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Full Length Research Paper

Ecological approach in sustainable tourism: Şavşat district example

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Unless the measures, envisaged for mass tourism in a sustainable understanding, are taken for ecotourism as well, ecotourism will be brought to the same point with mass tourism in terms of environmental hazard as a consequence of an increase in demand. Thus, it is fundamental to find out the level of environmental degradation of the resource and to form the potential for making use of nature-based tourism resources. In order to reduce physical effect in the area used, the relationship between tourism and conservation has to be analyzed in terms of ecological sustainability. Ecological tourism is based on the requirement of conserving resources while they are used. Being the subject to the research, the town of Şavşat in Artvin has rich natural and cultural heritage. However, the area is damaged due to intensive touristic potential. In this sense, the use values and conservation values were taken as the basis in the research and the method of Kalem (2001) was applied. In order to determine the general use and conservation values of an area and its usable touristic potential, the criteria constituting the natural and cultural criterion were developed in the method. Natural and cultural elements were examined individually and values were appointed to the criterion report. In appointing these values, the thematic digital maps (the geographical location, transportation and settlement maps, soil map, geological map, presence of water, seismic activity and etc.), created by the GIS (Arcview 8.3) software for the features constituting each criterion report, were utilized. As a result of the research, the area's "weighted use value" put into to the percentage was determined as 69.9%, "weighted conservation value" as 48.7% and "weighted usable touristic potential" as 21.2%. The result got shows that the sources were not able to be protected adequately for sustainability while using them. In addition, natural and cultural properties which are crucial in the use of ecological sources and should be protected have been determined separately in the result of the research. Paying attention to these properties of sources, ecological tourism applications can be realized in the research area. It's considered that to open the research area, which has suitable potential for a variety of ecological tourism kinds, to tourism in the frame of sustainability principles in some phases will be useful in increasing the region's welfare level.

Key words: Sustainable tourism, ecological tourism, conservation-use, Şavşat district.

INTRODUCTION

In the 20th century, capitalism, population movements, transportation, and communication have become helpful for the development of tourism industry (Choi and Sırakaya, 2005). Although tourism industry provides economic profit, it can cause social, cultural, economic and environmental problems (Choi and Sırakaya, 2006; Saarinen, 2006; Tao and Wall, 2008). Unplanned tourism developments harm to natural and socio-cultural environment of many tourism areas and decrease the potential of sources (Lim and McAleer 2005). When the use more

than the carrying capacity is brought to tourism areas, it causes the environment to be sensitive (Priskin, 2001).

These undesirable adverse effects in tourism have caused the increase in the researches on the protection of natural sources, welfare of people and long-term economic capacity (Choi and Sırakaya). The 'benefit-harm of tourism' subject has become a part of discussions in the researches for long time (Tao and Wall, 2008). Some researchers consider that for local people tourism can be used for the exploitation and it causes environmental and cultural ruin. Others consider that tourism will have positive contribution to cultural structure, environmental protection and economy (Hughes, 2002; Erdoğan and Erdoğan, 2005). In these discussions, with realising the lacks of mass tourism, alternative options of tourism planning, management and development have been sought (Hughes, 2002; Choi and Sırakaya, 2006). As a result, sustainable development has come out as an alternative (Choi and Sırakaya, 2006).

Environmental protection and sustainability has become an essential subject after the introduction of the concept 'sustainable development' formed in Our Global Future report by Brundlant commission (World Environment and Development Commission, 1987) in 1990's. This report has been seen as a reflection of increased environmental conscious by the second half of 1980's (Johnson, 2002; Lim and McAleer, 2005). Sustainable tourism concept has continued with the World Summit in 1992 and with the Agenda 21 application in 1993 (Johnson, 2002; Lim and McAler, 2005; Saarinen, 2006). Sustainable tourism has been considered by the aim of long term life and continuity for all kinds and activities of tourism (Demirel, 2002). Environmental carrying capacity includes the principles of social responsibility and uniting tourism with local community wishes (Johnson, 2002).

Sustainability is based on the basis that sustainable sources should be protected while using them. It is evaluated economically, environmentally and socio-culturally (Choi and Sırakaya, 2006; Kiper, 2006; Saarinen, 2006; Kuntay 2004). For economic sustainability to be continued, economic profits got from tourism should be distributed to the local people justly. For environmental sustainability, the conscious that natural sources in the world must not seen as so rich after that and that these sources have been actually consumed continuously should be arrived. Natural environment must be protected for continuing its peculiar values. Socio-cultural sustainability is provided with the reinforcement of social identity, social gain, social culture and cultural heritage and social unity (Choi and Sırakaya, 2006).

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Tourism planning being environmentally sensitive and having ecological approach is considered as a potential strategy for providing the protection of natural ecosystem in the organization of tourism actions (Priskin, 2001; Demirel, 2002; Hughes, 2002; Lim and McAleer, 2005; Saarinen, 2006). That ecotourism be towards nature carries a sustainable tourism character in the context of appreciating natural and cultural sources (Weaver 2005; Priskin, 2001; Erdoğan and Erdoğan, 2005). Ecotourism takes the balance of conservation and use as basis for sustainability of sources, culture, economy and local community (Priskin, 2001; Yıldırım et al., 2007). If the relation between natural areas, local people and tourism are managed suitably, the balance between conservation and use can be provided (Choi and Sırakaya, 2006). Ayala, 1996 describes tourism as 'a tourism providing to understand culture and nature and to entertain in tourism area while providing economic benefits and supporting environmental conservation effectively' (Lim and McAleer, 2005). In rural communities, ecotourism has a continuously increasing importance for sustainable development. It encourages economic development and also environmental protection (Cater, 2002; Teha and Cabanbanb, 2008; Ross and Wall, 1999). Ecotourism is a human centred model emphasizing people's natural capacities and knowledge. It focuses on actions in the level of the society (Chambers, 1986; Tao and Wall, 2008).

