



**CEHENNEM DERESİ KANYONU'NUN (ARDANUÇ, ARTVİN) DOĞA TURİZMİ POTANSİYELİNİN
SWOT ANALİZİ İLE DEĞERLENDİRİLMESİ**
**SWOT ANALYSIS OF CEHENNEM DERESİ CANYON'S (ARDANUC, ARTVIN) ECOTOURISM
POTENTIAL**

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Abstract

Ecotourism has been on the rise in terms of popularity in recent years, and attracted a lot attention in developed countries in particular. The essence of ecotourism is to learn about historic and cultural values with a focus on respecting nature and ecology, get away from the stress caused by urban life, and rest in naturally preserved areas.

The Cehennem Deresi Canyon in the Ardanuc district of the Artvin province was selected as the study area as it is among places where ecotourism may develop. Although the study area has high potential in terms of ecotourism, the number of studies revealing this potential is limited.

The purpose of this study is to reveal the ecotourism potential of the Cehennem Deresi Canyon in the Ardanuc district of the Artvin province using SWOT analysis. The qualitative descriptive analysis method was employed in the study. SWOT analysis and visual resource assessment were performed to determine strengths and weaknesses of the study area. Maps of various scales, satellite images, photographs, and site observations were utilized to analyze the study area. The ecotourism potential of the study area was assessed and recommendations were made to open the area for tourism activities and ensure sustainable ecotourism in the area.

Initiation of ecotourism activities in the Cehennem Deresi Canyon in Ardanuc will allow Turkey and Artvin to have their share from the income generated from ecotourism which has been becoming more and more popular throughout the world. The study is expected to pave the way for similar studies in future.

Keywords: Ecotourism, Cehennem Deresi Canyon, SWOT Analysis, Visual Resource Assessment, Ardanuc District.

1. Introduction

One of the most important keys to development, prosperity, and wealth, tourism is simply the activity of traveling for relaxation and vacation purposes with no intention of profiting or settling in the destination (Özgüç, 1998: 15; UNWTO, 2010: 10).

Also referred to as 'smokeless industry', tourism is one of the most rapidly developing industries which make one of the biggest contributions to the economy (Güney and Somuncu, 2016:574). Money spent by those who engage in tourism activities generates income for persons and establishments providing goods and services for tourists. As well as contributing to the development of a country, ecotourism also allows countries to preserve and promote their cultural and ecological values globally. It provides a basis for increased international collaboration, too (Deniz, 2016: 60; Çoban and Aydınöz, 2016: 47).

Due to the increased interest in alternative tourism activities such as ecotourism, cultural tourism, faith tourism, and adventure tourism in recent years, touristic tour organizers have become more active in these fields compared to past (Özgen, 2010: 1409).

Ecotourism has emerged as an alternative tourism activity in 1980s and is one of the fastest growing tourism types. As a tourism activity aimed at natural and cultural settings, ecotourism is carried out in preserved natural settings with a focus on causing minimum negative effect on natural and cultural

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environments when observing and experiencing the landscape, the wildlife, the countryside, and the local culture. Ecotourism contributes to socio-economic development of locals. It creates an economic resource for preservation of natural environment and cultural values (Arslan, 2005: 30; Orams, 1995: 4; Clifton and Benson, 2006: 238; Koçak, 2012: 70).

Ecotourism and other forms of sustainable tourism mostly focus on places that have seen minimal change in terms of natural environment and cultural values in under-developed countries or regions. Social responsibility, economic efficiency, and ecological awareness are involved in all steps of such forms of tourism, and caution needs to be exercised to avoid negative effects on the natural environment and cultural values and such tourism activities should contribute to the economy of locals (Özgüç, 1998: 13; Özgen, 2010: 1410).

Although tourism has many benefits for the economy, tourism activities carried out unconsciously cause negative effects on the natural environment and lead to pollution of air, soil, water, and landscape (Koca et al., 2016:776; Güney, 2016:418). For this reason, studies on the destruction caused by tourism in the natural environment have become more widespread. As a result, governments have started to include alternative forms of tourism such as ecotourism in their tourism policies and strategic tourism plans (Kesici, 2012: 33).

It seems that a policy which supports ecotourism activities in addition to marine tourism activities is followed in Turkey in recent years in an effort to extend tourism throughout the entire year and make it more sustainable. There is an effort to allow rural areas with preserved natural and cultural values to enjoy economic benefits of tourism. Hence, the use of environment will be limited without causing irreversible damages. In this way, flora and fauna values which have endemic, rare, and special habitats will be preserved. Also, historic and cultural heritages will be protected against negative effects of tourism and transferred to future generations (Güngör and Arslan, 2004: 68; İbret and Cansız, 2016: 109). From this perspective, the Cehennem Deresi Canyon in Ardanuc, Artvin has a significant potential for ecotourism activities with geological-geomorphological formations and cultural values in its vicinity. The SWOT analysis can be employed to evaluate this potential and use results in tourism plans.

