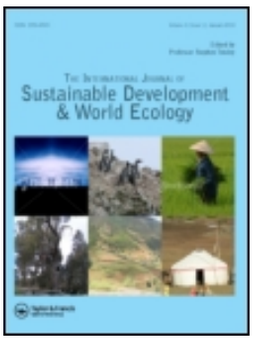

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Evaluation of recreational preferences of urban residents in Artvin (Turkey) in relation to sustainable urban development

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As the result of rapid technological development and human population growth, urban people often live in environments that do not meet their physiological and psychological needs. Instead, they use rural or natural areas outside of cities to meet these needs, causing damage to such areas. Yet, within a healthy city, there are green areas that offer recreational opportunities for city dwellers. Unless a balance is found between artificial and natural elements and landforms in a city, it is not possible to create quality urban ecosystems. In this study, the preferences of people living in the city of Artvin, Turkey, were determined in terms of recreational space in urban and rural areas. Visits by people living in the city centre were investigated, as well as their preferred areas in the city and its close proximity, and recreational activities in these areas were determined. Concrete suggestions are offered to create a greenway circulation, where green areas are maintained to create a healthy urban ecosystem.

Keywords: recreation; urban ecosystems; greenway

Introduction

Urban areas should rigorously enforce regulations on physical planning, environmental pollution prevention and control. In this respect, the term 'sustainable cities' has gained importance as part of a sustainable development strategy focusing on the need to apply ecological principles to economic processes. The idea of sustainable cities is based on constructing cities that can better satisfy the needs of residents through better organisation and foundation (Ertürk 1993).

Open green spaces are being consumed by urban settlements and are losing their identities over time. Open spaces, which are strong elements of aesthetic and architectural forms in cities, are not only ecologically important, but also offer learning opportunities. These areas are important because they provide social closeness, increase social development and support economic targets and activities. Because of a lack of outdoor recreation sources, urban people migrate toward outdoor recreational areas far from cities. City residents prefer natural, cultural and aesthetic values, and forests are the most preferred outdoor recreational areas. Forests also constitute an important natural resource for recreation and provide physical and psychological amenities (Aslanboğa and Gül 1999). Open green spaces have many meanings, types and functions depending on their planning, and often include squares, playgrounds, boulevards, pedestrian areas, house gardens and entertainment centres. Urban outdoor areas may be divided in four groups;

- Designed pedestrian areas: parks, sports areas;
- Shopping areas: permanent and temporary bazaars;
- Transitional areas: streets, roads, access arteries, pavements;
- Zones: squares, urban open prestige areas (Bakan 1987).

Functions of open green areas

Although limited, design targets of open green areas in cities are to re-establish, maintain and improve the urban– nature relationship. Open areas in neighbourhoods generally function as entertaining and relaxing spaces, while those in cities also have conservation functions and affect the urban pattern. At the regional scale, open areas are often extensions of rural areas that determine the stages and direction of urban expansion as well as buffering urban growth. In regional open spaces, nature conservation is the dominant function. Open spaces have many functions in urban areas:

(1) **Recreation**

- They offer active and passive recreation opportunities,
- They enable sporting facilities to be built in urban and rural areas,
- They provide entertainment for people,
- They offer a beautiful landscape and opportunity to experience nature.

(2) **Ecological**

- They create air movement in cities,
- They provide light and fresh air by removing dust and smoke from industries, residences and motor vehicles,

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- They are of key importance for the absorption or dispersion of noise pollution.

(3) **Land organisation**

- They are the balancing elements in cities, helping in space–mass arrangement,
- They provide traffic security for people by taking traffic flow from pedestrian sidewalks, recreation areas and residences,
- They give an organic character to cities by softening their patterns caused by the structure of buildings (Şahin and Barış 1998).

Recreation

Open green spaces, urban forests and greenways offering social and psychological benefits in evaluating leisure time for city residents are also strategically important in urban social life, increasing the quality of life in various ways. In addition to functions such as air and water purification, wind velocity, noise reduction and stabilising the microclimate, they also contribute to liveability in modern cities.