Unless measures prescribed for mass tourism in a sustainable understanding are taken also for ecotourism, in consequence of the increase in demand, ecotourism will move to the same point with mass tourism in terms of environmental hazard (Beatley, 1995; Vaughan, 2000). So it is essential to determine environmental degradation level of the source and to form the potential for evaluating nature-based tourism sources. For physical impact to be able to be decreased in the used area, the relation between tourism and conservation should be resolved in ecological sustainability basis (Priskin, 2001). Defining carrying capacities of ecosystems can be by measuring uses of natural-cultural environment (Hughes, 2002). In this measurement, multi-dimensionality of tourism must be taken as a basis (Choi and Sırakaya, 2006). Protected areas, species under the danger, use intensity, important sources consumed (water, energy, etc.), substructure capacity, environmental planning and relevant indicators must be evaluated (Miller, 2001). Sustainable indicators make early warning duty. They not only support potential negative effects of the development of tourism but also its sustainable development (Choi and Sırakaya, 2006).

Priority sector of Artvin city in development is tourism sector according to the researches (Cengiz et al., 2004). In Artvin city having rich natural and cultural values, it can't be adequately benefited from tourism potential (Cengiz and Çalışkan, 2005). Şavşat district which has

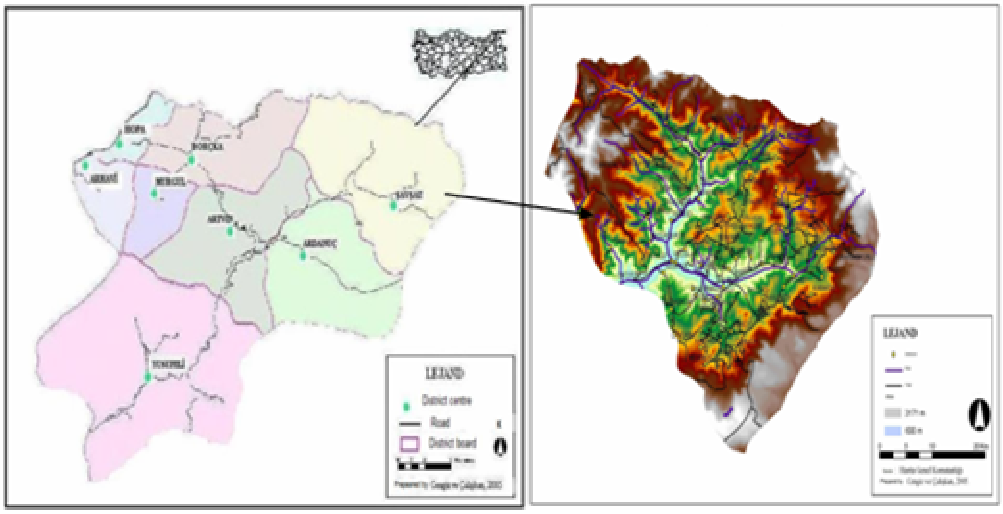

Figure 1. Geographical position and topographic map of the research area.

become the subject matter for the research in the city has rich natural and cultural values. However the area ruins since tourism potential is intensive. So in the research, depen-ding on use values and conservation values, Kalem (2001)'s method has been applied. Values have been given to these two concepts being opposite to each other and these values have been put into to a common base (%) and the difference (positively or negatively) between them has revealed the area's tourism potential, in other words, usable tourism potential in terms of protecting natural-cultural values.

MATERIALS AND METHODS

The Şavşat district being the research area takes place in the city of Artvin being in the northeast of Turkey and forming the city boundary with Gürcistan country (Figure 1). The research area composes of 2 municipalities and 3 neighbourhoods connected to the central municipality and 61 villages. The area is 1317 km^2. It is mountainous and rough.

The district's altitude varies between 600 m and 3171 m. Karçal Mountains elevating 3537 m limit the west and northwest direction of the district. There are 2650 m high Sahara Mountains and in the south there are 3050 m high Karagöl Mountains.

Karçal Mountains and Sahara mountains are important places in the district in terms of touristic potential. Sahara Mountains take place within Karagöl National Park boundaries. Mountainous and rough area in the territory has formed deep breaches in patches through rivers. Karstic structure of the area has caused canyons and caves to appear.

Supernatural geomorphologic formations have joined with green forest texture and provided unique beauties to emerge. The research area has quite much water wealth with its 13 big and little creeks. Valleys the rivers formed have importance in realizing activities such as adventure, discovery and trekking thanks to their morphological structure and flora. Big and little canyons each occurring in consequence of that in the research area water basins tear and erode geological structure have generally important potential in terms of ecological tourism. Also, thermal sources and mineral water sources which take place in the area have the quality and number to form attraction source of tourism movement. However it can't be benefited from these sources regularly. The area is suitable climatically to be able to make tourism activities. The region's 'touristic climate comfort value' has been calculated as 50%.

