate and abundant springs) have significantly impacted this village's formation. Water-rich valleys, high mountains, large springs, oak forests, and lush gardens around the village are the village's strengths in attracting tourists. This region attracts a considerable number of

tourists and nature enthusiasts annually. The lush mountain ranges of the village are covered with a wide range of medicinal plants and flowers. The economy of Dulab village is primarily based on agricultural, horticultural, and livestock activities. Women also cooperate with males in agricultural and horticultural activities. Other important attractions of this village include the Boolav Ceremony, which is held in the last week of September. This ceremony involves traditionally turning several tons of grapes into raisins and important shrines of famous Kurdistan dervishes, including the monastery of Sheikh Mohammad and Sheikh Hadi, built downstream of the valley and near the river and welcome followers of this school throughout the year.

Local people of the region speak the Hurami Kurdish language, which is one of the closest dialects to Avesta (Hashemi & Ghaffary, 2017). In 1966, the village had a population of 639, which increased until 1996. After that, the village's population decreased, reaching 491 in 2016, which showed the high migration of villagers. It should be noted that four out of 20 tourist accommodations of Kurdistan Province are located in Dulab village (Figure 2).

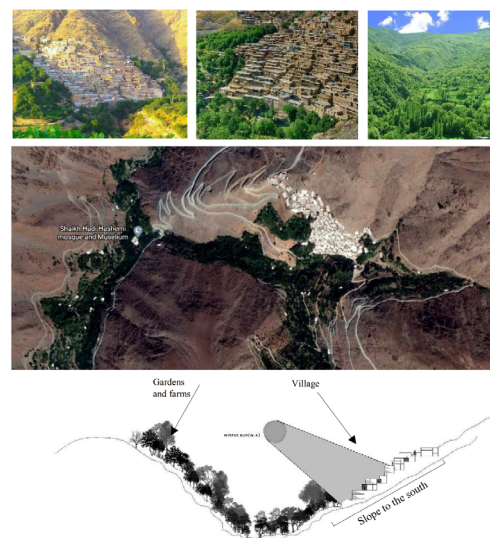


Figure 2. The study area

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Organizational development policies have caused various environmental, cultural, and social challenges through tourism. From an environmental and ecological point of view, the lands of this region suffer from human activities that have changed their nature. The decrease in income of the area has led to uncontrolled cultivation and damage to the region's pristine nature, including the slopes of mountains and hills. The low economy has led to unchecked cultivation and damaged the pririgion's untouched nature. Economic problems have resulted in disregarding standards and indiscriminate destruction of natural resources despite the existence of upstream terms for the preservation of natural resources. Meanwhile, the particular context of the region's villages (situated on the mountain slope), exceptional natural landscapes, and unique architecture of the area can be the basis for the development of rural tourism and provide a sustainable resource for the economic growth of the local people.

Methods

Concerning the structure of the study and based on experiences obtained from similar studies, the main part of the research was carried out through field data collection by questionnaires. The statistical population was selected by purposive sampling. The head of the family participated in the study on behalf of the whole family. Age and occupational diversity were considered in determining heads of households. Moreover, participants were selected from those who were familiar with the subject topic and objectives of the research and current laws and invested and participated in the development process of the study area, which gives special value to the study. The samples were selected based on Cochran's formula, including 97 heads of households. Two research team members who were familiar with the region's lo-

cal language distributed the research instruments. First, the research group guided the interested local people by training them about agritourism and encouraging them to participate in the study. Attempts were made to gain respondents' trust while familiarizing them with the research topic so that comprehensive answers could be received from the statistical population. Since some of the villagers work in the city during the cold seasons, the harvest season, in which most of the villagers are present, was chosen to fill in the questionnaires. The government introduced this village as a tourism target in the past few years. Moreover, the region's special architectural structure and beautiful nature attracted tourists and nature enthusiasts. Given the familiarity of villagers with tourism due to presenting services such as ecotourism resorts, the region's local people were recognized as the most valuable respondents familiar with local opportunities and the area's economic, environmental, and social needs.

The questionnaire includes three sections, the first starts with five background questions about gender, age, level of education, occupational status, and duration of stay in the village. The second section includes 22 items on the economic and social needs of the local community in the current situation, where tourism has been implemented with a pre-determined program by the government and without a survey of residents. The third section comprises 33 items related to the local community's attitude toward positive and negative economic, social, physical, and environmental factors resulting from agritourism. The questions were asked based on the country's sixth five-year economic, social and cultural development program (approved by the Islamic Assembly on 5 April 2017) and through the integration of similar studies performed at national and international levels (Table 1).

