

Tourism and Solid Waste Management on Koh Pha-ngan: An Exploratory Study

สถานการณ์การท่องเที่ยวและการจัดการขยะบนเกาะพะงัน: กรณีศึกษาเชิงสำรวจ

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บทคัดย่อ

บทความนี้มีวัตถุประสงค์ที่จะนำเสนอ มุมมองและความตระหนักถึงปัญหาที่เกี่ยวข้องกับสถานการณ์ทางด้านการจัดการขยะและบำบัดน้ำเสียบนเกาะพะงัน ซึ่งเป็นแหล่งท่องเที่ยวที่ได้รับความนิยมสูงที่สุดแห่งหนึ่งในประเทศไทย งานวิจัยนี้ได้รับการออกแบบในลักษณะของ Exploratory Study โดยใช้ทั้งข้อมูลทุติยภูมิและข้อมูลปฐมภูมิ ข้อมูลทุติยภูมิที่ใช้ได้จากการทบทวนเอกสารทางด้านงบประมาณและรายงานประจำปีของเทศบาลทั้ง 3 แห่ง บนเกาะพะงัน ส่วนข้อมูลปฐมภูมิที่ใช้ได้จากการสนทนากลุ่มกับผู้บริหารของเทศบาลแต่ละแห่ง และการสัมภาษณ์แบบเจาะลึกกับประชาชนทั่วไป ผู้ประกอบการธุรกิจโรงแรมหรือสถานที่พักต่างๆ บนเกาะ และนักท่องเที่ยวชาวต่างชาติที่มาเยือนเกาะพะงัน เป็นจำนวนความถี่มากกว่า 2 ครั้งขึ้นไป ข้อมูลที่เก็บรวบรวมมาได้มีลักษณะเป็นข้อมูลเชิงคุณภาพ จึงถูกนำมาวิเคราะห์โดยวิธีการวิเคราะห์เนื้อหาสาระ (Content Analysis)

ผลการวิเคราะห์ข้อมูลชี้ให้เห็นว่า ในอดีตเมื่อ 30 ปีก่อนหน้านี้ เกาะพะงันมีความสวยงามกว่าปัจจุบันเป็นอย่างมาก ความสวยงามที่ได้ลดลงไปนี้มีสาเหตุ

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ทางอ้อมมาจากนักท่องเที่ยวที่เพิ่มขึ้น ขณะนี้เกาะพะงันกำลังเผชิญกับปัญหาการจัดการขยะโดยเฉพาะขยะที่เป็นขวดแก้ว ประชาชนและทุกฝ่ายที่เกี่ยวข้องให้ความสำคัญกับปัญหานี้และตระหนักดีว่า หากธรรมชาติและความสวยงามของเกาะพะงันลดลงย่อมมีผลกระทบต่อจำนวนนักท่องเที่ยวและเศรษฐกิจของเกาะพะงัน

งานวิจัยนี้ได้ให้ข้อเสนอแนะว่า เทศบาลทั้ง 3 แห่งบนเกาะพะงันควรออกข้อบัญญัติในเรื่องการควบคุมและจำกัดขยะภาชนะและขวดแก้ว ซึ่งเป็นขยะที่สะสมอยู่บนเกาะเป็นจำนวนมากโดยการจัดเก็บภาษีสินค้าภาชนะขวดหรือแก้วเพื่อนำไปใช้เป็นต้นทุนในการขนส่งขยะประเภทนี้ไปแปรรูปเพื่อนำกลับไปใช้ใหม่ นอกจากนี้ งานวิจัยนี้ยังให้ข้อเสนอแนะโดยเทศบาลทั้ง 3 แห่งควรมีการกำหนดนโยบายควบคุมการก่อสร้างอาคารใหม่ประเภทต่างๆ ให้ขยายไปในแนวสูงมิให้ขยายเพิ่มไปในแนวราบที่มีพื้นที่สีเขียวอันเป็นแหล่งสำคัญของเกษตรอินทรีย์ที่ใช้ในการรองรับน้ำเสียและสิ่งปฏิกูลต่างๆ

Abstract

This article presents viewpoints and concerns about the problems of solid waste and wastewater management on Koh³ Pha-ngan, one of the most popular tourist destinations in Thailand. It is based on an exploratory study, which drew upon primary and secondary sources of data. Primary data came from focus group discussions with Municipal administrators and informal discussions with local key stakeholders such as business owners, hotel managers, and international tourists who have visited Koh Pha-ngan at least twice. The survey data are qualitative and were subjected to content analysis for the purpose of this research. Secondary data include Fiscal Year budget reports of the three Municipalities of the island.

