

## Tourist's Perspectives on Environmental Impacts in Doi Inthanon National Park

### มุมมองของนักท่องเที่ยวต่อผลกระทบทางสิ่งแวดล้อมในอุทยานแห่งชาติดอยอินทนนท์

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กนกกานต์ แก้วนุช

ผู้ช่วยศาสตราจารย์ ดร. ประจำคณะกรรมการจัดการการท่องเที่ยว และผู้ช่วยอธิการบดีฝ่ายกิจการนานาชาติ  
สถาบันบัณฑิตพัฒนบริหารศาสตร์

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### Abstract

This paper examines how tourists with different nationalities experienced the environmental impacts in the protected area. Nationalities of the tourists were used to classify their experiences on the environmental impacts and tourism activities they selected to do in the national park. Since park tourism has increased in recent years and it is likely to create negative impacts on a protected area. Yet, protected areas have immense value in educational, recreational, and ecological terms. In order to tackle the negative impacts appropriately the impacts first have to be understood. Therefore, this paper presents possible tourist impacts and suggestions for impact alleviation. This research explores perspectives of 152 Western and 248 Asian tourists visited the park. The research utilized questionnaire with altogether 400 tourists. The results show significance differences in Western and Asian tourists' views of environmental impacts experienced in the park. The findings also suggest that the Western tourists were more environmentally aware and believed that they have contributed more of the positive impacts to the park while the Asian tourists tend to concern more of the negative impacts in the park.

**Keywords:** Tourists' Perspectives, Impact, Environment, National Park

### บทคัดย่อ

งานวิจัยเรื่องนี้วิเคราะห์ถึงความต่างของมุมมองนักท่องเที่ยวต่างชาติต่อผลกระทบทางสิ่งแวดล้อมบนอุทยานแห่งชาติดอยอินทนนท์ เนื่องจากการท่องเที่ยวในอุทยานแห่งชาติมีอัตราที่เพิ่มขึ้นอย่างมากในหลายปีที่ผ่านมา จึงมีโอกาที่จะส่งผลกระทบทางลบต่อพื้นที่ เนื่องด้วยพื้นที่คุ้มครองมีคุณค่าต่อทั้งด้านการศึกษา ด้านนันทนาการ และด้านนิเวศวิทยา การที่จะจัดการหรือแก้ปัญหาอย่างเหมาะสมนั้น ผลกระทบต่าง ๆ ต้อง

ได้รับการศึกษาและทำความเข้าใจอย่างลึกซึ้ง เพื่อหาวิธีการจัดการได้อย่างตรงจุด งานวิจัยนี้จึงอธิบายถึงความเป็นไปได้ของผลกระทบที่มีโอกาสเกิดขึ้น รวมถึงคำแนะนำในการหลีกเลี่ยงผลกระทบและวิเคราะห์ให้ทราบถึงมุมมองต่อผลกระทบทางสิ่งแวดล้อมบนอุทยานแห่งชาติดอยอินทนนท์ของนักท่องเที่ยว 2 กลุ่ม คือ กลุ่มนักท่องเที่ยวจากประเทศฝั่งตะวันตกจำนวน 152 คน และประเทศฝั่งเอเชียจำนวน 248 คน รวมเป็น 400 คน โดยใช้การเก็บข้อมูลจากแบบสอบถาม ผลลัพธ์ที่ได้จากข้อมูลแสดงให้เห็นถึงความต่างของมุมมองในนักท่องเที่ยวทั้งสองกลุ่มต่อผลกระทบทางสิ่งแวดล้อมบนอุทยานแห่งชาติดอยอินทนนท์ พบว่า กลุ่มนักท่องเที่ยวจากประเทศฝั่งตะวันตกมีความตระหนักในเรื่องสิ่งแวดล้อม ปัญหา และผลกระทบที่เกิดขึ้น โดยมีความเชื่อว่าเป็นปัจจัยหลักในการสร้างผลกระทบของสิ่งแวดล้อมในด้านบวก ขณะที่นักท่องเที่ยวจากประเทศฝั่งเอเชียมีความกังวลเรื่องผลกระทบทางลบที่เกิดขึ้นในอุทยานจากตนเองเป็นหลัก