Table 1. The indicators examined in the research

Indicator	Description
Personal characteristic	Gender, age, education, occupation, and length of stay in the village.
Economic effects	Job creation, self-sufficiency, increase in the price of land and housing, horticulture and livestock products, change of cultivation pattern, private sector investment, new jobs, government budget, and financial and executive aid, quantitative and qualitative improvement of handicrafts, increase in the sale of handicrafts, demand for Native products, supplementary income, unemployment reduction, women's employment, family income, etc.
Social effects	Hope for the future, cultural exchange and awareness, overcrowding in the host society, immigration, change in people's lifestyle, social anomalies, development of the level of education and knowledge, improvement of public health, the prevalence of urban life and culture, improvement of villagers' self-confidence, the impact of tourism on development of local customs and culture, the revival of ritual and religious ceremonies specific to the village, creating an atmosphere of cooperation and interaction between villagers, empowering women, strengthening language and communication skills, etc.
physical effects	Introducing the unique architectural structure of the region, increasing the quality of housing, preserving the traditional fabric of the village, developing communication infrastructure, improving amenities (restaurants, teahouses, etc.) and accommodation, new construction, improving the abandoned fabric of the village, etc.
Environmental effects	Environmental pollution, destruction of natural resources, pollution of water resources, lack of water resources, etc.

In this study, exploratory factor analysis was used for summarization and determining the positive and negative effects of the mentioned factors on agritourism from the perspective of local people. Extraction and identification of influential factors through a questionnaire according to the various levels of socio-economic needs is a fundamental issue. The items were scored based on a five-point Likert scale, and closed questions were asked because villagers might not have cooperated well due to harvest season and busy schedules. Notably, the tool's reliability was approved at a Cronbach's alpha of 0.891. In addition, data analysis was performed in IBM SPSS version 23.

4. Findings

Evaluation of the economic and social needs of the local community in the current situation: 22 items were presented about this topic, which was scored based on a five-point Likert scale. In addition, the tool's reliability was confirmed at a Cronbach's alpha of 0.813. The mean numbers obtained for each category and the mode of each item are shown in Table 2.

In this study, 92.5% (high and extremely high) of the total statistical population agreed with the development of agritourism. In addition, 55.3 People in the study population had very little or no inclination to migrate, although the number of people who tended to migrate was significant. Despite the region's tourism development, the local community was dissatisfied with employment status and income and might look for a better job. In the current situation, a considerable percentage of the participants felt economic deprivation but were still hopeful about the development of the village. Moreover, 63.7% of the locals were willing to participate in agritourism-related activities. In addition, 68% of the subjects were ready to receive tourism education. Therefore, while tourism development has had no considerable effect on the development of Dulab village, its residents were optimistic about opportunities created in this way and were willing to participate in tourism development programs. Given the inefficiency of the current development method, it seems necessary to provide alternative development methods.

Table 2. Villagers' perspective toward the positive and negative effects of rural tourism.

Item	Percentage in Likert Criterion					Mode
	Extremely low	Low	Moderate	High	Extremely high	
Satisfaction with the development of agritourism	0	2.1	5.3	57.4	35.2	High
Tendency to migrate	23.4	31.9	10.6	21.3	12.8	Low
Job dissatisfaction	5.3	3.2	6.4	51.1	34.0	High
Unemployment	12.7	13.8	17.0	36.3	20.2	High
A feeling of economic deprivation	7.5	8.5	24.5	37.2	22.3	High
Lack of safety	54.2	10.6	26.6	3.2	5.4	Very low
Inadequate income	10.6	28.7	42.6	12.8	5.3	Moderate
Dissatisfaction with the quality of housing	6.3	29.8	17.0	30.9	16.0	High
Lack of hope for village development	34	14.9	26.6	11.7	12.8	Low
Willingness to participate in tourism activities	3.9	18.1	14.3	38.40	25.3	High
Willingness to receive education in the field of tourism	2.1	17.0	12.8	47.9	20.2	High
Assessment of the pristine nature of the village	0	0	1.1	36.1	62.8	Extremely high
Evaluation of agricultural products	2.1	4.3	9.6	57.4	26.6	High
Assessing the special texture and architecture of the village	0	2.2	6.4	22.3	69.1	Extremely high
Dissatisfaction with communication services	4.2	16.0	11.7	26.6	41.5	Extremely high
Dissatisfaction with receiving proper training on the benefits of tourism development	5.3	14.9	30.8	36.2	12.8	High
Dissatisfaction with the appropriate advertisements to introduce the village	2.1	28.8	26.6	34.0	8.5	High
Dissatisfaction with recreational and sports activities	13.8	7.4	27.8	25.5	25.5	Moderate
Deterioration and uselessness of some spaces and creating an unsuitable appearance in the village	11.7	14.9	16.0	35.1	22.3	High
Dissatisfaction with accommodation services	4.3	16.0	11.6	26.6	41.5	Extremely high

