

Potential of Ecological Resources and Ecotourism Destination Management: A Case Study in Koh-Mak Community, Southern Thailand

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Abstract

Conserving the biodiversity richness is the paramount of the development of sustainable ecotourism and destination management. In Southern Thailand, Koh-Mak Community is one of well-known ecotourism destinations within Phayun District within Phattalung Province. Local people livelihoods in Koh-Mak community based on the quantity and quality of fishery and agriculture production including their community-based ecotourism (CBE) ventures. This study aimed to assess the potential of ecological resources within the Koh-Mak ecotourism destinations for providing the practical guidelines of the sustainable ecotourism practices. The mixed research methods were applied in this study by using questionnaires by quota sampling of the total 337 research participants with semi-structured questions for obtaining their opinion of CBE ventures, and using the potential assessment and weighting score equation for evaluating the contributory factors of ecological resources. Researchers found that the consistency willingness of local community engagement in CBE ventures is a vital key of sustainable tourism development in long-term. The results of potential assessment shown that the Koh Mak community areas held the total biodiversity richness at 3.4, which is consisted of the highest value of aquatic ecological resources at 4.4, local vegetation species at 4, and the aquatic bird species at 3.7 by respectively. Community leader suggested that the needs of CBE improvement are reliability collaboration management and equity benefit sharing among the related stakeholders and Koh Mak community members. Community members also recommended that the establishment of the newly ecotourism routes have to consider the continuity of the sustainable management practices to maintain the potential ecological resource as well as conserve their traditional knowledge of fishery and local cultures. Therefore, the continuity of good governance is needed to develop the existing CBE ventures towards the sustainable development.

Keywords: Potential of Ecological Resources, Ecotourism Destination Management, Koh-Mak Community, Sustainable Tourism Development

Introduction

Thailand's economics have been underwent through the unforgettable national economic crisis in 1997 and the global economic crisis in 2008 that caused a lot of damage in all investment sectors. As a result, Thai government and Tourism Authority of Thailand (TAT) has cooperatively attempted to solve this economic impacts by creating several campaigns for promoting all tourist destinations in all regions of Thailand (TAT,2008). Based statistical records of World Travel and Tourism Council (WTTC) in 2015, the data presented that the income of multiple types of tourism in the Southern Thailand is high and have contributed to basis infrastructure development of the Southern Thailand with approximately value of 2,345.1 billion Thai Baht in 2014, and increasing value to around 19.3% in 2015 of Thailand's Gross Domestic Product (GDP) (WTTC, 2015). Consequently, the Southern Thailand Tourism Authority have implemented the socio-economic development and conservation policies in many provinces through the promotion of sustainable tourism campaigns were created to solve the possibly impacts of mass tourism such as natural-based tourism and cultural-based tourism through the development of community-based ecotourism (CBE) ventures (Kontogeorgopoulos, 1999, 2005a; Auesriwong, Nilnoppakun, & Perawech, 2015).

According to the establishment of sustainable tourism, the CBE have been developed as the conceptual integration between ecotourism and community-based tourism by focusing on the community participation and empowerment (Corrigan & Hay-Edie, 2013). The development of CBE is mainly focused on the livelihoods and cultural practices of local people to access natural resource and participate in conservation activities within or nearby ecotourism destination (Kiss, 2004; Corrigan & Hay-Edie, 2013). As the key concern of tourism development, the unsustainable practices and overcrowding of tourism activities may lead to the dramatically change of marine ecosystems and loss of biodiversity of local fish and coral reef, which caused by the illegal fishing and collecting coral for making a souvenir (Kontogeorgopoulos, 2005b; Ferquest, 2016). Therefore, it is necessary to develop a sustainable and practical tourism model enabling communities, to manage tourist destinations effectively and such models are generally referred to CBE (Auesriwong, Nilnoppakun, & Perawech, 2015). Based on the concept of CBE, the reduction of negative impacts on environment and promote both natural-based and cultural-based tourism activities, the enhancement of community environmental awareness, the preservation of local environmental resources, the empowerment of local people and delivers economic benefits to local communities (Wallace & Pierce, 1996; Kontogeorgopoulos, 1999). Consequently, many CBE ventures have been developed CBE within and adjacent to local communities as for maintaining their sustainable ecotourism in their area (Vincent & Thompson, 2002; Kiss, 2004).

