

COMMUNITY PREPARATION AND COMPETENCY DEVELOPMENT FOR ECOTOURISM MANAGEMENT IN THE WANG NAM KHIAO-PHA KHAO PHU LUANG FOREST RESERVE

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Abstract

This study focused on supporting the officers of Wang Nam Khiao – Khao Phu Luang forest reserve and the local community with ecotourism management training using a six-day short-course based on the Experiential Learning Theory (ELT). As part of the need for assessment and training topics, 173 forest reserve officers, representatives of government authorities, and members of the local community, completed surveys consisting of five-point Likert-type scale items. The short-course training program was developed and implemented in the Wang Nam Khiao – Khao Phu Luang forest reserve. There were 46 attendees who participated in the short course program held in 2017; these included officers, local community leaders, and representatives. Pre- and post-tests were conducted before and after each training session. A one-way ANOVA was conducted to compare the pre- and post-test scores of the trainees and the ecotourism readiness in the Wang Nam Khiao - Pha Khao Phu Luang forest reserve among three groups of attendees. The results of the study showed that the training helped to form wider collaboration between locals and national park rangers, assisting in ecotourism management and natural resource management in the forest reserve.

Keywords: ecotourism, forest reserve, tourism development, tourism management, training

INTRODUCTION

Thailand has historically profited from an inflow of revenue from tourism in major cities (Tseng, Lin, Wu, & Sriphon, 2019; Youdelis, 2013; Hvenegaard & Dearden, 1998). Ecotourism is a market-driven conservation approach used across the world (Ronizi, Mokarram, & Negabhan, 2020), “involving not only the promotion of economic incentives but also the use of various disciplinary techniques intended to condition local participants to an ecotourism

discourse” (Fletcher, 2010; 177); it refers to “responsible travel to natural areas which conserves the environment and improves the welfare of local people” (Western, 1993). As stated in the SDGs, each country aims to promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss, as key enablers for sustainable development (UN General Assembly, 2015). Thailand’s four strategic areas for the Bio-Circular-Green Economic Model (BCG) are based on her

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economic foundation and strengths, namely, (1) food and agriculture; (2) medicine and wellness; (3) energy, materials, and bio-chemicals; and (4) tourism and creative economy. By focusing on tourism as part of the four strategic areas, Thailand activates the BCG model as a roadmap for strengthening the country's economy. Local communities are encouraged to live modestly and in an environmentally friendly manner (Youdelis, 2013), to be conservation-minded, and develop their communities through ecotourism discourse (Royal Forest Department, 2012).

Ecotourism is growing among Thai tourists, although Thai tourists prefer natural attractions over cultural, historical, archaeological, or amusement facilities. Most ecotourism-related research in Thailand has focused on three areas: national park visitation, nature trekking, and increasing numbers of tourists (more than 11.5 million people visited Thailand's national parks and protected areas in 2010). Tourism can be used as a way to make money to help local economies grow (Ronizi, Mokarram, and Negabhan, 2020) and to support the BCG roadmap for Thailand.

In a recent criticism of Thai tourism development in vulnerable areas, natural resources were said to be unattainable. BCG is a robust economic model for inclusive and sustainable growth that has been developed by the research community and promoted by the Thai government (NSTDA, 2020). The government intends to shift the tourism management standards from basic tourism management into more modernized and localized standards. Therefore, community-based and eco-based tourism campaigns have been initiated for cultural and natural enrichment and promotion in Thailand (Hvenegaard & Dearden, 1998). Promoting ecotourism among tourists is a challenging task, especially when park rangers and forest reserve officers have limited knowledge of sustainable tourism management. Although the Thai government has prescribed the national tourism management plan, there is no comprehensive framework for training or

tourism management criteria. Therefore, training for improving the skills and knowledge among park rangers and forest reserve officers is crucial. A study by Hurd (2005) highlighted the most important parks and recreational professionals' competencies were (a) communicating clearly with customers and staff, (b) listening to staff and customers, (c) dealing with the public, (d) performing tasks professionally, and (e) multitasking. The training is influenced by the high demands of worldwide tourism organizations and wildlife foundations, which could yield outcomes associated with the groups' performance, through the results of ELT-based training. In addition, drastic changes in the environment deteriorate the forest reserve's fauna and scenic quality, which impacts ecotourism inputs. Forest reserve and national park rangers should communicate conservation and ecotourism messages to Thai tourists in order to promote responsible, sustainable, tourism. Experiential learning theory (ELT) promotes active and effective learning and participation among trainees, which would be the right direction for sustainable tourism management training.

The sustainable tourism management training was an initiative to introduce ecotourism and sustainable tourism in Wang Nam Khiao - Pha Khao Phu Luang forest reserve, where no tourism had occurred before; this supported a legitimate decision that aimed to empower rangers with more control and decision making capabilities. However, each stakeholder had different needs and qualification standards. Khongthong (2019) studied competency development in the tourism sector for serving senior foreign tourists and reported that health and first aid, and communication were the most important skills. Tesone & Ricci (2005) found that good tourism management requires more than just knowledge and skills, but also a change in mindsets to improve tourism quality in the required areas (Tesone & Ricci, 2005). With the increasing popularity of ecotourism among tourists, it could potentially exploit natural resources or cause

deforestation around the forest reserve (USAID, 2015). In addition, the local community's participation is critical because tourism has the potential to be used as a tool for the preservation of local wisdom and public values. To avoid illegal invasion or improper land use in the forest reserve, the locals should be engaged in some form of training in order to understand the aims and directions of tourism management and the associated practical criteria.

Stakeholders are important in improving and strengthening ecotourism management in forest reserves. Forest reserve officers, national park rangers, and the local community, are key players in prolonging sustainable tourism in the Wang Nam Khiao - Pha Khao Phu Luang forest reserve. There is currently insufficient evidence in this field, which limits the ability to reach a conclusion on whether the community-based tourism (CBT) and ecotourism training should be implemented in the forest reserve. It is therefore necessary to evaluate the usefulness of the training, and to first identify the topics of training which could be of most help to the national parks and rangers.

