

## Guidelines for management of Kew Mae Pan and Pha Mon Nature Trail, Doi Inthanon National Park, Chiang Mai Province, Northern Thailand

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### Abstract

Environmental degradation and the shortage of skilled workers for hospitality services in Kew Mae Pan and Pha Mon Nature Trail, Doi Inthanon National Park, Thailand are a result of the rapid growth of demand for nature-based tourism. Based on the past research, many destinations had attempted to solve the problems, but not being successful. Thus, understanding different characteristics of the nature trail, management attributes, and problems of tourism management could help the manager to set effective management strategies reducing the negative socio-cultural and environmental impacts from tourism development. This study aimed to 1) identify different characteristics of Kew Mae Pan and Pha Mon Nature Trail, 2) investigate the problems of tourism management, and 3) propose the guidelines for managing sustainable tourism in Kew Mae Pan and Pha Mon Nature Trail. The study used qualitative research by an in-depth interview, focus group, and field survey method. The samples were 15 people from the senior advisory committees and youth advisory councils, local guides, national park officers in Kew Mae Pan and Pha Mon including professional community-based tourism research consultants. Keeping formal writing and electronic records were used to collect data between October and November 2016. It was analyzed by using content and thematic analysis.

The results indicated that Kew Mae Pan had suffered polluted condition around the area due to visitor overcapacity. The national park officer should limit amount of visitors permitted on the trail. Moreover, tourists' inappropriate behaviors should be also controlled by strict enforcement of a law and regulation. For the case of Pha Mon, since the trail faces the lack of young people who are the successors of community-based tourism management, the senior village leader should pay attention to build the learning organization in the community. Additionally, Young generation needs to study about community-based tourism management as well as foreign languages especially English and French with specialists for their career development in the future.

**Keywords:** nature trail, national park, Kew Mae Pan, Pha Mon, Doi Inthanon

**Article history:** Received 22 March 2018, Accepted 30 April 2018

### 1. Introduction

Nature-based tourism within Thailand's National Parks has become a popular form of recreational activity. In 2016, national parks welcomed nearly 16 million visitors and three million vehicles came to arrive at national parks that increased revenues of approximately 1.9 billion baht for attractions [1]. Tourism can bring many economic benefits, particularly in rural areas. For example, tourism creates jobs and incomes, strengthens the quality of life, develops infrastructure, and provides opportunities to improve and learn new skills [2]. However, tourism can also cause significant problems for social and environmental conditions due to adverse impacts of recreational activities: loss of biodiversity and cultural identity, ecological degradation, habitat destruction, extinction of wildlife, and polluted

conditions in natural attractions [3-5]. Although many research studies on the impact of tourism have proposed the guidelines for developing a destination strategies and management plan, several case studies were shown that many natural attractions were not successful in reducing negative effects resulting from tourism industry on the local communities and environment [6-8].

Kew Mae Pan and Pha Mon are the famous walking trails situated near Doi Inthanon National Park, Chiang Mai province, Northern Thailand. The growth of tourism demand in nature-based tourism increases both positive and negative effects to destinations. For instance, the outdoor exploration on the nature trails is a recreational activity that provides an opportunity for tourist to appreciate and learn about environmental conservation in natural destinations, and then creates tourists'