The analysis of data indicates that 30 years ago Koh Pha-ngan was much more beautiful and attractive than today. The declining natural

³ Koh is the Thai word for island. Thus, Koh Pha-ngan is Pha-ngan Island.

beauty is indirectly related to the increasing number of tourists that have been coming to the island. Currently, the island is attempting to cope with the problem of solid waste management, particularly the accumulation of glass bottles. The local residents and business owners recognize the importance of preserving the natural environment and beauty of the island and acknowledge that tourism is the principal source of income for the local people. Any decline in the natural beauty of the island would certainly have a negative impact on tourism.

Based on the results of this research, it is recommended that the three local administrative organizations (LAOs) in Koh Pha-ngan enact municipal ordinances to levy a local tax for the disposal of bottles and other beverage containers, the main untreated solid waste on the island. The proposed collectable tax will be used for the purpose of shipping this waste to the mainland for recycling. In addition, this research leads to the suggestion that the LAOs control the areas that will be allowed for new construction so that they do not encroach on the green and organic areas of the island that have been used for wastewater retention.

Introduction

In 2009, the Thai government expressed concern about the decline in foreign tourists, largely because tourism is an important source of income that helps boost economic growth (Department of Tourism, Ministry of Tourism and Sports, 2014). Accordingly, on April 17, 2009, the Thai Cabinet added tourism development to the National Agenda and assigned the Ministry of Tourism and Sports (MOTS) the task of crafting a strategy to stimulate an increase in foreign tourism to Thailand. This effort resulted in the National tourism development plan for 2012-16 (MOTS, 2011), specifying clear objectives and sub-strategies to increase the

number of incoming tourists, tourism income, and to distribute the tourism income fairly, for balanced and sustainable outcomes.

The five sub-strategies of the MOTS plan include: (1) Improvement in the infrastructure, facilitation, and conveniences to attract tourists; (2) Improvement and rehabilitation of sustainable tourist destinations; (3) Development of products, services, and enabling factors for enhanced tourism; (4) Promotion of confidence in safety of tourists in Thailand; and (5) Promotion of participation of all government agencies. The number of foreign tourists to Thailand increased steadily from 15.9 million visits in 2010 to 26.5 million visits in 2013 (Department of Tourism, MOTS, 2014). The projected number of tourists for 2014 based on ten months of data showed a slight (7%) decline from 2013 to 24.6 million. The decline in tourists in 2014 is almost certainly attributable to the political conflict in Thailand in the first half of the year. Nevertheless, the strong increase in tourism in the first four years of the plan period attest to the effectiveness of the MOTS strategy.

Sub-strategy 2 (Improvement and rehabilitation of sustainable tourist destinations) aims to protect popular tourist sites from degradation due to the large volume of visitors, which strain the capacity of the facilities and the local ecosystem. However, the country still does not have a consistent and clear approach to protect sites from overuse. This is in contrast to other tropical tourist destinations such as Hawaii where there is a strong state policy and action to protect and preserve the national environment. In Thailand, the Administration of Designated Areas for Sustainable Tourism has the responsibility and budget for implementing projects in popular international tourist destinations such as Pattaya. This Administration has improved the beach areas and has implemented anti-erosion interventions through a system of breakwaters. However,

when looking more closely at this initiative, it appears to be more of a stopgap measure. It does not seem to be designed to protect the sites it is responsible for from overuse and misuse by tourists and tourism operators (Designated Areas for Sustainable Tourism Administration Public Organization, 2013).

The 1999 Council of State directive to develop and implement a plan for decentralization assigns responsibility for conservation and rehabilitation of the natural environment to the LAOs (1999). Thus, the LAOs that encompass international tourist destinations have direct responsibility for protecting these locations. However, the preservation and rehabilitation task for the most popular tourist destinations such as Pattaya, Phuket, Koh Samui, and Koh Pha-ngan is often beyond the capacity of the LAOs to manage effectively and sustainably, especially in the absence of supplemental budgets and technical support from the central government, consistent with the size and scope of the challenge.

One of the more severe problems of foreign tourism management is how to manage solid waste and wastewater in overpopulated tourist destinations. This challenge is not unique to Thailand, as witnessed by many other studies of the problem from around the world (Mihai, 2013; Cierjacks, Friederike & Kowarik, 2012; Jiang, Lou, Silo, Luobu. & Ji 2009; Silva-Cavalcanti, de Araujo. & da Costa, 2009; Petrosillo, Zurlini, Grato. & Zaccarelli, 2006; Kuniyal, Jain. & Shannigrahi, 2003). Thus, this challenge deserves more attention from academics and administrators from the private and public sectors, including the LAOs and the central government. The researchers for this study chose Koh Pha-ngan, very popular among young tourists from around the world and a destination of increasing interest by the mass media in general (Kamnuansilpa, 2014; The Nation, 2014; Samui Times, 2014).

