Strategic Management of GavKhoni Wetland using Integration of the SWOT Analysis with Ecotourism evaluation using Geographical Information System, GIS and TCI modes

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Abstract

This study was an attempt to use GIS to consider and analyze temporal and spatial distribution of Climate Comfort Index for Tourism in the international GavKhvni wetland based on TCI model. In addition to determining the right time for presence of tourists in the wetland, risk factors and their impact according to local conditions and tourism impact on living conditions (designated endangered species) in the GavKhvni wetland were identified. In order to achieve a favorable or better condition during the presence of tourists, the most important threatened factors in this region were identify and prioritize using AHP, TOPSIS and EFMEA models. In this study threaten factors in the GavKhoni wetland were identified. At the end the most important strategic recommendations were prioritized.

In this research, seven climatic parameters were extracted monthly from 11 synoptic stations in Isfahan, particularly around the GavKhvni international wetland during 30-year (1976 to 2005) prior to estimated and evaluated the comfortable climate index for tourism in region using GIS. Then necessary conversions were applied on the data according to TCI model. After combining the maps in the GIS, the distribution map of TCI index was prepared for a 12-month period. According to comfortable climate index for tourism the tourism climate in the months of April, May, June, September and October are ideal. The results demonstrated that the northern part of the wetland in June and all of the wetland area in July in terms of climate comfort index for tourism are excellent.

In this study, the following questions are answered: 1) what is right period for tourists from TCI model points of view? 2) Which environmental factors affect tourism and vice versa 3) what is current strategy for Gavekhoni wetland based on analysis of the SWAT 4) what are the strategies for sustainable tourism development?

In this study the favorite tourism period were detected based on climatology data and TCI model and also potential and limitations of tourism development in Gavekhoni wetland was considered to provide strategies and solutions to guide the wetland toward sustainable development. Data collection and their analysis were performed based on documentary, analytically and by survey.

GaveKhoni wetland were assessed from physico-chemocal, biological, economocal and sociological aspect, prior to present recommendation for attract tourists to the area. According to streghten and weakness points as internal parameters, and threaten and opprtunities as external parameters, the strategy of wetland was detected. In order to improve condition and shift it to appropriate form, the most important impact factors were detected and recommended using EFMEA ،TOPSIS and AHP.

The results showed that the wetland is in a defensive position and any precipitous action which would be applied in the area can cause serious problems.

In this study, the analysis of 21 environmental risks threatening parameters of Gavkhvni wetlands as the options and considering 5 indexes was performed using multi-criteria decision-making methods and TOPSIS.

The results of ranking the threaten factors using TOPSIS suggested that the risks of drought and water shortage on one hand and construction dam on the Zayanderood on the other hand were the first and second important risk factors, respectively. The risks of irregular water removal from Zayanderood and pollution which enter to the wetland by industrial activities were in the third and fourth ranking. From the results it can be deducted that the shortage of entrance water and industrial pollution which lead to the wetland were the major risks of the wetland.

Non-specified environmental water right for wetland and irregular water removal from Zayanderood increased the amount and level of problems in the GavKhoni region. Determining environmental water right of wetland from Zayanderood based on

standards can solve a significant part of problems, such as salinity. In this study, overgrazing was detected in the last ranking place.

Keywords:
Strategic management, International Govkhoni wetland, GIS, TCI, EFMEA, TOPSIS, AHP.