

Research on the Management Model of China's Geopark in the Perspective of Comprehensive Value

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Abstract: The value of geopark include natural value, ecological value, scientific value, cultural value, tourism value and location value, which can be further divided into core layer of natural and ecological value, intermediate layer of scientific and cultural value, and peripheral layer of tourism and location value. The three value layers together promote the geopark functions of environmental protection, humanistic service, and economic development. The value-function relation model of geopark is established, and the comprehensive value oriented management system is formed on that basis, which contains two major issues, three key links, four management sectors, five shareholders and six categories of value. At last, the suggestions on giving full play to the comprehensive value of geopark are put forward.

Introduction

Geopark has various types of value. Farsani (2011)^[1] thought the development of geopark can improve employment, generate new economic modes and brings extra income and profits, especially for rural areas. Härtling (2010)^[2] pointed out that besides natural value, geopark contains value in tourism, education and scientific research areas. Many other scholars studies geopark from the perspective of local communities (Azman, Halim&Liu, 2010; Azman, Halim&Liu, 2011; Burlando, Firpo, Queirolo, et al., 2011; Halim, Komoo, Salleh, et al., 2011)^[3-6]. In the management mode, Han Yu (2013)^[7] pointed out that compared with the United States, the management of world geological park in China is relatively backward with imperfect management system. Danlin Hu (2010)^[8] studied the operating agencies, transfer mode, transfer price and income distribution of the National Geopark, and established a highly efficient operating mechanism by introducing market tools.

Geopark is an important part of the ecological civilization in China. Its healthy development is conducive to ease the contradiction between human and nature. With the “innovation, coordination, green, open and sharing” ideology, it's necessary to study the comprehensive value, so as to propel the environmental, social, economic and ecological benefits of the geopark.

Value-function relation model of geopark

Values of geopark and their relations

Geopark has such values as natural value, ecological value, scientific value, cultural value, tourism value and location value. These 6 categories of value are closely related to the three

functions of geopark, which are environmental protection, humanistic service, and economic development. The corresponding relations are shown by Fig. 1.

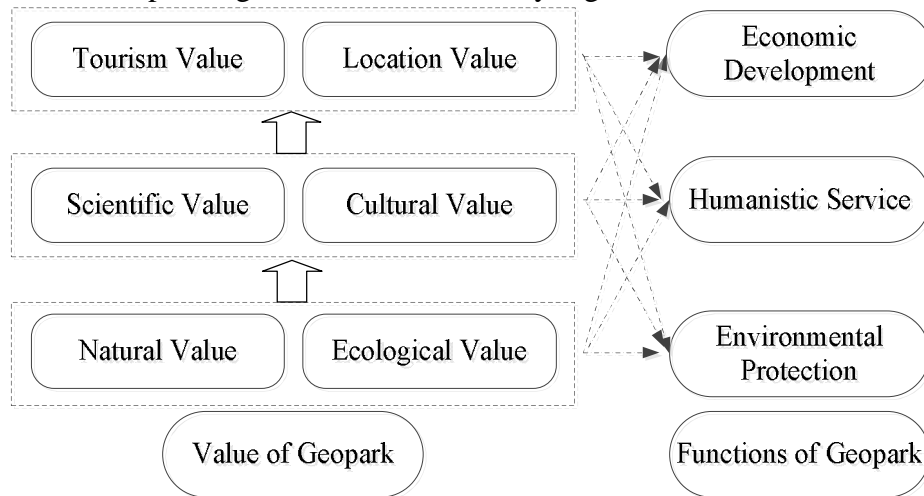


Fig. 1 The value-function relation model of geopark

In Figure 1-1, the natural value and ecological value is the intrinsic or core value of the geopark, which show the direct link with nature. With this feature the geopark naturally plays the protection of geological heritage resources, natural landscape resources and biological resources, corresponding to the environmental protection function.

The scientific value and cultural value is the interaction between the core value of geopark with human beings, which meets the spiritual and cultural needs of human, hereby we call it the intermediate value, corresponding to the humanistic service function.

The tourism value and location value represent the interaction between the first two value layers and the social economy, which creates wealth and promote local development through the tourism and related industries, hereby we call it peripheral value, corresponding to the economic development function.

Relations between the three value layers of geopark

In the three value layers, the natural and ecological value forms the core value layer of geopark. Based on that occurs the intermediate layer, and it shows its scientific and cultural value, which relates with the human spiritual world. Then on the basis of the first two value layers the geopark derives tourism value and location value, which is associated with human material needs, or demands for economic development.

As the geopark is mainly the protection area for natural resources, its location function is only a small part of the whole national economy growth. Besides, the overheated development of tourism may lay stress to the natural heritages and thus should be controlled within a rational amount. In this sense, we may name it the peripheral layer of geopark value.

From the above analysis it can be seen that the core, intermediate and peripheral value layers follow the bottom-up development mode, and the importance degree decreases from internal to external.