2. Purpose, Material, and Method

The purpose of the study is to evaluate the ecotourism potential of the Cehennem Deresi Canyon in the Ardanuc district of the Artvin province and make recommendations for sustainability. The number of studies on the ecotourism potential of the Cehennem Deresi Canyon is limited. The study is expected to pave the way for similar studies in future.

The study material consists of natural and cultural characteristics of the Cehennem Deresi Canyon in Ardanuc, Artvin, access to the canyon, its topographic structure, tourism facilities available in the area, and the area's demographic construct.

SWOT analysis and visual resource assessment were performed to determine strengths and weaknesses of the study area. The available ecotourism potential of the area was determined using the SWOT analysis. Evaluations regarding the strengths and weaknesses of the area and the opportunities and threats in the area were made based on interviews with representatives of the Ardanuc Municipality and locals, previous studies and area surveys performed for similar areas, and observations on site.

The qualitative descriptive analysis method was employed in the study. Descriptive research can be defined as description and explanation of events by those who experience them. Instead of previous events, ongoing events are studied in this type of research. In descriptive research, no effort is made to control natural and social events under study. The researcher does not intervene or attempt to insert a new variable to change the flow of things. The event or phenomenon is researched as is without intervention (Sönmez and Alacınar, 2016: 47-48).

Geographic characteristics of the Cehennem Deresi Canyon were determined via site surveys and photographs were taken from certain points. A slope map, a digital elevation model map, a relief map, and a general drainage network map of the study area using maps in different scales and satellite images of the study area and its surroundings and the Geographic Information System (GIS) (Figure 1).

3. General Geographic Characteristics of the Study Area

The Cehennem Deresi Canyon is located at the point where 42° longitude and 41° latitude intersect. It is within the boundaries of the Ardanuc district of the Artvin province located in the Eastern Black Sea Region, and 36 km from Artvin's city center (Figure 1, 2). The Cehennem Deresi Canyon is approximately 500 m long, 70 m wide, and 6 m deep. The distance of the canyon to the center of Ardanuc is 3 km. The Cehennem Deresi Canyon is one of the largest canyons in Turkey and in the world (Artvin Provincial

Directorate of Environment and Urban Planning, 2012: 8; Eminağaoğlu and Beğen, 2015a: 67; <http://www.ardanuc.gov.tr/ardanuc-tarihi>).

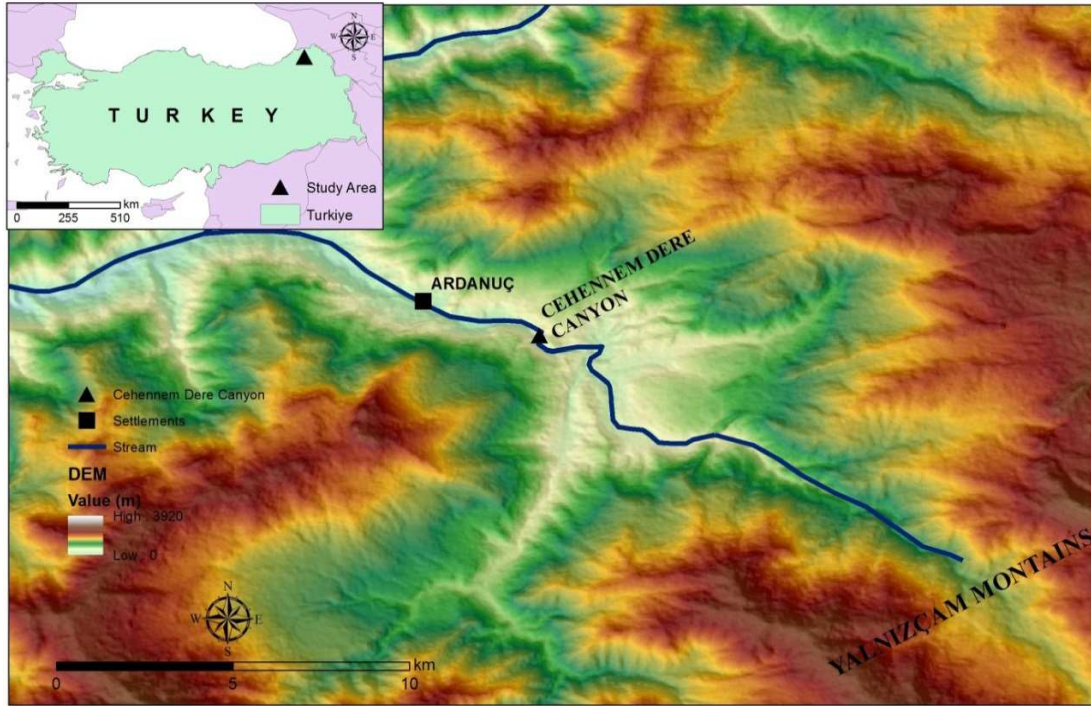


Figure 1: The location map of the study site.

