



The Urban Elephant: Sustainable Roles in a Changing Society

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ABSTRACT

This report analyzes the evolving role of elephants in an increasingly technological Thai society. With the rise of technology and the decline of their traditional roles, elephants and their keepers, mahouts, are in danger of losing their place in Thailand. Our project goal was to study the changing roles of elephants and their keepers and propose solutions that will help maintain the importance of elephants in Thai culture. We found that current efforts to both eliminate elephants in Bangkok as well as give them a place to go have been met with limited success. We have provided recommendations on how to improve these efforts.

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We would like to take this opportunity to express our gratitude to those who dedicated their time to helping us complete this project. This project would not have been possible without their contributions.

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EXECUTIVE SUMMARY

Elephants have historically been deeply connected with the human spirit in Thailand. They have held many roles in war, transportation, and logging. With the exception of logging, all of these roles have been replaced with technology. Due to the drastic levels of deforestation logging caused, Thailand banned logging in 1989. After this was enacted, 70% of mahouts (elephant owners and keepers) were left unemployed. With the increasing encroachment of plantations on traditional elephant feeding grounds and the increase in the cost of supporting elephants, mahouts began to enter the streets of major cities such as Bangkok in order to earn sufficient income. Several legal regulations were enforced to keep elephants off the streets, as well as conservation programs founded to provide both mahouts with a source of income and elephants a healthy environment. Despite these efforts, there are still mahouts entering cities every night. This number fluctuates according to tourist seasons. With this information and the interest of all relevant stakeholders in mind, our team evaluated the legal regulations and conservation programs' attempts, and proposed improvements to their efforts.

Methodology

To achieve the goal of our project, we developed the following objectives:

1. *Evaluate current and previous efforts to regulate the presence of elephants and their mahouts in Bangkok.*
2. *Evaluate programs designed to provide new roles for elephants and their mahouts.*
3. *Investigate additional alternative income sources for mahouts and their elephants in the Bangkok area.*

The efforts to preserve the importance of the role of elephants in Thailand were achieved through two distinctly different approaches. The first approach is the government laws and regulations that attempt to control the presence of elephants in cities such as Bangkok, while the other approach, conservation programs, focuses on providing alternate income sources to begging in the cities. In order to evaluate both of these efforts, we conducted interviews with leading professionals in the elephant field, such as Richard Lair, Ewa Narkiewicz, veterinarians from the

Thai Elephant Conservation Center, Malin Pongsapipatt (producer of Urban elephant documentaries), and several mahouts from Bangkok, Krabi, and Surin. In addition to these interviews, we carried out observations of current conservation programs including elephant parks such as The Elephant Stay in Ayutthaya, the Thai Elephant Conservation Center in Lampang, and the Surin Elephant Study Center. We also observed elephants and their mahouts on the streets of major cities such as Ao Nang. During our research, we encountered obstacles such as mistrust from mahouts and biases from organizations.

Findings

1. Two distinct types of mahouts are entering Bangkok: entrepreneurial mahouts and traditional mahouts.

Because of the lucrative nature of bringing elephants into cities such as Bangkok, two types of mahouts have developed. Traditional mahouts enter the cities out of necessity for their elephants, but entrepreneurial mahouts rent elephants to bring into the cities for their own income. The fact that both types of mahouts are not currently considered separately is affecting the success of conservation programs and the efforts to keep street elephants out of the city.

2. Despite the 95% decrease in the number of elephants entering Bangkok each night from 200 to 10 within the past twenty years, law and regulation efforts to control the presence of elephants in the city are hindered by lax registration practices, a lack of personnel, and a lucrative tourism industry.

Mahouts and their elephants are still entering Bangkok despite the successful efforts from local government. This is largely because the cyclic nature of the tourism seasons makes it difficult for mahouts to make enough income legally in this industry.

3. Conservation programs are improving the quality of life of elephants in Thailand by promoting awareness, creating natural habitats, and providing income sources for mahouts, but their success is limited by a lack of funding.

Due to fluctuating tourist seasons, the number of tourists visiting conservation programs causes an unstable income for the programs. This makes it difficult for these programs to provide a steady source of income for mahouts. Also, a lack of funding or low participation from mahouts often leads to these efforts being ineffective. Furthermore,

many of these programs do not use the resources of the elephants to their full extent, which hinders their ability to support the mahouts year round.

4. Although conservation groups have a common goal, different approaches are causing a lack of cooperation that is undermining their efforts.

There are currently numerous conservation programs, both government and non-government, that have a common goal of preserving a healthy future for elephants in Thailand. Though all of these programs have the same goal, many of them go about accomplishing this goal in conflicting ways, which leads to a lack of cooperation and communication between groups.

5. A lack of trust from some mahouts towards conservation efforts prevents the mahouts' full cooperation with potentially beneficial programs.

In our interviews, many mahouts expressed frustration that they had received less money than originally promised. There have been instances where the money that was allocated for mahouts' income suffered losses as it moved through both government and private departments, thus leaving mahouts without enough income to support their elephants.

6. A designated location for elephants in the Bangkok area is not feasible because of pollution, high cost, and concerns of market saturation.

While there has been a desire for an elephant park in Bangkok, pollution, lack of funding, and market saturation are all deterrents to this effort. Plant life is coated with harmful toxins that would prevent such a camp from having a local food source. Importing food from an eco-safe area would not be feasible due to the cost. Developing the land in Bangkok for elephant use would be very expensive. If these two problems were overcome, an elephant camp in Bangkok may still be unfeasible because it may saturate the market in the Bangkok area. Currently, there is a conservation program in Ayutthaya, which is approximately one hour away from Bangkok and home to over 50 mahouts at any given time. Creating an elephant camp inside the Bangkok area might create too much competition for the conservation program in Ayutthaya. This pre-existing camp may be forced to compete with the camp in Bangkok until they both fail.

7. Supplemental income sources exist for elephants, including bio-gas and fertilizer production, but they are not being used to their full potential due to a lack of funding, research, or awareness.

Elephant dung provides resources for alternative income sources such as bio-gas,

fertilizer, mosquito repellent, and paper. However, many camps or conservation programs do not use these alternatives because they do not have the informational resources, funding, or awareness of these uses.

Recommendations

Recommendations for Laws and Regulations:

1. *We recommend that organizations responsible for the registration of elephants adopt registration tactics including a standard microchip, consistent microchip location, and periodic renewals of the chip information.*
2. *We recommend that the legal restrictions on elephants in the city of Bangkok be implemented and enforced in all cities of Thailand.*

Recommendations for Conservation Programs:

3. *We recommend that awareness of both the traditional and entrepreneurial mahouts be considered when developing a sustainable future for elephants in Thailand.*
4. *We recommend creating a department that oversees all elephant conservation efforts within Thailand in order to improve cooperation between conservation programs.*
5. *We recommend that elephant conservation programs and elephant camps implement supplemental income sources such as bio-gas, mosquito repellent, fertilizer, and dung paper production into their daily efforts.*

AUTHORSHIP

Laura-Ashley Alegbeleye developed the mahout and elephant conservation center interview questions. Laura-Ashley also was the primary writer of the Background, Objectives, and Findings sections relating to the elephant conservation programs. She performed additional research on the different elephant conservation programs. Laura-Ashley served as a relentless editor in order to identify and correct punctuation, sentence structure, and grammatical errors in the report.

Wirut Jitphongsaiikul took part as an interviewer with mahouts throughout the trip to Surin and the zoo visit in Bangkok. He also conducted some phone interviews with conservation centers. Wirut developed interview questions previous to and during interviews based on the reaction of interviewees. He also took notes during interviews and translated information obtained from interviews from Thai into English, to be used in the Appendices. Additionally, Wirut served as a writer in Finding 1, and as a co-writer in Finding 3.

Emily Silva was the main writer for the following sections of the report: Objective 3, Findings 6 and 7, Recommendations for Improving Laws and Regulations, and Recommendations for Future Researchers. Emily also did the majority of the research on supplementary income sources along with Jakkrit, as well on stakeholders and policies pertaining to the elephant problem. She took notes during all of the meetings and took part in editing every section of the paper as well as making valuable contributions to brainstorming sessions.

Jakkrit Suriboot served as a primary interviewer in field-work with the mahouts and conservation programs, including phone interviews, and took responsibility in contacting these interviewees. He developed the interview questions to be more suitable to Thai culture and translated the interview results that were in Thai into English. He also conducted field research that would benefit the group. He was involved in writing and editing the report, especially sections relating to supplementary income sources for mahouts and incorporating these technologies into their lifestyles.

Ty Tremblay contributed to the writing of many sections of the paper, and edited the paper for citations, readability, and accuracy. In addition, Ty travelled to Surin with Wirut and the Roong

Aroon students to conduct interviews at the Surin Elephant Study Center. He also held a primary role in the development of presentation materials and in formatting the report.

John Wyatt authored the Abstract, Executive Summary, Past Roles of Elephants and Mahouts, Finding 5, Recommendations for Further Research, and the Project Conclusion. John also co-authored Objective 1 of the Methodology, Finding 2 with Ty, and Finding 4 with Laura-Ashley. In addition to authorship, John served as the primary Project Meeting Chair during sponsor and adviser meetings, interviewed Ewa Narkiewicz, helped interview Malin Pongsapipatt, and prepared the necessary forms for the Internal Review Board approval of interview questions.



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INTRODUCTION

The lives of both the Asian elephant and the Thai people have been intertwined for thousands of years. In modern days, however, this bond is in jeopardy. In the early 1900s, Thailand was home to over 400,000 elephants, including approximately 300,000 wild elephants and 100,000 domesticated elephants (EleAid 2007). Destruction of the natural elephant habitat through logging and expansion of urban and agricultural areas has since led to a dramatic decline in the elephant population. Today, only 6,000 elephants remain, the majority of which (between 3,000 and 5,400) are domesticated (Parntep 2005). In the past, domesticated elephants were employed in Thailand's logging industry but, when logging was banned in 1989, the elephants and their owners were forced to find other employment (Lohanan 2002). Advancements in technology eliminated many alternative sources of income. Machines are now accomplishing jobs once reserved for elephants, and cities and roads now lie in place of the elephants' natural habitat. Currently, the most profitable remaining option is the tourism industry.

