

Revitalizing Ecotourism for a Sustainable Tasik Chini Biosphere Reserve

A. Habibah^{1,2}, A. C. Er¹, I. Mushrifah², J. Hamzah^{1,2}, S. Sivapalan¹, A. Buang¹, M. E. Toriman^{1,2} & S. A. Sharifah Mastura¹

¹ School of Social, Development and Environmental Studies, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Malaysia

² Tasik Chini Research Centre, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, Bangi, Malaysia

Correspondence: A. Habibah, School of Social, Development and Environmental Studies, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Bangi, Malaysia. E-mail: ha@ukm.my; habibahamad2012@gmail.com

Received: July 22, 2013 Accepted: September 1, 2013 Online Published: October 11, 2013

doi:10.5539/ass.v9n14p70

URL: <http://dx.doi.org/10.5539/ass.v9n14p70>

Abstract

Ecotourism is often perceived as an excellent tool for promoting sustainable development in most of the protected and special areas, including the Biosphere Reserve (BR). In fact, ecotourism can help to revive a declining tourist destination as it preserves nature and support rehabilitation and most importantly, it fits well with the Biosphere Reserve functions of conservation, development and logistics. This article aims to analyse the life cycle of Tasik Chini as an ecotourism destination, by focusing on the following aspects, namely travel engagement, ecotourism approaches and revitalization initiatives. This study utilized a mixed method approach by combining the primary and secondary data in tracing the evolution, development and the existing stage of ecotourism. The study reveals that the four major components which drive ecotourism program/initiatives toward achieving sustainable development are the state of ecotourism in the BR, the targeted segments of the community, the extent of community involvement as well as the supportive infrastructure for ecotourism. As ecotourism in the BR significantly promotes learning and research, smart partnership or collaboration between the stakeholders will help generate true eco-tourists. It is therefore imperative that ecotourism initiatives in the context of the BR is revitalised as it will enable a reflective analysis of the destination's life cycle. The intervention of credible initiatives can fulfil the real and future roles of ecotourism in sustainable development.

Keywords: revitalizing, ecotourism, life cycle of a destination, exploration, local involvement

1. Introduction

Ecotourism is often perceived as an excellent tool for promoting sustainable development as well as attempting to address issues of ecological sustainability and seeking a balance between local livelihood and conservation of protected areas (Weaver, 1999; Lai & Nepal, 2006, Gurung & Seeland, 2008; Campbell, 1999; Honey, 2008). This means that ecotourism is a viable mechanism in managing and sustaining natural resources of a designated protected area, including the Biosphere Reserves (BRs) (Lu & Deng, 2008; Wallner et al., 2007). This underlying basis fits well with the BRs' practices in managing resources and fostering sustainable development (Kuřová et al., 2008; Canning, 2005, Bolland et al., 2006). Those who visit ecotourism sites have high respect for the conservation efforts and more importantly, help to minimize exploitation of resources, respect the community's cultural tradition and support economic gain in a sustainable manner (Honey, 2009; Kerstetter et al., 2004; Chaminuka et al., 2012; Habibah et al., 2012a).

To date, there are 546 Biosphere Reserves around the world; much work has been concentrate on the initiatives in encouraging/enabling local participation, ecotourism practices and development (Kuřová et al., 2007; Buckley, 2007; Goslings, 1999, Stronza & Gordillo, 2008; Honey, 2008; Batisse, 1997, García-Frapolli et al., 2008, Bonheur & Lane, 2002). While these exemplary success cases help to spearheading the sites, efforts on how these sites were revitalised with ecotourism as part of the sustainable development approaches during stagnation and decline period nevertheless are seldom demonstrated. Hence, an assessment of the past and present destination practices as well as its achievements in revitalising the destination is a crucial initiative. In fact, it

ensures a significant contribution of the Biosphere Reserve as the living laboratory in conservation, development and learning, especially to those newly established destinations.

Like any other Biosphere Reserves, Tasik Chini was accorded as the first Biosphere Reserve in Malaysia in 2009, and it aims to enhance ecotourism in achieving sustainable development. Endowed with rich biodiversity, it is one of the ecotourism spots in Malaysia for more than three decades (Habibah et al., 2012, 2011). In the late 1990s and early 2000, Tasik Chini, however, experienced a reduction in tourist arrivals. While previous studies assert that the unplanned land development within the surrounding areas has jeopardized the ecotourism richness and eco-tourist flows (Habibah et al., 2012b), little is known in terms of how the locals faced and responded to these problems.

Indeed, some of the NGOs and local stakeholders put the blame on these two interrelated development, namely the physical infrastructure development favouring of the mass ecotourism and the unethical behaviour of tourists. The tourists are known to have plucked lotus which is a major cause that impacted the natural lake and the socio-ecological processes, hence, affecting the livelihood of the aboriginal people as well. What pertinent at this juncture are the following questions: i) What makes a real ecotourism product or process possible? ii) Who are the eco-tourists? iii) What shapes the tourism infrastructures and institutional mechanism in providing ecotourism experiences in Tasik Chini? All these are key focal areas of the revitalisation processes taking place at this destination. Against this backdrop, an assessment of the past and present offering of a destination from 'a state of decline' moving toward sustainable ecotourism will provide a basis for the revitalization process that is mutually agreed among the stakeholders. This article, therefore aims at evaluating the ecotourism of Tasik Chini Biosphere Reserve (TCBR) from the perspective of the past, present and the future with special emphasis on the components for revitalising ecotourism.

It is noteworthy to explore ecotourism, biosphere reserve and its components in rejuvenating and revitalising ecotourism in the biosphere reserves. The literature also helps to discern the components for revitalisation of a destination as well as to suggest data collection in line with evolutionary destination development. Specifically, the data collection fits the situational period of assessment, the existing and the past of the ecotourism offerings of the study area.

2. Literature Review

2.1 Ecotourism

There is no one mutually agreed definition of ecotourism since the introduction of ecotourism among scholars and practitioners (Honey, 2008; Campbell, 1999; Fennell, 2001; Blangy & Mehta, 2006; Horwich, 2003). The first eco-tourism definition was coined by Ceballos-Lascurain (1991, 25) as travelling [to] relatively undisturbed or uncontaminated areas with the specific objective 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. More recent definitions advocate that it should improve local welfare, contribute positively to visitor's satisfaction, and incorporate environmental education (The International Ecotourism Society, 2005; Blangy & Mehta, 2006; Honey, 2008). As a destination, ecotourism development can be dissected in stages, as what is termed by Butler (1980) as a product life cycle. This theoretical approach suggests that a destination evolves in a series of five stages, comprising of the inception/exploratory stage, growth, saturation, decline, and re-growth. It is however, not necessary for all the stages to be experienced at one destination.

