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CHALLENGES FOR ECOTOURISM DEVELOPMENT IN ÇUKUROVA DELTA BIOSPHERE RESERVE, TURKEY

Introduction

The Çukurova Delta is an internationally important coastal strip ecosystem and situated in the southeastern part of the Mediterranean Sea in Adana Province, Turkey. The Delta encloses an area about 5000 km² with 110 km coastal strip, including Turkey's largest natural sand dune ecosystems. The Delta is the largest coastal river basin in Turkey and created by the sediments from Berdan, Seyhan and Ceyhan Rivers [1]. Whilst the upper part of the Delta has important fertile soils for agriculture, the lower part still contains an internationally important coastal lagoon ecosystems [2]. These complex ecosystems contain valuable habitats not only for water birds but also for many other living organisms; therefore, the Delta has an outstanding biological diversity including a large number habitats and species listed in Bern Convention. For example; sand dunes are valuable habitats for three globally threatened sea turtles (*Caretta caretta*, *Chelonia mydas* and *Trionix triunguis*) and also for other herpetofauna, insects and mammals. Unfortunately, the Delta is one of the most threatened wetlands in Mediterranean region due to a variety of reasons e.g. intensive agriculture, dune flattening, waste dumping, grazing, cutting and water pollution; however, Turkey's largest natural coastal sand dunes still survive in the Delta [1]. The problems indicated particularly derive from the conflicts between the biodiversity conservation and development in the region. Hence, the Delta was designated as a *biosphere reserve*¹ to contribute to the biodiversity conservation and creation of alternative economic incentives (e.g. ecotourism and organic agriculture) for the rural poor and marginalized groups (e.g. people with least access to farmland) to lift their lives out of poverty in the region. Accordingly, the European Union Life Project entitled 'Çukurova Delta Biosphere

¹ Biosphere reserves are sites recognized under UNESCO's Man and the Biosphere Programme, which innovate and demonstrate approaches to conservation and sustainable development (UNESCO 1996 [13]).

Reserve: Determination of Biological Diversity and Initiating a Program for Sustainable Development' (LIFETCY/99TR-087) was initiated and conducted in the Delta between 1999 and 2004 years. Within this context, development of ecotourism in the Delta was carried out to contribute to the outcomes of the project anticipated.

Ecotourism is a form of tourism whose purpose is to sustain and renew natural resources and systems and is used as a tool to protect natural resources. Ecotourism aims to minimize environmental damage and share the profit with the local residents [3]. Considering this point of view, ecotourism potential of the Cukurova Delta was investigated to assist the long term conservation of the biological diversity and sustainable use of natural resources; to minimize negative impacts on the natural resources and socio-cultural environment; to increase awareness towards the conservation of biological diversity, natural resources and environment; and to provide alternative employment and income opportunities for the local communities. In addition; potential challenges for ecotourism development in the Delta were examined in the framework of the research.

1. Ecotourism potential of Cukurova Delta Biosphere Reserve

Natural and cultural components of the Delta from the point of ecotourism development were investigated by literature review [1, 2, 4-10] and field-work conducted in the region. The components indicated are discussed in turn below.

Coastal strip and sand dunes

The Cukurova Delta represents internationally important and complex coastal strip ecosystems. Sand dunes cover a large area in the Delta. Hills of sand dunes extend from 1 to 10 m high. Sand dunes are significant habitats for internationally endangered sea turtles, insects and other organisms. In addition, vegetation of the sand dunes have created an outstanding landscape in the Delta [11]. Therefore; the coastal strip and sand dunes with these characteristics provide an opportunity for water sports (e.g. swimming), recreation (e.g. nature-walking) and ecological studies (e.g. monitoring of sea turtles) in the Delta [9].

Lagoons and rivers

The Seyhan, Ceyhan and Berdan Rivers are the major sources of the lagoons - covering a total area of 34.000 ha in the Delta [2, 4]. The lagoons are the nesting and breeding sites of water-birds, endangered sea turtles, and other species [7, 10]. In addition, the lagoons have economic value due to traditional dalyan fishing. According to Cetinkaya [9]; the lagoons and Rivers provide opportunities for ecological and environmental studies (e.g. monitoring of birds and sea turtle), fishing and other environmentally friendly activities in the Delta.

