



Challenges and solutions of geotourism development in Iran

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ABSTRACT

In the most advanced countries, geotourism has a top place in GNP and plays an important role in national development of these countries. The vast country of Iran has a lot of geotourism attractions with diverse geology and a wide variety in geomorphological effects that is known as the earth paradise in a lot of national and international societies. Optimal and principal use of these potentials can cause sustainable development in economic, social, cultural and environmental levels. Access to sustainable geotourism principles is possible via coordination between its elements such as necessary infrastructures, education, protection and security in strategic and long-term programming. Therefore, benefits and challenges of geotourism industry have been surveyed in this article and solutions are provided for maintenance natural environment and geology attractions for access to sustainable development. In this view, cultural view, health, protecting the environment and welfare of natives around geotourism attractions are considerable.

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1. Introduction

In recent years, tourism industry becomes one of the main pillars of development from different aspects especially economic benefits in a way that pundits believe that tourism will be a dominant industry in the next years and will have numerous social and economic effects. Geotourism is considered a new way to providing tourism attractions as a sub-branch of tourism and has an important part in tourism studies. Iran has a beautiful nature, diverse climate and rich areas of unique earth science phenomena and surveying these attractions is necessary for knowing them better and development of geotourism (Yazdi, 2012). Iran's specific tectonic and climatic conditions create diverse geology and geomorphology displays in different parts of the country (that cause to create tens geosites and geoparks) and if they introduce correctly in international era, it can convert Iran as one of the largest geotourism poles in the world. Therefore, we introduce and survey these geological and geomorphological attractions in this article.

2. Research method

The current article is applied and developmental one and its used research method is descriptive-

analytic. Therefore, according to the diverse library-documentation studies, interpretation and general analysis of Iran's satellite images, direct observation and surveying a lot of phenomena are used from geotourism view.

3. Geotourism concept

Geotourism or land tourism is considered a new concept in tourism industry that is considered a remarkable growth and attention in the current decade. Geotourism has defined boundaries that geological tourism is in its focus center (Newsome and Dowling, 2006) and surveys effects related to the earth, geomorphological situation, geological phenomena and their tourism capability. Frey et al. (2006) define geotourism as transferring knowledge and comments of the earth science to the public. From Gates (2006) view, geotourism means "tourism in geological landscapes". Moreover, it can be said that geotourism is an informed and responsible tourism in the nature with the aim of visiting and understanding geological processes and phenomena as well as learning the way of their formation and evolution (Amrikazemi, 2009).

According to the provided definitions, geotourism is not only a new part in tourism marketing but also a principal guidance for maintenance the inanimate nature and sustainable development. Most of geotourism addressees are not geology experts and specialists but common people and nature lovers.

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Therefore, one of the issues that have a lot of importance in geotourism is training and informing. Familiarization of all with valuable geology attractions, we can benefit of public cooperation in maintenance and optimal and correct use of these works. Meanwhile, geotourism tries to organize and targeted visiting the earth attractions via creating and defining geosites and geoparks and prevent geological heritage via human.

4. Relation of geotourism and ecotourism

Some knows expert branches of geotourism as one of ecotourism sub-branches but according to the writer's belief, it can be said that these two kinds of tourism are based on nature and are parallel not sub-branches of each other. If we divide the nature to two parts of animate and inanimate, ecotourism includes studding animate nature and its attractions and geotourism includes studding inanimate nature and its attractions. Therefore, we can divide nature tourism to two sub-branches of geotourism and ecotourism. Considerable issues in ecotourism include studding and tourism of reptiles, birds, fishes, insects, plants and trees, wildlife and more. From kinds of geology phenomena that is considered in geotourism are kinds of fossils, rocks and minerals, faults, folds, domes, volcanoes, karsts, mud volcanoes, caves, valleys and etc.