The Ardanuc district where the Cehennem Deresi Canyon is located has a very mountainous and steep morphology. Ardanuc has a hilly topography where the Karcıl Mountain (4328 m) and the Yalnızcam Mountains (3050 m), which are in the Eastern Pontides orogenic belt, and deep valleys, which divide these valleys, are located. The climate, vegetation cover, soil characteristics, and hydrographic construct of the region shaped according to this morphology (Figure 2). Artvin is one of the richest geographical areas of Turkey in terms of plant diversity where 2727 plant taxa have natural distribution. 500 of these plant taxa are under the risk of extinction (198 being endemic). There are 4 important plant areas (the Karcıl Mountain, the Coruh Valley, the Eastern Black Sea Mountains, and the Yalnızcam Mountains) and 4 important natural areas (the Karcıl Mountain, the Coruh Valley, the Eastern Black Sea Mountains, and the Yalnızcam Mountains). It is also one of the prominent areas in Turkey in terms of biodiversity with 1 biosphere area (Camili), 2 national parks (Karagöl-Sahara and the Hatilla Valley), 3 natural conversation areas (Camili-Efeler, Camili-Gorgit, and Camburnu), and 2 natural parks (Borcka Karagöl and Altıparmak). Rich floristic characteristics of the area attract the attention of national and foreign tourists in the 35-54 age group who have a high educational level, above average income, an interest in nature, culture, and gastronomy (Eminağaoğlu and Beğen, 2015b: 96-103). High biodiversity of Artvin presents an important potential for ecotourism. The most popular tourism destinations list of Euromonitor (2015) included five cities from Turkey: Antalya, Istanbul, Muğla, Edirne, and Artvin. Artvin took the top place in Europe and the third place in the world (<http://www.sabah.com.tr/ekonomi/2015/01/31/artvin-turizmde-kuresel-100e-girdi>). This presents a good opportunity to develop ecotourism in Artvin.

Ardanuc, where the Cehennem Deresi Canyon is located, has a semi-arid climate which shows properties close to humid climate serving as a transition point between the steppe climate of Eastern Anatolia and the rainy climate of the Black Sea Region. The vegetation cover of the district is generally in the 'Colchic Flora' group. In addition to bush formation types such as juniper (*Juniperus*), oak (*Quercus*), Christ's thorn (*Paliurus spina-christi*), and mastic (*Pistacia Lentiscus*), lower areas close to the district center of Ardanuc are also covered with broad-leaved trees such as Oriental beech (*Fagus orientalis*), sweet chestnut (*Castanea sativa*), and alder (*Alnus barbata*). Humid-cold environment becomes dominant in higher elevations, where spruce (*Picea orientalis*), fir (*Abies nordmanniana*), and Scots pine (*Pinus sylvestris*) forests are common (Eminağaoğlu and Beğen, 2015a: 80).

