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Editors
Ilia CHRISTOV
Eric STRAUSS
Abd-Alla GAD
Isa CUREBAL

Science, Ecology and Engineering Research in the Globalizing World

Ecological and Engineering Researches in the Globalizing World

Managing Editor
Recep EFE

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Preface

This book, "Ecological and Engineering Researches in the Globalizing World" has 43 Chapters including ecological approaches in making urban land use decisions, landscape design to develop public awareness, sustainability principles and landscape planning, effects of global climate change, landscape planning in urban design competitions, wetlands under the pressure of urbanization, landscape ecological analysis of the modern delta of the Ural river, microbial interactions in phyllosphere and rhizosphere, history of Edremit/Van cultural landscape, concept of urban square in sustainable cities, sustainability of cultural heritage assets, visual landscape quality, the role of the regional scale cultural, ecological properties of wooden building materials, tobacco in the historical process, antiurolithiatic activity of medicinal plants, green infrastructure plan in metropolitan cities, bio-fertilizers in organic agriculture, importance of fertilization programs in new production models, the role of ecotourism in the preservation and development of rural identity, some natural and exotic invasive plant species in turkey, modeling of urban sprawl using remote sensing data, ecological design in landscape architecture, vertical green systems, neighborhood effect in urban identity formation, greenways on railway route, structural equation modeling, evaluation of visual landscape quality, the contributions of green spaces to urban ecosystem, the effects of integrated urban water management on the quality of urban life, construction of rafting tourism strategic action plan, bronze age urban organization in mesopotami and green chemistry applications in textile industry.

Contributions in each chapter are prepared by experts in the respective fields and mirror the advancement in the approach. This book contains important future tasks of the particular fields and supplies extensive bibliographies at the end of each chapter, as well as tables and figures that illustrate the research findings. All these make this book highly useful and a must read for students, researchers and professionals in landscape architecture, ecology, environmental sciences and architecture.

We would like to express our gratitude to all contributors for bearing with us as the volume has taken time to come to fruition

We particularly wish to express our thanks to the team at Sofia St. Kliment Ohridski University, Publishing for preparing the book for publication.

The Editors

Chapter 25

Rafting Tourism Strategic Action Plan Framework: The Köprüçay River Case

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INTRODUCTION

Today, along with rising living standards and the increase in leisure activities, demand for touristic activities increases as well. The said increase differentiates tourism demands, leading to different types of tourism. It was observed that the differentiation of tourism types was reflected mostly in nature-based activities. The most important problem encountered in nature-based touristic activities is the failure to maintain sustainability. In particular, tourism activities conducted in natural reserves with special status can destruct or destroy these areas (Akgün, 2009). The tourism activities conducted in a natural environment should be based on planning, development, management and preservation of natural resources. The basic principle in utilization of natural resources is to provide the balance between preservation and use to minimize the damages to the natural areas due to utilization (Nayir, 2009).

One of the most important problems that administrators face in protected areas is the confusion caused by the need to protect natural ecosystems and in the meantime to allow touristic and recreational use of these areas (Kuss &Grafe, 1985). Especially the increase in recreational demands makes it difficult to concurrently implement these two opposing tasks (Kearsley, 1990). Today, the basic reasons for conservation of natural areas protected by law in scientific and technical terms often contradict with recreational and touristic objectives, thus causing negative impacts on natural and cultural assets. Regulation of this relationship in sensitive natural reserves with special characteristics, namely balancing the recreational demand and supply and minimization of adverse effects, is only possible through the determination and regular monitoring of the recreational load capacity or the visitor capacity (Kliskey, 1994).

To ensure the rational use of the existing natural, cultural and visual assets in natural preserves and their transfer to future generations in a sustainable manner, it is necessary to construct holistic, participatory and applicable "management plans" (Gül & Akten, 2005). It is necessary to determine the design standards of visitor facilities and services, to associate the levels of use to changes in social and physical impacts, to generalize the estimates for utilization models and to determine demand trends in order to establish the sensitive balance between the resources and the user

and to conduct the best possible assessment of the existing recreational potential in natural preserves. This process requires a lengthy, systematic visitor observation study (Gül & Özgüner, 2005). As the level of recreational and touristic utilization of natural reserves increase, natural resource assets are negatively affected as well as the quality of use of the area due to factors such as crowding and noise. This results in the loss in landscaping appeal. Thus, visitor management is an important tool between recreation & tourism and the natural preserve, and requires careful and attentive administration to meet the requirements of both the nature and the visitors (Cessford & Muhar, 2003).