According to the abovementioned matters, it is determined that these two kinds of geotourism are a complex of tourism depended on the nature and are not sub-branches of each other. The main difference of these two is that ecotourism has most attention to organisms and plant and animal's life environment. But geotourism concerns in geomorphology and geological phenomena and relates to inanimate nature and their evolution. Even in matters that geotourism considers fossils, it mentions to an abiotic (fossil) (Amrikazemi, 2013). Geotourism is the most important affair that is done in the range of one geosite or geopark.

5. Geotourism territory

According to Newsome and Dowling (2006) interpretation, geotourism territory determines with parts of the earth shape, earth processes, and their composition with the large complex of tourism industry. From interesting shapes' complex in geotourism, we can mention to volcanoes, rocks, fossils and etc. Moreover, observing active ground's processes is another geotourism attraction that converts to geotourism activities and aims besides use of interpretation, like listening to geotourism guide about relative processes' history as well as tourism sub-structures.

6. Geosite's concept

Geosite is a place that has uncommon shapes and interesting processes of geology and geomorphology.

This is while tourism infrastructures including residential facilities, access ways to geosites, relative management to maintenance that attraction and etc. is considered for that area.

Geosites mainly divides to two groups: those that in natural or synthetic form has outcrop as special shapes of geological and geomorphologic within open bounded areas (Hose, 2006) and the other, geotourism visiting centers in closed spaces like Earth Sciences museum and etc. other terms that are used equivalent to geosite is Geotop German term (Sturm, 1994).

7. Geopark concept

Geopark is a geographical area with determined frontiers that has one or several specific or unique geology phenomena and considerable natural and cultural attractions are in that area. This complex should be effective on the area's economic development and has special protection and programs as well as formulated management plans (Amrikazemi, 2006). Moreover, we can find a group of geosites in the extent of one geopark. Geoparks are a part of universal net that share the best experiences with respect to maintenance the earth heritage and can have a principal role in the country's economy with tourism growth as well as having a lot of effect on sustainable development. Therefore, each country or area that has more ancient history and attractions as well as geological effects, will have a suitable potential for developing this industry.

8. Different kinds of geology phenomena from geotourism view

Totally, geosites or geology phenomena can be divided to three groups from the amount of importance and value: local geosites, national geosites and international geosites. Those are local, are ones that their samples exit in other areas of the country and they are not unique. National geosites are ones that no similar sample is existed in the country and are unique nationally. International geosites are considered as the best sample of that type or one of the few phenomena of this type in the world; they had this chance that place in UNESCO geoparks' list that cause the growth of tourism in that country in international level and bring currency for that country.

Geotourism researchers divide geology phenomena according to the way of their formation and nature of different styles. We describe the grouping of Amrikazemi (2006) in the following:

Magmatism: it is every phenomenon that has relation with magmatic activities on the earth or in the earth including Maku basaltic flows, Damavand basaltic prisms, Bazman and Taftan volcanoes and etc.

Erosion: They are phenomena that create because of erosion or breakup in different ways like

caves and beautiful shapes via wind and water erosion in Oman Sea and Persian Gulf islands.

Tectonics and geostructure: Small and big phenomena related to tectonic activities like: faults, salt domes and etc.

Environmental and engineering geology: The geohazards are in this group including: subsidence and landslides. And phenomena related to ecotourism including: phenomena that more than geology specifications have natural attractions and are considered as attraction in ecotourism discussion (nature tourism) including: waterfalls and lakes.

Sedimentology: A large range of beautiful geology phenomena are in this group including travertine springs and glaciers.

Geoarchaeology: This group of phenomena has geology values more than geology specifications and often a historical background and its relevance with human activities bring geotourism values for them like aspects of ancient mining.

Moreover, some of these areas like salty domes, salty caves and their adjacent hot springs are considered as rare and uncommon geology phenomena that can be considerable for tourists via medical tourism (salt therapy, crystal therapy and etc.).

9. Geotourism and sustainable development

World Commission on Environment and Development defined sustainable development in the conference of "our common future" that was held in 1987 as: "a development that meet the needs of the current generation without hurting the needs of the future generation" (Khoshraftar, 2012). Sustainable development in the current changing world is born with a glance to 21 century. Sustainable development is a new era that concerns to politics, culture, economy and business simultaneously and emphasize on industrial, trade and economy growth.

