

# Enhancing Ecotourism Management based on Local Resources towards the High Value Creative Economy of Na Tham Community, Yala Province

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**Abstract** - The future of tourism trends for 2021 and beyond, the tourism and hospitality industry must take the changes taking place towards a more sustainable world seriously especially ecotourism. This research aimed to study and evaluating plants in the limestone mountain areas of Wat Tham, study the potential eco-tourism attractions of the Na Tham Community, and recommend guidelines for managing ecotourism based on local resources aimed to create a high-value creative economy for the Na Tham Community, Yala Province. This study was qualitative research consisting of ecotourism theory, concepts of creative economy, concepts of ecology, and natural interpretation, as a conceptual framework. The research field was the Na Tham Community, Yala province (Thailand), whereas there were four sample groups of the key informants. The researcher selected thirty key informants and employed three research tools, composing of semi-structured interviews, and quality assessment form of ecotourism attractions as data collection tools. The researcher used content analysis, followed by written descriptive narratives. According to the findings, 27 families, 48 genera and 50 species were enumerated in the limestone mountains near the Na Tham Community, Yala province. The Orchidaceae, Araceae, and Polypodiaceae are the most diverse families with 6, 5 and 4 species, respectively. Concurrently, according to the study of the potential for ecotourism attractions, before the participatory development process of the Na Tham Community, Yala province. Meanwhile, according to the assessment results after passing through the participatory development process for ten months, it was found that they had a quality standard at a good level with 65 scores from assessment or 65 percent. The researcher passed down 3 guidelines of development to enhance ecotourism management based on local resources towards the high value creative economy of the Na Tham Community, Yala province: 1) guidelines for creating a plant database to educate and upgrade the interpretation of the ecotourism attractions as nature-based tourism via online communication, 2) development guidelines for economic activities using the cultural and natural assets coupled with creativity or technologies to produce ecotourism products and activities to add commercial value, 3) development of community participation and influence on the activities to develop ecotourism for the equal benefits to upgrade the ecotourism management based on local resources towards a high value creative economy. Besides, the survey discovered plant in the genus *Paraboea* (Gesneriaceae), which were expected to be a new to science for Thailand.

**Keywords:** *Enhancing Ecotourism, Ecotourism Management, Creative Economy, Yala province*

## INTRODUCTION

The global expansion of the tourism industry is incessant and plays the significant role in the international economic and social system. It is a key source of income, bringing in the foreign currency, jobs, and development to many countries. The United Nations World Tourism Organization (UNWTO) foresees that the number of international tourists will reach 1,800 million by 2030. With such statistic, the potential tourism reliant countries require to consider a tourism development plan to be set up as a national agenda, creating a master plan to steer the tourism attractions aiming to attract the designated number tourists desired by their country. Thailand has set the goal to develop tourism as the preferred destination under the vision “Thailand is the quality tourism attraction with the world-class tourism competitiveness that generates and distributes income fairly, equally, and sustainable.” [1]. From the research results in a parallel dimension about the utilization of tourism resources, worthiness and conservation should be considered concurrently. Also, the natural resources i.e., non-renewable resources, such as mineral water, hydro-carbons, and the used biological resources that can be conserved for long-term and sustainable utilization. These biological resources, such as plants and microorganism, is termed “biodiversity”, which is found less in the western temperate countries although they have more advanced technologies, should be taken in to consideration. Thus, the availability of valuable biological resources is an advantage and the study, knowledge construction, conservation, and sustainable utilization should be encouraged.

Ecotourism or Green Travel is a form of the environmentally friendly tourism that is safe for nature, while offering contentment and responding to the current world situation where everyone should save energy and maintain the environment. Ecotourism or green travel includes nature sight-seeing trips and the study of living things [2]. One interesting site is located in the southern part of Thailand, and is Yala the only landlocked province. Yala is a pleasant and uncluttered province, and the provincial and district capital has a beautiful design. The tourist attractions are diverse and striking, particularly in Betong District where the slogan is “The Southernmost Point of Siam and The Beautiful Border City”. Most people work in the agricultural sector, such as rubber plantations and orchards. Most of them are Islamic and have their own unique traditions and cultures but coexist peacefully in the