After a thorough literature review, it was found that ecotourism management was necessary to maintain the quality of the forest reserve and to preserve the naturalness of the areas. However, tourism can be an intervention to this aim as it leads to an area's development. To avoid this, the forest reserve, as part of its responsibility, and other stakeholders, should be knowledgeable about tourism. In the forest reserve, learning and training are mainly focused on the forest, biodiversity, fauna, and flora, with little to no training on tourism management and the tourist carrying capacity. As a result, tourism training modules were initiated and developed, and stakeholders were invited to attend training to fill the gap. Later, an evaluation of the effectiveness of the short-course training was conducted accordingly.

The research questions were as follows:
1) What is the current state of ecotourism in Wang Nam Khiao-Pha Khao Phu Luang Forest Reserve? 2) What content should be

included in the short course training program for park rangers, forest reserve officers, and the local community? 3) How effective is the short course training program in meeting the needs of park rangers, forest reserve officers, and the local community? This led to a needs assessment to scope the context of the short course training and the development of the short course training.

After analyzing the data, the current overview of ecotourism in the Wang Nam Khiao-Pha Khao Phu Luang forest reserve was obtained from forest reserves, non-profit organizations, and the local community perspective. A six-day short course training program for forest reserve officers, national park rangers, and members of the local community was held in 2017. Thirty-four volunteers participated and completed the whole training. Pre- and post- tests were used to assess the knowledge of the participants before and after the training. A one-way ANOVA was used to analyze the differences between the test scores of the attendees.

The objectives of the study were (1) to assess the needs for ecotourism management from the forest reserve officers and national park rangers, and (2) to develop and assess a six-day short-course training "Community Preparation and Community Competency Development for Ecotourism Management in the Wang Nam Khiao-Pha Khao Phu Luang Forest Reserve."

LITERATURE REVIEW

Community Participation in Ecotourism

Ecotourism is described as visiting natural areas in an environmentally friendly manner, and as such, it has developed into a tool for environmental preservation. In order to address the shortcomings of conventional (mass) tourism in addressing the needs of sustainable development, ecotourism arose as an alternative kind of travel in the 1990s. An emphasis on natural resources, sustainable management, environmental education, and community involvement are important aspects of ecotourism (Leksakundilok, 2004).

Before developing an area for ecotourism, its potential must be evaluated in order to fully understand the local population and local resources. There are various characteristics connected to the development of ecotourism in an area, the assessment of these characteristics is always based on qualitative data. The value of the attractions, facility management, environmental concerns, ecotourism activities, and community involvement, are the five ecotourism attributes which should be assessed prior to development. The actual growth of ecotourism is then evaluated using 21 criteria. Findings show that community involvement is the causative factor determining ecotourism potential and neighbourhood support for conservation efforts. Ecosystem activities are based on the natural resources of attraction areas; facility management with conservation and the protection of the environment; and collaboration between stakeholders, the government, and local populations, managing ecotourism development and influencing ecotourism practices. This study also offers managerial and theoretical insights to help with ecotourism potential (Tseng, Lin, Lin, Wu, & Sriphon, 2019). To develop a sustainable

community-based ecotourism (CBET), people from the community should participate, especially locals living near the attractions. They can participate in any travel-related activities, including working at the sites or selling goods and services to tourists. This can help to distribute income to grassroots residents. There is also a lack of evidence that complying with protected areas makes a significant contribution to the needs of local communities (Lambi & Ndenecho, 2009).

A large number of illegal activities take place in forest reserves. Occurrence of illegal activities is particularly high in many developing countries, where the lives of local communities are inexplicably entangled with the forests that provide the resources (Burgin & Zama, 2014). To engage local people with sustainable CBET, an extensive process of inclusion of the park rangers of forest reserves in natural and/or cultural tourism eventually creates jobs and prevent locals from migrating into forest reserves and using land for farming or deploying other activities.

In order to examine the relationship between the community and community involvement in ecotourism, this research

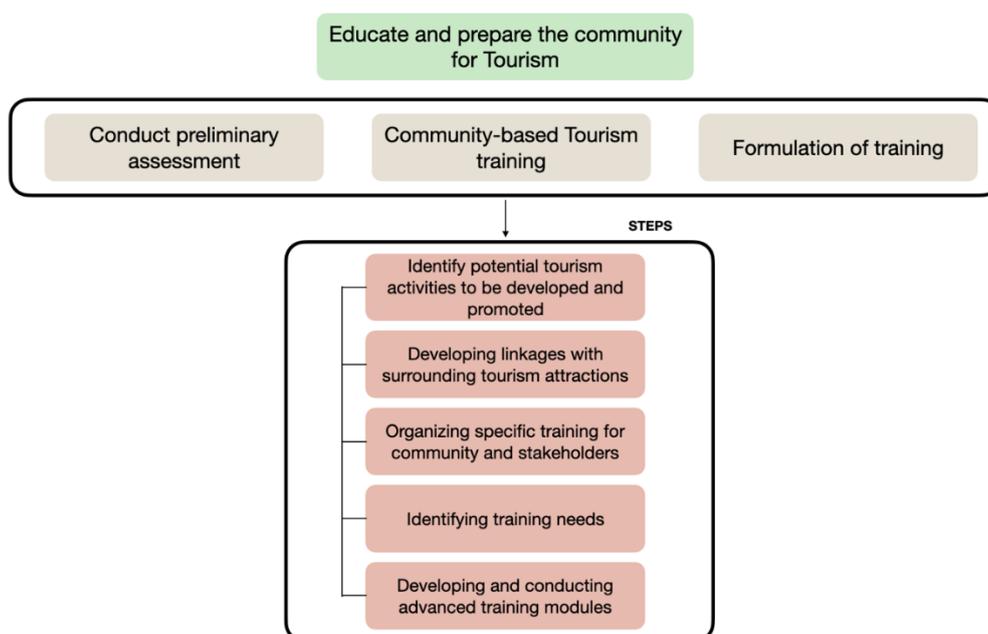


Figure 1 Components of Educating and Preparing the Community for Tourism in Wang Nam Khiao-Pha Khao Phu Luang Forest Reserve (adapted from Hanoi Open University, Capilano College, and North Island College)

