

ECOTOURISM AT PENANG HILL BIOSPHERE RESERVE: A VIEW FROM NGOS AND LOCAL COMMUNITY

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ABSTRACT

Ecotourism and Biosphere Reserves are closely connected based on their contribution to environmental conservation, sustainable development, and community involvement. Ecotourism at Penang Hill Biosphere Reserves (PHBRs) is a new branding of tourism attraction. It has been acknowledged by UNESCO as the third biosphere site in Malaysia in September 2021. PHBR consist of three main tourism destinations that are Penang Hill, Penang Botanic Garden and Penang National Park. These destinations are currently managed by their own destination managers while currently constituted under the umbrella of PHBR. This paper explores the view of the local community and non-profit organisations (NGOs) on their existing roles, activities and challenges and proposes strategies for the PHBR. The findings indicate that these two parties play an active role in promoting the conservation and sustainability of PHBR. There are local communities that are voluntarily active in NGOs where the main focus was in environmental conservation. They raised their concern about the lack of awareness of the PHBR acknowledgement among various stakeholders. As a recognised biosphere site, they proposed a few strategies from the management of PHBR and other related stakeholders on branding and promotion, creating awareness and monitoring illegal and unsustainable activities at PHBR. The present study carries a strong message on to the governance of PHBR to plan, manage and monitor activities within the PHBR to sustain PHBR as a worldwide popular biosphere site.

Keywords: *Penang Hill Biosphere Reserve, NGOs, Local Community and Qualitative Study*

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INTRODUCTION

The Biosphere Reserve (BR) concept, first developed in the 1970s, idealised the integrated approach using three zonation: core, buffer, and transition zones to harmonise conservation and development. *“Biosphere reserves are mechanisms that seek to promote an approach to land management that harmonises interactions between people and nature”* (Van Cuong et al. 2017). Penang Hill and its surroundings received the designation “Penang Hill Biosphere Reserve” (PHBR) under the UNESCO Man and Biosphere (MAB) Programme for its unique natural and cultural heritage during the 33rd International Coordinating Council at Abuja, Nigeria on 15 September 2021. It comprises a network of ca. 12,500 ha of contiguous natural areas that follow the slopes from Penang Hill down to Penang Botanical Gardens in the East and Penang Island’s, coastal and marine areas in Penang National Park in the West.

Ecotourism has been described by the World Conservation Union (IUCN) (1996) as:

Environmentally responsible travel and visitation to natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local people.

Most of the researchers use the term ‘ecotourism’ to represent the concept of ‘Biosphere Reserve’. Some scholars refer ecotourism as a tool for conservation and sustainable development (Wallace & Pierce, 1996). Schultz, Duit, & Folke (2011) argued ecotourism fits well within the context of UNESCO Biosphere Reserves (BR), which, since its first introduction in the early ‘1970s, raised the debate on the potential coexistence of objectives such as conservation and sustainable development. This paper adopts the definition given by Anderson et al. (2012), which states:

Ecotourism is the part of sustainable tourism, which is made up of cultural, rural and natural tourism aimed to conserve

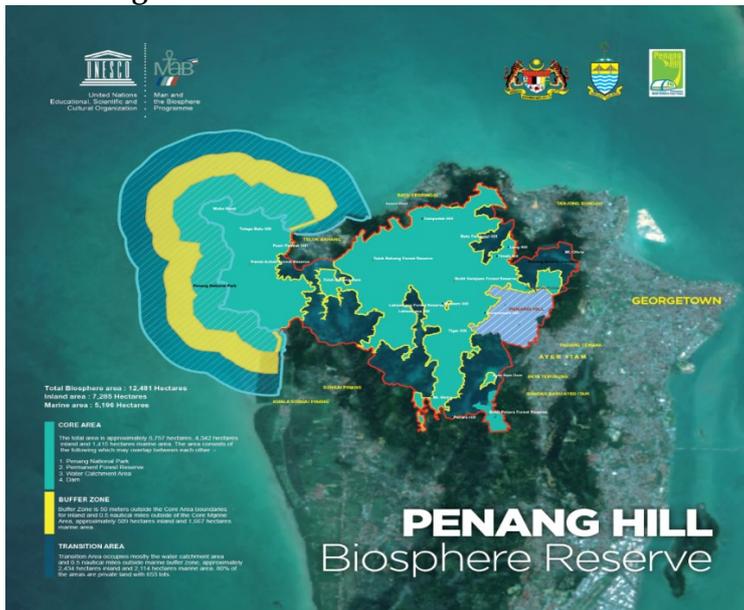
biodiversity, sustain the well-being of local people, includes learning experience, involves responsible actions on the tourism industry, and requires lowest possible consumption on non-renewable resources and stresses.

