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Kizilcahamam-Camlidere Geopark (Ankara/Turkey) with its Geological Heritage Values and Geotourism Planning

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Abstract: Geological heritage areas have lot of information about the formation of the earth, its history as well as ecological and aesthetic and resource values to attract different tourism activities. Unique geological and geomorphologic structures attract the attention of scientists and nature lovers. Turkey's first geopark Kizilcahamam-Camlidere Geopark needs evaluation with its twenty-three geosites and different tourism activities. While a part of this potential is being used the remaining portion has to be developed. This study aims to assess Kizilcahamam-Camlidere Geopark and its surrounding within the frame work of planning so that it can become operating and to guide the project practitioners in this aspect. In this study visual analysis, SWOT analysis, surveys, work of focus group etc are used. Autocad 2012, Photoshop CS5 softwares are used for preparing drawings of the plan. From the study geotourism planning has been proposed.

Keywords: Geological heritage; geopark; geotourism; Kizilcahamam-Camlidere Geopark, Turkey.

INTRODUCTION

For centuries, people have inspired from different natural landscapes and have desired to observe and live in specific areas which exhibit interesting features of nature. One of these unique areas is geological heritage areas. Geological heritages are traces of the past and also clues of the future which allow understanding the evolution and life in the geological time. Each element is representative of different living environment and different geological story. These heritages are limited information sources of the long and complex past. While taking their importance into account the protection of the world's geological history is based on the introduction and evaluation and protection of geological diversity (Kazanci, 2010b).

Geological and geomorphologic areas and rare structures which have national significance as well as the common values of humanity give research/analysis opportunity for nature experts and instructors and learning and understanding opportunity for other visitors. Geological heritage areas which seem as open-air laboratory and museum have become the centers of geotourism (MTA, 2008).

Geotourism plays a major role for the realization of this function (Kazanci, 2010b). In recent year geotourism attracts great attention with its nature-oriented activities. Geotourism focuses as mainly educational-scientific tourism on geological-geomorphologic area and rural landscapes and cultural structures. The development of present values within the scope of geotourism and tourism planning for sustainable earth are needed. Determining the usage criteria of these areas with tourism planning will increase attractiveness of these areas and also provide protection.

The aim of the paper is to analyse natural and cultural significance and potentiality of Kizilcahamam-Camlidere geopark with special reference to geotourism and it sustainable planning.

Geological Heritage, Geotourism and Geoparks Concepts

Geosite is a geological area or element which indicates any current or former geological process, event or property and which is exceptional. These structures are wealth of mankind with their extremely important scientific and aesthetic values (Huang and Geogr, 2010).

Geological heritage is a geosite which has important scientific or visual value, threatened by the extinction of natural or human process (Kazanci, 2010b). Geological heritage elements are valuable structures formed as a result of geological events, internal and external forces. Geological heritages contain many rocks, minerals, fossils, soil and landforms and are important in terms of biotic and abiotic

life diversity which has economic, functional, aesthetic and scientific values (Gray, 2008).

Geopark is an area in which the same or different kinds of geosites are found together and is not smaller than the pedestrian travel distance. Geoparks help in local area development and draw attention as a place to visit because they have record of earth's history. In recent years geoparks have increased in all countries since they are associated with geology, landscape and society (Kazanci, 2010b). One of the main objectives of geoparks is to get wider participation of local community in conservation and management of geoparks. There are wide tourism opportunities in these areas. These are also cultural-educational areas to serve for the purposes of research and education (Binal and Ercanoglu, 2010).

Geotourism is an activity to examine the nature and spatio-temporal dimensions of geological heritage and to carry out different tourism activities in the geological heritage areas. The thing that directs participants of geotourism attracts them and creats the vision desire is the formations of the earth history and elements of functioning. Georoad is a way or route to follow in order to see and visit the declared and registered multiple elements of geological heritage. Geotour is georoads that reach the same place from the starting point. Georoad can be established both by the continuity of one georoad and by adding a large number of georoads. Geotourism is divided into educational and recreational geotourism (Kazanci, 2010b). Geotourism has a great role on protection of the geological heritage and has especially economic benefits activities (Huang and Geogr, 2010).