Recreation includes activities that people perform in their leisure time, away from work, for relaxation and entertainment (Tümer 1975; Uzun and Altunkasa 1991). It is also the sum of physical and intellectual activities related to an individual's social, economic and cultural capabilities, fulfilling an individual's self desire and refreshing him/her physically and mentally (Gülez 1983). Since the relations between an individual and his/her parents and other relatives are very important in childhood in order to acquire free-time habits, special care should be taken in terms of family education (Zeijl et al. 2000). The fact that recreation is teachable and has a role in the prevention of violence is important to direct the habits of young people in the future (Burkeen and Alston 2001). For example, in the USA, the number of individuals who participate in outdoor recreational activities increased by 35% between 1960 and 2000 because of increasing income, reduced working hours and improved accessibility (Outdoor recreation in America 2002). Outdoor activities not only contribute to physical, psychological and social health, but also create positive changes in personal skills, social behaviours, personality and general behaviour, and they increase self-confidence and self-respect (McAvoy 2001). Rapid population growth and higher numbers of young people have increased the importance of studies on the evaluation of leisure time. Many people live in unfavourable, dense settlement areas that cannot satisfy their physical and psychological needs; however, motor vehicles and public transport increase free time per capita and direct people toward rural environments, such as forests (Akesen 1978).

Greenways

Today, it is possible to see successful examples of greenways in many cities that were designed to conserve ecological balance and to provide liveable environments. Greenways are linear corridors that are maintained to increase environmental quality and offer options for outdoor recreation (Arslan 1996). Greenways, parkways or greenbelts are the green land-use models that offer people both recreation and conservation (Little 1990). The term 'greenway' not only includes city centres and nearby areas but implies that the areas are also connected to the conserved, historical and natural areas outside of cities (Kurdoğlu 2002). Greenways may be characterised as green systems connected to each other and to natural systems (Arslan et al. 2004), such as wildlife corridors, cultural areas, historic routes, scenic roads, riverbanks and valleys, parks, shorelines, parkways and paths, ecological nature corridors, and recreational use areas including existing green spaces.

Within this approach, landscape planning comprises the planning of the whole landscape, including the use and conservation of natural, historical, cultural and scenic reserves. According to current approaches, management of urban growth and sustainable development are directly within the scope of such planning. Greenways and green corridors increase environmental quality and conserve nature (Arslan et al. 2004).

The objectives of this study, which was conducted in the city of Artvin, Turkey, were:

- To determine the level of utilisation by and expectations of city people for open green spaces in the city and its close proximity in terms of recreational activities;
- To determine the relationships between socioeconomic conditions of city people and their use and expectations of the city and recreational facilities;
- To determine the relationship between utilisation and expectations in and around the city;
- To create a consistent open green area pattern that will connect rural areas with the city centre in relation to results from the above studies.

Study area

The study area is in the Eastern Black Sea sub-region of Turkey (45° 62′ 38″–45° 59′ 25″N, 41° 36′ 20″–41° 32′ 80″E). The city of Artvin lies in the Eastern Black Sea mountain range and is surrounded by the cities of Ardahan in the east, Erzurum in the south, Rize in the west, the Black Sea in the northwest and the Republic of Georgia to the north. The surface area of the city is 7,436 km^2 (Artvin Valiliği Web Sitesi 2005; Figure 1). Artvin is on a narrow plain surrounded by the Eastern Black Sea mountain range, parallel to the Black Sea shore. The city is constrained by mountains, hills, slopes and the River Çoruh to the north. The city population has been affected by consistent immigration, increasing by 12.30% in 1990, 20.42% in 1997 (Artvin Belediyesi Websitesi), and 2.28% according to the census in 2000, with a total population of 23,157 people.