On the other hand, the Biosphere Reserve is defined by the MAB-UNESCO as an area comprising of three zones, namely the core, buffer and transitional zones exhibiting three functional roles in conservation, development and logistic support in learning and research (UNESCO, 2012, 2007). During the United Nations Decade of Education for Sustainable Development (UNDESD 2004-2013), Biosphere Reserves are given full responsibility to function as learning laboratories or learning sites which emphasise on evidence-based knowledge, iterative principles and collaborative initiatives to achieve sustainable development (Ishwaran et al., 2008). Consequently, the BRs generate distinctive learning communities that are not limited to the locals residing within the areas but where the opportunities are also extended to the international community.

Moreover, in recent years, innovative approaches such as social learning (McCarthy et al., 2006; Cruz et al., 2005), ecosystem approach (Flitner, 2006), system thinking approach (Nguyen et al., 2009) and sustainable landscape (Kuřová et al., 2007) provide a pool of alternative perspectives and tools that can be utilized to foster sustainable development. The literature and official reports on Biosphere Reserves define BR as the sites of special area for special people (Schultz et al., 2011; UNESCO, 2012; Habibah et al., 2012) in which many are involved and actively promoting ecotourism. All the above achievements signify more challenges for the BRs to perform and serve the society. Taking into account the vulnerability of the ecosystem of the Biosphere reserve,

ecotourism is therefore fundamental for the Biosphere reserve to exhibit their roles and functions in conservation, development and learning as well as in creating sustainable regions (Ishwaran et al., 2008; Kriesel, 2011; Stoll-Kleemann & Welp, 2008).

2.2 Revitalising Ecotourism

Even though there have been extensive studies on ecotourism, studies that elucidate the evolution as well as the progressive growth of tourism destination in developing countries toward achieving sustainable development are quite limited. Specifically, studies on how these destinations seek to revitalise themselves after experiencing stagnation and decline are rare and fragmented. Some authors claim the applicability of the Butler life cycle in demonstrating the evolution and achievement of the ecotourism destination (Butler, 1980, 2011; Agarwal, 2006), while others propagate an enhanced model with the introduction of 3Cs of a destination in terms of context, characteristics and consequences (Pornphol et al., 2010). Butler (2011) also points out that successful rejuvenation requires a complete change of the attraction on which tourism is based. According to him, only two strategies have been successful: 1) the addition of man-made attractions, or 2) the use of untapped natural resources. As a complete reorientation of a destination might be not feasible because of financial or political constraints, Agarwal (2006) then suggests an alternative "reorientation stage" where efforts for renewal take place at the destination.

In fact, recent studies assert on the changing types of ecotourism products that range from soft to hard or active to passive, larger to a smaller scale and from leisure to experiential seeking purposes and motivations (Nepal, 2000; Zhang & Lei, 2012). Moreover, as these venues or sites are located in remote areas which are rich in biological diversity and indigenous cultures (Nepal, 2000; Honey, 2008; Badola et al., 2012; Lu & Deng, 2008), ecotourism will not exist without a healthy and attractive physical environment; tranquil, stable, equitable social environment; and educated groups of tourists and locals who are motivated to support measures to protect the local environment and culture (Goslings, 1999; Blangy & Mehta, 2006; Honey, 2008). Therefore, one important perspective that determines the effectiveness of the revitalising approach is the market priorities during the rejuvenation period, and equally important is to know the eco-tourists' needs, satisfaction and experiences that they are seeking (de la Barre, 2005; Kerstetter et al., 2004; Wallance, 1993; Kriesel, 2011).

Relevant to the initiatives of revitalising the destination is the degree to which ecotourism actually improves the environment within which it occurs and offers. In this vein, choosing an appropriate approach from 'minimalist' to 'enhancement' serves to actively improve on the environmental status quo through measures such as habitat rehabilitation, ecologically sensitive site hardening, and the acquisition of land for inclusion in high order protected area networks (Schultz et al., 2011; Kay, 1999). The claim that is most often asserted is that ecotourism helps the poor and marginalised people of the rural and remote areas, and requires a mandatory engagement of the locals during the rejuvenation period to ensure its sustainable development (Asker et al., 2010a, 2010b; Honey, 2008; Horwich, 1993, Ezebilo, 2010). In other words, engaging the locals in/during the revitalising processes is a key focal point in terms of practices and actions. However, whilst Pretty's (1994) ladder of participation provides an understanding and mode of participatory approaches/means, recent studies suggest that a better choice would be a community driven participation as compared to a community based participation approach. The problem in shifting to this new approach depends on the limitation of the local people who are financially incapable as well as lacking in knowledge, skills and experiences (Coria & Calfucura, 2012). The new approach provides opportunities for a balanced participation and collaboration between community members as the idea, views and inputs are derived from both, locals and related stakeholders (Buss, 2007; Boucher et al., 2003; Khelghat-Doost et al., 2003).

In a product life cycle model, tourism infrastructure and facilities are also key attractions satisfying the eco-tourists' needs. This positions the provision of ecotourism facilities comprising of accommodation, recreation and learning experiences with nature and culture of the locals. Over time as the destination develops and matures, it is expected that these facilities will be adequately furnished, sustained and of high quality. On the contrary, in destinations that have experienced stagnation and decline, quality facilities are seldom guaranteed. Based on the above literature, it is suggested that an analysis of the existing trend and past achievement in the following components provides a scenario of the revitalisation period, as indicated in Table 1.

Table 1. Component for the revitalization period

Components	Existing situation	Changing to the invention of:
Definition of Ecotourism	Product	Process and Outcome
Tourist typologies/ market segment	Eco-tourists	Knowledge Eco-tourists
Involvement of the locals	Community Based Ecotourism, Bottom-Up Initiatives	Community Driven Ecotourism, Combination Of Bottom-Up and Top-Down
Infrastructures and mechanism	Mass and Unfriendly to the Environment	Eco-Friendly and Green Technology
Research	Discipline-based and not integrated among Science and Social Sciences	Integrated and collaborative research among Scientists and Stakeholders.
Benefits	Fragmented and limited	Value chain of benefits and opportunities
Decision Making in ecotourism	Outsiders oriented – tourism providers' domination; top-down and directed decision making.	Local orientation and multi-sectoral; informed and consultative decision making
Destination positioning	Remote ecotourism and national destination.	Knowledge ecotourism and international link with the MAB-UNESCO Biosphere Reserve

Source: authors' contribution, 2013

3. Methods and Materials

3.1 Study Area

Tasik Chini is the second largest natural fresh-water lake in Malaysia. Located in the southeast region of the state of Pahang, Tasik Chini is within easy access through road and Sg. Pahang. As a Biosphere Reserve, Tasik Chini encompasses three functional zones, namely the core, buffer and transitional zones. The designated area is rich in wetland biodiversity and ecological capitals as shown in Table 2.

