

## **Evaluation of the Capabilities and Uses of Geomorphosites (Case Study: Geomorphosites of Tabas County)**

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### **Extended Abstract**

#### **Introduction**

Today, Geotourism is one of the sections of tourism that can be developed in the regions with geologic and geomorphologic attractions. Geotourism and geomorpho-tourism is new branch of responsible tourism based on the use of geological and geomorphological attractions. In addition to the natural attractions, the geotourism consider cultural, economic and ecological values. Responsible tourism emphasizes on the conservation of natural resources and human tourism. In fact, purpose of geotourism is economic and social development of local community and ecologic protection of natural resources by geomorphosites. All geomorphologic, cultural and tourism heritage of geotourism are in the form of sites called geomorphosite. Geomorphosites are landforms involved special values caused human insights and those provide important condition to develop tourism activities and special infrastructures in a region. This is of importance in understanding geohistory. Geomorphosites can present scientific, conservational and tourism values and affect cultural, ecological and economic condition. Conservation is one of the basic conceptions in a geomorphosite. Geoconservation emphasizes on management of geologic features with scientific, cultural, tourism, educational and tourism values. Geoconservation concept is approximately equal with geologic heritage because it is related to collection of activities for decision and geoconservation in special places. Both the concepts of geoconservation and geologic heritage are discussed as recent concern in the geotourism researches. In general, total tourism values are consisted of scientific, conservational and tourism values. Final purpose of geotourism is economic and tourism development in a region and preservation of scientific and conservational values and improvement in tourism values. Therefore, in order to achieve this purpose, it is essential that

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geomorphosites are assessed with different criteria. In the past years, it is presented and designed different methods for this assessment. Tabas County in Khorasan Jonobi Province is one of the suitable regions for geotourism development in the country. Since Tabas County is located between two vast desert regions (Dashte-loot and Markazi Kavir) the arid areas of Tabas County are secluded and its capabilities are not analyzed scientifically. According to this concern, in this research, geotourism of Tabas County is assessed using sustainability concept and tourism and economic development.

### **Methodology**

In order to assess geotourism capabilities of the geomorphosites, different methods are presented in the recent years. These methods have mainly focused on conservation value and improvement of scientific and tourism values. In this paper, assessment of geomorphosites is performed for Tabas County. With several geology and different geomorphologic landforms, Tabas County is recognized as a great geology region in Iran. Desert situation of the county and historical and cultural landscapes with geomorphologic potentials also made this area as one of the suitable geotourism regions. One of the spatial characteristics of Tabas County is natural variability in addition to desert condition. Part of this county involves mountain areas in Shotori region and also ecological area in Naybandan region. In order to assess geotourism, in the first stage, geologic and geomorphologic features and landforms are assessed according to spatial and subjective distribution of features. Finally, up to 50 features are determined as geomorphosites for assessment of geotourism of Tabas County. These are 24 geomorphosites in arid and desert area, 17 geomorphosites in mountain areas in Shotori region and 9 geomorphosites in the ecological area in Naybandan region. In order to assess these geomorphosites, GAM method is applied. This method was designed by Mr Vujicic (2011). In this method, several values and criteria are used. This method involve these values: scarsness, representativeness, knowledge on geoscientific issues, level of interpretation, viewpoints, surface, surrounding landscape and nature, environmental fitting of sites, current condition, protection level, vulnerability, suitable number of visitors, accessibility, additional natural values, additional anthropogenic values, vicinity of emissive centers, vicinity of important road network, additional functional values, promotion, organized visits, vicinity of visitors center, interpretative panels, number of visitors, tourism infrastructure, tour guide service, hostelry service, and restaurant service. These criteria are ranged in value from 0 to 1 that consist degrees and grades of suitability and unsuitability.

### **Results and discussion**

In order to assess geomorphosites of Tabas County, many experts of tourism, geology, and geomorphology with knowledge about Tabas County, have assigned values and assessed the criteria of this research for each of the geomorphosites. Finally, value of each geomorphosite has been determined for each criterion. By using cooperation total values, final value of each geomorphosite has been determined. Final results indicate that geomorphosites of Derenjal outcrop, Sarzamin Siah, Shotori alluvial fan, Mazino coal phenomenal and Rig Shotoran are determined as the most suitable. Therefore, large scale geomorphosites has higher value. Scientific value of Mazino coal phenomenal is related to paleology. Sarzamin Siah and Rig Shotoran have much variety and good perspective. In final stage, geomorphosites are assessed separately with scientific, conservational and tourism values. Scientific, conservational and tourism values are chosen from GAM method and their values are determined for georphosites. The results also indicate that the geomorphosite of Derenjal phenomenal is suitable for scientific

value, geomorphosite Korit valley for conservational value and geomorphosite Roohe Marghom Lake for tourism value.

### **Conclusion**

Geotourism planning can realize the importance of tourism uses and conditions and potentials for each geomorphosite. According to the results of this research, geomorphosites of Derenjal outcrop, Sarzamin Siah, Naybandan crag fault, Kalmard old low height mountains, Darrin unconformity, and Halvan sandy hills are determined as tourism goods that can be presented for tourists. Other geomorphosites should be improved in scientific, conservational and tourism values to serve tourists. The results also show that there is not proportion between different values of geomorphosites. Although it should be noticed that conservation of actual earth heritage in Tabas county and local communities have very small share in the result of tourism development. This is due to lack of facilities and official decisions making to development of geotourism and improving tourism.

**Keywords:** GAM method, geomorphosite, geotourism, sustainable tourism, Tabas County.

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