focuses on the Doi Inthanon National Park's community involvement mechanism in ecotourism. A new ecotourism management system was created by enhancing community benefits and reducing adverse effects on the environment. As well as conducting in-depth interviews, data from a questionnaire survey was gathered from roughly 302 households located inside Doi Inthanon National Park. A study by Jiraya & Yujun (2019) suggested that to maximize the benefits of ecotourism in Doi Inthanon National Park, the government should set up a solid management system, provide training based on local needs, and support locals. According to the APEC tourism working group (2008), community preparation is a vital part of engaging the community with tourism development. By educating and preparing the community with basic knowledge in ecotourism and sustainable tourism development, the community are better able to participate in the protection of natural systems with high biodiversity value (Burgin & Zama, 2014). This study follows the steps and procedures as shown in Figure 1.

In a study of Hanoi Open University (HOU), Capilano College, and North Island College, staff and students from the Canadian and Vietnamese academic institutions collaborated to develop modules and deliver training to the local community in Ta Phin Village. Due to the paucity of knowledge on community-based ecotourism management in Thailand, it is not possible to generate a new model. Therefore, this study aimed to gain valuable data to match the existing models and create a practical module for ecotourism in the Wang Nam Khiao-Pha Khao Phu Luang forest reserve. Hence, the model of HOU, Capilano College, and North Island College was used as a framework and sequence for conveying community-based ecotourism training modules. The training was targeted at the local community 4-6 times a year. The modules consisted of hygienic preparation of food, homestay development, health issues, sanitation and maintenance, first aid, tour guiding, community tourism product development, and conservation.

Current Ecotourism Management in Thailand

In 2019, Thailand won the best destination in the Asia-Pacific at the 28th Irish Travel Trade Awards. According to Thailand's tourism marketing outlook (2022-2032), the Thai tourism market was valued at 57 billion US dollars and is expected to be valued at 76.60 billion US dollars in 2032, which shows a massive growth in tourism income. Tourism generates about 1.17 trillion baht of income for the country annually. However, the revenue from tourism mainly goes to developing or improving infrastructure. Previous studies showed that in order to effectively progress ecotourism (Promburom, Klunklin, & Champawalaya, 2009), and ecotourism resources and management in Thailand (Chettamart, 2003), the involvement of the local community (Leksakundilok, 2004; Promburom, Klunklin, & Champawalaya (2009) is a necessity. Putjorn & Visuthismajarn (2017) proposed a model of ecotourism management in marine parks in Thailand. A baseline study for ecotourism development was conducted in Mae Hong Son (United Nations Joint Programs on Integrated Highland Livelihood Development in Mae Hong Son, 2011). Past studies have mainly focused on natural resource management and ecotourism management for sustainability in protected areas in Thailand (Chitapanya, 2005). As stated by Leksakundilok (2004), local community participation is a significant element in transforming the dominant development concept from ecotourism to CBET. Promburom, Klunklin, & Champawalaya (2009) investigated the needs and readiness of the community in managing community-based ecotourism and gathered and assembled local knowledge to develop guidelines for community-based ecotourism management. The community was willing to have ecotourism and would like to promote their culture, traditions, and way of life, including highland agricultural practices, to tourists. In addition, Chettamart (2003) suggested a model of ecotourism management in marine

parks in Thailand that emphasized key elements in marine park ecotourism management, including ecotourism policies, activity management, travel services, the management of facilities, service quality, safety and security, the readiness of the infrastructure, and tourist attraction accessibility. Under tourism activity management, the activities should meet the demands of tourists based upon the specialty of each marine park, such as culture, history, and wildlife. In terms of travel services, the management of facilities, service quality, safety and security, the readiness of the infrastructure, and tourist attraction accessibility must be considered.

Building the capacity of ecotour operators and professional (licensed) tour guides will help them better understand the needs of high-quality independent travelers. Community tour guides should also receive specialized training in order to collaborate with local tour guides and improve interpretation of deep culture and nature, maximizing the benefits to communities and the environment.

Conflict has long existed between park officials and local communities because of illegal wildlife hunting and forest encroachment. The analysis of documents has shown that ecotourism could reduce conflict between park officials and residents by encouraging more responsibility in the conservation of the park's natural resources. The results of this research have implications for protected areas in Thailand as a whole. Overall, ecotourism in protected areas is well managed in terms of socio-cultural and economic factors. Nevertheless, all related stakeholders, such as park managers, rangers, and local communities, must focus more on environmental impacts, and more effective management is required in this regard (Chitapanya, 2005).

Little has been devoted to sustaining the environment, which is contrary to the sustainable development goals (SDGs). Due to illicit wildlife hunting and forest encroachment, there has long been tension between park administrators and the

surrounding residents. By promoting more responsibility in the conservation of the park's natural resources, ecotourism has been shown via the examination of documents to be able to lessen tension between park officials and locals. Locals' involvement in ecotourism can benefit tourists by allowing them to interact with and learn about the local culture, in addition to reducing disputes in the parks. The findings of this study have effects on Thailand's protected regions as a whole. In terms of sociocultural and economic considerations, ecotourism in protected areas is often well-managed. However, all relevant parties, including park managers, rangers, and surrounding inhabitants, must pay greater attention to environmental effects. Efficient ecotourism management and community engagement are needed in this area.

Local people who use the area for their livelihood are particularly disadvantaged by the protection of their lands for biodiversity conservation. Environmental sustainability remains a crucial factor with intensive environmental damage and threats to wild plant and animal species. Yet Thailand's natural resource potential was ranked highly, at 16th place in 2015. In essence, local people who use the area for their livelihood are particularly disadvantaged by the protection of their lands for biodiversity conservation. Environmental sustainability remains a crucial factor dragging down its rank, falling from 116th in 2015 to 122nd last year, with intensive environmental damage and threats to wild plant and animal species being highlighted as the prime factor dragging down the country's rank. Therefore, it is important to teach forest reserve officers and park rangers, skills that will help them to meet the needs of ecotourism management. The crucial information that was missing from previous studies points out that there were conflicts in the parks and the participation of locals in ecotourism, but no possible solution to solve such conflicts. The community's role in preserving the quality of ecotourism in national parks is critical to conserving the forests, yet there has been no effective way to create linkages between the local community

and national park officers.

