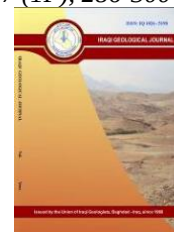




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Typology and Development Orientation of Geotourism in the Dak Nong UNESCO Global Geopark, Vietnam

Do Manh An^{1*}, Tran Duc Thanh², Nguyen Thi Cuc¹, and Bui Vinh Hau¹

¹ Hanoi University of Mining and Geology, Vietnam

² University of Social Sciences and Humanities, VNU Hanoi, Vietnam

* Correspondence: domanhan@humg.edu.vn

Abstract

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The Dak Nong UNESCO Global Geopark (DNAUGGp) is an area that still preserves many unique geological attributes, topography, and natural landscapes. This study evaluates the potential resources, current exploitation status, and conservation level of geological and cultural heritage values in the Dak Nong Global Geopark. Data was collected through direct surveys and questionnaires for tourists, local people, management officials, and experts in such related fields as geology, heritage, culture, and tourism. Based on the analysis and evaluation of the Dak Nong UNESCO Global Geopark's tourism potential and attractiveness, the paper proposes two types of natural and cultural geotourism with seven sub-types which have potential for exploitation and development in the Dak Nong UNESCO Global Geopark. The survey results show that the appeal of different types of geotours and tourist in the geopark varies according to the age, gender, and profession of the surveyed group. The research findings contribute to guiding potential customer groups for each type of geotourism and directing the sustainable development of geological tourism in the Dak Nong UNESCO Global Geopark.

Keywords: Geoheritage; Cultural heritage; Geopark; Geotourism; DNAUGGp

1. Introduction

The concept of geotourism was first introduced over 25 years ago by Hose (1995), who defined geotourism as “an activity that provides services and explanations to enable tourists to gain knowledge and understanding of the geology and landscape of a destination (including its contribution to the development of Earth sciences) beyond mere aesthetic appreciation.” Newsome & Dowling (2006) described geotourism as a part of nature-based and ecotourism, but with a specific focus on geological and landscape elements. Errishi et al. (2020) divided geotourism resources in the Libyan desert into two groups: first, landscapes related to endogenous tectonic activities of the Earth's crust, like volcanoes and earthquakes and second, the landscapes created by exogenous elements, including valleys, sand dunes, caves, and lakes. Joyce (2007) proposed another definition of geotourism, considering it as an activity associated with research and exploration: “People go to a place to examine and learn about one or more aspects of geology and landscape.” With this same viewpoint (Al Siaede, 2020) conducted quantitative research on landscapes of nine quarries locations in Missan, SE Iraq. The research results show that the landscapes' geo-education values are higher than their geo-tourism values, and are influenced by the accessibility and infrastructure of the destinations. Many researchers in the UK and Australia identify geology and landscape as central elements of geotourism, (Lee, 1993; Herrera-Franco et al., 2020; Hose,

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1995; Joyce, 2010). National Geographic in the United States takes a broader approach, defining geotourism as “the sustenance or enhancement of the distinctive geographical character of a place being visited, including its environment, culture, aesthetics, heritage, and the well-being of its residents” (National Geographic Society).

In Vietnam, geotourism is one of the newest concepts in tourism studies. Most of the research works on geotourism are in the early stages, focusing on theoretical foundations and evaluating the values of geological heritage and prominent landscapes. Based on these findings, proposals have been made to establish geoparks, including the UNESCO Global Geoparks. Notably, the research projects conducted by the Institute of Geology and Mineral Resources in collaboration with scientists and experts from UNESCO, Belgium, Japan, and South Korea since 1991 have been outstanding. As a result, Vietnam currently has three geoparks were inscribed in the UNESCO Global Geoparks network, namely the Dong Van Karst Plateau Geopark (2010), the Non Nuoc Cao Bang Geopark (2018), and the Dak Nong UNESCO Global Geopark (DNAUGGp) (2020). In terms of research on assessing the values of geological heritage for tourism development, Thuy (2021) conducted a thesis on the environmental landscape for geotourism development in the coastal area of Binh Thuan province. The author confirmed that “geotourism is an innovative form of tourism that promotes both environmental and social responsibilities of tourists”.

It can be seen that geotourism is a new form of sustainable tourism that has been recently studied and promoted, with a main focus on experiencing the geological features of the Earth in order to promote understanding, adaptation, and conservation of natural and cultural values, while also creating economic benefits for the local communities. Dak Nong province in Vietnam has also been promoting and collaborating in the development of geopark tourism, enhancing community awareness through education and communication, contributing to the development of tourism and economic growth in the geopark.

The aim of study is to evaluate the tourism resources in the Dak Nong UNESCO Global Geopark and propose appropriate forms of geotourism to serve tourism development, as well as promote the Dak Nong UNESCO Global Geopark in the current crucial stage of recognition as a geopark.

2. General Geology of the Study Area

The Dak Nong UNESCO Global Geopark covers an area of 4,760 km², spanning across 5 districts: Krong No, Cu Jut, Dak Mil, Dak Song, Dak Glong, and the city of Gia Nghia in Dak Nong province. The history of geological stratigraphic succession dates back to 140 million years ago, when it was part of a vast ocean whose traces are present in sedimentary rocks, coral fossils, and other fossil types (Tinh, 1988; Thang, 1999; Tri et al., 2009). The tectonic movements of the Earth's crust have uplifted this area and led to the formation of volcanoes. The volcanic eruptions have covered half of this area with layers of volcanic ash and created a unique and massive system of caves and volcanoes, the largest one in Southeast Asia. The traces of prehistoric settlements dating back to approximately 10,000 years ago have been discovered here (Phuc et al., 2018).

In the Dak Nong UNESCO Global Geopark, there are 55 remarkable geosites of outstanding values (belonging to 9 out of 10 types of geosites classified by UNESCO's GILGES system) (Phuc et al., 2018). Comparing its uniqueness to that of other geosites within and outside the country based on UNESCO criteria rank. The evaluation results indicate that the geopark possesses 07 internationally recognized geosites, 42 nationally recognized geosites, and 06 locally recognized geosites. Most of the mentioned geosites are dual or mixed heritage sites (Fig. 1) (DNAUGGp Management Board, 2018).