Visitors also gain new knowledge and experiences in scientific, aesthetic, recreational, cultural and educational aspects and funds are created for socio-economic development of the population living in the area (Weaver, 1999).

It's clear that Earth's resources offered to mankind are not infinite and people have to recognize the earth and provide the sustainable use in order to maintain the generations of mankind (Kazanci, 2010b). Planning concept come to agenda with this fact. Geotourism planning as a tourism tenet is to develop and manage the geological-geomorphologic resources of a region by protecting negative effects of tourism. For this purpose integrated decisions are carried out between the protection of geological heritage and sustainable development through, the development of tourism and the local employment (Huang and Geogr, 2010).

Tourism planning as a tool for the development of tourism which is environmentally friendly to social, physical and ecological environments at national and international level aims to sustainable use of resources, protection of natural and cultural diversity, by including the local people to planning support of the local economy, provision of co-operation different stakeholders in tourism industry, provision of enhancing the awareness of local people. In the context approach of geopark and geotourism is a worldwide new model, a form of life and perception of nature (Fig.1).

MATERIAL AND METHOD

Kizilcahamam-Camlidere Geopark area and its surroundings are the field and material of this study. In this study domestic and foreign sources were used as an additional material. For the information of area topography

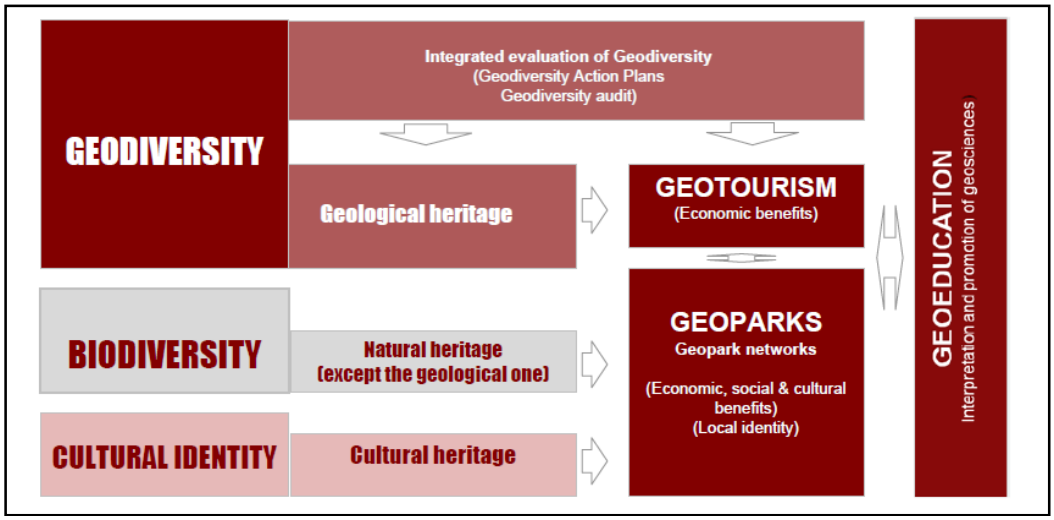

Fig.1. Geological heritage, geopark and geotourism relationship (Andrasanu, 2010).

and geology of previous study reports are used. The area was analyzed by land works in different seasons in the years of 2010 and 2011. Photographs of the geosites which are the main material of the study and its surroundings were taken. In the scope of Kizilcahamam-Camlidere Geopark project training sessions with local people, focus groups studies and face to face interviews were conducted and ideas and suggestions on the subject were received from different age and occupational groups. The area was evaluated in terms of geotourism through SWOT analysis (Strengths, Weaknesses, Opportunities and Threats). Tourism activities to perform in the scope of geotourism are also designated and shown on the table.