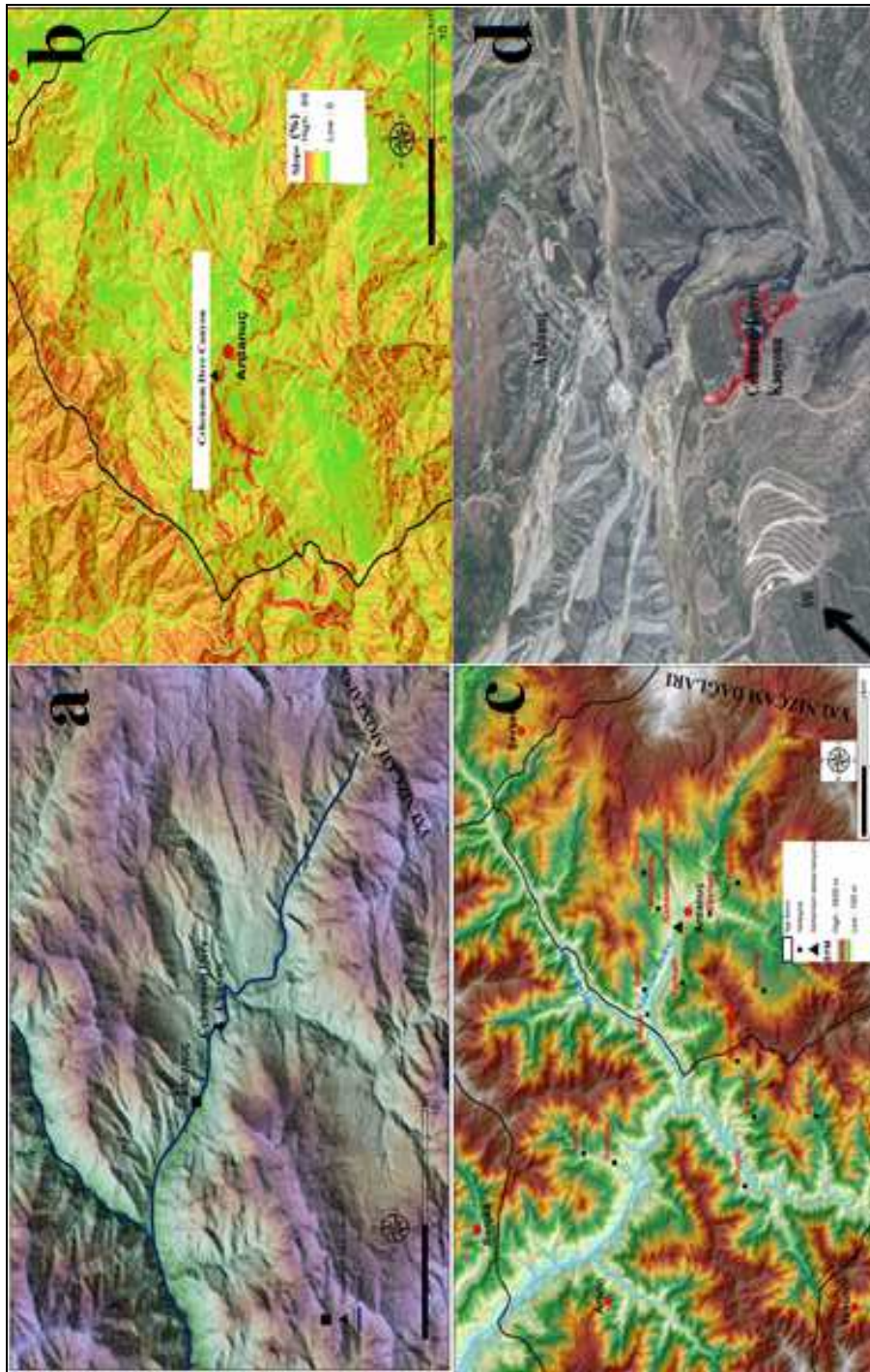
There are alluvial soils in plains extending along the Ardanuc River, and colluvial soils on debris cones in places where the Ardanuc River and its tributaries meet. Elevated areas surrounding the canyon



usually present limy brown forest soils. The elevation of Ardanuc, where the Cehennem Deresi Canyon is located, is 500 meters and there are 49 villages in the district. The settlements are dispersed due to hilly structure of the area (Figure 2). The distance between Ardanuc and Artvin is 39 km, the road connecting Artvin, Gole, and Ardahan passes through the district center. The closest airports to the district are Kars Airport (162 km), Erzurum Airport (265 km), Trabzon Airport (296 km), and Batumi Airport in Georgia (145 km). About 32% of the district's surface area is covered with forests, 8% is covered with grassland, and 56% is covered with non-arable lands. About 11% of the district's surface area is suitable for agriculture. The economy of Ardanuc mostly relies on agriculture. The main livelihoods of locals include agricultural production, animal husbandry, and forest work, which is seasonal. The district does not host any large-scale industrial facilities, and small-sized establishments include carpenter shops, blacksmiths, and auto-repair shops (<http://www.ardanuc.gov.tr>). According to the Address-based Census System, the population of the district center was 5,527, while the total population including villages was 10,744 in 2016 (<http://www.tuik.gov.tr>).

Apart from the Cehennem Deresi Canyon, Ardanuc has numerous historic and cultural values. Noteworthy historic and cultural places in Ardanuc include Iskender Pasa Mosque and Tombs in the Adakale locality, Ardanuc (Gevhernik) Castle, Ferhatli Castle in the Ferhatli village, Petoban Castle in the Baglik locality of the Kutlu village, Rabat Church which is 6 km to the Bulanik village, and Bal Rock which has a length of 1 km and height of 300 meters and located 14 km from the district on the road connecting Bulanik, Zekeriya, and Gulice villages. Uclu Kara Lakes located over the Kutlu village around Bilbilhan Highland stand out with natural trout. Festivals and village-highland carnivals are organized in various times of the year in Ardanuc. These include Curuspil Efkari Bard Festival and Karakucak Sun Festival organized by the Ardanuc Municipality, the Sogut Duzu Highland Carnival in the Aydin village, Karakucak Wrestling Festival, Highland Carnivals organized in Bereket and Ovacik villages, the Socluk Festival organized in the Bulanik village, the Gules Village Festival, and the Kutlu Village Highland Carnival (<http://www.ardanuc.gov.tr/ardanuc-tarihi>).

