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# Core Competitiveness as the Fundamental Guarantee for Sustainable Development of Geo-parks

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**Abstract** With the booming development over the past years, geo-parks have achieved impressive progress together with a series of problems. Most importantly, geological tourism is not in prosperity. How to prosper geological tourism and achieve the sustainable development of geo-parks is the top concern of workers engaged in tourism geology in China. This article discusses the problem from the perspective of core competitiveness of geo-parks, particularly from three aspects of subject, object and medium, and puts forward methods to form the core competitiveness.

**Key words** Geo-park, Geological tourism, Core competitiveness, Sustainable development

## 1 Definition of Geo-park

Geo-park is the special natural region with geological significance, rare natural characteristics and relatively high ornamental value, taking geological relics and landscape as the subject and combining other natural scenery as well as humanistic landscape. As a place for sightseeing, leisure, health care and cultural entertainment with relatively high scientific character, Geo-park is also the key region preserving geological relics and ecological environment and the base for geological scientific research and popularization<sup>[1]</sup>. Geo-parks should have three main functions, namely preserving geological relics, popularizing scientific knowledge and carrying out geological tourism.

## 2 Status quo of Geo-park development and the problems

**2.1 Status quo** The Ministry of Land and Resources of the People's Republic of China formulated *Geological Relics Conservation Planning in China* (2000–2001) and *Work Guidance of National Geo-park Overall Planning* in 2000 and started the process of preserving geological relics through establishing Geo-parks. In 2001, the Ministry of Land and Resources founded the leading group and appraisal committee of national geological relic protection<sup>[2]</sup>. And establishment of geological parks was booming among various provinces and autonomous regions. The Ministry of Land and Resources approved altogether 138 national geological parks in four separate years of 2000, 2002, 2004 and 2005, after which the Ministry of Land and Resources reformed the approval procedure from the perspective of strengthening park establishment. Construction qualification of another 63 national Geo-parks was approved in 2009 and 2011 separately and these Geo-parks were required to complete establishment within three years and be con-

ferred with the title only after check and acceptance by specialists organized by the Ministry of Land and Resources. So far, China has boasted 26 global geological parks and 218 national geological parks and construction of Geo-parks has gradually formed a certain scale. With the prosperity of Geo-parks, various problems have emerged during the construction and development.

**2.2 Main problems** The first two functions of geological parks (preserving geological relics and popularizing scientific knowledge) are of social significance while the third one (carrying out geological tourism) is of economic significance. The first two functions can be basically achieved with the state and provincial financial investment in supporting geological relics conservation. However, promoting geological tourism is an essential issue universally existing in Geo-park construction in China. Economic profit is the key element for constant development of Geo-parks. If geological tourism cannot create promising economic benefit, local government will abandon the development of Geo-parks. This article will discuss the essential problem as to what is geological tourism and how to develop geological tourism.

## 3 Geological tourism

Geological tourism is a kind of tourist behavior taking geological tourist products as the main tourist feature and tourist behavior refers to the tourist activity in which visitors bring desire and purpose, which requires the planned geological tourist products to satisfy visitors' demand, not only knowledge demand. Therefore, geological tourism can never be knowledge intrusion, but the fascination of main products. Only when main products have enough attractiveness can geological parks form competitiveness, and further core competitiveness.

## 4 Core competitiveness of Geo-park

Competitiveness of Geo-park is the relative advantages of resources conservation ability, comprehensive reception ability and sustain-

able development ability of Geo-parks which are based on geological relics. It is also the ability of geo-parks to utilize geological relics to create tourist products. Core competitiveness of Geo-park means to offer visitors irreplaceable tourist experience which is superior than that provided by competitors, taking target market as orientation and highlighting geological tourist resources as well as providing different experience as the core. This article will analyze how to offer tourists irreplaceable experience from three aspects of subject, object and the medium.