Natural diversity close to the city is reflected in its cultural structure: forests, mountains, plains and rivers serve as recreational areas for local people. A traditional festival, the Kafkasör Fest, combines entertainment and

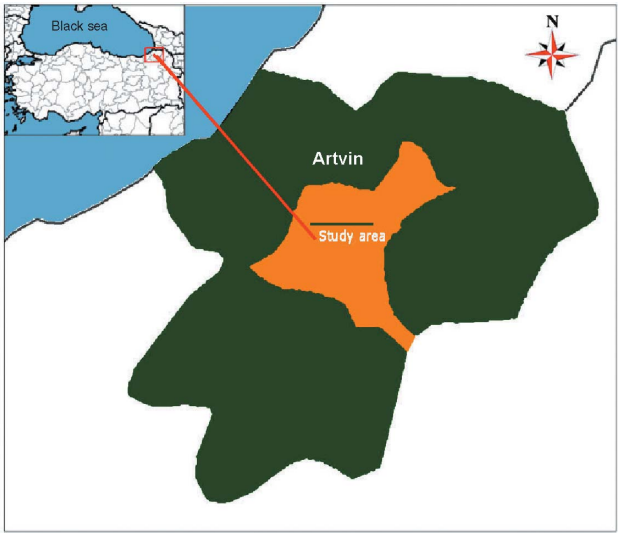

Figure 1. Study area.

relaxation for people in the city and its surroundings. The traditional Georgian architecture of the Turkish houses, mosques, churches and castles in the city centre reflects the cultural diversity of the region (Artvin Governorship 1998, 2004; Artvin Derneği Web Sitesi 2008). The total green area of the city is 4,478,356.68 m^2, consisting of geologically green areas that have drawbacks (2,623,075.93 m^2) and forested areas (60,192.214 m^2). The green area per capita in the city centre is 193.4 m^2, but the actively used green area (e.g. parks) is 25 m^2 per capita. Actively used green areas include city parks, playgrounds, sports areas and camping areas. While, forests, areas to be forested, agricultural areas, geologically undesirable green areas and other types of green areas are included in the general definition of green areas (Yavuz and Eminağaoğlu 2007).

Methods

Data were gathered from maps, reports, development plans and charts showing the development over time for Artvin and its close proximity. A questionnaire was developed to determine the socioeconomic conditions and recreational expectations of city residents and the nearby area population. Face-to-face interviewing was adopted in the questionnaire survey. One hundred and fifty subjects participated in the questionnaire, as determined according to the formula of Kalıpsız (1981) given below.

$$n = \frac{Z^2 NPQ}{ND^2 + Z^2 PQ}$$

$$n = \frac{1.96^2 \times 34572 \times 0.95 \times 0.05}{34572 \times 0.05^2 \times 1.96^2 \times 0.95 \times 0.05}$$

where n = sample size, Z = confidence coefficient, P = probability, Q = 1–P probabilities in a binomial distribution (95% confidence level), N = population.

In order to decrease the probability of experimental error in this study, we decided to work with 150 people. Data obtained from the questionnaire were statistically analysed and their frequency distribution was determined using SPSS 11.6 software. Chi-squared and correlation analyses were also performed. All findings were evaluated, and a consistent open green space pattern was assessed. Results of the evaluated activities, preferred areas and areas requiring design in and around the city were classified. These results were scored from 1 to 3 (where 1 = least, 2 = moderate, and 3 = most use).

Results

Of the 150 participants, 109 (73%) participated in recreational activities, while 41 (27%) did not use recreational facilities (Supplementary Table 1 [available via the multimedia link on the online article webpage]). Classification of the activities in and around the city revealed that walking was most preferred in the city (3 points), while the least preferred activities received only 1 point (Table 1). The most preferred areas were İskebe and Kafkasör (3 points), while many other areas received only 1 point, indicating that they were the least preferred (Table 1). The results suggest that there are few recreational opportunities in the city centre. We found a close similarity between the responses of participants in terms of areas to be designated and areas they want for their recreational activities, suggesting a lack of facilities for recreation (Table 2). The reasons for not taking part in recreational activities include lack of free time and lack of designated areas for recreational purposes. However, the same people wished to undertake recreational activities provided they had more opportunities (Supplementary Table 1). From these results, it is obvious that free time and the time left for outdoor recreation activities are sufficient, and 72% of people leave half or more of their free time for recreation. Of the participants, 97% prefer weekends for recreational activities (Supplementary Table 1). This may be because the city does not provide recreation opportunities on weekdays or that the participants were mostly students and officials who work on weekdays. However, when considering the hours preferred by people for recreation on weekdays, it is evident that people in Artvin can leave time for recreation on weekdays and weekends (Supplementary Table 1).