Rivers and streams play a vital role in economic development of a country by providing sustainable water resources (Zeitoun et al., 2013) and also an important transportation route for goods and services (Kusky, 2009). Rivers and stream corridors provide important riparian habitats for terrestrial wildlife and also aquatic habitats for fish and other aquatic organisms (Nilsson & Svedmark, 2002). Rivers and streams contain water which has important relationship with human as a recreational resources with many types of recreation activities such as swimming to kayaking (Nuruddin & Ali, 2013).

Rivers and its surrounding provide several valuable natural and aesthetic sites for cultural, historical (May, 2006) and physical attributes for the purpose of recreational users (Nuruddin & Ali, 2013). Users are willing to pay for using these water-based recreational sites. Stream course also provide "recreation habitat" for water dependent activities such as boating and fishing, as well as water enhanced activities such as camping and bird watching (Shelby et al., 1992)

The river tourism, which is very important for nature-based tourism, one of the most dynamic sectors of the tourism industry, provides significant potential for economic development in regional areas (NRRDB, 1994) and recreational users can cause significant ecosystem damage in natural areas (Alden, 1997).

Antalya province is one of the rare areas that are suitable for all types of tourism activities and possess natural climate, flora and fauna, and available for tourism all year round. Due to these characteristics, Antalya province has 92.418 hectares of preserved areas that include 5 national parks, 3 natural reserves and 3 nature parks. Within these areas, there are facilities that cater the daily leisure and entertainment needs of domestic and foreign tourists. One of the natural preserves with high touristic potential in Antalya province is the Köprülü Canyon National Park. The national park adds to the recreational tourism assets in the area with its several natural and geological formations that allow natural tourism activities. Within the area, the Köprüçay River is one of the factors that provide the most important recreational texture of the national park.

Introduction of touristic activities in natural reserves is a popular trend. Incorrect and unplanned utilization of these areas has negative consequences on the national natural resources. Knowledge about the strengths and weaknesses of nature tourism activities that are increasingly important in contemporary life and analysis of present and future opportunities and threats by anticipation play an important role in determining adequate strategies and policies, especially in the tourism industry. As a

result, the aim is to reduce the negative effects of touristic utilization on natural resources, to improve the significance of nature tourism, and to utilize the resources properly.

In order to identify potential sites for instream activities, rivers need to be assessed for potential recreational and nature activities (Nuruddin & Ali, 2013).There are many methods of evaluating the potential of river for recreational activities (Miskell, 2009).

The objective of the present study was to determine decisions that aim to identify the conceptual perceptions, demands and trends of the stakeholders in Köprüçay river rafting area, located in Köprülü Canyon National Park, internal (strengths and weaknesses) and external (opportunities and threats) factors specific to the area with SWOT analysis and to minimize the problems in this area. Furthermore, sustainable and holistic strategic action programs (strategic goals, objectives and activities) specific to the Köprüçay rafting area were envisaged. Thus, it was aimed to provide a holistic administration in the area.

Rafting Tourism

Recreational activities in and around the water are very popular activities in many countries. Water presence is a fundamental requirement for the existence of open space recreation both in terms of being both the center of the activity and the attractiveness of recreational design. Some of the active varieties of water-based recreation are made directly in the sea and some in other inland water sources such as rivers and dams. In recent years, participation in water-based recreational activities has increased steadily (Turgut, 2012).