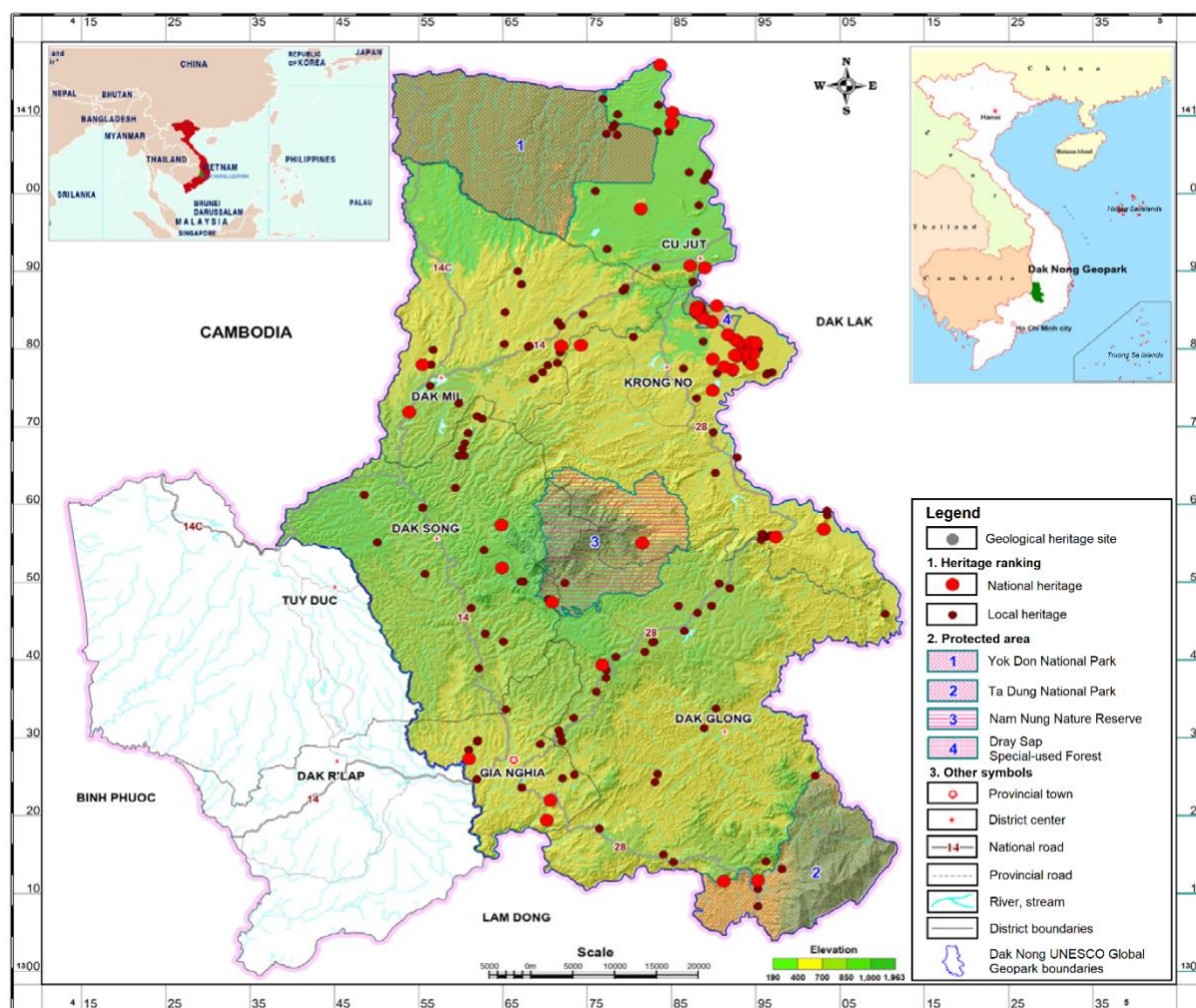


Fig. 1. Geological heritage map of the Dak Nong UNESCO Global Geopark (modified from DNAUGGP Management Board, 2018)

The outstanding geological heritage that creates highlights for the Dak Nong UNESCO Global Geopark includes the following geosites:

(i) the cave system related to the volcanic eruption of Chu Bluk, distributed in the special landscape forest of Dray Sap and the protective forest of Chu Bluk. This is a very rare dual or mixed heritage complex of geological heritage, biodiversity, and globally outstanding cultural heritage;

(ii) the system of fossil points in Cu Jut;

(iii) volcanoes and volcanic landscapes;

(iv) waterfalls and waterfall landscapes; and

(v) precious stones.

Among these above-mentioned geosites, the volcanic cave system has a special highlight.

3. Materials and Methods

3.1. Literature Review and Secondary Data Collection Method

Secondary data is information that has been calculated and published by state agencies and compiled from reports by various sectors, communities, research projects, state policy documents, books, newspapers, documents, and images collected from the Dak Nong UNESCO Global Geopark Management Board, the Department of Natural Resources and Environment of Dak Nong province, data

from scientific workshops on tourism development for the Dak Nong UNESCO Global Geopark, and information from the Internet. Some remarkable sources of reference materials include the report “Study, survey, and assessment of geological heritage, construction of the Krong No Geopark, Dak Nong province”, the provincial-level scientific research topic of Dak Nong (Phuc et al., 2018), and the submission dossier to UNESCO for the recognition of the UNESCO Global Geopark title for the Dak Nong Geopark by the Geopark Management Board in 2018 (DNAUGGp Management Board, 2018).

3.2. Field Survey Method

In this study, the authors conducted field surveys in the research area, collecting information and real-life images of the cultural and natural heritage values within the Dak Nong UNESCO Global Geopark. Accordingly, they not only proposed advisable geotourism types for the research area but also evaluated the natural and human conditions, favorable factors, and challenges affecting the attraction of tourists and the development of tourism in the local area. Specifically, the authors carried out four field survey routes, covering a total distance of 138.9 km, including 127.1 km by motorbike and 11.8 km on foot, exploring heritage sites and tourist areas within the Dak Nong UNESCO Global Geopark (Fig. 2).

- Route 1: Dak Mam town - Trinh Nu waterfall - Serepok bridge - Bang Mo volcano.
- Route 2: Dak Mam town - Dray Sap Special Use Forest - C1, C2, C4 volcanic cave cluster - Gia Long waterfall - Lua waterfall - Dray Sap - Gia Long tourist area.
- Route 3: Dak Mam town - Buon Choa volcanic forest reserve area - Chu Bluk volcano - C9 cave - A1 cave - N'Trang Guh memorial house - Buon Choa field (VIETGAP qualified).
- Route 4: Dak Mam Town - Mountainous rice field landscape - Krong No river sand mining cluster - Nam Kar volcano - Quang Phu organic cooperative.