While the tourism industry is a lucrative source of income, it has proven to be unstable and dependent on tourist seasons. As a means to make up for income sources lost during tourist off-seasons, some mahouts make a living by bringing their elephants into cities such as Bangkok to sell food to tourists that can then be fed to the elephants. While the problem of itinerant elephants in Bangkok was a great problem in past decades, due to laws enforced to regulate the presence of elephants in Bangkok, the number of itinerant elephants has decreased from 200 to 10 in the past twenty years (ASTV Manager 2009). Unfortunately, because of an increasingly technological society, Thai citizens often become separated from the importance of elephants in their culture as the elephant plays a smaller and smaller role in their daily lives. There have been several attempted solutions to find ways for elephants to productively participate in Thai society, ranging from elephant shows that raise cultural awareness to ceremonies including elephants. Although these attempted solutions have helped maintain the importance of elephants in Thai culture, they are not enough. The Asian elephant is still losing its place in Thai society.

The goal of our project was to study the changing roles of elephants and mahouts in an increasingly technological Thai society and propose solutions that help maintain the importance of elephants in Thai culture. We achieved this goal through three objectives:

1. *Evaluate current and previous efforts to regulate the presence of elephants and their mahouts in Bangkok.*
2. *Evaluate programs designed to provide new roles for elephants and their mahouts.*
3. *Investigate additional alternative income sources for mahouts and their elephants in the Bangkok area.*

To accomplish each objective, we conducted multiple interviews with experts, elephant owners, and organizations in the field of elephant conservation. We observed mahouts and conservation centers in order to ascertain information regarding how they work and interact with elephants. We also analyzed our gathered information in order to make educated suggestions regarding effective alternative income sources for mahouts and their elephants in the Bangkok area. Through our research, we hoped to obtain information on the limitations of current conservation efforts and make suggestions on how to overcome these limitations.



BACKGROUND

In order to adequately understand the Asian elephant's reduced role in Thai culture, this chapter describes three topics: the roles played by elephants and mahouts in the past, the pressures that forced the roles of mahouts and their elephants to change in the post logging era, and the new role elephants now hold in tourism. As traditional roles for elephants and their mahouts have disappeared, mahouts have been forced to find other income sources in order to provide for their families and elephants. Unfortunately, the most lucrative option for mahouts involves bringing their elephants onto the streets of cities such as Bangkok. This option is unhealthy for the elephants and has gained increased attention from the public and the government.

Past Roles of Elephants and Mahouts

Through religion, royal rights, war, and economic industry, the Thai people have continually shown that the bond between Thai people and the Asian elephant is particularly unique and prevalent in their culture. In the Pha Tam, Khong Jeam district of Thailand, cave drawings dating back to 5,000 B.C. depict humans capturing wild elephants (Iamsudjai 2004). This evidence shows how far back the bond between elephants and their trainers extend for the Thai people.

In Thailand, most keepers and trainers of elephants, or mahouts, have a significant bond with their elephant. Elephants are only one month old when their mahout begins training them. This training reaches its most crucial point when the mahout begins to ride their elephant. This starts when the elephant is only three months old. A mahout raises his elephant as if it were his child or sibling. In this bond the elephant becomes a part of the mahout's family. After this bond is made, an elephant will only listen to its mahout, recognizing their counterpart by the mahout's image, smell, and the sound of his voice (Personal Communication with Mahout A, January 2010). Because of this close relationship, the mahout is as much a cultural symbol for Thailand as the elephant. Therefore, mahouts are intricately connected to the roles elephants play, and are subject to the same influences as their domesticated elephants.

The imagery of elephants is deeply rooted in Thai religion. For example Erawan (Figure 1), known elsewhere as Airawata, serves as steed for the Hindu deity Indra. Unique to Thai legend, Erawan is said to have thirty-three heads, but this is often simplified by depicting just three (“Erawan Museum”, 2005). The existence of this elephant god projects itself in the Thai belief that elephants are a symbol of good luck (Cohen, 140).

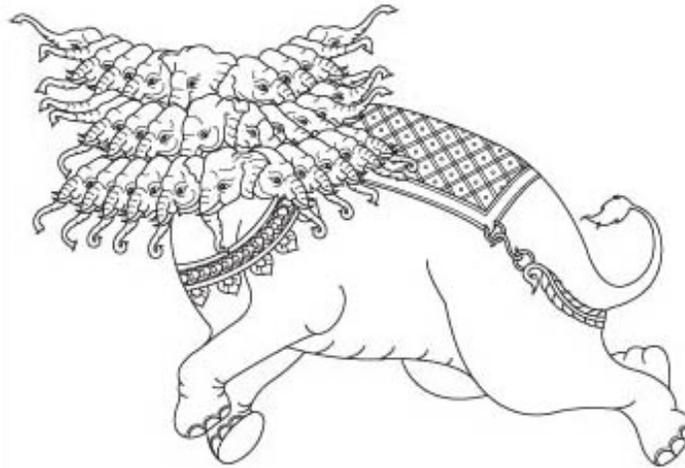


Figure 1: Erawan

Historically, elephants were used in the Thai military as war machines. These elephants were armored, typically with focus to their legs, and wielded various tusk enhancements (Figure 2). Elephants were used in a way similar to the way a horse cavalry would be used in the west. Because of their massive size and thick skin they were intimidating and hard to take down. They were also used as the main form of transportation to and from the battlefield and leaders of armies fought each other from elephants’ backs (Thailand’s Talented Elephants 2010). The power of the elephant in war was exemplified when Alexander the Great was halted in his world-wide conquest by the large number and immense strength of war elephants, which overwhelmed his previously unmatched military forces (Glover, 1). After the introduction of guns and artillery, the roles of elephants in warfare changed from mounted war animals, to transporting cannons and other supplies (Cohen, 153). The advent of railroads and automobiles made even this use for elephants in war become obsolete. While elephants are no longer used in warfare, they continue to remain an image of power.



Figure 2: Statue Depicting Elephants Being Used in War

In the past, elephants have played a very important part in Thailand's economic industry through logging. Nimble feet made elephants highly efficient at moving through a forest, while their massive strength enabled them to pull trees from the ground and carry them for long distances. Elephants were a primary method of logging in the forests of Thailand up until 1989, when logging in Thailand was officially outlawed due to concern about shrinking forests (Figure 4). Unless they continued to log illegally, 70% mahouts were left without their primary source of income (Baker & Kashio, 2002). This made it difficult for many mahouts to support their elephants, and has pressured the mahouts to find other income sources in order to continue working with their elephants.

Elephants were so revered in Thailand that, until 1917, the Thailand flag consisted of a red background with a white elephant in the foreground (Figure 3). This indicated two of the major roles of the elephant to the Thai people. The red background represented the role of an elephant in war and, because white elephants were viewed as a symbol of royalty, the white elephant represented the royal family. While the flag was changed in 1917, the elephant, especially the white elephant, was made the national animal of Thailand (Cohen, 140-141).

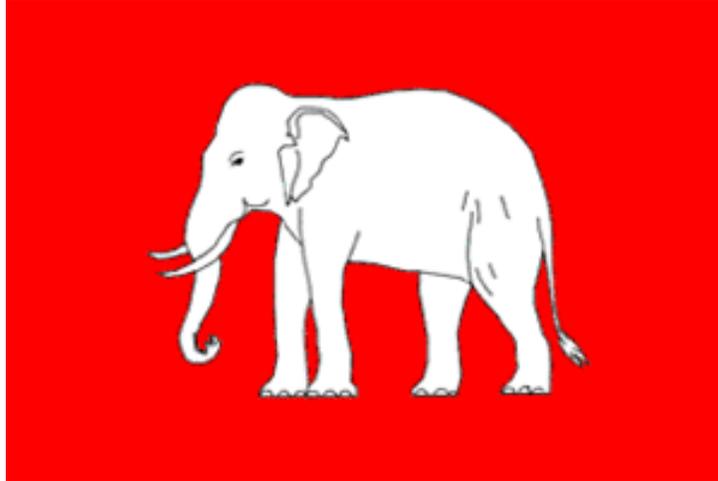


Figure 3: Former National Flag of Thailand

Elephants have always been important to Thai royalty. In the ancient capital city of Ayutthaya, a corral was built for captured wild elephants. Here, it was thought that the whiter the elephant a king owned the more powerful he was (Iamsudjai 2004). White elephants are so respected that they hold the same rank, ‘Chao Fa’, as the prince or princess (“Love the King”, 2006). The relationship between the Thai king and the Asian elephant shows one example of Thai citizens’ devotion and respect towards the animal. Beyond royalty, elephants were essential to many Thai ceremonies; most notable was their presence in traditional wedding ceremonies and the practice of pregnant women walking under an elephant’s belly three times for good luck during the pregnancy (Personal Communication with Malin Pongsapipatt, January 2010).

Post-Logging Ban: Pressure for Change

The roles of elephants are both directly and indirectly being replaced by the technologically advancing Thai society. Thailand’s logging ban of 1989, caused by a developing economy and expanding population, eliminated the role elephants held in this industry. Likewise, trucks, tanks, and other technologies have replaced elephants in the battlefield. Because of the loss of available roles, many Thai people fear that elephants are losing their importance in Thai society. Much of this concern is directed towards urban environments, where healthy ways of incorporating elephants into daily life are not readily available. Due to the lack of healthy alternatives, some mahouts are participating in the harmful practice of bringing their elephants into tourist sections of cities such as Bangkok in search for an income source. This migration is

magnified by the urbanization that has caused mahouts to lose their land. Sources of both land loss and urbanization include shifting cultivation by tribal villagers, dam and road construction, gas pipelines, pineapple plantations, and resort developments in forest reserve areas (Lohanan 2002).

As elephants migrate to search for food, they often trespass on plantation land, which leads to conflicts between the plantation owners and the elephants (Lohanan 2002). As a result, elephants often end up being poisoned or killed. One reason that elephants trespass on plantation land is that natural habitats in which to graze are disappearing. Due to logging, the forest area in Thailand has declined from eighty percent of the total area of the country in 1957 to less than twenty percent in 1992 (Lohanan, 2002). A map of the forest area in Thailand and its surrounding area can be seen in Figure 4.