**คำสำคัญ :** มุมมองนักท่องเที่ยว ผลกระทบ สิ่งแวดล้อม อุทยานแห่งชาติ

## Introduction

Weaver & Lawton (2014) affirm that maximize environmental, socio-cultural and economic benefits of tourism destination at the same time minimize the associated costs is the fundamental goal of managing tourism destination. Therefore, in order to meet this goal, tourism policy makers and all those stakeholders need to understand the positive and negative impacts of tourism as perceived not only by host but as well as guest. The extensive growth that the tourism industry has witnessed in the past century has made tourism one of the most extraordinary economic and social incidents (UNWTO, 2016). Yet, it is also a sector that has the ability to create negative impacts upon a destination's environment and its culture, which are the resources of many tourism products (Cooper, Fletcher, Fyall, Gilbert & Wanhill, 2011). Furthermore, it is also generally assumed that the relationship between tourism and the environment is fundamental and there is a strong element of them being mutually dependent on one another (Shaw & Williams, 2002; Stefanica & Butnaru, 2015). This has led to a rapid take up of sustainability options and ecotourism, in order to secure this dependent relationship (Hunter & Green, 1995; Mowforth & Munt, 1998 as cited in Shaw & Williams, 2002). In fact, Buckley (2003) and Kiper (2013) offer similar idea that ecotourism as a model of alleviating tourism impacts on the natural environment. National parks also fall under ecotourism; and Eagles et. al. (2003); Naturenet (2006) together with Liburd and Edwards (2010) offer the idea that, national parks are ways in which tourism and the environment can be managed together. In fact, the number of national parks has been increasing as countries realise the threats of environmental impacts on forest areas.

Thailand is also another country that has many national parks. According to the Office of National Park (2017), in the year 2017 Thailand have 150 national parks. Doi Inthanon National Park (DINP) is situated in Chiang Mai and is one of the most popular destinations for bird watching and nature study (TAT, 2017); it is also the best mountain national park and the most popular national park in the northern part of Thailand (Thailand.com, 2004; Betz et.al., 2014; Tourism Authority of Thailand, 2017). The number of tourists to the park has increased in the past very rapidly, by three-fold during a 10-year period from 1983-1993, from 312,000 to 936,000 tourists (DINP, 1993 as cited in Beltran, 2000), however, there is an interesting pattern of declaration which reflected in the number of tourists visited the park in 2017 to be counted for 797,453 (Office of National Park, 2017). Subsequently, it is really crucial that the tourist induced environmental impacts are understood to a greater depth as to minimise the implications they may have on a national park, in order to maintain the ecological, biological, educational, recreational and environmental value of a national park. Thus, this research will determine the tourist induced environmental impacts on a popular national park by exploring views from different nationalities which divided into Western and Asian tourists because there is an increasing number of both Westerner and Asian tourist visit the park (Doi Inthanon National Park, 2006; Betz et.al., 2014; Tourism Authority of Thailand, 2017). Moreover, since the past until now, there has been limited studies focus on comparison view point of environmental impacts in Doi Inthanon National Park area between Western and Asian tourists.

