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Forest Department**

**Ecotourism and Community Development: A Case Study in Myanmar's
Inle Lake Wildlife Sanctuary**



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သဘာဝအခြေခံခရီးသွားလုပ်ငန်းနှင့် ဒေသခံပြည်သူဖွံ့ဖြိုးတိုးတက်ရေး
မြန်မာ့ အင်းလေးကန် တောရိုင်းတိရစ္ဆာန်ဘေးမဲ့တော၌ လေ့လာစစ်တမ်းကောက်ယူခြင်း

အိစန္ဒီဆက်
တောအုပ်ကြီး
သစ်တောသုတေသနဌာန

စာတမ်းအကျဉ်း

မျက်မှောက်ကာလတွင် သဘာဝအခြေခံခရီးသွားလုပ်ငန်းအား အရေးပါသည့် စီးပွားရေး အထောက်အပံ့ပေးနိုင်သည့် ဒေသအကျိုးစီးပွားဖွံ့ဖြိုးစေသည့် တန်ဆာပလာတစ်ခုအဖြစ် ပိုမို အသိအမှတ်ပြုလာပါသည်။ ခရီးသွားလုပ်ငန်းတိုးတက်လာသည်နှင့်အမျှ သဘာဝအခြေခံ ခရီးသွားလုပ်ငန်းမှာလည်း ပိုမိုထင်ရှား လူသိများလာပါသည်။ ယေဘုယျအားဖြင့် မြန်မာနိုင်ငံ အနေဖြင့် သဘာဝထိန်းသိမ်းရေးနယ်မြေ(၂၁)ခုအား သဘာဝအခြေခံခရီးသွားလုပ်ငန်းနေရာ များအဖြစ် တိုးမြှင့်ဆောင်ရွက်လျက်ရှိသော်လည်း ၎င်းလုပ်ငန်းများနှင့် ဆက်စပ်၍ ဒေသ အကျိုးစီးပွား ဖွံ့ဖြိုးတိုးတက်မှုအပေါ် သုတေသနပြု လေ့လာခြင်းမှာ အနည်းငယ်သာ တွေ့ရှိရ ပါသည်။ သို့ဖြစ်ပါ၍ လက်ရှိ မြန်မာနိုင်ငံ၏ သဘာဝအခြေခံ ခရီးသွားလုပ်ငန်း အခြေအနေကို သိရှိနိုင်ရန်နှင့် သဘာဝအခြေခံခရီးသွားလုပ်ငန်း၊ ဒေသခံ ပြည်သူနှင့် သဘာဝထိန်းသိမ်းရေး နယ်မြေတို့၏ ဆက်စပ်ပတ်သက်မှုကို အကဲဖြတ် လေ့လာသိရှိနိုင်ရန်အတွက် အင်းလေးကန် တောရိုင်းတိရစ္ဆာန်ဘေးမဲ့တောဧရိယာအား ရွေးချယ်၍ သုတေသနပြု ဆောင်ရွက်ခဲ့ခြင်း ဖြစ်ပါသည်။ အကဲဖြတ်သုံးသပ်ချက်အရ သုတေသနဆောင်ရွက်သည့် ဧရိယာရှိ ဒေသခံပြည်သူ၊ အင်းလေးကန် တောရိုင်းတိရစ္ဆာန် ဘေးမဲ့တောနှင့် ခရီးသွားလုပ်ငန်းတို့၏ အပြန်အလှန် ဆက်စပ်မှုမှ ကြုံတွေ့ရသည့် အခွင့်အလမ်းနှင့် အခက်အခဲများအား ခွဲခြားထုတ်ဖော် တင်ပြ ထားပါသည်။ ထို့ပြင် နိုင်ငံတွင်း အခြားသော ခရီးသွားလုပ်ငန်းများနှင့် နှိုင်းယှဉ်ပါက သဘာဝ အခြေခံခရီးသွားလုပ်ငန်း ဖွံ့ဖြိုးတိုးတက်မှုသည် ကနဦးအခြေအနေမှာပင် တည်ရှိနေ ပါသေးသည်။ သဘာဝအခြေခံ ခရီးသွားလုပ်ငန်းအနေဖြင့် ထိန်းသိမ်းရေးလုပ်ငန်းများ ဆောင်ရွက်ရန်အတွက် အခွန်ဘဏ္ဍာများ ပြန်လည်ထောက်ပံ့ပေးနိုင်ခြင်းမရှိသဖြင့် စီမံ အုပ်ချုပ်ခြင်းနှင့် ထိန်းသိမ်းရေးလုပ်ငန်းများအတွက် ရန်ပုံငွေများ တိုးမြှင့်နိုင်ခြင်း မရှိခဲ့ပါ။ ဒေသခံပြည်သူများအတွက် လူမှုစီးပွား အကျိုးကျေးဇူးများ ရရှိနိုင်မှုမှာ အကန့်အသတ်ဖြင့်သာ တည်ရှိနေပြီး ဖွံ့ဖြိုးတိုးတက်လာသည့် သဘာဝအခြေခံ ခရီးသွားလုပ်ငန်းမှ အလုပ်အကိုင် အခွင့်အလမ်းများ ပေါ်ပေါက်လာရာတွင်လည်း အငြင်းပွားဖွယ် အခြေအနေများ ဖြစ်ပေါ်လာ နိုင်ပါကြောင်း သုံးသပ်မိပါသည်။ သို့ဖြစ်ပါ၍ စီးပွားရေး၊ လူမှုရေး၊ အပန်းဖြေရေးနှင့် သဘာဝ ဝန်းကျင်ဆိုင်ရာ ကြီးမားသော တန်ဖိုးများကြောင့် မြန်မာ့သဘာဝ အခြေခံခရီးသွားလုပ်ငန်း ဖွံ့ဖြိုးတိုးတက်ရေးသည် စိန်ခေါ်မှုများဖြင့်ရှိနေပြီး ဒေသခံပြည်သူနှင့် သဘာဝထိန်းသိမ်းရေး နယ်မြေရှိ ဘေးမဲ့တော/ဥယျာဉ်များအကြား အခွင့်အလမ်း၊ ပိုင်ဆိုင်မှုနှင့် အသုံးပြုမှုတို့အတွက် ရုတ်တရက် ဖြစ်ပွားစေသည့် သဘောထားကွဲလွဲမှုများ မကြာခဏ ဖြစ်ပေါ်နေမည် ဖြစ်ပါသည်။

Ecotourism and Community Development: A Case Study in Myanmar's Inle Lake Wildlife Sanctuary

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Abstract

Ecotourism is increasingly recognized as a community development tool with significant economic contribution. The ecotourism industry is experiencing increasing popularity as the demand grows for tourism that is environmentally sensitive, informative, and beneficial for local communities. Generally, Myanmar, as in other developing countries, has been promoting its 21 protected areas as ecotourism sites, and there have been only few studies about ecotourism and community development. In this research, Inle Lake Wildlife Sanctuary (ILWS) was selected as a case study in order to assess the current status of ecotourism, also to evaluate the existing tourism-park-community relationships. Through an evaluation of the existing tourism-park-community relationships, opportunities and constraints are identified. Ecotourism development was found to be at an early stage in the study area, despite only other types of tourism such as nature-based tourism and cultural tourism have developed as a main stream for many years. Ecotourism activity has not contributed revenues towards conservation to date and as a result tourism has yet to raise funds for management or conservation activities. Socioeconomic benefits for the local community have been limited. Controversial activities will come in the form of increased employment opportunities from the development of ecotourism. This is especially important because many of the threats arising from the need of the local community to use natural resources for their livelihoods. In this case, developing ecotourism in Myanmar has its challenges. Because of their immense economical, social, recreational and environmental values, often trigger conflicts of interest among people and park for access, ownership and consumption.