Relations between the value layers and functions of geopark

In the relations between the three value layers and the three functions of the Geopark, the value of each layer is related to each function. The core value layer directly corresponds to the function of environmental protection. Such function is realized through delineating a certain protection area, such as the core preservation zone within a national park or Level A preservation zone in a geopark. Human beings are prohibited to enter in the preservation area for tourism or habitation. At the same time, the reparation work is carried out in case that the native fragile geological hiretages and

ecological environment is damaged or polluted. The intermediate value layer also has corresponding relations with the environmental protection function through promoting public awareness of environmental protection by popularizing the knowledge of earth science. On one hand, they understand our mother earth contains tremendous natural and ecological value, on the other hand, they know the correct approach to treat the nature by getting the sense of value cognition. The peripheral value layer also corresponds to the environmental protection function in two aspects. For tourists, their awareness of environmental protection can be raised through recreational experience; for local residents around the geopark area, they will also treasure the auspicious natural resources through the development of tourism industry which brings a good life to them. In this way, the natural sites can be protected from the source.

The function of humanistic service directly corresponds to the intermediate value layer of scientific and cultural value. This function is naturally based on the core value layer, as geopark stimulates human's interests in exploring the planet in which they're living, including both history of natural heritages and human relics. Only by knowing the past can we better foresee the future, and create splendid science and culture for present. The evolution of human civilization is closely related with the natural background, which also enriches the elements for cultural industries such as movie, documentary, novel, songs, painting, photography, etc. In this sense, the core value layer is the foundation for the humanistic service of geopark. The periphery value layer contributes to the this function through interaction between visitors and the natural and cultural heritages.

The function of economic development directly corresponds to the peripheral value layer of tourism and location value. Tourism development will promote the tourism-related industries such as transportation, catering, accommodation, small commodities, agriculture tourism, etc. Therefore it can address the employment issue for local people and improving their quality of life in the process of providing quality services to visitors. This function is naturally based on the core value layer. Poor natural landscape will not attract tourists. Meanwhile, the intermediate value layer of scientific and cultural value also promotes this function. The academic and scientific research and popularization activities, as well as its unique cultural symbols can be a special way of publicity both at home and abroad, attracting more high-level academics and culture hobbyists to come.

Complementarity of different value layers of geopark

Within the same value layer, the two categories of value can complement each other. For example, in the core value layer, the natural and ecological value can fulfill the environmental protection function in a complementary way. If both have low value, then attention should be paid to the controllable value. If the natural value is fixed, more efforts shall be put to give play to the ecological value. If the value of culture is stable, then the value of scientific research shall be emphasized. If the tourism value is hard to explore, then more stress may be laid on the local development first.

Among the three value layers, if the two value factors in the same layer are both low, and the value factors are high in the layer closer to the core value, then we shall pay attention to give play to the high value factors. But if the situation is on the contrary, then we shall focus on the role of the regulatory functions of the government to vigorously promote the core value of the geopark.

It can be seen that the six categories of the value of geopark, and the three value layers are complementary to each other. Geopark is like a wood bucket constituted by the six boards of value. From the level of the value it's very easy to judge whether the functions of geopark is fully exerted. The purpose is to give full play to the function of geopark through effective management measures.

Comprehensive value oriented management system

Main conception

The purpose of comprehensive value oriented management is “to innovate and develop through protection and inheritance; to protect and inherit through innovation and development”. The main conception is shown by Fig.2.