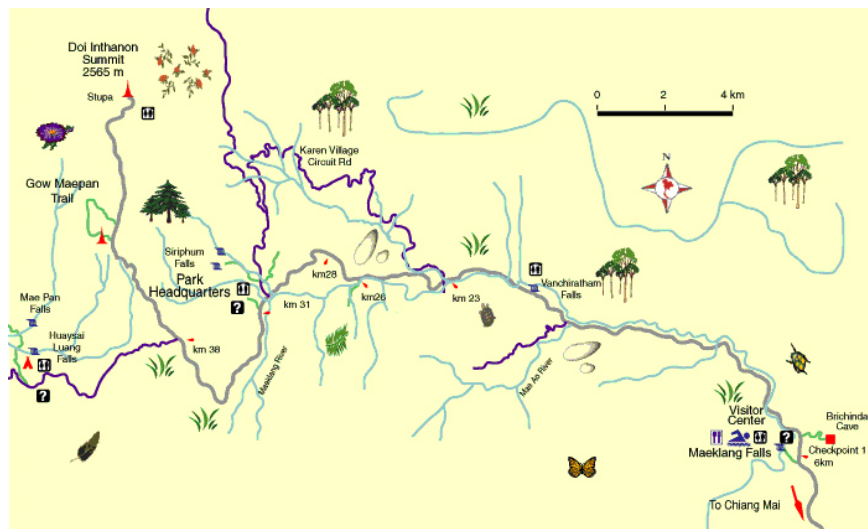
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Although many research studies have provided guidelines for the management of destinations, several case studies were shown that many natural attractions were not successful to reduce negative environmental and social impacts [7, 8]. Additionally, many studies have attempted to investigate a roadmap for increasing economic benefits in natural attractions. For better understanding, this study aims to examine the problems for tourism management focusing on Kew Mae Pan and Pha Mon Nature Trail, including the different natural resources, management attributes, trail characteristics, and laws and regulations. In particular, the sustainable

1. to identify different characteristics of Kew Mae Pan and Pha Mon Nature Trail, namely natural resources, cultural components of the environment, management attributes, interpretation, and law and regulations.
2. to investigate the problems of tourism management in Kew Mae Pan and Pha Mon Nature Trail
3. to propose the guidelines for managing sustainable tourism in Kew Mae Pan and Pha Mon Nature Trail.

Karen is an ethnic group in Pha Mon Village and often stays in the lower mountains, and engages in agriculture, livestock including rice cultivation. Pha Mon Nature Trail has been developed as a destination for community-based tourism and administrated by the Pha Mon village committees. The main features of the



**Figure 2** Location of Kew Mae Pan and Pha Mon (Karen Village) Nature Trail  
Source: Maps-Thailand [15]

trail are presented about the ethnic identity of the Karen, especially agricultural communities. The local guides are young generation members trained by the senior leaders of the village [12].

In conclusion, based on previous literature, Kew Mae Pan and Pha Mon Nature Trail have different characters in natural resources and environment, cultural aspects including tourism management. The literature review provided fundamental information that helps to understand about substances associated with the characteristics of the nature trails related to tourism management in destinations and then bring about to examine the problems of tourism management together with the guideline for managing the nature trails.

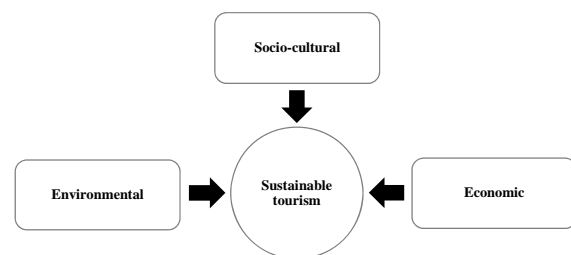
### 3.3 Sustainable tourism management

Fundamentally, sustainability principles referred to the environmental, economic and socio-cultural aspects of tourism development, and a suitable balance must be established between these three elements to guarantee its long-term sustainability (Figure 3).

Walking along nature trail is form of environmentally responsible tourism that involve travel and visitation to relatively undisturbed natural areas with the object of enjoying, admiring, and studying the nature and cultural aspect, through processes which supports sustainable development, e.g. environmental conservation, low impact on the environment and culture, socio-economically beneficial involvement of local communities.

## 4. Methods

The study used qualitative research by the in-depth interview, focus group, and field survey method. The



**Figure 3** Elements of sustainable tourism  
Source: Sastri [16]

study sites were Kew Mae Pan and Pha Mon Nature Trail, Doi Inthanon National Park. The samples were 15 people from the senior advisory committees and youth advisory councils of Pha Mon Village, local tourist guides, national park officers along with professional community-based tourism research consultants. Keeping formal writing and electronic records were used to collect data between October and November 2016.