FINDINGS

Natural and Cultural Structure Analysis of Kizilcahamam-Camlidere Geopark

Kizilcahamam-Camlidere Geopark located in the capital city Ankara in Central Anatolia Region. The area is adjacent to Ankara districts in the south, Karabuk in the north, Bolu in the west and Cankiri Provinces in the east (Fig.2). Geopark is 80 km to Ankara, 400 km to Istanbul and 110 km to Bolu which are the main centers. Geopark area is located along with the route of tourism which is considered together with the other touristic areas around the geopark. The population of the Kizilcahamam District which is center of geopark is 29.288 inhabitants. 20.655 of the population live in the center and 8.633 of the population live in villages. In the geopark area, the altitude of the terrain increases from south to north. In the north the peaks of mountain and hills, most of them are volcanic, reach to 2000 meters. Common effects of continental climate of Central Anatolia and rainy climate of Black Sea are seen in the area. If Kizilcahamam Cental is taken for the meteorological data the average temperature of area is 11 C°, average of many years rainfall is 545 mm and humidity is 66 % (Kizilcahamam Belediyesi, 2010).

There is a lot of hot springs in the Kizilcahamam geopark center. The chemical composition and temperature of water is very suitable for spa tourism and the district is being used as a tourism center for many years. Kurtbogazi, Egrekkaya and Akyer dams in district provide drinking water for Ankara and their surroundings allow different tourism activities. Kizilcahamam and Camlidere Geopark is Turkey's first geopark. In the context of geopark 23 geosites were determined so far. These geosites are connected into one anorher with certain roads and tours (Kazanci, 2010a) (Chart 1).

Geosite of Kizilcahamam-Camlidere Geopark is shown in Fig.2.

Kizilcahamam-Camlidere Geopark area and its surrounding are characterized with rich diversity, geological heritage having scientific and aesthetic high degree value in about 2000 km^2 area. The main categories of them are geologic-geomorphologic structure, the presence of nature and landscape, landforms at the national and international level, fossil sites, volcanic forms (Kazanci, 2010a).

Chart 1. Geosite of Kizilcahamam-Camlidere Geopark (Kazanci, 2010a)

Georoad–1 **Kizilcahamam Center**	**Georoad–2** **Kizilcahamam-Guvem-Isikdag**
1.1 Soguksu National Park 1.2 Kizilcahamam Spa and Mineral Water 1.3 Koroglu Volcanic 1.4 Uzunkavak Tree Fossils in National Park	2.1 Guvem Region 2.1a) Sey Bath 2.1b) Sabuncudere Basalt Column 2.1c) Beskonak Village Flora-Fauna Fossils 2.2 Isikdagi2.2a) Karagol 2.2b) Isikdagi Picnic Area 2.3 Gerede Region 2.3a) North Anatolian Fault (NAF) 2.3b) Koroglu Mountain Jura Limestone 2.4 Akyarma Tuffs
Georoad–3 **Kizilcahamam-Celtikci-Camlidere Dam**	**Georoad–4** **Kizilcahamam-Kazan**
3.1 Mahkemeagcin Village 3.1a) Mahkemeagcin Village Tuffs 3.1b) Abaci Village Fairy Chimneys 3.2 Celtikci Region 3.2a) Kizik Fault 3.2b) Alicin Monastery 3.3 Camlidere Region 3.3a) Pelitcik-Yahsihan Fossil Forest	4.1 Taslica Village 4.1a) Bride Rocks 4.1b) Turtle Brothers 4.2 Kazan 4.2a) Sinaptepe Mammals Fossils