PHBR has received a new acknowledgement of a biosphere reserve and PHBR's governance is still in its initial stage of development. Thus, this study explores the existing role played by the local community and NGOs and their challenges and input for PHBR sustainability. Addressing these aspects is crucial for harmonising conservation efforts with sustainable tourism and ensuring the PH|BR continues to thrive as a model for sustainable development in Asia.

Case study sites: Penang Hill Biosphere Reserve

PHBR consist of three major attractions, which have their own governance structure. However the PHBR existence has combined these three destinations under PHBR (refer to map below).

Figure 1: The natural conditions of PHBR.



Source: The PHBR Dossier

Penang Hill was first built in 1788 by the British Government. Bukit Bendera, situated at an altitude of 735 m (2,450 feet) above sea level, provides comfortable and cool weather (RKKBB 2020). The cable car is the main attraction for recreation with three stations (lower, medium and upper stations). Currently its residents consist of 147 communities of mixed races, including 36 private bungalow owners and locals. The service sector's involvement is mainly in tourism-related activities such as accommodation, restaurants, gift or souvenirs, transportation, and logistics. About 57 shops are selling different kinds of products on the top and lower stations of PHBR. The local communities consist of farmers, who are of the older generation, who prefer to remain in the place and make a living through small-scale agriculture and fruit planting activities. There are 20 farmers, mainly concentrated at the Middle Station and Summit of Penang Hill. Other populations include people who visit PH, such as hikers, tourists, and businesses.

Penang National Park (PNP) was announced as a National Park in 2001. It is this state's most important natural treasure in terms of high biological diversity. PNP is a natural place with high biological diversity (flora and fauna), sandy and rocky beaches, and Meromictic Lake contributes to tourism, research and education. The development concept focuses on tourism with good care of sustainability and conservation. The current development of PNP focuses on Sungai Tukun dan Pantai kerachut, which provides basic infrastructure such as a walking walkway, chalet, camping area, jetty, lookout tower (Menara pandang), hall and toilet. The development combines tourism and sustainability. Ecotourism and conservation remain the most important consideration in any development. The local community consist of fisherman community who basically resides in the area of Teluk Bahang. In the context of Penang Island, a total of 2318 fishermen, with almost half of them within the age range of 40 to 69.

Penang Botanic Garden (PBG) existed in 1884 and is the oldest botanical garden in Malaysia. PBG has two main resources: the

waterfalls, which supply Georgetown and its surroundings and unique flora species. This area provides recreational areas for the community and tourists as well play an essential role in microclimate stabilization, carbon sequestration, flood mitigation, erosion control and water purification. Preserving this natural area is vital in ensuring the values of safety, health and the well-being of residents (RKKTBPP, 2001). There is no specific local communities involved with PBG however; PBG has its group of communities, which includes daily visitors (joggers), tourists, business operators and NGOs.

Ecotourism activities at Penang Hill Biosphere Reserve

There are a combination of activities that can be classified as ecotourism such as Eco /park, Culture and heritage, Family Entertainment, Gastronomy and Research and Education.

Table 1: Ecotourism attractions at PH, PNP and PBG

Penang Hill	Adventure trail, nature walk and monkey cup garden Jungle trekking is available for the three destinations. Colonial building (Crag Hotel, el Retiro and Gate House), owl museum, Toy Museum, Earthquake pavilion, Bukit Bendera Mosque and Kuil Si Aruloli Skywalk, Skydeck, El walk, Love lock, little village, Dinasour and Aviary Garden, Henna Spa Any kind of local and western food The Edgecliff Gallery (showcases Penang Hill's history, culture and biodiversity)
Penang National Park	Meromictic Lake/ Tanjong Kerachut/Muka height Jungle trekking is available for the three destinations. Local food Interpretation centre
Botanical garden	Recreational and leisure Jungle trekking is available for the three destinations. Local food Plant species and conservation

LITERATURE REVIEW

Stakeholders and Eco-tourism

Stakeholders is define as *"Individuals and organisations who are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or successful project completion"* PMI (2010). Getz and Timur (2005) and Kadi et al. (2015) note that stakeholders such as the local community, government, tourists, industry, educational institutions, and NGOs greatly influence sustainability development. Understanding the roles and significance of stakeholders could help resolve a wide range of issues in a sustainability context, and stakeholders' collaboration significantly impacts the area's development (Kadi et al., 2015).