Fig. 2. Map of field survey in the research area

3.3. Data Collection

The authors consulted local authorities to gather additional information on the tourism development situation in the area. Primary data was also collected through field surveys and interviews with experts in the fields of tourism, geological heritage, and local management at the Dak Nong UNESCO Global Geopark and local government officers during the research process. The exchange of information during these meetings helped the authors to gather valuable materials and data regarding the understanding of tourism resources and geological heritage values within the Dak Nong UNESCO Global Geopark, as well as future tourism development orientations.

3.4. Questionnaire Survey Method

Based on the research objectives, this survey method was used to collect opinions from tourists, responsible managers, and experts in the fields of geology and tourism. The questionnaire was divided into two parts: questions on personal information of the survey participants (such as age, gender, and occupation) and questions focusing on investigating criteria for two groups of visitors and non-visitors of the study area (Fig. 3). A total of 230 questionnaires were collected, including 28 respondents (12.2%) who were unaware of the Dak Nong UNESCO Global Geopark, indicating the novelty of the content and research subjects (Fig. 4). The survey results helped the authors determine the attractiveness and appeal of tourism resources within the geopark, as well as the desires and needs of tourists and local communities. This provided a clear understanding of the tourism resources and activities in the research area, serving as a basis for evaluating and proposing various types of geotourism and identifying potential tourist groups for each type of geotourism at the Dak Nong UNESCO Global Geopark.

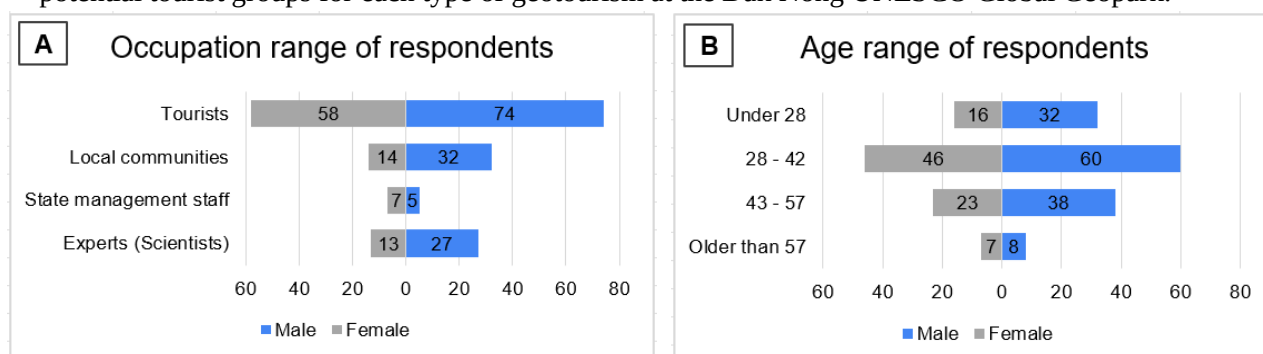


Fig. 3. (A) Occupation range of respondents; (B) Age range of respondents ($n=230$)

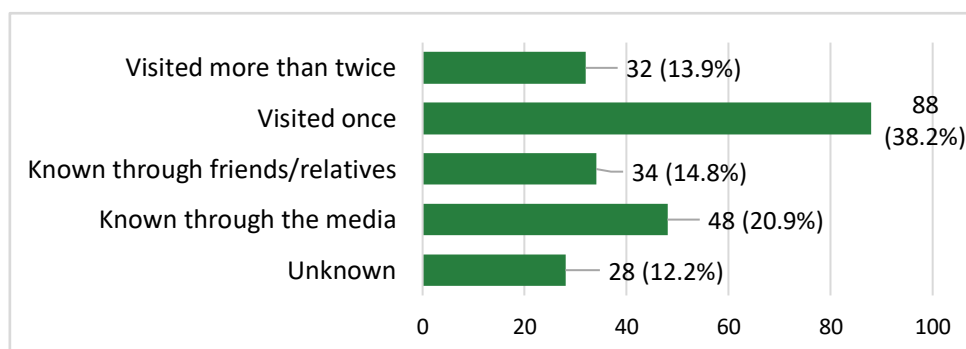


Fig. 4. Participants' engagement with the Dak Nong UNESCO Global Geopark

4. Results and Discussion

4.1. Tourism Classification at the Dak Nong UNESCO Global Geopark

Travel development is based on the exploitation of tourism resources and the formation of different types of tourism. The concept of tourism types is widely used in theory. Tourism types are determined based on the specific needs of each type of tourism. Tourism types are organized forms of tourism that aim to satisfy the travel purposes of tourists. Tourism activities are very diverse and varied in types. Tourism activities are usually divided into different groups according to their specific purposes. There are many criteria for classifying different types of tourism. Dinh and Hoa (2006), and Tue et al. (1999) used eight criteria to classify types of tourism, while Thanh et al., (2022) used ten criteria, which are: (1) approach to tourism resources (This criterion divides tourism into two major groups: natural tourism and cultural tourism); (2) tourism demands; (3) operational territory; (4) geographical characteristics of tourist destinations; (5) means of transportation; (6) accommodation forms; (7) duration of the trip; (8) age range of tourists; (9) organizational form; and (10) contract method.

Since the research objective is the Dak Nong UNESCO Global Geopark, the tourism resources, specifically the geological heritages, natural landscapes, archaeological values, and other significant heritage values, play a vital role in determining the values and attraction of the park to tourists. Therefore, based on the natural and cultural tourism resources in the research area, the authors constructed a classification scheme for geological tourism types within the Dak Nong UNESCO Global Geopark with a reference to classification criteria systems for tourism types from both domestic and international research works as shown below (Fig. 5).