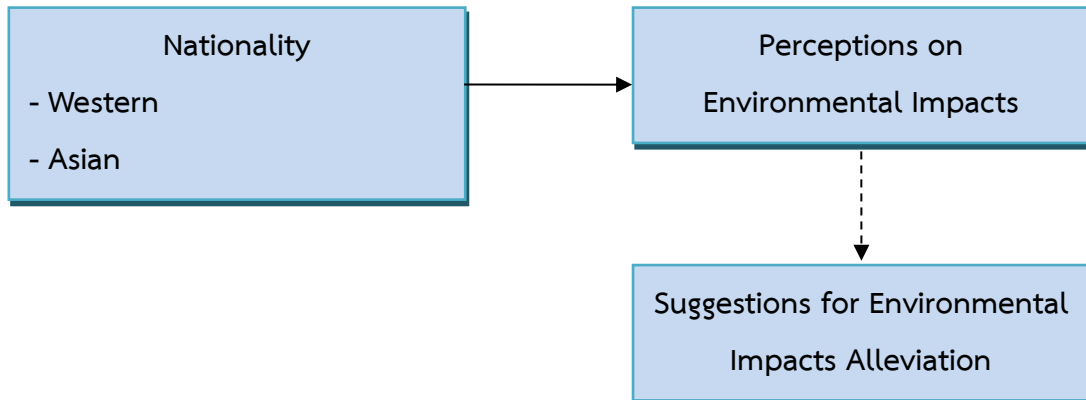
In addition to that, the findings of this research will be valuable for national park authorities in Thailand and other similar national park areas. It may even be important internationally in the management and development of a national park with degree of similarities. It may assist park management in how to better manage environmental impacts. This research will prove to be very useful in that manner and in suggesting ways in which the negative impacts can be alleviated.

## Research Objectives

This research aims to investigate the tourist induced environmental impacts to DINP and to suggest ways in which these impacts can be alleviated. With this in mind, the research objectives are:

- To assess environmental impacts perceived by the DINP's management team
- To explore the perceptions of western and Asian tourists on environmental impacts experienced in the park.

## Research Framework



## Literature Review

### Protected Area Category

Due to the establishment of national parks worldwide, there is a requirement by the UN that a list of national parks and protected area is kept. In doing so, standard definitions were established since then (Eagles & McCool, 2002). The definition of a protected area has been agreed upon by several scholars since the past until present which defines as, an area of land or sea that is specifically devoted to the protection and maintenance of biological diversity, and of natural and related cultural resources, which is legally or efficiently managed (IUCN, 1994 as cited in Thomas & Middleton, 2003; Spenceley, 2008; Betz et.al. 2014; Office of National Park, 2017). In addition, Ceballos-Lascuráin (1996) and Novelli (2011) offer a similar view that the creation of protected areas is the most universally adopted means of ecosystem conservation and/or pertinent cultural heritage for an extensive range of human values.

Protected areas are also categorized into six individual types, in accordance to their management objectives, the IUCN's Management Category System for National Parks and Protected Areas is based on ecological integrity with Category I having the highest level of ecological integrity because it has the lowest level of human impact (Eagles & McCool, 2002). The categories include:

Category I *Strict Nature Reserve/Wilderness Area*—a protected area that is managed primarily for science and wilderness protection, with Category IA being a Strict Nature Reserve for science and Category IB being a Wilderness Area for wilderness protection

Category II *National Park*—a protected area that is managed primarily for ecosystem protection and recreational purposes

Category III *Natural Monument*—a protected area that is managed for the conservation of particular natural attributes

Category IV *Habitat/Species Management Area*—a protected area that is managed mainly for conservation purposes through management involvement

Category V *Protected Landscape/Seascape*—a protected area that is managed for the conservation of landscape/seascape and recreational purposes

Category VI *Managed Resource Protected Area*—a protected area that is managed for the sustainable utilisation of natural ecosystems

Therefore, it can be concluded that, national parks can be one of the most common form of protected areas which need careful management and planning attention. Nonetheless, there might be some other categories of a national park tied to the management objectives (Novelli, 2011).