multicultural environment. For this reason, the researcher foresaw the significance of the Na Tham Community as a community with abundant natural resources, traditions, cultures, wisdom, foods, fruits, and a long history of the reclining Buddha at “Wat Khuha Phimuk” or “Wat Tham”, where the over 1,000-year-old mural is situated. That makes this place have the innate potential to become an ecological, cultural, and historical tourist destination. Therefore, the researcher was interested to study the plants in the limestone mountain area of Wat Tham, Muang District, Yala province. Also, to compile a list of products from community resources showing the identity of plants and sustainable biodiversity in the area to support the development of ecotourism. Further, the researcher elected to explore the community’s potential and green-tourists’ demand to create ecotourism participatory management innovations based on the local resources to add value to tourism and service products with creativity and technology. The primary focus was to provide guidelines and plans for the development of a tourism industry connected with ecotourism to add value to the activities and strengthen the management potential of local entrepreneurs, also to access modern marketing methods for long-term sustainable income generating. The marketing gap from the potential of Thailand tourism industry applies and offers the opportunity to distribute income to communities in the border southern provinces. This to assist the communities to be well-prepared for a grassroots economy and community industry and to develop competitive advantage among the quality tourism industry, which is the creative, culture, and high value services industry according to the 4.0 Thailand Development Strategy[3].

The research results will be very useful for the development of ecotourism based on local resources to create a high value creative economy for the Na Tham Community, Yala province in different dimensions to support the development of creative ecotourism with the cultural identity, diversity of local plants, and assist the government agencies concerned with tourism in Yala province to attract tourists. The research results could be used as a tool for enhancing competitiveness among the tourism businesses, providing benefits to the community, entrepreneurs, and tourist attraction owners to recognize the strengths, weaknesses, opportunities, and threats to tourism activities. The development guidelines provide a mechanism to navigate the development of management, marketing promotion, and quality of tourist attractions. There are benefits for the tourist who will receive services that fulfill their desires, get a positive experience in ecotourism, and have wonderful travel that is worth the cost.

### **RESEARCH OBJECTIVES**

1. To study and evaluate plant diversity on limestone hill of Wat Tham of Na Tham community, Yala province.
2. To study the potential ecotourism attractions of the Na Tham community, Yala province.
3. To recommend management guidelines for ecotourism based on local resources towards creating a high value creative economy for the Na Tham community, Yala province.

### **LITERATURE REVIEW**

1. Tourism Theory [4] explained that tourism is travel from a regular residence to other locations temporarily. It is voluntary travel, non-business related nor with an income earning purpose. It is in line [5] who clarified that tourism is the travel from a regular residence temporarily and voluntarily to change the living environment or conduct non-occupational or non-habitation related activities. Moreover, McIntosh, [6] that tourism is the outcome of the circumstances or the association derived from the interaction between tourists and service businesses that relate to activities that satisfy the tourists or visitors.
2. Ecotourism Theory The World Tourism Organization [7] proposed the concepts of ecotourism as follows. 1) It is tourism concerned with nature. 2) Knowledge providing and interpretation are involved. 3) It is tourism activities for a small group. 4) It minimizes the effects on nature while offering benefits to the local community. 5) It raises the awareness of conservation. Other than these five concepts, the researcher studied the concept presented by [8] which stated that ecotourism activities involve learning and natural experience. Some activities have the obvious characteristics of ecotourism, whereas some might be on the borderline and the components, objectives, and services should be considered for what they are aimed at and how such as for relaxation, studying, adventure, sports, entertainment, and experience, etcetera. However, the implemented the concept to the ecotourism development at Na Tham Community, Yala province in terms of the utilization of tourist attractions.
3. Natural Interpretation Theory The study pointed out the natural attractions management for the highest benefits according to the ecotourism management principle. Consequently, tourists or visitors had learnt something. The development of tourist attractions to a learning source is the basis of information and experience to support a learner pursue knowledge and have continuing extensive self-learning to enhance them construct the learning process and serve as the learning center [9]. A significant step to support such a process is the interpretation. [10], the Father of Natural Interpretation, stated that interpretation is the operation that is not in the interest of the area users. Further, natural interpretation is the key activity that allows visitors to learn about the area, ecosystem, and natural resources to be impressed and have an awareness of conservation [11]. Natural interpretation conveys and relays the facts or is the tool for the public or tourist to perceive the significance of natural resources, have a common understanding and amiability during rambling along natural trails. Thus, appropriate naming of a trail should be taken into consideration when creating the interpretative media. The names should connect with the prominent point of the area. The introduction to the trail, the display of trail layout, and the elucidations along the trail highlight the relationship between the living and non-living things which are the components of environment [12]. The designation of a natural trail, in any area, aims to prevent tourist loss or leaving the excursion. The trail should be convenient, without danger to prevent accidents, and avoid the damage to the surrounding plants and animal. Signs should be displayed along the trail, plus name plates of the plants and the tourist regulations [13]. The goal of natural interpretation is to educate the visitors or tourists, which is the foundation of understanding and awareness that will finally construct the skills or practice automatically [14]. For this reason, the natural interpretation theory directed the researcher to the development of ecotourism attractions interpretation of the Na Tham Community, Yala province unambiguously.