Method and Sources of Data

To achieve the objective of documenting the viewpoints of the LAO officials, local residents, and tourists on the issues related to solid waste and wastewater management and the declining beauty of Koh Pha-ngan, an exploratory research format was employed. The research team conducted on-site collection of secondary data regarding the volume and management of waste by three Tambon Municipalities: Koh Pha-ngan, Petch Pha-ngan, and Ban Tai. Primary data were collected by focus group discussions with senior management of the three Municipalities to tap their understanding, opinions, and concerns about the status of the local environment, policies, and procedures for the management of solid waste and wastewater by the Municipalities. Data were also collected by unstructured interviews with various stakeholders such as hotel and restaurant owners on the island. In addition, personal conversations were conducted with foreign tourists who had visited Koh Pha-ngan at least twice in order to provide some “time-lapse” perspective on the changes in the area.

A sample of 4 different groups were selected: 5 hotel owners, 5 restaurant owners, 5 tourists, and 5 local residents for a total of 20 voluntary key informants. Local residents who were born and had continued to live on the island recommended the hotel and restaurant owners for us to interview. To contact foreign tourists, the researchers posed as tourists themselves to gain trust and familiarity. Thus, data collection was more like an informal conversation than a structured interview with a questionnaire. A research assistant took field notes for compilation and content analysis.

Results Research

This research demonstrates how a large number or a high concentration of tourists can have an impact on Koh Pha-ngan, a relatively fragile ecosystem. To help the readers understand the concerns and the viewpoints of the four groups of research participants, this section begins by presenting the context from which the mounting challenges of municipal solid waste management and environmental degradation have emerged, then the viewpoints of three groups follow. The viewpoints and opinions of these three groups are analyzed to inform recommendations for municipal waste management.

Tourist Impact: Emergence of Municipal Waste Problem in Koh Pha-ngan

Koh Pha-ngan is one of the most frequently visited islands by tourists from all over the world. This small island (194.3 square kilometers) is in the southwestern part of the Gulf of Thailand and located in Surat Thani Province. It is famous for its Full Moon Party, a monthly music and dance festival, at Haad Rin Beach. Backpackers were among the very first of the tourist groups to come to the island. In 1984, they organized a relaxing party on the full moon night and the islanders helped with basic food and drink. At that time, the beach did not have easy access and could only be reached by boat. At first, some local residents showed their hospitality to the visitors by taking them for boat trips along the shore of the island. On those occasions, the visitors discovered the beauty and the serenity of the beach during the day and the magic of the moonlight on full moon nights. This very first group of visitors kept returning, bringing more and more friends. That was how the world-renowned Full Moon Party began. Word of mouth led to a continued increase of visitors.

The island became one of the most popular destinations in Thailand when it was the setting for Alex Garland's 1996 novel, *The Beach*, which was also made into a well-known Hollywood movie. In that movie the natural beauty of the island when that first group of backpackers first discovered it was recreated at Maya Bay in Krabi Province. The living and lodging of the visitors as it appeared in the movie were very basic, and the scenery resembled the condition of the island some 30 years ago.

Finding an accurate figure of the total population of the island on any day is quite tricky. In order to derive a close estimate, we used the registration data that were kept separately at the three Tambon Municipalities to estimate the number of native residents. We found that in 2014 there were 15,838 native residents. Most of them worked in agriculture, followed by public service. A few locals own small restaurants or guesthouses catering to frugal tourists. Adding the number of these native residents to the estimated 80,000 Burmese migrant workers, nearly 20,000 Thai workers from other parts of the country, and about 30,000 tourists,⁴ the total population of the small island on a typical day is nearly 150,000.

Using the national average for tourist expenditures in 2013 (Ngamsangchaikit, 2014), the typical tourist spends approximately 4,000 baht per day. Given 10,000 tourists per day to the island, as a group they contribute approximately 14.6 billion baht to the Thai economy per year. A personal conversation with the Director of the Local Finance Office,

⁴ Records of the ferry companies show that each day the island receives about 10,000 tourists from all over the world. The average duration of a visit is three days. That is how the number of 30,000 tourists is estimated. It must be noted, however, that on the full moon night in the high season (October - May) this figure can be much higher. It is estimated that each year about four million people stay at least one night on the island.

a representative of the Department of Revenue, who is stationed on the island, indicated that in 2014 about 97 million baht in VAT was collected and transferred to the national coffers.⁵ In light of this, we can say that the economic impact of the island on the national economy is quite significant. These statistics and their economic significance compel us to look hard at the future of the island. It is quite discouraging to learn that this boom in tourism is also creating serious environmental degradation.