According to the results, 99% of the statistical population considered the pristine natural environment and agricultural landscapes around the city as a factor in attracting tourists. Meanwhile, 91.4% and 85% of the subjects regarded the special and step-like architecture of the village and its agricultural products as tourist attractions, respectively. In this study, 68.1% of the topics mentioned that a lack of access to proper communication services and transportation systems was a currently important barrier to the development of tourism. In comparison, 68% and 57.4% of the participants respectively introduced a lack of suitable accommodation services for tourists and deterioration and uselessness of some buildings as some of the most important barriers to tourism development. Moreover, agritourism development could lead to the expansion and enhancement of infrastructures (roads, transportation networks, water supply, and sewage networks), as well as welfare and accommodation services of the region through financial resources provided by this process (Sanches-Pereira et al., 2017).

Factor analysis of economic effects of tourism: In this regard, we presented 11 five-option items. In addition, factor analysis was used to summarize research variables. Items indicating the positive and negative effects of tourism were entered into factor analysis so that the share of each of these factors could be measured. According to the calculations, data had proper internal consistency for factor analysis. The KMO statistic was estimated at 0.738, which approved sampling adequacy and model appropriateness.

Moreover, Bartlett Statistics was reported at 333.15, which was significant at the significance level of 0.05 and showed the appropriate sampling and sample size. Table 3 presents the factor analysis results following the use of Varimax rotation. It is worth noting that the most important variable of each factor is determined by highlighting its factor load.

These four factors account for approximately 65% of the variations in all items in this section. The highest variance was related to the first factor, career development and earning additional income with tourism development. In this status, “renting parts of a house to tourists” had the highest relationship with the factor and formed the most important source of income increase. Increasing investment in the tourism sector was ranked second. In addition, the native handicraft sales boom due to tourism development was ranked next, which could lead to the employment of residents. The second factor was diversifying the rural economy, which expressed only 14.79% of changes in the model. Increasing land

and housing prices which is the factor of instability in the rural economy and tourism system, with a factor load of 0.837, had the highest association with the element. It is noted that by increasing tourism development in land, prices should not lead to land grabbing and the presence of mediators. Selling and changing the use of agricultural lands could result in environmental hazards and loss of the financial capacity of villagers by creating benefits only for certain groups. The third factor was financial support and government support of tourism projects, which indirectly linked to poverty reduction. In other words, increasing support reduces poverty. Even though it has been a few years since the government introduced Dulab as a tourism target village, its residents considered the attempts made by the government to improve tourism in the region insufficient. It is suggested that non-governmental organizations (NGOs) be established to enhance tourism development by persuading the government to allocate budgets to this area and attract public sector investors. The fourth factor included threats to tourism development. According to this factor, rural households are concerned about seasonal and temporary employment despite their satisfaction with tourism development.

Factor analysis of social effects of tourism: In this section, the positive and negative social impacts of the entrance of tourists into Dulab village from the participants’ perspective were entered into factor analysis to measure the share of each factor in these impacts. To this end, 14 questions were asked from heads of households. According to the factor analysis results, these 14 questions could be divided into four factors: strengthening the spirit of cooperation and sociability, developing social infrastructure, and repelling the threats of tourism and rural life. Following the use of Varimax rotation, the analysis results are shown in Table 4. Notably, the most important variable of each factor is determined by highlighting its factor load.

