



RESEARCH ARTICLE

THE SUSTAINABILITY OF THE HIGHLAND ARCHITECTURE AS CULTURAL HERITAGE: THE
EXAMPLE OF KARADENİZ PLATEAU, TURKEY

¹Birgöl Çakıroğlu and ^{2,*}Reyhan (Gedikli) Akat

¹Department of Construction and Technical Works, Karadeniz Technical University, 61080, Trabzon, Turkey

²Ministry of Environment and Urban Planning, Presidency for Strategy Development, Ankara, Turkey

ARTICLE INFO

Article History:

Received 27th July, 2017
Received in revised form
06th August, 2017
Accepted 16th September, 2017
Published online 17th October, 2017

Key words:

Ecotourism, Highland Tourism,
Nature-Mountain Tourism,
Traditional Housing, Sustainability,
Kahvedüzü Khans, Green Tourism,
Karadeniz plateau.

Copyright©2017, Birgöl Çakıroğlu and Reyhan (Gedikli) Akat. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Birgöl Çakıroğlu and Reyhan (Gedikli) Akat, 2017. "The sustainability of the highland architecture as cultural heritage: the example of Karadeniz plateau, Turkey", *International Journal of Current Research*, 9, (10), 58929-58938.

ABSTRACT

Today, people who live in urban areas, especially those who are desperate for open-green areas, are increasing the tendency to nature, their curiosity about learning different cultures and lifestyles, as well as the desire of such people to move away from crowded city environments. Rural settlements; Their natural, historical and traditional values and their cultural-natural inheritance occupy an important place. For this purpose; Kahvedüzü Khans in Anatolia was chosen as a case study area in this work for preserving and preserving the cultural - natural heritage. In-situ observation, analysis, analysis and evaluation methods were used in the research. As a result of evaluating the obtained data, suggestions have been developed to help the survival and tourism of the Kahvedüzü Khans by introducing different functions without disturbing their architectural features and to help increase the tourism potential.

INTRODUCTION

Recent changes in the economic, political, cultural, technological and environmental aspects of the world have necessitated a renewed policy on the development of countries, and a multifaceted approach such as "ecotourism" has been required in the development of rural areas, taking into account changing tourist demands (Yürük, 2002). Ecotourism has been adopted as an approach or attitude that safeguards the sustainability of the earth's natural resources and, in addition, supports the economic development of the local people while protecting and maintaining their social and cultural integrity. In the concept of ecotourism, terms like green tourism, alternative tourism, nature tourism, wild tourism, adventure tourism, cultural tourism are used. Ecotourism usually targets the use of traditional architecture and local resources, in small groups, in small plants run by families. Ecotourism is a tool that can generate resources for the conservation of sensitive ecosystems and the socio-economic development of the population living in and around these areas, if carried out appropriately for the purpose (Cater, 1993; Campell, 1999; Scheyvens, 1999).

Considering the poverty of the peoples living in the villages in the mountainous and forested regions with the potential of important ecotourism, it can be said that ecotourism is a factor that can reduce the imbalance between the social classes (Altıparmak, 2002, s:276), (<http://tr.wikipedia.org/wiki/Ekoturizm>). Nature-mountain areas where recreational activities and activities are carried out are of great importance in maintaining the relations with nature. Human; the cities remain dirty, loud and sunless, and their relations with nature are gradually diminishing. Light green areas; abundant sunshine, fresh air and free movements, making positive, refreshing and beneficial effects on human health. They serve as a shelter away from city noise, crowd, pollution. It is very important to walk in the open green area or to do sports, to appreciate the beauty of nature, to provide intellectual relief, to find peace and mountain tourism (Wallace and Pierce, 1996; Wight, 1993; Wall, 1997). Therefore, mountain-plateaus should be considered to meet tourist demands. The important thing here is that the plateau culture, which is a part of traditional cultures, is well introduced to local and foreign tourists. "Nature-mountain tourism", in other words, the benefits of highland tourism can be summarized as follows:

*Corresponding author: Reyhan (Gedikli) Akat,
Ministry of Environment and Urban Planning, Presidency for Strategy
Development, Ankara, Turkey.

- In a country where rural areas have a lot of space, the idea of spreading tourism to these regions by saving

from the dominance of coastal tourism is an important opportunity to be evaluated.