Experiential Learning Theory in Tourism Management

ELT is a method of learning by doing. This theory says that an experience should be related to real life and include both hands-on activities and time to think. For tourism management, there could be both course-based and non-course-based ways for individuals to receive hands-on experience. These could include internships, student teaching, capstone projects, research, and service learning. Experiential learning provides chances to address problems in the real world and apply them in real situations. ELT permits experiment and practice to yield better results by testing comprehension of the underlying principles, methods, and procedures. The majority of tourism management mistakes result from poor teamwork and communication. Since tourism services are delivered in teams, study and training should occur in groups. The same experience cannot be obtained by reading a book or listening to a lecture. Problem-solving and reflection could create a feedback loop, which would create a training progression. Participants in traditional training would not benefit from practicing and gaining real-life experience; in contrast ELT encourages a shift in tracking one's own progress and learning from experience (Hyasat, 2022).

Kolb & Kolb (2005) assert that the ELT is supported by six pillars. The fundamental tenet is that education is a lifelong endeavor. This study takes into consideration how academic courses are applied and how the ISP provides follow-up. The second pillar is predicated on assessing the circumstances and responding appropriately. The third pillar focuses on learning through finding solutions to various conditions. The fourth pillar is based on continuous adoption through the learning process, while the fifth is based on the interaction between the learner and the environment, and the final pillar refers to the creation of knowledge based on the previous pillars. In addition, Ruhanen (2005) has

shown that experiential learning theory bridges the gap between theory and practice.

Introduction to Wang Nam Khiao-Pha Khao Phu Luang Forest Reserve

Wang Nam Khiao and Kao Phu Luang were established in 1962 as Thailand's first national parks and are located in Khao Yai National Park, Nakorn Ratchasima province in northeastern Thailand, the third largest national park in Thailand, covering an area of 2,168 km² and containing both dry dipterocarp and dry evergreen forest. This National Park is also a world heritage wildlife sanctuary declared by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). Certain areas of the Wang Nam Khiao and Kao Phu Luang forest reserves are not yet developed for ecotourism and have the potential to be promoted as tourist attractions. The Wang Nam Khiao and Khao Phu Luang forest reserves are known for their biodiversity, their status as biosphere reserves, their natural features, as wildlife sanctuaries, and for their beautiful forest scenery with public access, surrounded by villages and agricultural fields.

Tourists visit the Wang Nam Khiao-Pha Khao Phu Luang forest reserve for relaxation, trekking, sightseeing, wildlife watching, and other nature-related activities. Tourists are also delighted by the variety of local delicacies from the area and are able to visit local shops for souvenirs. Tourism activities are important elements in promoting ecotourism. Environmental education provides a pathway to understanding the environment and ecosystem of the Wang Nam Khiao-Pha Khao Phu Luang forest reserve. The ELT serves as a base for tourism training which could foster concrete tourism experiences through practical short-course training. The environmentally educated visitor is one of Buckley's (1994) key ideas of ecotourism. According to Ross and Wall (1999), the goal of tourist education is to conserve the natural environment in the protected area. The tourism industry should be enriched with high-quality natural experiences.

Khao Yai is only 200 km from Bangkok, Thailand's capital and largest city. Khao Yai has become a popular destination for Thai and foreign tourists (Panusittikorn & Prato, 2001). The forest reserve possesses a landscape suitable for tourism and provides basic infrastructure for visitors. There is housing accommodation, lodging, and camping grounds, for tourists around the Khao Yai national park area.

As witnessed by local communities in the Wang Nham Khiao and Khao Phu Luang forest reserves, basic infrastructure to serve tourists' needs has been developed. However, the local communities still lack ecotourism knowledge and management. The local communities aim to develop infrastructure, while tourists aim for nature-based, adventurous experiences and wildlife exploration activities. The aims of tourists and local communities are not aligned. The local community and forest reserve officers should be trained to support ecotourism.

Tourism consequently produces a substantial amount of waste and pollution. In some places, tourists produce an incredible amount of trash and disposed waste due to ill-managed tourism (Panusittikorn & Prato, 2001). This can put a strain on local waste management systems, causing landfills and sewage plants to overflow. This could lead to soil and water degradation. For foreign visitors to Khao Yai National Park, 20.4% stated that wildlife viewing was the main purpose of their trip, while 11.4% wanted more wildlife viewing facilities (Hvenegaard & Dearden, 1998). Encouraging ecotourism

in the forest reserve could be achieved through environmental protection and area improvement (Western, 1993). CBET in forest reserves is a useful tool for solving the economic and environmental problems of the area (Goodwin, 1996).

Figure 2 demonstrates a connection between the sustainable CBET training needs analysis and the process of integration of officers and park rangers, as well as the local community, into the training process.

METHODS

The research was conducted by identifying potential tourist activities or routes by investigating and exploring the Wang Nam Khiao and Khao Phu Luang surroundings. This allowed for the development of links with surrounding tourism products and attractions. A questionnaire was used to assess the CBET training needs and required topics, and to assess the training suitability through matrix analysis. A pilot study was conducted to evaluate the instrument's validity and reliability ($r = .912$). Specific short-course training was then organized according to the needs of the respondents. Finally, a six-day advanced training course was designed based on the ELT aiming to engage trainees and support them in gaining concrete experiences during the training. Pre-and post-tests were used to assess trainees' knowledge before and after each training.