Figure 2: Shaded relief (a), Slope (b), DEM (c), map of the study area and Southwestern view of the Cehennem Deresi Canyon (d).



4. SWOT Analysis for Ecotourism Potential of the Cehennem Deresi Canyon

SWOT is an abbreviation for Strengths, Weaknesses, Opportunities, and Threats. The SWOT analysis can be used to determine the tourism potential of any place with its intrinsic (strengths and weaknesses) and extrinsic (opportunities and threats) aspects, and for tourism policies of countries.

The SWOT analysis is a strategic technique used to determine internal strengths and weaknesses and external opportunities and threats of an establishment or person carrying out a project or undertaking an enterprise. It can also be used for techniques, processes, and situations. The SWOT analysis allows for realizing opportunities and threats related to the product and make strategic marketing plans accordingly. It also allows us to focus on our strengths and areas which present great opportunities (Güngör and Arslan,



2004: 68; Yeşiltaş et al., 2009: 252). The SWOT analysis helps countries realize their strengths and weaknesses in terms of ecotourism activities, and develop appropriate tourism planning strategies accordingly (İlhan et al., 2017: 327).

The SWOT analysis for the Cehennem Deresi Canyon and its surroundings yielded the following results:

Strengths (S):

1. The Cehennem Deresi Canyon, one of the largest canyons in Turkey, is located here (Photograph 1).
2. The Ardanuc Cehennem River is located in the Coruh Valley.
3. There are topographic structures and geomorphological structure which will allow for different ecotourism activities such as deep valleys, mountain passes, high mountains (e.g. Karcal, Cadir, and Yalnizcam), small falls, and numerous caves (Figure 2; Photograph 1).
4. The Cehennem Deresi Canyon has morphological units suddenly elevating from the river level, a nature with minimal exposure to anthropomorphic effects, a unique landscape view with clean streams, a diverse vegetation cover, steep walls, numerous caves, and dolines (Figure 2; Photograph 1, 2).
5. The Caucasian Ecological Region, where the Cehennem Deresi Canyon is located, is accepted one of the "34 Biodiversity Hotspots" which are the most important biologically diverse and endangered areas in the world according to Conservation International (CI), World Bank (WB), and Global Environment Fund (GEF) (Eminağaoğlu and Beğen, 2015a: 82-83).
6. Ardanuc Cehennem River is located in Artvin, one of the most prominent sites in Turkey in terms of plant diversity. Artvin is one of the richest geographical areas of Turkey in terms of plant diversity where 2727 plant taxa have natural distribution. 500 of these plant taxa are under the risk of extinction (198 being endemic) (Eminağaoğlu and Beğen, 2015a: 82-83).
7. The Cehennem Deresi Canyon in Ardanuc, Artvin is located among four important plant and nature areas; the Karcal Mountain, the Coruh Valley, the Eastern Black Sea Mountains, and the Yalnizcam Mountains (Eminağaoğlu and Beğen, 2015a: 82).
8. The Cehennem Deresi Canyon is located in the Coruh Valley, which is classified as one of the 200 ecological regions with priority due to the presence of mild Caucasian forests by World Wildlife Fund (WWF).
9. The Coruh Valley, where the Cehennem Deresi Canyon is located, is suitable for ornithology. BirdLife International defines the Coruh Valley as one of the 217 bird protection regions with priority (Eminağaoğlu and Beğen, 2015a: 82-83; Surat et al., 2015: 5).
10. The Cehennem Deresi Canyon is located within the Coruh Valley Wildlife Protection and Improvement Area (12 animal species included in the list of animals under the risk of extinction in Turkey live in this area. These animals include wild goat, mountain goat, Persian rabbit, bear, Eurasian badger, grey wolf, and some bat species) (Surat et al., 2015: 19).
11. One of the most important morphological units in the Eastern Black Sea Region, the Yalnizcam Mountains (one of the sites which glaciated during the Pleistocene epoch) host glacial lakes, valleys, cirques, and moraines. The Yalnizcam Mountains is one of the spots where Scots pine (*Pinus sylvestris*) forests reach the highest elevation in Turkey (Figure 2).
12. Ardanuc, where the Cehennem Deresi Canyon is located, has a semi-arid climate which shows properties close to humid climate serving as a transition point between the steppe climate of Eastern Anatolia and the rainy climate of the Black Sea Region.
13. Ardanuc has noteworthy historic and cultural heritages which have great potential for belief and cultural tourism including Iskender Pasa Mosque (Photograph 2) and Tombs in the Adakale locality, Ardanuc (Gevhernik) Castle, Ferhatli Castle in the Ferhatli village, Petoban Castle in the Baglik locality of the Kutlu village, and Rabat Church which is 6 km to the Bulanik village.
14. Festivals and village-highland carnivals are organized in various times of the year in Ardanuc (Curuspil Efkari Bard Festival and Karakucak Sun Festival organized by the Ardanuc Municipality, the Sogut Duzu Highland Carnival in the Aydin village, Karakucak Wrestling Festival, Highland Carnivals organized in Bereket and Ovacik villages, the Socluk Festival organized in the Bulanik village, the Gules Village Festival, and the Kutlu Village Highland Carnival).