Table 2. Ecological capitals and biodiversity for ecotourism

Natural capitals and components	Biodiversity status	Ecotourism purposes
Flora and fauna	<ul style="list-style-type: none"> - Over 144 species of fish, 260 plant species, 25 aquatic plants, 46 families of insects. - 304 species of non-aquatic vertebrates, 14 amphibians, 39 reptile species from 12 families, 184 bird species - 40 families and 67 mammal species from 22 families 	<ul style="list-style-type: none"> - Diversity - a strong point of ecotourism - Nature tourism, ecotourism birding, forest trails, sightseeing
Water bodies, lake and rivers	<ul style="list-style-type: none"> - 12 open water bodies, called "laut" by the local people. - Second largest natural fresh-water lake, totalling 202 hectares of open water. 	<ul style="list-style-type: none"> - Water based nature challenges - Scenic experience
Hills and undulating Landscape	<ul style="list-style-type: none"> - 700 ha of Riparian, Peat, Mountain and Lowland Dipterocarp forest 	<ul style="list-style-type: none"> - Trails and serenity
Forest	<ul style="list-style-type: none"> - Dipterocarp forest 	<ul style="list-style-type: none"> - Trails, expeditions, forest products, herb production
Agricultural activities	<ul style="list-style-type: none"> - Cultivate natural capital 	<ul style="list-style-type: none"> - Provide landscape and agro-based activities. Farm based aboriginal tourism
Climate	<ul style="list-style-type: none"> - Humid tropical climate with two monsoon periods. Annual rainfall varies, 1488 to 3071 mm. 	<ul style="list-style-type: none"> - Humid tropical climate as attraction. - Shiny and bright landscape, Sunrise and sunset experiences
Local inhabitant	<ul style="list-style-type: none"> - Indigenous Jakun tribe living around Tasik Chini 	<ul style="list-style-type: none"> - Community, actor and recipient in ecological capital

Source: Habibah et al. 2012a, 2012b.

Tasik Chini is dominated by the Jakun tribe, one of the major aborigine groups in Malaysia. Residing in and within the surrounding area of the watershed, the Jakun forms a total of six kampungs (small villages). Altogether 80 families or approximately 500 members stay in this sensitive area (Habibah et al., 2012a, 2011). The mainstay economy is mainly forest-based and agriculture-based activities. Tasik Chini is one of the earliest pristine ecotourism destinations in the early 70s. Popular with the iconic lotus plant spreading throughout the watershed, the unplanned development and the flood hazard occurrence are some of the human interventions causing impacts to the community.

3.2 Data Collection and Analysis

This study is a scenario analysis of a life cycle of a tourism destination. It begins with its evolutionary depiction from its exploration, involvement and development/growth stage. The evolution of the destination life cycle traces three key components, namely travel engagement, ecotourism approaches and revitalization action initiatives. Taking into account the needs of data collection to represent these various stages, several sources of data were utilised. Secondary (A) and primary (B) data sources were obtained to derive an understanding of the varying stages of its evolutionary path.

(A) Secondary data from varying levels i.e. the state, regional and local levels were obtained. These include the officials of the local plan, regional and state plans as well as the national ecotourism master plan. From these

reports, progression of Tasik Chini in terms of historical setting, hydrological and land use was derived. These data also described the ecotourism attraction.

(B) Primary data was obtained through in-depth interviews with the community, focus group discussion and tourist survey. From the qualitative data derived from the in-depth interviews with the tourism providers and local folks, the manner in which ecotourism emerged as a tourism product and how the locals took part in providing chalet and guided jungle trekking were identified. Furthermore, based on the focus group discussion organized during the public consultations prior to the establishment of the BR, ecotourism was also discussed. Development of the ecotourism was elaborated by the participants including the locals and the tour guides. The FGD members also reflected on the past especially in terms of who were the eco-tourists, the route they came from, and the attractions of their forests. The primary data also involved a survey among the tourists and participants of the thematic programme organised by the Tasik Chini Research Centre. The survey generated the perspectives of the tourists on recent developments of Tasik Chini, especially the knowledge ecotourism offers.

The data obtained from these secondary and primary sources were analysed using a triangulation method. This attempt matched with the need of a rich evolutionary description of ecotourism in the study area. Moreover, with several sources of data, this data analysis gave a more detailed and balanced scenario of ecotourism from the past to the present, within the period of study that is before the 1960s to the 1990s and the present 2001 till 2012.

4. Results and Discussion

4.1 From Exploration to the Involvement and Development of Ecotourism

Tasik Chini is one of the popular ecotourism destinations in Malaysia. As a destination, Tasik Chini has a long history, believed to be in existence for more than three decades. The destination's life cycle, as proposed by Butler (1980) is a series of development stages comprising of exploration, involvement, development, consolidation, stagnation, decline and rejuvenation, of which similar stages can be tracked in Tasik Chini (Table 3). The exploration and introduction of ecotourism began in the late 1960s and in the early 1970s.

Table 3. Evolution of ecotourism and progression, 1960s - 2013

Evolution of ecotourism/ scale	Past 1960 – 1980s	1990 - 2000	2001 - 2008	2009-2013; Tasik as the Biosphere reserve
Stage of ecotourism with reference to Butler's life cycle model of tourist destination	Exploratory, Introduction, by the locals and outsiders. English and Indians as well as locals	Development and booming of attraction	Progressive but slowing down	Gradually increasing
Product	Lake centric, not yet recognised as ecotourism	Lake and nature, ecotourism	Ecotourism	Knowledge Ecotourism
Local Involvement	Active locals interested in forest and lake excursion	Locals, still dominating limited segment.	Locals – the Jakun tribe, yet decrease in numbers	Local and collaboration with Outsiders and Higher education; increased of numbers as more promotional campaign made.
Government intervention	Low and forest reserve	Tourism facilities upgrading	Conservation and regional ECER Development Plan – environment and conservation	ECER development of Tasik Chini, redevelopment of tourist facilities
Tourists typologies	Small, backpackers and progressing	Mass tourists and group tourists	Reduction in mass tourists	Special organised academic, and knowledge eco-tourists.
Lake and water bodies	Pristine with 12 'lauts'	Disturbed yet still showcasing the pristine nature	'Dying state' and slow death, claimed by the scientists and NGOs.	Toward Conservation and revitalization
Facilities development	Limited facilities	Development of selected facilities, chalets operated by locals and entrepreneurs	Faded, old and not well maintained facilities	New development and towards clusters of tourist facilities, jetty, chalets and restaurants

Source: Author's compilation of several field work, 2009-2013.