The six-day advanced CBET training program was chosen because experts in the

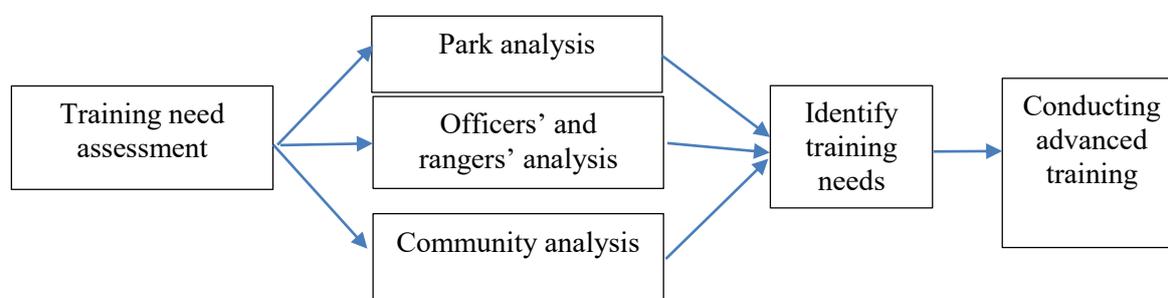


Figure 2 Sustainable Ecotourism Training Needs Analysis

tourism field suggested this as an appropriate duration; it also aligned with the results of the needs analysis collected from the questionnaire. The recommended duration was two hours of training per week (approximately three sessions would cover all the topics). Later, modules were designed in which instructors in tourism management assisted with the topics, details, and module designs.

Each module was designed by tourism experts such as university professors, Tourism of Thailand representatives, and the chairman of the regional division of the tourism council of Thailand. To make sure this program was accurate and to avoid bias, a triangulation technique was used with a draft of the module, being submitted to three tourism experts from the Tourism Authority of Thailand, a tourism management professor from a university, and a person who works in ecotourism management, to check the modules for consistency, relevancy, and completeness. In addition, the module contents were reviewed by the Wang Nam Khiao-Pha Khao Phu Luang forest reserve service leader for confirmation of the training program and to ensure that the training program represented all dimensions of the park service rangers' duties.

Local communities, forest reserve officers, and national park rangers, were trained for CBET management based on ecotourism management frameworks, community-based development frameworks, and competency development frameworks. The six-day short-course training "Community Preparation and Community Competency Development for Ecotourism Management in the Wang Nam Khiao-Pha Khao Phu Luang Forest Reserve" was developed using Experiential Learning Theory (ELT). The training consisted of seven modules: (1) ecotourism development; (2) sustainable tourism; (3) carrying capacity; (4) forest reserve laws and regulations; (5) cost per tourist calculation; (6) infrastructure development and maintenance; and (7) tourism activity development.

Participants

There were two groups of participants: 1) those who responded to the needs assessment survey, and 2) the 54 respondents who attended the training. Thirty-four out of a total of 54 responded to the pre/post-test for assessment of the knowledge and skills gained from the training.

Participants 1 Training suitability needs assessment surveys were sent to national park and forest reserve offices. There were 173 national park officers and park rangers who answered the needs assessment questionnaire.

Participants 2 Formal invitation letters were sent to invite national park rangers and forest reserve officers to participate in the short-course training. Fifty-four out of 100 invitations resulted in voluntary attendance of the short-course training. Thirty-four out of the fifty-four attendees took the pre-and post-tests to compare their knowledge before and after the six-day training, determining what knowledge & skills were gained in the training, for evaluation purposes.

Data Collection

This research was carried out in multiple stages, with analytical and empirical strands. In the first strand, on-site surveys and training suitability questionnaires were collected for the tourism management training of local community members, national park rangers, and forest reserve officers. Then, the pre- and post-tests were used for collecting and comparing scores before and after the training.

I. Ecotourism Management Training

The questionnaire survey was designed and tested for reliability ($r = 0.912$). 173 out of the 200 mailed questionnaire surveys were responded to by national park and forest reserve officers. A primary needs index was used to determine the training topics, which were CBET development, sustainable tourism, carrying capacity, forest reserve laws and regulations, carrying capacity, cost per tourist calculation, infrastructure development and

maintenance, and tourism activity development.

A six-day short course training was implemented in Wang Nam Khiao – Khao Phu Luang Forest Reserve for the local community, national park rangers, and forest reserve officers. The questionnaire survey was cross-sectional in that the information was only collected at one point of time. A satisfaction towards the short-course training questionnaire survey was collected on site at the end of training. The survey questions were scored on a five-point Likert scale, from 1 (strongly agree) to 5 (strongly disagree).

Data Collection

Data collection was received from 173 respondents for a needs assessment of the ecotourism training. After analyzing the data, the short course program was developed with topics retrieved from the needs assessment data. At the short course training program, attendees were invited to the training. The emphasis of the workshop aimed to foster collaboration between forest reserve officers and local communities. Therefore, each session focused on working together among the government institutions and supporting government policy. Questionnaire surveys were completed within the Wang Nam Khiao-Pha Khao Phu Luang Forest Reserve areas for the purpose of training evaluation, after the ecotourism training sessions were completed. Thirty-four out of a total of 54 attendees completed the pre-and post-tests for determining the knowledge gained from the six-day training.

Data Analysis

The results of the content analysis of ecotourism research articles and training suitability analysis were presented, along with multiple on-site surveys. This led to the development of a six-day training program called “Community Preparation and Community Competency Development for Ecotourism Management in the Wang Nam Khiao-Pha Khao Phu Luang Forest Reserve.”

Based on the results of the Priority Needs Index (PNI), the short-course program was

developed with the following topics: ecotourism and sustainable tourism guidelines; forest reserve and national park laws and regulations; infrastructure design and development; tourism funding proposals; garbage disposal and waste management; cost calculation; the National Forest Reserve Act; and procedures to strengthen ecotourism. Each training session was recorded and redistributed on an allocated website for participants to revisit the materials.

There were three groups of 34 attendees from the local community (n = 12), forest reserve officers (n = 11), and national park rangers (n = 11). A one-way ANOVA was conducted to compare the pre- and post-test scores of the trainees and ecotourism readiness in the Wang Nam Khiao - Pha Khao Phu Luang forest reserve among the three groups of attendees.