With regard to municipal solid waste management, we found that, on an average day, activity on the island generates more than 400 tons of waste, of which a little over 20 tons are incinerated. Over 200 tons of solid waste are plastic and metals that are recyclable. The rest are bottles, which in theory are recyclable but, due to their low economic value (averaging at about 1 baht per kilogram), it is not economically feasible to ship them to the mainland for recycling. This is a problem that the LAOs are struggling with. With the low revenues and the low budgets they have, the LAOs require assistance from the central government to fully address the challenge. The tourists themselves increasingly cite the problem of environmental degradation and that it has made the island less attractive. Because of the economic role of the island, the central government should allocate more money to assist the island in tackling this problem. Without this help, how else are we to maintain a balance of beauty and attractiveness to tourists? That is the question that we need to address from the views of four groups of people: Local administrators, local business operator, local residents, and foreign tourists.

⁵ It can be seen that the VAT rate of 7% indicates that the estimated total VAT should be much higher. Some of this discrepancy was attributable to the fact that some economic transactions were not taxable.

Viewpoint of the Municipal Administrators

All administrators of the three LAOs are native residents of Koh Pha-ngan, over 40 years of age, and have worked for their respective Municipalities for more than ten years. All are very familiar with the changes that have occurred on Koh Pha-ngan since the island started to become a popular international tourist destination. They reminded us that the year 2014, when we conducted the fieldwork for this study, marked the 30th anniversary of the first landing of the small group of backpackers.

We have learned from the administrators, who are the Mayors and the Directors of the Division of Health and Environment from the 3 municipalities, that the dramatic increase in foreign tourists during the first decade was due mainly to word-of-mouth communication and not by any organized promotion or publicity campaign. The tourists with whom we later had a conversation confirmed this information. These administrators also acknowledged that, while tourism revenue has become the major force behind economic growth of the island, the large and increasing number of tourists is straining their ability to protect and preserve the environment, especially from damage caused by municipal solid waste. Accordingly, the three LAOs of Koh Pha-ngan are trying to address the problems, but they all complained of limited budget to meet the challenge. The researchers analyzed the budget and expenditures of the three Municipalities and found that, on average, the three LAOs programmed about 9% of their annual budget for waste management, and all three LAOs still had revenues that were in excess of about 10% their expenditures. This shows that these LAOs have a strong financial base to fund programs going forward.

Of the three Municipalities on the island, Koh Pha-ngan Municipality has a garbage incineration plant to process the waste that can be burned. They can keep pace with the daily volume of disposable waste

and processes all that is collected within 24 hours. The remainder of the waste, except for glass, is recycled as much as possible. Petch Pha-ngan Municipality recycles as much of its waste as possible (again except for glass) and pays Koh Pha-ngan Municipality to incinerate its disposable waste. The third Municipality, Ban Tai, also recycles as much of its waste as possible and then deposits the balance, except for glass, in a waste dump. However, burying the waste can contaminate the underground well water resources, which are an essential resource of the island. Ban Tai also has the extra burden of having the responsibility for Haad Rin Beach, the location of the Full Moon Party, which can attract as many as 30,000 short-term visitors per day.

Our analysis suggests that, each day, Koh Pha-ngan can process only 50% of the waste generated (approximately 400 tons total). Only 25 tons are incinerated daily and about 200 tons are recyclable (compressed plastic, scrap metal, and cans, and paper products). The balance of the compressed waste is bought by waste traders who take it back to the mainland for sale. The remaining problem is the management of 175 tons of discarded glass bottles⁶, which are stockpiled in dumps on Koh Pha-ngan. Glass is heavy and takes up space. Exporting the bottles to the mainland costs more than can be recovered by sale to middlemen (at one baht per kg). At present, the companies that ferry construction material to the island also are given as many glass bottles to take back as they can. They are able to sell to recyclers on the mainland and they retain the proceeds. Unfortunately, they can transport only a portion of the daily accumulation.

⁶ Conversations with local business people indicate that they are now purchasing as many products (beer, soft drinks, etc.) as possible in cans and moving away from glass bottles.