Key Words: Community Development, Ecotourism, Inle Lake, Tourism

Content

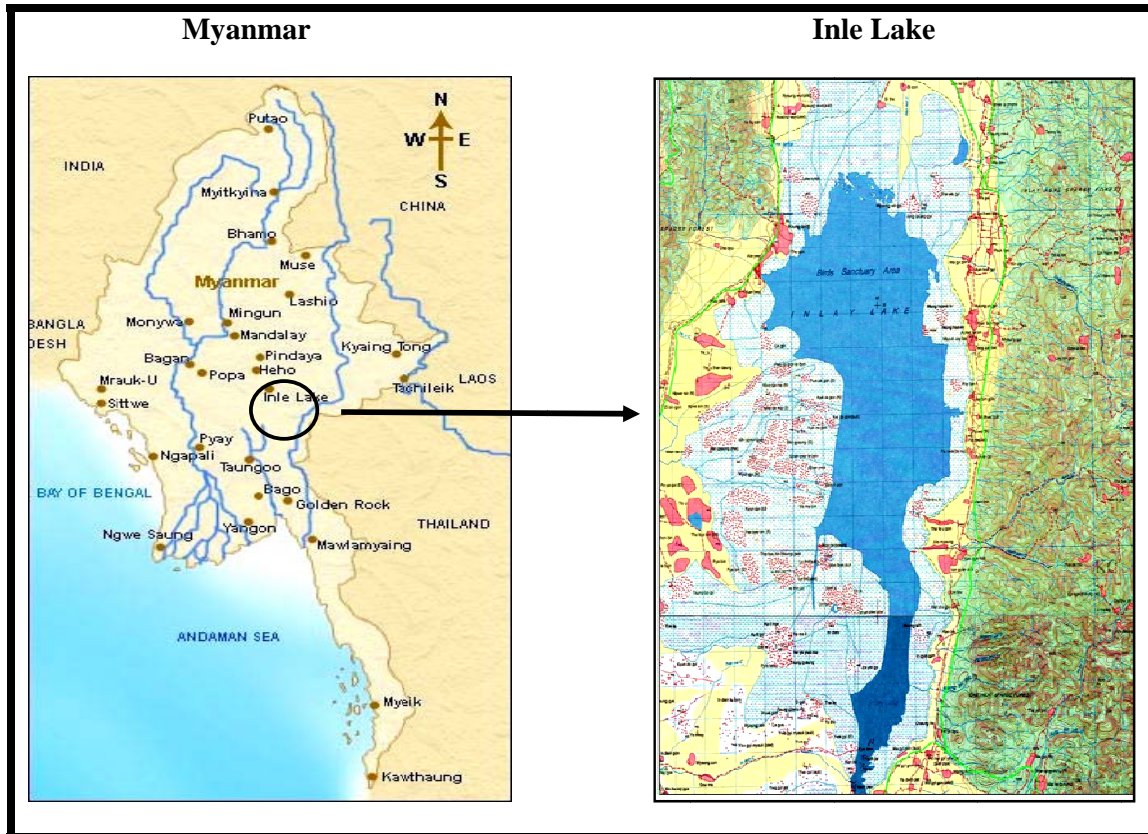
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1. Introduction

Inle Lake, the second largest freshwater lake in Myanmar, is one of the ASEAN Heritage Parks and situated in Southern Shan State, and extends from approximately 20° 15' to 20° 45'N latitude and 96° 49' to 96° 58'E longitude. The average elevation of the lake surface is 890 meter above sea level. The elongated shape is approximately aligned on a north-south axis, and the north and south end taper to a relatively narrow breadth. High hills flank the lake on both sides of the shore (figure 1). The lake was formed more than 1.5 million years ago and is a remnant form of a much more extensive series of lakes which included the former Heho upstream. So, people in the mainland of Myanmar recognize Inle Lake as lake on the mountain. This lake formed as water dissolved limestone in the landscape, and areas around Inle Lake have many limestone features such as caves, sinkholes, springs, spurs and intermittent streams. Ecologically, Inle Lake is home to wetland species, such as migratory and residential birds and Inle Carp, which locally is called nga-phane (*Cyprinus carpio intha*). There are 29 creeks flowing into the lake, and among them, nine creeks are a key source of water for the lake (Kyaw Zin Aung Soe, 2012). During the dry season, the average water depth is 2.1 meter, with the deepest point being 3.7 meter, but during the rainy season this can increase by 1.5 meter. The watershed area for the lake lies to a large extent to the north and west of the lake. The lake drains through the Nam Pilu or Balu-Chaung on its southern end. There is a hot spring on its northwestern shore.

According to 2011 statistics, Inle Lake and its surrounding areas have 36 village tracts and 34,272 households, and have a population of 168,131 (Nyaung Shwe Forest Department). Among them, fifteen village tracts are located on the lake. Ywama is the largest village on Inle Lake. Many ethnic groups reside on and around Inle Lake, the dominant ethnic groups settled in the Inle Lake region are Intha, Shan, Pa-O and Da-Nu, and also including Taung-Yoe, Shan, Kayah and Bamar. Among them, the Intha, whose name means 'lake dwellers', is the major group. The population at Inlay Lake is 70% Intha and 15% Shan (Sidle et al., 2007). Local inhabitants are unique in the way they have adapted their lifestyles and livelihoods to their biophysical environment. Most of them earn their income by traditional methods of hydroponic farming and fishing, weaving, and silversmith, etc. More than 170,000 people inhabit the lake vicinity. It is a vital part of broader ecosystem and providing many goods and services to its surrounding communities. The cultural traditions of numerous villages around it focus on the lake and several ethnic groups use the lake and its shore as their central landmark. Its values and functions support other ecosystems and are significant for economic development. Additionally, Inle lake support different activities such as recreational, educational, scientific, aesthetic, spiritual and cultural, and these activities form an important component of and are critical functions influencing lake ecological functions. Unfortunately, Inle Lake is degrading gradually and in 2010 the depth of Inle Lake has been reached to the lowest point in the last 50 years due to the impacts of climate change and climate variability as well as unsustainable uses of natural resources. Many factors are contributing to these changes including an unprecedented surge in temperature in the summer season of 2010, deforestation in the watershed area, eutrophication, heavy sedimentation, overuse of chemical fertilizer and insecticides, and an overall shrinkage of the surface area of the lake. Different kinds of environmental degradation have a negative effect on the livelihoods of local people who reside in the area.