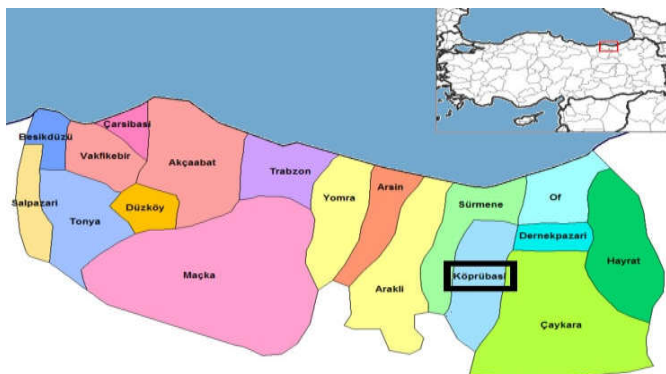
- Touristic tourism is an additional source of income for farmers working in rural areas.
- Natural tourism has relieved the burden of traditional resorts that have reached the saturation point and thus have lost their restfulness in terms of tourism.
- Natural tourism provides balanced distribution of tourist movements within the space.
- Rural areas have proved to be calmer and more restful than the sea shores.
- The cost of touristic activities in rural areas is low. For this reason, a large number of tourists are able to participate in tourist movements.
- Social and physical life privileges between the urban and rural areas are significantly reduced.
- It helps revive localities that are suffering from loss of population due to inadequate tourism, agriculture and industrial activities and keep them in the locality where the local population is located and prevent migration movements towards big cities (Olalı, 1990; Özdemir, 1996).

In Highland culture - in plateau culture; thanks to their natural, historical and traditional values, rural settlements are an important place. For many reasons such as rest, livestock, health, etc., people who are migrating in the springtime develop and live the architect without architecture here. In the planning of the rural settlement areas, preserving the existing natural values with the effect of vegetation, topography and silhouette, making efforts to maintain the traditional style of construction makes a great contribution to the cultural continuity.

MATERIALS AND METHODS

Field of work - Sample selection

The back road that reached the height of 2500m on the skirts of Madur-Polut Mountain starting from the sea level and between the two valleys (Araklı Küçükdere and Sürmene Stream) in Ağaçaşlı plateau in Trabzon Country Köprübaşı district and the historical caravan road which reached Aydıntepe (Antik Hart Town) - Bayburt The Kahvedüzü khans, which bear social, cultural and social values together, are studied as a study area. Kahvedüzü settlement; with the old caravan accommodation area protecting the natural and historical identity on the caravan road, and an active caravan han (Figure 1).



http://www.turkiye-rehberi.net/harita/resim/Turkiye/trabzon_haritasi.jpg

Figure 1. Location of Trabzon Köprübaşı District

Selection of Working Area;

- Interview technique (in consultation with local people),
- External observation technique (field study aiming to go and see),
- Various journals, books, province years, thesis etc. Detection based on publications.

Methods

The revitalization of the natural and historical caravan road is the aim of studying the architecture of Kahvedüzü Khan, one of the khans on the caravan road, to gain eco-tourism along with the preservation, modernization and caravan route. In this study, it is aimed to determine the current situation of the Kahvedüzü khans; observation, examination, data collection, analysis, evaluation and suggestions; a method based on visual and formal examination with the help of photographs was used. The buildings to be rebuilt are built in accordance with the local architecture and the existing architectural features of the existing buildings and landscapes are kept alive without disturbing them and if necessary, tourism is needed and the necessary things are done to help increase the tourism potential.

Study in the field of the determination of the properties was carried out in two stages.

- Field study aiming to see in place for analysis; a detection form for recording photos, slides, relays and data relating to the area,
- Includes a literature review of information on the site.

The present conditions of the buildings in the Kahvedüzü khans have been determined, identification and documentation work;

- Physical detections;
- Identification of the monumental structure of the building scale,
- Identification of examples of civil architecture in building scale,
- The settlement scale is covered under the captions.

Buildings; plan, carrier system, roof, window, door headings, and the proposal project has been developed as the result of analytical study.

RESULTS

Caravan Road

Sürmene-Araklı bay has been an important port both from commercial and military point of view until the 20th century. Sürmene-Köprübaşı-Bayburt Caravan Road; The shortest route from the other arms of the Silk Road and its geographically advantageous position, as well as the stone roads and historical inns are the only historical caravan roads of Turkey (Figure 2). The basin has a great potential in terms of rich biodiversity, Madur Mountain, deep valleys, dozens of flora, rich flora and fauna, plateau, nature, culture tourism and ecotourism. The basin through which the Historical Caravan Road passes; the region, and Turkey's 9000-year-old ecological treasury, the 2000-acre Woodwind Peat Swamp.