### **Tourism in Protected Areas**

Not only has the growth in protected areas and national parks increased, the number of people visiting these places had also increased dramatically in recent years (Boniface & Cooper, 2011; Betz, et.al., 2014). In fact, Mason (2011) believes that people have been encouraged to seek solitude with nature due to the increased pressure of urban living and rising human populations, which clearly results in an increase in tourist numbers. Subsequently, it is also worth noticing that nature based tourism and ecotourism have been growing significantly in recent years. Nature based tourism is a form of tourism that involves traveling to untouched natural areas with an objective of studying, appreciating, and taking pleasure in the scenery, plants, and animals, along with any existing cultural features (past/present) prevalent in these areas (Liburd & Edwards, 2010). Spenceley (2008) define ecotourism as a form of responsible travel to natural areas that serves to conserve the environment while sustaining the welfare of the local population. Yet, it should minimize all impacts, raise awareness among locals and tourists about conservation needs of cultural and natural assets, provide a pleasant experience for both locals and tourists, generate income and jobs for locals, as well as empowerment, increase understanding to host countries' social, political and environmental climate, and lastly support labor agreements and international human rights. Though sometimes ecotourism and nature based tourism are used synonymously, such as by McNeely et al. (1992), other authors such as Newsome, Moore, and Dowling (2002) would argue that nature based tourism is a term that

could be synonymous with ecotourism, but it lacks observable environmental interpretation and/or education.

Eagles and McCool (2002) and Holloway (2009) affirm that ecotourism is believed to be the fastest growing tourism sector with great potential for increasing visitation to parks and protected areas. This is also an evident for the Thai context where number of tourists visit national parks remains (Tourism Authority of Thailand, 2017). The changes are observable in the United States, Canada, Kenya, United Kingdom, and many Asian countries (Spenceley, 2008; Boniface & Cooper, 2011; Office of National Park, 2017). As more parks are created, more visitations occur. Subsequently, just as there is more acceptance of parks there is increased demand and that increases the opportunity for tourism which is witnessed at a global level (Eagles & McCool, 2002; Holloway, 2009).

Nevertheless, tourism in parks or protected areas can become potentially problematic (Mason, 2011). It must also be considered that the idea of tourism is not exactly the idea of preservation. It is as what Wearing & Neil (2011) believe that there is a conflict between ‘preservation and ‘use’, which is precisely what tourism in protected areas is. Tourism can create many impacts, positive and negative, as will be discussed later. Yet, it can only be positive if it is managed appropriately and efficiently.

### **Environmental Tourism Impacts**

The tourism industry is an industry that is characterised by creating many kinds of impacts (Mason, 2011). In order to discuss the kind of tourist impacts that can happen, certain definitions would have to be considered. A tourist is a person who travels away from home to a place outside his/her common environment and stays there for no longer than one consecutive year and at the very least stays for one night for a variety of purpose (Cooper et al., 2011). As a result, natural resources are often being abusively utilised (Cooper et al., 2011). The tourism industry is characterised by having economic, social, and environment impacts, which can be positive, negative, or both. However, it has reflected in many cases where natural resources in tourism destination received less attention for careful management and planning which often result in negative environmental impacts (Wearing & Neil. 2011).

When tourists travel to a protected area, they are likely to create some form of environmental impact which can be positive, negative, or both. According to Mason (2011) and Liburd & Edwards (2010) it can help raise funds for local communities and the protected area.

It can help safe certain species of flora and fauna, such as how the gorillas in the Parc National des Volcans in Rwanda are aided by the tourists that visit them through revenue generated (Mieczkowski, 1995; Weaver & Lawton, 2010). This is one important factor that should be an outcome of tourism initiatives to protected areas; otherwise it may defeat the purpose especially in cases where national parks were created to attract tourism. It may also help conserve certain watersheds and ecological procedures, protect biodiversity; comprising of gene, species, and ecosystem (Eagles et al., 2002; Cooper et al., 2011). In addition, it can enhance self-financing methods for the operations carried out in the protected area (Weaver & Lawton, 2010). Mathieson and Wall (2012) also claim that, tourism helps introduce planning controls to sustain the quality of the environment. This is precisely what tourism can do in protected areas.