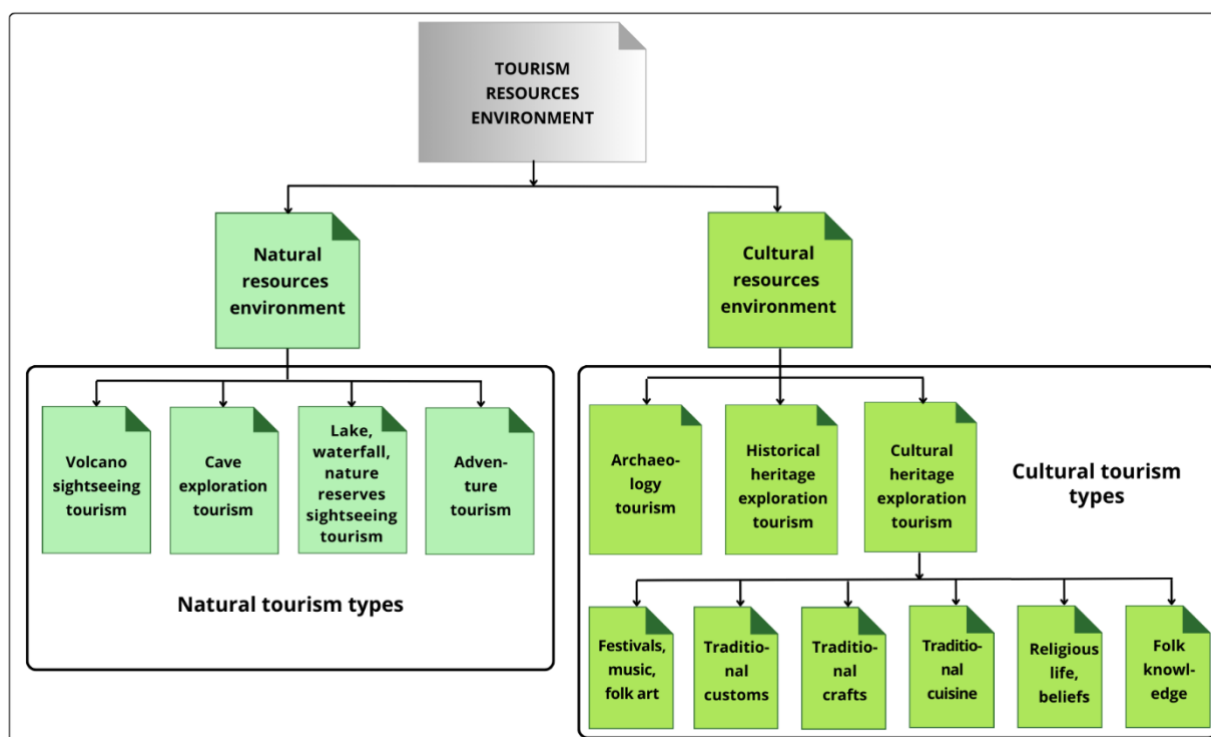


Fig. 5. Classification of geotourism and tourism types at the Dak Nong UNESCO Global Geopark

4.2. Natural Tourism Types

4.2.1. Volcano sightseeing tourism

According to the survey results among scientists, the Dak Nong UNESCO Global Geopark currently has 05 volcanoes, including Nam Blang Volcano (Chu B'luk), Bang Mo Volcano (Ea Tling),

Nam Gle Volcano (Thuan An), Nam Duong Volcano, and Nam Kar Volcano. These volcanoes preserve the geological history of the Earth's crust, leaving their marks on this land with ages ranging from 0.199 to 5.33 Ma. The volcanoes have a relatively round funnel shape (Bang Mo Volcano) or an elongated oval shape with a narrow channel (Nam Gle Volcano) (Fig. 6). Particularly, Chu B'luk is the only volcano that has a system of 50 lava caves in the Dak Nong UNESCO Global Geopark, making it the most unique and outstanding in East Asia. Furthermore, the discovery of prehistoric archaeological sites in these volcanic caves has shaken the world of archaeology and highlighted the scientific and educational value of this unique geological site. Field survey results showed that the volcanoes and cave systems at the Dak Nong UNESCO Global Geopark have great appeal to tourists (Fig. 7).



Fig. 6. (A) Bang Mo Volcano; (B) Nam Gle Volcano; (C) Chu B'luk Volcano. (DNAUGGp Management Board, 2018)

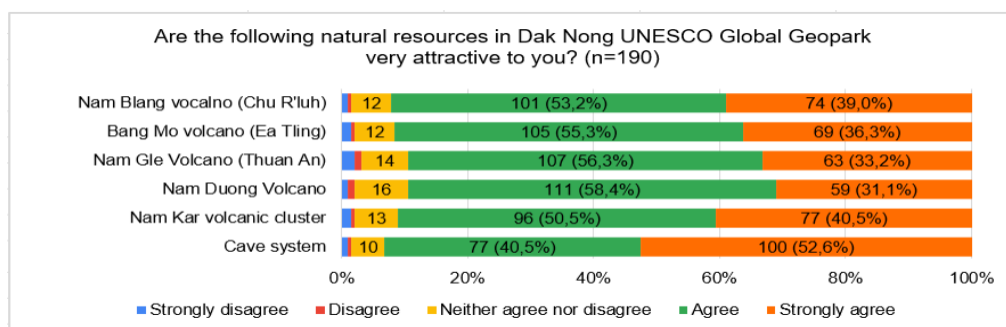


Fig. 7. Attractiveness of volcano sightseeing tourism at the Dak Nong UNESCO Global Geopark to tourists

The field survey results indicate that the Dak Nong UNESCO Global Geopark has a great appeal to tourists since up to 21.6% (41/190) of the participants have visited the park before (Fig. 8), and 20.0% (46/230) of those who haven't visited yet but have certain knowledge about different types of tourism activities in the Dak Nong UNESCO Global Geopark (Fig. 9). It can be concluded that the target customers for the geopark are young and middle-aged individuals (with good health) since lots of the respondents have a great passion for exploration and adventure.

Currently, there are roads leading to the bases of all the volcanoes in the Dak Nong UNESCO Global Geopark (Fig.10), making it easy for tourists to access and explore these volcanoes. However, visitors should prepare neat and comfortable clothing for easy movement, bring sun protection such as hats and sunscreen, and have a lot of water available. It is also recommended to wear sports shoes or hiking boots to climb up the slopes and reach the volcanoes' peaks. The average walking distance from the base to the summit of the volcanoes is about from 400 to 500 m, except for Mount Chu B'luk, which requires a longer walk of about 2 km. This type of tourism is suitable for people of all ages who are in good health, particularly young, and middle-aged. Additionally, tourists should choose the appropriate time to visit, avoiding the rainy season from April to July. It can be difficult for tourists to travel on rainy or hot sunny days, with temperatures reaching up to 36-38°C in April. Besides, the lack of tree

shades may cause fatigue and exhaustion. In the future, the development of fly camera services can be considered to enhance the tourist experience and capture beautiful photos of volcanic landscapes.