When questioned about the present conditions of recreational facilities in and around the city centre, 77% of the participants responded that they are not sufficient, 20% indicated that they are partly sufficient, and only 3% found them to be sufficient (Supplementary Table 1). The types of facilities demanded in and around the city centre were similar, and people wanted more variety. City residents want facilities in the city centre that they presently only find around it or in rural areas. Although the green area per capita is higher in Artvin than in many other cities in Turkey, the number of designated recreational areas is small, and 41% of participants said that there is insufficient green area in Artvin, while 20% made no comment (Supplementary Table 1).

Table 1. Activities performed in and around the city.

	Preferred areas	Walking	Picnicking	Scene watching	Photography	Cycling	Camping	Bird watching	Skiing	Examining nature	Relaxing
AREA	Score	Score	Score	Score	Score	Score	Score	Score	Score	Score	Score
In the city											
İskebe	(3)	(3)	(1)	(1)	(1)	(1)	–	–	–	–	–
Kafkasör	(3)	(2)	(3)	(1)	(1)	–	(1)	–	–		–
Atapark	(2)	(1)	–	–	–	–	–	–	–	–	(1)
Country road	(1)	(1)	(1)	(1)	–	–	–	–	–	–	–
Balkonies	(1)	–	–	(1)	–	–	–	–	–	–	(1)
Haypet road	(1)	(1)	–	(1)	–	–	–	–	–	–	–
Seyitler	(1)	(1)	(1)	–	–	–	–	–	–	(1)	–
Saçinka	(1)	–	(1)	–	–	–	–	–	(1)	(1)	–
Sehitlik village	(1)	(1)	(1)	(1)	–	–	–	–	–	–	–
Along the River Çoruth	(1)	(1)	–	(1)	(1)	–	–	–	–	–	–
Around the city											
Kafkasör	(3)	(2)	(3)	(1)	(1)	–	(1)	–	–	–	(1)
Borçka Karagöl	(3)	(1)	(3)	(1)	(1)	–	(1)	–	–	(1)	(1)
Hatila Valley	(3)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	–	(1)	–
Şavşat Karagöl	(2)	(1)	(3)	–	(1)	–	(1)	–	–	(2)	(1)
Arhavi-Hopa-K.paşa	(2)	–	(1)	(1)	(1)	–	–	–	–	–	(3)
Borçka Camili	(1)	(1)	(1)	(1)	–	–	–	–	–	–	–

Table 2. Areas that people want the authorities to designate as recreational areas.

Area to be designed	Score
İskebe	(3)
Kafkasör	(3)
Hatıla Valley	(3)
Around dam	(3)
City centre	(2)
Borkça Karagöl	(1)
Haypet and Around Çoruh River	(1)
Şavşat karagöl	(1)
Saçınka	(1)
Katravan and Seyıtler (University Campus)	(1)
Forest Faculty, Orta Mah and Artvın Castle	(1)

The kinds of recreational activities performed in and around the city by participants in the questionnaire were scored from 1 to 3 (where 1 = least, 2 = moderate and 3 = most use; Table 1 and Supplementary Figure 1 [available via the multimedia link on the online article webpage]). Table 2 shows the areas people would like the authorities to designate for recreation. The associations between recreational activity and factors such as age, occupation, monthly income, educational level and gender were tested, and only the relationship between recreational activity and educational level and gender was found to be significant ($p \leq 0.05$; Table 3). There was a significant relationship in the timing of recreational activities on weekends and on weekdays ($p < 0.001$) and between available free time per week and the time left for recreational activities ($p < 0.001$). There was also a

Table 3. Relationship between recreational activity, education and gender.

Significant values between recreational activity and education		Value	Approx. Sig.
Ordinal by ordinal	Pearson Chi-Square	11.070	0.011
	Spearman correlation	–.257	0.001
Number of valid cases		150	

Significant relationship between recreational activity and gender		Value	Approx. Sig.
Ordinal by ordinal	Pearson Chi-Square	6.181	0.013
	Spearman correlation	203	0.013
Number of valid cases		150	

Table 4. Relationship between hours of recreational activities on weekdays and weekends.