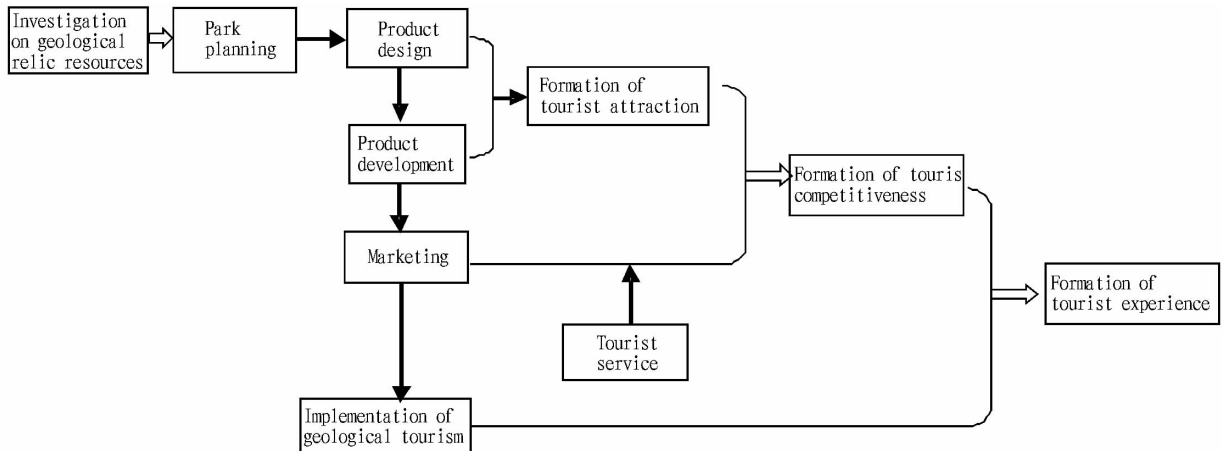


Fig. 1 The formation process of tourism experience in Geo-parks

**4.1.1** Controlling monopolistic geological relic resources and making them core competitiveness through planning. Monopolistic geological relics are much more likely to be irreplaceable tourist attraction, which, however, does not mean that monopolistic resources require no worries. The distinctive feature of Geo-parks is geological relics whose value depends in large measure upon the development of the earth while the tourist attraction of geological relics lies in the aesthetic value, appreciation value, uniqueness and how it can be accepted by people. Therefore, geological relics with high value do not necessarily have strong attraction. Golden Spike is the global geological relics while it cannot definitely be the core attraction of the park. The planning, design and even packing of Golden spike can highlight its rareness, uniqueness and aesthetic appreciation value, increasing entertainment, emphasizing participation and making it the tourist site that can be understood and accepted by tourists. People can acquire totally different experience from visiting Golden Spike, hence the distinctive tourist product of the Geo-park.

**4.1.2** Choosing proper tourist attraction to form distinctive competitiveness. The selection of tourist attraction is also a key element for distinctive competitiveness. The primary task of geological tourism is to design and create tourist attraction with geological features, which can be either natural landscape or artificial landscape. However, the tourist attraction must have strong attractiveness to visitors. The typicality, rareness, security and accessibility of the geological landscape should be impressive to people and create imagination as well as strong tourism demand. Tourists' real-time perception on the tourist sites can be further enhanced

**4.1 Subject** Geo-parks should have outstanding tourist attraction. Geological relic resources should be transformed to distinctive tourist products and special tourist attraction with delicate planning. The construction of geological parks is long-lasting and complete procedure, mainly including investigation on geological relic resources, park planning, product design, product development, marketing and implementation of geological tourism, during which product design and development are the most significant.

when the potential tourism demand becomes tourist behavior. And tourist attraction can be distinctive competitiveness, which is to be explained with cases of both success and failure.