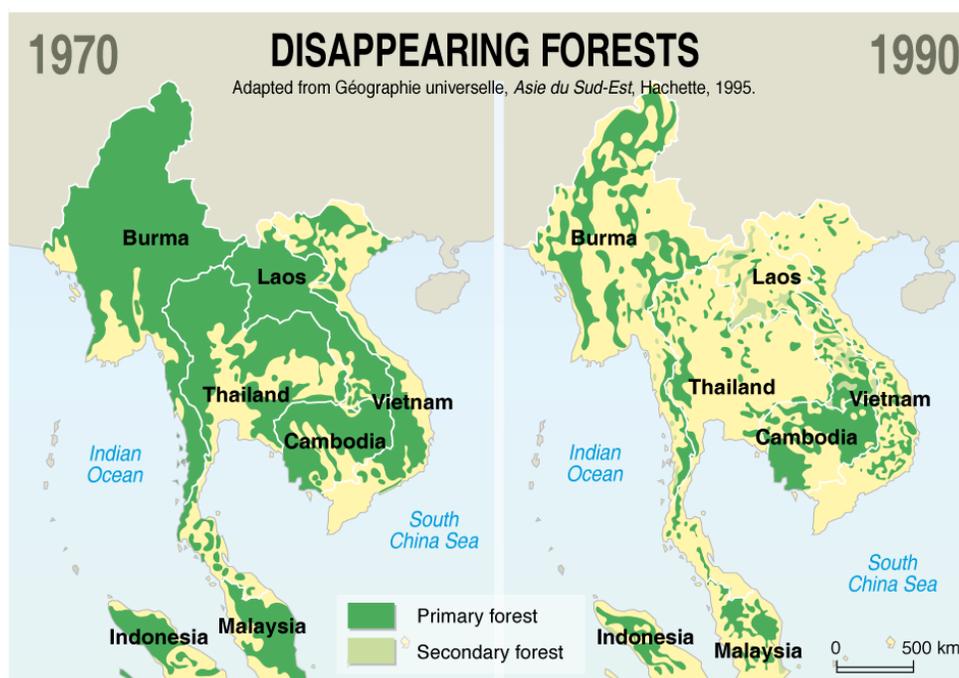


Figure 4: Map of Deforestation in Thailand and Surrounding Areas

Eucalyptus plantations replaced locations where mahouts used to bring their elephants to graze on bamboo bushes. Similarly, in northern Thailand, domesticated elephants are often blamed for polluting water sources and destroying forests. Although the elephants' owners claim that these accusations are made from villagers that do not want to share resources with the elephants, the elephants are banned from entering forest reserve areas. Because elephants need to consume

200kg of food every day, these restrictions and resource losses have made it increasingly difficult for mahouts to support their elephants (Lohanan 2002).

As a result of these changes, the wild elephant population continues to decrease while the domesticated elephant population increases (Lohanan 2002). In the early 1900s, less than 25% of Thailand's elephants were domesticated. Today, it is estimated that as many as 90% of all elephants in Thailand are domesticated (Parntep 2005). These domesticated elephants have lost their traditional role in Thai culture. Domesticated elephants are no longer allowed to log and many of their past uses, such as their roles in war and transportation, have become obsolete. As a result, there is now a growing population of domesticated elephants with a loss of purpose, lack of available jobs, and inadequate amounts of food to eat or space to live in.

The decline in resources and sustainable income for mahouts caused an increasing need to find a way for mahouts and their elephants to survive. Mahouts responded by finding an alternative income source by introducing their elephants to a new role, tourism (Cohen 2008, 141-2). But, out of the changes in technology and advancements in society, a new problem arose: the urban elephant.

A New Role: Elephants in Tourism

Tourism is now the most prominent role for elephants and their mahouts in Thailand. Employees at elephant conservation centers not only care for injured elephants, but also tailor their programs to appeal to tourists. Mahouts can bring their elephants to these sanctuaries, as well as zoos and other tourist attractions, in order to gain enough income to support themselves and their elephants. Unfortunately, Thailand's tourism industry fluctuates throughout the year and organizations helping to support the mahouts and elephants are often forced to reduce the numbers they can employ as the industry wanes. Thus, due to the lack of healthy alternatives, some mahouts are bringing their elephants into tourist sections of cities such as Bangkok in search for income.

Recent estimates state that up to ten elephants can be found roaming the streets of Bangkok with their mahouts on any given night of the week. "Due to the Beast of Burden Act of 1939,

domesticated elephants are considered commercial animals. This implies that the mahout has the right to use the animal at his will” (Lohan 2002). Therefore, mahouts take their elephants into heavily tourist-populated areas to sell tourists food that can then be fed to their elephants (Figure 5). Tourists are also allowed to pet and play with the elephants for a fee. By taking elephants into the city, mahouts make an average income of between 15,000 and 30,000 baht (500-1,000 USD) per month. This is considered a lucrative job when compared to average factory wages in Bangkok, which are about 5,000 to 8,000 baht (160-270 USD) per month (Barrow 2005).



Figure 5: Tourists Feeding an Elephant on the Streets of Bangkok

Such a profitable source of income is enticing to mahouts who are struggling to feed their elephants, but the urban environment can be harmful to the animals in their charge. In one day an elephant can eat over 150 kg (330 lbs) of food and drink over 70 L (18 gal) of water (Sea World, 2010). The large amount of resources necessary to keep elephants nourished are not easily found in cities like Bangkok, and elephants require more resources to sustain a healthy diet than the urban environment can provide. In addition to malnutrition, elephants are not adapted to the urban environment and its hazards. Elephants are ill equipped to deal with the harsh conditions of the urban environment, often suffering from respiratory problems, infections, sores, and sunburns. The city streets are also a hazard for elephants (Figure 6). Vehicular collisions

are a constant worry for mahouts while in the city, as drivers often fail to see the elephants in the streets. The most frequent injuries that occur in elephants as a result of their urban environment are limb fractures. These injuries are caused when vehicles hit elephants, or when elephants fall through storm drains (The Urban Elephant). The injuries and health problems caused by bringing elephants into the city has gained increased attention from the Thai public and government.



Figure 6: A Mahout and His Elephant Crossing a Busy Bangkok Street

The Thai people see the elephant as a national symbol and do not want the image of the elephant or Thailand to be tarnished. Anand Panyarachun, the prime minister of Thailand in 2001, expressed the feelings of the government and the people, "We are not only sorry for the elephant but we're also ashamed of ourselves. The elephant was a symbol of honor, of dignity and leadership, but today it has become the symbol of the failures and injustices of Thailand's development."

Thailand Takes Action

Due to increasing public concern, many organizations in Thailand, both governmental and non-governmental, have made efforts to alleviate Thailand's urban elephant problem. These efforts to preserve the roles of elephants in Thai culture can be separated into two categories: Laws and Regulations and Conservation Programs. Laws and Regulations encompass fines, registration, and government task forces that work to eliminate street elephants from Bangkok. Conservation Programs include both government and non-government organizations that work to improve the life of elephants in Thailand.

Laws and Regulations

In an effort to regulate the presence elephants in the streets of Bangkok, the Thai government established several laws, regulations, and organizations. The government organizations responsible for domesticated elephants in Thailand are the Department of Livestock Development (DLD) and the Division of Registration (DOR). The DLD is responsible for the healthcare of livestock throughout Thailand, while the DOR is responsible for the registration of domesticated elephants.

The DLD carries out their responsibility of the healthcare of elephants through a network of veterinarians. The registration of elephants is tracked by the DOR through microchips that are implanted underneath the elephants' skin. Dr. Alongkorn, an elephant veterinarian for Thailand's royal family, stated that elephants are not registered with the DLD until they reach eight years old. This allows mahouts to capture wild elephants at the age of five, when they no longer rely on their mother for sustenance, and implant microchips removed from already domesticated elephants. Sometimes, the elephants' family members are killed during the capture (Dr. Alongkorn, Personal Communication, February 5, 2010). Minimal standardization is used when placing the microchips in the elephants. The microchips can be put in different places on the elephant and different types of microchip can be used (Kanjanapunka 2009).

Though laws against bringing elephants into Bangkok have existed for many decades, they have only been enforced within the past twenty years due to growing public concern (Kurlantzick, 2002). In an effort to enforce laws prohibiting bringing elephants in Bangkok, The Stray Elephant Task Force was created in 2006. This task force is composed of police that can arrest

mahouts and detain elephants under eight different laws in categories such as moving violations, wildlife protection, public health, and urban tidiness. The fine that mahouts are given for having an elephant in the city is about three hundred baht (US \$10), which mahouts calculate as an operating expense (Fuller 2008). As the head of the Stray Elephant Task Force, Prayote Promsuwon has said, "To be honest, nobody wants to do this job, nobody wants to deal with the elephants" (Fuller 2008). The arrests of mahouts or the detaining of elephants rarely ever happens because the force cannot deal with the elephants due to a lack of personnel.

In addition to the creation of the Stray Elephant Task Force, the Bangkok government has made efforts to minimize the entry of elephants into Bangkok by offering mahouts jobs in government parks and returning the mahouts to their home town of Surin to revitalize the town's tourist industry. In 2002, the Thai government offered mahouts and their elephants jobs as scouts in national parks. This project failed due to both a lack of participation and underfunding. In 2006, the Bangkok government promoted a "Bring Me Home" project. Under this program, the mahouts could earn up to 8,000 baht (US \$270) per month if they agreed to live with their elephants in Surin, which is northeast of Bangkok and the homeland of many mahouts in Thailand (Fuller 2008). Recently, there has been an influx in participation in this program, which has increased the number of mahouts participating with the program in Surin to approximately one hundred (Personal Communication with mahouts of Surin, February 2010). These efforts have reduced the number of elephants on the streets of Bangkok, but have not eliminated the problem.

Conservation Programs

Due to the enforcement of laws restricting the presence of elephants in Bangkok by the Bangkok government, mahouts that once brought their elephants into the city for income were left without a way to support their elephants. To address this problem, government and private organizations developed programs to provide these mahouts with a suitable future with their elephants. A few of the largest conservation programs are detailed below.

The Thai Elephant Conservation Center (TECC) in Lampang, in collaboration with the governor of Bangkok, is providing an effective way to keep elephants from returning to the streets of Bangkok. This center gives the elephants new jobs through tourism, as well as other sustainable

ways to earn income. The Thai Elephant Conservation Center (TECC) has many different tourist attractions centered on elephants. Regular shows are held in the TECC to raise funds as well as display the intelligence and utility of the elephants. The mahouts train their elephants to create paintings during the show that can be sold for up to \$700 USD. Other attractions include riding elephants, making elephant dung paper, and feeding elephants. This particular activity helps to promote the eco-friendly tourism of Thailand, while spreading the awareness of the importance of elephants. Through these efforts, the TECC has managed to greatly reduce the need for mahouts and their elephants to enter Bangkok to earn a living. The TECC compound also includes an elephant hospital and mobile clinic that treats injured elephants from around Thailand including the city of Bangkok. (TECC, Personal Communication, January 20, 2010).