When the research area is handled in terms of active fault-earthquake relation, it is seen that there is not any active fault to be able to make destructive earthquake. The research area is quite rich in mineral deposits as well. In the locale there are copper, zinc, lead and manganese mine sources (Yılmaz et al., 1998).

The research area, due to its gene variety, has an important place as Gene conservation area in the world. Karçal Mountains taking place in the research area is one of nine hotspots in Turkey. Since there are over 200 plant species peculiar to the region and this area is the point having the most variety and the highest vanishing risk in the world (URL-2, 2005; URL-3, 2005), this area has been chosen as hotspot. In the point of plant geography, Karçal mountains taking place in Kolchis part of Europe-Siberia floristic region stays within the boundaries of "Caucasian and North Anatolia Temperate Zone Forests" being one of priority 200 ecological regions in global level conservation, determined by world wildlife fund (WWF) and international union for conservation of nature (IUCN).

International foundations like conservation international (CI), World Bank and global environment facility also show Caucasian region as one of 25 terrestrial ecologic regions being rich but under danger in the world. The region has the widest natural old forest ecosystems in the geography including Europe and Middle Asia. Karçal Mountains is one of the most important places in Turkey in terms of biological diversity. Big villages like Maden, Tepebaşı, Meydancık, Taşköprü and Mısırlı which take place within the research area in Kaçkar Mountains being an area of 25,000 hectares are included in hotspot area. Kaçkar Mountains being a part of North Karadeniz Mountains is one of the most important migration paths of raptors. Urkeklik (*Tetraogallus caucasicus (Caspian snowcock)*) and Hus tavuğu (*Tetrao mlokosiewiczi (Caucasian grouse)* living in Alpine prairies are Caucasian endemics.

In the region it is rarely met wild species like golden eagle (*Aquila chrysaetus*), rüppell's griffon (*Aegypus monachus*) and falcon (*Falco peregrinus*). These are a few of reasons that the region has been chosen as one of priority 217 areas in the conservation in the world by Bird Life International. The studies made in the last years show that the area by itself includes the potential of being 'Important Bird Area' owing to migratory birds, temperate zone forest types and mountain alpine types. In the area there is *Vaccinium arctostaphylos* species taking place in Bern Agreement (Black Sea Technical University Review Report, 2002).

In Karagöl-Sahara National Park and surrounding taking place in the research area, it was recorded the total 872 taxons pertaining to 91 families and 364 species according to the research made between 1997-2002. In the research area, the three families having the most taxaons are Compositae, Leguminosae and Gramineae families, respectively. The richest species is Astragalus, the second one is Campanula L. 6,3% of taxons are endemics. In the area there are *Picea orientalis* (east spruce), *Pinus sylvestris* (scotch pine) and *Abies nordmanniana* subsp. nordmanniana (east black sea fir), *Fagus orientalis* (east beech), *Quercus sp.* (oak) and other leaved species. In high parts it is seen alpine zone (Eminağaoğlu and Anşin, 2004).

In the head of important birds reproducing in the research area are dağ horozu (*tetrao mlokosiewiczi*) and caspian snowcock (*Tetraogallus caspius*). Caucasian viper (Vipera kaznakowi) actually lives in the area. When researches made in Karagöl-Sahara National Park were evaluated (Black Sea Technical University Review Report, 2002), according to "Eurepean Vertabre Red Data Book" (EVRDB) and "Bern agreement", mammals, fish, reptiles, amphibians, insects were examined in terms of their economic measures, hunting situations and life areas. According to this research, there are 128 bird species in the area. According to EVRDB, 50 species are endemic species for Europe being under danger. 4 species are universally sensitive species. These are species which aren't under danger in the nature yet but are likely to face vanishing danger in medium term. There are 1 endemic species. According to BERN, 87 species are certainly under protection.

Karagöl-Sahara National Park taking place in the research area is rich in natural, cultural values. With its untouched natural areas, forests, lakes, numerous rivers, rich flora, wild life, interesting geological formation, plateaus and mountain areas, it presents rich opportunities for tourism and recreation. In the research area many tourism activities such as mountaineering, plateau tourism, ornithology, photo-safari, farm tourism, trekking and boats are made. The area has a quite rich structure with its cultural characteristics as well as natural beauties.

It has become an arena to various civilizations and cultures since the 8th century B.C. In excavations and groundwork it was met copper and bronze axes. There are rich archaeological and historic works in the area. There are four historic churches and three mosques of the Hegira 1306 (1889 A.C.) and of middle age term and six towers and stone bridges pertaining to middle age again (Aytekin, 1999). Most of historic works have arrived to today. However the conservation-use balance of works couldn't be provided well. The area has also architecturally created its own identity with its historic wooden houses. In residence places, as basic construction material, wooden and stone materials form original character of local architecture. There are 17 real properties of culture and nature in the research area in this scope. Since the research area doesn't interact much with other cultures, it protects own peculiar life style. It still tries to protect various behavioural patterns such as social interdependence, intangible values, traditional clothing styles and relations with animals and nature.

One of the most important problems of the research area is transport. The existence of mountainous geography makes transport both expensive, times wasting and also difficult. The research area has a limited trade potential due to reasons such as transport problems sourced from its geographical position and less source potential. Basic living source of local people is retirement pay. In the villages, that population is less and old and that area is mountainous geographically caused stockbreeding to be made instead of agriculture.

However the decrease in young population and workforce caused significant drop in stockbreeding. Employment opportunities remain inadequate in consequence of that agricultural lands are limited, there aren't industrial facilities, other major sectors did not develop. Agriculture continued in a limited area and in small parcels is in the level of merely answering needs of families. Although the research area has important potential for tourism that can be utilized economically in ecological tourism, tourism sector couldn't come to desired level.