Source: Forest Department, Myanmar

Figure 1: Map of Myanmar and Inle Lake

In 1985, the Inle Wetland Wildlife Sanctuary (IWWS) comprising about 700 square kilometer was established by the Forest Department, and it has been designated as an ASEAN Heritage site in 2004, as well as being a Protected Area System. A 10.36 square kilometer area on the northern fringe of the Sanctuary area has been demarcated as a Bird Preservation Area, where around 25,000 birds consisting of about 270 species, both native and migratory species, congregate during the cold season months (FD). Several species of egret, seagull, cormorant, wild duck, and magpie are abundant in north-west Inle. Migratory birds usually come to Inle wetland areas in October as the monsoon rains diminish and depart in May as the rains intensify. Wild duck, which are particularly abundant, migrate seasonally from the Yunnan Plateau and other adjacent areas of China. In addition to fish and waterfowl, aquatic animals found in Inle include several species of frog and tortoise, as well as otters, which live near tributary streams and the lake shore.

Inle Lake region of southeastern Shan State is not only a place of natural scenic splendor, but also an ancient cultural site with its amazing collection of ancient stupas, caves temples, prayer halls and shrines. Inle Lake is one of the three key tourism destinations in Myanmar, alongside Mandalay and Bagan, and is renowned for its beauty and serenity, attracting visitors for hundreds of years. It attracts over 300,000 visitors annually, including both international tourists and national visitors on pilgrimage (IID, 2012). Inlay Lake is a popular pilgrim site among local and tourists from neighboring Asian countries because of its many ancient pagodas and monasteries. Moreover, different standards of hotels are available to fulfill the needs of various tourist and visitors. The following table 1 shows the list of hotels, inns and restaurants at the Inle Lake region.

Table 1: Number of Hotels in and around the Inle Lake

Place	Hotel	Room
Taunggyi	18	551
Nyaung Shwe	42	1265
Pindaya	5	176
Kalaw and Pinlaung	29	635
Total	94	2,627

Source: Ministry of Hotels and Tourism, 2013

Myanmar has an abundance of natural and cultural tourism assets, including 2,832 kilometers of coastline, the pristine Myeik archipelago, 36 protected areas covering 5.6% of the country, outstanding examples of religious and vernacular architecture, and a youthful population of about 60 million that includes over 100 distinct ethnic groups. Myanmar is currently becoming an emerging and fast-growing tourism destination in Southeast Asia. As a result of sweeping political and economic reforms, Myanmar is enjoying unprecedented tourism growth. For the first time in its history, Myanmar received over 1 million international visitors in 2012. The number of international visitors increased by over 30% compared to 2011. The total income from tourism activity was \$ 534 million in 2012 compared to \$ 319 million in 2011. Although Myanmar possesses diverse and extensive cultural, natural, and historic assets, it has only begun to develop its enormous tourism potential. Due to the income- and employment-generating opportunities it creates, tourism is a global industry with special economic significance to developing countries (MOHT, 2013). Inle Lake Wildlife Sanctuary is the high potential for future ecotourism development (FD, 2011). International tourists have visited Inle Lake in increasing numbers since the early 1950s, with a more significant trend since 1996 after the Myanmar government focused on increasing tourism (Akaishi et al., 2006). In 2001, the Myanmar government nominated Inle Lake as one of nine key sightseeing sites for the development of tourism. Additionally, the Lake was designated one of the Earth's 200 most valuable eco-regions in 1998 as well as being designated as an ASEAN Heritage Site in 2004 (BEWG, 2011).

In Myanmar, Ministry of Environmental Conservation and Forestry (MOECAF) has the primary responsibility for the administration and management of the forestry sector, and also managed and controlled the ecotourism sites. It is currently experiencing rapid growth in tourism demand. According to the statistics of the Ministry of Hotels and Tourism, in the first six months of 2012, international visitor arrivals increased by over 30% compared to 2011. In the short run, success is assured and tourism will continue to grow rapidly. With the increase of packaged tours, nature-oriented ecotourism is getting popular in Myanmar due to its diverse forests and green landscape having a large variety of wildlife species. Previous studies on the ecotourism market in Myanmar found that 75% of total eco-tourists are Western Europeans followed by Japanese and Americans. Hence, ecotourism is an area which Myanmar can develop effectively. However, tourists coming to Myanmar to explore ecotourism account for only a modest percentage (0.11%) of total tourist arrivals in 2005. It is expected that the number of eco-tourists will increase along with the development of ecotourism in Myanmar (Myat Thein et.al., 2007). The obvious trend towards nature-based

tourism and ecotourism is growing significantly, though Myanmar has not yet implemented its ecotourism development plans.

In this case, developing ecotourism in Myanmar has its challenges. Because of their immense economical, social, recreational and environmental values, often trigger conflicts of interest among people and park for access, ownership and consumption. Currently, local people in and around the protected areas rarely get benefits from the nature-based tourism and ecotourism, and most of the benefits mostly go to the people from outside and consequently, the interests of local people are decreased in ecotourism. Developing employment opportunities for local people and initiating ecotourism, which contribute the benefits to local people might mitigate potential conflicts between the park and local people. Furthermore, successful ecotourism development depends on many critical factors, such as: improvement of environmental conservation, least economic leakage, active community participation and support, capability of human resources, development of available facilities, enhancement of local livelihoods, and tourist satisfaction. There are some positive and negative impacts by the ecotourism development.

Inle Lake was selected as a case study area because of its particular circumstances: it is the country's second largest inland lake, one of the unique tourist destinations in Myanmar, well known for its traditional life styles, famous culture and textile products, home to more than 170,000 people, a large bird wildlife sanctuary, and one of major source of hydroelectric power for Myanmar. Because of its picturesque setting and diverse fauna, as well as the unique lifestyles and traditions of its human habitants, the lake is renowned in Myanmar. The lake is also an integral part of the livelihood of the local people by fishing in its waters and cultivating a variety of crops on its floating gardens. Since long ago, their main livelihood activities involved floating garden agriculture, textile production, local gold and silver smiting, fishing and hiring motor boats to picking up and taking care of local pilgrims who come from other area of Myanmar and tourists from the other countries. Suddenly, the drought in 2010 has had a devastating effect on the Inle Lake. Due to unfavorable environmental conditions, their livelihood activities could not continue successfully and have had to change to the alternative options for their sustainable income. Gradually, the interests of local people have changed to engage with the local tourism industry. Tourism is one of the key activities that can either be a difficulty or an answer to the lake ecosystem conservation (Ismael Adebini Ingelmo, 2013). Currently, most of the people have participated in the local tourism industry according to their social networks and capital holdings.