The Bring the Elephant Home (BTEH) project's mission is to help Thai elephants by promoting eco-tourism and protecting and pro-creating a natural habitat for the elephants. Elephants in this program are relocated to the BTEH's elephant park, where they can live the rest of their lives as elephants without being trained, chained, or overworked. The Bring the Elephant Home project created an elephant rescue team that consists of 12 people who raised awareness about the need for nature conservation and the problem of urban elephants by making their way through areas of Thailand, including the provinces of Surin, Ayutthaya, Lopburi and Sukhothai. However, the project believes that mahouts have to also earn money in order to take good care of their elephant. Therefore, they promote animal friendly ways of making money with and for the elephants (Bring the Elephant Home, 2010).

Due to deforestation in Thailand, many elephants have lost their home and the Asian elephant is considered an endangered species. In 2008, the BTEH started a project called Trees for Elephants. Through this project, the BTEH has planted 100,000 trees in areas where the elephants are most threatened. In 2009, they planted 44,000 trees and have continued to take care of the trees they plant. Their goal is to continue replanting natural habitats and food in hopes to strengthen the wild elephants' population levels (Bring the Elephant Home, 2010).

Somphol Chaisiriroj, Vice President of Arrow Product, I.C.C. International Public Company Limited, initiated the Don't Hurt Me project. Through this program, Somphol launched the Elephant Reintroduction Fund Raising Project. This project sells elephant polo shirt collections

in order to raise money to support Thai elephant conservation efforts and promote awareness of issues facing Thai elephants such as urban elephants and low a decreasing wild elephant population. In 2008, the program was able to fund the reintroduction of five elephants to the various locations in the wild (Arrow Shirts, 2010).

Located in Ayutthaya, The Elephant Stay has focused on preserving the relationship of mahouts and elephants. The Elephant Stay has taken this approach order to accomplish their mission to create a sustainable future for elephants. The Elephant Stay has many eco-friendly tourism activities such as: trekking, theater production, and elephant painting. They also provide a stable monthly income for about 50-60 mahouts through jobs and also provide them housing throughout the year. The program focuses on building a community infrastructure in order to support mahouts and their families. Over 90 elephants reside at The Elephant Stay, and they are pared with a mahouts based on the mahouts' skill level and a personality match. This program is different in the sense that it does not keep the traditional role of elephants and their mahouts. The Elephant Stay is currently researching sustainable roles outside of tourism for the elephant including elephant dung for fertilizer (Personal Communication with Ewa Narkiewicz, February 2010).

The Surin Elephant Study Center is situated adjacent the Ban Ta Klang Village in Surin Thailand. The village consists primarily of mahouts and their elephants, and elephants hold a very central role in the village's daily life. The Surin Elephant Study Center is a project funded by the Thai government in an effort to encourage mahouts currently in other provinces to return to their homes in the Ban Ta Klang village. Mahouts are given 8,000 baht per month to support themselves and their elephants. They are also provided with a house and a place to keep their elephant at night. The Study Center holds daily elephant shows, and offers rides to school groups and tourists as additional income sources.



METHODOLOGY

The goal of our project was to study the changing roles of elephants and mahouts in an increasingly technological Thai society and propose solutions that help maintain the importance of elephants in Thai culture. We achieved this goal through three objectives:

1. *Evaluate current and previous efforts to regulate the presence of elephants and their mahouts in Bangkok.*
2. *Evaluate programs designed to provide new roles for elephants and their mahouts.*
3. *Investigate additional alternative income sources for mahouts and their elephants in the Bangkok area.*

We have developed a graphical representation of how our goal was accomplished that can be seen below.

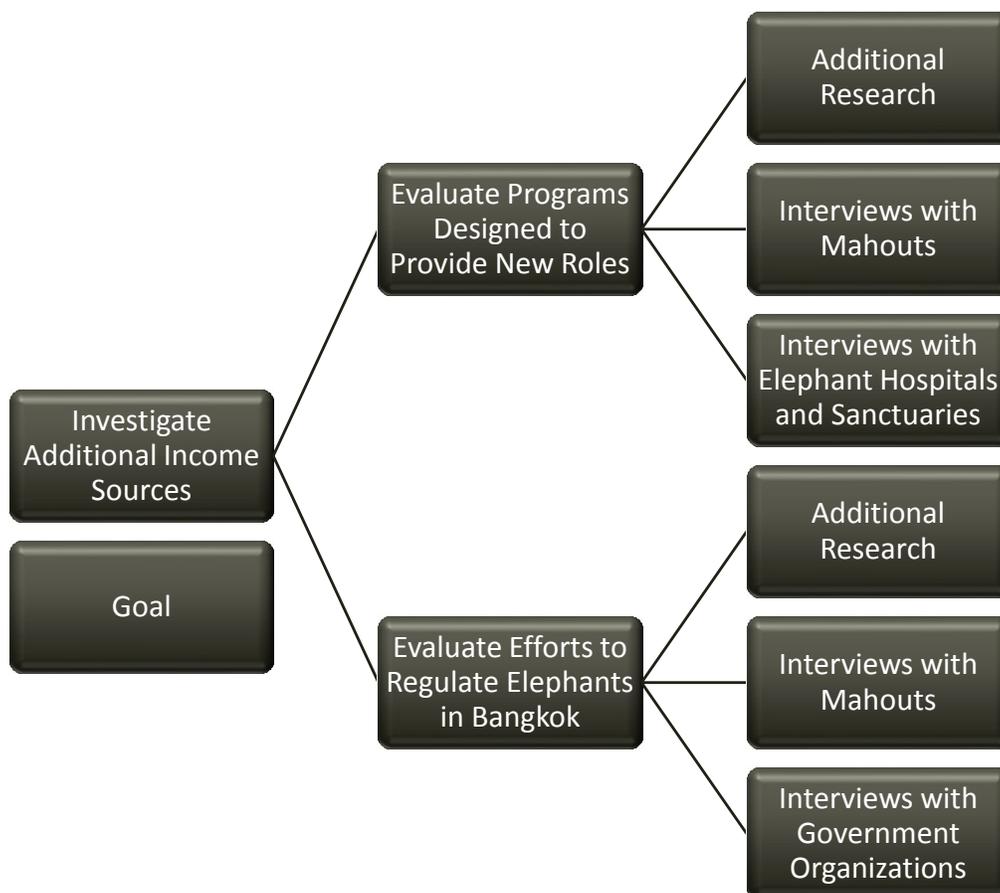


Figure 7: Graphical Representation of the Breakdown of the Goal

Objective 1

Evaluate current and previous efforts to regulate the presence of elephants and their mahouts in Bangkok.

To accomplish this objective, we conducted both background research and semi-structured interviews. The background research allowed us to determine which efforts had been enacted, while the semi-structured interviews with government officials and mahouts helped us gather the information necessary to effectively compare the efforts. By assessing the laws and regulations, we were able to determine the gaps that existed in Bangkok's efforts.

Based on the information gained from our research, we then conducted several semi-structured interviews with key informants and stakeholders including prominent elephant veterinarians at the Thai Elephant Conservation Center and in the Bangkok area (Dr. Titiporn Keratimanochaya, Dr. Sittidet Mahasawangkul, and Dr. Alongkorn), Richard Lair (a well-known Thai elephant activist), and Malin Pongsapipatt (a Thai documentary producer). Before these interviews, we developed initial questions about government efforts. These varied depending on the interviewee's background, but focused on what aspects of these efforts worked and the obstacles that have hindered the efforts' progress. Our Thai group members conducted the interviews in Thai and later translated the information gathered into English.

It was unrealistic to develop a quantitative method of comparison because it was impractical to determine which laws and regulations affected which types of elephants or mahouts. Therefore, we evaluated these efforts using qualitative analysis. The qualitative evaluations were based on which programs were deemed to be working by our interview subjects, and which efforts required change. This method was effective, but it faced many limitations. If a subject was biased, our data became skewed. Similarly, not all sources had the same amount of exposure to the government's efforts. Therefore when evaluating a program, we also evaluated the sources we were using and adjusted the level of input that source had based on its biases and the degree to which they operated within the government's programs.

Objective 2

Evaluate programs designed to provide new roles for elephants and their mahouts.

Because developing technologies have led to the loss of traditional roles of elephants in Bangkok and the rest of Thailand, there have been efforts to provide new opportunities to mahouts and their elephants. Our research allowed us to determine how many mahouts these programs could support, and how these numbers fluctuated with the rise and fall of Thailand's tourist seasons.

In order to achieve this objective, we conducted interviews with mahouts, elephant hospitals, and elephant conservation programs. These interviews gave us important information regarding the care of elephants, the types of injuries they sustain while entertaining tourists, their opinion about the state of current conservation programs, and their ideas for possible future solutions. The interviews we conducted at Dusit Zoo, TECC, and The Elephant Stay were held with representatives from these centers and were semi-structured. We were able to visit an Elephant Village in Surin and interview twelve mahouts. The interviews with the mahouts, elephant hospitals, and conservation programs were conducted in Thai, and then translated to English.

The visits also allowed us to observe the relationship between the mahouts and their elephants and an opportunity to see the roles elephants play in tourism. We visited the Dusit Zoo in Bangkok, Thai Elephant Conservation Center (TECC) in Lampang, The Surin Elephant Study Center in Surin, and The Elephant Stay in Ayutthaya. By visiting elephant sanctuaries in Thailand, we observed potential alternative employment opportunities for mahouts. Once we understood the operations of these sanctuaries, we were better able to suggest additions to these programs to provide sustainable income for mahouts throughout the year.

It was also not possible to develop an accurate quantitative method of evaluating the conservation programs; however, the additional research performed on these conservation programs gave us qualitative information needed in order to properly evaluate them. The qualitative evaluations were based on which programs appeared to be working based on information obtained from our interviews with conservation programs, and which efforts required change. When evaluating conservation programs, we also evaluated the biases based on their respective goals regarding helping the Asian elephant.

Objective 3

Investigate additional alternative income sources for mahouts and their elephants in the Bangkok area.

We first analyzed the previous and current efforts to provide mahouts and their elephants with income sources. We obtained information from several sources that are both knowledgeable about the roles of elephants in Thai society and that have actively been working on adopting these roles to the changing society. Some of these sources were the TECC and The Elephant Stay. From interviews with these sources, we learned about the alternatives that are currently being employed to help elephants earn income. We asked questions about bio-gas systems, the making of elephant dung paper, elephant paintings, elephant shows, and historical re-enactments. These questions were directed to the head of the respective organizations that perform the activity. The interviews were open ended and lasted about 30 minutes. The interviews took place in Thai language but translations of major points can be found in Appendix A: Interviews.

In order to learn more about current and possible solutions to the elephant problem, we conducted additional research. Research was conducted on topics such as the many uses of elephant dung, the seasonality of tourism, and efforts made by various camps to provide new roles. This information was gathered from newspapers, scholarly journals, government reports, and the websites of many elephant conservation camps.

