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GEOTOURISM CURRENT STATE AND FUTURE PROSPECTS: A CASE STUDY IN THE CAO BANG UNESCO GLOBAL GEOPARK, VIETNAM

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Abstract: Cao Bang Geopark is one of three UNESCO heritage sites in Vietnam, with unique geological, landscape and cultural properties of high value to tourism. This study aims to provide a better understanding of the potential for geotourism development in Cao Bang Global Geopark, thereby proposing reasonable development strategies in the future. The research using the multi-criteria assessment and SWOT analysis tool found that Cao Bang Global Geopark has a high ability to attract tourists and exploit large tourism resources globally. However, the infrastructure, technical facilities, human resources and investment capital for geotourism are still limited and need to be improved. The research results can be considered useful references for academia and managers in finding strategies and solutions for sustainable geotourism development at Cao Bang Geopark in the future.

Key words: geodiversity; geoheritage; geopark; geotourism; UNESCO Global Geopark Cao Bang

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INTRODUCTION

Tourism is now an important economic sector of many countries worldwide due to its rapid development speed and high economic efficiency (Tue et al., 2018). Among the types of tourism, geotourism has long been considered a popular thematic form of tourism. Newsome and Dowling (2010) described geotourism as a form of tourism that specifically focuses on geology and landscape. Unlike ecotourism, which by definition can only take place in natural areas, they argued that geotourism can occur in either natural or human modified environments. It is viewed as promoting tourism to geological sites (geosites), the conservation of geological diversity (geodiversity), and an understanding of earth sciences through appreciation and learning. This is achieved through independent visits to geological features, use of geological trails (geotrails) and view points, guided tours, geo-activities and patronage of geo-site visitor centres (Dowling, 2013). Since the 1990s, geotourism has been discussed and evaluated by many researchers and measures to use and improve the exploitation efficiency of this good type of tourism. "Global Geopark" is a natural area with clear geographical-administrative boundaries, containing a collection of geological and landscape heritage of international stature of scientific, educational, sustainable development, along with other values of biodiversity, archeology, history, culture and society and has a large area to develop the local economy, through the development of tourism and other ancillary services recognized by UNESCO (Justice, 2018).

Cao Bang Geopark is Vietnam's second global geopark, covering an area of more than 3,390 square kilometers, covering the entire administrative boundary of Ha Quang, Trung Khanh, Ha Lang and Quang Hoa districts and part of the area Hoa An, Nguyen Binh and Thach An districts. It is an area with over 500 million years of development history with many unique natural features, especially geological values. The park has a very complex and diverse terrain, mountainous climate, diverse landscape ecosystems. At the same time, this is also where the Tay, Nung, and Mong Dao, San Chi, Lo Lo, Hoa, Kinh ethnic groups live with many unique historical relics, tangible and intangible cultural heritages (Thuy, 2022). These are very important geotourism strengths that Cao Bang needs exploitation in local socio-economic development.

The research objective is to evaluate the potential for geotourism development at Cao Bang Global Geopark by the multi-criteria assessment method and SWOT analysis tool. The research results are the basis for proposing orientations for sustainable and effective exploitation of the geotourism potentials of Cao Bang Global Geopark in the future. The study also presents a method of the comprehensive assessment of geotourism resources in a locality that can be applied to research for other potential areas in Vietnam. Therefore, three research questions must be addressed:

1. To evaluate the overall potential for geotourism development in an area, what criteria?

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2. What is the potential and extent of Cao Bang Global Geopark for geotourism development?
3. What strategy should be applied to effectively and sustainably exploit tourism potential in Cao Bang Global Geopark?

LITERATURE REVIEW

Geotourism is one of the newest concepts in recent decades in tourism research (Tessema et al., 2022). It has become an essential resource for economic and social development at the local, regional and international levels (Ruban, 2015), and its popularity is overgrowing. Dowling (2006) defines geotourism as "sustainable tourism with a primary focus on experiencing the Earth's geologic features in a way that fosters environmental and cultural understanding, appreciation and conservation, and is locally beneficial. Geotourism product protects, communicates and promotes geoheritage, helps build communities and works with a wide range of different people." Meanwhile, Hose (2012) defines geotourism is "the provision of interpretative and service facilities for geosites and geomorphosites and their encompassing topography, together with their associated in situ and ex situartefacts, to constituency-build for their conservation by generating appreciation, learning and research by and for current and future generations." Martini et al. (2012) definition: "Geotourism allows tourists to know the local geology but also to better understand that this geology is closely related to all the other assets of the territory, such as biodiversity, archaeological and cultural values, gastronomy, etc."