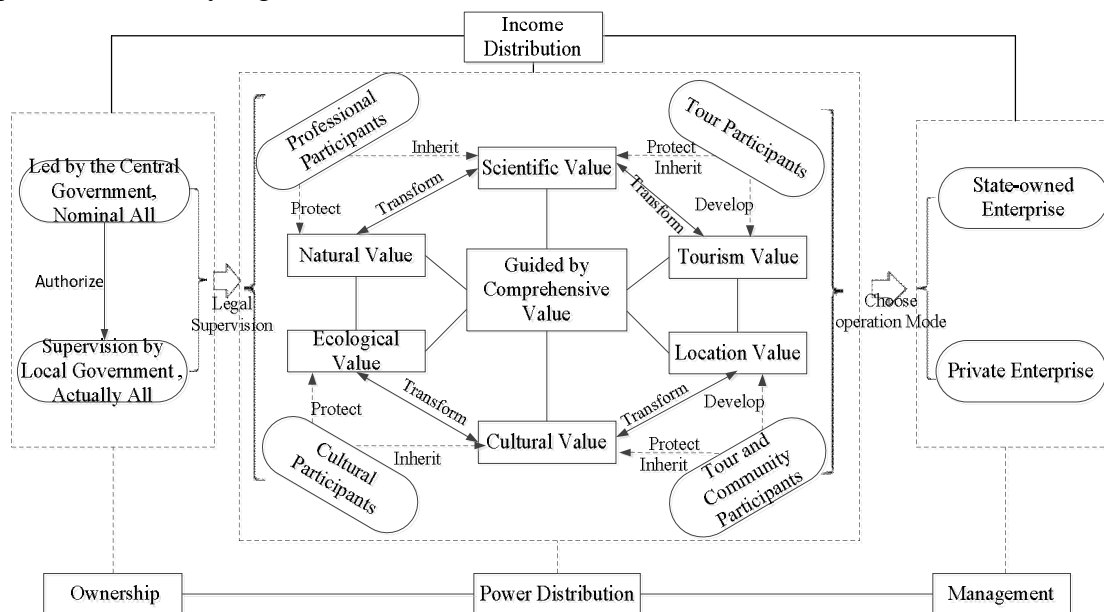


Fig. 2-1 Comprehensive value oriented management system

In the above comprehensive value oriented management system, there are two major issues, three key links, four management sectors, five shareholders and six categories of value. The two major issues include power distribution and income distribution. Three key links are ownership, management and social responsibilities. Four management sectors refer to the central government, local government, state-owned enterprises, and private enterprises. Five shareholders involve professional participants, tourism participants, cultural hobbyists, local residents (community), and public interest groups. Six categories of value are natural value, ecological value, scientific value, cultural value, tourism value and location value.

Value-centered geopark management

In the process of geopark management, the evaluation of its comprehensive value shall be conducted for better examining the total performance of the geopark. For improvement, we shall appropriately play the role of different stakeholders in order to achieve coordinated development and create the optimal value of the geopark. The six categories of value constitute the three management links, the natural-ecological management link, the scientific-cultural management link, and the tourism-location management link. Each link is perfectly realized through the participation of five types of shareholders.

The professional participants include those engaged in professional research experts and scholars. Through the study of natural heritages and ecological resources, they can promote the scientific popularization value through the making of science signage, development of databases and electronic guide system, designing museum, writing academic papers and books on popular science, etc.

The tourist participants include domestic and foreign tourists, and visitors from schools and research institutes. In the tour they obtain knowledge and cultural experience, which raises awareness of environmental protection. At the same time, as self-media they will promote this

concept to more people and indirectly enhance the tourism value and cultural value.

The cultural hobbyists include cultural media practitioners, arts groups, etc. They create excellent film, music, drama, poetry, painting, literature, etc. by exploring natural and ecological beauty, which achieve very good inheritance and protection efficacy.

The local residents or communities obtain economic benefits and enhance the visibility of natural scenic spots, thus better promote the sound development of the local ecological economy.

In addition, the public interest groups voluntarily take part in the park environmental publicity activities, or donate funds to boost geological heritage protection and local community development. They are the good partners for healthy development of the geopark.

Conclusions

(1) The value-function relation model of geopark is established, including six categories of value forming three value layers, and three functions of geopark. The value layers follow bottom-up development mode and each could play positive effect on the three functions of geopark.

(2) The evaluation of comprehensive value shall be conducted for examining the overall performance of the geopark. From the level of each category of value the performance of geopark can be judged.

(3) The comprehensive value oriented management system is established, including two major issues, three key links, four management sectors, five shareholders and six categories of value.

(4) The role of different stakeholders shall be appropriately played in order to achieve coordinated development and create the optimal value of the geopark.

References

- [1] Farsani N T, Coelho C, Costa C. Geotourism and geoparks as novel strategies for socio - economic development in rural areas[J]. International Journal of Tourism Research, Vol. 13(2011), p. 68-81.
- [2] Härtling J W, Meier I. Economic effects of geotourism in geopark TERRA. vita, Northern Germany[C]//The George Wright Forum. George Wright Society, Vol. 27(2010), p. 29.
- [3] Azman N, Halim S A, Liu O P, et al. Public education in heritage conservation for geopark community[J]. Procedia-Social and Behavioral Sciences, Vol. 7(2010), p.504-511.
- [4] Azman N, Halim S A, Liu O P, et al. The Langkawi Global Geopark: local community's perspectives on public education[J]. International Journal of Heritage Studies, Vol.17(2011), p. 261-279.
- [5] Burlando M, Firpo M, Queirolo C, et al. From geoheritage to sustainable development: strategies and perspectives in the Beigua Geopark (Italy)[J]. Geoheritage, Vol. 3 (2011), p. 63-72.
- [6] Halim S A, Komoo I, Salleh H, et al. The Geopark as a potential tool for alleviating community marginality[J]. Shima: The International Journal of Research into Island Cultures, Vol. 5(2011).
- [7] Yu Han, Liu Xin, Li Bo. Insufficient Management of China's geopark from the Perspective of Achievements in United States[J]. Journal of Land & Resources, Vol. 2 (2013), p. 27-30.
- [8] Hu Danlin. Study on the Operation and Management Mode of National Geopark[D]. Chengdu University of Technology, 2010.