Adventure tourism is the sale of an adventurous trip or activity where there is some risk, uncertainty and challenge involved. Clients are actively and physically involved and most participants experience of strong emotions, such as fear and excitement (McKay, 2014). Adventure activities are usually classified into three key segments: hard, soft and nature-based adventure (Buckley, 2006; McKay, 2013). Hard adventure, includes activities that are perceived to be more risky, more physical and more challenging that soft and nature-based adventure activities. In this regard, rafting, is considered a hard adventurous activity. According to Wilson et al., 2013, McKay, 2014); rafting is a group activity where between four and eight participants both propel and steer an inflatable raft using single-blade paddles. In a commercial situation, the bulk of the steering and the propulsion is done by paid river guides (McKay, 2015). According to the American Whitewater Association-River Classification Scale based on the principle of showing resistance without harming nature, these sports rivers are divided into 6 classes according to the difficulty criteria such as water flow rate, volume, river bed width, water fall height. The easiest, least dangerous and least 'exciting' is a Class I rapid. The Class I; for beginners and those who will learn to use a new shovel. Class II (novice), there are constant currents, a few maneuvers and easy-to-reach radips. The Class is for people with basic rowing skills who can successfully row in the river. The Class III (intermediate), there are high and irregular waves, narrow passages that require maneuvers, and waves that can fill water. Has moderate skill in all general maneuvers, The Class II is for people

who can use a successful shovel in the river. The Class IV (advanced), there are long, difficult and continuous rapids, strong waves and halls that prevent the boat from moving. For those who are experienced in coastal / bounty rescue, who have led in the Class II rivers. The Class V (expert), the precision maneuvers require strong, hard, and long rapids in the constricted areas. Rescue is hard to do. Having the ability to overcome obstacles in all rivers in the middle water levels, IV. for those who have made successful leaders in graded rivers. The Class VI (extreme), the progress is almost impossible or very dangerous. All difficulties rise to limit points. It is suitable for specialists to do. All safety precautions must be taken (Uğurlu, 2005).

MATERIALS AND METHODS

Study material included the Köprüçay rafting area and its immediate vicinity, which is an asset for the Köprülü Canyon National Park, located within Antalya province. SPSS software was used to assess the findings of the survey conducted with the residents, visitors, rafting business operators and experts. Köprüçay and Köprülü Canyon National Park is located in Köprüçay basin, located between the 31001'30 "E and 37016'10" N west, 31011'16 "E and 370 25'12" N north, 31014'01"E and 37016'32" N east and 31012'59"E and 37007'40"N south coordinates (Figure 1). It is located in the north-east of Antalya and at a 85 km distance from the city. Köprülü Canyon National Park is one of the 7 national parks administered by Ministry of Forestry and Water Works 6th Regional Directorate, where the most intensive touristic activities are conducted in Turkey and with a unique beauty, geomorphologic and geological features that include archaeological, aesthetic and rich plant and animal groups (DKMPGM, 2007). Köprülü Canyon National Park was declared a national park on 12 December 1973 with the Article 25 of Forest Law No. 6831 due to 35.777.0 hectares of natural, cultural and recreational assets it possesses.

Dense recreational activities such as rafting, picnics and visits to cultural sites are conducted and most visitor needs could be fulfilled in the area. The rafting activities in Antalya commenced in 1992 at Köprülü Canyon. Köprülü Canyon National Park is estimated to receive an average of 500,000 tourists per year. No exact figures are available since there are no checks or ticket requirements on entrance. In villages such as Beskonak, Karabük, Altınkaya, Gaziler located within the national park, the land is generally used for agricultural cultivation, for residential and grazing purposes and to build rafting facilities on riverbanks.

The Köprüçay River rafting area located within the borders of Beşkonak, Manavgat district of Antalya has 1, 2 and 3 difficulty levels according to international rafting difficulty grade classification.

A face-to-face survey was conducted to determine the demands and trends of related stakeholders, the current situation and problems in the Köprüçay rafting area and to identify and propose solutions to these problems. Before the survey was conducted, observations were carried out to determine recreational and tourism activities of the residents and the visitors and information was obtained by interviewing the individuals who are familiar with the environment. Based on the collected information, survey forms were applied face-to-face to four different stakeholder groups that included local residents, visitors (domestic and foreign

tourists), rafting operators and experts (academicians and administrators), and subject demographics, conceptual approaches, perceptions, trends, problems and recommendations were determined. The total number of questionnaires applied to stakeholders was 600 in the present study.