To investigate the potential of CBE development in Southern Thailand, the Koh Mak community was selected as a case study because this island comprises of various ecological resources particularly for biodiversity of bird as a key of the wellness of mangrove forest ecotourism. The Koh-Mak community within Phattalung province is located on the west coast of the Southern Thailand, and this area held the variety of natural landscapes and the richness of biodiversity. This community have developed their own CBE as an alternative livelihood activity to increase their income while conserving their ecological resources. Due to the economic development pressures, many local people tend to move out from their community. As a result, some group of local people developed their own CBE as a part of their alternative livelihood activities and additional incomes. Furthermore, as one of the campaigns of tourism authority of Thailand (TAT)as "the Hidden Gems of Ecotourism Destinations of Thailand" and these areas are also considered as the attractive landmarks for establishing the newly ecotourism routes for serving the growing demand of ecotourists as one of marketing niche (TAT, 2008; WTTC, 2015)

This study therefore employed the mixed of qualitative and scientific research methods to assess the management of CBE practices and potential ecological resources of ecotourism destinations within Koh Mak community. The potential ecological resources in ecotourism destinations within Koh Mak community is evaluated by using the potential assessment and weighting score equation. Lastly, this study used the results to provide conclusion and recommendation of CBE management for moving toward the sustainable development.

Literature Review

Definitions of Ecotourism: Since the 1980s, ecotourism has been widely acceptable natural-based tourism practices for protecting the natural resources whilst raising up socio-economic wellbeing especially in ecotourism destination (Coria & Calfucura, 2012). Accordingly, in the 21st century, the principles of ecotourism have been extended to include all aspects of ecological conservation, economic development, social inclusion, cultural protection, human rights and ethical issues in terms of ecotourism destination management (EDM) (Cobbinah, 2015). Ceballos-Lascurain (1996), one of the well-recognised tourism researchers, provided a definition of ecotourism as “traveling to relatively undisturbed or uncontaminated natural areas with the specific objectives of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas.” (cited in Coria & Calfucura, 2012, p. 47). Based on this definition, the International Ecotourism Society (TIES) provided a statement of ecotourism as responsible travel to natural areas, which seeks to conserve the environment and sustain the well-being of the local communities (TIES, 1990; Coria & Calfucura, 2012). In addition, CBE has also been linked to poverty reduction and local development (Wood, 1999; Kiss, 2004). Therefore, enhancing the present understanding of eco-tourism is important and can help in the finding of a balance between environmental preservation and economic development through the promotion of relationships among natural areas, local populations, and tourism (Ross & Wall, 1999; Weaver & Lawton, 2007). In summary, CBE encompasses several relevant principles, notably minimizing the effects of tourism on environmental conservation, providing educational and socio-cultural experiences for visitors, and generating economic benefits for the community.

Community-Based Ecotourism Management in Southern Thailand: The uses of key principles of CBE is the form of ecotourism in the Southern Thailand, which emphasizes the local engagement, social responsibility and environmental conservation within the community areas (Vincent & Thompson, 2002; Auesriwong, Nilnoppakun, & Perawech, 2015). A wide range of CBE initiatives is related to the learning of natural-based livelihoods and conservation activities as a way of the development of sustainable tourism by considering the good ethics in ecotourism destination management (Bjork, 2000; Donohoe & Needham, 2006; TIES, 1990). Thus, the development of CBE is founded as a strategy for conserving natural resources and contributing to the socio-economic benefits to societies.

In Southern Thailand, the CBE is a form of sustainable tourism management which attempts to involve local communities and residents in managing their natural resources to maintain local, cultural and biological diversity as a significant part of sustainable tourism management and current trend (Kontogeorgopoulos, 2005a, 2005b; Aunjun, 2009; Duangjai, Tuntates & Kroeksakul, 2014). According to variety of ecotourism research and rural community development, CBE is a popular method of supporting biodiversity conservation, especially in developing countries. It involves linking ecological preservation and local people's lives, conserving biodiversity, reducing rural poverty, and achieving sustainable objectives (Foucat, 2002; Lai & Nepal, 2006; Hiwasaki, 2006; Okazaki, 2008). In addition, the World Wide Fund for Nature (WWF) stated that the key elements of CBE are areas which have natural attractions of interest to specific visitors, management without damage to natural environments, awareness of local community involvement, participation of the community in the decision-making

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process, the conservation of local culture and tradition, and the assessment of area capacity and current marketing (WWF, 2001). Kiss (2004) provided the key points of the successful CBE projects should be strictly regulated conservation, environmental awareness, full participation, effective collaboration, and empowerment the local people as well as the other stakeholders who relating to CBE destination.