However, the benefits are sometimes overstated. Many protected areas cannot cope with a large number of people because of their vulnerable ecosystems. Recreational activities, such as powerboats may also create disturbances to wildlife. At other times, reckless tourists or tourists litter in protected areas, which can sometimes harm wildlife if consumed (Cooper et al., 2011). It may even introduce exotic species to the ecosystem. The utilization of vehicles within a protected area also results in death of wildlife, while driving off provided tracks can harm soil and vegetation. In fact, Mathieson & Wall (2012) carried out a research in a German national park, where he found a tremendous decline in hares, red deer, and roebuck as a result of increased road traffic. In addition, creating fire can lead to forest fires (Cooper et al., 2011), habitat destruction, and wildlife mortality. Roads built within protected areas can also result in habitat loss (Mathieson & Wall, 2012). At other times, people collect rocks, minerals, and fossils from protected areas as souvenirs (Liburd & Edwards, 2010). Trampling, camping, or horse riding may all cause soil compaction, which makes the land susceptible to increased run-off and erosion (Mason, 2011).

## Methodology

This research seeks to explore the environmental impacts experienced by Western and Asian tourists in DINP. Thus, it has an exploratory nature, but a one-sided perspective of a few people involved in the management of DINP is inadequate to produce an entire picture of the situation. As a result, the tourists' perspectives also have to be sought after. Nevertheless, a

few representatives are inadequate to generalize about the whole population and the demographic characteristics also have to be understood.

The data collection methods adopted in this research were in-depth interview with the DINP management stakeholders, who have been working at DINP more than 2 years, in order to guarantee that the key informants have and able to share insight knowledge and deep understanding of the situation and all the issues occur in DINP.

There were four in-depth interviews held altogether. An interview was held with the head officer of the national park, head of the Baan Luang Sub-district Administrative Organisation, assistant to head of the Inthanon Royal Project Research Station, and Head of the Inthanon Birds Center. All the data was collected through a voice recorder.

On the other hand, number of tourists visiting the area are infinite population therefore the approach was based on non-probability sampling due to the lack of solid information on population size. This research utilized W.G. Cochran formulation with confidence level at 95% and acceptable random error at 0.05 The result for the sample size was 384 and to round up the number, the questionnaires were distributed to 400 tourists in DINP, divided into two main groups; 152 Westerner and 248 Asian tourists.

The questionnaires were conducted with both Western and Asian tourists visited the park during the end of 2015-2016. The questionnaire was divided into different segments: respondents' demographic profile which collected in terms of their gender, age, nationality. The respondents were asked about their means of transport to the park whether they produce any pollution through those means. They were also asked about the types of tourism activities in the park. Moreover, respondents' views of environmental impacts were also collected by asking them to indicate their level of agreement on a five-point likert scale (strongly disagree to strongly agree)

The national park's cafeteria was the site in which all questionnaires were passed out because it is the only main cafeteria in DINP and visiting DINP would take as long as four to five hours due to the vast area of the national park, which means people would have to eat there.

The questionnaires were targeted at approximately 400 people. The forms were passed out to almost every tourist between the periods of 11:00 am-14:00 pm. They were predominantly self-completed, but on certain occasions the respondents were interviewed and the forms were filled out by the researcher.



The interviews were transcribed and then read over and over again in order to categorize reoccurring themes. In this research, categories were derived from the main focus of the interviews which had themes of: park environmental management plan, environmental impacts witnessed, and other major problems witnessed in the park.

The questionnaires were analyzed through SPSS. A number of statistical techniques such as descriptive statistic, and an independent sample *t*-test were used for data analysis in this research.

## Findings and Discussion

The sample from the survey consists of 400 respondents. 248 Asian tourists were responded to this questionnaire which is accounted 62% and the majority were Thai. Therefore, less than half of the respondents were Westerner which is only 38%. Surprisingly, almost a quarter of the Western respondents were from European countries, the countries include: Ireland, England, Scotland, Italy, Germany, France, Holland, Belgium, Czech Republic, Netherlands, and Luxembourg. In fact, respondents from England represent the highest number of Western tourists and this in fact corroborates with a previous research conducted by TDRI 1996 in Khaosa-ard et al. (1997a); Association of Thai Travel Agent (ATTA) (2017) where England is part of the high visitation group. Over one-sixth (13%) of the respondents are from North & South America, while 6% are from Australia and New Zealand, and 1% from South Africa and Bahrain. A possible reason as to why DINP receives tourists from all over is that it has a lot to offer, be it relaxation, beauty, the highest spot in Thailand, and various recreational activities.