Parallel to the development of geotourism is the establishment of geoparks in many countries of the world. The concept of geopark has been diffused since 1996 (Zouros, 2012) and was also supported and endorsed by the Division of Earth Science at United Nations Educational, Scientific and Cultural Organization (UNESCO), which proposed a program named the "UNESCO's Geoparks Programme" (Eder, 2004; Zouros, 2012). According to a definition proposed by UNESCO, a geopark is a unified area with geological heritage of international significance. Geoparks are not new forms of nature protection as they are usually established based on the already existing forms, e.g., national parks or landscape parks. At present, geoparks are the basis for the development of geotourism, i.e., "a knowledge-based tourism, an interdisciplinary integration of the tourism industry with conservation and interpretation of abiotic nature attributes, besides considering related cultural issues, within the geosites for the general public (Hose, 2012). In recent decades, geotourism research has experienced growth around the world and will continue to be prominent in the future (Duarte, 2020). Most geotourism studies between 2012 and 2018 have been carried out in Europe (mainly in Italy and Poland) Asia (mainly in China and Iran), and South America (mainly in Brazil) (Ruban, 2015; Ólafsdóttir, 2018; Matshusa et al., 2021). Duarte et al., 2020 analysed the countries with the most publications on geotourism and development (2007-2018). The country with the most geotourism studies was Brazil, with 17 articles published, followed by Australia (16), Italy (14) and the UK (13). Other countries with less than 10 documents published were the USA (8), Poland and Portugal (7 each), France and Malaysia (6 each) and Serbia (5) (Matshusa et al., 2021).

For the research direction on assessing the development potential of geotourism, there have been many studies that can be mentioned, such as Pralong (2005), Reynard et al. (2015), Štrba et al. (2015), Brilha (2016), Martins et al. (2018) and Kubalíková (2019). In general, these studies have proposed assessment methods (including both qualitative and quantitative) for the potential for geotourism development, but they have been limited to an assessment of particular geological or geomorphological sites. For larger areas, studies are typically evaluated by GIS-based analytical methods, such as those of Reynard (2005), Serrano (2007), Pellitero et al. (2011), Pereira et al. (2013) and Zwoli´nski et al. (2018). However, these studies often focus on geological heritage management or impacts on geological conservation without exploiting economic and cultural factors related to tourism development. Meanwhile, to realize the potential for geotourism development in an area, it is necessary to carry out a detailed assessment of the resource types (natural and human) and the additional conditions and readiness to welcome them receive tourists from the area. For the study area, Vietnam in general and specific areas in the territory of Vietnam in particular, there are very few research n geotourism. Compared to other countries, Vietnam is still lagging in geotourism research. It shows that research on geotourism in Vietnam is influenced mainly by western theories. However, due to cultural, political, and historical differences, Western geotourism theories cannot fully explain the factors affecting the development of geotourism in different regions in developing countries like Vietnam. Therefore, it is necessary to find criteria to evaluate the aggregate geotourism potential suitable to the conditions in Vietnam. This study can also improve the knowledge of geotourism in Vietnam, which is a valuable reference for further studies.

STUDY AREA

Located in the northeast of Vietnam, Cao Bang Geopark is about 300km from Hanoi has a convenient location for attracting domestic and international tourists. The Geopark has a road and waterway system adjacent to China, and many tourist attractions are located near the Vietnam-China border. This borderline is up to 333km long with many pairs of border gates, creating an advantage in attracting international tourists from the large Chinese market. In addition, the road network adjacent to Bac Kan, Lang Son and Ha Giang creates favorable conditions for Cao Bang province in developing linkages and attracting tourists from key tourist areas in the region Red River Delta and Northeast Coast.