To conclude, the sustainable CBE initiatives should have to include the participation of local communities in all decision-making process of conservation activities within the ecotourism destinations (Ross & Wall, 1999; Yongstar, 2005). In addition, the paramount of CBE is to promote the collaboration environmental management practices among the related stakeholders and local communities at those destination, generate economic benefits for local people, and provide the good quality of attractive and educational experiences to ecotourists and visitors (Aunjan, 2009; Perkins & Grace, 2009).

Research Methodology

This study aimed to assess the potential of ecological resources within the Koh-Mak ecotourism destinations for providing the practical guidelines of the sustainable ecotourism practices. The mix research methods were implemented to collect the useful data. First, the uses of questionnaires with semi-structured questions by quota sampling of the related stakeholders, community leader and community members (the total research participants were 337 persons) for obtaining their opinion of the existing CBE ventures. Second, the uses of potential assessment and weighting score equation were applied with the collected data and sites surveys for evaluating the contributory factors of ecological resources. All gathered qualitative and scientific data from the mixed research methods were analyzed to indicate the contributory factors for improving the existing CBE management practices towards the sustainable development.

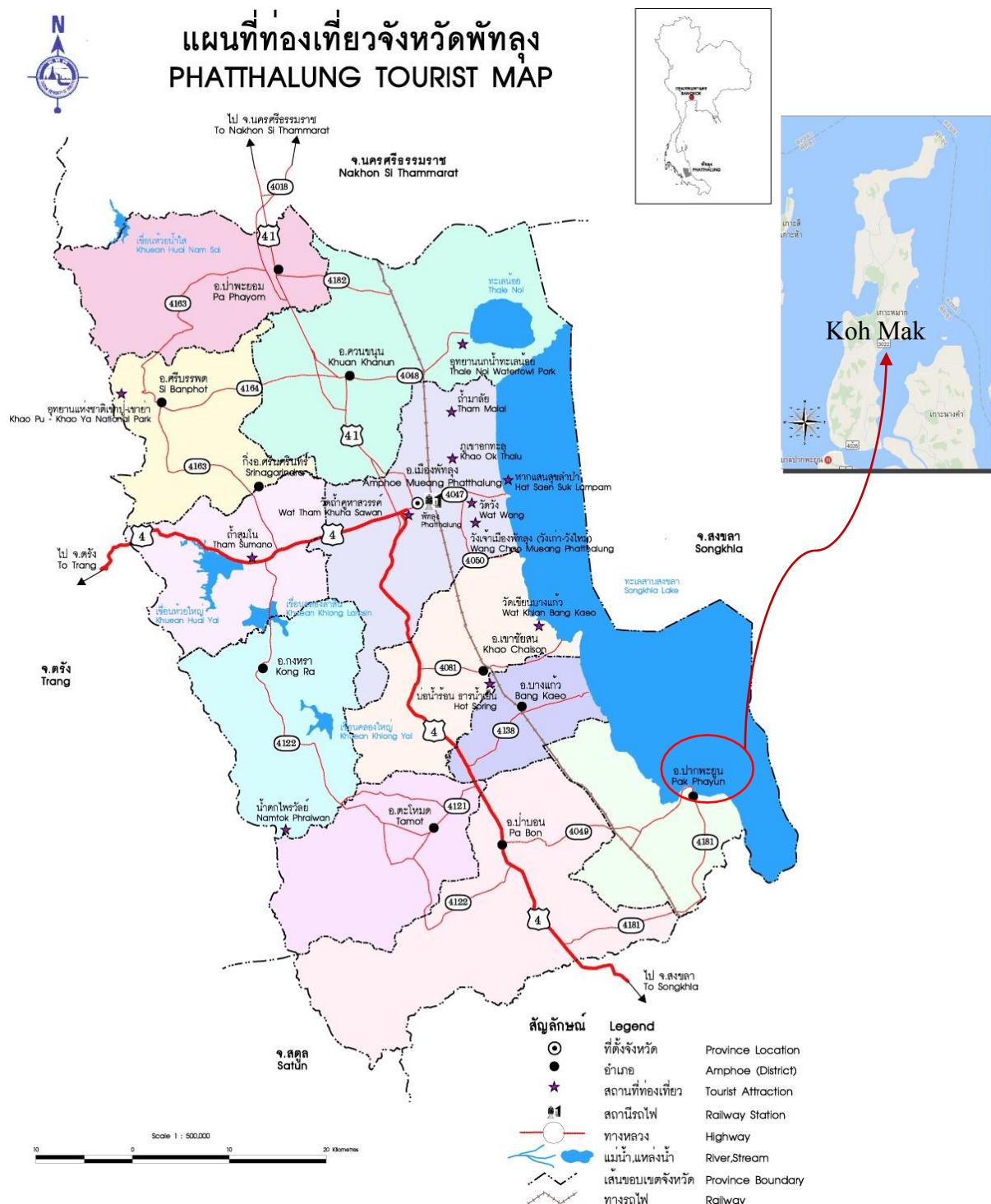


Figure 1 Phatthalung Tourist Map with Koh-Mak Area

Research Results

Ecological Resource Assessment: The values of biodiversity richness is the key factors of sustainable ecotourism development especially for the integrated livelihoods between agriculture, fishery and ecotourism for their household incomes. The result of potential assessment of ecological resources showed that the biodiversity of aquatic animals was 4.4, which is a significant part of the primary incomes in household and community from their mixed-aquatic products and CBE initiatives. Regarding to the mixed-aquatic products, the three

main types aquatic ecosystems of Koh Mak community can be divided into three kinds of water which are fresh water, brackish water, and salt (sea) water. This mixture of water also created the balance of natural resource and wellness condition that lead to the emigration of aquatic animals move from the fresh water at the head of water in the middle of mountain and join with the salt (sea) water, which become to be the brackish water. The biodiversity of aquatic animals within this condition also have been increasing in terms of species richness such as Yellow shrimp (*Macrtapenaeus brevicornis*), Spotted scats fish (*Scatophagus argus*) and Giant malaysian prawn (*Macrobrachium rosenbergii*) (see Figure 2). The local vegetation found at the average value of 4 such as Sugar palm tree (*Borassus flabellifer*) and Cashew nuts (*Anacardium occidentale*) as a part of local products (see Figure 3).