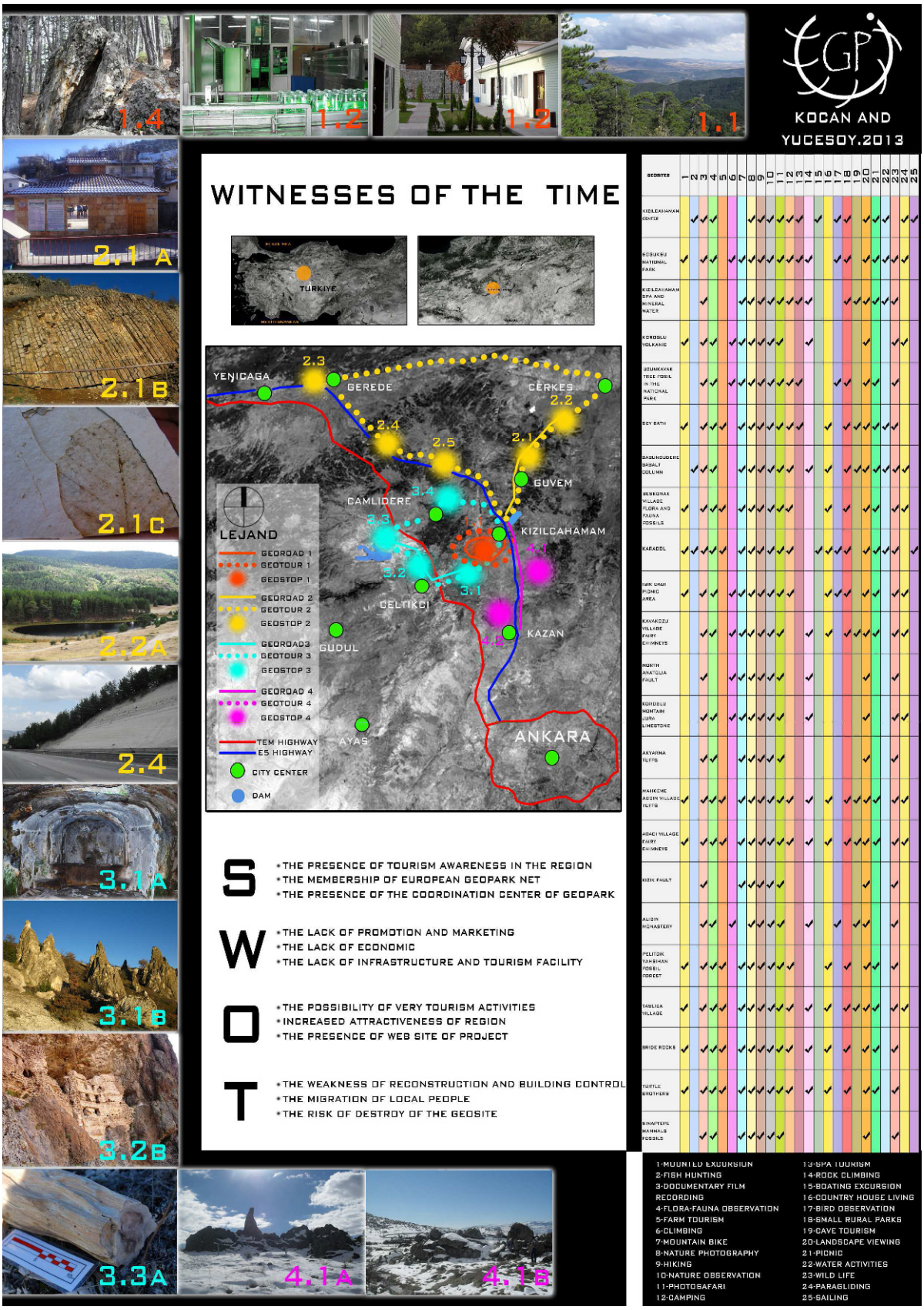

Fig.2. Geotourism project of Kizilcahamam-Camlidere Geopark.