Cao Bang UNESCO Global Geopark has many values for geotourism development, specifically as follows:

Geomorphological value: Studies show that Cao Bang experienced a complex geological development history, extending over 500 million years from the Paleozoic to the Cenozoic (Thao, 2000; Thanh et al., 2005; Dzung, 2020). That long-term development has created unique features and exceptional geological values for Cao Bang province. This area has many individual geological heritage sites with diverse topography and limestone landscapes. Scientists have discovered, evaluated, and proposed to rank over 130 unique geological heritage sites with rich and varied limestone terrains and landscapes, such as stone towers and cones, valleys, caves, river and lake systems, and underground caves (Thien and Phuong, 2021). In addition, there are many other types of geological heritage, such as paleontological fossils boundaries between geographical units. It can

be said that geological conditions are the core factors that make up the uniqueness and difference of the Central Park Geopark, containing scientific, cultural, and aesthetic values... attracting tourists scientists and tourists come to this land (Dzung, 2020).

In terms of space, the UNESCO Global Geopark Cao Bang is divided into three quite different areas with different geological features, including a limestone area in the east, a mountainous area in the west, and the middle is plains (CBPPCb, 2021). The limestone area in the east, the site in the west, and a part of the delta area are the most valuable for geological tourism activities. The limestone area in the east accounts for more than 60% of the size of Cao Bang Geopark and here has gathered the most unique and complete features of a tropical karst evolutionary cycle entire hot and humid climate from the linear limestone terrain of the early stage, the conical limestone terrain surrounding the round, deep, closed valleys of the early stage, to the towering limestone terrain scattered over the mountains open valley, long, wide, flat, rich in both soil and water of the adult stage. Finally, the landscape remains in the form of remnants of the above limestone towers, gradually disappearing into small ridges on the wings karst field with many rivers, streams, and lakes. Suppose Dong Van Karst Plateau Geopark is famous for its karst terrain, mainly in its infancy and early stage. In that case, Cao Bang is notable mainly for its geographical karst formations in the mature background and remnants form spectacular landscapes, such as Nguom Ngao grotto, Bat cave, Nguom Phuc grotto, Ban Gioc waterfall and Thang Hen lake (CBPPCb, 2021). The western area with mainly mountainous terrain is composed of sandstone, siltstone, and claystone mixed with little limestone and especially has quite a lot of igneous rock. The Phja Oac is nearly 2,000m high, the highest of Cao Bang Geopark, made of this rock. Under the influence of leaching and erosion processes, the stones mentioned above have created the soft and gentle mountainous terrain in the western region, which is quite different from the rugged and rugged limestone terrain in the eastern region. And it is the interaction between these rocks has produced in the Phja Oac, Phja Den area many types of minerals, such as gold, tin, tungsten, fluorite, uranium (Dzung, 2020; CBPPCb, 2021).

Historical value: Since the early twentieth century, archaeologists have discovered dozens of sites from the Old Stone Age and Neolithic Age to the Metal Age in Cao Bang. Many places have been surveyed and excavated, and thousands of artifacts have been collected at Cao Bang Museum, proving that Cao Bang is one of the cradles of prehistoric people, a land with a rich cultural tradition culture and long history. The relics of Au Lac period in Cao Bang are found in the ruins of Ban Phu citadel in Cao Bang city. In addition, there are many relics of different historical periods, from ancient, middle to near and modern. According to statistics, the Cao Bang Geopark area has more than 93 ranked cultural and historical relics. There are three national monuments, especially Pac Bo Special National Monument and Tran Hung Dao Forest 1950 Border Victory Site Historic Site (Thien and Phuong, 2021).

Cultural values: Cao Bang is a diverse and rich cultural region with the cultural harmony of many ethnic groups: the Tay and Nung live in the valleys, the Dao live in the mountains, and the Mong people live in the valleys. Kinh, Hoa and San Chi are ethnic groups living together in the high mountains. They have traditional cultural heritages to contribute to creating unique and unique cultural values about the site costumes, festivals, traditional arts, folk art, dishes with culinary, aesthetic, and humanistic values, and craft villages. The tradition is still handed down the handicrafts such as forging, incense making, and paper-making.