Yuntai Mountain is outstanding in tourism and has created miracle which is regarded as Jiaozuo phenomenon. Geological relics in Yuntai Mountain are mainly Yuntai landforms which have been formed by neotectonic movement under the background of rifting. Neotectonic movement has formed Taihang Mountainous blockgebirge and caused segregation and cracking of extremely thick clastic rock and carbonate rock formation of approximately level formed under Paleoproterozoic and Paleozoic ocean environment, creating the typical Yuntai landforms of magnificent mountains, interleaving gorges and peak valleys as well as cliff walls. Gorges, cliff walls and interspersing water are the main sight-seeing subjects of Yuntai landforms. Yuntai Mountain has fully harnessed Yuntai landforms as the tourist attraction and refined the landscape to be in accordance with Yuntai landforms as the tourist image as well as propagation slogan. Visitors all feel impressed by the gorge landforms and water landscape. Red-stone Gorge, Laotangou, Xiaozhaigou and Zhuyu Peak reflect tourists' imagination on Yuntaishan landscape. Real-time perception has been constantly enhanced during the sighting-seeing to form unforgettable tourist experience. The proper selection of tourist attraction brings excellent conditions for geological tourism, making Yuntai mountain a shining pearl of Taihangshan Mountains.

Xixia dinosaur relic park, as the main tourist site in Funiu Mountain Global Geo-park, is an artificial geological tourist park. Dinosaurs are mysterious to people and have strong attractiveness

to the tourists. However, dinosaur fossils are not attractive themselves and most dinosaur relic areas lack natural tourist products with high attractiveness. Therefore, the charm of dinosaur relics lies in the secret of the species itself as well as the secret of the dinosaur age. Xixia dinosaur relic park exactly displays the mystery of dinosaur species and dinosaur age, hence the astonishing development.

Wangwu Mountain, holding excellent geological tourism advantages, the reputation of "the king of the mountains" in Tiantan Peak and the incomparable Fangshan landforms, has not achieved promising tourism. Wangwu Mountain has not taken good advantage of the rare landscape product when choosing core tourist attraction, but constantly publicized the spectacular cave of Taoism and hometown of the foolish old man trying to remove mountains. Therefore, visitors focus their attention on finding these relics and are disappointed at the real-time perception. The error in selecting tourist attraction leads to the failure in tourism of Wangwu Mountain while the incomparable Fangshan landforms have been gradually forgotten.

Songshan Mountain, as the key base for geological research in China, is regarded as geology dictionary and geology cradle. The theme of geological tourism in Songshan Mountain is also creative and impressive, known as "Five-generation Living Together and Three Big Movements". However, geological tourism there is not in prosperity. Firstly, Shaolin Temple, as a humanistic tourist attraction, has a long history and shadows the geological tourism in Songshan Mountain. Secondly, tourists cannot find the geological tourist attraction of Songshan Mountain and have no idea about what to visit while Shaolin Temple as a humanistic attraction satisfies visitors' explicit tourist requirement. Inappropriate tourist attraction and slogan are the main factors restricting the development of geological tourism in Songshan Mountain.

**4.2 Object, namely market advantage of Geo-park** Market advantage includes the traffic advantage and location advantage. Location condition determines the amount of potential visitors while traffic advantage means better accessibility to the park. The ability of transforming potential visitors to the real visitors depends on these two factors. Parks with advantageous location and convenient traffic condition have superior tourist advantage to those with remote location, inconvenient traffic condition and low accessibility.

Zanda Clay Forest National Geopark of Tibet, located in the top of the world – Zanda county of the Ngari region in the Tibetan Plateau, owns the world-famous Guge Kingdom and Zanda clay forest. The core area of Zanda clay forest reaches 500 km<sup>2</sup> and it is the only Neogene loess landform formed under the permafrost environment in China. The magnificent total forest landscape, exquisite and various individuals, abundant scientific value and high aesthetic value make the Zanda clay forest superior to other clay forests in China, such as Yuanmou clay forest (42.9 km<sup>2</sup>), Datong clay forest (1.06 km<sup>2</sup>) and Jingdong clay forest (0.4 km<sup>2</sup>). However, traffic is inconvenient in Tibet with only three high-

ways, namely Qinghai-tibet highway, Yunnan-tibet highway and Sichuan-tibet highway and one railway. Besides, only national road 219 (Lhasa – Yecheng) and the newly-opened three flights in one week in the Ngari airport can reach Zanda. Remote location and inconvenient traffic hinder the tourism there. Although Zanda county owns considerable resources, the total amount of tourists in a year cannot surpass 100 000<sup>[3]</sup>.