Stakeholder collaboration is *"a process of ensuring that there is the interaction of various stakeholders with common or related goals during planning, learning, decision making and empowerment mainly for the sake of enabling smooth management, collectively decision and innovation when tackling challenges, opportunities and plans for current and future well-being of a particular society"* (Pasape et al., 2013). Stakeholder collaboration is crucial for ecotourism because it ensures sustainable development, balances diverse interests, and enhances the overall experience for both visitors and local communities. Stakeholder collaboration is necessary when it deals with various stakeholders with varying needs and interests (Majail & Webber, 2006; Novey, 2015).

Local communities refer to people or local residents who live in or near protected areas. Tourism affects their lifestyles, traditions and cultures, as well as their livelihood and their long-standing ways of organizing themselves socially and politically; in most cases, local communities are often unprepared for the demand, especially when dealing with the international market. The community plays typically two main roles: 1. active decision-makers in ecotourism planning and management and 2. key players in conserving natural resources both within and outside of neighbouring protected areas. However,

residents have varying opinions on this encroachment. Some prefer to distance themselves from tourists, valuing their privacy and resisting the changes tourism brings. Others, however, find it fascinating and are actively working to foster its growth. In developing countries, Petrovska (2009) identified many local communities are involved in creating various programmes for income generation and trying to protect their surroundings.

Besides the local community, NGOs are organisations working towards the benefit of the environment. NGOs are known as the third sector, which is outside of governmental organizations and the private sector, and work towards a common goal by seeking the contributions of volunteers (Hudock, 1999). Ecotourism can greatly benefit from NGOs as environmental conservation is one of the key goals of NGOs, and many have done a considerable amount of work in it. According to Akkucuk and Sekercioglu (2016), environmental NGOs play an important role in terms of raising public awareness about environmental issues, protecting habitats and lobbying the governments in order to enact environmentally friendly legislation. NGOs normally provide a forum for discussion and influence regarding ecotourism. NGOs are valuable players who play different roles in ecotourism. This study defines an NGO as an organisation involved with ecotourism, including private, non-profit groups that focus on conservation and development or may be explicitly dedicated to ecotourism. Some of these NGOs have members who appreciate nature and would be keen on ecotourism education and promotion.

METHODOLOGY

This study employs a qualitative approach to gain understanding and experience directly with the respondents about their collaboration in the management of PHBR. The focus group discussions (FGD), popularly known as group interviewing, is one of the most common primary tools used for research in current context. This tool, by nature, is qualitative and engagement in discussion enables the

researcher or interviewer to pose inquiries to numerous participants systematically and simultaneously (Lanshima & Abdulkarim, 2021). This study reports the results of FGD sessions with local communities and NGOs. There are six NGOs and three representatives from the local community. This FGD been conducted in January 2024.

This study uses thematic analysis with a systematic approach to organize and examine qualitative data to reveal important themes from the FGD sessions that have been conducted. We interpreted complex data sets from transcripts of focus group discussions by identifying recurring patterns in meaning from the discussions' results. This analysis aligns with the thematic analysis framework guide from Braun and Clark (2006), familiarising with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the findings. Next, the formation themes and sub-themes for this study were explicitly formulated in the context of challenging aspects of managing PHBR.

RESULTS

The role of NGOs / Local Community

PHBR consists of three independent tourism destinations with different attractions. Each site has its management. Destination planning, management, and conservation are conducted in accordance with specific acts and regulations. The FGD session was conducted to identify: 1. The role of NGOs/Local community. 2. The ecotourism activities conducted at the three destinations and, 3. The challenges to enhance the sustainability of PHBR. Table 1 indicates the role played by the NGOs.

Table 2: Role played by the respondents

	Respondents	Role
FGD SESSION: Local community and NGOs	NGO1	Watch the illegal activities such as hill land clearing-closely deal with local authority Take the initiative to introduce a sustainable farming system
	NGO2	Deals on water education and conservation
	NGO3	Focus on natural history conservation
	NGO4	volunteer community group involved with outdoor recreational activities such as hikers, mountain bikers
	NGO5	Also, community groups support NGOs activities on the educational part of PHBR
	NGO6	To connect people through education and outreach.
	LC1	To protect Penang Hill from any damage
	LC2	To help the fisherman community and organise programs for their socioeconomic benefit
	LC3	To protect the coast and sea from garbage

The three destinations have their own strengths, and NGOs and local communities have different ecotourism programmes tailored to their attractiveness. All the programmes are conducted with destination managers and sometimes involve other government agencies. There are also monetary activities involved. NGO6 arranged a free and paid heritage walk and habitat tour. Besides that, they also arrange a program structured for the tourists, especially for the younger generations, about farming, wild herbs and common herbs, and sustainable farming, including seeding and planting, and he mentioned: *“the education on PHBR is important for the younger generation because they are going to shape the future of PHBR”*. Besides this, they also work together with the destination manager and other NGOs to manage the experience walk package where the locals have to pay a certain amount of fees to cover the fast lane train and a hill

guide for the heritage walk and tour. They also run a free walk every day for nature and the heritage walk.