The rocks and landforms of the region are the morphological elements which are formed in years between 5-23 million (Miocene) and the volcanism and its various elements such as volcanic cones, calderas, dikes etc. There are lava flows, tuffs and pyroclastics such as agglomerate which are formed by volcanism and separate deposition and formation of lake in the area. Lacustrine sediments and sequential pyroclastics storage has enables different landforms to occur. A wide variety of geological units are seen in the region and it also attracts attention with its natural, cultural and historical structures. There is tourism potential in the Kizilcahamam-Camlidere Geopark which is formed of rural areas, water resources, forest and natural vegetation, geological natural elements and other alternative tourism areas (Chart 2).

RESULT AND PROPOSALS

At the end of the study geological, biological and cultural features in Kizilcahamam-Camlidere Geopark area were found to be adequate for the potential of geotourism and recreation. This potential is an opportunity for the local development. There are different types of rural recreation activities to perform in the geosites. In terms of natural and cultural resource values as a symbol of incorruption, keeping these areas alive and make planning by considering the use and protection stability is everyone's duty.

Recommended tourism activities for Kizilcahamam-Camlidere Geopark (Fig.2)

1 Mounted Excursion
2 Fish Hunting
3 Documentary Film Recording
4 Flora-Fauna Observation
5 Farm Tourism
6 Climbing
7 Mountain Bike
8 Nature Photography
9 Hiking
10 Nature Observation
11 Photosafari
12 Camping
13 Spa Tourism
14 Rock Climbing
15 Boating Excursion
16 Country House Living
17 Bird Observation
18 Small Rural Parks
19 Cave Tourism
20 Landscape Viewing
21 Picnic
22 Water Activities

Chart 2. SWOT analysis of Kizilcahamam-Camlidere Geopark and Its close environment

Strengths	**Weaknesses**
• Geographical location and proximity to the main centers • The existence of the transportation facility geosites located in diverse location • The support of Ankara University and local government • The presence of labor force to guide in tourism • Being the first geopark and a new concept for Turkey • The cooperation and sponsorship of Weilburg Municipality in German • The presence of tourism awareness and spa tourism presence from the past • Having different touristic areas around the area such as Beypazari • Having local culture, crafts and cuisine • To have been established the geopark coordination center • Presence of Soguksu National Park • Membership of European Geopark Network	• The lack of sufficient promotion and marketing • The problem of financing-Wideness of geopark region and • The lack of existing business, infrastructure, tourism plant structure and the lack of facilities • The minimum local population in the geosites • In terms of the superintendence and control geopark area's control is difficult
Opportunities	**Threats**
• Allowing different eco-tourism activities • Increasing the attractiveness of the region with the geological and cultural texture • The presence of rich forest sources • The presence of project web site • The presence of suitable environment to plan and realize the infrastructure and touristic facilities	• The weakness of building and superintendence • The migration of rural population to the provinces of Ankara and near province • The destroyed risk of geosites by the local people and tourists • Upon the awareness of important area overuse of the carrying capacity of area

23 Wildlife Observation
24 Paragliding
25 Sailing

Suggestions for Physical Space

- The link of region roads to other residential and facilities should be completed.
- Geosite road maps, promotional boards, banners, brochures and booklets should be prepared.
- Physical environment arrangements, transportation, communications, electrity and health infrastructures of geosites should be established.
- Recreation areas and landscape projects should be prepared on geosites and on their surroundings.
- In design projects the original silhouette of the local area should be protected, hotels compatible to the traditional architecture should be formed and local food and handicrafts businesses should be established.

Suggestions for Awareness of Public and Achieving Participation in the Project

- Geopark and geotourism practices provide an opportunity for the sustainable development of rural areas. For this reason the management plan needs support of the local people. Local guides should be trained and village athnography gallery and village products sales units should be established.
- Training and courses with various publications should be organized for tourist and local people to introduce and protect the nature and socio-cultural envirnment.
- Educational briefings have been started for teachers and students. School trips to geosite will provide a positive effect on the project.
- Tradesmen should make the brand of their business with various touristic products.
- Places should be formed to sell the home-made produce. If local people sell their products, they will gain the economic advantage and they will protect the project. Thus an important goal of ecotourism will have been realized such as business opportunities and economic benefits to local people. Stuffed onions, paty, pickled plum, honey, molasses, black walnut, rose hip jam and butter etc. different local foods should be presented to tourist.
- Souvenirs courses should be arranged for public education center's trainess and souvenirs of geopark remembrance should be made.
- Local people should be trained by cooperating with the tourism and hotel school in different branches within the scope of geopark project.