Data analysis for this study comprised of two main parts, namely content analysis, and thematic analysis. In the procedure of analyzing qualitative interview data, content analysis, as an analytic method, has been applied for summarizing the different characteristics of the nature trails focusing on natural resources, cultural components of the environment, interpretation, laws and regulations, and tourism management. For the second part, focusing on the interpretive dimension of data, the main social statistical methodology was used in data analysis: a thematic analysis.

**Table 1** Interpretative sign points of Kew Mae Pan

<b>Educational objective of interpretation</b>	<b>Ordinal number of point</b>	<b>Name of point</b>
<b>1) Understanding ecology and plant species</b>	1 <sup>st</sup>	- Filmy fern
	2 <sup>nd</sup>	- Cloud forest
	4 <sup>th</sup>	- Plants community
	5 <sup>th</sup>	- Dynamic forest
	6 <sup>th</sup>	- Aerial expressway
	8 <sup>th</sup>	- The re-tolerant bracket fern
	13 <sup>th</sup>	- Rhododendron
	14 <sup>th</sup>	- Secondary forest
	15 <sup>th</sup>	- Watershed forest
	16 <sup>th</sup>	- Moss-water loving but drought tolerant
	17 <sup>th</sup>	- Two generation forest
	18 <sup>th</sup>	- Tall but easily fall
	19 <sup>th</sup>	- Tree fern
<b>2) Learning about wildlife habitat</b>	10 <sup>th</sup>	- Rock cliff – a safe home the gorals
<b>3) Admiring beautiful natural scenery</b>	3 <sup>rd</sup>	- Humble origin of mighty river
	7 <sup>th</sup>	- Semi-Alpine meadow
	9 <sup>th</sup>	- Panoramic view
	11 <sup>th</sup>	- Pha-Ngam Noi
	12 <sup>th</sup>	- Kew Mae Pan
	20 <sup>th</sup>	- Listen to nature's voice
<b>4) Concluding about the nature trail</b>	21 <sup>th</sup>	- Summary

Source: Ministry of Natural Resources and Environment [14]

Thematic analysis method was applied to interpret the data of several problems related to tourism management in Pha Mon Nature Trail. Commonly, thematic analysis usually refers to the qualitative research method based on the purpose of integrating the findings of results from data collection and attempting to identify the theme and sub-themes indices of interesting issues in research. Fundamentally, thematic analysis processes can be divided into six phases, e.g. becoming familiar with the data, generating initial codes, searching for a theme, reviewing theme, defining and naming themes, and producing the report [17].

## 5. Results and Discussion

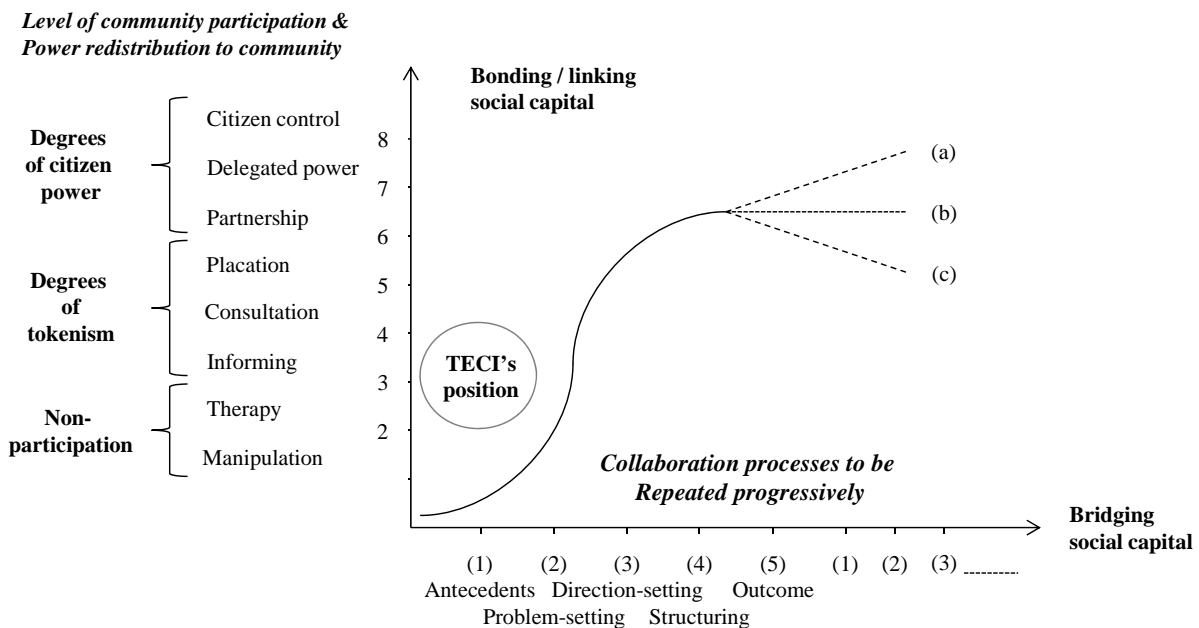
### 5.1 The characteristics of nature trail