2. Objectives

This study was carried out by focusing on the following issues:

- 1) To assess the current status of ecotourism in the study area.
- 2) To evaluate the existing tourism-park-community relationships.

3. Materials and Methods

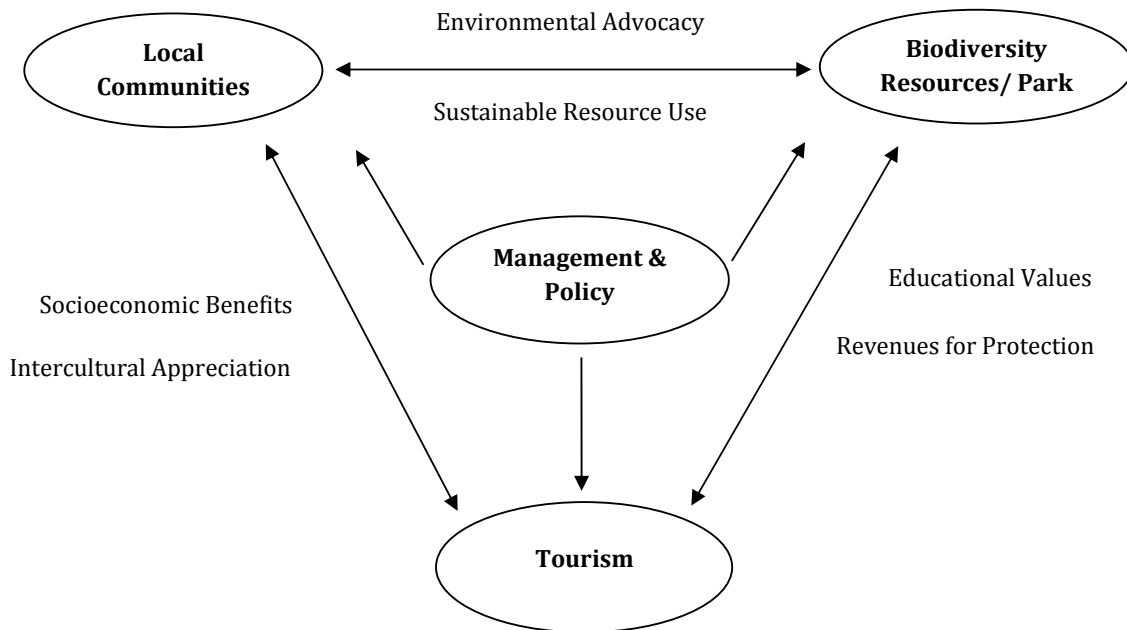
The research employs a case study approach and combines both, quantitative and qualitative methods for an effective assessment of the multidimensional impacts of ecotourism on various levels, such as individuals, groups of households as well as local pilgrims and tourists in and around the Lake. Conducted field research in two key ways; the first was secondary data collection and the second was field data collection.

Firstly, It was made secondary data collection by gathering data and information from government organizations such as the Forest Department situated at Nay Pyi Taw and Nyaung Shwe, including Nature and Wildlife Conservation Division of Forest Department, the General Administration Department at Nyaung Shwe, the Hotel and Tourism Department situated at Nay Pyi Taw, and the Department of Development Affairs at Nyaung Shwe. It was also collected data from non-governmental organizations (NGOs), plus the newspapers, both national and international, as well as journals. Other sources were such as researches about Inle Lake and Tourism from the reliable websites, as well as library resources. Secondly, field data collection was done based on questionnaires. Socio-cultural and economic data were collected through interviews and group discussions in selected communities adjacent to Inle Lake. I also conducted the in-depth interviews with the Park Warden and staff of the Inle Lake Wildlife Sanctuary, the Senior Officers of Forest Department in Inle Region. Data on wildlife were collected from existing inventory records and official reports. This paper is based on data collected between August and October 2013 using questionnaire surveys, interviews, and updated information gathered from the records of Forest Department. A total of 270 individuals (5 government administrators, 123 locals, 64 local visitors, 65 tourists and 13 hotel managers) were interviewed during the field. Interview questions touched on livelihood options, ecotourism and park resource management. This study has also used different reports to assist field data and put the findings in context.

For this study, the combination of qualitative and quantitative research methods was used. Bryman and Burgess (1999) stated that qualitative research is characterized by three factors: (a) the search for an understanding of the world through the behavior patterns and thoughts of people, (b) the pursuit of information from natural situations, not experimental ones, and (c) the development of new theories instead of testing existing ones. Furthermore, qualitative methods are more subjective than the objective gathering of statistical data. It was deemed most appropriate given the exploratory nature of the research. Indeed. Qualitative approaches have a history of use in travel and tourism research with certain disciplines (Decrop, 1999). According to Berg (2007), qualitative research refers to the meanings, concepts, definitions, characteristics, metaphors, symbols and descriptions of things, while quantitative research refers to counts and measures. The essence of qualitative research is to seek answers to questions by examining various social settings and the individuals who inhabit these settings (Berg, 2007). Hennie R. Boeije (2010) stated that the purpose of qualitative research is to describe and understand social phenomena in terms of the meanings people bring to them. Basic quantitative analysis is used to aid in the presentation and interpretation of interview results. It is also important to recognize that the macroeconomic, quantitative, techniques typically used to evaluate tourism's economic impacts from an industry perspective are generally inappropriate and not very meaningful at the local community level (Walpole and Goodwin, 2000).

In an effort to limit the personal and methodological biases, triangulation – looking at a phenomenon or research question from multiple perspectives and sources of data is used wherever possible. In this study, an effort is made to address the first two types. In terms of data triangulation, the use of a variety of data sources, including both primary and secondary sources of information are used. Primary sources included observations and interviews, and were complemented by a variety of secondary sources. In terms of method triangulation, the use of multiple methods to study a single problem, this study employed collection of documentary evidence, observation, semi-structured interviews, and quantitative interpretation of some interview results. Ross and Wall (1999) have developed a framework that defines an ideal ecotourism development, and can therefore be used to both help plan, and evaluate the status of, ecotourism at particular sites. The framework employs a variety of

indicators to determine if existing tourism-resource-community relationships are operating in a manner that allows each to make positive contributions to the others. Given the lack of practical assessments, there is clearly an opportunity to apply an evaluative framework to assess the current status of ecotourism, and offer planning direction, at a destination where it is being promoted as a sustainable and balanced development strategy. In considering a variety of socioeconomic and environmental aspects of an ecotourism development, the Ross and Wall (1999) framework is most suited to the objectives of the proposed research and has therefore been adopted for the purposes of this study (figure 2). The framework considers ecotourism in terms of synergistic links, and uses a variety of indicators to determine if existing relationships are operating in a manner that allows making positive contributions to the other. The review will serve as a basic for conducting of this study.