Suggestions for Tourism Activities

- Areas except from the congress and spa tourism in Kizilcahamam and the Soguksu National Park should be included in geopark project in order to make different tourism and recreation activities.
- Performing landscape desing project in the urban and rural areas is important to create visual effects on tourist to attract them to the area.
- Establishing a geologic museum in the area to exhibit the geologic and geomorphologic elements will create tour alternative for any time of year.
- The importance of species growing in Kizilcahamam black vulture (*Aegypius monachus)*, white eagle *(Haliaeetus leucocephalus)* and mouse (*Rattus* sp.) should be revealed.
- Presentations should be made to develop the Kizilcahamam mineral waters for not only beverage but also cosmetics initiatives.
- Geopark will allow a different activity for young individuals of families coming to the spa.

Suggestions for Development of Project and Geopark-Geotourism Concept

- Systematic tours should be organized with the municipal guiders, translators and tour buses.
- Photograph exhibition, poem, essay, story and idea projects competitions about the geopark concept should be organized in schools.
- Documentary films should be made.
- Various professional groups coming to Kizilcahamam for congress tourism should be directed to geopark studies.
- Thermal hotels can plan daily activities to geosites and by establish the geopark stand in hotels to promote the geopark.
- An online tour can be done on the geopark website.
- Stories and old photograps can be collected from the geosite settlements.
- Promotion can be made by putting the geopark logo on touristic products such as handicrafts, souvenirs, food etc.
- Posters can be stuck on buses and taxis, brochures can be given to tourists and promotion can be made with the promotion movie in the buses during the travel.
- Geopark tours should be organized in specific days and weeks for the members of profession (teacher's day, nurse's day, medical feast etc.)

References

ANDRASANU, A. (2010) Geopark Development and Management, Internat. Geol. Conserv. Symp., Elazig, Turkey.

BINAL, A. and ERCANOGLU, M. (2010) Assessment of Rockfall Potential in the Kula (Manisa, Turkey) Geopark Region. Environ. Earth Sci., v.61, pp.1361-1373.

GRAY, M. (2008) Geodiversity: Developing the Paradigm. Proc. Geologists Assoc., v.119, pp.287-298.

HUANG, S. and GEOGR, J. (2010) The Geological Heritages in Xinjiang, China: Its features and protection. Science, v.20(3), pp.357-374.

KAZANCI, N. (2010a) Dunyada ve Turkiye'de Jeosit-Jeopark-Jeomiras Olgusuna Yaklasimlar. Kizilcahamam-Camlidere Jeopark ve Jeoturizm Projesi Raporu, pp.76, Ankara.

KAZANCI, N. (2010b) Jeolojik Koruma (Kavram ve Terimler), Jemirko ve TMMOB Jeoloji Muhendisleri Odasi Yayinlari, pp.60, Ankara.

KIZILCAHAMAM BELEDIYESI (2010) Kizilcahamam-Camlidere Jeopark Projesi. http://www.kizilcahamam.bel.tr/Accessed: 19.10.2010

MTA (2008) Maden Tetkik ve Arama Genel Mudurlugu, Dogal Miras. http://www.mta.gov.tr/mta/jeoloji/faaliyet_alanlari/dogal_miras Accessed: 23.06.2008

WEAVER, D.B. (1999) Magnitude of Ecotourism in Costa Rica and Kenya. Annals of Tourism Res., v.26(4), pp.792-816.

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