Figure 1: The Köprüçay River rafting area

SWOT analysis technique was applied with the findings obtained. The significance ranking of the factor values within each SWOT group resulting from combining the SWOT technique with the "Ranking Technique" in order to determine the priority values (significance, weight) of the factors in each group was determined. According to the survey and SWOT analysis, holistic action programs were established.

RESULTS

Knowing the current strengths and weaknesses of today's increasingly prevalent nature tourism and anticipating and analyzing today's and future opportunities and threats play an important role in determining appropriate strategies and policies, especially in the tourism sector.

Antalya Köprüçay SWOT Analysis was carried out in the direction of the data obtained from the survey studies made to the field specific data and stakeholders in order to determine the current situation of the rafting area and to determine the strategic objectives and activities for the future. For this purpose, the internal (strong and weak aspects) and external (opportunities and threats) factors of the field have been identified. Priorities were assigned to these factors with the scores given by the stakeholders.

Taking into account the internal and external factors of the study area, planned decisions and proposals have been developed that will make the most of the existing strengths and opportunities of the Köprüçay rafting area, and will minimize the effects of the threats and weaknesses.

Determination of the Current Situation and Determination of Priorities by SWOT Analysis

The SWOT factors within each SWOT group are ranked by giving scores on the "Nine weightiness scale" (Table1, 2,3,4). This scale is used as "1 point - weakly important", "3 points less important", "5 points - moderately important", "7 points - more important", and "9 points - extremely important". Besides these," 2,4,6,8 values" are used as medium values.

Table 1: The strengths of the Köprüçay rafting area and percentage of importance ranking

STRENGTHS	**Priority Percentage Value (%)**
Different tourism and nature tourism activities in the area	7
Due to its geographical location, Turkey is one of the tourism centers in Antalya and has accessibility qualities	7
Potential for water-based and various recreational activities	7
In terms Rafting is one of Turkey's leading river	6
Being of rich in terms of biodiversity and ecosystem values	6
Taking place in Köprülü Canyon National Park	6
Offering suitable areas for nature tourism	6
Köprüçay area is the focus point for natural landscape	6
To have many species of life-threatening species that are unique to the area and not found anywhere else on earth	5
Has rich flora and fauna diversity	5
Important geological and geomorphological have occurrences within the national park	5
Within the national park are unique archaeological sites and possessing human settlements that are equivalent to prehistoric times	5
Having the largest pure cypress forest in the Mediterranean basin	4
Possession of alluvial soils suitable for agriculture	4
Finding of topography that allows for different nature tourism activities	4
Finding and serving rafting, restaurants and other businesses	4
To have natural and cultural riches that can be used for tourism in the region	4
The presence of the business force to be able to direct tourism and be treated	4
Take place intertwined with natural areas	3
Tourism has wildlife and bird diversity to contribute	3
Total	**100**

Table 2: Köprüçay rafting area weaknesses and percentage of importance ranking

WEAKNESSES	Priority Percentage Value (%)
Köprülü Canyon National Park natural tourism activities do not have spatial and spot action plans.	8
The absence of an institutional structure or activities for the coordination, organization, monitoring and controling of nature tourism activities (Not having a responsible central government entity	8
Inadequacy of publicity, advertisement, marketing opportunities for nature tourism activities	6
Insufficient protection of natural and cultural resources	6
Unplanned construction of illegal rafting, restaurants and other businesses due to legal protection restrictions and illegal construction	5
Inadequate recreational facilities, accommodation and shopping facilities for tourists	5
Lack of trained staff members (staff, guides, trainers) for rafting tourism activities	5
Destruction of vegetation and forests along the river during the operations of the enterprises	5
Dialogue and cooperation between tourism stakeholders (acental, ecotourist, local people) are not institutionalized and lack of participation mechanism	5
Inadequate tourism investments	4
Lack of awareness and knowledge for tourism	4
Difficult access to the area	4
Unconsciously consuming people's natural resources and increasing environmental pollution.	4
Rafting operations' rafting material, quality of service and lack of security	4
Incorrect land use in the area	4
Incompatibilities between existing sub-superstructure and environmental qualities of natural sites	4
Uncontrolled input and output of the field	4
The inability to fully perceive the nature tourism concept.	3
The agricultural value of the soil should be low, only the alluvial soil around the Köprüçay river.	3
Lack of promotion of handicrafts and various traditional products in the region.	3
The ignorance of local people about natural and cultural resource values.	3
Water access in some areas is difficult.	3
Inadequate quality and quantity of travel and tour operators.	3
Total	**100**