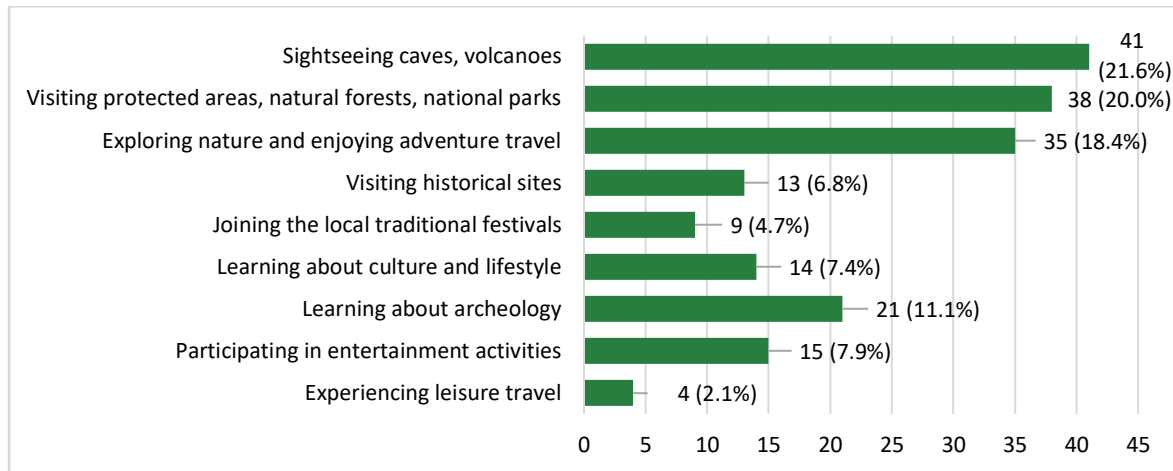


Fig. 8. Tourism activities survey participants who HAVE VISITED experienced at the Dak Nong UNESCO Global Geopark

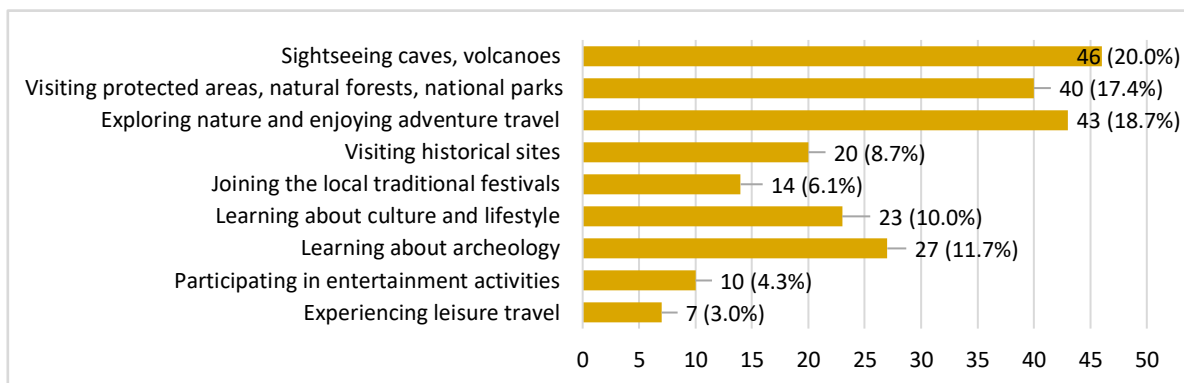


Fig. 9. Tourism activities survey participants who HAVE NOT VISITED want to experience at the Dak Nong UNESCO Global Geopark

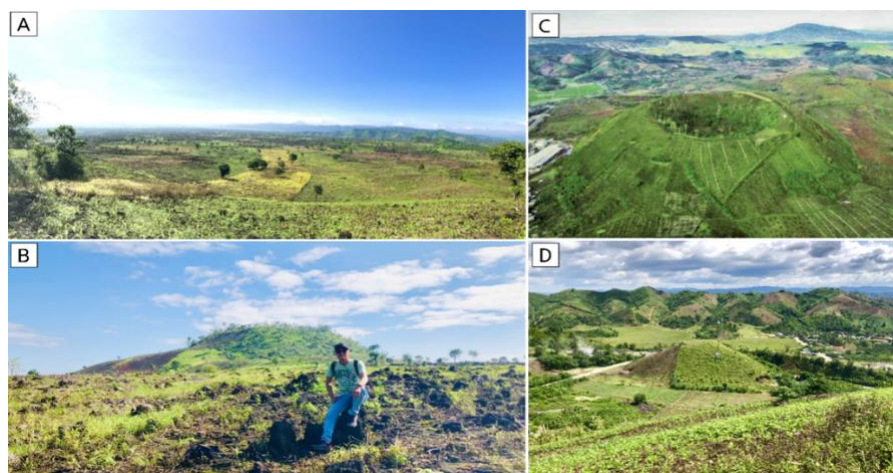


Fig. 10. Volcano landscapes in Dak Nong Geopark: (A) View from Chu Bluk volcano; (B) Terrain at the foot of Chu Bluk volcano with the main composition of basalt rocks; (C) Mouth of Nam Kar volcano; (D) View from the mouth of Nam Kar volcano to Non Si hat (S1)

4.2.2. Cave exploration tourism

Alongside volcanic eruptions, another special feature in the Dak Nong UNESCO Global Geopark is a system of nearly 50 caves that have been discovered, surveyed, and meticulously mapped with a total length of nearly 10,000 m in the basalt rocks of the Xuan Loc formation (βQ_1^2xl), distributed in the Dray Sap - Chu R'Luh area (Phuc et al., 2018). This volcanic cave system has set a Southeast Asian record in terms of scale, length, and uniqueness, as recognized by the Japan Caves and Lava Association. The origin of this cave system is primarily volcanic, formed during the eruption and cooling of lava flows through the mechanism of volume contraction and gas accumulation of gas-rich lava flows. The caves branch and stratify, depending on the ancient topography. The flatter the ancient topography, the more extensive the branching (such as cave C7) (Fig. 11A), and conversely, the steeper the ancient topography, the less branching, even no branching like caves C1, C9 (Phuc et al., 2018). The distribution characteristics and formation mechanisms of the caves here are quite similar to the volcanic caves in the basalt formations in Dong Nai province (Laumanns, 2013; Tuan and Nhuan, 2021). Inside the caves, there are many distinctive features of volcanic eruption processes, such as lava stalactites and collapse pits. Most of the caves here have tube-like shapes, and there are also interconnected branches forming circles. The caves in the Dak Nong UNESCO Global Geopark are divided into two types: primary caves and secondary caves. Lava caves belong to the class of primary caves that form at the same time as the rock containing them. The majority of discovered caves are secondary caves, formed by collapses or weak points in cave walls (Fig. 11B). Within these caves, there are hidden secrets about the formation mechanisms, mineral combinations, biodiversity, and archaeological sites.