(http://www.cekulvakfi.org.tr/files/dosyalar-haber/ipekyolu_harita.pdf)

Figure 2. Caravan roads, caravansarays and bridges in the Middle Ages in Anatolia



Figure 3. Photographs of the Kahvedüzü Khans



Figure 4. Photographs of the Kahvedüzü Khans



Figure 5. Photographs of the Kahvedüzü Khans

Table 1. Examined samples

1- Housing	2- Commerce+ Housing	3- Commerce+ Housing
		
4- Commerce+ Housing	5- Housing	6- Khan
		
7- Housing	8- Housing	9- Housing
		
10- Housing	11- Housing	12- Housing
		

.....Continued

<p style="text-align: center;">13- Housing</p> 	<p style="text-align: center;">14- Housing</p> 	<p style="text-align: center;">15- Housing</p> 
<p style="text-align: center;">16- Housing</p> 	<p style="text-align: center;">17- Mosque</p> 	<p style="text-align: center;">18- Housing</p> 
<p style="text-align: center;">19-khan</p> 	<p style="text-align: center;">20- Housing</p> 	<p style="text-align: center;">21- Housing</p> 
<p style="text-align: center;">22- Housing</p> 	<p style="text-align: center;">23- Housing</p> 	<p style="text-align: center;">24- Housing</p> 
<p style="text-align: center;">25- Housing</p> 	<p style="text-align: center;">26- Fountain</p> 	

In order to protect the swamp and transfer it to future generations, in the studies initiated by the Association for the Protection of Natural and Historical Values in 2008, the historical Caravan Road passing through the middle of the mire was identified under the guidance of local residents and protected in 2010 (<http://www.karadenizolay.com/arinhaber/kervan-yolundan-bayburta-h340.html>).

As a result of the study of the Caravan Road; the boundaries of the old-new structures were determined and the existing tissue was subtracted with the values deduced from the photographs (Figs. 3, 4, 5). Within the existing tissue; 26 traditional houses, 1 mosque, 1 khan and 1 fountain were identified as historical values (Table 1) (Figure 6).



Figure 6. Site plan

Determination in Building Scale

Determination in Monumental constructions

Mosque: There are 1 mosque in Kahvedüzü khan, opposite the khan. The material is stone and it is made in the stacking system.

Khan: The khan on the way to Carvan; the basement floor stacking system, the ground floor wooden skeleton system was made in the stuffed wall technique. It is 2 floors. At the same time, 25 people can stay in a wooden room, one eye is used for accommodation, the dining room is used as a grocery store, and the other rooms are also in old han culture.







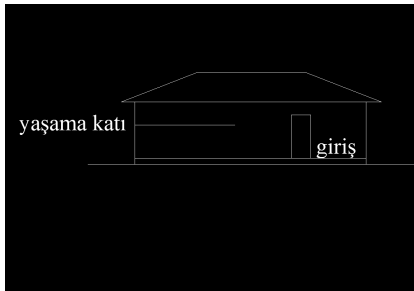
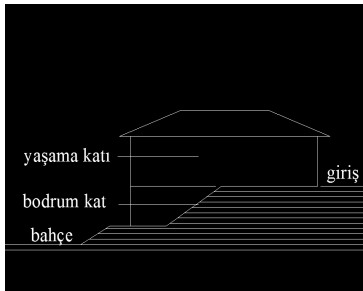
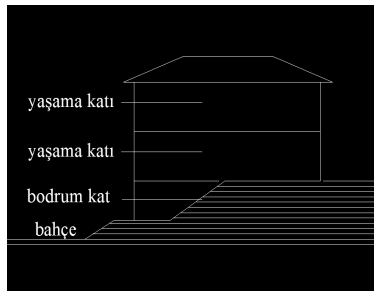