Wastewater from households, hotels, and restaurants is also an increasing problem for municipal waste management. In 2014, there were 220 registered hotels and guesthouses on Koh Pha-ngan, in addition to 250 large and small restaurants. These businesses serve the needs of the approximately 40,000 tourists daily, as well as the boat crews and the Burmese and Thai workers, who comprise approximately an additional 110,000 people. These hotels and restaurants are the principal sources of solid waste and wastewater on the island, not the roughly 7,500 homes and apartments of the local residents.

All three LAOs have conducted household campaigns to promote construction of oil traps and wastewater sewers to treat and reuse wastewater. Residents are also encouraged to recycle treated wastewater for use in watering organic vegetable gardens and fruit orchards, which are an important source of income for local families and are preferred by Thai and foreign tourists. Wastewater from hotels and guesthouses is collected by the Municipalities and distributed to organic farmers for fertilizer. At present, there are enough demands to absorb the supply of wastewater from the hotels and guesthouses that cater to the needs of the tourists. A problem for the future is the declining interest of the younger generation of Koh Pha-ngan families to continue in the organic farming trade, as they prefer to seek jobs in the public or private sector. At the same time, investors are buying up land on Koh Pha-ngan for construction of businesses and other services catering to tourists. Thus, the future demand for wastewater as organic farm fertilizer is likely to decline significantly and the Municipalities will have to find other uses for the wastewater or a means for safe processing. Meanwhile, the trend in tourism to the island continues to increase, and an airport is being constructed to receive direct flights from Bangkok and other popular tourist destinations. All the LAOs

are fully aware that without proper solid and wastewater management, the beauty of the island will be sacrificed. All are wary of the possibility that, due to the felling of an increasing numbers of trees, particularly at the watershed areas, the natural freshwater sources will be also reduced and the environment will further be degraded, thus causing a more fragile environment. The construction of the airport, which is expected to be completed in early 2016, is also resulting in considerable clearing of forest cover. Shortages of natural sources of freshwater are already apparent in the reduced flow and increased cost of the piped water system. The three Municipalities do not have the resources or capacity to successfully address the mounting challenges. Under these pressing conditions, it is very possible that, in the near future, Koh Pha-ngan will have to purchase fresh water from the mainland. This will dramatically increase the cost of living on the island, with much of the cost being passed on to the foreign tourist with predictable declines in tourism a result.

Viewpoint of the business owners and local population

The discussions with the business owners and hotel proprietors revealed that they all realize that the success of their businesses is dependent on tourism and that over 90% said a majority of their clientele were foreigners. They also fully realized that tourist satisfaction (and the health of local economy) is directly related to the maintenance and protection of the natural beauty of the island. The accumulation of garbage and untreated wastewater from hotels or guesthouses, if released to the sea, will definitely destroy the natural attractiveness of the seawater and the surrounding environment. All of the participants in the group discussions were providing leadership in the campaign to protect against releasing raw sewage into the sea. We were told (and confirmed by site visits) that all hotels and guesthouses have wastewater treatment mechanisms. In addition,

these business managers conduct sorting of solid waste for recycling to help the Municipality in processing waste. This is a good example of the constructive collaboration between local business and local government to protect and preserve the environment.

As noted above, the participants in the focus groups were native residents of Koh Pha-ngan. Thus, they perhaps have a greater attachment to the local environment and are more sensitive to the need for conservation and were eager to participate in the research. One of their concerns was the increasing number of business entrepreneurs from outside the province - both Thai and non-Thai - who are investing in Koh Pha-ngan. Some foreigners establish businesses as juristic persons by using a Thai nominee (proxy) as a way to get around legal requirements. Accordingly, many of these foreign investors may only have short-term interests in the island and will not support long-term sustainable development or resource conservation. The local business owners would like to see the LAOs conduct closer inspection of these outside investors and be stricter with the registration requirements. There was less need for municipal oversight in the past when most of the businesses were owned and managed by locals because they knew the “do’s and don’ts.” But this kind of passive oversight needs to stop and the LAOs need to be more proactive inspectors and enforcers of the law.