Table 3: Köprüçay rafting area opportunities and percentage of importance ranking

OPPORTUNITIES	Priority Percentage Value (%)
Increasing interest of Köprüçay and its surroundings for increasing nature tourism	8
High potential for space for alternative tourism types	7
Increased demand for nature tourism in to the world and Turkey	7
One of the largest and most advanced city to be connected to Antalya in the Mediterranean Region	7
Antalya local managers and other interest groups have the intention and desire to improve the natural tourism potential	7
Providing local people with new business and revenue opportunities	6
Due to the geographical structure of the area, it is very suitable for different tourist and recreational activities	6
The cultural and natural texture of the area that will be adapted with conservation and restoration works	6
The development and increasing of rafting tourism activity	6
Formation of new investment and sub-sectors for nature tourism	6
Mediterranean region attractiveness in terms of nature tourism	5
Increasing travel opportunities with improved transport facilities	5
Possibility to develop local national and global awareness on nature conservation	4
Increasing local awareness of nature conservation	4
The people of the region are willing to participate in nature tourism activities	4
Serik and Manavgat provide job opportunities for young population	4
Increase in the quantity and quality of natural areas protected by law in Turkey	3
Increasing interest of nature tourism in the world and in Turkey	3
Providing opportunities for ecologically and biologically rich scientific work	3
Total	**100**

Table 4: Köprüçay rafting area threats and percentage of importance ranking

THREATS	Priority Percentage Value (%)
Uncontrolled and unconscious construction of tourism activities in the suburbs, damage to the natural vegetation cover	9
Increasing and growing tours without plans, damage to wildlife	8
As the carrying capacity of the field becomes more difficult, the resource value is likely to deteriorate	8
Environmental pollution	8
Uncertain incentives and investments to tourism lead to over-construction in natural areas	8
Unplanned tourism activities distort the natural structure of the area	7
Population during the tourist season and increasing number of visitors to the area	6
Risks of uncontrolled and unconscious tours that increase the loss of life and property of tourists and create bad reputation	6
Unplanned tourism activities	6
Hydroelectric power plant (HEPP) construction on the Köprüçay River	5
Difficulty in finding young population for acceleration of population migration and rafting tourism activities	5
Water source to be used as drinking water	5
Increased water pollution due to restaurants, businesses in the area	5
Removing sand and gravel from the tea bed	4
Socio-cultural degeneration and conflict of tourists and local peopl	4
The use of chemical pesticides for agricultural purposes	3
Individual buildings and advertising boards such as restaurants, built-in buildings that do not have architectural aesthetics, restaurants, visual signs of roadside signs	3
Total	**100**

Determination of Strategic Goals, Objectives and Activities for Köprüçay Rafting Area

Based on the field study and survey findings obtained in Köprüçay Rafting area in Köprülü Canyon National Park, a holistic action program and action programs for stakeholder powers and authority were designed as a result of the conducted SWOT analysis and determination of the current status. The envisaged action programs could serve as a guide to both the applications and field managers (Table5).

Table 5: Rafting Tourism Strategic Action Programs

Rafting Tourism Strategic Action Programs for the Köprücay Rafting Area			
Holistic Action Programs	**Strategic Aims**	**Goals**	**Activities**
Administrative Structure Action Program	Establishment of a sustainable and participatory management structure that will enable the active implementation of management plan applications in and around the Köprülü Canyon National Park.	Establishment of a central administration unit in charge of Köprülü Canyon National Park Köprüçay area.	-Establishment of the national park administrative structure, -Successful management of the national park, -Ensuring that interest groups work effectively in accordance with the targets set out in the management plan, -Organizing the allocation and management structures for the national park, etc.-
		2.Spatial, Administrative and Recreational Structures and Equipment	-Establishment of units that are in charge of natural, cultural and archeological assets in Köprülü Canyon National Park, -Control of unplanned and irregular businesses, -Determination of entrance and exit points and regular routes, etc.
		3.Creation of budgets and funds for expenditures such as personnel, tools and equipment, maintenance and repair, project applications, in-field activity programs and conservation.	-Organization of revenue-generating activities, -Generation of income from in-field facilities, -Production and marketing of area-specific souvenirs, etc.
Spatial Development Infrastructure Action Program	Managing the sustainable development of the residential areas within the Köprülü Canyon National Park with a holistic, ideal, spatial	1. Construction and application of spatial planning and design application (structural and planting) projects at Köprüçay rafting area and its surroundings in	-Establishment of settlement boundaries, -Establishment of conservation and development master plans, -Creating of a separate conservation master plan for Köprüçay river rafting route, -Creating of a holistic inventory of the area (social,