In this section, KMO was estimated at 0.697, which showed the appropriateness of the sampling process and the model. In addition, Bartlett Statistics was reported at 517.06, which was significant at the significance level of 0.05 and showed the appropriate sampling and sample size adequacy. In this part, the most important factor was strengthening the spirit of cooperation and sociability, which explained 23% of changes in the model. In this factor, the most important variable was “women’s empowerment,” with a factor load of 0.775, which had the highest relationship with the element. In other words, villagers believed that developing agritourism and complementary agricultural activities (welcoming, packag-

ing, guiding the tourists, cooking, training, handicrafts, homemade products, and accommodation management) could strengthen rural women in society. The second important factor of social effects of tourism development was developing the social infrastructures, which explained 19.28% of changes in the model and demonstrated the positive impacts of tourism development. In this factor, the “hope for the future” variable with a factor load of 0.760 was identified as the most effective variable. The third factor was recognized as repelling the threats of tourism, which explained 16.77% of changes in the model.

Moreover, the factor load of the “being proud of the culture” variable was estimated at 0.881. This factor was identified as the most important factor in repelling tourism’s threats from the perspective of heads of households. The fourth factor was threats to rural life, which only explained 9.9% of changes in the model. This factor revealed the negative social effects of tourism. It showed that despite the positive outcomes of tourism, it might also threaten the village’s safety and could increase anomalies in the region and lead to the promotion of urban culture.

Table 3. Factor analysis of positive and negative economic effects in Dulab village and the level of factor loads

Factor	Item	Factor Load
Career development and earning additional income	Increasing investment in tourism	0.730
	Renting parts of the house to tourists	0.753
	Increasing demand for local products and handicrafts	0.605
	Female employment	0.435
	Increasing the income of rural families	0.574
Diversifying the rural economy	Increasing land and housing prices	0.837
	Native handicraft sales boom	0.720
	Teaching agricultural activities to tourists in exchange for money	0.524
Financial support and government support	Reducing poverty	0.534
	Increasing government funding and grants to support rural tourism	0.847
Threat	Creating temporary and seasonal employment	0.856



Table 4. Factor analysis of positive and social effects in Dulab village and their factor loads

Factor	Item	Factor Load
Strengthening the spirit of cooperation and sociability	Women’s empowerment	0.775
	Strengthening language and communication skills	0.753
	Improving public health	0.758
	Self-adequacy	0.677
Developing social infrastructure	Hope for the future	0.760
	The importance of agricultural tourism values	0.576
	Interacting with tourists and transmitting the values, traditions, and culture of the village	0.680
	Protecting the local customs	0.482
	Increasing the interaction and participation of the villagers	0.640
Repelling the threats of tourism	Raising awareness to prevent tourism threats	0.421
	Being proud of the culture	0.881
Negative effects (threats to rural life)	Promoting urban culture	0.862
	Increasing anomalies in the village (e.g., theft, insecurity)	0.898



Factor analysis of physical and environmental effects of tourism: In this section, we assessed agritourism's physical and ecological impacts from the perspective of the local community of Dulab village. In this regard, eight five-option items were developed. Factor analysis results divided the eight items into three factors of developing physical infrastructures: environmental and physical threats. The results are shown in Table 5 following the use of Varimax rotation. Notably, the most important variable is determined by highlighting its factor load.

In this section, KMO was estimated at 0.629, which showed the appropriateness of the sampling process and the model. In addition, Bartlett Statistics was reported at 111.27, which was significant at the significance level of 0.05 and showed the appropriate sampling and sample size adequacy. In this classification, the most important factors were the development of communication infrastructures, reducing damage by planning and education, protecting lands and preventing land-use change, and reconstructing deteriorated textures. This factor was identified as the development of physical infrastructures and could explain 26.6% of changes in the model. In addition, the variable of developing welfare and accommodation facilities with a factor load of 0.817 had the highest relationship with the factor. In other words, the most important positive physical result of tourism development in villages is from the perspective of heads of households. The variable of reconstructing deteriorated textures with a factor load of 0.809 was ranked second, and the factor of environmental threats explained 19.2% of changes in the model.

Furthermore, the variable of reduction of water resources with a factor load of 0.801 had the highest impact. The environmental threat factor resulted from developing welfare facilities, which had a strong association with

the reduction of water resources. The third factor was physical threats, which explained 13.4% of changes in the model. The arrival of tourists in the village and the development of constructions have increased water consumption and have negative environmental effects.