15. The area has economic, cultural, and climatic diversity as well as architectural diversity as a result of the disperse settlement in the Cehennem Deresi Canyon and its surroundings due to high slope and elevation.
16. The area allows for hiking trips in mountains and highlands (Bal Rock which has a length of 1 km and height of 300 meters and located 14 km from the district on the road connecting Bulanik, Zekeriya, and Gulice villages is noteworthy and Uclu Kara Lakes located over the Kutlu village around Bilbilhan Highland stand out with natural trout).
17. Valleys, highlands, and mountains in the area and its surroundings are suitable for hiking, trekking, and mountain-climbing activities and camping-caravan tourism from July to October.
18. The Deriner Dam, which is close to the Cehennem River, allows for fishing (Photograph 2).
19. The Cehennem Deresi Canyon has great potential for mountain-climbing with its steep walls and structure (Photograph 2).
20. The Cehennem Deresi Canyon and its surroundings present very suitable conditions for canyoning, cave tourism, mountain hiking, trekking, nature photography, safari, geomorphological observation, highland tourism, river sports, ornithology, wildlife observation, and botanical trips.
21. The canyon is easy to access using the road connecting Artvin-Ardanuc-Ardahan, offers good conditions for festival tourism, recreational fishing, river tourism, and rural heritage trips.
22. The Cehennem Deresi Canyon located within the boundaries of the Coruh Valley is suitable for ecotourism activities bird, butterfly, and wildlife observation, botanical tourism, recreational highland activities, and bicycle safari.
23. The increased interest in ecotourism is an advantage.
24. The policy of the Ministry of Culture and Tourism is to expand tourism to the entire year.
25. The canyon offers fresh air and water, and (preserved) natural beauties.
26. The Coruh River and its tributaries pass through the area.
27. There is diversity in terms of folkloric values, which are preserved to this day.
28. Locals of the study area have a positive attitude toward ecotourism.



Photograph 1: The Cehennem Deresi Canyon in Ardanuc (a) and morphological units suddenly elevating from the river level in the Cehennem River Canyon (b).



Photograph 2: Iskender Pasa Mosque and Tombs (a) and The Cehennem Deresi Canyon stands out with steep walls (b).

Weaknesses (W):



1. The canyon is very far from large cities with high population such as Ankara, Istanbul, and Izmir, which negatively affects its attractiveness.
2. There are no signs and information boards regarding remarkable characteristics of the canyon at the canyon's entrance.
3. The number of parking spaces and tourism establishments in the canyon and its surroundings is not sufficient.
4. There are no public or private organizations which provide information about the canyon or translation services.
5. There are no health-related measures for possible injuries, venomous animal attacks, or deaths in the canyon.
6. Locals are not sufficiently informed about the tourism potential of the canyon, and there is a lack of staff and experts to promote the canyon and give tours.
7. The Ardanuc district and the Cehennem Deresi Canyon are not included in the list of ecotourism and protection areas within Artvin specified in the Ecotourism Master Plan for 2013-2023 prepared by the Ministry of Forestry and Water Affairs.
8. There are no efficient and planned hiking routes, hiking platform, and hiking signs.
9. Marketing and promotion activities for the area are not sufficient.
10. Accommodation facilities lack in number and service variety.
11. Geomorphological formations in the canyon and its surroundings are not promoted.
12. There is a lack of trained personnel.
13. Travel agencies in Artvin have low interest in ecotourism activities.
14. The service quality of ecotourism activities is low.
15. The unemployment rate is high and Artvin is an emigrant city.
16. The area is far from airports.
17. Roads in the canyon and its surroundings are narrow.