Sustainable development is one of the most important accessories that have the main role in tourism programming since tourism development project often are according to the attractions and activities relevance with natural environment, geosites, cultural heritage and cultural works. Right now, tourism is considered as one of the most important ways of earning and is accounted as a considerable part of countries' exchange incomes. Therefore, countries that have diversity in the field of geomorphology and geology effects and register their potential geosites and geoparks in the universal heritage list of geoparks can be more successful in attracting tourism and resulting revenues of it.

Some parameters should be observed in geotourism that are summarized as:

- Decrease the negative effects on the nature and culture that finally can damage tourism areas.
- Emphasize on the importance of responsible business that is done with accompany of local authorities and people for meeting the local needs

and providing resulted benefits of maintenance from natural areas.

- Training the importance of protecting the nature to tourists.
- Emphasize on the necessity of zoning tourism areas and programming for tourism management in natural areas that are going to become geotourism poles.
- Emphasize on use of basic environmental and social studies like long-term monitoring program to assess and reduce the negative effects.
- Emphasize on infrastructures in harmony with the nature, minimal use of fossil fuels, protecting wildlife and native plants and harmony with cultural and natural environment of the area.

According to Broenland Commission, sustainable development is a development that meets the needs of the current generation without hurting the needs of the future generation. Ernest Hagel, the innovator of ecology states that sustainable development in the trends of development based on sustainable development has root in biology and ecology studies that are injected to physical, economic and social issues, later. With this definition, any extension in geotourism and applicable programs of the earth in areas with geology tourism capabilities can be an approach for sustainable development. According to what is said, sustainable development can protect the environment and its related constructions with use of concepts such as valuing, phenomena aesthetics and creating geotourism parks or geoparks for the next generations.

10. Effective elements on tourism industry management

A lot of elements are important in tourism development and interaction between them can shape tourism development. Three main elements in tourism development include: tourists, local people, and destination specification. In other words, guests, hosts and attraction are three main elements in tourism development (Alvani, 2006) (Fig. 1).

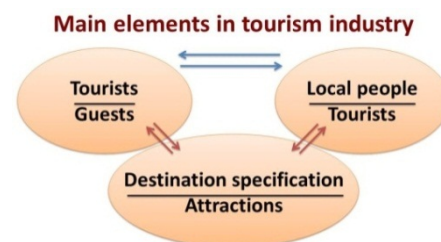


Fig. 1: Main elements tourism industry

According to damages that tourism development can have in different dimensions, it is recommended that regarding each program and project for create, development and expansion of tourism activity, first enough and comprehensive surveying is done and according to the available findings, conscious decisions are made to increase the expected results and decrease unexpected results. Governments have important and key role in related surveying and

programming. These programs can be found in parameters like necessary infrastructures and programming, monitoring, control and security.

Creating roads is one of the important necessary infrastructures for tourism development but it needs serious manipulation in natural environment that this program should associated with exact surveying with at least environmental costs. Governments should control tourism works of each natural environment with programming and supervision and limit negative effects as well as strengthening positive ones. For example, according to the programs, governments should program on tourism development of an area with the help of experts according to the priority framework and purposes and find which kind of tourism in a specified environment can expand with minimum possible damages. Meanwhile, governments should explain the necessary structures for evaluating the performance of economy actors in the environment and perform regulatory mechanisms for dealing with offenders. Creating the organization of environmental monitoring, training and using qualified personnel for it, developing regulations for legal action with natural environments' offenders are duties of governments. Monitoring system of the government should focus on activities of private sector and governmental units that are active in the field of tourism services to register the violations that endanger the health and safety of the environment and deal with them. Other duties of the governments are providing programs for security of tourist and tourism destinations that is one of the main factors in tourism development. Therefore, increasing foreign tourists has direct relation with equipment and expansion of some facilities. Expansion of infrastructures and facilities, improving health, improving communication lines are activities that help to improve tourism situation.