4. Concepts of a creative economy The study showed an interesting explanation from “World Creative Hub” [15]. who defined the meaning of creative economy as “the economy including the industries founded on the creativity, skills and proficiency, and talent, which are valuable for establishing the wealthiest and jobs, that are accumulated and passed along from generation to generation under intellectual property protection.” Likewise, [16]. clarified that the core of creative economy comprising economic activities creating new things or interpretation regardless of cultural-related concepts that would start an industry based on the creative economy and eventually developed into the “creative industry” that launches the ecosystem of creativity comprising local resources and the social system supporting the creativity. The researcher implemented the creative economy concept by introducing the community to use local resources to increase their economic value and raise awareness of local resources’ value. Communication in the participatory process was applied to lead the development of the social system, promoting a sustainable creative economy.
5. Concepts of ecology and plant society in the Yala limestone mountain. The mountain area in Thailand occupies 150,322.45 km<sup>2</sup> or 93,951,533 rai, accounted for 29.3% of the entire country area. The larger mountains are limestone, granite, and sandstone mountains and are found throughout the country [17]. Limestone mountains have their own characteristics; they are knotty mountains and in some areas have sharp and wavy tops. Some have a high cliff and short channels, underground water courses, caves, and sinkholes (Rattana, 2011). These outstanding characteristics make the mountains interesting in terms of the diversity of living things and the trace of human civilization. Limestone mountains occupy 12.5 million rai area or 4% of Thailand. they are mostly found in Kanchanaburi, Tak, Lumphun, Chiang Mai, Mae Hong Son, and Saraburi. The smaller mountains occupy less than 10,000 rai or single mountains that are within the plain areas and not involved in other ecosystems. For this reason, it is a supportive factor of new development. In addition, the living things at the limestone mountains have specific features that match the environment, producing endemic species dispersed within a limited area or area with a low populace. Some are classified as rare species or in the endangered group [18]. A report from Thailand Red Data: Plants illustrated that there were 800 kinds of the endemic species in Thailand, of which 180 kinds (22.5%) were found only at limestone mountains. The researcher applied all above concepts as the guidelines and primary data to study the plants at the limestone mountains area of the Na Tham community, Yala province.

## **RESEARCH METHODS**

This research applied the qualitative research methods.

### **A. Key Informants**

Purposive sampling was applied along with the snowball selection method to select the qualified key informants. The list of the persons who held similar qualifications was mentioned by the key informants during their interview to collect sufficient data for the analysis. Data were collected from willing and voluntary informants only, to gain actual and solid opinions from all related sectors to tourism in Yala province and members of the Na Tham community. As a result, 30 key informants were selected [19].

### **Tool Construction and Quality Check**

The research tools used to collect data included a semi-structured interview form, a quality evaluation form of ecotourism attractions, and an evaluation form of plants in the limestone mountain area. The guidelines for setting the key questions were based on the concepts, theories, and researches related to ecotourism and the audit of a quality standard of ecotourism attractions.

### **B. Data Collection**

The data were collected from two sources.

1. Primary data were collected from the semi-structured interview form, the quality evaluation form of the ecotourism attractions by the field trip to the limestone mountain area adjacent to the Na Tham community, Yala province. Information of plants in the limestone mountain area close to the Na Tham Community and surrounding areas were collected using the evaluation form of plants. A survey was conducted in the study area. The data and reports from the relevant researches, questioning community members and the area survey were the sources of data for considering the selection of the plot area for data collection. The route and plants survey in the study area was conducted to set the temporary plots and determine the best natural trail. The biodiversity of plants was studied by collecting plants with perfect leaves, flowers, fruit, and seeds (if any) from the sample plot to get a sample of dry and wet plant specimens to examine and define the type. A minimum of three samples per one type were collected for plant species analysis. The group discussion with the key informants, relevant people to ecotourism management, the community of Na Tham, and participant observation at the attractions where eco-tourists had visited.