Nonetheless, when comparing tourist statistics from the primary research with statistics gathered from DINP, the statistics reveal a parallel picture. Statistics show that throughout the year the park is visited mostly by Thai tourists and in the same period of July there are more Thai tourists than westerner. Surprisingly, statistics show that in the year 2015 western tourists declined to its lowest number, while Thai tourists increased significantly. The probable cause for the decline may have been due to the Thai political instability. However, there was a dramatic increase of Thai tourists visiting DINP which may have resulted from TAT's big marketing campaign on promoting domestic travel.

A *t*-test was carried out to test the difference in views of Western and Asian tourists visiting the DINP. The data collected from the questionnaire show that there is a significant difference between Western and Asian tourists in terms of their views for environmental impacts in the DINP.

**Table 1** Comparison between Western and Asian tourists towards their views of environmental impacts

Variables		Mean	Std. Deviation	Levene Statistic	t	Sig.
Nation	Asian	3.06	0.40	1.090	-22.034	0.000
	Westerner	4.04	0.45			

\*Results from Independent sample t-test results indicate a significant difference between the two groups at the level of  $\leq 0.05$ .

The finding from Table 1 shows statistically significant differences between Western and Asian tourists on their view of environmental impacts at DINP. Interestingly, the results reveal a significant difference ( $p \leq 0.00$ ) in terms of their views of environmental impacts from tourists in the park.

**Table 2** Western tourists' views of environmental impacts in DINP

Variables	Degrees of agreement		
	$\bar{x}$	S.D.	Results
Tourist creates degradation of land in the park	4.09	0.73	high
Tourist creates inadequate quality of water in the park	4.01	0.79	high
Tourist creates air pollution in the park	3.96	0.78	high
Tourist creates noise pollution in the park	3.99	0.81	high
Tourist creates risks for forest fire	4.02	0.77	high
Tourist results in more littering in the park	4.01	0.76	high
Tourist attracts more tourism related constructions in the park	4.04	0.78	high
Tourist results in overcrowded park	4.00	0.80	high
Tourist creates destruction of vegetation	4.10	0.74	high
Tourist puts more pressure on endanger species	4.18	0.71	high
Tourist puts more pressure on wildlife animals	4.39	0.69	highest
Tourist puts more pressure on water supply	4.28	0.71	highest
Tourist destroys the natural resources in the park	4.18	0.80	high
Tourist changes animals' pattern of lives	4.06	0.75	high
Tourist creates awareness of the environmental impacts to the park management	3.94	0.74	high
Tourist creates sense of park conservation	3.98	0.75	high
Tourist creates improvement of environmental resources	3.97	0.72	high
Tourist creates well-being of wildlife animals	3.81	0.69	high
<b>Total</b>	<b>4.06</b>	<b>0.75</b>	<b>high</b>

**Table 3** Asian tourists' views of environmental impacts in DINP

Variables		Degrees of agreement		
		$\bar{x}$	S.D.	Results
1	Tourist creates degradation of land in the park	2.45	0.71	less
2	Tourist creates inadequate quality of water in the park	2.44	0.70	less
3	Tourist creates air pollution in the park	3.24	0.56	fair
4	Tourist creates noise pollution in the park	3.50	0.88	high
5	Tourist creates risks for forest fire	3.71	0.95	high
6	Tourist results in more littering in the park	3.98	0.97	high
7	Tourist attracts more tourism related constructions in the park	3.36	0.90	fair
8	Tourist results in overcrowded park	3.85	0.79	high
9	Tourist creates destruction of vegetation	2.48	0.82	less
10	Tourist puts more pressure on endanger species	3.84	0.73	high
11	Tourist puts more pressure on wildlife animals	2.83	0.64	fair
12	Tourist puts more pressure on water supply	2.83	0.72	fair
13	Tourist destroys the natural resources in the park	2.80	0.76	fair
14	Tourist changes animals' pattern of lives	2.82	0.65	fair
15	Tourist creates awareness of the environmental impacts to the park management	2.81	0.70	fair
16	Tourist creates sense of park conservation	2.82	0.73	fair
17	Tourist creates improvement of environmental resources	2.84	0.94	fair
18	Tourist creates well-being of wildlife animals	2.50	0.75	less
<b>Total</b>		<b>3.06</b>	<b>0.77</b>	<b>fair</b>