Relationship between hours of recreational activities on weekdays and weekends	Value	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.465	0.000
Number of valid cases	109	
	Value	Approx. Sig.
Spearman correlation	0.471	0.000
Number of valid cases	109	
Weekly free time amount and the amount rest for recreation	**Value**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	88.580	0.000
Number of valid cases	109	
	Value	Approx. Sig.
Spearman correlation	0.148	0.125
Number of valid cases	109	
Relation between preferred areas in and around city	**Value**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	121.999	0.000
Number of valid cases	109	
	Value	Approx. Sig.
Spearman correlation	0.434	0.000
Number of valid cases	109	
Relation between structures to be constructed in and around city	**Value**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	258.217	0.000
Number of valid cases	109	
	Value	Approx. Sig.
Spearman correlation	0.312	0.000
Number of valid cases	109	

significant ($p < 0.001$) relationship between the characteristics that respondents prefer in and around the city and the facilities that the respondents want the authorities to construct (Table 4).

Discussion

Our results suggest that designated green space is inadequate in Artvin. Planning for open green spaces in cities must be complementary and consistent so that greenways connect the urban to the rural environment and vice versa. This feature must be maintained by retaining urban green areas. Such consistency in green space can provide ecological, social and aesthetic functions. Through this questionnaire survey, recreational preferences of people in Artvin were determined and the results were compared with the proposed changes to the city by considering the points that were suitable in the city centre and their connections to rural areas.

When considering a sustainable development strategy, the main aim is to obtain harmony among humans and between humans and nature. From an ecosystematic view, the aim is to conserve ecological balance, biodiversity and ecosystems. In this respect, the main target of sustainable economic development is environmental protection and conservation of natural resources. When this target is considered in the long term, the concepts of economic development and ecological sustainability will be in harmony (Ertürk 1993).

There are some common points in the principles related to urban development. For instance, in the main principles of ecologically sustainable cities, as developed by Miller (1990), the focus is on the need for greenways, urban forests and other green area systems for urban ecology. Miller (1990) stated that greenbelts must be constructed from forests and open green spaces that exist in and around other urban areas, and that wetlands and agricultural areas in the vicinity must be maintained. Moreover, in order to mitigate the effects of urban air pollution and noise, and to form recreation areas and wildlife environments, greenbelts should contain abundant plants in uncontrolled areas and streets (Miller 1990).

The greenway strategy can only be realised based on sustainable development concepts related to concurrent nature protection and economic development. Green area systems maintain the natural and cultural source values of places where they are planned. They also contribute to local economies by requiring sustainable use of the source values and increase the liveability of cities, connecting them to rural areas or other cities by roads. Greenways adopting a complementary approach can meet the needs of sustainable development in this respect (Kurdoğlu 2005). Ahern (1995) proposed that greenways should be 'networks of land containing linear elements that are planned, designed and managed for multiple purposes including ecological, recreational, cultural, aesthetic or other purposes compatible with the concept of sustainable land use.' He identified five key ideas within this definition: (1) linear configuration, (2) linkage, (3) multifunctionality, (4) consistency with sustainability, and (5) integration. Greenways mainly have three functions: (1) as corridors or natural systems with ecological significance, (2) for recreation, and (3) to conserve historical and cultural values (Fabos 2004).

The concepts and applications of greenways have been elaborated by many authors. Schrader (1995) examined rural road planning in the USA, and Conine et al. (2004) suggested various scenarios on green area systems, recreation, environmental protection and alternative access systems in Concord, North Carolina, USA. Similarly, Artvin has a linear connection to rural areas, where the greenway pattern combines urban, urban–rural and rural characteristics. Lindsey (1999) examined the aims and planning strategies of a greenway system for Indianapolis, Indiana, USA, in terms of visitor density and visitor profiles. In that study, all streams and valleys in and around the city were included in the system. In our study, the greenway system was determined in terms of the recreational preferences of Artvin residents.