Incorporating the Roong Aroon Students

Our project sponsor, the Roong Aroon School, paired our project group with four of their students that had conducted research on elephants. Our sponsor's liaison, a teacher at the school, recommended that we utilize them as a resource by obtaining relevant information from them. This information included further background knowledge and contacts with elephant activist groups, hospitals, and sanctuaries. The Roong Aroon students also helped us with archival research by researching relevant news articles regarding elephants in Thailand. The

Roong Aroon students also acted as translators for the WPI students during the Dusit Zoo, TECC, and Surin interviews (Figure 8). The students helped us expand on the information that we could not obtain while in the U.S. They were also crucial in organizing our trip to the mahout village in Surin. The students also assisted us by conducting several interviews in the Surin Elephant Study Center that is adjacent to the mahout village.



Figure 8: Roong Aroon Students Interviewing a Mahout at the Surin Elephant Study Center

Working with the Roong Aroon students also provided the WPI students with a great opportunity to further understand the Thai culture. It was helpful for us, as well as The Roong Aroon students, because it allowed them to gain experience while working with different cultures and at a different education level. We also exchanged research information with them to aid them in their separate project of designing a public awareness campaign about alternative roles for elephants including, but not limited to, those that we suggest.

Weekly meetings were held with the Roong Aroon students in which presentations were given by our respective groups to outline the progress of the previous week and plans for the upcoming week. This allowed us to work efficiently with one another, and improved all of our presentation

and project organization skills. For more information on the Roong Aroon School, please see Appendix B: Sponsor Description.

Cultural Limitations and Boundaries

Throughout this project journey, we expected to run into many issues regarding overcoming cultural boundaries. The largest boundary to overcome was the language barrier. Since most Thai people do not speak English and the WPI students on our team have little knowledge of the Thai language. Our Thai team members helped our team translate documents and conversations. While we did anticipate the language barrier, there were several obstacles that we did not expect to encounter during this project.

One major obstacle that we faced was the mistrust from mahouts towards us. Because bringing elephants into cities is illegal, they feared that we would release their information, or that we were conducting governmental research. To gain their trust, we informed them that we were a student group, and that any information that would identify them would not be recorded or reported. With the help of our Thai team members, and our slow progression into more sensitive topics, our group was able to gain the mahouts' trust. Another problem issue that arose while conducting interviews was dealing with biases from our interviewees. Because there are many approaches in preserving the health of elephants in Thai culture, peoples' bias towards one particular effort could skew our findings. To account for this, we interviewed a wide range of professionals and took into account any biases they may have.

While conducting interviews, the problem of social stigmas and taboos could have arisen. Our Thai partners helped the team avoid this by reviewing the interview questions so that they would not be offensive to those that we were interviewing. Our group also submitted our interview questions to the WPI Institutional Review Board (IRB) for review. Our approval from the IRB allowed us to avoid many issues dealing with cultural limitations. We were also able to use cultural boundaries to our advantage, as a question asked by a foreigner might not seem that offensive as a question asked by a Thai citizen. This issue was gauged by background knowledge and communication with the Thai team members.

FINDINGS AND ANALYSIS

Through our research and evaluations, we have reached several findings regarding the changing roles of elephants and mahouts in an increasingly technological Thai society. This chapter first describes why mahouts bring elephants into the city, outlines the successes and failures of laws and regulations and conservation programs, and details the reasons behind these results. It then explains the factors that are hindering the improvement of these efforts. We found that many of the current efforts to preserve the future of elephants in Thailand are successful at promoting the importance of elephants in Thai culture, creating a natural habitat for elephants, and providing jobs for mahouts. However, there are several aspects of these programs that require adjustments in order to provide a sustainable future for elephants and mahouts.

Finding 1

Two distinct types of mahouts are entering Bangkok: entrepreneurial mahouts and traditional mahouts.

Through evaluation of our gathered data, interviews, and observations with mahouts and elephant groups, we found that bringing elephants onto the streets can be a lucrative alternative for mahouts. The practice of bringing elephants to city streets is no longer utilized only by mahouts for trying to feed their elephants, but as a source of income for themselves. As a result, two types of mahouts have developed in Bangkok: *traditional mahouts* and *entrepreneurial mahouts*.

Traditional mahouts catch and raise their elephants by themselves; they own their elephants. Moreover, they carry out traditional religious ceremonies before catching the wild elephants. Most of these traditional mahouts treat their elephants as a part of their family and care greatly about their elephants' welfare. The mahouts in the tribe grew up with elephants as a part of their life, one of the mahouts said, "I rode my elephant to school every day" (Personal Communication with Mahout A, January 18, 2010). Unfortunately, 70% of traditional mahouts lost their income due to the 1989 logging ban (Baker & Kashio, 2002). Subsequently, a large

fraction of traditional mahouts had no alternative other than taking their elephants to the cities to earn a living.

Recently, new types of entrepreneurs have developed who invest in buying and raising elephants to lease them out to mahouts or common people. Common people only need to train for three weeks in order to ride and control elephants (Personal Communication with TECC, January 2010). These mahouts or commoners choose to walk the elephants only because of the huge amount of income these elephants bring. These people are known as *entrepreneurial mahouts*, they are concerned only for their benefits and ignore about their elephants' welfare. Entrepreneurial mahouts view their elephants as a source of income without any close bond, thus these elephants are at a higher risk for inhumane actions. Because of these traits, entrepreneurial mahouts are one reason why the government hasn't been completely successful in eliminating street elephants from Bangkok. These entrepreneurial mahouts have less reason to leave the city. They are interested in the profit, and while conservation camps do offer elephants and mahouts a home, typically the salary they are paid is less than what can be earned on the streets.

Finding 2

Despite the 95% decrease in the number of elephants entering Bangkok each night from 200 to 10 within the past twenty years, laws and regulation efforts to control the presence of elephants in the city are hindered by lax registration practices, a lack of personnel, and a lucrative tourism industry.

It has been illegal to bring an elephant into Bangkok for many decades, but it was not until after the logging ban of 1989 that enforcing this law became imperative (Kurlantzick, 2002). The Stray Elephant Task Force (SETF) was created in 2006 to regulate the presence of elephants and mahouts in Bangkok. Police on the SETF can arrest mahouts and detain elephants under eight different laws in categories such as moving violations, wildlife protection, public health, and urban tidiness. The SETF and other Laws and Regulations efforts have been mostly successful in removing elephants from Bangkok and, since 1990, the number of elephants entering Bangkok each night has been reduced from over 200 to less than 10 (ASTV manager, 2009). Unfortunately, these efforts have not been able to completely eliminate the problem, as approximately 10 street elephants are still currently entering Bangkok each night. The reason

this migration continues is due to a lack of personnel, inefficient registration techniques, and tourism.

Lack of Personnel As the head of the Stray Elephant Task Force, Prayote Promsuwon said, “To be honest, nobody wants to do this job, nobody wants to deal with the elephants” (Fuller, 2008). Domesticated elephants are considered livestock by the government. Therefore, the government organization responsible for domesticated elephants in Thailand is the Department of Livestock Development (DLD). The DLD is responsible for the healthcare of livestock nationwide, and carries out this responsibility through a network of veterinarians. Veterinarians trained to care for elephants are difficult to find, and the few veterinarians that are trained in elephant care often find their resources stretched very thin (Personal Communication with Dr. Alongkorn, February 2010).

Registration The DLD currently employs a system that uses microchips embedded under the elephants’ skin to keep track of the domesticated elephants under their jurisdiction. Dr. Alongkorn, an elephant veterinarian for Thailand’s royal family, stated that elephants are not registered with the DLD until they reach eight years old. This allows mahouts to capture wild elephants at the age of five, when they no longer rely on their mother for sustenance, and implant microchips removed from already domesticated elephants. Sometimes, the elephants’ mother is killed during the capture (Dr. Alongkorn, personal communication, February 5, 2010). Little standardization is used when placing the microchips in the elephants. The microchips can be put in different places on the elephant and different types of microchip can be used (Kanjanapunka 2009). Due to this lack of regulation, is nearly impossible for the DLD to monitor the number of elephants that are being removed from the wild, and brought into captivity.

Tourism Tourists enjoy seeing the elephants roaming the streets in Bangkok because few other cities present such a spectacle. They are the major force supporting the mahouts and making it profitable for them to bring elephants into the city. Tourists provide so much income, in fact, that mahouts can often pay law enforcement officials to allow them to remain on the streets (Personal Communication, Mahout A, January 8, 2010). Alternatively, tourism provides sources of income for mahouts and their elephants that do not involve roaming city streets. These jobs

are healthier for elephants and legal for mahouts but, due to the seasonal nature of Thailand's tourist season, some jobs do not exist year-round.

Consequences As a result of the 95% effective measures to keep elephants off the streets of Bangkok, mahouts and their elephants have started migrating to the streets of other cities and provinces in order to continue their lucrative practice. Phuket, Pattaya, and Buri Ram are places still plagued by the itinerant elephant. There are over 100 elephants registered in Buri Ram (Piragsa, 2010). There is a need to conduct further research on the extent of the urban elephant problem in other Thailand cities and provinces.

Finding 3

Conservation programs are improving the quality of life of elephants in Thailand by promoting awareness, creating natural habitats, and providing income sources for mahouts, but their success is limited by a lack of funding.

By preventing elephants from entering Bangkok, Laws and Regulations eliminated a way of making a living for mahouts. Conservation programs have attempted to provide new roles and homes for the displaced mahouts and their elephants. These efforts are from both government and non-government organizations. The following describes the success and failures of these two types of organizations.

Non-Government Conservation Programs Many non-government organizations (NGOs) play a role in starting and financially supporting conservation programs to provide elephants and their mahouts a place to work. NGOs are all non-profit and rely heavily on donations. Their conservation programs realize that elephants need a sustainable role in society. As a result, they have given the elephants and their mahouts' new jobs through eco-friendly tourism, as well as other sustainable methods of earning income, in order to utilize every resource of the elephant.

The conservation programs also work to protect and pro-create a natural habitat for the elephants by raising awareness about the need for nature conservation and the problem of urban elephants. For example, the Arrow Product, I.C.C. International Public Company Limited, which funds the [Elephant] 'Don't Hurt Me' project, sells polo t-shirts depicting elephants to raise public

awareness. These t-shirts have proven to be very popular. The proceeds from the sales go towards elephant conservation programs ("Send Me Home Project", 2008). Another conservation program, 'Bring the Elephant Home', has implemented a 'Trees for Elephants' project in 2008. In 2008, they planted 100,000 trees in areas where the elephants are most threatened. As of 2010, they have planted 44,000 more trees, and have continued to take care of the trees they planted last year. The goal is to continue replanting natural habitation and food for the elephants to strengthen the elephants fight for survival and prevent extinction of the Asian elephant ("Bring The Elephant Home - About BTEH", 2010).