Table 1. Summary of criteria for assessing geotourism potential

	1	2	3	4	5
A. ABILITY TO ATTRACT VISITORS					
1. Attractiveness					
- Geological history	Small participa-tion at local level	Moderate participa -tion in local level	Great participation in local level	Moderate participa-tion at regional level	Great participation at regional level
- Diversity of landscape	1	<3	<5	<10	>10
- Representative	Not at all	Low	Medium	High	Unique
- Types of tours that can be organized	1	<3	<5	<7	>10
2. Safety					
- Ecologically safe	Not at all	Low	Medium	High	Very high
- Society's vices	-	-	-	-	Not at all
- Disease, pollution	-	-	-	-	Not at all
3. Connectivity					
Number of nearby resource points	0	<2	<3	<4	>5
4. Infrastructure and Tourism technical facilities					
- Synchronism	Not at all	Low	Medium	High	Very high
- Convenience	Not at all	Low	Medium	High	Very high
- Accessibility	Not at all	Low	Medium	High	Very high
B. ABILITY TO EXPLOIT					
1. Seasonality					
- Number of days that can be organized	<100	<150	<180	<250	>250
2. Sustainability					
- Conservation level	Totally damaged	Low	Medium	High	Intact
- Resilience	Not at all	Low	Medium	High	Very high
- Possibility of existence	<10	<15	<50	<100	>100
3. Capacity					
- Moment capacity	<50	<100	<150	<250	>250

Biodiversity values: As the second geopark after Dong Van Karst Plateau, Cao Bang UNESCO Geopark contains almost intact and diverse natural and artificial ecosystems, predominantly flora and fauna rich diversity. Cao Bang has

ten different ecosystems belonging to 2 groups: natural and artificial ecosystems. The province's forest area is 372,908.24 ha, accounting for 55.59% of the natural area. The area of natural forest ecosystems located in conservation zones and biodiversity corridors is planned to be 44,353.21 ha (accounting for 6.62% of the total forest area). The most critical value in biodiversity is Phja Oac - Phja Den National Park (CBPPCa, 2015).

RESEARCH METHODOLOGY

From the fact of Cao Bang Geopark, after reviewing the current state of resources, we realize that the park's resources for geotourism are in a potential aspect. Therefore, in this study, we apply the "multi-criteria assessment" method combined with the expert method to assess the value for exploitation and the ability to develop geotourism activities. Based on consulting 05 experts (including 02 experts from the Vietnam National Administration of Tourism, 02 experts from the Institute of Geography and 01 expert from the Department of Culture, Sports and Tourism of Cao Bang province), we use 02 groups of criteria, including (i) the group of criteria of ability to attract visitors (04 criteria: attractiveness, safety, connectivity and infrastructure - tourism technical facilities); and (ii) the group of criteria on exploitability (03 criteria: seasonality, sustainability, capacity) are shown in detail in Table 1.

These indicators are evaluated based on a rating scale from 1 (lowest value) to 5 (highest value). After calculating the score for the factors, the total score is calculated according to the formula by (Thang, 2012) is:

$$F = \sum_{i=1}^{n} Mi * Xi$$

In which: *Mi is the multiplier; Xi is the evaluation criterion; i = 1 → n; n: number of factors.* Based on previous authors' research overview and consultation with 05 consultants, we determine the multiplier for attractiveness and safety at 3; connectivity, infrastructure, tourism facilities, seasonality, sustainability is 2, and capacity is 1. The assessment of other attractiveness and exploitation is graded based on according to formula (Armand, 1973).

$$S = \frac{Smax - Smin}{B}$$

In which: *Smax is maximum attraction value; Smin is minimum attraction value; & B is the evaluation term* The specific rating and rating points apply as follows:

(i) For the ability to attract tourists, if the total score is > 42, the area has a high ability to attract tourists. In the case of 42 > total score > 34, the area has an average ability to attract tourists; if the total sco re is < 26, the area has a low ability to attract visitors.

(ii) For exploitability, if the total score is > 21, the area has high exploitability. In the case of 21 > total score > 17, the site has average exploitation ability; if the total score is < 17, the area has poor exploitation ability.