Erickson (2004) described a route with historic values between Milwaukee (Wisconsin, USA) and Ottawa (Ontario, Canada), and proposed a greenway system. Similarly, Artvin is an important city for its nature, historic houses, castle, festivals and culture, and these values must be considered in greenway planning. In a study similar to ours, Mugavin (2004) described a city on the banks of a river in South Korea and proposed a 50-km greenway along the river. Haren and Reich (2004) provided information on the advantages of greenways and habitat networks in Germany, and Yokohari et al. (2006) reported the functions of greenways in modern Japanese cities. In Turkey, Arslan et al. (2004) defined the concept and functions of greenways and emphasised their importance in connecting rural and urban areas. In that study, decisions on greenway construction in Ankara were made by determining the routes in and around the city for recreational and cultural aims. In another study from Turkey by Kurdoğlu (2005), three different suggestions for a recreational, scenic and historic–cultural greenway using GIS and maps of suggested plans was presented, while Kurdoğlu et al. (2006) also determined plans for the Hatila Valley National Park. Ahern (1995) defined the principles of linearity, connectivity, multifunctionality, sustainability and five keys to landscape planning characteristics in greenway planning.

Recommendations

In the light of information obtained from the reviewed studies and the questionnaire survey, a development plan following a greenway model is suggested for Artvin, aiming to implement recreation, conservation, scenic and historical functions. When determining the routes of greenways and road types in the city, the parameters in Table 5 were evaluated according to information obtained from a development plan chart. The aim of the Artvin greenway plan is to make ecological, cultural and recreational sources easy to access for city people and to increase their various uses. This requires a widely inclusive formal greenway system consisting of natural forms such as valleys and high elevations, some parts of the existing road system and open green spaces in the city centre. The system has various functions, such as recreation and scenic values with nature conservation characteristics (Table 5).

The city of Artvin is on a hill, and air circulation through the surrounding hills and valleys is very important for the city. The River Çoruh, where a dam is being constructed, is also important for the city. The results of the questionnaire survey suggest that recreational areas in use at present overlap with the areas people want authorities to designate (Supplementary Figure 2 [available via the multimedia link on the online article webpage]; Tables 1 and 2). Based on the results of our questionnaire survey, the green area planning criteria should involve six stages.

Stage 1: Urban pattern (recreational, historical and cultural aims)

In this stage, historical and cultural areas (e.g. traditional houses and the castle) in the city centre are connected by a

Table 5. Matris of information obtained from a development plan chart and suggested greenway functions.

	Recreation	Scenic	Culture	Nature conservation
Conservation areas and belts				
Inventoried historical remains	X	–	X	–
Suggested historical remains	X	–	X	–
Areas where agricultural features must be protected	X	–	X	–
Geologically undesirable areas	X	–	X	–
Open green spaces				
Parks and playgrounds	X	X	–	X
Areas to be forested	X	X	–	X
Forest areas	X	X	–	X
Geologically undesirable but with green characteristics	X	X	–	X
Cemeteries	X	–	X	X
Tourist areas				
Kafkasör tourist centre	X	X	X	X
Resting points in forest and urban forest				
Kafkasör urban forest	X	X	–	X
National parks				
Hatila Valley National Park	X	X	X	X
Karagöl-Sahara National Park	X	X	X	X
Urban tissue				
Squares	–	–	X	–
Roads	–	–	X	–
Fountains	–	–	X	–
Other				
Scenic points areas with priority	X	X	–	X
Borçka Karagöl	X	X	–	X
Dam and its proximity	X	X	–	

road system that includes existing and additional pedestrian roads. Via this system, important historical and cultural structures can be seen while walking in the city. In addition, this system provides a connection to open green spaces around the city. Routes from city to rural areas are planned. City residents are offered alternative routes where they can see the historical structures while going to school, work, or shopping.

Stage 2: Route from the city to the Iskebe-Hatila Valley (recreation, scenic and nature conservation aims)

Through this stage, the city is connected to a conserved natural area. On this route, which is a buffer between the city and conserved areas, a series of activities are planned, such as jogging/walking, cycling, picnicking, scenic viewing, birdwatching, and enjoying plants. In determining these activities, the capacity of the area and the results of the questionnaire were used. Because the proposed route to the Hatila Valley National Park incorporates conservation aims, the planned activities include conservation measures. The route can function as an open space laboratory for nature education and provides scenic views from the River Çoruh. This stage connects Artvin to a conservation area, rural areas and wildlife habitats, and provides a binding function. In addition, roads provide a recreational and a conservation function leading to a national park. These two functions support sustainability and contribute to landscape planning.