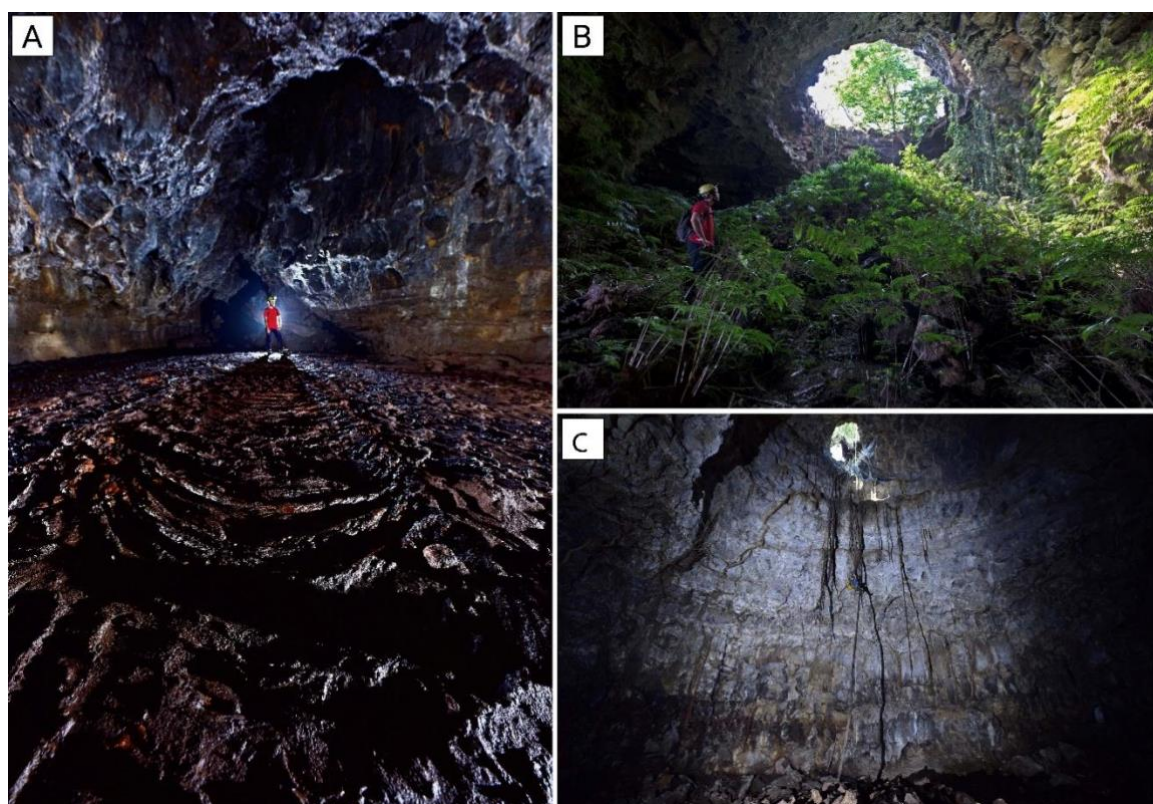


Fig. 11. Volcanic cave system: (A) View inside cave C7; (B) The cave entrance formed due to the collapse in cave C7; (C) Exploration activities in cave T8. Photos: Takeshi Murase

The type of cave exploration tourism is suitable for young, healthy, adventurous groups of travelers who enjoy discovering newly discovered locations. However, there is a need for further research and selection of caves with attractive characteristics to attract tourists and facilitate tourism. Some caves can

be studied for survey and scientific research purposes. The best time to participate in this type of tourism is the dry and cold season from October to March. Tourists should avoid the rainy season which can make cave exploration difficult and cause the accident by fallen trees. Additionally, the rainy season makes the rocky ground damp, and the ceilings of volcanic caves may collapse due to water seeping through cracks and crevices, posing a safety risk to tourists. Tourists should also participate in training courses to learn the necessary skills for cave exploration, with special attention to not damaging the ceilings and walls of the caves, which can cause harm to the heritage and endanger themselves and other tourists.

4.2.3. Lake, waterfall, nature reserves sightseeing tourism

The Dak Nong UNESCO Global Geopark is evaluated to have high biodiversity, both in terms of forest ecosystems and various species of fauna and flora. The forest ecosystem consists of four landscape forms: lowland tropical evergreen forest, tropical monsoon evergreen forest, freshwater aquatic vegetation, and artificial vegetation. The natural landscapes are diverse and attractive, which can be found in Nam Nung Nature Reserve, Ta Dung National Park, D'ray Sap, Trinh Nu waterfall, Gia Long, and Yok Don National Park (Dak Lak) (Fig. 12).



Fig. 12. Landscape and geotouristic objects described in the text: (A) Ta Dung lake; (B) Dray Sap waterfall; (C, D) Basalt rocks in the form of curved columns at Trinh Nu waterfall

According to the survey results, the type of tourism that involves visiting lakes and waterfalls within the geopark is very attractive to tourists. From 18.4% to 20.0% of the survey participants have visited the park (Fig. 8), while from 17.4% to 18.7% of those who haven't visited yet expressed interest in coming (Fig. 9). This type of tourism is suitable for young travelers (gen Z - consists of people born between 1997 and 2012) who enjoy exploring natural beauty and capturing beautiful photos. The best time to visit is from July to December. The accessibility depends on the specific destinations, where visitors can travel by car, motorbike, or even on foot. When participating in this type of tourism, visitors should prepare comfortable and easy-to-move clothing, as well as sun protection. Most waterfalls have steep terrain, fast-flowing water, and various-sized rocks with slippery surfaces due to water erosion, so visitors need to be cautious to ensure their safety.