Notably, the desire to establish accommodations at the global standard levels will harm the cultural and traditional identity of the region. It will destroy the most important factor for tourist attraction, which is the natural environment and landscapes of the area (Rendelli & Martellozo, 2019). Therefore, it is recommended that the physical facilities in the village be used to decrease worry in villagers regarding the negative physical-environmental outcomes of tourism. In addition, we can avoid creating new constructions different from the village texture by reviving the deteriorated texture. By doing so, tourists can be familiarized with the style and context of rural life, and agricultural tourism goals, such as maintaining a rural lifestyle (Calza et al., 2018; Ayhan et al., 2020), can be realized. In general, there is a need to enact laws and monitor uncontrolled construction that differs from the context and environment of the village.

The results showed that the residents of Dulab village agreed with agritourism development. They believed in Dulab's potential for agritourism growth. According to the subjects, agritourism development could be considered a sustainable development plan. Tourism development increased hope for the future of the local community. The decline in the rural population shows the villagers' intention to migrate in recent years. Still, based on the positive perspective of the local community toward tourism in the village, there is hope that rural tourism development and improvement of the current condition could increase the chance of their stay in the village.

Table 5. Factor analysis of the positive and negative physical and environmental effects of tourism in Dulab village and their factor loads

Factor	Item	Factor Load
Developing the physical infrastructure	Developing the communication infrastructures	0.528
	Reducing damage by planning and training	0.665
	Protecting lands and preventing land use change	0.762
	Reconstructing deteriorated textures	0.809
	Developing welfare and accommodation facilities	0.817
Environmental threats	Reducing water resources	0.801
	Destruction of natural resources and noise pollution	0.457
Physical threats	Disrupting the appearance and the main texture of the village with new constructions	0.804

5. Discussion

Rural development projects' primary goal is to improve social and economic welfare and stability in the rural community. Meanwhile, the current tourism development trends have generated challenges in sustainable development from economic, social, physical, and environmental aspects. Sustainable tourism development occurs when it matches a region's economic and social needs and ecological limitations. This could be achieved by monitoring the effects of all projects, including tourism development programs.

Implementing an agritourism-based development program will be realized with the participation of three main pillars of government policies, the study and planning group (researchers, local managers or consulting engineers), and local people in development projects. The project is implemented based on economic, spatial, and temporal indicators. The re-evaluation of the conditions created by the project is carried out with emphasis on the attitudes and views of local people. Sustainable development will be realized by improving the development indicators, especially in the area of the economy and the satisfaction of residents. Nevertheless, other development projects will fail and should replace sustainable development. If the development process is inappropriate, residents are dissatisfied with the program and its results, and comprehensive improvement in the status of indicators with emphasis on economic and social indicators does not occur.

The present study proposed a method that directly evaluates the effects of tourism development on the expansion of rural settlements and determines whether tourism development led to sustainable development. Economic and social assessment of the local community in Dulab village revealed that people were still dissatisfied with

their economic and social conditions despite tourism development in the region. Since agriculture is the main source of income and job of residents of Dulab, agritourism was introduced as an alternative development solution. In addition, the local people of the village emphasized the necessity of all community members' participation in the generation of development programs. The present study introduced a new process for better assessing rural tourism development programs. It is suggested that further studies be conducted to complete the participatory planning process in the planning and execution stages.

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Conflict of Interest

The authors declared no conflicts of interest.

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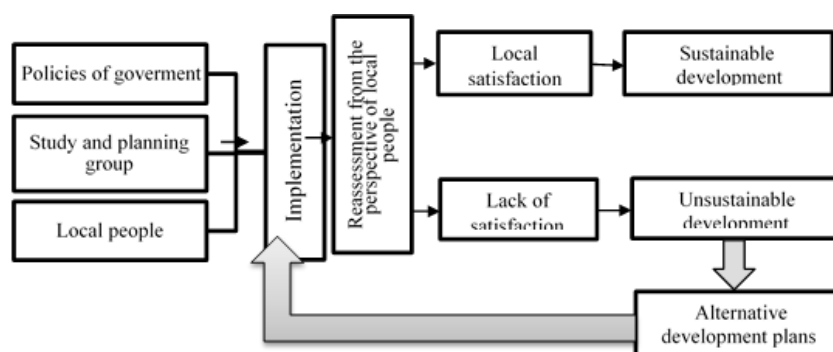


Figure 3. Development process

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