Determination in Examples of civil architecture

There are residential and commercial buildings in the study area. 23 housing in the study area have been identified. Buildings were made as masonry and skeleton system, wood, stone, concrete material was used. It is generally seen that the structures are located on both sides of the historical caravan









road axle as adjoining and discrete arrangements. The facades are open to the street. The number of floors is 1-2-3 storeys. The basement is generally used as warehouse, barn. Ground floor living place is located. No exit from the buildings. The residences in the settlements dominate the local architecture. Traditional, original plan types originated from materials, culture and environmental conditions have developed. The most important factor in the planning of houses is the traditional life. Climate, topography, landscape, sun and the role of material are also seen as important factors. In terms of residential settlements, the houses are located in parallel and parallel to the road and as a separate order in the land. The dwellings usually consist of two quarters. The lower floor is used for stables and the upper floor is used for living. Of them;









Stable floor / basement floor; in the sloped terraced houses, it was obtained by taking advantage of the elevation caused by the slope. The rubble was obtained by stacking the walls of the stables, which were buried in the backyard, by putting the rubble on top of the stones in the form of a carrier. The ground is usually earth and wood flooring. Stable height of the barn is kept small.

Table 2. General characteristics of Kahvedüzü Khans buildings





LOCATION	separate		adjoining				
	Free in the garden	Along the road	Adjacent to a single structure				
							
FLOOR NUMBER	ONE FLOOR			TWO FLOOR		THREE FLOOR	
							
USAGE OF FLOORS	LIVING FLOOR		STABLE FLOOR + LIVING FLOOR		STABLE FLOOR + LIVING ROOM + LIVING ROOM		
							
CONSTRUCTION SYSTEMS	STABLE FLOOR						
	Yığma Sistem- Load bearing system						
	Stone Wall		Briquette Wall				
							
	GROUND FLOOR						
	Load bearing system						
Rubble Stone Wall		Cut Stone Wall		Briquette Wall		Brick wall	
							

.....Continued

CONSTRUCTION SYSTEMS	Timber frame system			
	Block Stone infill	Tiangular infill	Tiangular unfilled	Briquette infill
				
	Timber frame system		Reinforced concrete frame system	
Concrete filled	Unfilled wall	Briquette Wall-Free	Coating / Painted	
				

ROOF	Roof Formats			
	Two pitched	Four pitched	Four pitched	Tree pitched
				
	Roof Formats		Roof Material	
Flat roof	Corrugated Flat Sheet	Trapezoidal aluminum	Terracota tile	
				

WINDOW	Single Window		
	4 horizontal- 2 vertival	4 horizontal- 2 vertival - Shutter	2 horizontal- 2 vertival - Shutter
			

DOOR	Single winged		Double Wing	
	Wooden	Iron	Wooden	Iron
				

Living floor; the place where everyday life passes. The living floor contains many activities such as daily sitting cooking, eating, guest hospitality. The windows used in the houses are kept quite small. A wooden stacking system was used. In the houses there is a very simple shed roof which is inclined to both sides. Corrugated sheet, flat sheet (tinplate), trapezoidal aluminum and terracota tile material were used as the roof cover. Plain pitchers are prevented from passing water by driving the pitch. In addition, the black color obtained as a result of this process has been adapted to the houses and the environment. Stone weight is placed on the roof cover to prevent it from flying due to the wind. Each house has its own private garden. There are 50-60 cm high rubble stones in garden's wall limiter and wooden piles in some housing gardens.

Determination of settlement scale

Transportation in settlement scale, green, empty area, street, street walls, street elements, road pavements etc. It was investigated. Settlements; Taking advantage of a very old road, the sequence formed by lining a back line is in the form of settlement. The settlement was along the road that responded to pedestrian access and vehicle traffic. Generally the road; earth, concrete, gravel, stone. On the ground floors of the structures on the road sides and on the rubble stone wall braids that are connected to them, the brick and green garden walls are in an organic texture. There are also staircase passages. Electric masts and wires are in the streets, which are conventional wire breakers. There is a large or small outdoor area in the immediate vicinity of each house. In this area there are sections for sitting-resting, eating, children's playgrounds, grazing various pets. There are also laundry facilities, stalls, wc, garden items such as fountain-wells. Collective square in the neighborhood; A mosque, a fountain and an area where the khan was located.