Figure 2 The biodiversity of aquatic animals in Koh Mak community



Figure 3 The biodiversity of local vegetation in Koh Mak community

Based on the results, the potential of ecotourism destination in Koh Mak community relating to the varieties of aquatic birds with the average value at 3.7 especially in the winter season due to the annually migration factor. These aquatic birds are always have their annually migration because of the wellness of natural resources and food sources in the swamp forest within the Koh Mak community areas. These aquatic birds are known as Black-winged Stilt (*Himantopus himantopus*) and Purple Swamphen (*Porphyrio porphyrio*) (see Figure 4). Additionally, the biodiversity richness of swamp forest and mangrove forest is 3.4 that can be confirmed the abundance of natural resources of Koh Mak community areas (See Figure 5). The variety of their aquatic animal products shown in Figure 6.



Figure 4 The biodiversity of aquatic birds in Koh Mak community



Figure 5 The swamp forest and mangrove forest in Koh Mak community



Figure 6 The variety of aquatic animal products in Koh Mak community

Community-Based Ecotourism and Destination Management: Based on interviews, some government officials explained that the development of CBE are challenging in terms of tourism marketing and the needs of the infrastructure and facilities at ecotourism destination. There are the needs of accommodation quality improvement for short stay and long stay visits within the Koh Mak community. Community member explained that they need a learning center to improve their skills and the quality of aquatic animal products due to the high market competition. Fortunately, in Koh Mak community, there are volunteers who assist them (e.g. local people) to protect their properties and lives, and this led to the rapport development among local people and volunteers. One of community members who work in conservation team gave an opinion of CBE management

“the participation in ecotourism activities help local people to increase their household incomes and conserve the surrounding natural resources. The local knowledge and traditional cultures are also the key element of community-

based ecotourism. Lastly, one of the concerns of the CBE is the decision making process, sometimes, the community leaders seem to overlook the proper carrying capacity of ecotourism destination that may lead the negative impacts of ecotourism such as overcrowding and exceed of disposal in the water resources”.