In addition, erosion is a serious problem in the area. Water erosion, except base lands, shows itself more or less in almost everywhere. Another important environmental problem about earth is that agricultural earths are used for settlement. In the district there are earth-pollutant factors such as fertilizer use and disinfection. Sand-pebble Oven Crusher Facilities cause physical environment degradations in the area. This facility harms to the environment and at the end of work, necessary attention can't be shown about land rehabilitation. Dry-waste depot has irregular quality and geological, topographical, hydrological and meteorological criteria prescribed in the land selection in the Regulation have not been paid attention.

Method

In the research Kalem (2001)'s method has been referred. Use values and conservation values have been taken as basis according to this method. Values have been given to these two concepts being opposite to each other and these values have been put into to a common base (%) and the difference (positively or negatively) between them has revealed the area's tourism potential, in other words, sustainable tourism potential in terms of protecting natural-cultural values.

In the method the criteria have been developed by Kalem (2001) to determine an area's general use and conservation values and usable tourism potential. Criteria reports have been arranged to determine a certain area's touristic use, conservation and usable touristic potential according to a certain criterion. In formulating indicators concerning use value, those properties of the criterion are paid attention in the area:

1. Quantity: Abundance, shortage, diversity, etc.
2. Quality: Being interesting, beauty, etc.
3. Sufficiency for touristic use and opportunities it presented

In formulating indicators about conservation value:

1. Quantity: Abundance, shortage, diversity, etc.
2. Potential danger which can be formed by touristic use (natural) or nonusage (cultural)
3. Criterion's sensitivity and vanishing tendency

Kalem made a survey answered by 200 participants living both in Turkey and in various regions of the world through e-mail, direct interview and other communication tools for weighted ratio of every criterion to be able to be determined objectively. Questions concerning the importance level of every criterion in the survey

Table 1. Weight coefficients of criteria (Kalem 2001).

No	a) Natural criteria	Weight coefficient	No	b) Cultural criteria	Weight coefficient
1	Geoghraphical position	1.3	12	History and Archeology	1.3
2	Surface shapes	1.7	13	Socio-ekonomic situation	1.0
3	Geological formations	1.3	14	Social infrastructure	0.9
4	Seismic conditions	0.6	15	Area use	1.1
5	Earth and underground wealthiness	0.7	16	Transport and communication	0.9
6	Climatic conditions	1.5	17	Energy and water	0.9
7	Hydrological situation	1.5	18	Folklore	1.2
8	Flora	1.7	19	Social behaviours	1.5
9	Wild life	1.4	20	Traditional architecture and artifacts	1.1
10	Areas of natural protection and recreation	1.5	21	Gastronomy	0.9
11	Environmental problems	1.6	22	Socio-cultural life	0.7
			23	Cultural conservation areas	1.4

Table 3. The region's general unweighted, weighted and percentage use, conservation values and usable touristic potential.

	Total	A		Total	A		Total	A
X	92	57	Xi	110.8	77.5	Xi(%)	92	69.9
Y	92	45	Yi	110.8	54.0	Yi(%)	92	48.7
Z	92	12	Zi	110.8	23.5	Zi(%)	92	21.2

were asked and three-optional answers were presented: Unimportant, important and very important. 'Important' option was evaluated with (1) point, 'very important' with (2) points and 'unimportant' with (0) point. Weighted coefficient of each criterion was calculated with the below formula.

$$a = \frac{(n0x0)+(n1x1)+(n2x2)}{N}$$

in the formula:
a: Weighted coefficient
n: Answer numbers taken concerning surveys
n0: point of the unimportant option
n1: point of the important option
n2: point of the very important option
N: shows the total answer number (n0+n1+n2) taken from surveys. Table 1 shows weighted coefficients of the given criteria that were calculated with this formula.

In the research firstly the Quick Rural Evaluation Technique was applied. According to this technique, the meeting was arranged for 61 village mukhtars taking place in the research area. Semi-survey interview technique was applied to the villages' mukhtars towards recreation and tourism potential of their villages. After this pre-information meeting, the survey information was verified by making territorial studies in villages of the district and the survey studies were made. According to the territorial studies made in the area and to the survey results, attraction centres of the research area were determined in terms of recreation and tourism. Necessary data were got by making cooperation with associations concerned with the area. The area's history, current use area, population, education, historic values, folkloric values, economic structure, etc. specialities were examined and it was revealed what kind of importance these factors had in planning for recreation and tourism and how they affected the district.

A database was formed by preparing some thematic maps concerning the area's geographical position, transport situation and residential situation, hydrological structure, earth properties, etc. in computer medium in Arcview (8.3) program. Benefiting from this database, the conservation and use requirements of the area were identified. The district's natural and cultural landscape places were revealed and the landscape potential was examined in terms of conservation and use.

After these researches, to determine the area's usable tourism potential, natural and cultural factors affecting tourism and conservation were individually examined and values were appointed to the criteria report carnet.

Research findings

In consequence of the area data examined according to the method, the use, conservation and usable touristic potential values calculated as weighted and unweighted in the base of each criterion for the region and the general area values being the sum of these are given in Table 2.