At its early stage of exploration and involvement (in the late 1960s and early 70s), there is no clear sign of ecotourism as it was mostly recognized as 'a travel to an undisturbed area'. The attraction of Tasik Chini during this time was very simple and original/real, with wilderness fishing, hunting and forest collecting forming some

of the favourite outings. Among visitors, magnificent scene of the lotuses that bloom during the period from June to September was often highlighted as an unforgettable experience. Perhaps, during those days, there was no actual business transaction involving ecotourism activities as understood and practiced by the mass ecotourism which was witnessed in the late 1980s. What actually occurred was the barter exchange of goods such as food stuff, and cigars from 'outsiders' in return for obtaining forest products.

In the 1980s, more and more domestic and international tourists visited Tasik Chini for its pristine nature. During that time, some of the local communities had close contact with the tourism industry; hence, they were motivated to provide basic accommodation in terms of bed and breakfast, and services such as boatman, craftsmen and local guides. According to one of our key respondents (Pak Ngah as the local guide), international tourists came through Sungai Pahang, and dealt with the local tour operators who actually provided boatman services. Although they did not receive any formal training as tour guides, their keen interests in tourism made them visible and popular among tourists.

In addition, in the late 1980s, the DARA, a regional development agency undertook a study that aimed to promote Tasik Chini as one of the tourism destinations. During this exploratory and introductory stage, several initiatives were taken by the locals as well as the tourists. With an increasing demand for ecotourism activities, it not only acted as a pull factor for further development, it also acknowledged Tasik Chini as a state park of which its function was to become an ecotourism destination. Apart from the natural ambience, the socio-cultural environment and livelihood of the aborigines have also become a major attraction.

Tasik Chini enters into the development stage when the ecotourism development flourished and was popularized as an alternative to mass tourism in the early 1990s. Due to commoditization of ecotourism during that period, more tourist infrastructures were developed. One key development is the weir or barrage, which then caused failure/dilapidation of the natural lake's ecosystem, resulting in a drastic drop of tourist arrival which saw the onset of the declining stage.

While the above description provides a scenario of Tasik Chini's life cycle, an analysis of who were the eco-tourists, the involvement of the locals and the government's intervention demonstrate the dynamism of this destination.

4.1.1 The Eco-tourists

As mentioned earlier, ecotourism and eco-tourists were hardly recognized as a term in the olden days in the country; there also hardly exists any typology of eco-tourists among those who travelled to this destination. In the early 70s, travellers who frequent these sites were those who knew the hidden attractions of the lake and virgin forest. This natural attraction established close ties with the nature lovers who were mesmerised by the mystical wonders of Tasik Chini. Most of them travelled on an individual basis while those who travelled through the tour agencies network would normally flock from the tourism belt located in the tourism clusters, especially the Cherating tourism belt located in Pahang and the capital city of Kuala Lumpur.

During the early period of the 1970s, the international tourists stayed for several days in the tribal settlements and explored the virgin forest and lake sites. Also apparent were their close contact with the local livelihood. The tourists also did some transaction of services and goods, including getting the locals as the tour guides. In fact, due to the social bonding, those who stayed for a longer duration also lend their hand to help seek international aid (for example UNDPs funds) for the aborigines to venture into new accommodation business. The *Challengers*, chalets owned by one of the locals were built from this financial aid.

The term 'eco-tourist' is often used to refer to travellers who explore undisturbed areas by ecotourism scholars, and this is quite a recent phenomenon in Tasik Chini. Still facing limited accessibility, in the 1990s, most eco-tourists get through to this destination by crossing the Pahang River. Their entry-exit point was from Kg Belimbing. Many of the tourists mentioned that while they had to push their boat when the river water level was low, they often cited the enjoyment and fun derived from these activities as most satisfactory and memorable. They really did not mind spending the time in the forest as nature enthusiasts, and wandering around in a carefree manner.

4.1.2 The Local Involvement in Ecotourism

This study also found that involvement of the locals in ecotourism can be tracked since the early 1960s. During the early days of this period, even though the aboriginal people were considered a nomadic who often moved from one area to another, there were still some efforts in locating themselves at a permanent settlement with a secure local economy and livelihood, which includes tourism. The tourism initiatives resulted from the collaboration of three families, namely Pak Alok (father of Awang, the current Batin, i.e., chief), Pak Laksa (who

ventured into tourism), and Pak Tempek (known of his supernatural powers). Their combined leadership and entrepreneurship efforts established and founded Kampung Gumum as their permanent settlement. They planted rubber trees and fruit trees in the area around Laut Gumum. Under the Aborigines Settlement Scheme, 10 houses were built in 1977, and subsequently under the Low Cost Housing Scheme, 3 houses were built in 1993 and another 5 houses in 2007. Today, about 60 families live in Kampung Gumum. In terms of economic activities; a sizeable number of families are rubber small holders. Their fruit trees are relevant, not only for fruit harvest but also as markers of ownership of land. The landscape of attraction during the introduction and exploration of ecotourism portrayed the unique features of Tasik Chini and it continued to experience more expansion in the 1970s.

At the development stage of ecotourism which was around the 1980s, there seemed to be fewer numbers of accommodations available in the area. However, the locals managed to involve themselves as the entrepreneurs in the accommodation sector. According to our key respondent (Kak Norhayati, a women entrepreneur, in her 50s), during those days, she managed her small Kijang Emas, a resort chalet which was once popular among the international backpackers. Her involvement was motivated by the opportunities of meeting the tourists. She also emphasised that her involvement led others to follow suit, thus seeing an increase in ecotourism development. Besides Norhayati who is the only female aboriginal entrepreneur, several key players also dealt with the needs of the tourists. As highlighted by the Tok Batin, during his youth, his involvement as a tour guide was with the intention of engaging and knowing his local forest. Although the idea of roaming the surrounding forest was naturally a part of their culture, the need to master their movement/route as well as the lake ecosystem was not easily accomplished. He had to learn and practice through direct involvement in ecotourism, where the skills are well treasured and preserved. The package deals included the trail to Bukit Tembakang, the highest landscape of Tasik Chini. Learning to survive in the forest and cooking with natural fire makes the eco-tourists explore deeper the elements of the forest.

Although the women normally take care of their children and domestic needs, they also seem to be actively involved in ecotourism. Memories of women's involvements in ecotourism by one of our key respondents, claimed that she has been involved ever since when she was young; taking good care of forest excursions. During those trips, survival skills such as crafting leaves of local plants as outdoor utensils were developed. Their wide exposure in the forest has enabled them to become responsible women as well as being well versed in traditional herbal treatments. They also performed the Kelundang dance to tourists as well as to ritual needs. Of recent cultural performances, however, the young school children had been given more opportunities to showcase their talent. With a local verse of Kelundang song, these young generations help nurture and revitalize the cultural aspect of the community.