Source: Ross and Wall, 1999

Figure 2: Framework for Conceptualizing and Evaluating Ecotourism

In this case study, an analysis of local people’s expectations of ecotourism is presented by using data collected in the Inle Lake Wildlife Sanctuary. The survey covered the destinations of Inle Lake and there are significant differences in responses. Local people were asked about their experiences of ecotourism, their expectations and their aspirations, including their preferred way of earning money from ecotourism. Finally, an analysis for their perceptions of the barriers to their involvement in the industry is presented. The paper also addressed the ways in which a national park or conservationist might response to these aspirations and seek to involve local people in tourism enabling them to secure all or part of their livelihoods from tourism related employment or entrepreneurial activity. An analysis of tourists surveyed about their activities, their feeling impressed upon enjoying the aesthetic views of the lake, and interesting things in the Inle Lake, are presented. The paper also includes with an analysis of the activities and perceptions of the warden and staff of the Inle Lake Wildlife Sanctuary, senior officer and staff from Forest Department and hotel service providers. The data analysis will explore the socio-cultural and economic differences between and within different communities due to ecotourism development, the contribution of

ecotourism to conservation activities, local support for conservation and ecotourism as well as the influence of tourist activities on the Lake.

In this study, four villages, namely Ywa-Ma, Lwe-Nyeint, Inn-Paw-Kon, and Nan-Pan were purposively selected to represent the entire population surrounding ILWS. Selection criteria included the presence of tourism attractive features, extent of interest on tourism ventures, extent of dependence on lake resources and experiences with certain specific forest management issues in relation to ecotourism and proximity to ILWS. The underlying assumption was that villagers had direct interaction with both forest and ecotourism resources, hence they would provide the required information. A questionnaire survey was conducted using a structured questionnaire administered to heads of households and also family members. The survey sought to collect information on costs and incurred because of benefits obtained from tourism, socioeconomic, and demographic data such as income, education, occupation, and household size. In addition, the survey was carried out to get the local communities' perceptions. A total of 123 households including 68 male and 55 female was surveyed.

4. Results

Cultivation of floating gardens is the predominant occupation in the area and 30 % of the surveyed respondents are floating gardeners by planting vegetables, fruits, flowers, and other cash crops. Income from floating gardens agriculture contributed 30.89% of the total annual household income. The tomato is the major high income earning vegetable, and millions of kilos of tomato are distributed around the country every year. Also, the majority of the households practiced fishing as a livelihood activity; contributed 27.6% of the total annual household income and 23.1% of the surveyed respondents are fishermen. Some respondents (9.7%) are employed in various sectors as school teachers, health workers, workers at factory, and workers in gold and silver smiting. Also, results show that some people are involved in other activities such as boat driving and weaving, these activities contributed 11.3% and 5.6% respectively (figure 3).

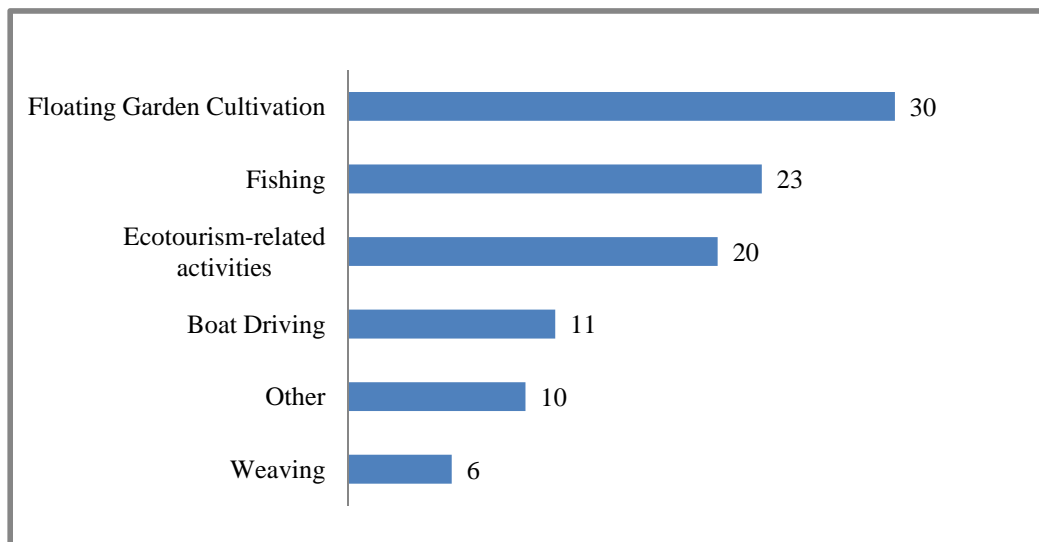


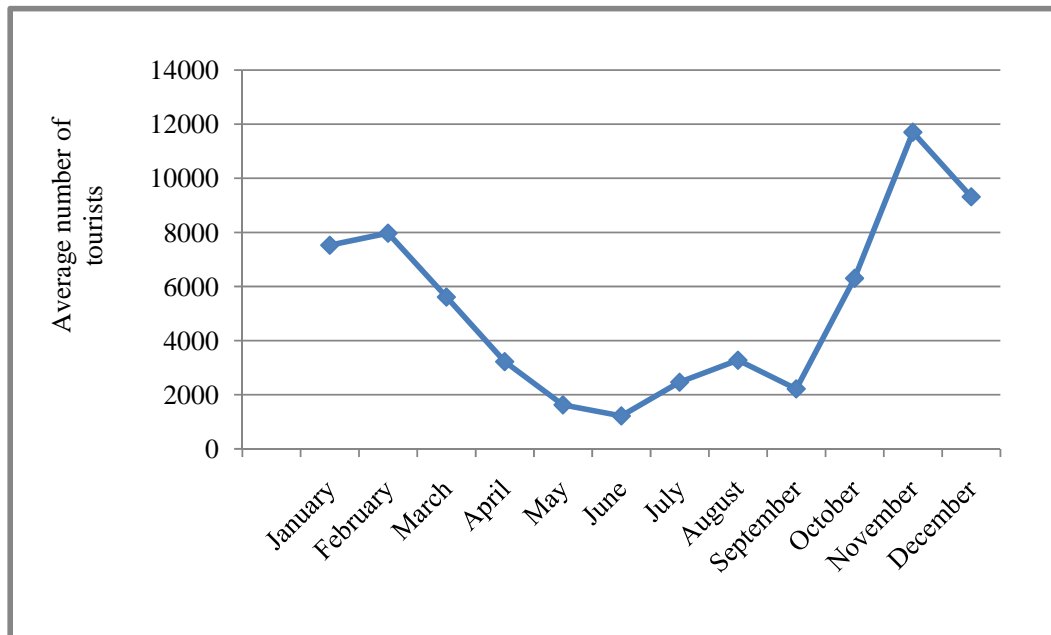
Figure 3: Livelihood activities practiced by respondents

The role of ecotourism in improving livelihoods was assessed by looking at the position it occupied as a source of household income. Among all economic activities listed, ecotourism ranked fourth in terms of the number of people engaged in the activity and fifth in terms of contribution to household income. Results indicate that only 20.3% of the respondents surveyed were engaged in tourism-related activities and tourism accounted for 13.8% of the total annual household income and rare income from ecotourism. This suggests that a relatively small portion of residents make a living from tourism and also ecotourism. The reason could be lack of awareness of tourism and ecotourism opportunities. It was noted that a few households earned income from the sale of locally produced goods to the tourists or the provision of services associated with ecotourism in ILWS. These included selling products from agriculture and fishery to the restaurants, making and selling local foods, handicrafts, goldsmiths, silversmiths, and traditional clothes to the local and international visitors. Some were traditional massagers who served visitors, some were traditional dancers who entertained tourists, and some were taxi and boat drivers who picked up the visitors in and around the lake region. Other respondents revealed that they had been working as field assistants, local guides, cooks and watchmen. Generally, on average a person involved in tourism-related jobs earned annually with 480 US\$ and 1440 US\$ being the lowest and highest incomes, respectively.