The next set of focus group discussions was conducted with ordinary residents who were born and raised on Koh Pha-ngan and were not business or hotel owners. These individuals have mixed opinions about tourism and the island’s future. They recognize the problem and the destructive effects of solid waste and the environmental pollution that the rapid tourism development has brought, on the island. The sewage from hotels, guest houses and markets is increasingly apparent, there is

noise pollution at night from the loud music being played at entertainment establishments and parties, and there is the litter from tourists themselves. Solutions are urgently needed for these growing problems. On the other hand, the growing tourism over the years has increased the household income of local residents. When we researched data on per capita income, the average annual income was only 60,000 baht. We found that this figure was much lower than the average per capita income of 161,232 baht for the mainland Surat Thani residents (National Statistical Office, 2012). This is perhaps explained by the fact that the source of local income for indigenous households on the island is organic farming, with produce largely marketed to the foreign tourist population. Income from rentals and shuttle service or home-stay mostly goes to outside middlemen who negotiate these services. In addition, the increased cost of living affects everyone on the island, both indigenous and immigrant residents. Thus, many locals have to take on second occupations in the tourism sector to make ends meet. It is difficult for Thais to compete with the increasing number of migrants from Myanmar who can charge less for the same service. In sum, the net effect of the tourism boom in Koh Pha-ngan has not benefited the indigenous population as much as the outside business operators and migrants. In addition, the participants observed that the large influx of foreign tourists from wealthier countries had created a bustling urban environment in what was once a quiet and rural setting. The atmosphere has become more competitive and selfish, with less cooperation among the indigenous residents themselves, and this could reduce the socio-cultural charm, which originally attracted the tourists.

Viewpoint of the tourists

As noted earlier, the researchers posed as tourists and stayed in a hotel located near the beach where the Full Moon Party is held that

catered mostly to foreign tourists. In this way, the researchers were able to befriend and gain the trust of other guests in the hotel. To get a sense of the change to the area, only those tourists with a history of at least two visits to Koh Pha-ngan were included in the study. It is understandable that some 30 years ago, when the first tourists from the West visited the island, there was little garbage and few plastic bags or bottles visible on the beaches or most other places on the island. According to a veteran tourist, it is quite common, today, to see the beaches filled with discarded objects. This opinion was virtually universal, so we determined that we did not need to collect more information about this environmental issue. Our conversation with the tourists, therefore, moved away from the topic of municipal waste management. We felt that discussing the issue with them would unavoidably put the research team in an awkward position by sounding like we were blaming the problem of the damaged ecological system on the international guests. At that juncture, we viewed them as the repository of knowledge about the past and the vision of the future. We therefore stayed focused on the relevant issues such as the reasons for visiting and their perception of changes over time, using the pressing solid waste management and the declining beauty as already indicated clearly by the other two groups of key informants as a backdrop.

We found it interesting that all the tourists gave almost the same information. One of one of the respondents who had first come to Koh Pha-ngan 25 years ago (1989) and has returned on a regular basis gave an interesting account of his visit. In his own words, *"I have returned to the island every now and then. I have seen a lot of changes, and I am not sure whether they are improvements or whether they just cater to what they think a visitor like me wants. For one thing, at that time [when I first arrived] I only had to spend 50 baht per night for accommodation. Now*

I have to pay close to 3,000 baht per night. Now I see far fewer trees. I also see more buildings and hotels. When I first came here, I could not imagine that one day this island would be overcrowded. Now, everywhere I go I see tourists and visitors. This is not the kind of thing I want to see." Clearly this tourist yearned for the more esthetic conditions of the island in the past.

When tourists were asked why they continued to come back for vacations on Koh Pha-ngan, the common response was because of the friendly culture and easy-going nature of the local population. But they lamented that this welcoming atmosphere is fading away due to the influx of many non-Islanders as service providers and proprietors. One of the key informants noted, *"I have a friend who came to this island before I did. He was the one who introduced me to this place and had told me about the enchantment of this island. I guessed it was the magic of the moonlit night and the shadow of the coconut trees that leaned on the sparkling sea water that brought us back many times."* Here again it substantiates the importance of the culture and through the word-of-mouth recommendations that makes Kho Pha-Ngan famous.

Another respondent mentioned that Haad Rin Beach is most fitting for relaxation and experiencing the natural beauty at the time of the full moon. *"In the early days of tourism, the locals would provide food and drinks to the tourists as if they were visiting relatives. Now, that's just a memory. When I first came to Koh Pha-ngan, I was overwhelmed by the friendliness of the Islanders. Even today, this innate friendliness can still be seen among the local population in the way they all know each other as if they were an extended family. Having just one friend who is an original Islander is like having all their relatives and acquaintances as your friends."*

One tourist observed that, *"It is a shame that it is not possible to integrate development and conveniences of the present with the pristine natural beauty of the past...It shouldn't be necessary to have to cut down the forest and destroy nature to build big buildings to accommodate the tourists. It should be possible to carefully integrate guesthouses in ways that are harmonious with the ecosystem without the need for much construction. At the same time, there is the need for certain modern conveniences such as phone access, the Internet, and local transportation. Further, by preserving the environment by limiting construction, you will attract the higher quality tourists who appreciate environmental conservation, especially those who come with their families and have the ability to afford a more limited range of services. This will increase demand. Currently, the population of tourists to Koh Pha-ngan is quite diverse."*

Yet another tourist offered the following opinion. *"At present, a significant number of tourists come to Kho Pha-ngan to indulge in excess drug and alcohol consumption that really wasn't part of the original Full Moon Party ritual."* Indeed, the researchers learned that what was a once-a-month event has spawned Half-Moon, Quarter-Moon, and Last-Quarter Moon spin-off parties.