Generally some matters that are effective on geotourism and tourism industry development are:

- Amendment of restricted laws for entrance and exit of tourists.
- Creating confidence and security for tourists.
- Establishment of suitable roads for access to geosites and tourism centers.
- Advertisement and information about Iran's geotourism and tourism centers.
- Creating suitable residential and facilities.

11. Benefits of tourism development

Tourism development not only causes economic growth but also cause international relation development, peaceful coexistence and etc. In tourism's economic analysis, two coefficients are mentioned: coefficient of increasing the income and coefficient of increasing the employment. The coefficient of increasing the employment causes new jobs via tourism. Five kinds of employment for human resources (management and labor) are separable about tourism:

- Employment for infrastructure, airports, roads, security, health.
- Primary employment that mainly includes activities to provide related issues for doing the trip or during travel (tours and etc.).
- Employment in meeting the needs (hotel, transportation, restaurants and etc.).
- Software employment (insurance, banking, internet and etc.).
- Indirect employment that is more related to lateral production activities. Infrastructural facilities and activity in building hotels are in this group.

According to the above-mentioned matters, we can describe tourism works as followed:

- It is a source of income and employment like other export activities.
- It creates a chain of all servicing and economic activities.
- Natural landscapes and geosites have optimal utilization without changing their nature.
- It increases the demand for industries and crafts as well as activities that need more labor.
- To the extent that attracts tourists from outside national economic environment, it injects exchange incomes to the area.

12. Barriers and challenges in tourism industry development in Iran

We can classify obstacles, insufficiencies and challenges of tourism industry in Iran according to several important groups (Alvani, 2006).

12.1. Economic insufficiencies and obstacles

- Lack of support for investment in tourism industry
- Unsuitable economic policies
- Increase of tax, duties, insurance and etc. in tourism
- Lack of adequate support from private sector and encourage to investment in tourism sector

12.2. Social obstacles

- Low level of society's knowledge about the country's tourism attractions.
- Lack of facilities, health and medicine.
- Lack of suitable programming for filling tourists' leisure time.
- Legal and administrative weaknesses and barriers such as restrictive regulations of customs and issuing visa.
- Problems of transport and civil aviation.
- Legal problems and weakness of supportive rules.

12.3. Organizational and managing obstacles

- Weakness of management and programing in attracting tourism.
- Lack of organizational structure.
- Lack of principal and comprehensive programs as well as basic studies for tourism development.

- Existence of parallel organizations in tourism industry sector.
- Lack of organizational coordination for tourism growth and multiplicity of decision-making centers.
- Administrative obstacles in organizations related to tourism.
- Lack of skilled and expert manpower in tourism.

12.4. Researching and educational obstacles

- Lack of continuing and periodic education for training technical, administrative and educational personnel.
- Lack of effective and efficient research system in order to identify the needs of tourism sector.

12.5. Failure of equipment and welfare services

- Inadequate welfare system, services and accommodation in tourism industry sector.
- Lack of adequate supervision and effective controlling units in order to improvement, repair and maintenance.

12.6. Advertising and cultural obstacles

- Mental problems and negative thoughts and incorrect thinking about tourists.
- Applying irrational methods in dealing with tourists.
- Structural weakness in advertising and informing
- Lack of principal applying and correct methods in communication with tourists.

13. Conclusion

Beginning 21 century, tourism identifies as the century's unavoidable fact as well as one of the main landscapes of the human that make his future. One of the new necessities in sustainable development is geotourism and tourism. Sustainable geotourism strategy in today's world is a comprehensive approach that wants long-term growth of tourism industry without damaging effects on natural ecosystems and it is emphasized in the point that in tourism development, human is able to manipulate certain aspects of the environment in positive or negative manner. Natural tourism was considered free of any negative effects within over the years but with the increase of the tourists' number, irreparable damages are happened for the nature and cause a lot of concerns for supporters of the nature and therefore, it is named sustainable geotourism. Geotourism is one kind of tourism that can have the most coordination with sustainable development that has all environmental, cultural, social and economic dimensions. Access to sustainable geotourism principles is possible via coordination between its elements such as necessary infrastructures, education, protection and security in strategic and long-term programming. What is said shows that geotourism is a new approach in