NGO2 is concerned with water education and is involved in programmes related to water education, river monitoring, and related activities. She views *'the awareness on water education as important for PHBR because of the farming activities on PH, which less emphasize sustainable farming.* NGO4 added as:

We are also doing a programme in collaboration with agencies, departments, and media to promote a clean and safe environment. We work together with the Penang Hill and Botanical Garden to clean up the trails. We also work with Police Department to solve burglary cases in the jungle, so we become the eyes in the jungle and help solve the cases.

There are also communities that actively collaborate with the destination managers in conducting programs. LC3 mentioned that they have a good relationship with the National Parks, have collaborated on many programs, and meet regularly to address any issues that arise. The above narrative explains the existing collaboration and communication between the destination management officers and local communities and NGOs on activities related to PHBR. These activities can be enhanced to support the sustainability of PHBR.

Challenges for Sustainable PHBR

Based on the above responses, it was concluded that after almost 16 months of PHBR recognition, people still have a lack of understanding of the concept of PHBR. The local community association of Penang Hill (LC2) quoted, *'nobody knows about PHBR, and without a huge notice board, they won't know what it is'*. One of the NGOs (NGO4) also agreed on this, and she added from her experience, the new generation is more alert on PHBR compared to the older generation. PHBR is still a new recognition, and in Penang, people normally refer to Georgetown as a World Heritage City". LC 1 highlights international tourists who would like to see the notice

board and attractions related to PHBR while the awareness program needs to be provided for local people.

For the National Park (LC3), according to the community, they are having problems with garbage in the sea and along the coast. When fishermen do fishing activities, they get garbage; this is also a problem for fishermen in carrying out their economic activities. For example, if we go to the beach at Monkey Beach, the area is not suitable for taking food there because there are many monkeys and when they see us carrying plastic bags or food, they will attack. The same is the case with the programs that are run there, such as team building and so on, which also produce garbage and throw it into the sea." Another thing raised by him is financial constraints: 'Before MCO, we used to do many events, but after that, we no longer organize events due to financial budget constraints involving high costs'.

In the Penang Hill area, there are many unoccupied old bungalows, and most of them use this bungalow as a rest stop. There are squatters living in the area of Penang Hill and most of them are farmers. According to LC 1 *'Most of the farmers are older generations above 50 ys old and don't know the correct way to do the farming. Now the foreigners got in and helped them, and eventually, they are doing farming, and they do not care about sustainability'*. He foresees that there will be many more illegal lands and activities carried out on government land in particular, and many foreigners monopolize this agricultural land. NGO2 further highlighted the water issue on Penang Hill as:

Illegal farming that use fertilizers pollute the water. Agricultural activities use a lot of fertilizers and water, which can cause water pollution to occur with the presence of heavy chemicals. This type of vegetable plant uses a lot of pesticides that pollute water such as chilies and so on. Changing agricultural activities towards sustainable farming is a very important step in contributing to the development of PHBR.

Another important matter is hiking trails. NGO4 explains there are many illegal trails in Penang Hill.

For hikers, creating systematic trails has several obstacles where the planning involves many parties to standardize. It is also quite difficult to get all the agencies to sit down and discuss this. In addition, one trail can be used by various forest recreation activities; this also creates conflicts between these various activities."

For the Future Sustainability of PHBR

Based on the statements below, the NGOs and local community perceive that the PHBR office should have strategies to ensure its sustainability. According to the PHBR management Plan, the PHBR management office partly exists and is responsible for managing PHBR. However, the responses below highlighted suggestions for enhancing the achievement of PHBR objectives.

The above statements indicate the need for PHBR's governance to explore its marketing and branding strategies. The strategies can also be referred to in the table below.

Table 3: Proposed strategies based on the respondent's feedback

Strategies	Respondents	Narrative
PHBR branding	LC 3 LC 1	Every activity or programme should use PHBR branding as an official brand to attract their attention and promote PHBR For Bukit Bendera, while visitors or tourists are going up to on the train maybe the recording can be played telling them on PHBR
Promotion	LC2	Conventional approaches such as sign boards and such are still relevant the latest technology and social media approaches are very relevant nowadays. Creating a PHBR One Stop Center is also a good approach to gather all activities, events, programs, campaigns and so on annually for the purpose of promoting and branding PHBR as a whole."