The researchers had an opportunity to observe the Full Moon Party celebration at one particular establishment. There was sale of vodka and other intoxicants mixed with energy drinks in a large container called "bucket drinks," and hallucinogenic mushrooms mixed with marijuana called a "Mushroom Shake." Most of the consumers of these party drinks were the younger tourists and groups of backpackers.

Originally, the Full Moon Party was an event to quietly appreciate the natural splendor of a moonrise on the ocean shore. However, this event has now morphed into a drug festival, with raucous behavior and beachside

music so loud that it is impossible to have a conversation. Some of the activities are truly risky, especially when practiced by intoxicated youth, such as the rope jumping competition in which a kerosene rope is set on fire to be vaulted over at ever-higher heights. Without doubt, there are injuries and burns as a result of this recklessness, and one tourist remarked, *"I don't know how the authorities can tolerate this illegal and dangerous behavior associated with the Full Moon Party. It's like a convention of the insane."*

As the original purpose and practice of the Full Moon Party is lost among the new generation of tourists, one respondent expressed concern about risk to property and life of the tourists: *"I know of two tourists who had their valuables stolen when they became intoxicated; they lost cash and cell phones on Haad Rin Beach. And every year there are stories about drunk tourists wading out into the ocean and being pulled out to sea by a rip current."*

Even though the repeat tourists in this study did not have much to say about waste management, they all expressed dismay at the degradation of the natural environment, the general loss of charm of the island, and the increasing debauchery of the Full Moon Party celebrants. What was once a cozy and friendly gathering of tourists and locals to appreciate the beauty of a coastal full moon and the exchange of hospitality as a social function has now become an economic function for the benefit of a few exploitative entrepreneurs and low-quality tourists.

Discussion and Recommendations

This case study of Koh Pha-ngan serves as an example of what can happen to a valuable tourist destination in the absence of proper local government planning and management. Foreign tourism is undoubtedly

one of the most important sources of foreign exchange for Thailand and a driver of economic development. However, as has been found elsewhere, when that tourism is allowed to expand unchecked it often destroys or clearly maims the environmental and socio-cultural resource base that made it popular in the first place (e.g. Ghulam Rabbany et al., 2013; Othman, Mohamet. & Khairi, 2012). This research did not use time series data to follow-up the evolution of this tourist destination. Thus, it cannot measure the degree of the negative association between unregulated tourism and the erosion of the natural and environmental beauty of Koh Pha-ngan. Despite this limitation, this qualitative research study tapped into descriptions of what Koh Pha-ngan tourism was like in decades past and the current status of the situation. In this way, clear inferences can be drawn on the connection between the volume and changing nature of the tourist population and the adverse conditions on the island. This finding does not mean that the government should abandon the promotion of tourism. Instead, the goal should be to develop and implement strategies for sustainable tourism by maintaining and revitalizing the natural and socio-cultural resources that made tourist attractions attractive.

In the case of Koh Pha-ngan there is an urgent need to address the problems of municipal solid waste, especially glass bottles that cannot be recycled because of the prohibitive cost of exporting these to the mainland. This study found that the largest producers of glass bottle waste are convenience stores and restaurants. However, it is not clear how to hold these outlets responsible for managing the waste. One approach would be for the Municipalities to issue ordinances to collect taxes or deposits on glass bottled products to offset the cost of transport to recycle centers on the mainland. On another island in the same district, Koh Nang Yuan Municipality has introduced an ordinance that prohibits tourists from

bringing glass-bottled products to the island. Given the small size of the Koh Pha-ngan and the approximately four million tourists per year, such an ordinance may be difficult to implement but we see it as a necessary step to controlling the problem.

