**Analysis of Spatial Disturbance in the Rural Tourism Area of Baraghan, Karaj**

**Extended Abstract**

Today, the growing demand of tourists, second-home construction companies, and the prosperity of land broker, low production of agricultural sector, decreasing income and entrepreneurship processes resulted in the rapid and extensive selling of gardens, farmlands and uncultivated land by the local community. This led to the destruction of natural resources and a significant decline in arable land and gardens and them all resulted in the emergence of unproductive residential complexes. Also, construction in the beach, jungle and river zones caused the reduction in accessibility to tourism resources and an increase of environmental pollution and ultimately the land cover change.

In recent decades, land cover changes have become a serious challenge. The growth of tourism activities in these areas, the activities of land brokers in the region and an increased level of demand for second homes and villas resulted in increased construction of tourism and recreational facilities and followed by the extensive land cover changes. Considering the location of Barragan village in terms of geographical conditions, temperate climate and beautiful scenery, proximity to the Tehran and Karaj metropolises and having appropriate road accessibility, this rural district receives a large number of tourists every year. On the one hand, these features have attracted tourists with the aim of buying land for constructing villas and second homes, as well as high demand for buying rural agricultural lands. These changes indicate the escaping from agriculture and gardening activities and gradual elimination of productive economic activities because of its cost-effectiveness and low income due to land cover changes. Environmental hazards are a major threat to the degradation of the garden and arable lands. Therefore, minimizing this threat requires a full understanding of the previous process. The purpose of this study is to analyze the spatial disturbanceof rural tourism areas and investigate the land cover changes in the Baraghan area.

This study is applied to research in terms of purpose and uses the descriptive-analytical method. According to the nature of the study, data were collected through fieldwork and library research methods. This research is based on the use of remote sensing methods for analyzing spatial disturbance in the tourist area of Baraghan in a period of 30 years. To carry out this study, satellite images of the TM and OLI satellite Landsat were used in three-time series of 1985 (Landsat 5 / TM), 2000 (Landsat 5 / TM) and 2015 (Landsat 8 / OLI). In this research, ENVI software was used to prepare the land cover maps for geometric correction, radiometric and atmospheric and finally the region cutting (R.O.I). The multidimensional perceptron neural network (MLP) algorithm has been used in the ENVI software to classify the identified land covers. Finally, for monitoring the land cover changes and anticipating future developments, the Markov chain has been used in Terrset software.

Land cover changes in Baraghan have classified into five levels. The classification with a total accuracy of 8530.88 percent in 1985, 98.7170 percent in 2000 and 96.1186 percent in 2015, respectively with a coefficient of kappa of 0.96, 93 and 93, had the best accuracy (higher than 85 percent). Land cover maps of the study area showed that land cover changes have occurred in the area with different intensity. This means that the extent of the modified land cover varies between the classified covered during 1985-2015 ranging from 4.6536 to 7500 to 122200 hectares. Among the classified levels, the most land cover changes are related to the arid, mountainous and residential green areas and garden lands. So that the area of arid and mountainous lands has decreased and green cover and residential gardens have increased. Satellite images, maps, and field observations have shown that over the years of studies, arid and mountainous lands changed into arable lands with low and medium vegetation. After changing the arid and mountainous cover into green cover, this covers (crops, gardens, and pasture) converted to the residential garden for achieving more benefits. This means that, in the first step, there has been a reduction in arid and mountain cover and an increase in green cover. In the second step, the first cycle was weakened and the area of the green cover has been reduced and the area of residential garden and residential villas increased.

The development of tourism in the studied area led to an increase of urban activities by removing agricultural land from the production cycle. Also, instead of traditional activities (agricultural and animal husbandry new activities (service, residential garden, residential villa) formed that are economical. And overloading the ecological stress on the land while creating environmental hazards caused the formation of incompatible uses and activities that are not consistent and are in conflict with each other. Therefore, tourism in Baraghan region, which has gradually evolved over many years and now it has become a part of the rural context, has created spatial disturbance and mutual incompatibility between them. Spatial disturbance created due to the changes in land cover and acceptance of incompatible activities that derive from human-nature relationships. This means that the rapid and unpredictable development of tourism poses a problem for the rural landscape and changing the land cover led to incompatibility between different activities and ultimately spatial disturbance.

**Keywords:** Spatial Disturbance, land cover changes, land use change, rural tourism areas, Environmental hazards