The sum of the use values (x) concerning every criterion gives the general use value of the area (X), the sum of conservation values (y) the general conservation value of the area (Y), the sum of usable touristic values (z) the general usable touristic potential of the area (Z). (A) general use value of the region was determined as 57/92 and conservation value as 45/92. According to this, the general usable touristic potential is 12/92.

However since the sum of general weighted values got by taking weight coefficients of criteria into account is 110.8, reducing these values to the percentage (%) again is necessary to see how much criteria affect general values of their weights. To this, (A) weighted use value of the region is 77.5, weighted conservation value 54.0 and weighted usable touristic potential 23.5. When these values are put into the percentage (%), such a table appears (Table 3).

Table 2. The region's unweighted and weighted use, conservation and usable touristic potential according to criteria.

No	Criteria	Unweighted Values			Weighted Values (i)		
	Natural		**Max. Value**	**A**		**Max. Value**	**A**
1	Geographical Position	x	4	3	xi	5.2	3.9
	Coefficient (i):1.3	y	4	1	yi	5.2	1.3
		z	4	2	zi	5.2	2.6
2	Mountains and Other Territorial Surface Shapes	x	4	4	xi	6.8	6.8
	Coefficient (i):1.7	y	4	2	yi	6.8	3.4
		z	4	2	zi	6.8	3.4
3	Geological Formations Coefficient (i):1.3	x	4	1	xi	5.2	1.3
		y	4	1	yi	5.2	1.3
		z	4	0	zi	5.2	0
4	Seismic Conditions Coefficient (i):0.6	x	4	2	xi	2.4	1.2
		y	4	-	yi	2.4	-
		z	4	2	zi	2.4	1.2
5	Climate	x	4	2	xi	6.0	3
	Coefficient (i):1.5	y	4	-	yi	6.0	-
		z	4	2	zi	6.0	3
6	Earth and Underground Wealthiness	x	4	-	xi	2.8	-
	Coefficient (i):0.7	y	4	3	yi	2.8	2.1
		z	4	-3	zi	2.8	-2.1
7	Hydrology	x	4	2	xi	6.0	3
	Coefficient (i):1.5	y	4	2	yi	6.0	3
		z	4	0	zi	6.0	0
8	Flora	x	4	4	xi	6.8	6.8
	Coefficient (i):1.7	y	4	1	yi	6.8	1.7
		z	4	3	zi	6.8	5.1
9	Wild Life – Wild Existence	x	4	2	xi	5.6	2.8
	Coefficient (i):1.4	y	4	1	yi	5.6	1.4
		z	4	1	zi	5.6	1.4
10	Areas of Natural Protection and Recreation	x	4	3	xi	6.0	4.5
	Coefficient (i):1.5	y	4	4	yi	6.0	6.0
		z	4	-1	zi	6.0	-1.5
11	Environmental Problems Coefficient (i):1.6	x	4	3	xi	6.4	4.8
		y	4	2	yi	6.4	3.2
		z	4	1	zi	6.4	1.6
12	History and Archeology	x	4	3	xi	5.2	3.9
	Coefficient (i):1.3	y	4	3	yi	5.2	3.9
		z	4	0	zi	5.2	0
13	Socio-economic Situation Coefficient (i):1.0	x	4	2	xi	4.0	2
		y	4	2	yi	4.0	2
		z	4	0	zi	4.0	0
14	Social Infrastructure Coefficient (i):0.9	x	4	2	xi	3.6	1.8
		y	4	3	yi	3.6	2.7
		z	4	-1	zi	3.6	-0.9
15	Area Use	x	4	2	xi	4.4	2.2
	Coefficient (i):1.1	y	4	2	yi	4.4	2.2
		z	4	0	zi	4.4	2.2

Table 2. Continued.

16	Transport and Communication Coefficient (i):0.9	X	4	1	xi	3.6	0,9
		y	4	2	yi	3.6	1,8
		z	4	-1	zi	3.6	-0,9
17	Energy and Water Coefficient (i):0.9	x	4	2	xi	3.6	1,8
		y	4	2	yi	3.6	1,8
		z	4	0	zi	3.6	0
18	Folklore	x	4	3	xi	4.8	3,6
	Coefficient (i):1.2	y	4	2	yi	4.8	2,4
		z	4	1	zi	4.8	1,2
19	Social Behaviours Coefficient (i):1.5	x	4	3	xi	6.0	4,5
		y	4	2	yi	6.0	3,0
		z	4	1	zi	6.0	1,5
20	Traditional Architecture and Artifacts	x	4	3	xi	4.4	3,3
	Coefficient (i):1.1	y	4	2	yi	4.4	2,2
		z	4	1	zi	4.4	1,1
21	Gastronomy	x	4	2	xi	3.6	1,8
	Coefficient (i):0.9	y	4	1	yi	3.6	0,9
		z	4	1	zi	3.6	0,9
22	Socio-cultural Life Coefficient (i):0.7	x	4	2	xi	2.8	1,4
		y	4	3	yi	2.8	2,1
		z	4	-1	zi	2.8	-0,7
23	Cultural Conservation Areas	x	4	3	xi	5.6	4,2
	Coefficient (i):1.4	y	4	4	yi	5.6	5,6
		z	4	-1	zi	5.6	-1,4
		X	92	57	Xi	110.8	77.5
	TOTAL	Y	92	45	Yi	110.8	54.0
		Z	92	12	Zi	110.8	23.5

In consequence of evaluations made with the area data, the data given for the area has been given in Figures 2 and 3. Here, columns show use (grey), conservation (black) and usable touristic potential (white) values from 0 - 5, lines show criteria values. In case conservation value is higher than use value, negative (-) values got take place on the right side. From yellow coloured bars (z) got by abstracting conservation value (y) from use value (x), that columns take place in the positive direction (right) and be long shows highness of usable touristic potential value for that criterion and that they take place in the negative (left) direction and be long shows the opposite of this.