Flora and woodland 'Camlik 'Pinus halepensis' dune forest'

The flora of the Cukurova Delta consists of 560 taxons belonging to 70 families [12]. The Delta is very rich in flora. The Camlik '*Pinus halepensis*' dune forest is the most important site for flora and coastal ecosystems in the Delta and also in the whole of Turkey (Fig. 1). The area is a habitat with high priority according to Natura 2000 Flora-Fauna-Habitat Directives [2]. The diversity of flora and the Camlik '*Pinus halepensis*' dune forest particularly provides opportunities for floristic research, environmental and educational programs in terms of ecotourism development [9].



Fig. 1. A view from the woodland '*Pinus halepensis* dune forest'

Fauna

The most significant fauna species in the Delta include three globally threatened sea turtles (*Caretta caretta*, *Chelonia mydas* and *Trionix triunguis*) and water birds (Fig. 2). For example; it was recorded that 180.000-200.000 water birds overwinter in the Delta each year [10]. Fifty kinds of fish species are living in the lagoons and rivers. Thus, the Delta provides a great potential for environmentally sound activities (e.g. bird-watching, monitoring of sea-turtle and fishing) in terms of ecotourism development.



Fig. 2. Globally threatened sea turtles - *Caretta caretta*

Cultural potential of the Delta

Traditional dalyan fishing is one of the most significant economic activities of the local in the Delta. Caviar production from mullet is also carried out in the dal-yans in a traditional manner. Carpet weaving is another cultural component that is carried out by women in Kaldırım village. Carpets are usually woven for trousseau of young girls in the village. This activity is not carried out with the aim of income generation due to the lack of a marketing mechanism. Introduction of traditional dalyan fishing, caviar production and carpet weaving to visitors can provide economic benefits, attract tourists and also give an opportunity for social interaction between the local people and tourists [9].

Assessment of the natural and socio-cultural potential of the Delta revealed that the area has a great potential for ecotourism development. However, a number of challenges are required for ecotourism planning and development in the Delta.

2. Challenges for ecotourism development in Cukurova Delta Biosphere Reserve

The Cukurova Delta Biosphere Reserve offers numerous environmentally friendly activities which are complementary to ecotourism. Although major ecotourism destinations were designated in the framework of the Life project, unfortunately, the activities indicated are personally conducted in the Delta due to the lack of an operation plan, responsible body, skilled staff and adequate services. Howev-

er, working towards sustainable ecotourism and its conservation, economic and socio-cultural goals require the collaborative planning and implementation of strategies. For that reason, a participatory evaluation process was conducted in the Delta in 2003 in order to address pressing issues within the communities and to examine potential challenges for ecotourism development in the Delta. The process consisted of an interactive dialogue to understand potential constraints and challenges in terms of community-based ecotourism development in the Delta. Major challenges examined are discussed in turn below.

Establishment of an ecotourism committee

An ecotourism committee should be established to deal with all issues about ecotourism development in the Delta. The committee should take a lead role for maximizing the economic benefits of ecotourism and also ensuring that the benefits should be shared equally with all the communities. Within this context, the ecotourism committee should develop a mechanism whereby young people and/or local community members interested in ecotourism would be eligible to guide tourists. In addition; the ecotourism committee should determine local households who are willing to participate in ecotourism development by providing accommodation. Thus, the ecotourism committee should take all responsibilities for organizational structure of ecotourism development in the Delta.

Economic strategies and mechanisms

An economic strategy should be designed to capture the greatest portion of tourist to spend time in the community. For that reason; the ecotourism committee and the communities should pursue a financial fund to improve and develop the provision of ecotourism infrastructure and services. The strategy should be based upon the development and maintenance of local ownership of all guide, transportation, lodging and food services. The second strategy should be the use of local materials wherever possible for construction, food and transportation. The third strategy should be the development of local arts, crafts and souvenirs for sale to visitors. Finally, the ecotourism committee should have use entry fees or donations from tourists to directly support the communities or conservation projects. The indicated strategies explicitly recognize that ecotourists are willing to pay to support local conservation and community development projects and capitalize on the materials locally available to provide for tourism services.