RESULTS

I. Ecotourism Management Training

The overall ecotourism operations and forest reserve management were studied via documentation, ecotourism activities, research studies, on-site surveys, and the results of the readiness assessment. The results from the questionnaire showed that there was an urgent need to improve ecotourism knowledge and community-based tourism management.

There was a lack of collaboration among government officers, forest reserve officers, public tourism organization staff, and the local community. The attendees lacked knowledge of how to write a financial ecotourism proposal or design and develop basic ecotourism facilities.

The respondents consisted of 173 forest reserve officers, representatives of authorities, and members of the local community. Data were collected using a questionnaire consisting of five-point Likert scale items. The results of the needs assessment questionnaire for sustainable tourism management in the forest reserves were as follows:

Most of the respondents were male

(56.65%) and aged between 21 and 30 years old (29.48%) or 31 and 40 years old (25.43). The preferred length of training was 2-3 days per week.

A comparison of respondents' abilities with their expectations of what skills or competencies they should possess in order to manage tourism training properly, was analyzed to find the appropriateness of the training topics as presented in Table 1. Respondents assessed the needs for training in the Wang Nam Khiao - Pha Khao Phu Luang forest reserve by rating the topics; ecotourism management ($\bar{x} = 3.13$, $SD = 1.00$), and consciousness towards nature, wildlife, and plants ($\bar{x} = 3.12$, $SD=1.01$), demonstrated the highest mean scores.

From the matrix analysis, as shown in Figure 3, there were six topics which required training including providing tourism knowledge to tourists, using technology to promote tourism; laws and regulations in forest reserves; and networking and CBET

management.

To minimize the chance of response bias, the questionnaires contained both closed-ended and open-ended questions. However, it was impossible to avoid the impact of personal biases. The researchers considered these factors and used data from the survey on both "current" and "expected" along with open-ended questions to reduce the response bias.

Table 1 shows that the overall PNI had a value of $PNI = 0.35$. The highest ranking priority needs index value was for managing the diversity of ecosystems in the area ($PNI = 0.44$), followed by tourism impact management ($PNI = 0.37$), and providing advice on natural herbs for health ($PNI = 0.35$).

The results showed that three topics were required, namely: 1) providing advice on the environment, birds, insects, or other wildlife; 2) providing advice on natural herbs for health; and 3) managing the diversity of ecosystems. These topics would be added to the short course training.

Table 1 Priority Needs Investigation for Topics in Wang Nam Khiao - Pha Khao Phu Luang Forest Reserve Training (n = 173)

Topics	Current				Expect				PNI	Rank
	\bar{x}	S.D.	level	rank	\bar{x}	S.D.	level	rank		
1. Community engagement in tourism management	3.13	.84	moderate	1	4.55	.57	highest	5	0.45	3
2. Conservation, natural resources and ecology awareness	3.12	.63	moderate	2	4.23	.66	high	7	0.36	6
3. Facilities and services for the elderly and disabled	3.01	.67	moderate	4	4.37	.45	high	6	0.45	3
4. Health promotion	3.02	.89	moderate	2	4.01	.61	high	4	0.33	7
5. Using technology to facilitate tourism	3.00	.73	moderate	5	4.12	.72	high	9	0.37	5
6. waste management in forest reserve areas	3.11	.81	moderate	3	4.89	.54	highest	1	0.57	2
7. Laws and regulations in forest reserve areas	3.01	.74	moderate	4	4.78	.53	highest	2	0.59	1
8. Networking and tourism management	2.97	.65	moderate	6	4.07	.76	high	3	0.37	5
9. Cycling for health	2.98	.76	moderate	7	4.22	.55	high	8	0.42	4
Average	3.04	0.75	moderate		4.36	0.60	Highest		0.43	

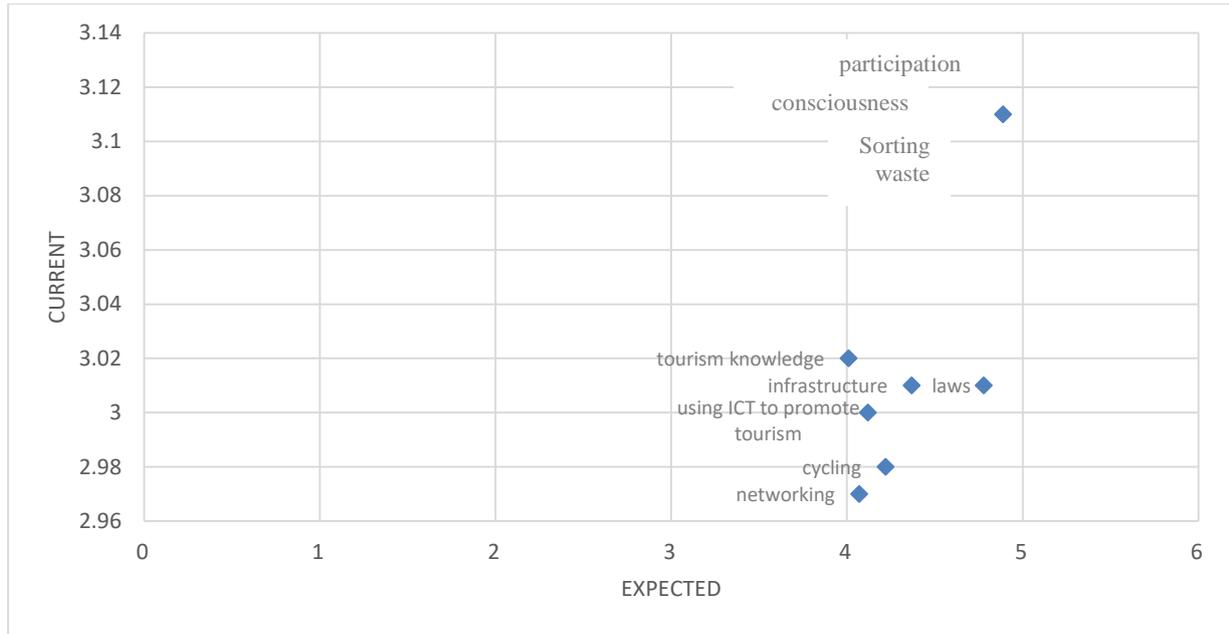


Figure 3 Matrix Analysis for Sustainable Tourism Training topics

Table 2 Priority Needs Investigation for Wang Nam Khiao - Pha Khao Phu Luang Forest Reserve Competency Development (n = 173)