According to Table 2, almost two-thirds of Western tourists (64%) agreed that tourists create positive environmental impacts in the park such as “tourists creates improvements of environmental resources” ( $\bar{x} = 3.97$ , S.D. = 0.72) and “tourists create sense of park conservation” ( $\bar{x} = 3.98$ , S.D. = 0.75) while almost all Asian tourists (87%) disagreed and only suggested that tourist is the main cause of negative environmental impacts in the park, for example “tourists results in more littering in the park” ( $\bar{x} = 3.98$ , S.D. = 0.97) and “tourist put more pressure on endanger species” ( $\bar{x} = 3.84$ , S.D. = 0.73) also “tourists put more pressure on wildlife animals” ( $\bar{x} = 2.83$ , S.D. = 0.64), for example.

However, less than 10% respondents from both groups felt that they did not create any negative and or positive impact on the environment but felt that the most detrimental impact was nature deterioration. It could be an indication that not everybody has an understanding of

how their actions may contribute to an impact. It could possibly indicate how park management should try to educate tourists even more about the harm that people can create, even if it is as simple as telling them that even the cars they travel in contributes to pollution.

To sum up, more than half of the respondents from both groups felt that they were contributing to either a negative or a positive impact; while the western group felt they were contributing to both kinds of impact but more likely giving positive ones whereas Asian group believe they create more or less negative impacts to the park by suggesting that the most detrimental impact was the rubbish generated by tourists.

Moreover, the in-depth interviews were used to collect another set of data on the tourist-induced environmental impact from the key informants at the DINP. Based on DINP's head officer, the worse impacts are rubbish. The problem with rubbish is the biggest problem and it is the most detrimental impact in the national park. Some other problems occur in the park are: parking in areas that are not allowed, going into prohibited forest areas, picking flowers and/or leaves, building fire in the wrong places, and such. According to the head officer, the problems occur because it is human nature and driven by people's conscience that may not have a sense of environmental awareness.

Yet, the result also suggested that pollution is another problem, though it is not as severe as rubbish generated. Data collected from the interview suggested that DINP officer and those who in charge of managing the park are not too keen on increasing tourism to the national park because they think that attracting the tourists will make people invade the forests in order to provide the infrastructure or superstructure needed. In addition, the more development there is, the more cutting of trees there will be which ruins natural resources. This is in fact a very crucial point to be made. Management does have a plan on expanding the routes to more tourist attractions, a plan of building more restaurants, and tourist centers in the national park (Khaosa-ard et al., 1997a), which will definitely mean more land clearance. Nevertheless, one of the guidelines of park tourism and plan is never to put the natural and environmental culture at risk (Eagles et al., 2002; Mason, 2011). Risk is inevitable if more "tourism" expansion is on the way, decisions may be made through research, but the actual consequences are not known until execution. Moreover, it also seems surprising that neither the head officer of DINP, nor the chief officer of the Baan-Luang Sub-district Administrative Organization mentioned anything about the deteriorative state of the ecological system as founded by Khaosa-ard et al. (1997)

study that suggested the root cause as the development of roads to the top of the mountain, which is also for tourism. The water being pumped for tourists use and the parking area have also contributed to the overall ecological change of the Ang Ka area. These were discussed in the literature review and though the findings may date back to a substantial amount of years, more tourism development that is planned will only lead to more detrimental impacts.

## Conclusions

This research was based on the idea of tourism in protected areas, which according to Wearing & Neil (2011) is a conflict between preservation and use. It can lead to disastrous consequences if improperly managed and this research was undertaken as to investigate the tourist induced environmental impacts in a national park.