Majority of community members tend to believe that the CBE initiatives did not have the negative impacts on their livelihoods. Based the interview data, community members explained that the degree of participation of CBE activities is the significant element of CBE development depend on the willingness of individuals and their household's livelihood background. Results showed that the community members tend to follow the community leaders when they joined and developed their own CBE initiatives. In addition, the unique local environment and cultural heritage in Koh Mak can be used and create the newly ecotourism routes to show the ecotourists and visitors about their fishery livelihoods and traditional knowledges. Community leaders explained that

“The ecotourists and visits can learn about how to plant the trees in mangrove forest while going to visit a crab and shrimp nets. And the next day, they can learn about growing the organic rice and other edible plants in organic farm and in the afternoon going to see how to apply traditional knowledges of fishing and farming practices in local daily life by using the local materials for making the fishing and farming tools”.

One of community committee provided his opinion about the establishment of newly CBE routes as the lights of sustainable tourism development

“Currently, majority of community members tend to appreciate the development CBE initiatives and ecotourism routes because they enable community members and tourists to understand the value of natural resources and raise the awareness of environmental and cultural conservation.”

“Koh Mak community held the range of potential materials for conducting the environmental education with the principles of CBE in the existing and newly ecotourism routes in order to raise the environmental awareness through the using leaflets, signboards and learning centers to protect the surrounding natural resources within the Koh Mak community”.

Additionally, some ecotourism destinations within Koh Mak community have the volunteers to provide the proper ecotourism knowledge to community members and tourists at the visitor learning center. However, there are the needs of foreigner language speaking for providing the explanation of the rules if ecotourism destination to foreigner tourists such as English and ASEAN countries' language. One of community members provided her opinion about the important of English and ASEAN countries' language for improving the skills of community members in CBE destinations and routes as a part of sustainable ecotourism development.

“the improvement of CBE management skills and the uses of foreign language can help community members to maintain the sustainable CBE initiatives”

Therefore, the good ethics of CBE management is the paramount important for the sustainable development especially the aspects of socio-economic wellbeing and environmental protection. The participation of community members are the important factor to support and protect their local knowledge to manage their CBE initiatives and conserve their traditional cultures.

Overall, the participation of conservation in the CBE initiatives all explained that the significant strategy to improve the existing CBE ventures concerns with the willingness of local engagement in natural resource management. However, none of the government representatives explained that the direct responsibility is belong to both government officials

and community members due to the needs of control and manage in all CBE initiatives with the good governance and local engagement. However, the local people perceive the development of CBE can provide both socio-ecological and economic benefit that makes their community to become well-known for its natural attractions and encourages the wide range of tourists to visit and join CBE activities as a significant source of household incomes. Thus, the need of visitor management is required for control the tourist number in line with carrying capacity threshold to protect the surrounding natural resources. Additionally, the participations of conservation activities among ecotourists and visitors is important for the sustainable of ecotourism, such as collecting garbage along the beach, planting mangroves, and conserving marine animals. In summary of results, the richness of biodiversity and natural resources with the beautiful ecotourism destinations in the Koh-Mak community within Phattalung province are the leading factors to create good experiences of local people's livelihoods and cultures for ecotourists and visitors. The involvement of related stakeholders and community members is the vital factor of CBE development for sharing the socio-economic benefits to society and protecting natural resources.

Discussion

Understanding Concept of CBE and ecotourism's perception can enable the community leader and members to develop their CBE venture in the sustainable management practices to protect their surrounding natural resource. According to this understand, it could be help the Koh Mak community leader and members to establish the CBE development plans and practical guidelines for improving the existing CBEs and availability resources in their ecotourism destination areas in sustainable ways and pay attention to the local participation and empowerment.

Environmental Area: Many research participants and other stakeholders were proud of their plentiful natural resources which are useful for their livelihoods in terms of household consumption and surplus for sell in their local markets. And, they expressed that their local knowledge and cultures of their communities are important to economical livelihood activities such as agriculture, animal farming, and fishing within the Koh Mak community. At the Phattalung province level, Koh Mak community should be determined to include the policy of regional sustainable development strategy for improving CBE management in terms of collaboration of conservation, and ecotourism skills development. Further, it is necessary to increase long-term of collaboration CBE management among local communities, local business sectors, non-profit organizations and development agencies in oder to involve the decision-making processes of planning and management (Stone, 2015). Additionally, an equal distribution of economic benefits could be encouraged the local stakeholders' participation in CBE management and natural conservation activities as the partnership (Garrod, 2003; Parker & Khare 2005). The local employment is important for socio-economic development such as hire local people as ecoturism staff, tour guides, conservation project teams, and sourcing teams to produce souvenir and fresh food suppliers from local producers. Consequently, a certain percentage of the income from eco-tourism activities should be allocated to conservation funding to ensure the sustainable development of CBE in the area.