#### 1) Kew Mae Pan Nature Trail

The results from data analysis in this study described the characteristics of Kew Mae Pan Nature Trail that can be explained in three aspects: natural resources and environment, trail characteristics, and destination management. Kew Mae Pan is rich in natural beauty. Firstly, the trail has hill evergreen forest and grassland. The grassland is the result of human disturbance. The

plant species that occur naturally in the trail: Jambolan Plum and Needle Wood. The trail located at a height of 1,800 meters above sea level. The path is at a distance of three kilometers and approximately three hour's walk. In an effort to preserve the trail, the site imposes restrictions that limit not more than 10 tourists allowed on the trail each walk round. 21 of interpretative sign points were set for environmental education objectives along Kew Mae Pan as shown in Table 1. In addition, Kew Mae Pan is a good viewpoint to see gorals in natural habitat including The Great Holy Relics Pagoda Nabhamethanidol and Nabhapolbhumisiri. The trail is closed for restoration work during June and October in each year.

Finally, the trail is managed by The National Park, Wildlife, and Plant Conservation Department, Chiang Mai Office. National Park Act, B.E. 2504 that is an applicable law and Regulation is applied for attraction administration. In addition, a trained local tourist guide was allowed from authority to take care of tourists during recreational activity. Some interpreters can speak English fluently.



**Figure 4** Level of community participation in Pha Mon Village  
Source: Okazaki [18]

## 2) Pha Mon Nature Trail

Fundamentally, Pha Mon Nature Trail is rich in cultural beauty. The trail comprises socio-cultural components of Karen such as places (i.e., Pha Mon Temple and Niyom Phrai Pha Mon School), community forest, non-timber products, local handicrafts, folk wisdom, and way of life. The trail is managed and administered by village committees and association. The level of community participation in Pha Mon Village is the partnership which means that the community and public organizations work together to manage tourism policy and planning (Figure 4) [18]. Additionally, village members pay attention to knowledge management processes in the organization especially brainstorming, monitoring system, and telling the story about experiences in community-based tourism management. Furthermore, Pha Mon has received private support to develop infrastructure and amenities in the area from France travel agency.

The regulations were set by committees for visitor management such as setting limits on the number of tourists permitted that no more than ten people per a group, prohibiting noisy activities, and dressing appropriately for travel in the area. During the trail, tourists have gained knowledge from young villager guides about the condition of natural resources and environment along the trail, agricultural communities, and rice terrace including The Royal Initiated Projects. Furthermore, the results of focus group discussion

indicated that the senior village leaders attach great importance to the local community collaboration in tourism management, as presented opinion below.

“Managing tourism destination by local community stakeholders has better handles than by capitalist group. Local people still have main incomes to live comfortably from agriculture, but not from tourism services”.