4.1.3 Government's Intervention for Tourism Infrastructure Development

As is often mentioned in the evolution of destination studies that at the introduction and exploration stage of a tourism destination, initiatives came from the locals; it appears that similar experience was also witnessed in the case of Tasik Chini. The government intervention commenced when the destination had received an influx of eco-tourists, especially in the late 1980s. The development of the weir was one of the physical developments introduced as a result of the commoditization of ecotourism. The weir was built in 1995 to ensure the water level was adequate to allow cruising boats to fetch tourists who wished to explore both the Chini Lake and the adjoining rivers.

Several acts were later in place, to ensure the need for biodiversity preservation. These include the federal legislation (Wildlife Act 1972, Environmental Quality Act 1974), provincial legislation Wildlife Act 1972, Fisheries Act 1985, Forestry Act 1984, Environmental Quality Act 1974 (Act 127) & Subsidiary Legislation, Land Rules Applicable to the States in Malaysia, and the Town and Country Planning Act 1976) and management plans (Habibah et al., 2013). In addition, the existence of government agencies related to water, forest and the surrounding ecosystem are typically acknowledged by the community. Surprisingly, at the national level, there are no comprehensive strategies of aboriginal tourism and therefore, it has widened the gap of priority tourism. The Department of Orang Asli Development (JAKOA), somehow recognized that limited talent of entrepreneurship, hospitality skills and business management are the challenges that need to be revitalized.

4.2 The Present/Contemporary Ecotourism Scenario, 2001 - 2013

As a destination that has undergone a series of life cycle from exploration, introduction and development in the 1960s to the late 1990s, the present ecotourism in the 2001- 2013 showed what Butler mentioned as the declining period of a destination. Tasik Chini has been reported as a dying state in the social media. The following sub-sections reflect on this experience.

4.2.1 A Declining Period of Ecotourism

It is an accepted fact that as the destination showed a decline in its ecotourism quality, the overall performance of ecotourism development will also decline. This in particular is true in Tasik Chini as a destination. The 2000s was a decade that saw a decline in tourist arrivals; rapid decline was especially witnessed in the late 2009. Though there are many reasons attributed to this decline, it was primarily due to the incompetent and poor management of the lake environment that diverted tourists to alternative destinations. From the reports of tourist arrivals, the figure shows an obvious drop. In 2009, the figure was only 6,079 tourist arrivals, compared to the 28,748 tourist arrivals in 2007 (Figure 1).

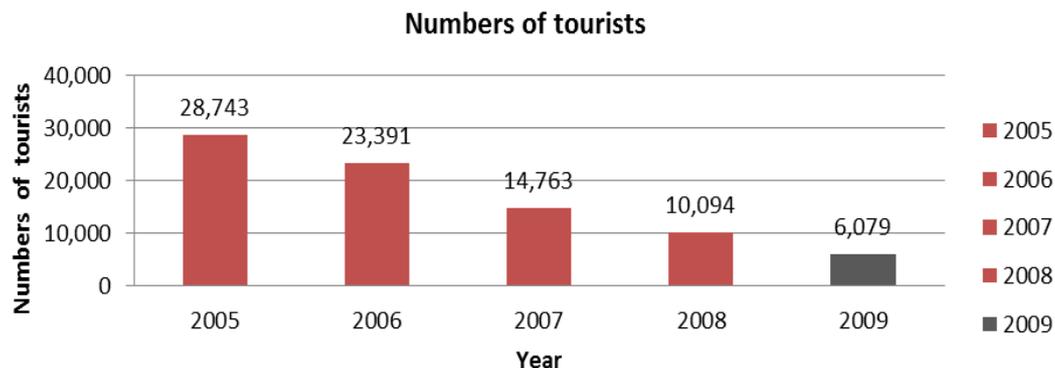


Figure 1. Tourist arrivals from 2005-2009

Source: Tasik Chini Research Centre, 2010

Due to declining ecosystem, many tour agencies refused to organise tours in Tasik Chini. Based on the scientific expedition organised by Universiti Kebangsaan Malaysia in 2004, it was found that rapid changes in land use was the major cause to the declining quality of the lake environment. The encroachments of agriculture and mining as well as settlements placed greater pressure on the lake's ecosystem. The wider concern of saving the disappearing lake began to receive more public attention.

4.2.2 Who Are the Present Eco-tourists?

As mentioned earlier, in the past eco-tourists play a dominant role in ensuring the existence of ecotourism demand, and it is vital to determine who the eco-tourists are in the present scenario. From our key respondent (the Resort Manager of Tasik Chini), in 2011-2012, this destination received an increase of tourist for overnight stays especially in the vicinity of Tasik Chini. Three major tourist segments have shown significant increase and emergence, described as follows:

- 1) The non-organised eco-tourists who travelled individually or in families to gaze at and experience Tasik Chini. They seek to experience the lake's ambience and engage in local tourism activities such as lake cruising and visiting orang asli (aborigines) settlements.
- 2) The organised tourists were mostly from the package tour originating from the tourism belt of Cherating and Kuantan. They experience Tasik Chini as one of the sites in their package tour, primarily as a stopover for nature escape or ecotourism. Their activities centred on the lake activities and Orang Asli settlement. Among the two most visited villages are Kg Chenahan and Kg Puput.
- 3) The knowledge eco-tourists were those organised by the Tasik Chini Research Centre whereby the core experiences entailed the tourist learning about the lake and the forest's ecosystem from the experts. From 2009 to 2012, several segments of knowledge eco-tourists have visited this site, and their responses on the programmes initiated are illustrated in Table 4.

Table 4. Provision of services during the knowledge ecotourism programmes

Activity	Mean	Sp	Rank of Activity	Level
Staff	4.29	0.62	1	High
Transportation	4.09	0.92	2	High
Activities	4.04	0.99	3	High
Destination	4.00	0.48	4	High
Information	4.00	1.01	4	High
Food	3.93	0.74	5	High
Hospitality	3.89	0.94	6	High
Cleanliness	3.33	0.94	7	Moderate
Accommodation	3.22	1.04	8	Moderate

Source: Author's field work and program involvement, 2012

4.2.3 Involvement of the Locals

Ensuring all segments' involvement in ecotourism activities in Tasik Chini is also one of its goals to achieve in revitalization programs. However, it was not without challenge, and the present situation shows a lack of local involvement, even though some would hope for a progressive improvement in their involvement. There were some local involvements in ecotourism initiatives as the following cases illustrate:

- *Men involvement: Rajan Jones* – an Indian man married to a local aborigine who offers chalet and jungle trekking services which inevitably involved local folks who assisted him in guiding the tourists. Being involved since the early 1970s, his passion in ecotourism and the lake tour made him popular among the tourists. *Pak Bahrin's* efforts in tour guide services and as a host of his kampung, and *Pak Ngah*, a boatman who is a host of his kampung are still dominant in providing ecotourism experiences of Tasik Chini. Sometimes they receive group tourists and SAVE tourists who come for scientific expeditions.
- *Women involvement: Mrs Norhayati*, also married to a local aboriginal man, shows high enthusiasm in encouraging ecotourism and entrepreneurship among women. She offers hands-on experience in crafting and weaving.
- *Youth involvement* is seen to be seasonal because of their employment in the plantation and industrial sector. Their engagement as boatmen and participants in public awareness programs showed increased commitments.
- *Neighbouring communities in buffer zone: actively participating in programs related to knowledge transfer programs such as composting, volunteerism and conservation.*

In comparing the above achievement with Butler's life cycle situation, Tasik Chini's experience shows an increased of local involvement within the more structured tourism production mechanism mainly from the 'Outsiders' of this destination. This is definitely in tandem with what should be achieved at the stage of development, even though it needs more measurable indicators in showing real achievement of the locals especially in value chain of economic sector.