Opportunities (O):

1. The canyon is open to various recreational and touristic activities all year round.
2. The Deriner Dam shows potential for transportation and water sports.
3. Ecotourism can be carried out all year round.
4. There is an increased interest in ecotourism.
5. The area has a dynamic population structure which can be employed with ecotourism.
6. Artvin is included in the Incentive Act.
7. Locals and the local government are willing to assume responsibility for management of natural resources.
8. The Eastern Black Sea Development Agency (DOKAP), which can improve the collaboration between the public and private sectors and provide financial support, is active in the region.
9. Locals with abundant financial resources are willing to invest in their home land.
10. The public sees Artvin as "the capital of ecotourism".
11. There is an increase in the number of accommodation establishments in Artvin.
12. Artvin Coruh University and Artvin Governorship conduct studies on ecotourism.
13. The area has the potential to meet expectations of ecotourism enthusiasts.
14. There are potential investments for an airport in Rize-Artvin.

Threats (T):

1. If the Cehennem Deresi Canyon is opened for ecotourism activities without proper planning, there is a risk of damage to the area and its surroundings due to lack of natural awareness.
2. The limited number of touristic facilities in Ardanuc, where the canyon is located, is usually constructed to suit overnight accommodation needs.
3. Economic fluctuations have a negative influence on ecotourism activities.
4. There is an effort to use forest areas for non-forestry related activities for prolonged periods of time under the disguise of 'public benefit'.



5. The active population who can be employed in ecotourism migrate due to economic, social, and cultural problems.
6. There is a lack of public lands for infrastructure and superstructure investments necessary for ecotourism activities.
7. The high slope in the canyon and its surroundings leads to the risk of landslide, which may impair access to the area.
8. Snow during winter has a negative impact on access to the area.

5. Visual resource assessment

Visual resource assessment can be defined as evaluation as a result of comprehensive observations and monitoring of the site via land vehicles, on foot, and air vehicles. Factors such as morphological structure (land form), vegetation cover, water, color, neighboring view, uniqueness, and cultural variables are considered in visual resource assessment (Yeomans, 1983: 40-41). Each element is scored from 3 to 5 in visual resource assessment. A score between 21-35 indicates *class A* (high visual resource), a score between 8-20 indicates *class B* (moderate visual resource), and a score between -14-7 indicates *class C* (low or no visual resource) (Güngör and Arslan, 2004: 70). The visual resource assessment performed for the Cehennem Deresi Canyon based on the method suggested by Yeomans (1983) can be seen in Table 1. The visual resource assessment performed for the Cehennem Deresi Canyon is completely subjective.

Table 1: Visual resource assessment table of the study area and its surroundings

Table Showing Visual Quality Criteria for Cehennem Deresi Canyon, Ardanuc, Artvin		
Visual quality element		Score
1. Morphological structure	High, horizontal relief (cliffs, etc.), outcrops, hard surface formations, sand dunes, dominant formations.	4
2. Vegetation	Vegetative diversity consisting of one or two primary species.	4
3. Water	Clear, clean, calm, or falling water resources which have dominant character in the landscape.	5
4. Color	Rich color combinations (in soil patterns, rocks, vegetation, or water).	4
5. Neighboring views	Regions with neighboring areas which moderately increase visual resource.	4
6. Uniqueness	Areas with unique or rare flora and fauna.	5
7. Cultural variables	Areas far from non-aesthetic or non-harmonic views or structures.	4
Result	Total Score: 30. Class A (Total Score Between 21-35) High Visual Resource	30

6. Discussion and Conclusion

The type of tourism which involves non-profit activities such as recreation, fun, sight seeing, and learning is one of the most rapidly growing sectors in the world. Increased income, growing urbanization, higher level of education, and improved tourism infrastructure lead to an increase in tourism activities. The participation of people into tourism activities is facilitated by places which have climatic and scenic advantages, sport facilities, beaches, hot springs, historic monuments, antique cities, battle fields, temples, museums, places where old traditions are still maintained, religious centers, and cultural activities (festivals and carnivals, etc).

Tourism is one of the main sectors of national economies worldwide, it is necessary to protect and improve resources which are mostly used for tourism in order to ensure sustainability in this sector. Negative effects of tourism activities on natural and cultural resources and the realization that such effects would influence the development of tourism negatively in future have led to a type of tourism which pays attention to the natural environment. As such, sustainable tourism has gained traction. In order to improve touristic usage areas and transform tourism into a year-wide activity rather than a summer activity, there has been an inclination towards forms of tourism such as "ecotourism", "nature tourism", "conscious tourism", and "ecological tourism" as an alternative to mass tourism. These forms of tourism are performed without changing or disturbing the nature and consuming resources (Erdoğan, 2014: 143; Kaypak, 2012: 11-12; Mansuroğlu, 2006: 35-36).