	substructure-superstructure planning and design.	Köprülü Canyon National Park.	economic, natural, historical and cultural), -Creating of holistic landscaping spatial organizations, -Design and implementation of spatial application projects by the project team in planning (1/2000 or 1/1000) and design 1 / 500-1 / 200/1/100 or 1/50) scales.
		2. Repair, improvement and reforestation of vehicle and pedestrian transportation substructure and superstructure.	-Improvement of spatial physical substructure and superstructure -Maintenance and repair of existing vehicle and pedestrian roads and pathways, -Widening and pavement of vehicle roads with asphalt or natural stone material, etc.
		3. Maintenance and repair of existing tourism and recreational facilities, reinforcements and furniture in the area.	-Construction of the area entrance checkpoint and security cabin -Construction of the main entrance arch and development of an adequate concept, -Maintenance and reconstruction of the orientation and information boards, -Determination of the boundaries of the area and bordering with appropriate material, etc.
		4.Prevention of environmental pollution, regular collection of waste and deposits	-Construction of fully functional waste processing and collection facilities in the villages within the National Park, -Cooperation with Manavgat Municipality about the transportation of solid waste, -Construction and supervision of wastewater treatment systems for restaurants and rafting enterprises that sprawl on the banks of Köprüçay

			River, etc.
Resource Management Action Program	Preservation of natural and cultural resource assets within Köprülü Canyon National Park.	1. Creating sustainable tourism and recreation facilities by protecting existing resources in Köprüçay center and along the Köprüçay River.	-Design of areal and spot action plans for Köprülü Canyon National Park nature tourism activities, -Construction of a separate conservation development plan for the Köprüçay rafting route, -To enable the rafting sport as a planned and responsible activity -Prevention of activities that could change the natural topography and stream beds, etc.
		Development of preservation, management and monitoring programs for the preservation of endemic plant and animal species, habitats and ecosystems in the area.	- Conservation of nature tourism and ecosystems, -İdentification and technical maintenance of existing endemic and rare plant and animal species, -Conducting additional studies and surveys for primary habitats such as cypress (*Cupressus sp.)* forests and canyon ecosystems in the National Park, -Establishment of permanent monitoring systems for all ecosystems.
		Enabling planned and controlled access to natural resources in the national park.	- Preservation of natural resources in the area, - Construction of national park management policies - Completion of forest and land registry maps and conducting necessary studies to determine the legal administrative borders, etc.
		Preservation and administration of the cultural values in the national park.	-Establishment of cultural values administration sub-plans for archaeological and historical structures and sites, -Preservation of the current status of the cultural values in

			the national park, -Provision for the administration of these values for the use of visitors and local residents, prevention of the destruction of existing structures and securing these structures, etc.
Economic Activities Action Program	Sustainable and versatile economic development of Köprüçay rafting center	Development of qualitative and quantitative capacity of recreational facilities and activities.	-Recreational opportunities and infrastructure for visitors to the national park, -Remediation, design, implementation and operation of accommodation and catering facilities, establishing an entrance fee for the area, etc.
		Organizations and programs for nature tourism or ecotourism activities.	-Management and promotion of biodiversity and ecosystem assets for nature tourism, -Providing information for the visitors, -Design of an ecotourism plan for a safe, environmentally and socially responsible visits, etc.
		Production and sale of local and area-specific products.	-Design of awareness and educational and self-improvement programs for local residents, -Raising the awareness of local residents on ecotourism to improve public wealth, etc.
Education-Promotion and Awareness Action Program	Raising the awareness of stakeholders on the environment and nature.	Turning the area into an educational natural laboratory space.	-Design of educational and promotional programs, conducting, -Conducting theoretical and practical classes on nature for kindergarten, primary and secondary education and college students, -Design of an educational material set about the National Park for use in schools and youth groups, etc.
		Raising the awareness of stakeholders.	-Organization of educational activities for local residents, visitors, tour agency staff and