The conservation programs also work towards ways of making money with and for the elephants while keeping jobs for the mahouts in mind. An example of this can be seen at The Elephant Stay in Ayutthaya. At this camp, tourists can see, buy food for, and ride elephants (Elephant Camp 2010). In Ayutthaya there are also tours of the city given from the back of an elephant. The money from these tourist activities supports the elephants and the mahout community. Also, to solve the problem of the tourist off-season, The Elephant Stay offers the mahouts a stable income, which comes from donations, and the income generated from the tourist season (Elephant shelter 2004).

Government Conservation Programs While the government is responsible for regulating the number of elephants entering Bangkok, it also takes part in providing alternatives for mahouts and elephants forced to leave the city. The government planned, but never implemented several conservation programs due to lack of funding. In 2002, it was suggested that mahouts and their elephants be offered jobs as scouts in national parks. Also, in 2006, another project failed at encouraging mahouts to leave Bangkok. Under this government program, the mahouts could earn up to 12,000 baht (375 USD) per month if they agreed to live with their elephants in an area outside of Surin, which is northeast of Bangkok (Fuller 2008). However, if the mahouts were offered money by the government to relocate themselves and their elephants, many mahouts would choose not to participate in the program. This is because the mahouts rent the elephants, so the original elephants' buyers, the entrepreneurs, would receive the profit, not the mahouts (Personal Communication Dusit Zoo, January 2010).

However, there have also been successful efforts by the government to implement conservation programs. A government-funded conservation program, The Thai Elephant Conservation Center (TECC), is also involved in promoting eco-friendly tourism and sustainable roles involving elephants. Committed to preserving the traditions of the elephant, the TECC holds daily elephant shows and has found uses for every resource of the elephant. In this center there are facilities to make paper and bio-gas out of elephant dung. The proceeds from elephant rides, elephant paintings, and elephant dung paper go directly back to supporting the elephants. The TECC also hires mahouts, and has managed to greatly reduce the need for mahouts and their elephants to enter Bangkok to earn a living (Personal Communication with TECC, January 20, 2010).

Another government conservation program, The Elephant Reintroduction Foundation, is working alongside Bangkok Governor Sukhumbhand Paribatra to buy street elephants, rehabilitate them, and return them to the wild. As of 2008, the Foundation had enough funds to purchase 18 elephants, priced between 500,000 baht (15,625 USD) to 1 million baht (31,250 USD). The Foundation also employs 60 mahouts to take care of their elephants. This is important because jobs are still being provided to the mahouts, and their relationship between them and their elephants is being respected (Bangkok introduces, 2009).

Factors Contributing to the Programs' Limited Success A lack of resources is a prominent factor of why many of these programs fail. Non-government organizations are all non-profit and rely heavily on donations. Often these donations cannot cover the operation costs of an elephant conservation center. In addition to a lack of funds, a lack of available space is a contributing factor to the programs' limited success. Due to deforestation, there is often no available land and wild for the elephants to occupy. Deforestation also contributes to the lack of available food needed to sustain the large number of elephants that these centers hold. Another factor contributing to limited success is tourism. Tourists are the driving economic force supporting elephants and their mahouts. Subsequently, seasonality is also a large issue in the success of conservation programs. These conservation programs are usually at the mercy of Thailand's fluctuating tourist seasons and cannot provide a stable income to mahouts during the tourist off-season [March to October]. When it is tourist off-season, mahouts turn towards other job

alternatives, which are usually returning to the streets of Bangkok (Personal Communication with TECC, January 2010).

Finding 4

Although conservation groups have a common goal, different approaches are causing a lack of cooperation among groups that is detrimental towards their common goal.

While many conservation programs have the same main goal of helping itinerant elephants, they all have a different perspective of how to accomplish this goal. For example, some conservation programs follow the ideology that the way to help the future of elephants in Thailand is to release them into the wild, while others believe that in order to help the elephants they must find ways to integrate elephants into the advancing Thai society. These conflicting interests hinder the programs' ability to work effectively with each other (Personal Communication with Malin Pongsapipatt, January 2010). From our research and interviews, we have not observed a major effort from the conservation programs nor the government to work with each other to help Thailand's elephants.

Through our interviews and observations, we ascertained that not only is there a lack of cooperation between the conservation programs themselves, but there is also no real collaboration between these programs and the different government organizations. Because the NGOs have to obey the laws of the Thai government, there is more order. Yet, these laws can be detrimental to the ability of these organizations to protect the future of elephants in Thailand. For example, due to government laws, the TECC cannot assist wounded elephants in the wild (Personal Communication TECC, January 2010). Although NGOs' may have a significant effect on public opinion, their ability to influence the problem is limited due to their lack of legal authority (Personal Communication with Malin Pongsapipatt, January 2010). The biggest obstacle to the relationship between these two groups is lack of effective collaboration due to conflicting interests or approaches. For example, during our research, we contacted 'conservation program A' and were in the process of setting up an interview. However, once 'conservation program A' found out that we interviewed 'conservation program B', they cut off all contact with us. One reason for this lack of cooperation is that there is currently no central

organization to oversee and coordinate the efforts of the government agencies and regulate those of the NGOs (Personal Communication with Malin Pongsapipatt, January 2010).

Finding 5

A lack of trust from some mahouts towards conservation efforts prevents the mahouts' full cooperation with potentially beneficial programs.

Based on interviews conducted with mahouts with various backgrounds, we have found that some have a weary attitude, or mistrust, towards most elephant conservation programs. These mahouts have therefore been reluctant to cooperate with these programs (Personal Communication with Mahout A, January 2010). Richard Lair feels that mahouts trust the Thai government. In fact they see that the government has tried and is continuing efforts to help the mahouts (Personal Communication with Richard Lair, February 2010). Similarly, in all of our mahout interviews in Surin, the mahouts expressed that they also trust the government and acknowledge that the Thai government is making efforts to help the mahouts and their elephants (Personal Communications with mahouts, February 16-18, 2010). However, during other interviews with mahouts, mistrust directed mainly towards programs that are government funded was expressed. Several accounts from mahouts that have worked with some of these organizations reveal that the payments mahouts receive from some organizations are far less than what was promised (Personal Communication with Mahout A, January 2010). Many organizations receive funding from the Thai government in order to pay the mahouts. Some of these mahouts have reported instances where the money that was allocated for their income suffered losses as it moved through departments, thus leaving the mahouts without enough income to support their elephants. Because of the fear of receiving much less income than promised, many mahouts refrain from collaborating with conservation programs (Personal Communication with Malin Pongsapipatt, January 2010).

As seen from our interviews in Surin, this mistrust is not a wide spread attribute for mahouts in Thailand. However, the Surin mahouts' opinion on the government could stem from the fact that they are employed by a government organization. We had to take into account that the mahouts may not speak badly about their current employers. The feelings of mistrust about conservation

programs that we obtained were from mahouts not currently participating in a conservation programs. There is still a level of mistrust in many mahouts. Without increased efforts to show these mahouts that improvements are being made, they will remain apprehensive about participating in conservation programs.

Finding 6

A designated location for elephants in the Bangkok area is not feasible because of pollution, high cost, and concerns of market saturation.

Our initial hope was to develop additional alternative income sources for mahouts and their elephants in the Bangkok area, but our research has shown that this is not feasible. The dirty air and water in the Bangkok area bears several negative consequences. Breathing polluted air can cause respiratory problems in elephants, and drinking polluted water causes gastrointestinal complications. High pollution levels in the air and water also causes the vegetation in and around Bangkok to be toxic for the elephants to eat (EleAid 2007). When asked about the feasibility of a central location for elephants in the Bangkok area, Richard Lair stated that the cost of caring for elephants in Bangkok would be difficult to overcome (Personal Communication, Richard Lair, February 12, 2010). Many of the staples of an elephant's diet do not grow in the Bangkok area and would have to be imported from elsewhere, increasing costs (Personal Communication, Eva Narkiewicz, February 9, 2010).

Having an elephant camp in the Bangkok area may also draw business away from The Elephant Stay in Ayutthaya. Ayutthaya is about one hour's drive from Bangkok, and much of the camp's income comes from tourism. Having an additional camp in Bangkok may create unwanted competition between two entities with the same goal, possibly resulting in the failure of both. The Food and Agriculture Organization of the United Nations has conducted initial research on this topic. However, further in-depth research will need to be conducted on market-saturation. Finally, setting up an elephant camp inside of Bangkok or directly outside of Bangkok would be an attraction for more elephants and mahouts to come into the city. With a nearby camp, mahouts would have a reason to flock to the city. If the pay is not what was expected or the mahout wanted to try and make more money by walking the streets of Bangkok it would be that

much easier for them to do so. Drawing more elephants towards the city would be detrimental to keeping mahouts from walking the streets with their elephants begging for food (Lohan 2002). Considering all of these issues, creating an elephant camp inside of Bangkok or directly outside of the city is not a feasible option.

Finding 7

Supplementary income sources, including bio-gas and fertilizer production, exist for elephants but they are not being used to their full potential due to a lack of funding, research, and awareness.

Our research has shown that there are already many feasible income substitutes, including technological alternatives, which elephants can take part in to support themselves and their mahouts. This includes making items such as bio-gas, paper, fertilizer, and even mosquito repellent from elephant dung. Elephant dung has long been considered a drawback of gathering large amounts of elephants together in one area and a bio-hazard to the surrounding land. However, with these new alternatives, elephant dung can become a money making asset. Unfortunately, current applications of these ideas in Thailand have been limited.

Bio-gas Bio-gas is an effective way to reduce the operating costs of elephant conservation centers that is currently under-utilized. The temperature in Thailand is the ideal temperature for making biogas, taking away the need for additional temperature controls. However, as of 2004, only 7 out of 20 elephant camps in Chonburi, Kanchanaburi, Prachaubkeereekhan, and Lampang made bio-gas from elephant dung (National Elephant Institute 2004). Three of the major elephant camp spots in Thailand, Ayutthaya, Surin, and Chiang Mai, do not implement this technique. Making bio-gas from elephant dung is a new procedure, and is still in initial stages of research. Many elephant camps are wary about trying bio-gas, as there is not much documentation on the subject (Personal Communication with Ewa Narkiewicz, February 2010). Many people also do not know of this technique yet as it is not widely advertised. The TECC is successfully implementing biogas production. The TECC in Lampang currently uses the methane from their bio-gas production for use in mahout's cooking stoves, the cooking stoves in the kitchens of their visitor's centers, and conversion into electricity (National Elephant Institute 2004). Below is a table showing the TECC's use of bio-gas.