Stage 3: Route from the city to the dam and Seyitler (recreation and scenic aims)

With this stage, the urban area is connected to the dammed lakes being constructed on the River Çoruh, a university campus area and, eventually, a village. The urban–rural relationship is reinforced, allowing people to reach the university campus via an alternative route. This route involves transportation, recreation and scenic components.

Stage 4: Route from the city to Genya Hill (recreation and scenic aims)

The city is connected to Genya Hill via this route. This hill is of importance for its appearance and ecological value in the identity of the city, as it can be seen from everywhere in the city and includes a rural area between the city and the hill, connected by roads providing recreation and scenic opportunities.

Stage 5: Route from the city to Kafkasör urban forest and festival area (recreation, scenic, cultural and conservation aims)

With this route, people can access an important green area. In this stage, the city is connected to an urban forest, a festival area (Kafkasör Bull Fighting Festival area) that is culturally important and eventually to a hill (Cerat Hill), which is especially important for city identity and ecology. In this stage, consistency is obtained using a route offering viewpoints, recreational facilities and conservation capabilities. This location at a point in the centre of the city must be completely conserved because it represents the heart of the city. However, the rest of this pattern must be available to people in the city centre. The main aim in planning this stage is to maintain green and cultural consistency from urban to rural areas and vice versa.

Stage 6: Route from the city to Orköy district (recreation and scenic aims)

This stage is an alternative transport route to Kafkasör urban forest and festival area. In this system, scenic and recreational roads are planned, with semi-urban and semi-rural characteristics. Several roads are planned to connect Stages 5 and 6; however, no new roads are planned and existing roads will be used. On these routes, complementary actions will be taken to provide consistency and improvements to the roads. These roads have various functions, e.g. some will be suitable for vehicle traffic, while the majority will be controlled roads for vehicles, for walking or cycling, and some will be scenic roads for people with or without a vehicle.

Conclusion

The most important point of this study is that cities must provide green areas for the benefit of urban people, the climate and the ecosystems. As a result of the accurate design of green areas in the urban ecosystem, climate can be moderated, and residents can be closer to green areas and gain social, psychological and recreational benefits. Urban green areas can serve both people and the flora and fauna that will be reshaped within them. With this linking function, including historical and cultural characteristics, rural areas become accessible, and increased quality of life, education and a healthy environment can be provided. As the result of these improvements, the cost of land may increase and new job opportunities may become available, thus improving the economic situation of residents.

The city of Artvin and its surroundings have many different characteristics and have a high per capita natural and green area. However, there are few designated green areas for recreational activities. There is a national park 10 km from the city centre, an urban forest 8 km from city centre, a festival area, traditional houses and a castle, which represent the cultural pattern. Another natural asset is the River Çoruh and its valley. In the future, dammed lakes will be constructed on this river and will be integrated with the natural scenery. Such diversity can only be maintained by accurate planning involving conservation bodies. The different aims detected with the greenway model proposed in this study and the different solutions proposed may sustain the balance by incorporating the six stages outlined above.

City identity is a significant issue in planning. Artvin is defined by its green areas, sloping topography and the River Çoruh, which constitute essential features in future planning. Without correct planning, people may leave cities, destroying their past experience, culture and green areas and, as a consequence, emigration will become inevitable because of economic stagnation. For this reason, our questionnaire approach inevitably involved public participation. The greenway idea is a planning approach that allows natural and cultural values to be used in a sustainable way.

The city of Artvin is a candidate tourism city, and its values must be conserved for the future of Turkey. The green area project proposed here is a model that can conserve the source values without affecting the city's identity while providing recreational opportunities, increasing the quality of life of local people and indirectly supporting education. This approach in Artvin will be an integrated planning example that must be applied and developed with the participation of the local administration, the university, associations and the people.

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