DISCUSSION

An important factor in tourism studies is to ensure that the texture of the area is protected without deterioration. For this purpose, accommodation facilities should be constructed by utilizing the architecture of existing houses in the region. The facilities that need to be built either have to be renovated and repaired or built in the same way. Traditional plateau housing needs to be re-used without disturbing its originality and to provide a new function for tourism. For this purpose it is necessary to repair and improve the houses. In particular, infrastructure, installation, sewerage, etc., where large deficiencies are observed, should be improved. In the region that is rich in clean water; The water should be transported into the dwelling. Lighting elements, electricity and communication (telephone, fax, satellite system) systems are among the requirements of the residences. What is important is that the understanding of tourism is gained here and that it has the place to stay and the accommodation units and other structures to be made are made in accordance with this regional texture. Existing residences need to be used without disturbing their originality in terms of their immediate surroundings and settlement texture. The preservation of the texture of the gardens can be helped to maintain the preservation-continuity of the cultural heritage. For this purpose it is necessary to repair and improve the houses. Structural stability must be ensured through the repair and reinforcement of the structural system of the structures. In particular, infrastructure,

installation, sewerage, etc., where large deficiencies are observed, should be improved. It is important that accommodation facilities and family businesses are established and that the standards of service for those who are established are further improved. For this purpose, it is necessary to make use of the architecture of existing houses in the province and to adapt to the existing architectural texture if it is necessary to construct additional structures in necessity. The required structures are; The existing structures must be renovated and repaired or built in the same way. For this reason, "original architectural projects" suitable for the locals should be prepared. It is necessary to encourage and support the improvement of the existing situation and the transformation of the local architecture into a suitable one. Nature surveys, nature walks, photography, scouting, camping etc. It is necessary to evaluate the area which is extremely convenient for the activities. As a result of the examination, the structures are generally neglected and ruined; Formal, functional and material distortions. Although the restoration of the individual structures has been tried to be done, no improvement work has been found on the whole of the street. As a result of the examinations, it was deemed necessary to maintain and repair all of the structures. Repair of facade elements, windows, doors, garden walls need to be repaired. Restoration of facade plaster; Come on, console. Reconstruction of these items of structures that have lost their items; Subsequent additions need to be removed.

In order to restore constructions to today's comfort conditions, it is necessary to improve the substructure, to clean up the parts of the structure which breaks the originality of the structure afterwards, to renew it in the lost parts of the original function. In addition to preserving and restoring cultural values, they must be protected by integrating them with the intensive functioning of the zone, the structural and structural changes required by the new function, the enlargement and upgrading of the new dimensions, the construction of new sections and additions. Lower and upper structure studies should be started, transportation should be standardized and roads should be standardized, and investments including social needs such as electricity, water, telecommunication, wc, fountain should be emphasized. Social facilities such as coffee shops, bakeries, butchers and mosques surround the area. The snow-covered formation in winter is the most important feature of the fog and the formation of spring in the winter. The increasing interest in our springs in recent years, and the place where the Kahvedüzü khans are placed on the cave, and the value it carries, must be designed to meet the accommodation needs of thousands of people coming from every year. Despite the historical characteristics of the area, the user and the irritants that arise as a result of time factor, the visual pollution created for this area disturbs the significance of the streets. Cultural values determined by historical touch (symbolic values in terms of form, order, etc.) should be determined, old and new building textures should be designed together and given necessary functions, and city equipments should be created by taking advantage of historical motifs. Constructive new functions must be installed to restore life. The proposed proposal for this purpose in this area is:

- Housing, which is the function of the majority of the structures in the vicinity, is proposed as housing + accommodation in the proposal project, and housing + commerce is also designed as housing + commerce.