Agreeing on the evaluation criteria, we sent questionnaires (online) to 60 experts. They are highly qualified experts in tourism, geology, and geography who are eligible to provide statements and opinions that ensure transparency and objectivity about the research content (Table 2). The survey was conducted in November 2021 (from 5/11 to 20/11), and the number of collected respondents was 56. After processing and cleaning, there were 52 valid respondence. The demographic profile of the respondents is shown in Table 2.

Table 2. Demographic characteristics of the respondents

Group	Composition	Number of people	Percentage (%)
Gender	Male	35	67,3
	Female	17	32,7
Age	Under 40	16	30,7
	From 41 to 50	14	26,9
	From 51 to 60	15	28,8
	Over 60	07	13,6
Degree	Undergraduate	14	26,9
	Postgraduate	38	73,1
Professional research experience	Under 05 years	3	5,7
	From 5 years to10 years	11	21,2
	From 10 years to 15 years	12	23,1
	Over 15 years	26	50,0

According to the criteria, we continue to use the SWOT analysis tool after the aggregate evaluation (Table 3). Basic SWOT analysis has been already employed for the assessment of geotourist resources to identify strengths, weaknesses, opportunities, and threats to the development of geotourism in Cao Bang Geopark as a basis for orientation to exploit them most effectively.

Table 3. SWOT analysis (or so-called "TOWS matrix")

	Strengths	**Weaknesses**
Opportunities	Strengths - Opportunities (S-O) strategy (maxi-maxi): use strengths to take advantage of opportunities	Weaknesses - Opportunities (W-O) strategy (mini-maxi): overcome weaknesses by taking advantages of opportunities
Threats	Strengths - Threats (S-T) strategy (maxi-mini): use strengths to avoid the threats	Weaknesses - Threats (W-T) strategy (mini-mini): minimize weaknesses and avoid threats

Table 4. Geological tourism resource scoring at Cao Bang Geopark

	Score	Number	Total
A. ABILITY TO ATTRACT VISITORS			**43.35**
1. Attractiveness	4.54	3	13.62
2. Safety	4.45	3	13.35
3. Connectivity	5.00	2	10.00
4. Infrastructure and Tourism technical facilities	3.19	2	6.38
B. ABILITY TO EXPLOIT			**22.5**
1. Seasonality	4.50	2	9.00
2. Sustainability	4.10	2	8.20
3. Capacity	5.00	1	5.00

RESULTS AND DISCUSSION

Assess the potential for tourism development

Applying the scoring method in this study, assessing the potential for geotourism development in Cao Bang Geopark is based on the proposed criteria. The results of the evaluation are shown in Table 4. Experts assess the attractiveness of the resources of the Cao Bang geological plateau with a relatively high average score (43.35 points) in the group of high exploitability. The geological attractiveness has a high rating (4.54 points) because the area has a long history of over 500 million years, from the

Paleozoic to the Cenozoic, with many unique natural features. The long history of a geological formation is the basis for this area to form many natural landscapes, ecosystems, and heritage sites with unique and distinctive geological appearances that are highly representative of an evolutionary cycle complete karst culture in the tropics such as Nguom Phuc grotto system (Thach An), Doi grotto (Ha Lang), Nguom Ngao grotto (Trung Khanh), Pac Bo cave (Ha Quang); system of rivers, streams and lakes, including Quay Son river, Ban Gioc waterfall (Trung Khanh); Lenin stream (Ha Quang), Thang Hen lake (Trung Khanh); Phja Oac primeval forest (Nguyen Binh); Thach An forest; Hoang Tung rock garden (Hoa An); Luc Khu rocky valley (Ha Quang); Ma Phuc pass, Mat Than mountain (Trung Khanh). The diversity of landscapes creates favorable conditions for Cao Bang Geopark to organize many typical geological types such as cave tourism and research tropical karst landscape, adventure tourism, eco-tourism etc. The connectivity of the resource is also highly appreciated (5.00 points) because it can be linked with many other resources in the area.