Annual data on the level of visitation show that tourism in ILWS has been growing. Tourist arrivals in ILWS are subjected to pronounced seasonality. In 2013, the findings revealed that from October to March is the peak season and with an average of 12,614 visitors. From April and May also have many tourists with an average of 4,032. The less preferred months are June, July, August and September where the numbers of visitors were less than 3,000 per month (figure 4). The low season coincides with the rainy season as the accessibility of the area becomes difficult for visitors and the weather is not ideal for most of the tourist activities. In 2012, tourist arrivals in the Inle Lake area were more than 50% on the previous year, rooms were not enough for available all tourists that some tourists were staying at local monasteries for temporarily.

In August and October 2013, surveys of 65 international visitors were made. The gender situation was more male tourists than female, and composed of 52.3 % and 47.7 % respectively. The results showed that the single largest age group was between 21 and 39 at 58.46 %, while over 50 years old group accounted for 18.5 %. In relation to the educational background of respondents, most of them were educated; 63.1 % held at least one bachelor degree. 7.7% percent of the respondents were highly educated at Masters and PhD level. The majority was business employees (29.2 %), professionals (21.5 %), and retired persons (15.4 %). Mostly, tourists were travelling independently (50.76 %), either alone or in small groups, and average length of stay was 3 nights. This is likely due to the survey's bias towards European visitors, who formed 36.9 % of the sample size and stayed an average of (5) nights. Asian visitors accounted for 27.7 % of the sample and stayed an average of (2) nights. Average daily expenditure was around \$ 30 (excluding accommodation). The average tourists spent \$ 35 per night for accommodation, 56.9 % of the respondents spent between \$ 100 and \$ 150 per day for their stay in Inle. 73.8 % of tourists were on their first trip to Inle Lake, 15.4 % were on their second trip, and 10.8 % had visited more than 3 times. About 81.5 % of the tourists wanted to see and visit the lake and see the floating nature, 13.8 % wanted to enjoy the lake ecotourism, and 4.6 % wanted to learn more about the local nature and culture. Prior to visiting, the main source of information about the lake was distributed by the Tourist Information Center of Ministry of Hotel and Tourism at Nyaung Shwe Township. Mostly, 89.2 % of tourists used guidebooks and 10.8 % relied on word of mouth from the local people

while travelling around the Inle region. Almost all of the tourists were satisfied with the ecotourism attractions and activities they perceived. Visitors are most satisfied with the available attractions and activities, the performance of tour guides and local guides; but some of them unsatisfied with the availability of information for the lake ecotourism, value for money for accommodations, availability of transport services, cleanliness and sewage system of the host area. In comparison, 65 respondents of local visitors were also surveyed. Mostly, local visitors were travelling in small or large groups and had visited more than 3 times. Actually, their main objective is to pay respect to the image of Buddha at Paung-Daw-Oo Pagoda, wanted to see the floating nature in Inle, rather than to enjoy the lake ecotourism.

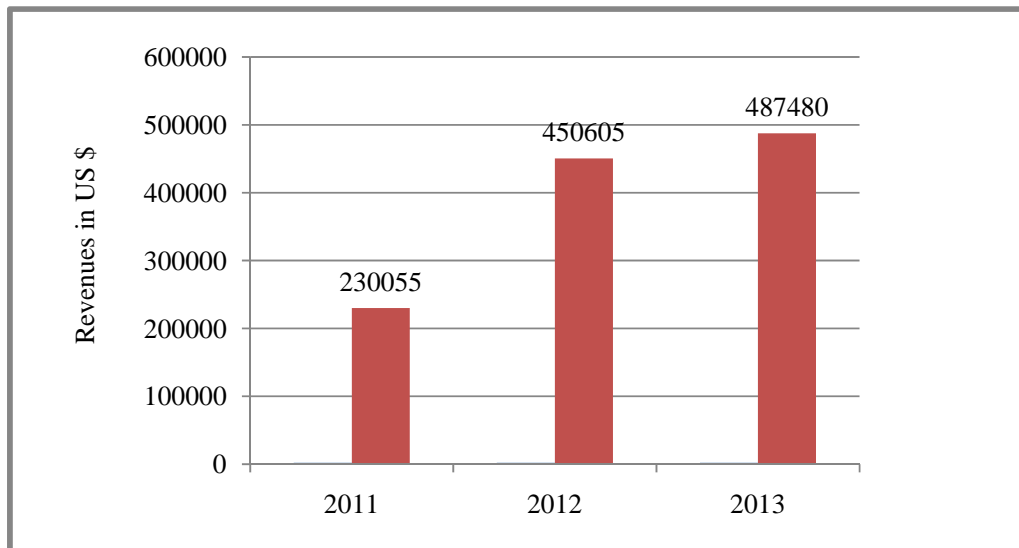


Source: MOHT, Nyaung Shwe, 2013

Figure 4: Average number of tourist arrivals in ILWS per month (2011-2013)

The responsibility for visitor management currently lies with the Ministry of Hotels and Tourism, Ministry of Home Affairs and the Ministry of Immigration and Population. There does not exist reliable long term data about tourism in the lake, existing accessible statistics are not accurate. According to IID, in the year 2012 Inle Lake received roughly 300,000 visitors, of which half of them were international. Forecasts predict the number of visitors will double within the following three years. There have been no imperative needs to address tourism impacts in recent years due to the reduced amount of visitors. Previous tourists were believed to have little economic, environmental and social impact. Nonetheless, some opinions estimate that in recent times the tourism industry within the lake accounts for about 50 million USD a year (Personal communication, Joen Kristensen, Director and Representative at Institute for International Development (IID), 2013, cited in Ismael Abedin Ingelmo, 2013). In early June 2013, the Government of Myanmar, alongside the Asian Development Bank (ADB) and the Government of Norway, unveiled the Tourism Master Plan, which outlines 38 development projects valued at nearly a half billion dollars that will help increase Myanmar's tourism competitiveness, protect environmentally important areas, and safeguard ethnic communities. Projects focus, between others, on expanding international air arrivals in Mandalay and Nay Pyi Taw, and building feeder roads in destinations like Ngapali beach and Inle Lake. Provisions safeguard ethnic communities are also expected to

feature, with pilot community-based tourism projects designed to provide local people with the means to maintain control over the increasing number of visitors. International visitors are charged a fee \$USD 5 for entering the Inle Lake area until before September 2013 and then is increased to \$USD 10 starting from October 2013, which is dedicated to sustain its ecosystem services for the lake (figure 5). In addition, there is a system of Payment for Environmental Services (PES) which currently is only collected at the gate of the road leading into Nyaung Shwe from Heho Airport.