The research area's general use value, according to unweighted values, is 57/92, general conservation value 45/92 and usable touristic potential 12/92. According to the calculation made by taking weights of the criterion into account, the region's general use value is 77.5/110.8, general conservation value 54.0/110.8 and usable touritic potential 23.5/110.8. As a result, the general weighted usable touristic potential has been calculated as 23.5/110.8 (Figure 4).

When weighted values are put into the percentage (%) base, weighted use value of the region having 57/92 use value comes out as 29.9/92. Coefficient of the criterion has provided an advantage of +12.9/92 points. Weighted conservation value of the region having 45/92 conservation value comes out as 48.7/92. Coefficient of the criterion has provided an advantage of +3.7/92 points. Weighted usable touristic potential of the region having 12/92 usable touristic potential comes out as 21.2/92. Coefficient of the criterion has provided an advantage of +9.2/92 points (Figure 5). In the research findings concerning the region fist natural values and later cultural values were examined.

Natural values

According to Figure 6, elements providing the highest contribution to the general use value of the area in current conditions are mountains, other territorial surface shapes and flora (4). The other strong properties (3), following these two elements, of the region in terms of natural values are geographical position and relative drop in environmental problems. Seismic conditions, climate and hydrology have medium level use value in terms of wild life (2). Earth and underground wealthiness haven't got contribution to use value (0).

When we look at the research area in terms of conservation value, the highest protection requirement is lived in the earth and natural protection recreation areas (4); this is followed by earth and underground wealthiness (3), territorial surface shapes, hydrology and environmental problems (2). The lowest protection requirement is sourced from geographical position and geological formations, flora and wild life (1).

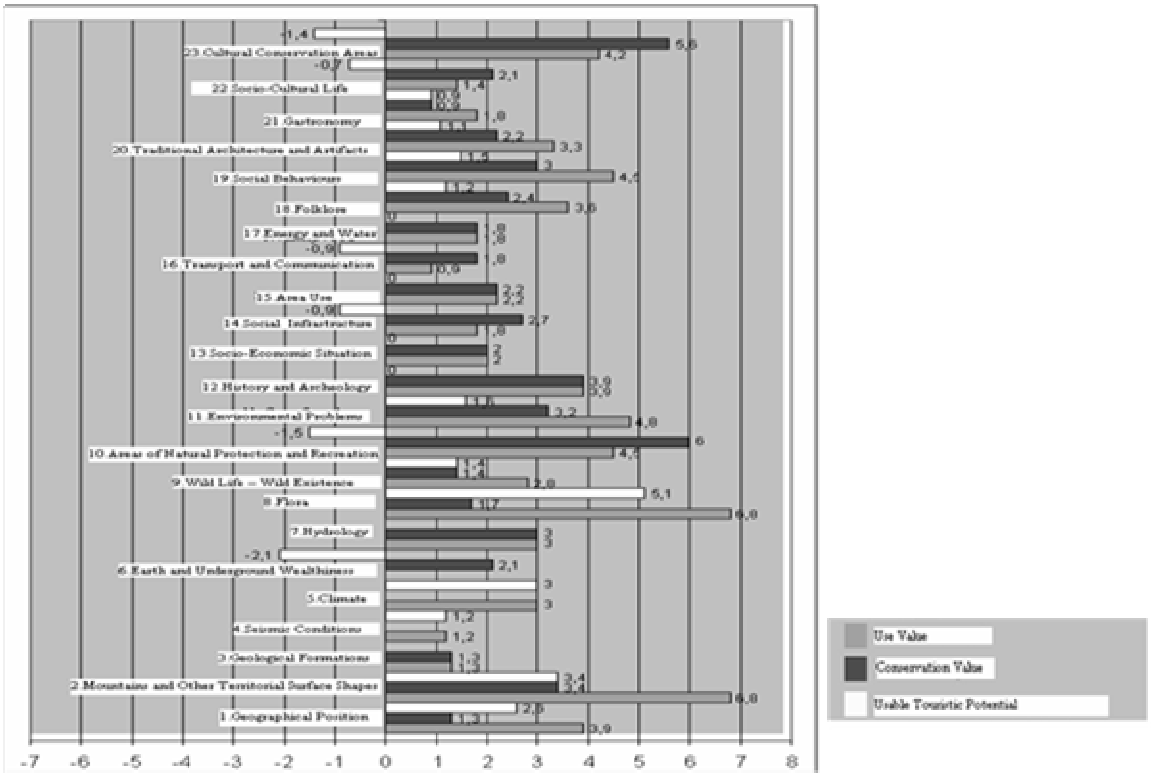

Figure 2. The region's use and conservation values and usable touristic potential (weighted).