			students to increase their awareness on nature, -Providing annually updated information on the national park for the web pages of tourist organizations in Antalya, etc.
Resource Monitoring and Assessment Action Program	Development of the source monitoring system	Monitoring the fauna, wildlife and soil structure in the area.	-Observation of vegetal density and plant species diversity in areas where recreational activities are conducted, -Establishment and development of early warning systems for endangered species, -Observation of wildlife density and species diversity in areas where recreational activities are conducted, etc.
		Monitoring environmental pollution.	-Observation of sufficiency of waste bin and environmental waste in the area, etc.
		Monitoring the area visitor capacity.	-Observation of the number of visitors in spatial use areas, - Parking capacity and occupancy rates, - The capacity of the visitors, who participate in the activities, etc.

Köprüçay Rafting Area Stakeholder Responsibility and Collaboration Action Program

It is necessary to design an action program that will enable cooperation and general framework between the institutions and organizations and other stakeholders that are responsible for the management of the Köprüçay Rafting area (Figure 2). In this program, the powers and responsibilities of each stakeholder, their duties, the institutions and organizations they will collaborate with and the activities they can perform should be defined (Keleş, 2015).



Figure 2: Rafting Area Stakeholders

DISCUSSION AND CONCLUSIONS

Several countries, such as Turkey, consider tourism and ecotourism as a major development tool and envisage a great contribution to their economy via these tools. Especially when considering the possibility that domestic and foreign tourism industry capital could purchase and / or utilize the natural resources in Turkey in the short and long term with an opportunistic and purely liberal approach, nature tourism or ecotourism could be used as a savior, a mask or a shield (Gül &Ozaltın, 2007).

Increasing and diversifying tourism activities in nature areas often harm natural resource assets and can lead to adverse consequences for the sustainability of the area. According to Keleş (2015), any human activities that are performed in the natural environment would always lead to a change, deterioration and a multifaceted interaction in the natural environment independent of the circumstances. Thus, it is necessary to develop more cautious and conscious approaches to tourism and recreational activities in natural areas. The main purpose of natural tourism or ecotourism approaches to natural preserves should entail the preservation, support and nourishment of natural and cultural resources.

Knowledge about the current strengths and weaknesses of increasingly popular nature tourism and anticipation and analysis of the present and future opportunities and threats play an important role in determining adequate strategies and policies, especially in the tourism sector.

The rafting tourism center on Köprüçay, which is located in Köprülü Canyon National Park, became one of the most important rafting centers in Antalya province and Turkey. Especially the area, where there is a historical bridge and the starting point of the rafting activity, is the most important National Park attraction center for recreational / tourism activities and a high number of visitors travel to the area. Every year an average of 600,000-700,000 individuals visit the park and 90% of the visitors

are foreign tourists who visit the area for the day long rafting tours.

Several problems were determined as a result of the surveys and observations conducted on the Köprülü Canyon National Park and face-to-face interviews conducted with the locals. These problems can be summarized briefly as follows:

- Several problems such as the lack of an institutional structure and activities to coordinate, organize, monitor and supervise nature tourism activities in the area, presence of more than one protection status for Köprülü Canyon National Park, unplanned construction of area businesses such as rafting operators, restaurants and other facilities due to legal protection restrictions and the presence of illegal settlements, pollution and deterioration experienced in the river downstream (areas where the facilities are concentrated), damages to the natural settings and vegetation as a result of uncontrolled tourism activities, lack of trained personnel for rafting activities were identified.