Source: MOHT, 2014

Figure 5: Revenues generated by entrance fee (US\$) (2011-2013)

5. Discussion

Relationships between the local Community and ILWS

Local residents in developing countries are critical to the long-term, sustainable conservation of biodiversity within protected areas (Dasmann, 1984; Machlis and Tichnell, 1985; Brandon and Wells, 1992; Newmark et al., 1993; Fiallo and Jacobson, 1995; Furze et al., 1996). Local residents' perceptions of protected areas are not only a foundational component of park-people relationships (Lynam et al., 2007), they are also a key indicator of protected area success (Struhsaker et al., 2005). Understanding the park-people relationship from residents' perspectives can provide guidance for policy and management decisions (Parry and Campbell, 1992; Hill, 1998; Weladji et al., 2003) and a baseline for assessing success of management activities (Gillingham and Lee, 1999; Weladji et al., 2003). Understanding resident perceptions can also provide a foundation upon which management can begin a process of interaction with local communities by identifying potential entry points to constructively engage with local residents and helping managers understand how they are perceived by residents. The relationship between management and local residents can strongly influence residents' attitude toward PAs (Parry and Campbell, 1992; Newmark et al., 1993; Fiallo and Jacobson, 1995; Ite, 1996; Alexander, 2000; Infield and Namara, 2001; Holmes, 2003; Allendorf et al., 2007). Positive interactions between management and

residents can increase local acceptance of protected areas (Mannigel, 2008), while residents' distrust of management can contribute to local opposition to protected areas (Stern, 2008). Forms of nature-based tourism, such as ecotourism, have emerged in recent years as a popular means for integrating parks and people in rural developing regions (Place, 1991).

However, park establishment alters the local economic base and has often resulted in reduced access to resources for local people (Lindberg et al., 1996). The human resources (13 staff) are barely sufficient to manage the site. More foresters are needed to carry out conservation activities on the surrounding slopes. Many infrastructures are present, such as office, ranger posts and a bird watching centre, and equipment is provided. Staff has a different level of training in environmental issues and computer literacy is higher than elsewhere. Access to the site is easy due to the presence of motor roads around the lake and boat transportation inside (Instituto Oikos and BANCA, 2011).

Indicator	Assessment
Town Population	>170,000
Dependency on Natural Resources	High
Access to park resources	Restricted: Arranged in two special management zones, fishing: allowed with fishery license
Illegal resource use	Medium
Enforcement Capacity	Determined
Benefits from resource protection	Prevent from water pollution, Lake ecological protection, Climate and drought prevention,
Conservation attitude	Positive; If people benefit from tourism, they will see reason to conserve the environment
Potential for Conservation	Good
Staff local relations	Good
Participation in planning	None: only participated in awareness activities

The site is in a state of environmental emergency. Poor agricultural practices based on the inappropriate use of chemical fertilizers and pesticides are polluting the water. The growing tourism industry is an increasing threat to water quality due to the growing facilities that have been built inside and outside the protected area without due respect to environmental issues. Zoning recommendations are not respected by local fishermen that are increasingly abandoning traditional practices. Soil erosion in the surrounding slopes, which have been largely converted to agriculture, is the main cause of a severe sedimentation in the water body. All this is resulting in the alarming lowering of the water level and of its quality. Poaching, the collection of firewood and house poles, gathering orchids, traditional gold mining are localized threats considered to be of limited impact (Instituto Oikos and BANCA, 2011).

The main livelihood activities of the people are the cultivation of floating gardens, fishing, rice cultivation and tourism. They also work as goldsmiths, silversmiths, blacksmiths, weavers and in tourism. Floating gardens on the Inle Lake are the major production source in the area, supplying tomatoes to much of the country. Every year, millions of kilos of tomato are distributed around the country. Fishing is the traditional livelihood activity of the people, and fish are the main source of food for local community, as well as a key income source. Traditional weaving is both for the local and commercial markets, and cloth woven from lotus is locally called "Kyar Thingan" and is unique to Inle. The development of floating

gardening has led to a reduction in the open water of the lake, and the gardens can choke the lake's fragile ecosystem. Mostly, the farmers have to use a lot of chemical fertilizers, pesticides and insecticides, which are leading to pollution of water and also to eutrophication. Also in the weaving industry, chemical dyes are used as bleaching agents. The gasoline and diesel residues from the motor boats used for transportation are also a source of water pollution. Also detergents from the washing of clothes and the direct sanitary wastes from the houses have a lot of adverse impacts on the quality of water. Dependence on natural resources is high in the study area and some degree of illegal resource harvesting has occurred as a result. Over the last decade, environmental degradation around Inle Lake has become severe due to a variety of anthropogenic factors. Ongoing improper "in-lake" and "near-lake" agricultural practices are the main cause of environmental degradation, with their impacts including deforestation, sedimentation, eutrophication, water pollution, water level decline and shrinkage of the surface area. The major factors contributing to the deforestation are logging, shifting cultivation and improper ploughing systems. Due to deforestation around the catchment area of the lake, the remaining bare soil cannot maintain water and the lake dries up quickly. Moreover, when it rains, water flows directly into the lake, causing soil erosion. In this way, sedimentation levels have increased in the lake in recent years (Kyaw Zin Aung Soe, 2012). There are two emergent threats to the ecology and biodiversity around the Inle Lake area. One is deterioration of water quality, and the other, depletion of water area.

Lake officials are also hoping that controversial activities will come in the form of increased employment opportunities from the development of ecotourism. For now, such an opportunity has yet to materialize and other strategies are needed. This is especially important because many of the threats face arise from the needs of local community to use resources for their livelihoods. Although park staff has made an effort to educate community members, providing them with information about the reasons behind establishment of the park and the importance of protecting the lake and its environment, residents have not had the opportunity to participate actively in planning and decision-making processes.