### **4.3 Medium including tourist service as well as promotion and marketing and concerning how to offer tourist attractions to the middle force of visitors**

**4.3.1 Tourist service.** Tourist service means the ability of Geoparks satisfying tourists' demand with certain reception equipment which includes catering, accommodation, leisure, entertainment and traffic during the whole tourist procedure. Tourist service is the invisible and important product purchased by tourists. When there is no obvious difference in tourist products in two tourist sites, tourist service as the appendant will exert great effect. That is to say, high service quality, the perfection of equipment and convenient traffic will be of great significance when tourists make selection of destination<sup>[4]</sup>.

**4.3.2 Marketing strategy.** The ultimate goal of Geo-park marketing is also to satisfy tourists' demand. Due to the specialty of geological parks, visitors with different age, gender, occupation and education in particular have different requirement on visiting, entertainment, study as well as research, which requires the marketing to be visitor-oriented, dividing target market in detail. Based on the detailed target market, different marketing strategies should be adopted to fully display the differentiation and uniqueness.

Currently, the establishment of geological parks is mostly conducted by the government, therefore integrated marketing strategy of "combining government image dissemination and practical operation of the enterprise" should be adopted<sup>[5]</sup>. The government should be responsible for image dissemination of Geo-parks and enterprises investing in Geo-parks should carry out practical marketing strategy in an attempt to achieve marketing competitiveness with outstanding marketing experience and high-efficient distribution network. Zhangye is an important town on the ancient silk road. However, it is a remote and unknown place to the mainland. Zhangye national Geo-park is also newly approved with establishment qualification and unknown to the general public. "The 27th Annual Meeting of Geological Society of China Tourism Geology and Geo-park Research" organized by Zhangye municipal government was held in August, 2012. Experts and scholars in the meeting were all impressed by the distinctive Danxia landform and colorful hills. The meeting largely increased the popularity of Zhangye, promoted the attractiveness of Zhangye national Geopark and changed the old image of "being remote and deserted".

## **5 Conclusions**

Long-lasting development of geological parks must depend on the distinctive core competitiveness and the economic profit created by

species enhanced. The diversity index and uniformity index didn't change. As Wang Zhenghua *et al.*<sup>[13]</sup> concluded that the increase of resource density, improvement of species abundance and diversity doesn't mean the improvement of diversity. On the contrary, the rising diversity is caused by species abundance and resource density<sup>[13]</sup>. Scholars in China and abroad studied the similarity index of CPUE<sup>[12]</sup> and Jaccard<sup>[17]</sup>. The diversity of species improved to different degrees. The complicated group structure was stable as time went by<sup>[14-20]</sup>.

Through the study on the changes of dominant species before and after the reef being dropped, it was proved that squilla became the dominant species in the reef area. Therefore, the quality of design determines whether the fish reef can meet the expectation. During the design process, the actual geography and hydraulic situation were considered<sup>[21-22]</sup>. Both the background investigation and the tracking investigation applied the trawl and grill method, which reduced the selection of nets and improved the accuracy of evaluation. However, both methods were destructive. Modern technologies<sup>[24]</sup> should be applied to reduce destruction. Therefore, in future, the tracking investigation should be practiced more often so as to be more accurate.

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(From page 110)

developing geological tourism. Core competitiveness of Geo-parks is to be formed with the organic combination of subject, object and medium, forming stable competition advantage, being the key element of carrying out geological tourism and achieving the sustainable development of geological parks.

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