Another strategy is to more strictly enforce the issuing of permits for new construction of large hotels. Also, the Municipalities need to be more stringent about prohibiting direct discharge of untreated wastewater into the sea. The three LAOs could have a joint resolution to limit construction to certain enterprise zones. Additionally, they could promote more vertical construction rather than sprawling development in order to prevent even more deforestation and destruction of natural freshwater resources that has already occurred. By not setting a limit on the height of buildings, Koh Pha-ngan (unlike Bali, Indonesia) may see this as a compromise regulation that can serve both business and the environment. Koh Pha-ngan still needs to promote organic farming as a means of absorbing some of the treated sewage and for generating supplemental income for local families. However, if the land under organic farming declines, then there will be fewer safe outlets for depositing wastewater, which might result in greater pollution of the seacoast and the island environment in general. Another policy recommendation is that LAOs should promote and subsidize the island's declining organic farming. This policy will maintain or increase the level of untreated wastewater usage by the organic farmers.

References

- Cierjacks, A., Friederike, B. & Kowarik, I. (2012). Operation performance indicators for litter management at festivals in semi-natural landscapes. *Ecological Indicators*, 13(2012), 328-3337.

- Department of Tourism, Ministry of Tourism and Sport. (2014). A summary of foreign tourists in 2011 and the trend for 2012 (in Thai). Retrieved November 28, 2014, from <http://www.tourism.go.th/home/details/11/222/23921>.
- Department of Tourism, Ministry of Tourism and Sport. (2014). National Tourism Development Plan AD 2012 - 2016 (in Thai). Retrieved November 28, 2014, from National tourism development plan AD 2012 - 2016.
- Designated Areas for Sustainable Tourism Administration Public Organization. (2013). Performance report under the master development plan for Pattaya and its vicinity as special areas (in Thai). Retrieved November 28, 2014, from <http://www.dasta.or.th/dastaarea3/th/>.
- Ghulam Rabbany, M., Afrin, S., Rahman, A., Islam, Faijul, I. & Hoque, F. (2013). Environmental effects of tourism. *American Journal of Environment*, 1(7), 117-130.
- Jiang, J., Lou, Z., Silo Ng, Luobu, C. & Ji, D. (2009). The current municipal solid waste management situation in Tibet, *Waste Management*, 29, 1186-1191.
- Kamnuansilpa, P. (2014, September 16). Full moon party: Tourist lunacy versus local beauty. Retrieved December 8, 2014, from <http://www.nationmultimedia.com/opinion/Full-Moon-Party-tourist-lunacy-versus-local-beauty-30243323.html>.
- Kuniyal, J. C., Jain, A. P. & Shannigrahi, A. S. (2003). Solid waste management in Indian Himalayan tourists' treks: A case study in and around the Valley of Flowers and Hemkund Sahib. *Waste Management*, 23, 807-816.

- Mihai, F. (2013). Tourism implications on local waste management. Case study: Neamt County, Romania. *Present Environment and Sustainable Development*, 7(1), 214-221.
- Ministry of Tourism and Sport (MOTS). (2011). National tourism development plan AD 2012 - 2016. (in Thai). Retrieved on November 28, 2014, from http://www.tica.or.th/images/plan_tourism2555-2559/2555-2559.pdf.
- National Statistical Office. (2012). Gross Provincial Product new series at current market prices by industrial origin, Surat Thani Province year 1995 - 2012. (in Thai). Retrieved March 20, 2015 from <http://service.nso.go.th/nso/web/statseries/statseries15.html>.
- Ngamsangchaikit, W. (2014, June 25). Thailand tourism spending trends 2013. Retrieved March 23, 2015, from TTR Weekly: <http://www.ttrweekly.com/site/2014/06/thailand-tourism-spending-trends-2013/>
- Othman, N., Mohamed, S. & Khairi, F. (2012). Tourism activities and its impact on environmental sustainability in coastal areas. 2012 2nd International Conference on Economics, Trade and Development. 36 (2012), 94-95.
- Petrosillo, I. G., Zurlini, E., Grato, E. & Zaccarelli, N. (2006). Indicating fragility of socio-ecological tourism-based systems. *Ecological Indicators*, 6 (2006), 104-113.
- Samui Times (2014, December 11). Australia Channel 9 goes undercover at the Full Moon Party to produce damning report. Retrieved on December 11, 2014, from <http://tinyurl.com/paenudj>.
- Silva - Cavalcanti, J. S., de Araujo, M. C. B. & da Costa, M. F. (2009). Plastic litter on an urban beach - a case study in Brazil. *Waste Management and Research*, 27(1), 93-97.

The Council of State. (1999). The determining plans and procedures of Decentralization Act of 1999 (in Thai). Retrieved November 28, 2014, from <http://www.ratchakitcha.soc.go.th/DATA/PDF/2542/A/114/48.PDF>.

The Nation (2014, November 6). Time to sober up, Koh Pha-ngan [Editorial]. The Nation, p. 9A.