	Bio-gas Production (m ³ /day)	Cooking (m ³ /day)	LPG Substitution (kg/year)	Water Pumping (m ³ /day)	Diesel Substitution (L/year)
Anaerobic Digester (50 m ³)	8	3. 27	549	4. 37	1,036
Anaerobic Digester (100 m ³)	18			18	3,942
Total	26	3. 27	549	22. 73	4,978

Table 1: Fuel Substitution Using Bio-gas at the TECC

(National Elephant Institute 2004)

One concern about biogas is the cost of installing and the upkeep the digester tank.

Below is a table of the investment costs for the TECC.

	(Baht)	(\$USD)
Research	85,719	2,143
Installation		
50 m³ Tank	311,045	7,776
100 m³ Tank	500,000	12,500
Total Cost	896,764	22,419

Table 2: Investment Costs for the TECC Bio-gas System

(National Elephant Institute 2004)

Installation costs for the digester tank are fairly expensive. This is due to the fact that the digesters the TECC owns are concrete and installed underground. Tanks can be made from other materials and installed above ground to reduce costs. Further research regarding cost reduction techniques for the biogas making process needs to be conducted. If costs for this process were reduced, more camps may be interested and able to implement this supplemental income source.

Elephant Dung Paper Making elephant dung paper is a supplementary income source that is currently utilized by few camps but has the potential to be used in elephant camps throughout

Thailand. Making elephant dung paper is a process that started at the Thai Elephant Conservation Center (TECC) in Lampang although it is sold in several places online. The inventor of the paper, Wanchai Asawawibulkij, oversees the paper's production at the TECC. Paper made from elephant dung is cheap and easy to manufacture. Elephants produce about 50 kg of dung a day, which can be turned into 115 (18"x24") sheets of paper. Elephant dung is an ideal material for making paper because the elephants' digestive system does not completely break down the fibers from their food. First, the dung is collected and washed and boiled for five hours. Then it is spun for three hours to get the fibers to the correct consistency. At this point, color can be added to produce different tones. Next, the dung is mixed with water and sifted into frames to be left in the sun all day to dry (Figure 9). To produce a smooth surface, it is sanded and made into products such as notebooks and diaries that can then be sold. Any kind of paper product can be produced (Personal Communication with TECC, January 2010).



Figure 9: A TECC Employee Making Elephant Dung Paper

Some drawbacks of this process are that it is time consuming and requires laborers to make the paper. This process is publicized much more than bio-gas and even has several websites selling the paper produced, however not many elephant camps actually produce the paper. Other elephant camps throughout Thailand could easily use elephant dung paper production as long as

laborers were found to operate the production of it. Making paper out of elephant dung is also a cheap and effective way to get rid of a product that is normally considered a waste problem.

Fertilizer Fertilizer is another excellent way to take elephant waste and turn it into a useful product. Fertilizer is a natural byproduct of the bio-gas and paper making processes. The slurry (by-product) from the bio-gas process makes excellent nearly pathogen-free fertilizer. This fertilizer can be used to increase crop production and maintain soil fertility (Figure 10). Currently, the TECC in Lampang utilizes the byproducts from paper-making and bio-gas production as fertilizer (National Elephant Institute 2004). Other elephant camps, such as Ayutthaya, use the straight elephant dung in compost to produce fertilizer (Personal Communication, Ewa Narkiewicz, 2010). Fertilizer could also be sold, as well as utilized, by the producer in order to make more money. This use for elephant dung is free to utilize and healthy for the environment.

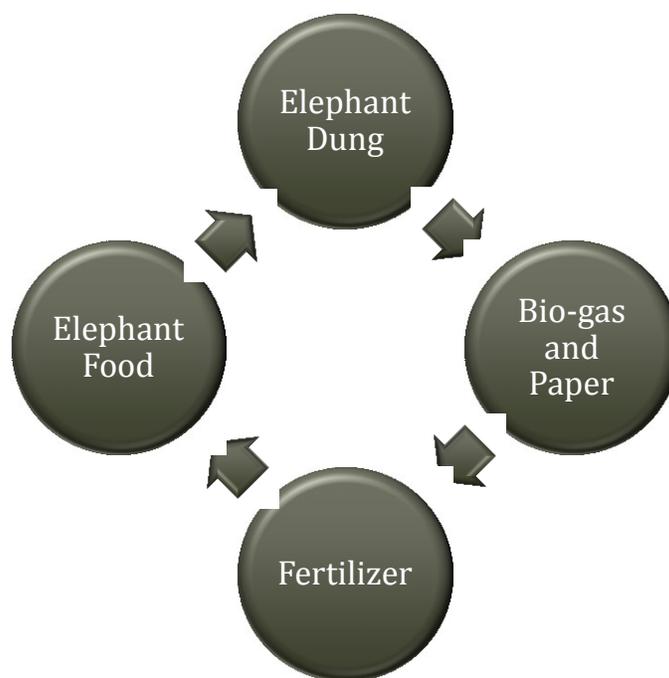


Figure 10: The Cycle of Utilizing Elephant Dung to Reduce Costs

Mosquito Repellant Elephant dung can be used as an effective mosquito repellant that has virtually no limitations aside from the lack of knowledge about it. Currently, only India and Africa are utilizing this use for dung; it has not yet been seen in Thailand. It has only recently been discovered that the burning of elephant dung is a strong mosquito repellant (Khan 2009).

Elephant dung is a good source for mosquito repellent because its smoke is effective and does not have an odor, but it is currently unknown if burning elephant dung is harmful to the environment. In Bihar, India, at the world famous cattle fair each year, people flock to the elephant market section of the fair in order to collect the dung and sell it to burn as mosquito repellent (Khan 2009). As it is a relatively new application, the knowledge of this use has not spread beyond India yet. This application of dung also does not cost any money, which makes it a very feasible option.

Conclusions

Through our interviews and research, we have discovered that a new type of mahout has evolved due to the changing roles of elephants in Thai society: the entrepreneurial mahout. Along with a lack of experienced personnel and poor registration regulation, this new type of mahout is one reason that the government has not been completely successful in removing street elephants from Bangkok. We also discovered that there are many conservation programs that are trying to improve the quality of life of elephants in Thailand but, because the conservation programs have different approaches to this common goal, a lack of cooperation is limiting their success. Through our discussion with many experts about the possibility of creating an elephant camp in or near Bangkok, we discovered that it might not be feasible due to high costs, pollution, and potential competition with the nearby elephant camp, The Elephant Stay, in Ayutthaya. Several camps have developed eco-friendly ways of raising additional funds by utilizing elephant waste. However, due to a lack of communication and cooperation, many camps are not employing these methods and must dispose of tons of waste every day by conventional and often costly means.

RECOMMENDATIONS

Our recommendations fall under four categories: Recommendations for Laws and Regulations, Recommendations for Conservation Centers, Recommendations for Further Research, and Recommendations for Future Researchers. We plan to send these recommendations to the governor of Bangkok, Sukhumbhand Paribatra, and the major conservation camps we visited, in the hopes that they will be considered. The four Roong Aroon students we worked with plan to publish a book that we hope will also contain these recommendations.

Recommendations for Laws and Regulations

Our findings show that the efforts from the city of Bangkok to regulate the presence of elephants in the city have been successful, but there are several ways that the government can improve their efforts.

We recommend that organizations responsible for the registration of domesticated elephants adopt improved registration tactics including periodic renewals of microchip information, a standard microchip, and consistent microchip location.

In order to accurately register and track domestic elephants in Thailand, the current registration laws need to be adopted to cover gaps in the current registration process. As of now, elephants are not required to be registered until they are eight years old. As a result, baby elephants are often captured from the wild around the age of five and trained for domestic life. During the capture of young wild elephants, their families are sometimes killed so they will not interfere with the capture. To combat this practice and ensure the correct registration of elephants in Thailand, experts suggest that the law be changed to registering new baby elephants at 30 days of age. In this stage of development, the juvenile elephants are not able to survive by themselves. By registering the elephants at this age, it will ensure that only domestically born elephants are registered as well as improve the safety of wild elephants (Personal Communication with Dr. Alongkorn, February 2010). Another way the current registration system is circumvented is through the transfer of registered chips from one elephant to another. Older elephants captured

from the wild are sometimes given chips already registered to domesticated elephants. We recommend that the elephants' registration be renewed periodically. This practice would drastically cut down on the capture of wild elephants and consequently, the false registration of them as domesticated elephants. We also suggest that microchips be standardized. Currently, microchips are inserted into different locations and different types of chips are used, some of which are harder to read than others (Personal Communication with TECC, January 2010). Standardization of the type and location of these microchips would improve the Thai government's ability to track the number of domestic elephants in Thailand.

We recommend that the legal restrictions on elephants in the city of Bangkok be implemented and enforced in all cities of Thailand.

The Bangkok laws and regulations regarding the control of street elephants have led to a 95 percent decrease in the number of street elephants within the last 20 years. Because these efforts have been so successful, we recommend that they be implemented in other cities where street elephants have become a problem in such as Phuket and Pattaya (Personal Communication with TECC, January 2010). Elephants have been banned from Bangkok since the 1940's, but it was only in recent years that the laws were enforced in a strict enough manner to effectively keep the elephants off the streets. With the implementation and enforcement of higher fines and strict laws targeting mahouts and elephants in the city, Bangkok has been successful in alleviating the problem of street elephants in the city. In addition, we recommend that cities experiencing this problem create specific elephant task forces, which consist of a sufficient number of trained personnel, to deal with the street elephants. By implementing these regulations and enforcing them, Thailand will be successful in keeping elephants out of a harmful environment.

Recommendations for Elephant Conservation Programs

Conservation programs have been met with limited success due to lack of funding, lack of cooperation, and lack of consideration of the two types of mahouts. The conservation programs have also met limited success because they are not utilizing the supplementary income alternatives such as bio-gas and fertilizer. We have developed a series of recommendations that

would improve the conservation programs' abilities to preserve the future of elephants in Thailand.

We recommend that awareness of both the traditional and entrepreneurial mahouts be considered when developing a sustainable future for elephants in Thailand.