2. Secondary data was collected from the related documents and information since 2017 to 2020 from the Ministry of Tourism and Sports (Department of Tourism), Tourism Authority of Thailand, Thai Ecotourism and Adventure Travel Association (TEATA), and the Designated Areas for Sustainable Tourism Administration (Public Organization).

### **C. Abbreviations and Acronyms**

Content analysis was applied to analyze the qualitative data by following these steps.

1. The data obtained from the in-depth interview, group discussion, and participant observation should be accurate and represented the current state-of-the research field.
2. The data should be recorded in detail by using the descriptive record based on the researcher 's observation or the interview with the informants. These were the raw data.
3. The key informants checked the data (member checks).
4. The triangulation method was used to determine the reliability of data from the different sources [20].

The analysis of plants in the limestone mountain area at Wat Tham and surrounding areas involved analysis to determine the plant names, the analysis and selection of the kinds of plant and a suitable area for natural interpretation media, and the report and research summary to propose the management guidelines for ecotourism based on the local resources towards generating a high value creative economy for the Na Tham community, Yala province. Abbreviations and Acronyms

### RESEARCH RESULTS

1) The research and evaluation of plant diversity on limestone mountain at Wat Tham, Na Tham community, Yala province were provide.

The area of Wat Tham, Na Tham community, Yala province is limestone outcrop with dry evergreen forest . The present study revealed 27 families, 48 genera and 50 species. The Orchidaceae, Araceae and Polypodiaceae are the most diverse families with 6, 5 and 4 species, respectively.

Based on field study of plant diversity on the limestone mountain at Wat Tham, the group discussion was criticized the outstanding of plants and collected some reasonable plants for learning along the nature trail at Wat Tham, Na Tham community, Yala province, as shown in Table 1.

**Table 1 :** Outstanding plants for the learning station along the ecotourism trail of Wat Tham, Na Tham community, Yala province.

No.	Local name	Family	Botanical name	Character analysis for nature interpretation
1.	เปราะป่า (ดอกขาว)	Zingiberaceae	<i>Kaempferia pulchra</i> (Ridl.) Ridl.	This plant is one of Thai Peacock ginger that found only in the southern Thailand. The leaf pattern is conspicuous. Moreover, the habitat of this plant is interesting.
2.	ตีนกบ	Phyllanthaceae	<i>Actephila collinsiae</i> W.Hunter ex Craib	<i>Actephila collinsiae</i> is endemic to Thailand. Only 3 species in this genus were found in Thailand. The distinct characters are sepal extended in fruit and the leaves of a fine glossy green above and glaucous beneath.
3.	มะลิเขียวขลุ่ย	Oleaceae	<i>Jasminum nervosum</i> Lour.	Jasmine is a genus of shrubs and vines in the olive family (Oleaceae). This is only one of vine Jasmine in Wat Tham limestone mountain. They look spectacular when they have many flowering.
4.	ชาตานิ	Gesneriaceae	<i>Paraboea</i> sp.	This species was found on the hilltop. It's quite interesting, perhaps it is a new species or new record for Thailand. The flower of this plant also looks very elegant.
5.	กล้วยไม้	Orchidaceae	1. <i>Crepidium prasimum</i> (Ridl.) Szlach. 2. <i>Habenaria</i> sp. 3. <i>Pinalia</i> sp. 4. <i>Coelogyne</i> sp. 5. <i>Dendrobium indivisum</i> (Blume) Miq. 6. <i>Micropera pallida</i> (Roxb.) Lindl.	Orchids are one of the most popular flowering plants in the world. The hilltop of Wat Tham limestone mountain is a hotspot of Orchidaceae. Many orchids are found here as the orchid park. Furthermore, some terrestrial orchids are found on the uphill trail.

Some spectacular plants discovered on the limestone mountain area at Wat Tham, Na Tham community, Yala province.