Management of CBE Destination: Overlooking the carrying capacity factor may lead to undesirable mass tourism in particular ecotourism destinations, which can be caused the environmental problems such as water and air pollution (Kontogeorgopoulos, 2005a; Longsamun, 2012). Thus, the visitor management of CBE destination is needed to control the tourism numbers in order to reduce the problems of overcrowding and waste management

system, which are the key aspects of consideration create the appropriate regulations of CBE destinations in the Koh Mak community.

Vincent and Thompson (2002) as well as Darnall, Jolley and Handfield (2008) suggested that the assessment of social and environmental impacts is necessary for improving the CBE destination management in long-term sustainability. According to one of community leader within Koh Mak community suggested that the good practices of this assessment should be developed from the bottom-up planning and management process to encourage the involvement of local stakeholders. The local collaboration of CBE management will be resulted in the greater sustainable outcome of CBE initiatives in Koh Mak community. Thus, the community leaders and community members in Koh Mak community should work together to establish the good practices of CBE initiatives, which emphasises on the importance of natural resource conservation and the equally contribution of socio-economic benefits within community areas. The environmental friendly aspect is also important for introducing the environmental education to community members and ecotourists to decrease the consumption of material, electrical energy and water as the ways to protect the natural resources in the ecotourism destinations (Wood, 1999; Darnall, Jolley & Handfield, 2008). Addition to this aspect, the community leaders and members should establish the formal regulations of ecotourism destination and accommodation for the ecotourists and visitors to follow as the ways to minimize the negative impacts on the surrounding environment and community areas (Black & King, 2002; Parker & Khare 2005).

Therefore, the community leaders should provide the opportunity of educational programs for community members about the principles and good ethics of ecotourism through the provision of the code to conduct and ecotourism instruction, which also uses with ecotourists and visitors. This recommendation also suggested in the study of Parker & Khare (2005) as the ways to develop the sustainable CBE practices. According to summary works of Wallace and Pierce (1996), and later Kontogeorgopoulos (2005a, 2005b) can be used as the recommendation of the good ecotourism destination management require the truly and long-term collaboration of environmental conservation for preserving natural resources and minimizing the negative impacts of tourism growth whilst empowering local people to management their own CBE for generating the long-term socio-economic wellbeing. Additionally, government officials should have their responsibility for developing the good practices of CBE initiatives together with local communities, NGOs and tourism organisations for stimulating the positive outcomes of CBE development as also shown in study of Parker and Khare (2005). Zhang and Lei (2012) and Caber, Albarak, and Matzler (2012) recommended that the local people held the significant role of CBE destination management because their experience, traditional knowledge and culture are essential in the CBE development, and this point was also discussed in the work of Kontogeorgopoulos (2005a, 2005b).

Conclusion

Based on the results, the potential assessment and weighting score equation indicated that the Koh Mak community areas held the total biodiversity richness at 3.4, which is consisted of the highest value of aquatic ecological resources at 4.4, local vegetation species at 4, and the aquatic bird species at 3.7 by respectively. According to these ecological resource values, the Koh Mak community can be considered as the potential areas to establish the newly ecotourism route to promote the specific needs of ecotourism market such as the routes of fishery livelihood investigators. The research findings also showed that the willingness of local community engagement and the participation in decision-making processes are the key factors of the sustainable CBE management and development, including the consideration of visitor management for reducing the possibly negative impacts of the over-exploitation on the ecotourism destinations. Consequently, the collaboration of related stakeholders, government

officials, NGOs and Koh Mak community members is the important factor especially in the decision-making process for improving the current CBE management of Koh Mak community in terms of environmental education and financial supports in conservation projects of CBE initiatives. As a result, the establishment of CBE ventures and newly ecotourism routes can contribute to socio-economic benefits and the involvement of natural resource conservation activities as the significant part of sustainable ecotourism management. In conclusion, the good governance of CBE management is the important factor of the sustainable ecotourism development of Koh Mak community in long-term.

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