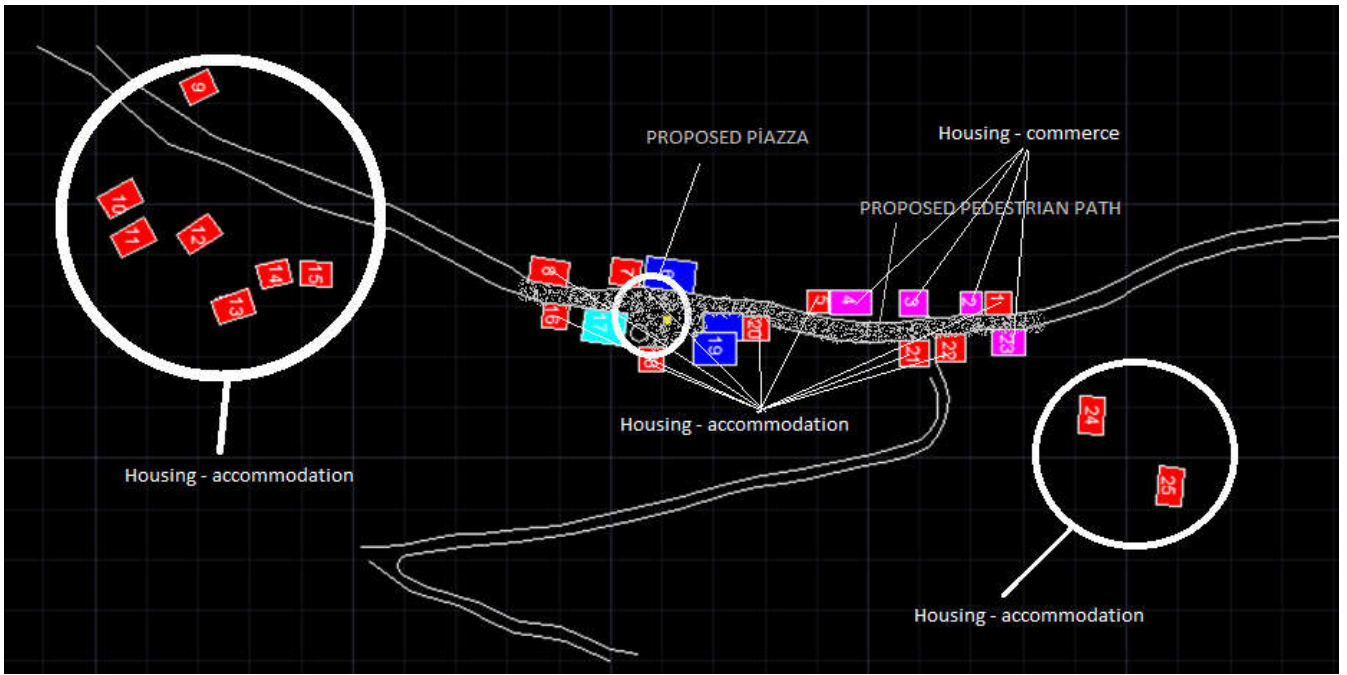


Figure 7. Suggestion project

- On the main road there is pedestrian and vehicle traffic. In order to preserve the characteristics of the neighborhood, the existing road is not enlarged, presently protected. The concrete paved road has been converted to its old state (stone pavement) in the direction of the proposed road. Thus, a new arrangement has been introduced in that area with floor covering. The road line is also used as a private place where street dwellers come together. It is proposed to clean and reconstruct different parts of the garden walls on the streets. Instead of electric poles that distort street silhouettes, lighting items that are installed in houses are proposed. The area in front of the mosque is also proposed as a square. The proposed conservation plan (Figure 7) is also provided in the settlement of Kahvedüzü khan.

In the settlement of Kahvedüzü khan with a wide range of flora and faunas, landscaping, mountain and nature walks, local food, traditional architecture, cultural life of the people and important potentials; By providing the function of exchange and renewal and good accommodation by preserving the characteristics of the buildings, contributing to the regional economy and opening tourism; It is proposed to register the area and individual structures, to cover the uncontrolled structure and to make a protection plan.

REFERENCES

- Altıparmak, 2002, s: 276). (<http://tr.wikipedia.org/wiki/Ekoturizm>)
- Cater, E. 1993. Ecotourism in the third World: Problems for sustainable tourism development, 1993, 85-90.
- Campell, LM. 1999. Ecotourism in rural developing communities, *Annals of tourism research*, 534-553.
- Olalı, H., *Tourism Policy and Planning*, Publication no: 228, Ege University Business Administration Publications, Istanbul, 1990.
- Özdemir, S. 1996. Modernization of Yayla Houses, M.Sc. Thesis, Karadeniz Technical University, Institute of Natural and Applied Sciences, Department of Architecture, Trabzon.
- Scheyvens, R. 1999. Ecotourism and the empowerment of local communities, *Tourism management*, 245-249.
- Wallace, GN. and Pierce, SM. 1996. An evaluation of ecotourism in Amazonas, Brazil, *annals of tourism research*, 843-873.
- Wight, P. 1993. Ecotourism: ethics or eco-sell?, *Journal of travel research*, v.31/3.
- Wall, G. 1997. Is ecotourism sustainable?, *Environmental management*, 483-491.
- Yürük, E.Ö., 2002. Future of tourism: Ecotourism, Ankara University, Çankırı Vocational School Publications.