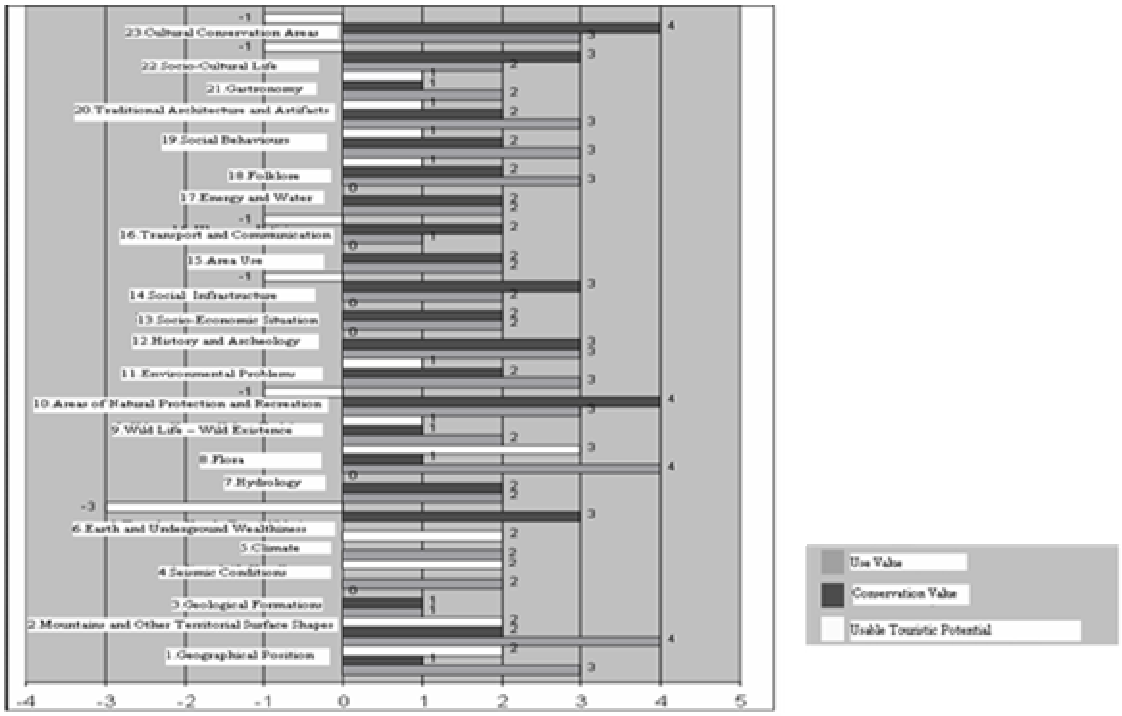

Figure 3. The region's use and conservation values and usable touristic potential (unweighted).

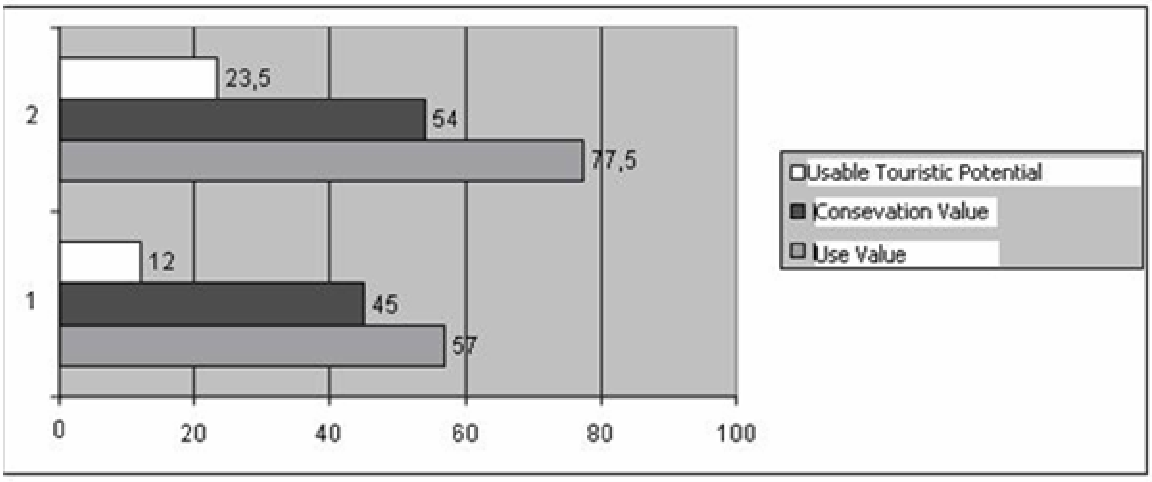

Figure 4. The research area's general (weighted, unweighted) use and conservation values and usable touristic potential.

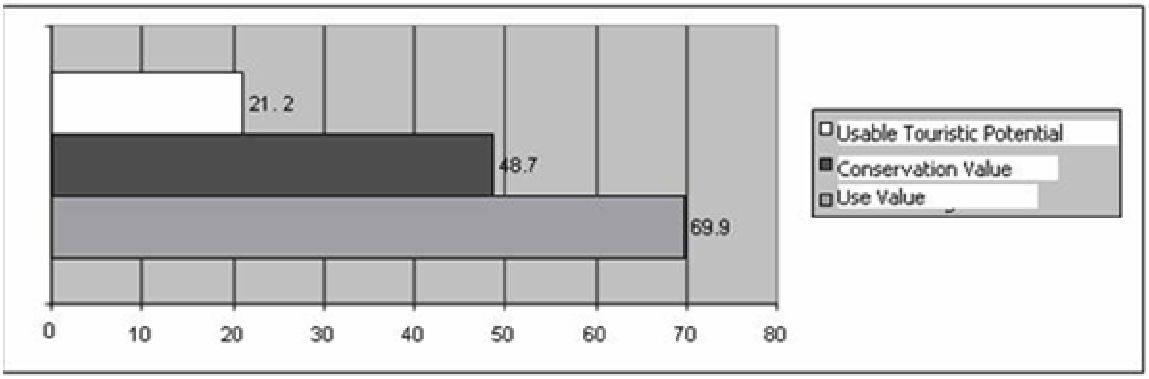

Figure 5. The research area's the percentage (%) general weighted use and conservation values and usable touristic potential.