4.3 The Future of Ecotourism: Some Revitalizing Initiatives

With the above mentioned scenario, ecotourism development has evolved and shown some progress in terms of improved tourism facilities, and signs are that this destination will be revitalised in a more holistic sense. Some ecotourism initiatives are taking shape; however, further improvements in its development and services for ecotourism experiences are anticipated. These include the following measures:

1) The introduction of knowledge ecotourism for Tasik Chini was identified to guarantee the biodiversity of the lake and its ecosystem. Since Tasik Chini is experiencing a slow growth and reduction in tourism quality, ecotourism could play a significant role in bringing the eco-tourists back. Thus, a new approach in ecotourism venture is therefore vital and the knowledge ecotourism introduced by the University has called for more experiential learning and conservation during the S.A.V.E period which is actually a declining stage in Butler's conception. During the subsequent stage, the enjoyment period which is the revitalizing stage will be filled with more enjoyable and fun experience/moment in celebrating and appreciating the restored ecosystem. The

introduction of this product is currently managed by the University as the ideal of experiential learning of the said ecosystem.

2) The revitalizing of ecotourism experiences through the involvement of the scientific community. The conventional notion of ecotourism is centred on nature and undisturbed area; however, being one of the areas known to have experienced many environmental threats, the introduction of the revitalising effort is therefore one of the feasible mechanisms. The scientific community's involvement in offering ecotourism experiences can help to diversify tourism experiences, and hence, help to increase tourist arrivals. However, the current programmes introduced are much in favour of the young tourists. In fact, an increase of the knowledge tourists adds a new channel of tourist arrivals. Planned activities undertaken by these tourists generate value added services to the Jakuns in term of cultural performances, souvenirs, food and boatmen.

3) Community-driven revitalisation initiatives will become one of the major components of ecotourism development in the future. In the current situation, the three most visited villages are dominated by tourists and travellers who want to visit the aboriginal settlements. These include Kg Gumum, Kg Puput and Kg Chenahan.

4) Refurbishing of the tourism complexes and services together with government support adds more value in the ecotourism services. Table 5 shows the available tourism infrastructure and upgrading of the facilities.

Table 5. Tourism infrastructure and upgrading of the facilities

Tourism facilities	Management
Jetty	Main jetty for tourist movement and transfer
Resort in Tasik Chini	A total of 18 rooms available in the core zone
Tourism Information Centre	The information centre is open but still lacks updated resources.
Tour agency and guide	No local tour agency available; only local guide from the boatmen
Restaurants	Available in the resort but with minimal choices of food and menus
Road	Road accessibility is far better in recent year. Three road access.
Research centre (Pusat Penyelidikan Tasik Chini)	A complete research facilities for flora, fauna, community and ecotourism.
Handycraft centre	A Felde handicraft centre with niche products of Tenun Chini and local food
Homestay	Upgrading and refurbished homestays within easy access to tourists.

Source: Author's field work in 2012 and recent work, 2013.

5) A strategic implementation plan for the future from 2012-2025. Taking a holistic BR approach, a strategic implementation plan has been in place. It is expected that ecotourism will be enhanced accordingly in two stage of approaches, i.e. a save period/revitalise approach in the decline stage and a 'fun approach' in the re-growth stage. During the decline stage of the ecosystem, programmes favoured restoration measures. The conservation experiences such as planting a seed a day and lotus planting should allure eco-tourists to such an experience. Furthermore, there is a need to ensure that the carrying capacity of this destination (a balance of tourist arrival figures with the facilities in current situation) must be met. The second regrowth stage entails the enjoyment or fun period which intends to celebrate the outcomes from the initial initiatives in conservation and revitalization programmes.

5. Conclusion

This study revealed the evolution of ecotourism in Tasik Chini. It started with the exploration stage which was only the exploration of a small and remote pristine forest, followed by the involvement and development stage which was facilitated through the promotion of ecotourism by the eco-tourists and the tourism providers especially the tour agencies. Subsequently, the ecotourism development embarked on the commoditization processes in the market system which led to the physical deterioration of the ecosystem. The revitalising period started when the site was recognised as a Biosphere Reserve in 2009 and it has shown several achievements. In its attempt to revitalize, Tasik Chini's experience showed that there is a need to introduce knowledge ecotourism, as well as the need for refurbishment of sites and diversification of ecotourism experiences. However, these

initiatives should not be viewed as a government-centred and top-down approach but as an integrated and holistic approach because it warrants concerted involvements of the stakeholders and careful management of resources. It is also recommended that cognizance and insight are learnt from past experiences as it would help the stakeholders to understand and set the limit for growth and development in the area. Consistence of revitalizing efforts should come from the locals; from the young to the old folks as well; as they are the actual beneficiaries and the guardian of this unique pioneer Biosphere Reserve of Malaysia.

Acknowledgements

This research is funded by the Ministry of Higher Education Malaysia, under the grants entitled Lake Ecosystem Assessment of Tasik Chini (UKMTOPDOWN-ST-08-FRGS0003-2010), The Science of Managing Environmentally Sensitive Areas (LRGS/BU/2012/UKM/BS) and *Dana Lonjatan Penerbitan* PM Dr Er Ah Choy, UKM-DLP-2012-030. The authors would like to express their gratitude to all the key respondents for making this study a success.