Relationships between the Local Community and Tourism

Indicator	Assessment
Number of tourists/local visitors	Tourists= 79134, Local visitors=77315 (2012)
Tourist employment	Limited
Tourism income for local community	Limited opportunities for local community involvement/ spreading of benefits
Tourism related entrepreneurship	Low; Involvement of local community requires skill development
Host attitudes towards tourism's impact	Mostly Positive and Optimistic, Some concern that only government and rich people benefit,
Social welfare benefits	New infrastructure development, water resources, skilful in language and tourism
Intercultural exchange opportunities	Increase
Potential for intercultural exchange	Good (Positively)

Ecotourism is at an early stage of development at Inle Lake. Inle Lake is the popular religious and historical site due to its many ancient pagodas and monasteries. At present, the number of pure ecotourists is still rather low. Mostly, the tourists are included in other types of tourism such as nature-based tourism, agro-tourism (seeing the floating gardens), cultural

and historical tourism. As a result, the socioeconomic development in the study area is not satisfying enough compared to the development of tourism. Some perceive improvements in water resources, climates, roads, incomes, and the local economy. Tourist hotels are already mushrooming on once-pristine shorelines and 617 acres of farmland have recently been razed for a special zone to include 16 more hotels. The establishment of these new hotels will be followed by new job opportunities for the local people. But, most locals are employed as low-paid since they are not skillful enough in this kind of business, while more lucrative and rewarding posts go to the employees who come from the other area of Myanmar. Despite the tourism boom will launch the youth on a bright career depending upon their social networks, their kinship tied and their capital holdings, is eroding traditional lifestyles of the local tribes. In addition, some people blame hotels and the wider tourism industry for some of the damage. Local people also point out that tourism; however it brings many jobs to the area, but damages the lake as well.

Although infrastructure developments were observed, climate and water resource effects are difficult to confirm and, in reality, tourism-related employment, entrepreneurship, and income have been very limited. Aside from employment in lake hotels, lake travel companies, or as a guide, and occasional small shop sales to tourists (water, fruit, snacks, etc.), employment and income from tourism have yet to materialize on a significant scale at the area. Should ecotourism grow and employment opportunities expand, it will be important for local residents to have the requisite skills to be able to fill positions. Providing tourists with opportunities to spend money locally, through the development of tourism facilities and services such as interpretive media, food concessions, and souvenirs, can help in this respect and also encourage tourists to return in the future (Lindberg 1991). Also need to encourage the tourists to lengthen their stay at the lake (three nights is the current usual length of stay) would also help to increase spending levels. This might be accomplished by offering reduced room rates for extended stays and publishing multiday suggested sightseeing itineraries. Interpretation facilities, programs and guides may also help in this respect. Spending opportunities are not only important for tourists, but also for local community. These considerations suggest that ecotourism should not be depended on as the only strategy for improving conditions for community members.

Relationships between Tourism and the ILWS

Indicator	Assessment
Park entrance fee	None (Only for entrance fee by MOHT)
Tourism's financial contribution to conservation	None
Availability if educational materials/ opportunities	Limited: Pamphlets, Sing boards, Guides
Quality of educational materials/ opportunities	Good
Information about tourists	Good (Available at Tourist Information Centre)

Tourism facilities are available in 19 sites but tourism statistics were not available at the park offices because they are managed by the Myanmar Travel and Tourism. No community-based tourism activities were recorded inside or in the proximity of protected areas except for Inle lake. There does not exist reliable long term data about tourism in the lake, existing accessible statistics are not accurate (Ismael Abedin Inglemo, 2013). Figures for international tourism are very small for Myanmar compared to neighbouring countries but

more investments are expected in the future, with special attention to ecotourism (Instituto Oikos and BANCA, 2011). Protected area user fees, especially in developing countries, are often nominal (Wall 1994, Lee and Snepenger 1992) or missing altogether (Lindberg, 1991). No users fees have ever been charged at the lake, only international visitors are charged a fee for entering the Inle Zone, currently 10\$. The use of collected fees should be transparent and follow an annual budget. Information should be provided so that visitors and stakeholders can see how funds are being used effectively to sustain ecosystem services. As a result, tourism has yet to raise funds for management or conservation activities. Although levels of visitation have been relatively low, and the lake have yet to attract a foreign market, even a small fee, which that management is considering implementing at the lake could raise substantial funds. Almost all of the tourists were satisfied with the ecotourism attractions and activities they perceived. A survey of tourists, asking what they would be willing to pay to enter the lake could help for lake conservation, most tourists answered positively that they want to pay more money for this. To sum up my research, the proper and long-term trade-off management should be evolved between unavoidable impacts of the tourism development and the Inle lake environmental conservation activities as well as the socioeconomic development of the local people.

6. Conclusion

Successful ecotourism development depends on many critical factors, such as improvement of environmental conservation; least economic leakages; community participation; human resources development, enhancement of local community livelihoods; and tourist satisfaction. Many definitions and types of ecotourism concern travel to a natural area; involving local people; feeding economic profit into local environmental protection; and contributing to the maintenance of the local environment and species diversity through minimizing visitor impact and promoting tourist education (Valentine 1993, Western 1993, Ceballos-Lascuráin 1998, Dimitrios Diamantis 1999, Fennell 2001, 2003). If ecotourism is to develop successfully, there should be some consensus among decision-makers on what the term means and what the objectives are in promoting its development. Overall, interviews revealed that most interpret ecotourism as a form of nature-oriented travel that balances natural resources conservation and human use. Although less noted among officials also see ecotourism as a means for producing environmental and socio-economic benefits for the area and local communities.

Developing ecotourism in the study area has its challenges. Because of its immense environmental, social and economic values, often trigger conflicts of interest among all stakeholders. Poverty is the major factor in the degradation of natural resources, that all of the natural resources in the area have been threatened by the pressure of high population.. If local people lack their equity to share its benefits, the lake will lose the future. Environmental friendly income generation activities and awareness raising programs are needed to alleviate poverty in the community. Therefore, local residents should be encouraged to participate in the lake ecotourism. Gradually, local people understand that the tourism potential is the best way to create income generating opportunities and healthy environment for their future. Nowadays, some of the people are trying to engage in tourism activities for their livelihoods. By changing their mindsets, not only the attractions of ecotourism are strengthened by absorbing local characteristics and customs, but it also increases the chance to develop the local economy. More jobs will be created for local people such as guides, guards, cooks, cleaners, practitioners of handicrafts, also as selling snacks and lodging. By involving in ecotourism activities, local community could upgrade their living standards and change their

lifestyles, which will release pressure on natural resources, and enhance the conservation of the lake. It will be the best initiative for the future. Realizing severe local livelihood and environmental crises, effective mitigation measures are needed to address these issues in a timely manner in order to promote integrated conservation and development processes. In this way, ecotourism (as a subset of alternative tourism) is being promoted by government and the tourism industry as a sustainable alternative tools for development. However, critics have suggested that ecotourism can be damaging to the natural environment, not least with respect to the environmental cost of air travel to popular destinations and the potential of unwittingly disturbing soils and ecosystems through accommodation and activities on site (Wheeller 1991, 1993, Hjalager 1996, Conservation International 1999, Wearing and Neil 1999, Kruger 2005). This study contributes to the growing body of tourism literature by providing practical site specific assessments of ecotourism at the ILWS, by demonstrating how an evaluative framework can be applied to site-level evaluation.

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