However, tourism infrastructure and technical facilities have a very low rating (3.19 points) due to the specific reality of Cao Bang's topography, mainly high mountains, high roads, and high mountains difficult traffic. Cao Bang has no airways, railways or waterways. From other localities in the country, visitors to the Geopark mainly go through National Highway 3, National Highway 4 and Highway 34 with many steep, winding, winding passes, severely degraded and frequently subject to landslides rainy season. In particular, many traffic routes to districts, communes and mountainous areas to access tourist attractions in the park are quite narrow, winding, degraded, frequent landslides in the rainy season, many tourist attractions only can be approached by high-rise passenger cars or passenger cars of less than 25 people, causing difficulties for tourists to travel. Besides, accommodation facilities are lacking in quantity and weak in quality. There is no system of services and shopping points dedicated to serving tourists in the area. The propaganda and promotion of tourism have not been promoted. These are the factual bases to consider in coming up with solutions.

In the exploitation capacity, the criterion of capacity has the highest score (5.00) because the geopark has a large area, and many attractions can take place simultaneously in all three main tourist routes. Seasonality has an average score of 4.50 due to different opinions of experts on the scale, ability to organize different types of tourism, and the level of infrastructure & facilities available. Sustainability has the lowest average score (4.10 points) because the limestone landscape is susceptible to damage caused by mass tourism activities and lack of management and regulation sustainable plan. In general, this area with highly exploitable tourism resources (22.5 points) needs to invest in developing geotourism.

Through the above assessment results, we see that the geotourism resources at Cao Bang Geopark are rich and have high-value great exploitation potential with a favorable international scale of operation for the development of many types of tourism, including many types of tourism associated with specific products of the region.

It is not only of great significance in developing and enhancing the position of Cao Bang tourism compared to other localities in the Northern Midlands and Mountains and the whole country.

SWOT Analysis

To comprehensively assess the potential for geotourism development of the Cao Bang geological park, we have analyzed the region's strengths, weaknesses, opportunities, and challenges (SWOT) to propose strategies suitable for tourism development for the area in the future. The results of the analysis are shown in Table 5.

Table 5. Results of the SWOT (strengths, weaknesses, opportunities, and threats)

Strengths (S)	**Weaknesses (W)**
1. Diverse geological resources. Many related tourism resources have been exploited. 2. Tourism resources are distributed adjacent to each other, easily combined according to routes. 3. It is possible to develop many specific geological tourism products such as caves, adventure exploration combined with historical research, etc. 4. The environment has not been polluted. 5. Many high-capacity resource points. 6. Associating with many historical and revolutionary landmarks and being the residence of many ethnic groups with unique cultural features recognized as national heritage. 7. The locality has many policies to support tourism development.	1. The terrain is difficult. There are many unusual natural disasters 2. Awareness of local authorities and communities about geotourism is not high 3. Poor quality traffic network, difficult to circulate 4. Accommodation facilities have low capacity, tourism services have not yet developed 5. Lack of labor to meet the needs of tourism development, especially the team of managers, planners, and geological tour guides. 6. Lack of investment capital for infrastructure upgrading and tourism promotion. 7. Lack of framework for tourism development and management in Geopark
Opportunities (O)	**Threats (T)**
1. The trend of increasing international and domestic tourist flows after the COVID-19 pandemic 2. Attracting the flow of Chinese tourists by road through border gates 3. The network of connections between global geoparks is expanding 4. The ability to connect with neighboring areas is increasingly developing 5. The State has many guidelines and policies to support localities in tourism development	1. Tourism management is still overlapping between stakeholders. The document system and legal corridor are not synchronized. 2. Invasion of foreign cultures and tourists 3. Unattractive tourism model, weak competitiveness compared to localities with similar resources. 4. Environmental degradation, resource degradation

The strategies to be implemented are derived from the strengths, weaknesses, opportunities and challenges of Cao Bang Geopark, specifically as follows:

- Coordinate S_{1-7}/O_{1-5}; S_{1-5}/T_3; W_4/O_{1-5}; $W_{3,4,6}/T_{2-4}$: Diversify types of tourism associated with the exploitation of geological resources in a sustainable; Develop many specific geological programs; Promote the exploitation of

geological tourist routes related to the border gate; Improve the level of management staff, workforce directly participating in geotourism activities.