**Figure 1** Plants at the limestone mountain at Wat Tham



**Figure 2** The orchid ground on the hilltop of Wat Tham limestone mountain



**Figure 3** *Kaempferia pulchra* (Ridl.) Ridl.



**Figure 4** *Jasminum nervosom* Lour.



**Figure 5** *Paraboea* sp.



**Figure 6** *Micropera pallida* (Roxb.) Lindl.

## 2. Study results of the potential ecotourism attractions of the Na Tham community, Yala province.

1) The evaluation results of the ecotourism attractions quality at the Na Tham community, Yala province were evaluated twice, before and after the development, by three experts in tourism using the evaluation form of ecotourism attractions quality produced by the Department of Tourism, Ministry of Tourism and Sports [21]. The results indicated that the overall quality of the Na Tham community before the participatory development process (July 2020) was at a moderate level, with a 59 score or 59% or ★★.

Moreover, the results showed that the overall quality after implementing the participatory development process over ten months (April 2021) was at a good level, with a 65 scores or 65% or ★★★, shown as follows.

**Table 2 :** Quality Evaluation Results of Ecotourism Attractions at Na Tham Community, Yala Province

Quality Evaluation Results of Ecotourism Attractions at Na Tham Community, Yala Province	Before (score A*B)	After (score A*B)
<b>1) Potential of ecotourism</b>		
1.1 Tourism attractiveness and natural sources of learning	8	8
1.2 Natural resources fertility	8	8
1.3 Connection between the local cultures and natural resources	6	6
1.4 Safety of natural resources for tourism	6	6
<i>Total score for no. 1 (40 scores)</i>	28	28
<b>2) Potential of area utilization for sustainability</b>		
2.1 Management of tourist attractions utilization	1	4
2.2 Management of tourist service	3	3
2.3 Management of tourism activities	3	4
2.4 Management of follow up and evaluation of the change of area results from tourism.	2	2
<i>Total score for no. 2 (20 scores)</i>	9	13
<b>3) Management of knowledge providing and raising awareness</b>		
3.1 Have the service center to provide the information and facilities to the tourists.	2	2
3.2 Provide knowledge about energy saving and accurate waste management to the tourists.	3	3
3.3 Provide knowledge about the value and conservation of natural resources to the tour guide and surrounding communities.	3	4
3.4 Have the knowledgeable staff who are expert in ecosystem and conservation to service the tourists, entrepreneurs and communities.	3	3
<i>Total score for no. 3 (20 scores)</i>	11	12
<b>4) Participation of community in tourism activities</b>		
4.1 Local community takes part in tourism management.	3	4
4.2 Community earns income from tourism.	8	8
<i>Total score for no. 4 (20 scores)</i>	11	12
<b>Total score (100 scores)</b>	<b>59</b>	<b>65</b>

2) The SWOT analysis results of the Na Tham community, Yala province as ecotourism attractions based on local resources towards the high value creative economy are shown in Table 3.

**Table 3 :** Strengths, weaknesses, opportunities, and threats of the Na Tham community, Yala province as a tourist attraction

Strengths	Weaknesses
<p>1. The community members were friendly and warmly welcomed the tourists. There were a variety of attractions in the area, such as occupations, nature, activities, traditions, and ancient Dvaravati civilization.</p> <p>2. The community gathered as a strong formal and informal group to organize the activities. It was the strong community enterprise.</p> <p>3. Tourism activities were varied, such as an activity to learn about nature from the cave, cultures, traditions, and community occupations such as tie dye cloth and salted egg by using Si Maya clay.</p> <p>4. The demand of tourists of all age ranges were fulfilled, as they chose to join the activity because of the accessible route.</p> <p>5. It was plentiful with the natural resource. There were many kinds of orchid covering the top of the limestone mountain at Wat Tham and other kinds were found along the way.</p>	<p>1. The community member who was in charge of health tourism lacked of skills to design the activity to suit the tourists.</p> <p>2. There was insufficient homestay service.</p> <p>3. The signs of interpretation and background information along the ecotourism trail.</p> <p>4. There was no standard of product pricing.</p> <p>5. There were no new generation to lead the tour at the tourist attractions in the community.</p>