Since this type of research in the selected area was limited, a few previous research undertaken such as by Khaosa-ard et al. (1997) shows that there are environmental impacts witnessed in DINP that are partially a result of tourism development and tourists. There has been a declining state of the ecological system at the top most part of the Inthanon Mountain range, change in the ecology of the temperate wetland/moss bog in the Ang Ka area, seasonal tourism has also made it hard for the ecological system to handle the high rates of human intrusion, and people that dwell within the park also rely on the resources of the forests only exacerbating the situation.

However, the results of the primary research undertaken during 2015-2016 revealed a different scenario and that the main environmental problem that DINP was really faced with was rubbish which was agreed by almost all respondents from the questionnaire. Moreover, more than half of the respondents also felt very strongly that it was Thai people creating more negative impacts than foreigners. The findings can be supported by Samovar & Porter (1991) which explained that people, especially from different cultural backgrounds acknowledge things differently because stimuli are chosen from the external environment and interpreted into profound meaningful internal experiences. This notion is supported by Rungapadiachy (1999) who described perception as the interpretation of sensory input. Therefore, it can be concluded that perception is the process that shape and produce what people actually experience and their backgrounds. However, a number of both Western and Asian respondents felt that tourism led to the invasion and destruction of forests because more land is needed to build the necessary superstructure to cater to tourists. This result is in line with Mason (2011)

who revealed the same result in Mexico and Spain. None of the impacts from the previous research as mentioned earlier were said by any of the respondents, but if tourism development is adding to negative impacts the national park should really consider not expanding attraction routes and sites as they intend to do.

Nonetheless, the informants from the in-depth interviews felt that the people that were creating the most detrimental impacts were the park dwellers—the indigenous people because they are permanent. Though they are temporarily exempted and allowed to live in the park by law, they have not been moved elsewhere yet. It probably is true that they create negative impacts more than tourists would since they are there through out the year; they also use the park's resources though they are not supposed to.

The findings suggested that the park has dealt with the problems through strict rules and regulations, trying to build an environmental conscience in people, and educating tourists. Based on the tourists' recommendations the park should develop new policies, such as: restrict tourist number, the number of cars allowed, offer shuttle bus service, offer bike hire and such. They also suggested that the park have more stringent rules and regulations or educate tourists. If the tourists feel that the park is not doing enough in providing information or educating them it probably means they really are not and how would the park be able to build an environmental conscience in people if they are not able to get their message across. Both Western and Asian tourists suggested that tourism development should be stopped to limit impact which is highly agreed by the researcher to prevent any further impact.

#### **Recommendations for Future research**

Based on this research several recommendations for future research can be suggested as follows:

- Overall, this study provides insights into the range of tourists perceptions and their concerns on tourism environmental impacts in the DINP. For the future research can address tourism impacts derive from different tourism activity and purpose of visit, in order to propose a screening and managing approach to attract only a certain group of tourist who generates less negative impacts to this particular type of area.
- Since, more tourism development seems detrimental to the environment and DINP does have a plan on extending routes to more attractions in DINP. Further research can be made into studying the tourism development plan of DINP with sustainability issues in mind

and if these issues are not carefully taken into consideration, formulating a new tourism development plan with these issues addressed.

- Moreover, this research has shown that impacts are created by tourist behaviors and their activities within the park. For the future research may focus on other potential causes of impact in the area and how to manage them into more conservative and sustainable manners.

### **Research Implications**

The academic reason for undergoing this research is that the research findings will be valuable for DINP and national park authorities as well other similarities national parks in Thailand. It was very difficult to obtain secondary research information with regards to this topic in Thailand therefore, the findings from this research can help fill in the gap and provide some baseline knowledge on ways to manage national parks and potentials environmental impacts. It may even be a significant contribution for a global context and important internationally in the management and development of a national park. Furthermore, it may assist park management in how to better manage visitor impacts. This research will prove to be very useful in that manner and in suggesting ways in which the negative impacts can be alleviated.

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