References

- Abidin, Z. Z. (1999). *The identification of criteria and indicators for the sustainable management of ecotourism In Taman Negara National Park, Malaysia: a Delphi consensus*. PhD Thesis. College of Agriculture, Forestry and Consumer Sciences, West Virginia University. Retrieved June 12, 2011 from <https://eidr.wvu.edu/eidr/documentdata.eIDR?documentid=791>
- Agarwal, S. (2006). Coastal resort restructuring and the TALC. In R.W. Butler (Ed.), *The Tourism Area Life Cycle: Conceptual and Theoretical Issues* (pp. 201-218). Clevedon, UK, Channel View Publications.
- Asker, S., Boronyak, L., Carrard, N., & Paddon, M. (2010a). *Effective community based tourism. A best practice manual. APEC tourism working group*. Retrieved July 10, 2012 from <http://www.crctourism.com.au>
- Asker, S., Boronyak, L., Carrard, N., & Paddon, M. (2010b). Learning for resilience? Exploring learning opportunities in biosphere reserves. *Environmental Education Research*, 16(5), 645-663.
- Batisse, M. (1997). Biosphere reserves, a challenge for biodiversity conservation and regional development. *Environment*, 39(5), 7-33. <http://dx.doi.org/10.1080/00139159709603644>
- Blangy, S., & Mehta, H. (2006). Ecotourism and ecological restoration. *Journal for Nature Conservation*, 14, 233-236. <http://dx.doi.org/10.1016/j.jnc.2006.05.009>
- Bolland, L. P., Drew, A. P., & Vergara-Tenorio, C. (2006). Analysis of a natural resources management system in the Calakmul Biosphere Reserve. *Landscape and Urban Planning* 74, 223-241. <http://dx.doi.org/10.1016/j.landurbplan.2004.09.005>
- Bonheur, N., & Lane, B. D. (2002). Natural resources management for human security in Cambodia's Tonle Sap Biosphere Reserve. *Environmental Science & Policy*, 5, 33-41. [http://dx.doi.org/10.1016/S1462-9011\(02\)00024-2](http://dx.doi.org/10.1016/S1462-9011(02)00024-2)
- Boucher, G., Conway, C., & Der Meer, E. V. (2003). Tiers of engagement by universities in their region's development. *Journal: Regional Studies*, 37(9), 887-889. <http://dx.doi.org/10.1080/0034340032000143896>
- Buss, D. (2007). *Secret destinations. creativity or conformity? Building cultures of creativity in higher education*. A conference organised by the University of Wales Institute, Cardiff in collaboration with the Higher Education Academy. Cardiff January 8-10 2007. Retrieved June 14, 2012 from http://www.creativityconference07.org/presented_papers/Buss_Secret.doc
- Butler, R. (1980). The concept of a tourist area of life cycle of evolution: implications for management of resources. *Canadian Geographer*, 19(1), 5-12. <http://dx.doi.org/10.1111/j.1541-0064.1980.tb00970.x>
- Butler, R. W. (2011). *Tourism area life cycle. contemporary tourism reviews*. Series Editor: Chris Cooper. Goodfellow Publishers Limited, Woodeaton, Oxford. Retrieved December 12, 2012 from <http://www.goodfellowpublishers.com>
- Campbell, L. M. (1999). Ecotourism in rural developing communities. *Annals of Tourism Research*, 26(3), 534-553. [http://dx.doi.org/10.1016/S0160-7383\(99\)00005-5](http://dx.doi.org/10.1016/S0160-7383(99)00005-5)
- Cellabos-Lascarin, H. (1996). *Ecotourism, tourism and protected area*. Gland: IUCN.
- Chaminuka, P. R., Groeneveld, A., Selomane, A. O., & Van Ierland, E. C. (2012). Tourist preferences for ecotourism in rural communities adjacent to Kruger National Park: a choice experiment approach. *Tourism Management*, 33, 168-176. <http://dx.doi.org/10.1016/j.tourman.2011.02.016>

- Coria, J., & Calfucura, E. (2012). Ecotourism and the development of indigenous communities: The good, the bad, and the ugly. *Ecological Economics*, 73, 47-55. <http://dx.doi.org/10.1016/j.ecolecon.2011.10.024>
- Cruz, R. E. H., Baltazar, E. B., Gomez, G. M., & Lugo, E. I. J. E. (2005). Social adaptation ecotourism in the Lacandon Forest. *Annals of Tourism Research*, 32(3), 610-627. <http://dx.doi.org/10.1016/j.annals.2004.08.005>
- de la Barre, S. (2005). *Learning travel product development workbook: A step-by-step guide for Yukon and Northern entrepreneurs, North to Knowledge (N2K), Whitehorse, Yukon*. Retrieved October 20, 2012, from <http://www.tc.gov.yk.ca/pdf/LearningTravelProductDevelopmentWorkbook.pdf>
- Ezebilo, E. E. (2010). Community-based preferences for economic incentives to promote biodiversity conservation in a Tropical Rainforest. *Int. J. Environ. Res.*, 4(3), 501-506.
- Fennell, D. (2001). A content analysis of ecotourism definitions. *Current Issues in Tourism*, 4, 403-421. <http://dx.doi.org/10.1080/13683500108667896>
- Flitner, M., Matthes, U., Oesten, G., & Roeder, A. (Eds.). (2006). *The ecosystem approach in forest biosphere reserves: results from three case studies*. Albert-Ludwigs-Universität Freiburg, Freiburg.
- Gurung, D. H., & Seeland, K. (2008). Ecotourism in Bhutan extending its benefits to rural communities. *Annals of Tourism Research*, 35(2), 489-508. <http://dx.doi.org/10.1016/j.annals.2008.02.004>
- Habibah, A., Hamzah, J., Mushrifah, I., A. Buang, A., Toriman, M. E., & Jusoff, K. (2011). The success factors of public consultation in the establishment of a Biosphere Reserve – evidence from Tasik Chini. *World Applied Science Journal (Sustainable development impact from the socio-environmental perspectives)*, 13, 74-81.
- Habibah, A., Mohamed, R., Mushrifah, I., Hamzah, J., Aimi Syairah, M. N., & Buang, A. (2012). Positioning university as knowledge ecotourism destination: key success factors. *International Business Management*, 6(1), 32-40. <http://dx.doi.org/10.3923/ibm.2012.32.40>
- Habibah, A., Mushrifah, I., Hamzah, J., Er, A. C., Buang, A., Toriman, M. E., Selvadurai, S., & Zaimah, R. (2013). Place-Making of Ecotourism in Tasik Chini: From Exploratory to the Contemporary Biosphere Reserve. *Asian Social Science*, 9(6), 84-95. <http://dx.doi.org/10.5539/ass.v9n6p84>
- Habibah, A., Mushrifah, I., Hamzah, J., Toriman, M. E., Buang, A., Jusoff, K., Mohd Fuad, M. J., Er, A. C., & Azima, A. M. (2012). Assessing natural capital for sustainable ecotourism in Tasik Chini Biosphere Reserve. *Advances in Natural and Applied Sciences*, 6(1), 1-9.
- Honey, M. (2008). *Ecotourism and Sustainable Development: Who Owns Paradise?* (2nd ed.). Washington, DC: Island Press.
- Horwich, R. H. (1993). Ecotourism and community development: A view from Belize. In K. Lindberg, & D. Hawkins (Eds.), *Ecotourism: A guide for planners and managers* (pp. 152-168). North Bennington, VT: The Ecotourism Society.
- Ishwaran, N., Persic, A., & Tri, N. H. (2008). Concept and practice: the case of UNESCO Biosphere Reserves. *Int. J. Environment and Sustainable Development*, 7(2), 118-131. <http://dx.doi.org/10.1504/IJESD.2008.018358>
- Kay, J. J., Regier, H., Boyle, M., & Francis, G. R. (1999). An ecosystem approach for sustainability: addressing the challenge of complexity. *Futures*, 31(7), 721-742. [http://dx.doi.org/10.1016/S0016-3287\(99\)00029-4](http://dx.doi.org/10.1016/S0016-3287(99)00029-4)
- Kerstetter, D. L., Hou, J. S., & Lin, C. H. (2004). Profiling Taiwanese eco-tourists using a behavioral approach. *Tourism Management*, 25, 491-498. [http://dx.doi.org/10.1016/S0261-5177\(03\)00119-5](http://dx.doi.org/10.1016/S0261-5177(03)00119-5)
- Khelghat-Doost, H., Zainal Abidin Sanusi, Z. A., Tunku Fariddudin, T. F. F., & Jegatesen, G. (2011). Institutions of higher education and partnerships in education for sustainable development: case study of the regional center of expertise (RCE) Penang, Malaysia. *Journal of Sustainable Development*, 4(3), 108-117. <http://dx.doi.org/10.5539/jsd.v4n3p108>
- Kriesel, J. (2011). *Education for sustainable development in the biosphere reserves Schaalsee, Germany, and Kristianstads Vattenrike, Sweden*. Diploma thesis. University of Greifswald. Retrieved December 2, 2012, from http://www.mnf.unigreifswald.de/fileadmin/Geowissenschaften/geographie/angew_geo/Diplomarbeiten/Jan_in_Kriesel_Diplomarbeit_BNE.pdf 5 June 2012.