- Coordinate S_{4-7}/O_{1-6}; S_{4-5}/T_{2-4}; W_{3-6}/O_{1-4}; $W_{3-6}/T_{2,3}$: Complete infrastructure, accommodation and services at tourist attractions in the geopark; To develop many large-scale tourist areas, combining geological tourism with ecological, cultural and historical tourism.

- Coordinate S_{4-6}/O_{1-5}; S_{4-5}/T_{3-4}; $W_{3,4}/O_{1-4}$; $W_{3,4,5}/T_{3-4}$: Rule-based development planning and close supervision; Well manage the organization of geological tourism activities at resource points.

Future development direction

Geotourism activities are increasing rapidly worldwide (Newsome et al., 2018; Drinia et al., 2021) and geological sites of considerable value should be considered the primary natural resource for these initiatives. Geotourism development will improve the attraction of the destination, preserve and promote geological and geomorphological values, raise community awareness, and contribute to the socio-economic development of the local association (CBPPCb, 2021). Cao Bang Geopark, classed as a world geological heritage, will attract many geological tourists interested in visiting the unique natural landscapes and gaining knowledge of history and the evolution of the Earth. Based on the fundamental analysis and survey results, we propose the development orientation and development phase for Cao Bang Geopark, the content of which is shown in Table 6.

Table 6. Summary of development orientation of Cao Bang Geopark

1. Development orientation	
- Development of typical geotourism types	Visiting and exploring caves; mountain resort; study geology, flora and fauna; community eco-tourism
- Developing typical tourism products associated with geological resources	- Visiting geological landscapes, caves and ecosystems in the geopark; - Community eco-tourism associated with indigenous culture; - Mountain resort tourism; adventure travel - Border tourism
2. Development divergence	
Period 2022 - 2025	- Invest in building facilities, develop additional heritage sites in 3 tourist routes of Cao Bang Geopark - Improve the quality and effectively exploit 03 existing geotourism routes; research and use new tourist routes in the Northwest tourist cluster (Bao Lac, Bao Lam areas), develop tourist routes connecting the geopark with inter-regional and inter-national tourist routes. - Completing investment projects, protecting the environment and ecosystems in the Geopark, creating a foundation for developing eco-friendly geo-tourism types according to UNESCO's criteria. - Building a brand, expanding the global geopark partner network - Invest in completing the infrastructure system, internal road system, sightseeing and developing additional services at attractions - Develop accommodation facilities and tourism services to meet the requirements of tourists.
Period 2026 - 2030	- Continue to invest in perfecting the technical infrastructure & facilities for the key attractions in the Geopark. Continue developing and exploiting tourist routes connecting the Geopark with inter-regional and inter-country tourist destinations and routes between Cao Bang (Vietnam) and Guangxi (China). - Preserve and promote geopark values as recommended by UNESCO.

Recommendations

To achieve the goals mentioned above, a lot of related work has to be done, including:

(1) Developing mechanisms and policies for geotourism: Mechanisms and policies directly impact the development of tourism activities in general and geotourism in geoparks in particular. Vietnam has issued many policies for tourism development (Tue et al., 2018), but to promote the development of geological activities, it is necessary to have separate policies for geotourism. For geotourism in Vietnam's geoparks in general and Cao Bang Geopark in particular, we think it is required to issue groups of policies: (i) Group of guiding policies for geotourism; (ii) Group of policies related to geotourism development associated with natural environment protection and cultural and social environment; (iii) Group of policies related to tourist management, coordination and monitoring of tourist attractions related to geological resources; and (iv) Group of policies related to human resource development, promotion and product development related to geological and geomorphological resources.