Recommendations were developed for all the above mentioned problems in order to ensure the planning and spatial utilization of the site based on the protection and utilization balance. These recommendations can be summarized as follows;

- Construction of the spatial landscape design application projects in the area: The rafting area built on Köprüçay is the center of activity and focus (landmark) that provide the most significant tourism revenues. Thus, rational implementation and administration of a spatial organization that could maintain the natural structure of Köprüçay, suitable to the natural character of the area, provide the local residents their livelihood and maintain the balance between ecological protection and purposeful use to increase the satisfaction level of the users (DKMPGM, 2007).

It is necessary to develop spatial development plan proposals within the framework of the strategic action programs for the area utilized as Köprüçay Rafting Area.

- Establishment of a sustainable and participatory central administration structure within the national park: An action program should be laid out to establish the cooperation and general framework among the institutions / organizations and other stakeholders that are in charge of the Köprüçay Rafting area. It is necessary to establish an effective and competent administrative organization that can inform and guide the visitors.
- Establishment of settlement borders and creation of protection master plans: In order to prevent the problems of local residents that arise from the protection status of the area, settlement borders should be determined and development master plans should be established as soon as possible. This would also prevent illegal construction.
- Establishment of alternative areas and activities besides the Köprüçay rafting activity to decrease the pressure on the river: Nature tourism and ecotourism activities conducted on Köprüçay should be diversified, new alternative tourism types should be introduced and the natural resources of the area should be promoted. In addition to the rafting activities, it is necessary to introduce trekking, adventure and sports tourism, historical and archeological tour, festival, Jeep safari, climbing, mountain biking activities in the area in addition to rafting.
- Design of spatial and spot action plans for nature tourism activities in

Köprülü Canyon National Park.

- Organization of rafting activities on Köprüçay and design of protective rafting plans: It is necessary to prevent irregular rafting activities in the area and render the rafting sport a planned and responsible activity. Organizations should be established to establish and organize rational rafting tourism activities and to make the area a rafting center. It is also necessary to establish an institutional organization that would control the qualifications of the material, guides and rafters that are active in rafting operations.
- Prevention of environmental pollution and raising the awareness of visitors and local residents on the environment: The most significant problems in the area are waste and wastewater management. Due to these problems, the polluted water that are discharged into the river deteriorate Köprüçay water quality and the ecosystem.

The following recommendations are made:

- Design of ecotourism plans to inform the visitors about the recreational use of the area and to conduct responsible activities,
- Protection of the natural and cultural assets of the national park and to ensure that the park is administered to maximize its use by the visitors and local residents,
- Establishment of visitor management systems for all protected areas
- More planned and controlled use of the national park
- More organized and controlled construction and supervision of rafting facilities that developed irregularly and illegally in the area
- Production and sales of local and area-specific products to increase the economic revenues of the local residents and for promotional purposes
- Construction of buildings and equipment that are suitable for the identity of the area
- Providing sufficient transportation to the area and improvement of both substructure and superstructure
- Regular maintenance and repair of the site
- Creation of sustainable tourism and recreation opportunities in the area
- Providing controlled access to national park resources to maintain the livelihood of the local residents
- Encouraging institutions such as colleges to conduct scientific studies in the area
- Monitoring the load capacity of the area.

Furthermore, the current capacity of the area cannot fulfill the high seasonal demand of domestic and foreign tourists for rafting. In order to prevent this, necessary measures should be taken and satisfaction level of the tourists should be improved. Collaborative, participative, responsible solutions that prioritize the protection-utilization balance should be developed in order to raise the satisfaction level and to meet the needs of all stakeholders that provide (administrators, operators, locals) and receive services (tourists, visitors) in the area.

Criteria of development for sustainable nature-based tourism are biodiversity conservation, economic consistently, controlled marketing, cultural wealth, local people prosperity, work and services quality, social equality, visitors pleased levels,

to spread to local of authorizes, community happiness, effective using of sources and healthy environmental (Polat *et al.*, 2016).

In conclusion, Köprüçay rafting area and vicinity natural and cultural assets should be preserved and transferred to future generations. For this reason, rafting activities on Köprüçay should be conducted without destroying the natural structure of Köprüçay river, in a manner that is suitable for the natural character of the area, to provide a living for the local residents and to raise the satisfaction of the users and should prioritize the balance between ecological protection and purposive utilization and all spatial and administrative activities should be integrated in the area.

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