- Kušová, D., Těšitel, J., Matějka, K., & Bartoš, M. (2008). Biosphere reserves—an attempt to form sustainable landscapes: a case study of three biosphere reserves in the Czech Republic. *Landscape and Urban Planning*, 84(1), 38-51. <http://dx.doi.org/10.1016/j.landurbplan.2007.06.006>
- Lai, P. H., & Nepal, S. K. (2006). Local perspectives of ecotourism development in Tawushan Nature Reserve, Taiwan. *Tourism Management*, 27, 1117-1129. <http://dx.doi.org/10.1016/j.tourman.2005.11.010>
- Lu, H., Campbell, D., Chen, J., Qin, P., & Ren, H. (2007). Conservation and economic viability of nature reserves: an emergy evaluation of the Yancheng Biosphere Reserve. *Biological Conservation*, 139, 415-438. <http://dx.doi.org/10.1016/j.biocon.2007.07.014>
- Lu, Y., & Deng, J. (2008). The new environmental paradigm and nature-based tourism motivation. *Journal of Travel Research*, 46, 392-402. <http://dx.doi.org/10.1177/0047287507308331>
- McCarthy, D., Whitelaw, G., Jongerden, P., & Craig, B. (2006). Sustainability, social learning and the Long Point World Biosphere Reserve. *Environments Journal*, 34(2), 1-15.
- Nguyen, N. C., Bosch, O. J. H., & Maani, K. E. (2009). *The importance of systems thinking and practice for creating Biosphere Reserves as “learning laboratories for sustainable development”*. Retrieved August 8, 2012, from <http://journals.issn.org/index.php/proceedings53rd/article/view/1161/398>
- Pornphol, P., & Mcgrath, G. M. (2010). *Implementation of the tourism area life cycle model as an advisory decision support system centre for tourism and services research*. Victoria University, Melbourne, Australia. Retrieved August 10, 2012, from <http://www.pacis.net.org/file/2010/P02-12.pdf>
- Pretty, J. (1994). Alternative systems of inquiry for a sustainable agriculture. *IDS Bulletin*, 25(2), 37-48. <http://dx.doi.org/10.1111/j.1759-5436.1994.mp25002004.x>
- Schianetz, K. J., Tod, J., Kavanagh, L., Walker, P. A., Lockington, D., & Wood, D. (2009). The practicalities of a learning tourism destination: a case study of the Ningaloo Coast. *International Journal of Tourism Research*, 11(6), 567-581. <http://dx.doi.org/10.1002/jtr.729>
- Schianetz, K., Kavanagh, L., & Lockington, D. (2007). The learning tourism destination: the potential of a learning organisation approach for improving the sustainability of tourism destinations. *Tourism Management*, 28(6), 1485-1496. <http://dx.doi.org/10.1016/j.tourman.2007.01.012>
- Schultz, L., Duit, A., & Folke, C. (2011). Participation, adaptive co-management, and management performance in the World Network of Biosphere Reserves. *World Development*, 39(4), 662-671. <http://dx.doi.org/10.1016/j.worlddev.2010.09.014>
- Stoll-Kleemann, S., & O’Riordan, T. (2002). From participation to partnership in biodiversity protection: experience from Germany and South Africa. *Society & Natural Resources*, 15(2), 157-173. <http://dx.doi.org/10.1080/089419202753403337>
- Stoll-Kleemann, S., & Welp, M. (2008). Participatory and integrated management of biosphere reserves: Lessons from case studies and a global survey. *GAIA-Ecological Perspectives for Science and Society*, 17, 161-168.
- The International Ecotourism Society. (1990). *The definition of ecotourism*. Retrieved July 10, 2011 from <http://www.ecotourism.org/index.htm>
- UNESCO. (2007). *UNESCO Biosphere Reserves: learning laboratories for sustainable development*. Retrieved June 8, 2012, from <http://unesdoc.unesco.org/images/0015/001516/151607e.pdf>
- UNESCO. (2012). *The Man and the Biosphere (MAB) Programme*. Retrieved July 1, 2012, from <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/man-and-biosphere-programme/>
- Wallance, G. N. (1993). Visitors management: Lessons from Galapagos National Park. In K. Lindberg, & D. Hawkins (Eds.), *Ecotourism: A guide for planners and managers* (pp. 55-81). North Bennington, VT: The Ecotourism Society.
- Weaver, D. B. (2005). Comprehensive and minimalist dimensions of ecotourism. *Annals of Tourism Research*, 32(2), 439-455. <http://dx.doi.org/10.1016/j.annals.2004.08.003>
- Zhang, H., & Lei, S. L. (2012). A structural model of residents’ intention to participate in ecotourism: The case of a wetland community. *Tourism Management*, 33, 916-925. <http://dx.doi.org/10.1016/j.tourman.2011.09.012>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).