Opportunities	Threats
<ol style="list-style-type: none"> <li>1 .Ecotourism is in the interest of tourists worldwide )Sustainable Development Goals(.</li> <li>2 .It is consistent with the trend of tourism products and services, and the behavior of Thai tourists during Covid-19 pandemic, as reported by TAT.</li> <li>3. The government authorities promote the domestic ecotourism.</li> <li>4 .The government authorities supported Na Tham District as a key attractions of the province and Thailand.</li> <li>5. Has convenient transport and quality roads to facilitate easy travel.</li> <li>6. Yala Province connected to Malaysia, so it has an opportunity to welcome Malaysian tourists throughout the year.</li> </ol>	<ol style="list-style-type: none"> <li>1 .The uncertain world economy affects the decision of tourist to travel or not and spent less money.</li> <li>2 .International terrorism in the three southern border provinces is a continuing problem.</li> <li>3 .Natural disaster, world climate change, and the Covid-19 pandemic or future epidemics.</li> <li>4 .The competition among the tourist attractions in ASIAN.</li> <li>5 .The flight routes are remote and insufficient to support tourists from the central region.</li> <li>6. Impacts of the country's politic situations.</li> </ol>
<p>3. Management guidelines for ecotourism based on local resources towards generating a high creative economy of Na Tham community, Yala province</p>	
<p>3.1 Guidelines for creating a plant database to educate and upgrade the interpretation of the ecotourism attractions as nature-based tourism via online communication</p>	
<ol style="list-style-type: none"> <li>1. Improve the plant information signs to provide knowledge to tourists at the starting point of the ecotourism route at the Na Tham community, Yala province.</li> <li>2. Develop an online media, such as a Facebook page to communicate the ecotourism attractions in the Na Tham community, Yala province.</li> <li>3. Create a bilingual VDO (Thai-English) to introduce the ecotourism attractions by having a QR code at the primary locations along the route. <ol style="list-style-type: none"> <li>4) Produce local interpreters to promote the ecotourism at the Na Tham community, Yala province.</li> </ol> </li> </ol>	
<p>3.2 Development guidelines for economic activities using the cultural and natural assets coupled with creativity or technologies to produce ecotourism products and activities to add commercial value for the Na Tham community, Yala province</p>	
<ol style="list-style-type: none"> <li>1. Create communications to convey the experience of ecotourism to encourage Thais who are the target group eager to have such an experience.</li> <li>2. Apply technologies to communicate and promote responsible tourism among the supply chain and Thai tourists consistent with restoring and maintaining sustainable tourism resources.</li> <li>3. The community should prioritize communications to ensure public health within the area and create media to publish safe and appropriate practice guidelines for traveling to suit the new normal situation.</li> <li>4. Build confidence and provide accurate knowledge to the public and local people about the safety measures of public health and zoning for ecotourism.</li> <li>5. The community and government authorities should cooperate to adjust demand to promote and encourage domestic tourism to minimize the dependence on foreign markets.</li> <li>6. Integrate the expertise of local agencies to create a digital ecosystem which will help to reduce the gap of digital skills and continuously update the operation bases on the database.</li> </ol>	
<p>3.3 Development of community participation and influence on the activities to develop ecotourism for the equal benefits to upgrade the ecotourism management based on local resources towards a high value creative economy for the Na Tham community, Yala province</p>	
<ol style="list-style-type: none"> <li>1. Support the government and private educational institutes in coaching the relevant people in the tourism industry, particularly the local people, to manage the tourism resources sustainably.</li> <li>2. Establish cooperative networks between educational institutes, relevant agencies, and local authorities as the center to promote, support, and organize activities related to the management of tourism resources under the participation of the community.</li> <li>3. Strengthen the community to take part in the tourist attractions management by giving important roles to the local people who have tourism-related jobs to generate community income appropriately for their long-term self-reliance.</li> <li>4. Create a new dynamic founded on the self-adjustment ability of the government sector, entrepreneurs, and community to be flexible towards integration to enhance the work potential, particularly in terms of supply.</li> </ol>	



Figure 7 Field survey of plants at the limestone mountain at Wat Tham



Figure 8 Group discussion of stakeholders at Na Tham Community



Figure 9 Interview with Thai eco-tourist in the community



Figure 10 Interview with tourism entrepreneur in the community

## DISCUSSIONS

The results of the plant survey on the limestone mountain at Wat Tham, Na Tham community, Yala province showed that this was the first time that 50 species of plants with 27 families, and 48 genus were discovered in the area as there has never been a survey conducted in this area, and the database was very useful for the community allowing efficient conservation, care, and utilization. The researcher had a group discussion to present the findings and a database of plants found on the limestone mountain at Wat Tham and surrounding areas to set the ecotourism route. The ecotourism interpretation theory of Freeman Tilden [10] was applied as the principle to select the pattern of interpretation to suit the community. It was in line with Onanong Cheablum [11] who revealed that natural interpretation was the key activity at natural tourist attractions, where tourists could learn about the area, ecosystem, and resource, which finally created the impression and awareness. The plant database was developed via the participatory process of the community to select outstanding plant species that appeared on the ecotourism route without destroying other resources. It was consistent with the Travel Buddy [13] that described that any area that was assigned as the natural trail aimed to prevent loss from the designate route. The route was convenient and safe to ensure the tourists, as well as the plants and animals, were secure. The direction signs and plant information plates, as well as the do and don't instruction signs, were put up along the route. The visitors and tourists could gain knowledge, which was the first step to understanding, awareness, and skills and accurate practice.