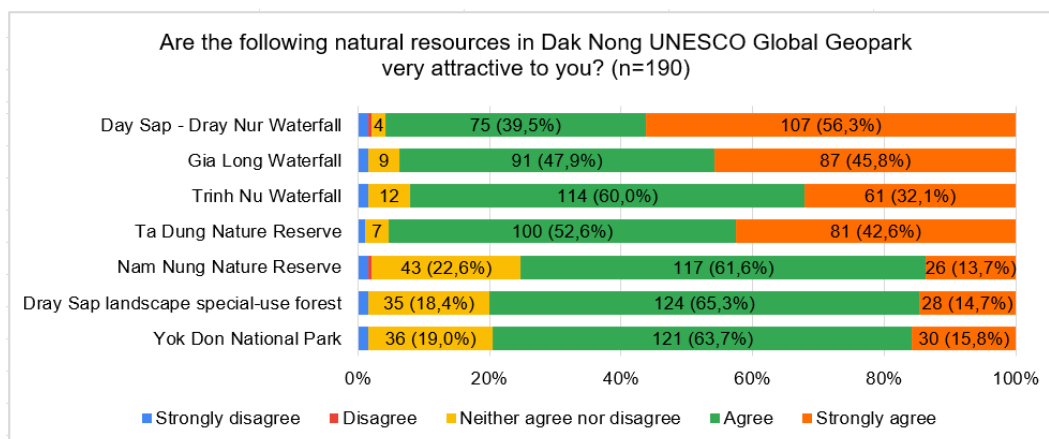


Fig. 13. Attractiveness of lake, waterfall, nature reserves sightseeing tourism in the Dak Nong UNESCO Global Geopark to tourists

In addition to traditional sightseeing routes, authorities can consider offering hot air balloon services to tourists to explore from above, providing a panoramic view that will surely enhance the appeal for visitors. Hot air balloon services are highly suitable for tourist destinations with beautiful landscapes like the Dak Nong UNESCO Global Geopark, and they are currently being effectively utilized in many popular tourist destinations in Vietnam such as Da Nang, Ha Long, Lam Dong, Hue and Binh Thuan...

Furthermore, it is possible to create tour packages that are linked to the issues of education, environmental protection, and ecosystem, targeting educational institutions at the secondary and high school levels. These educational packages aim to provide teenagers with real-life experiences and chances to explore the beautiful landscapes of nature; while educating them about resource conservation, environmental protection, and the preservation of natural heritage. They align with the sustainable development target of tourism.

4.2.4. Adventure tourism

With the Dak Nong UNESCO Global Geopark's diverse terrain, topography, and ecosystems, it is entirely feasible to research and develop adventure tourism products there. The Department of Culture, Sports, and Tourism of Dak Nong Province, in collaboration with the Le Khang Sports and Tourism Joint Stock Company and Phu Cuong Tourism and Service Joint Stock Company, can facilitate the exploration and development of paragliding competitions in the Ta Dung Lake area of geopark. Through organized competitions, it has been shown that adventure tourism has great potential to attract visitors. Currently, some organisations are also surveying and suggesting proposals for the development of adventure tourism in the Dong Van Karst Plateau Geopark, Ha Giang.

Stand-up Paddle boarding or "standing paddle boarding" is a sport that is quite similar to other forms of paddling, with the added fun of being able to stand or sit as you, please. It has been introduced to Vietnam in major cities like Hanoi, Ho Chi Minh, Thua Thien - Hue, and Da Nang for many years, but this sport is relatively new in Dak Lak, which has made the locals, especially the younger generation curious about it.

The natural resources of the Serepok flowing river and the diverse terrain in the Dak Nong Geopark provide perfect conditions for the exploitation and development of this sport. It is possible to combine kayaking with positions that have rapids and narrow flows, while flat terrain positions can be exploited for stand-up paddle boarding. When experiencing stand-up paddle boarding, visitors can also visit fruit

gardens (such as plum, cashew, and cocoa gardens...), purchase products grown by local farmers, and enjoy exciting overnight camping trips.

When exploring these adventure tourism activities, it is crucial to carefully study the weather conditions, river flow rate, and identify any potential dangers or risks for tourists. Additionally, before tourists participate in these activities, it is necessary to provide tourists with training services about surfing basics, types of waves and boards, and techniques of stand-up paddleboarding or riding waves. If successfully implemented, adventure tourism will attract young and healthy adventurous tourists.

4.3. Cultural Tourism Types

The Dak Nong UNESCO Global Geopark, is an area of approximately 4,760 km², including the districts of Krong No, Chu Jut, Dak Mil, and some neighboring communes in the districts of Dak Song, and Dak Glong, it is not only considered a geological heritage related to volcanic activities and biodiversity, but also a unique cultural and geographical heritage of high value. The values of these non-geological heritage sites will complement and enhance the overall value of the geopark. This is an important highlight, an infinite resource, and a powerful tool for developing tourism in the geopark.

4.3.1. Archaeology tourism

The discoveries of prehistoric archaeological sites in the volcanic cave area of the geopark have attracted the attention of many researchers and tourists both on national and international levels. The archaeological artifacts dating back to 6,000 to 3,000 years ago include stone tools, disc-shaped stones, short axes, flint tools, scrapers, grinding stones, and polishing stones (Fig. 14A, 14B). There are also various types of pottery made from clay mixed with sand, with different thicknesses. The patterns on the pottery pieces are sharp and diverse in patterns, such as dot patterns, fabric patterns, and rope patterns. In addition, there are animal bones, bone fragments of animals, and even prehistoric human bones (Fig. 14C) which are scarce in hundreds of archaeological sites in the Central Highlands. The discovery of prehistoric human remains in the volcanic cave in the study area is very special, unique, and rare (in Southeast Asia and the world), and it is now being studied and deciphered by scientists to rank, reconstruct, and craft artifacts for the outdoor museums, as well as for the preservation, sustainable development, and exploitation of the UNESCO Global Geopark's heritage in Dak Nong.



Fig. 14. (A) Stone tools at Thon 8 archaeological site; (B) Excavation pit at cave C6-1; (C) Prehistoric human remains. Photos: Nguyen Gia Doi (A), La The Phuc (B, C)

Currently, the new archaeological sites are still in the research phase and do not have any tourist service facilities. Some sites, after excavation and document collection, have been buried due to a lack of management and conservation, overgrown vegetation, and farming activities. The attractiveness of this archaeology tourism is still limited, as indicated by the fact that only from 6.8% to 11.1% of survey respondents have visited such sites (Fig. 8), while from 8.7% to 11.7% of those who haven't visited express an interest in these locations (Fig. 9). The rate of complete agreement with the attractiveness is quite low, while the rate of normal evaluation is relatively high (Fig. 15).