Biosphere Reserve (PHBR). Through the FGD from the local community and NGOs, this research explores the important role of these two organizations for the sustainable management of biosphere reserves. The results indicated that even though the three tourism destinations included in PHBR have their own programs, there is considerable scope for improving integrated communication and cross-cultural collaboration.

An important finding that emerged was the collaboration already taking place through partnerships with NGOs, local communities and other agencies. These collaborations are mainly focused on education and environmental awareness, as indicated in activities involving destination conservation and sustainability. It has been viewed that these two stakeholders have been incorporating with each other in conducting various activities such as heritage walks, awareness and water education.

The results also indicate that there is limited awareness and understanding of PHBR among stakeholders, especially the local community. Respondents indicated that many members are not aware of PHBRs recognition and its importance for the area. This research also points out that communication remains a major barrier in PHBR management, as stakeholders have limited channels for sharing information and fostering understanding.

Generally, these two stakeholders raised concerns on the lack of concerns for sustainability. It has been observed that there are many unsustainable practices happening in the PHBR, such as illegal farming activities, garbage issues and water security. By promoting responsible tourism practices that respect local culture and ecosystems, stakeholders can align their interests more closely. This approach allows for the generation of economic benefits while safeguarding the natural and cultural heritage of PHBR, ultimately contributing to both conservation and community development goals. The interplay between tourism and conservation, as observed in PHBR, demonstrates that achieving sustainability requires aligning stakeholder motivations with broader conservation objectives

through inclusive and economically viable initiatives.

These groups propose a few strategies. Among the important findings is PHBR branding and promotion. The acknowledgement has authorized PHBR to empower all the stakeholders for sustainability. The governance of PHBR should take an initiative to promote PHBR among stakeholders. They also suggested to enhance communication by using digital communication platforms and signboards to address this gap and engage stakeholders effectively. Another important finding that resulted from this study was the need for a centralised management platform. Stakeholders, including government representatives, NGOs and local communities highlighted the importance of creating a PHBR one stop center to gather all activities, and programs under one umbrella. Such type of platform could help consolidate efforts and promote PHBR as a unified entity, resulting in enhancing communication between agencies and ensuring more effective collaboration and thus guiding to achieve sustainability in the area.

Many scholars have emphasized the impact of stakeholder collaboration on destination success. The views of the local community and NGOs support this. Collaboration from various stakeholders is needed for various benefits, including creating awareness and monitoring.

CONCLUSION

PHBR is part of ecotourism destinations focusing on conservation and sustainability. This study explores the stakeholders' views about PHBR from the perspective of local communities and NGOs. These two parties have their own unique role in ensuring the long-term conservation and sustainability success of the PHBR. The study highlights the importance of stakeholder collaboration in managing the destinations. PHBR consists of three destination attractions managed by its own destination managers. Besides the cooperation from NGOs and the local community, the collaboration also happens with other stakeholders such as the destination managers,

government and private sectors. Under the umbrella of PHBR, this destination should work together with NGOs and the local community to participate in conservation efforts that produce benefits to all, such as revenue from sustainable tourism, which is aligned with conservation goals. Linking conservation and development goals can help PHBR turn competing interests into complementary ones, advancing ecological and community outcomes.

Findings also revealed that even though collaboration is present, it remains fragmented across different destinations within PHBR. Establishing a centralised communication platform such as PHBR one stop center, emerged as a significant need to unify activities and improve stakeholder engagement. By establishing a formal platform for interaction Governance and stakeholder relationships can improve and collaboration can become more streamlined.

Diverse stakeholder voices must be included when making decisions. PHBR can empower underrepresented groups, and especially local communities, to create an equitable governance framework consistent with environmental preservation and the well-being of local communities. This is to ensure that all stakeholders are able to speak and that conservation efforts enjoy broader support. Ecotourism at PHBR is still in the development phase. It is acknowledged that there is still a burden of promoting sustainable use of natural resources and preserving the environment. However the responsibly the triple bottom-line approach which consists of social equity, economic, and environmental factors, the burden shall share with everyone involved with the destinations. This study offers various practical recommendations for managing the Penang Hill Biosphere Reserve (PHBR) and related protected sites. The study highlights that stakeholders require a collaborative governance framework for regular engagement and shared decision-making. To make decisions jointly and fairly, PHBR managers might consider developing a governance structure with stakeholder representation.

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