	Current				Expect				PNI	Rank
	\bar{x}	S.D.	Level	Rank	\bar{x}	S.D.	Level	Rank		
1. Advising on the environment, birds, insects, or other wildlife	3.62	0.85	Moderate	1	4.69	.76	highest	2	0.30	4
2. Providing advice on natural herbs for health	3.40	0.87	Moderate	3	4.58	.65	highest	3	0.35	3
3. Managing the diversity of ecosystems in the area	3.32	0.87	Moderate	4	4.77	.63	highest	1	0.44	1
4. Tourism impact management	3.34	0.88	Moderate	5	4.56	.62	highest	4	0.37	2
5. Raising awareness on conservation of natural resources & ecology	3.51	0.90	high	2	4.53	.71	highest	5	0.29	5
<i>Average</i>	<i>3.44</i>	<i>0.87</i>	<i>Moderate</i>		<i>4.63</i>	<i>0.67</i>	<i>highest</i>		<i>0.35</i>	

II. Short-course Training Program

A short-course training was developed according to the topics retrieved from the needs assessment. The short-course “Community Preparation and Community Competency Development for Ecotourism Management in

Wang Nam Khiao - Pha Khao Phu Luang Forest Reserve” program was designed along with the contents, materials, and pre- and post-tests for each module. The course consisted of seven competency development modules corresponding to sustainable management,

ecotourism, community-based tourism, and tourism activities in the forest reserve. As suggested by Ruhanen (2005), ELT can bridge the gap between theory and practice; the collaboration and participation in this study helped the short-course training program to be implemented.

Thirty-four trainees took a pre- and post-

test, with an average pre-test score of 2.73 and an average post-test score of 4.50. A one-way ANOVA was conducted to compare the pre- and post-test scores of the trainees and of the ecotourism readiness assessment in the Wang Nam Khiao-Pha Khao Phu Luang forest reserve among three groups of attendees, as shown in Table 4.



Figure 4 Matrix Analysis for Sustainable Tourism Competency Development

Table 3 Comparing Pre- and Post-Test Scores (n =34)

Attributes	Pre-test		Post-test	
	\bar{X}	S.D.	\bar{X}	S.D.
1. Possess understanding of sustainable tourism management				
1.1 understand sustainable tourism management	2.40	1.47	4.50	2.32
1.2 understand the utilization of forest resources	3.00	1.10	4.30	2.10
1.3 understand how to manage conflicts from limits to utilization	2.60	0.98	4.20	2.14
2. Understanding the laws and regulations of the forest reserve				
2.1 Understand the laws and regulations affecting national forest reserves	3.50	1.37	4.10	2.25
2.2 Understand how to promote and support tourism development that corresponds to forest reserve law	3.30	1.38	4.50	2.26
3. Ability to analyze tourism resources in the forest reserve				
3.1 able to analyze tourism resources in the forest reserve	2.80	1.86	4.50	2.80
3.2 able to design and develop tourism programs in the forest reserve	2.70	2.14	4.50	3.06
4. Facility Design				
4.1 Understand the principles of tourist facility design	2.30	2.68	4.50	3.35

Table 3 (Continued)

Attributes	Pre-test		Post-test	
	\bar{X}	S.D.	\bar{X}	S.D.
4.2 Able to develop facilities in tourist attractions	2.60	2.99	4.60	3.76
5. Ability to analyze the cost of tourism management				
5.1 Understand the principles of cost and expenses	2.60	3.33	4.20	4.13
5.2 Able to analyze cost per tourist and for tour programs	2.50	3.78	4.40	4.32
6. Being a welcoming host and providing good services				
6.1 Understand the principles of service and being a good host	2.80	4.13	4.80	4.59
6.2 Able to design and promote marketing as a host	2.40	4.67	4.90	5.46
7. Environmental impacts				
7.1 Understand the principles of environmental impacts	2.70	5.02	4.70	6.37
<i>Total</i>	<i>2.73</i>	<i>4.50</i>	<i>4.50</i>	<i>4.05</i>

Table 4 Pre- and Post-Test Scores of the Trainees and Ecotourism Readiness Assessment (n = 34)

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1080.193	6	180.032	244.114	4.435	2.106
Within Groups	887.942	1204	.737			
Total	1968.135	1210				

Table 4 shows that there were no statistically significant differences between the mean score or pre- and post-test and ecotourism readiness as determined by one-way ANOVA, $F(6,1204) = 244.114, p = 4.435$.

DISCUSSION

Before the training, local communities focused on infrastructure development and overlooked the needs of ecotourists for wildlife experiences and ecotourism. The forest reserve stimulated local communities to live modestly and in a conservation-friendly manner through ecotourism activities (Youdelis, 2013). Guaranteeing collaboration between forest reserve officers and local community members makes it possible to promote the well-being of the local community (Ronizi, Mokarram, & Negabhan, 2020) and meet ecotourists’ expectations. Generally, training focuses on sharing basic knowledge through lectures or show and tell. Instead, this study aimed to develop a training program that included the active participation

of trainees based on the ELT. Idea sharing and reflective observations could enable trainees to grasp an abstract conceptualization through engagement and collaboration, as the ELT encourages individuals to see their own and others’ standpoints and perspectives in collaborative planning. The trainees critically designed a scenic tourist route which was presented in order to gather a collective critique from other trainees.

Ecotourism is growing among Thai tourists, although Thai tourists prefer natural attractions over cultural, historical, archaeological, or amusement facilities. According to the ecotourism readiness assessment, the results showed that there was no difference between the pre- and post-scores. The national park rangers are already equipped with acceptable knowledge of sustainable tourism management and could provide good knowledge and quality tourism experiences to tourists. However, there was a concern that laws and regulations and health-related issues were rated the lowest. This could be enhanced through additional training on particular topics to ensure knowledge

acquisition.