retention of geology heritages and recognition of natural capital and ecology of the country and increase of public interest to protect of environmental phenomena causes programmers and administrators of development projects to change decision-making trend. Public outcry from some affairs of organizations like municipality in cutting trees, destroying the historical architectures and buildings and etc. shows this evidence that citizens unconsciously have a kind of friendship and interest towards their surrounding environment. In a larger scale, this interesting can expand to the earth's natural heritages and its geology landscapes. It should be noted that our survival depends on our environment. Without natural environment and with destroying its natural gifts, we create a condition for occurrence of natural disasters such as floods, land subsidence and etc. more than destroying environmental aesthetics and this is against the principals of sustainable development.

14. Suggestions

Solutions for tourism's development include:

- Identifying, studying and introduce of Iran's geological and geomorphologic attractions and increase of the country's geosites list.
- Introducing historical, ancient, cultural, therapeutic centers and etc. around geosites.
- Surveying the effective elements on geomorphological phenomena for protection and avoid of their destroying.
- Act for universal registration of Iran's talented geoparks in the list of UNESCO geoparks.
- Providing tourism infrastructures including access roads, welfare and accommodation possibilities, security, signposts.
- Introducing Iran's geological attractions to who are interested in tourism in national and international arena via advertising.
- Expansion of land tourism in tourism agencies by training the managers and staffs of these centers.
- Support of residents surrounding geosites and geoparks in holding welfare, shopping, entertainment centers and etc.
- Improve the culture and training natives of geosites' areas in providing guidance and suitable services to tourists.
- Creating tourism and geotourism fairs and introducing Iran's capabilities in this field in different parts of the country.
- Creating necessary fields for producing and providing local products around geosites.
- Creating national and international fairs and conferences for Iran-touring and introducing tourism capabilities and potentials.
- Allocating budget and protect of researchers that are active in this field.
- Complication of a comprehensive program for tourism industry's development.
- Improving tourism's culture.

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References

- Alvani SMP (2006). *Tourism management processes*. Publication office of cultural research, Tehran: 8-112.
- Amrikazemi A (2006). A look towards overall concept of Geopark, Geotourism and geology heritage and Iran position in this field. proceedings of twenty-sixth meeting of Earth Science, State Geological and Mineral Exploration, Tehran.
- Amrikazemi A (2009). *Atlas of Geopark and Geotourism Resources of Iran*. Geological survey of Iran publication, Tehran: 22-23.
- Amrikazemi A (2013). *Geoheritage Atlas of Iran*. Geological survey of Iran publication, Tehran.
- Dowling R and Newsome D (2006). Geotourism's issues and challenges. *Geotourism*. Elsevier, Oxford, 242-254.
- Frey ML, Schäfer K, Büchel G and Patzak M (2006). *Geoparks: a regional, European and global policy*. Elsevier, Ltd, Oxford: 96-117.
- Gates AE (2006). *Geotourism: A Perspective from the USA*. *Geotourism*. Elsevier, Ltd: 157-179.
- Hose TA (2006). *Geotourism and interpretation*. *Geotourism*, Elsevier, Oxford: 221-241.
- Khoshraftar R (2012). *Global network of geoparks*. Hagh Shenan Publication, Rasht: 21-22.
- Newsome D and Dowling R (2006). *The scope and nature of geotourism*. *Geotourism*. Elsevier Butterworth Heinemann, Oxford: 3-25.
- Sturm B (1994). *The geotope concept: geological nature conservation by town and country planning*. *Geological and Landscape Conservation*. Geological Society, London: 27-31.
- Yazdi A (2012). *A Study of Iran's Lut desert: Geomorphological and Geotourism Attractions*. Proceedings of Annual International Conference on Geological and Earth Sciences (GEOS2012) 3-4 December, Singapore: 35-41.