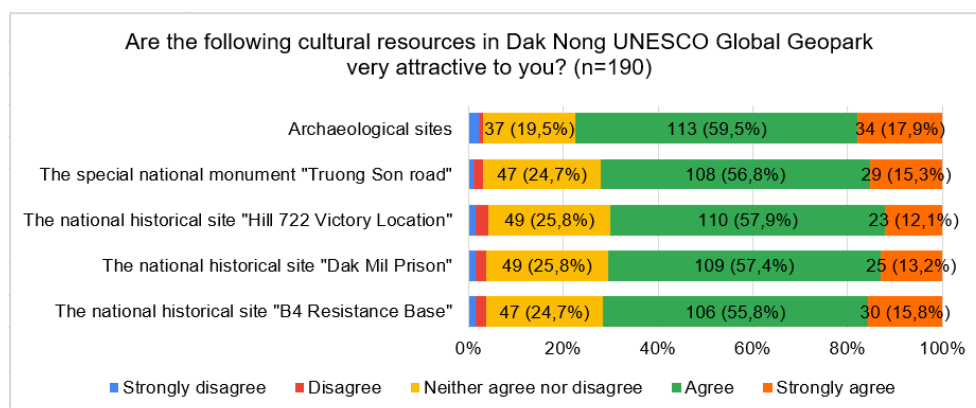


Fig. 15. Attractiveness of archaeology tourism at the Dak Nong UNESCO Global Geopark to tourists

4.3.2. Historical heritage exploration tourism

In addition to the natural landscapes, the Dak Nong Unesco Global Geopark also boasts numerous historical sites associated with significant periods of resistance and revolutionary movements against foreign colonizers. Some notable sites include the special national monument “Truong Son Road”, the national historical site “Hill 722 Victory Location”, the national historical site “N’Trang Guh”, the national historical site “Dak Mil Prison”, the national historical site “B4 Resistance Base”, and the historical-cultural tourist area of Dray Sap - Gia Long waterfall cluster (Fig. 16).



Fig. 16. (A) Historical site of Hill 722; (B) Memorial monument N’Trang Guh; (C) Dray Sap - Gia Long landscape eco-tourism area

The Dray Sap - Gia Long waterfall tourist area is the only location in the Dak Nong UNESCO Global Geopark that has been granted a license to operate tourism activities. Nowadays, it is not only a local leisure destination but also a national and international tourist attraction, as shown on the Vietnam tourism map.

4.3.3. Cultural heritage exploration tourism

The unique cultural heritage values associated with the lives of ethnic communities within the Dak Nong UNESCO Global Geopark include: (1) The intangible cultural heritage representative of humanity: The cultural space of the Central Highlands gongs; (2) Dak Kar - Dak Son stone tools; (3) Ot N’rong epic storytelling; (4) Oral traditions in the lives of the Mnong people; (5) Traditional folk music performance art of the Mnong people; (6) Mnong customs and traditions; (7) Mnong taboos and prohibitions; (8) Agricultural rituals of the Mnong people; (9) Life cycle rituals of the Mnong people; (10) Folk knowledge about cuisine, the universe, and nature of the Mnong people; (11) Traditional handicrafts: Decorations on fabric, clouds and bamboo, in architecture, traditional ceremonies and festivals.

Currently, the cultural heritage resources within the geopark are not widely known to the local residents. Only a few people in towns and villages are aware of the historical and traditional cultural sites of the ethnic communities within the geopark. Survey results showed that the level of interest in this type of tourism ranges from 7.4% to 10.0% (Fig. 8,9), with a relatively low percentage of complete agreement, ranging from 14.7% to 18.4% (Fig. 17). The unique cultural values of the M'nong community have also not been widely promoted to tourists. In the future, the local government and the management board of the geopark need to implement projects to exploit the potential for this type of tourism, bringing economic benefits to the local communities.

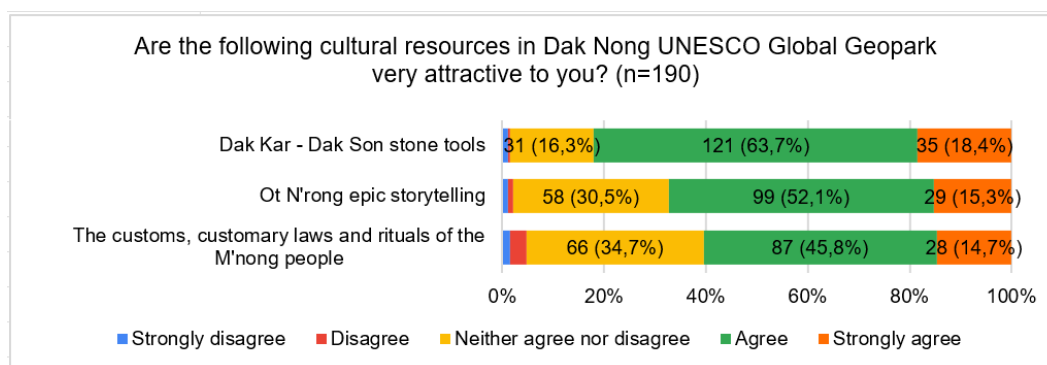


Fig. 17. Attractiveness of cultural heritage exploration tourism at the Dak Nong UNESCO Global Geopark to tourists

5. Conclusions

Based on the analysis and evaluation of the Dak Nong UNESCO Global Geopark's tourism potential and attractiveness, the current study proposes two types of natural and cultural geotourism with seven sub-types, which have the potential for exploitation and development in this geopark. The attractiveness of different types of geotourism in the geopark varies according to the age, gender, and profession of the surveyed group.

From the research results, some recommendations on directing the sustainable development of geological tourism in the Dak Nong UNESCO Global Geopark are made as follows:

The international community is increasingly aware of the need to protect the common geological heritage of humanity, or geologically valuable areas with scientific, educational, cultural, and aesthetic value. Therefore, developing geotourism brings an opportunity for the Dak Nong UNESCO Global Geopark to attract tourists, especially international visitors.

It is necessary to focus on geotourism investment and development at the Dak Nong UNESCO Global Geopark, considering it a key nucleus in the tourism development of Dak Nong province, and the Central Highlands.

Apart from promoting community awareness of the geological heritage of the exploited, and future geotourism sites, specific regulations are needed for visiting geological sites to ensure their sustainability in the future.

There is also a need for building unique and distinctive tourism products and supporting services for the development of tourism activities. The establishment of preferential investment policies to attract organizations and businesses to participate in the development of tourism-related services and infrastructure in the geopark is a vital factor.

It is very important to invest in research to improve the allure of destinations, enhance propaganda and promotion, raise community awareness, and management capacity, and strengthen cooperation nationally and internationally.

It is crucial to continue investing and building research topics and projects to further clarify the tourism resources and geotourism development orientation within the scope of the Dak Nong UNESCO Global Geopark.

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