All tourists and the local community must be encouraged to learn about sustainable tourism, CBET, and wildlife tourism in the Wang Nam Khiao-Pha Khao Phu Luang forest reserve. Any form of training could be conducted to educate the local communities and national park rangers about sustainable tourism and ecotourism. Tourists, on the other hand, should gain knowledge about sustainable tourism by promoting and educating acceptable tourist behaviors.

Promoting ecotourism locally and internationally has created a new brand for local tourism in Thailand under a sustainable tourism concept. Wang Nam Khiao-Pha Khao Phu Luang forest reserve targets ecotourists with wildlife diversity, forestry, and nature-based tourism activities. To promote ecotourism in the forest reserve, the local community must expand their knowledge and apply it in real cases (Kolb & Kolb, 2005) according to the carrying capacity, sustainable ecotourism management, and encouraging tourists to participate in learning about the uniqueness of the area. In turn, this could be “good practice” that can be used as an example and reference point (Ruhanen, 2005) for other national parks or forest reserves to use. In addition, local tourism products and their development could be developed to enhance community participation and boost the local community’s well-being through financial inputs. The combination of entry fees and tourist spending on food, lodgings, transportation, and souvenirs is a key part of the success of local ecotourism.

One problem found was that the local community did not have adequate knowledge of hospitality, services, accommodation, and natural resource management. Increasing numbers of tourists could potentially harm wildlife and deteriorate the surrounding environment (Hvenegaard & Dearden, 1998) in the forest reserves. The short-course training was offered to the forest reserve rangers, Forestry Industry Organization officers, and local communities through village headmen and subdistrict headmen.

The local community did not have adequate ecotourism development and engagement concepts, resulting in drastic changes in the local community’s identity and the exploitation of natural resources around the forest reserve to please tourists.

Focusing on ecotourism activities and conservation in Thai national parks, Hvenegaard & Dearden’s (1998) paper focused on two ways to create responsible CBET and improve the welfare of local people and collaboration among stakeholders, the government, and local communities (Tseng, Lin, Lin, Wu, & Sriphon, 2019). An ecotourism mindset should be developed among Thai tourists rather than expecting the changes to come from the local community and tourist attractions (Okasaki, 2008). By providing sustainable ecotourism knowledge to local communities, the forest reserve could sustain its natural habitats and wildlife quality (Palmer & Chuamuangphan, 2018). The training has positively changed the ecotourism mindset of the locals and officers in the Wang Nam Khiao - Pha Khao Phu Luang forest reserve.

Protecting the forest reserve and conservation activities is a duty of the forest reserve officers (Tseng, Lin, Lin, Wu, & Sriphon, 2019). Therefore, community readiness for CBET in Wang Nam Khiao - Pha Khao Phu Luang forest reserve could be a suitable alteration as the community is willing to manage CBET and generate supplemental income (Promburom, Klunklin, & Champawalaya, 2009). Educating the local community and tourists about ecotourism, natural resources management, recreational sports, natural trails, biodiversity and protecting wildlife, could enhance sustainable forest reserve tourism (Bramwell, Lane, & Miller, 2016). By developing ecotourism knowledge for both local communities and forest reserve officers, infrastructure and services can be planned and developed through appropriate measures intended to maintain the environment and surrounding conditions.

CONCLUSION AND RECOMMENDATIONS

Thailand has embarked on a large-scale reform of its tourism system to uplift the economy to be more resilient and flexible, as stated in Thailand's BCG economic plan. The success of ecotourism is contingent on changes in current policies and practices for sustainable tourism in a global partnership. Competency development is focused on hospitality, cost management, infrastructure development, and ecotourism, in the areas which could contribute to wider collaboration and strengthen ecotourism management among stakeholders. Local community and forest reserve officers collaboratively designed ecotourism routes and local products that could generate higher economic returns (Hvenegaard & Dearden, 1998) than other resource activities, consequently changing local communities' mindsets towards promoting nature-based tourism or ecotourism. Consequently, the training was able to attune to new ecotourism trends and tourists' demands that could shape new directions in ecotourism in forest reserves that was once considered impossible. In addition, pre- and post-tests were used to assess training implementation and effectiveness. The results of the pre-and post-test and skills development among officers has shown that the training modules covered the appropriate information necessary for officers and the community to maintain and promote CBET in the area. Similar national parks could benefit from the well-organized tourism modules and collaboration.

CBET in Wang Nam Khiao - Pha Khao Phu Luang forest reserve is a strategy to support the sustainability of the forest reserves and the local community's development. The usefulness of training was in empowering stakeholders with diverse needs to comprehend ecotourism using the training program. Although managing the attendees of the training was challenging, the training did engage stakeholders and public and private participation in offering various eco-friendly activities. Recreational sports

and environmental education for excursionists could ensure sustainable tourism in the forest reserves (Van, Huu, & Ushakov, 2018).

The results reflected a need for upskilling and reskilling in ecotourism management. It is recommended that further research be conducted to propose a strategic partnership plan with national parks, forest reserves, and non-profit organizations to extend the training to other areas with similar forest reserves. This competency development process will be reflected in advancing ecotourism in other areas that have natural resources as part of their tourism development plans. With the help of the ELT participants are able to get ongoing training that meets the requirements of their academic courses and provides community and national park rangers and officers the experience they needed to use the knowledge they had gained in the short-course training in Wang Nam Khiao-Pha Khao Phu Luang Forest Reserve, which was later adapted to ensure CBET management capability.

The limitation of this study was its restriction to one forest reserve at a single location, thus limiting any generalization of the results. Further studies should adjust the training programs to suit the needs of forest reserves in other locations and update the course content to cover specific ELT and other related disciplines rather than CBET. To report the existence of effects in a satisfactory way, the study must be repeated as the effect sizes are small.

CONFLICTS OF INTEREST

There is no conflict of interest.

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