Socio-cultural strategies and mechanisms

To achieve the socio-cultural goals of ecotourism development, the ecotourism committee and local communities together should develop a common strategy including the local ownership of guide, food, lodging and transportation services. By maintaining the local ownership of services, the service providers must work within the cultural norms of the communities and maintain these norms as good neighbors. The selection, training and practice of the local guides should take advantage

of traditional knowledge on plants, animals and wildlife behavior and landscape management and should reinforce the value of this knowledge.

Organizational strengthening

The ecotourism committee should develop and strengthen local organizations to face the challenges of managing community-based ecotourism. Therefore, the committee should organize training programmes in management, public participation techniques, leadership, strategic planning and financial administration. The obtained skills and knowledge by training would help as a tool to continue and adapt the ecotourism industry. In addition, training programmes would facilitate dialogue and cooperation between the communities and outside agencies from the public and private sectors. Bringing these sectors together to jointly implement training programs, resolve conflicts and strategically develop the ecotourism initiative would strengthen the capacity of the local communities. Thus, the communities can establish new contacts and understand the political process of ecotourism development in the Delta.

Conclusion

Ecotourism can play an important role in attracting support, both moral and financial, for the conservation of biodiversity and sustainable development in the Delta. In addition; ecotourism can make some participants in the tourist industry aware of the need to protect the resources upon which their livelihoods depend because ecotourism can create employment opportunities for the communities and a means of providing environmental education for visitors. However, these potential benefits do not arise automatically. They will only be achieved with appropriate policies and careful planning, including education, training and enhanced access to capital for the local residents to facilitate their involvement. Policies for ecotourism development in the Delta should include measures such admission fees or accommodation taxes that ensure the user pays so that money is available to maintain and enhance the resource base, and the requirement that visiting groups must employ and use local services and products during their trips in the Delta.

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Abstract

The Cukurova Delta represents internationally important coastal strip ecosystems and is located in the south-eastern part of the Mediterranean Sea in Adana city, Turkey. The Delta includes the largest natural sand dune ecosystems in the country; therefore, it contains valuable habitats of many species e.g. water birds and internationally threatened sea turtles. Unfortunately, the biodiversity of the Delta is threatened due to various reasons such as intensive agriculture, overgrazing and conflicts between biodiversity conservation and sustainable development in the region. Considering these constraints, a European Union Life Project was carried out to assist in conserving the biodiversity, minimizing the negative impacts on natural resources and designing a sustainable development strategy in the Delta. Ecotourism potential of the Delta was investigated within the framework of the project to contribute to the biodiversity conservation and support local strategies for sustainable development. Relevant data were collected by interviews with target groups and fieldwork conducted in the Delta. The results show that the Delta includes a great potential (e.g. coastal strip, rich flora and fauna) for ecotourism development in the region. Finally, potential challenges for ecotourism development in the region were examined. Major ones include: establishment of an ecotourism committee and economic strategies and mechanisms.

Streszczenie

Delta Cukurova to przybrzeżny pas ekosystemów o międzynarodowym znaczeniu, znajdujący się przy południowo-wschodniej części Morza Śródziemnego w mieście Adana w Turcji. Jest to zarówno największy naturalny ekosystem wydmy w kraju, jak również naturalne środowisko wielu cennych

gatunków, takich jak ptaki wodne oraz żółwie morskie, którym grozi wyginięcie. Niestety zróżnicowanie biologiczne tego rejonu jest poważnie zagrożone z takich powodów, jak: intensywne rolnictwo, nadmierne wypasanie zwierząt roślinożernych, a także ciągły rozwój regionu. Ze względu na powyższe zagrożenia Unia Europejska zapoczątkowała projekt zatytułowany „Życie”, mający na celu ochronę bioróżnorodności, minimalizację negatywnych czynników wpływających na zasoby naturalne oraz efektywny plan strategii rozwoju regionu. W ramach projektu zbadano potencjał ekoturystyki w regionie Delt, aby wspomóc zachowanie bioróżnorodności oraz lokalne strategie rozwoju. Przeprowadzono również odpowiednie prace w terenie oraz zebrano dane w grupach docelowych. Ich rezultaty dowodzą, iż Delta posiada wielki potencjał ekoturystyczny: przybrzeżny pas, bogata fauna i flora. Zbadano również ewentualne wyzwania dla rozwoju ekoturystyki w regionie. Należą do nich ustanowienie komitetu do spraw ekoturystyki oraz mechanizmy i strategie gospodarcze.