The criterion taking the highest share in general usable touristic potential got in consequence of the opposite directional interaction of conservation values with each other is flora (3) (Figure 6). Other criteria are geographical position, surface shapes, seismic conditions and climate (2). Wild life and environmental problems are in lower level (1). To be able to increase the contribution of earth and underground wealthinesses (-3), natural conservation and recreation areas (-1) which have negative directional contribution at the moment, to usable touristic potential depends on studies which will be made in the future in this subject.

Cultural values

As seen in Figure 7, in current conditions, cultural elements providing the highest contribution to the general use value are traditional architecture and aircrafts, history and archaeology, folklore, social behaviours and cultural conservation areas (3). Use value of a great part of other cultural elements is generally in medium level (2). These are socio-economic situation, social infrastructure, area use, energy and water, gastronomy and socio-cultural life. Criteria having the lowest value are transport and communication (1).

The highest protection requirement in the research area is lived in cultural conservation areas (4). The next protection requirements are socio-cultural life, history and archaeology and social infrastructure criteria (3). In contrary to this, area use, socio-economic situation, energy and water, folklore and traditional architecture and artefacts, transport and communication are elements being in medium level (2). The lowest protection requirement is meal culture (1).

Criteria taking the highest share in the general usable touristic potential got in consequence of the opposite directional interaction of use and conservation values with each other are social behaviours and folklore, traditional architecture (Figure 7) and artefacts and meal culture (1). The effect of history-archaeology, socio-economic situation, area use, energy and water on the research area's usable touristic potential is neutral (0) in current

Figure 6. Mountains, other territorial surface shapes and flora.
1: Karagöl Sahara National Park, 2: Papart forests, 3: Maden village landscape.

Figure 7. Some important views from cultural elements.
1: Tibet Monastery, 2: Söğütlü Church, 3: Traditional clothing style, 4: Wooden architecture, 5: Traditional life style

conditions. The effect of social infrastructure, transport and communication, cultural conservation areas, socio-cultural life style on touristic potential is negative (-1).

Drop in these criteria's potential values is sourced from that conservation values concerning these elements is high in current conditions.

DISCUSSION AND RESULTS

In sustainable tourism concept, the balance between the development of tourism and the protection of ecosystem should be provided. In sustainable tourism there is need for successful management techniques protecting ecosystem and providing tourist interaction (Orams, 1995; Fortuny et al., 2008). This concept has formed discussion topics in academic investigations (Johnson, 2002). Is nature-based tourism harmless and sustainable? Which strategies are successful in natural structured tourism management? How must successful nature-based tourism be designed and managed? Is ecotourism a harmless, sustainable and successful strategy in nature-based tourism? (Orams, 1995; Choi and Sırakaya, 2006). If ecotourism is to guarantee ecosystem or species, subjects like how large an ecological region can be accepted to accomplish protection and which level of source consumption can be tolerated form the focus point of discussions (Gössling et al., 2002). However although these discussions, there is a common acceptance that ecological tourism approach can be solution in sustainability concept. In ecological tourism environmental criteria and carrying capacity should be determined and the balance between social welfare and minimization of environmental degradations should be provided (Hughes 2002).

In the protection subject, landscape evaluations are useful techniques used for defining which areas need to be protected. It can provide inventories of the area to be formed, important components to be defined in area use planning and environmental impact to be evaluated (Mitchell, 1989; Priskin, 2001). In the research, usable touristic potential of sources have been determined by making landscape evaluation, measuring the balance of conservation and use through natural and cultural values.

It is quite hard to change natural criteria and to elevate their use potential. However usable potential value can be increased with some arrangements by using current natural properties. Cultural criteria can be changed in a certain size, depending on local society as well. So by the aim of increasing the general usable touristic potential of a criterion, studies towards increasing use value of the criterion or decreasing its conservation value can be made. For these studies to be carried out in a planned way, analyses concerning current situation of the area should be realized. These analyses will form background for ecological tourism plans of the locale.

According to Kalem (2001), to put values of the method into a certain base (like percentage) and to reveal a common list of criteria and indicators to be able to be applied in almost every geography will be useful for making evaluation between different areas. To make tourism potential assessment on this common basis will provide a more objective and realist comparison to be made between different areas. The conservation of natural values, “conservation”, means “to keep as far away possible from human intervention”. However cultural values corrode or vanish absolutely not due to use but due to loss of use opportunity, in time, in consequence of various effects. Namely it can be said that to increase an area’s touristic potential in a certain size with human effort is possible.

As a result of the research, the area’s “weighted use value” put into percentage was determined as 69.9%, “weighted conservation value 48.7% and “weighted usable touristic potential 21.2%. The result shows that source wasn’t protected for sustainability while using. In the research, natural and cultural specialities which are crucial in using of sources and are necessary to be protected were identified separately. Paying attention to these properties of sources, ecological tourism applications can be realized in the research area. It’s considered that to open the area, which has suitable potential for a variety of ecological tourism kinds, to tourism in the frame of sustainability principles, by also taking the research results into account, will be useful in increasing the region’s welfare level.

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