In conclusion, the basic characteristics of the nature trails are different in all aspects. Kew Mae Pan as a trail was developed for ecological education, and managed by the public organization. On the other hand, Pha Mon was handled by village committees, and organized for local cultural education objective.

## 5.2 The problems of tourism management

### 1) Kew Mae Pan Nature Trail

Kew Mae Pan and Pha Mon Nature trails have suffered from different problems and limitations in managing a site. The results of data analysis indicated that Kew Mae Pan faces polluted condition and tourism management inefficiencies in opening day for trail, namely the lack of infrastructure, traffic problems, air and noise pollution from vehicles, and garbage problems, although Kew Mae Pan has close off the path around five months period in each year, and the problems were mainly a result of visitor overcapacity.

In 2016, over eight hundred thousand tourists came to visit Doi Inthanon National Park, and Kew Mae Pan was one of the most-visited destinations in the national

**Table 2** Conclusion: participants' quotes, keywords, concept (sub-theme) in thematic analysis

Theme	Sub-theme	Participants' quotes
Problems for tourism management in Pha Mon Village	1. Lack of successors to manage community-based tourism	1.1 <i>"Several young people continue to work in downtown after graduation"</i>
		1.2 <i>"Very few young people are interested to participate community-based tourism management together with village committees"</i>
		1.3 <i>"It's hard to predict especially about the future direction of community-based tourism management in Pha Mon Village after senior leaders have retired"</i>
	2. Incomplete process for transferring knowledge	2.1 <i>"The knowledge transfer from one generation to the next will lead to the successful management of community-based tourism in Pha Mon Village."</i>
		2.2 <i>"I want to learn about sustainable community-based tourism management in Pha Mon Village"</i>

Sources: In-depth interview and focus group by the authors

park [1]. The growth in the number of visitors and visitor overcapacity during high season can cause inadequate supply infrastructure problems such as water sources. Moreover, the destination has not enough accommodation services and parking space to support for both travelers and vehicles. Additionally, the effect of overcrowding on a tourist attraction, i.e. traffic jam, leads to air and noise pollution. Even though Doi Inthanon National Park has established sub-division to handle for solid waste management in Kew Mae Pan, but the destination suffers waste problems due to tourists' inappropriate behaviors, i.e. littering inappropriately.

## 2) Pha Mon Nature Trail

The case study of Pha Mon Nature Trail, the results from the group and an individual interview with village's committees showed that the destination faces the lack of young generation people who are the successors of community-based tourism management. For instance, the samples have different opinions related to the problem, as shown in Table 2.

In addition, the local tourist guides have not enough skill of speaking foreign languages for interpretation, especially English and French. Furthermore, the nature trail has not yet installed interpretive signs along the trail.

## 6. Conclusions and Recommendations

The characteristics of Kew Mae Pan and Pha Mon Nature trail have different features on all sides. Kew Mae Pan is an environmental education trail, and then the area has directly controlled by National Park office, but Pha Mon has highlighted the cultural interpretation of Karen for tourists and managed by village committee association. Moreover, the visitor overcapacity can cause environmental pollutions in Kew Mae Pan, but Pha Mon has no successor managing community-based tourism.

## 6.1 Guidelines for managing Kew Mae Pan Nature Trail

According to the results of content analysis from in-depth interview and field survey can be proposed the five various recommendations managing sustainable tourism in Kew Mae Pan Nature Trail, as described below.