(2) Increase investment in infrastructure and technical facilities for geotourism: Infrastructure and technical facilities are the weakest affecting the exploitation of local tourism potential substances at Cao Bang Geopark (CBPPCb, 2021). In the condition that the province's budget and the capacity of businesses located in the area are limited, Cao Bang and the province's tourism industry need to plan to mobilize investment capital from a combination of social resources, socialization, national target programs and attracting investment capital from outside. In addition to the priority policy for key tourism development projects as recommended by UNESCO, there should be orientations in investment for each tourist spot and cluster in the entire Geopark. Based on the divergence of exploitation and development of geotourism resources and products and the existing financial capacity of the locality, we propose that in the first phase, focus on investing in building and completing several archaeological sites properties belonging to three tourist routes in the Geopark according to UNESCO's standards, upgrading the Geopark information and display center; construction of the fourth tourist route. In the next phase, there should be a project to improve traffic connections at border gates, tourist

zones and attractions; To encourage investment in building and upgrading tourist accommodation establishments; Develop food and beverage services, entertainment, and shopping facilities to serve tourists.

(3) Improving the training of human resources: To promote geotourism activities in Cao Bang Geopark, a very important factor to have is the human resource for geotourism. The locality should have the policy to prepare and encourage staff training for geotourism. In the immediate period, it is possible to take advantage and take advantage of international cooperation relationships in UNESCO's global geological heritage network to foster, train staff and exchange experiences. In addition, it is necessary to pay attention to the training of staff and guides for geotourism, which will play an important role in promoting the development of geotourism activities in the geopark.

(4) Promote promotion of geotourism activities: After the pandemic, tourists' demand for unspoiled natural destinations, away from crowded destinations that are less affected by human people, is increasing. It is a great opportunity for destinations with untapped potentials, such as Cao Bang Geopark. The target international tourist markets are France, Japan, Germany, Australia and other countries, and the domestic market is focused on big cities such as Hanoi, Hai Phong, and Da Nang, Ho Chi Minh City... For a new destination like Cao Bang Geopark, in our opinion, it is necessary to complete the website http://caobanggeopark.com, in addition to the Vietnamese and English versions, it is essential to add Chinese and articles need to be more attractive and have more images to attract visitors. At the same time, promote tourism information on social networks reputable TV channels, provide publications, travel brochures, maps to visitors through agencies, travel agents, travel centers, etc. Information center, border gate to welcome guests. Coordinate with related industries to organize seminars and press conferences to introduce the potentials and characteristics of the resources and at the same time integrate the introduction of local geotourism programs and products.

(5) Improving the organization of tourism in tourist sites, resource sites and programs: Researching and promulgating regulations and guiding principles on management and organization of activities appropriate to the situation the reality of each area and resource score; Develop detailed instructions for program implementation at resource points such as visiting time, number of visitors, travel speed, etc. Minimizing the impact on the environment.

(6) Raise awareness of the local community and protect the tourism environment, adapt to climate change: Promote educational activities to raise community awareness about the value of geological heritage; Increase participation and enhance the role of the community in exploiting geotourism values in destinations. Deploy appropriate models of community eco-tourism. Develop response strategies and plans, especially with contingency scenarios for climate change. Encourage the development of ecotourism programs with little impact or no resource consumption. Propagating and mobilizing local communities, tourists, and tourism businesses to be aware of climate change issues, to limit the effects on the environment to adapt and mitigate consequences with climate change.

CONCLUSION

Cao Bang Geopark is one of three UNESCO-recognized geoparks in Vietnam for its outstanding values of scale, landscape, educational values, and conservation of important geological features important. Through the multi-criteria assessment method and consultation with leading experts in the fields of tourism, geology - geomorphology, the study shows that on the potential for geotourism development in the local park area, Cao Bang has high tourist attraction value and great ability to exploit natural resources for tourism development at the global level. However, the strengths for tourism development here are mainly in the form of potential. The story of exploitation of tourism resources is only concentrated in a few traditional spots, infrastructure and facilities. Tourism quality has not developed synchronously, tourism services have been almost undeveloped. Therefore, in the future, to effectively exploit the geotourism potential here, it is necessary to focus on implementing strategies to diversify tourism types, develop specific geotourism products, use the new tour program. In addition, Cao Bang Global Geopark also needs to invest in completing infrastructure, accommodation and services at tourist destinations, training and improving the qualifications of workers directly involved in geotourism activities, development based on planning and with close supervision; Well manage the organization of geotourism activities at resource sites in association with environmental landscape protection and response to climate change.

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