Moreover, various kinds of orchids, both ground and commensal orchids grew along the way and on the top of the mountain were some assumed rare orchids. Since during the survey it was not the blooming season for some plants, so there was a lack of plant samples to identify accurately the names of all plants. Thus, further surveys are required at a different period to acquire the flowers and fruits data to identify the type of plants correctly. At the foothill, *Kaempferia pulchra* (Ridl.) was the only Zingiberaceae family that is found in southern Thailand, was discovered. It had a beautiful leaf pattern with white flower, though generally it is pink. It contained special antidote properties.

It was in accordance with [22] which reported that Thai people in the old day mixed its rootstock with other active bases to create the formularies of elixir or common cold drug by pounding the rootstock with onion. Furthermore, peacock ginger treated the inflammation and eye problem. Some people applied the juice by squeezing the leaf to sooth a sore throat. In addition, for the purpose of upgrading the ecotourism management based on local resources towards a high value creative economy for the Na Tham community, Yala province, the researcher proposed guidelines for creating the plant database to educate and upgrade the ecotourism interpretation via online communication as the details stated in the research results section.

The evaluation results of ecotourism attraction quality at the Na Tham community, Yala province indicated that the overall quality before implementation of the participatory development (July 2020) was at a moderate level with a 59 score. However, over the following ten months after the implementation of the participatory development (April 2021), the overall quality was at a good level with a 65 score. It was obvious that the community earned six more scores after the development process in the matter of potential of utilization for sustainability, in terms of utilization of tourist attraction, and the management of tourism activities. It reflected that the participation of the community and their self-adjustment resulted in the positive outcome. It was in line with A.H. Wertheim [23] who explained that participation was when the people took part in the decision making process in the administration and political matters to determine the demand of their own community. Moreover, [24] pointed out that giving the opportunity to the people was to empower them to mobilize the capability of resources management, decision-making, and controlling activities rather than to wait and expect the development solely. The changes at the Na Tham community clearly exhibited that the community participation was the key factor of the development. Furthermore, the researcher proposed the development guidelines for the process of community participation and their influence on the activities for developing the ecotourism in the community, aiming for equal benefits of development to improve the ecotourism management based on local resources towards the high value creative economy of Na Tham community, Yala province. In response to the research objective, which was to upgrade the community with the ecotourism, the researcher applied the content analysis method to analyze the study results of community context, plants in the community areas, and the SWOT analysis under community participation. Consequently, the researcher obtained the development guidelines for economic activities founded on the cultural and natural assets combined with creativity or technologies to produce ecotourism products and services that added commercial value for the Na Tham community, as detailed in the Research Results section. The above recommendations were in accordance with the direction of Thailand tourism development plan. [25] stated that the demand and supply should be enhanced for the community tourism during the Covid-19 pandemic. The implementation of technologies, innovations and online media to publish information, for marketing, creating tourism activities, communication, payment, and promoting the participation of the new generation was very essential. Besides, during the spread of Covid-19, the "Digital Nomad" the group of people who works online, has developed, and becomes popular; people not only work from home but also from the beach, the mountain and other tourist sites. As a result, this group of people is a target group who would possibly travel to the Na Tham community for relaxation and experience the local and natural lifestyle while learning about the ecosystem.

### CONCLUSION

The results of enhancing ecotourism management based on local resources towards generating a high value creative economy for the Na Tham community, Yala province, Thailand showed that five outstanding plant families were suitable to create learning station along the ecotourism route on the limestone mountain of Wat Tham at the Na Tham community. There are Gesneriaceae, Oleaceae, Orchidaceae, Phyllanthaceae and Zingiberaceae., , , . Moreover, during our expeditionary fieldwork on limestone mountain in September 2020 at Wat Tham, Yala province, *Paraboea* sp. (Gesneriaceae) was discovered. It was expected to be a new species or new record for Thailand was discovered. More information is needed for described and confirmed.

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