In this context, the Cehennem Deresi Canyon in Ardanuc, Artvin has great potential for ecotourism. SWOT analysis is one of the studies which need to be performed to assess this potential and open the area for ecotourism activities. For this reason, a SWOT analysis for the ecotourism potential of the Cehennem Deresi Canyon in Ardanuc, Artvin was performed.



The following were found as a result of the SWOT analysis performed within the scope of the study and recommendations were made accordingly. The Cehennem Deresi Canyon and its surroundings present very suitable conditions for canyoning, cave tourism, mountain hiking, trekking, nature photography, safari, geomorphological observation, river sports, wildlife observation, faith and cultural tourism, and highland and village festivals and carnivals. The Cehennem Deresi Canyon has great potential for mountain-climbing with its steep walls and structure.

Also, the Cehennem Deresi Canyon located within the boundaries of the Coruh Valley is suitable for ecotourism activities such as bird observation (ornithology), butterfly observation, wildlife observation, botanical tourism, recreational highland activities, and bicycle safari.

Land selection, transportation, accommodation, pollution, protection of natural areas and water resources, and the available structure should be considered in infrastructure planning efforts to develop ecotourism. Protection of natural and cultural values against possible pollution caused by ecotourism activities will ensure sustainability. Tourism activities have an important role in mitigating imbalance between regions as well (Surat et al. 2015). 23).With the development of ecotourism activities in the Cehennem Deresi Canyon and its surroundings, economic opportunities in the Ardanuc district will improve, unemployment and migration to larger cities will decrease, and development of this rural area will be supported.

6.1. Recommendations

Considering the results of the SWOT analysis performed within the scope of the study, recommendations regarding realizing the ecotourism potential of the Cehennem Deresi Canyon and its surroundings are as follows:

1. The Ardanuc district and the Cehennem Deresi Canyon are not included in the list of ecotourism and protection areas within Artvin specified in the Ecotourism Master Plan for 2013-2023 (p. 72) prepared by the Ministry of Forestry and Water Affairs. The Ardanuc district and the Cehennem Deresi Canyon should be included in areas with protection status and Ardanuc should be declared as an ecotourism and canyon tourism center.
2. There are no efficient tourism activities in the Cehennem Deresi Canyon. Hence, there is no structure aimed at tourists. Opening the area for tourism activities will increase the speed of infrastructure and superstructure efforts in the canyon and its surroundings. These efforts should be made in accordance with expert opinions and under supervision of experts (İlhan et al., 2017: 336).
3. Measures should be taken in accordance with expert opinions to protect the wildlife, relic plants, endemic plants, and socio-cultural heritage in the canyon and its surroundings.
4. It is necessary to determine hiking routes, construct hiking platforms, place hiking signs for information purposes, and provide consulting and translation services for efficient and planned use of the Cehennem Deresi Canyon and its surroundings.
5. The Cehennem Deresi Canyon is suitable for individual tourism activities as well as mass tourism activities in the form of small tour groups. This must be taken into account in tourism plans.
6. Transportation and accommodation facilities must be built without causing damage to the natural structure in the Cehennem Deresi Canyon and its surroundings, the canyon should be promoted, and locals should be informed about ecotourism.
7. The private sector should be encouraged to improve ecotourism activities in the study area.
8. As a priority, weaknesses found in the SWOT analysis should be improved, opportunities should be ceased, and threats should be eliminated in order to turn the Cehennem Deresi Canyon into a significant ecotourism destination.
9. It should be remembered that sustainable use of the ecotourism potential of the Cehennem Deresi Canyon depends on promotion and protection of this potential.
10. National (the Valla Canyon, the Koprulu Canyon, etc) and international (the Grand Canyon-USA, the Antelope Canyon-USA, the Fish River Canyon-Namibia, the Wulingyuan Canyon-China, the Copper Canyon-Mexico) examples which stand out with their ecotourism potential must be modeled to turn the Cehennem Deresi Canyon into a significant ecotourism destination.
11. Caution needs to be exercised regarding the socio-cultural status of the locals.
12. The purpose of natural planning should not be limited to economic development. Objectives must include raising awareness among locals regarding natural protection (TODEG, 2010: 13; Kaypak, 2012: 26).



13. Technical, institutional, and financial problems regarding the natural planning of the Cehennem Deresi Canyon must be solved, and the planning must be performed in a way that it will not change the lifestyle of those who live in the research site and its vicinity. The planning must take economic, social, and regional aspects into account (TODEG, 2010: 13).
14. Ecotourism applications in the Cehennem Deresi Canyon must certainly be monitored, assessed, and controlled (TODEG 2010: 13; Aydın ve Türker, 2010: 51).

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