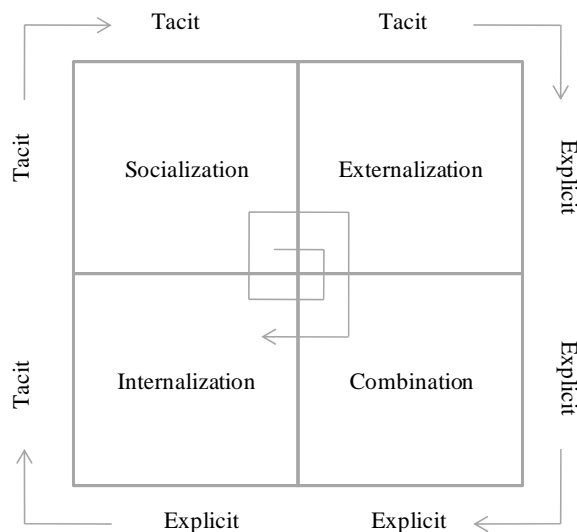
1) Evaluating carrying capacity for visitor management in Kew Mae Pan. The approaches are primarily aimed to reduce the negative effect on the environment from visitor overcapacity [6]. Additionally, the law limits on the number of tourists allowed on the trail in each day can decrease pollution and the lack of adequate infrastructure and accommodations in the attraction. Finally, the staff member should normally announce the travel information about Kew Mae Pan on official websites and social media.

2) Asking for cooperation with local tourist guides. Since the public organization has given the opportunity for local people around Doi Inthanon National Park to be a tourist guide in Kew Mae Pan, the national park officers should collaborate in finding the procedures for controlling tourists' inappropriate behaviors and encouraging tourists' environment responsibilities with local tourist guides through career development and training [18].

3) Managing efficiency transportation can decrease traffic jam problems such as providing public transportations and parking services.

4) Controlling tourists' inappropriate behavior by strict enforcement of a law and regulation. The roles in regulating and enforcing visitors' behaviors are the staff responsibility of monitoring tourist behavior and enforcing the law [19]. For instance, prohibit littering inappropriately, segregate waste, and bring waste back to the outside when leaving the destination.

5) Installing additional interpretive signs both inside and outside the trail. The signs give tourists the knowledge



**Figure 5** SECI model of knowledge dimensions  
Source: Nonaka *et al.* [20]

and information about trail direction, the characterizations of the trail, and plant species diversity in Kew Mae Pan.

## 6.2 Guidelines for managing Pha Mon Nature Trail

Based on content and thematic analysis, from in-depth interview, focus group, and field survey, there were four guidelines developing sustainable community-based tourism in Pha Mon Nature Trail, as described below.

1) Training young people about the knowledge of the socio-cultural environment in Pha Mon and community-based tourism management from elders, and then the approach can lead the new generations to appreciate the values of cultural identities in hometown.

2) Creating knowledge management system in the organization. Although the village and The Thailand Research Fund (TRF) have worked together in the management of learning organization, the problem is still there. Thus, knowledge management (KM) is an important process to collect tacit and explicit knowledge for developing KM system. The types of KM activity was explained in SECI model of knowledge dimensions which have a lot of standard forms that the village can apply for knowledge management in the organization (Figure 5), as described below.

Firstly, socialization is the process of tacit to tacit knowledge transfer or sharing tacit knowledge face-to-face or through experiences. For instance, the KM activities in socialization process are meeting and brainstorming about community-based tourism management, reviewing after actions among village committees and members. The secondary process is externalization

that is the process of tacit to explicit knowledge transfers. The externalization procedure may be initiated in present to the public events such as publishing in scholarly journals and submitting a conference paper. Next, the combination is defined as “the social interaction process that transfers explicit to explicit knowledge”. The combination procedure is managed by database system both document formats and information technology storage devices from inside and outside the community, and then creates innovative knowledge for tourism management. Latterly, the process of explicit to tacit knowledge transfer is called “internalization”. The procedure occurs when village members start learning by doing process such as establishing a community of practice [20].

The benefits of KM in Pha Mon Village can be applied for improving community-based tourism management, developing career paths and skills as well as encouraging the appreciation and conservation of natural resources and cultural identities in the destination for both senior and young people.

3) Encouraging foreign languages skill especially English through providing basic education for students in Niyom Phrai Pha Mon School. In addition, the committee group can collaborate with non-governmental organizations to find a specialist or volunteer who has the potential for teaching French and English to local guides and young people.

4) The staff team should install interpretation signs along the trail or make travel guidebook for giving knowledge and information about the nature trail to tourists.

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