A solution that considers both traditional and entrepreneurial mahouts must be developed in order to meet the needs of both groups. This solution must provide jobs and a steady salary for both types of mahouts so that they can support both themselves and their elephants. However, each mahout will not be satisfied at the same salary level. Because entrepreneurial mahouts care more about their profit than the elephant's welfare, it may take larger salaries to draw them away from the lucrative practice of bring elephants onto city streets. The promise of food and space for elephants alone will not satisfy them enough to change their current lifestyle. If a solution considering both types of mahouts is found, they will both not have to enter the streets of Bangkok. We also suggest that conservation programs take into account the mahouts' opinions and suggestions on the elephant problem and solutions to improve the programs meant to alleviate it. This will help make the both types of mahouts' needs clear and allow the programs to identify how to meet the mahouts' needs.

We recommend creating a department that oversees all elephant conservation efforts within Thailand in order to improve cooperation between conservation programs.

The different approaches to achieving the ultimate goal of preserving the importance of the elephant in Thai culture have caused conflict and a lack of cooperation between different conservation programs. In order to improve cooperation between these programs, we recommend a central location for information regarding conservation efforts, technologies, and other practices. An overseeing department to regulate communication between the different programs would fill this need. We recommend that this department facilitate periodic discussions or regular workshops in order to freely share information regarding efforts to preserve the future of elephants in Thailand, as well as increase profitability of conservation programs. Similar efforts have been used internationally and have been meet with success. For example the Food and Agriculture Organization of the United Nations held a successful forum in

Bangkok in 2002 (Baker Kashio, 2002). This was greatly beneficial to the elephant conservation community in Asia. A regular workshop focused on Thailand would benefit the Thai elephant conservation efforts and allow for communication regarding supplemental income sources between Thai elephant conservation programs.

We recommend that elephant conservation programs and elephant camps implement supplemental income sources such as bio-gas, mosquito repellent, fertilizer, and dung paper production into their daily efforts.

Few conservation programs are implementing sustainable alternatives to the elephants' current role of tourism. These alternatives include bio-gas, fertilizer, elephant dung paper, and mosquito repellent. These alternatives hold promise; however, the realistic benefits of these alternatives lie in the reduction of operating cost for elephant camps rather than being the primary source of income. Two main reasons for the low level of involvement in such programs are a lack of awareness and a need for more funding. We recommend that information about these programs be freely shared in order to spread awareness. Similarly, we recommend that the Thai government help to fund projects that initiate the involvement of conservation programs in the use of alternative income sources. This would require extensive private or governmental financial support, without which adaptation of these alternatives would not be feasible.

Recommendations for Further Research

While our recommendations can improve the efforts of both the Thai government and NGOs to preserve the future of elephants in Thailand, there are several gaps in the current knowledge of the problem of itinerant elephants in Thailand, and of the supplementary income sources outlined in our findings. This section outlines efforts to bridge these gaps.

We recommend continued research and further development of cost reduction techniques for conservation programs, including bio-gas and fertilizer production.

Although income supplements such as bio-gas and fertilizer are effective ways to increase profit margins for conservation programs, they can be expensive to implement. Therefore, research on ways to reduce the costs of the programs while maintaining or improving their benefits must be

conducted. We suggest further research on: low-budget alternative materials that can be used to construct bio-gas tanks, simplifying elephant dung paper production methods, and the benefits of elephant dung fertilizer over conventional fertilizer. With further progress in developing methods that generate a higher yield-per-cost ratio, more elephant camps will be able to utilize these technologies to their full benefit.

We recommend that an in-depth market analysis study be performed in order to fully assess both the capability and feasibility of a designated elephant camp in Bangkok.

While there are many reasons to start a designated location in Bangkok for elephants, one main concern of such a location is market saturation. Because the elephant camp in Ayutthaya is approximately one hour away from Bangkok, experts claim that too many elephant parks in Bangkok and the surrounding area would ultimately lead to the failure of both the new park in Bangkok and the current park in Ayutthaya (Lohan, 2002). While this apprehension towards an elephant park in Bangkok is seemingly well founded, more research from marketing experts is necessary in order to assess the effect that a new camp in the Bangkok area would have in the local market of elephant camps.

We recommend that a study to determine where mahouts bring their elephants instead of Bangkok be conducted in order to ascertain the migration of street elephants in the rest of Thailand.

Because of the effectiveness of the regulations on elephants in Bangkok, many mahouts may be starting to bring their elephants to the streets of other cities. To understand which cities may be affected by this migration, a survey of mahouts needs to be conducted. With this information, the Thai government will be able to assess the situation of other cities in Thailand, then apply that knowledge along with our recommendation for widespread enforcement of elephant restrictions in Thai cities in order to better address the problem of urban elephants in Thailand.

We recommend that efforts to ascertain accurate numbers of wild and domesticated elephants in Thailand increase.

In order to correctly understand the magnitude of the urban elephant problem, accurate numbers of both wild and domesticated elephants in Thailand must be acquired. Our recommendation to

revamp the current elephant registration process will help in ascertaining these new numbers of domesticated elephants in Thailand. Once more accurate numbers are known, both the Thai government's and activists' programs will be able to use this information to better tailor the scale of their respective efforts. To fully preserve the future for all elephants in Thailand, these census numbers should be further explored. Then, evaluation of current conservation programs can be more accurately conducted. One of the limitations of this recommendation is that, realistically, only estimates of the wild elephant population can be acquired. However, it will be easier to ascertain more accurate numbers of the population of domesticated elephants if the registration process is improved.

Recommendations for Future Researchers

We have developed several suggestions for future researchers based on our experience with this project. These suggestions are derived from our methodology, and are focused on our research topics. However, we believe that these suggestions cross into every research field, and would therefore be beneficial to researchers from all project types.

We advise that future researchers build trust with mahouts and conservation programs in order to allow for willing exchange of sensitive information. We recommend for future teams to be aware of how biases will affect communications with different conservation programs.

It is necessary to spend time with the people you will be interviewing in order to gain trust and increase their comfort level. Gaining mahouts' and conservation programs' trust was an important part of the success of our project, as the more trust and comfort they have in the interview the more open and honest the information one will receive. Having Thai group members greatly helped our team in interviewing mahouts. Many mahouts do not speak much, if any, English, and having a Thai translator also eased tensions between interviewers and interviewees, as sometimes mahouts feel more comfortable around people of their own nationality rather than foreigners.

The nature of the elephant problem is a sensitive one and there are many biases *within* programs as well as *between* programs; therefore, communication efforts must progress carefully. Through our research, we found that contacting certain organizations can be seen as a betrayal by other

organizations. When interviewing multiple organizations, one needs to be aware of these biases. One must understand that actions and interests in interviewing or touring one facility may offend another conservation program and cause it to refuse further communication. Once these biases are recognized, the situation must be analyzed in order to determine which organization is the most critical to communicate with in order to ascertain the most pertinent information to the project before proceeding.

We recommend that future researchers contact current experts in the field of elephants in Thailand.

We have included for future researchers a list of the important experts in the field of elephants in Thailand as of 2010. An important beginning in research is first knowing the experts in the field and then utilizing the information they have to the fullest extent. The table containing this information can be found in Appendix A: Interviews.



PROJECT CONCLUSION

The goal of our project was to study the changing roles of elephants and mahouts in an increasingly technological Thai society and propose solutions that help maintain the importance of elephants in Thai culture. We recommend better elephant registration practices, consistent enforcement of elephant restriction laws, management of conservation efforts, and that supplementary income sources are implemented in conservation programs. We also recommend further research to bridge several gaps, including the efficiency of supplementary income sources and current elephant population numbers. We hope that these recommendations will ensure that the future of elephants in Thailand is preserved in correspondence to the historically high social status of mahouts and elephants.

WORKS CITED

- ArrowShirts: International. "Send Me Home Project. " Web. 9 Feb. 2010.
<<http://www.icc.co.th/dotnet/files/investor/annualreports/2008/mag/6.pdf>>.
- Asian Elephant Conservation Charity - EleAid. EleAid, 2007. Web. 15 Nov. 2009.
<<http://eleaid.com/index.php?page=home>>.
- "Bangkok introduces back-to-nature scheme for urban elephants | Top News. " *Top News | Only Top Stories of the Day*. 4 July 2009. Web. 9 Feb. 2010.
<<http://www.topnews.in/bangkok-introduces-backtonature-scheme-urban-elephants-2185821>>.
- Barrow, Richard. "Average Monthly Wage in Thailand. " Web log post. Thai-Blogs. 03 July 2005. Web. 18 Nov. 2009. <http://www.thai-blogs.com/index.php/2005/07/03/average_monthly_wage_in_thailand?blog=5>.
- "Bring The Elephant Home - About BTEH. " *Bring The Elephant Home & Trees for Elephants (NL)*. Web. 9 Feb. 2010. <<http://www.bring-the-elephant-home.nl/about-bteh/en/>>.
- Buckley, Christine. (2009, June 29). New love for the endangered uglies?. Retrieved from
<http://www.esa.org/esablog/?tag=charismatic-megafauna>
- Chadwick, D. (2005, October). Thailand's urban grants: too big to ignore, too tame to set free, thailand's elephants have lost the logging jobs they were trained for. what's an unemployed pachyderm to do?. *National Geographic*, 208(4), 98+.
- Chapter 4 Learning Reform: Achievements and Experiences of Different Parties Involved. Rep. Office of the National Education Commision (ONEC). Web. 4 Nov. 2009.
<<http://www.onec.go.th/publication/4305009/chapter4.pdf>>.
- Cohen, Erik. (2008). *Explorations in thai tourism* (1st ed.). Bingley, UK: Emerald Group.
- Cummings, Joe; Becca Blond; and Morgan Konn. *Elephants in thailand*. Thailand. Lonley Planet.
- Elephant shelter at Ayutthaya. (2004). Dp-Studio Co. Retrieved January 19, 2010 from
[http://www.at-bangkok.com/place_elephant-Ayutthaya\(pang-chang\).php](http://www.at-bangkok.com/place_elephant-Ayutthaya(pang-chang).php)
- Elephant Camp in Kanchanaburi. (2010). Thailand Highlights. Retrieved January 19, 2010 from
<http://www.thailandhighlights.com/index.php?lay=show&ac=article&ld=5371118&Ntype=8>
- Emoto, Masaru. "Sunday, March. 27, 2005 Traveling with Dr. Emoto: Thailand day 2. " Web log post. Marasu Emoto's Website. 25 Aug. 2003. Web. 4 Nov. 2009.
<<http://www.masaru-emoto.net/english/ediary200503.html>>.

- Fuller, T. (2008, January 13). In Bangkok, it's a tough life for elephants. *New York Times*, Retrieved from <http://www.nytimes.com/2008/01/13/world/asia/13iht-elephants.1.9172548.html?r=2&pagewanted=1>
- Fuller, T. (2008, January 20). Caution: Elephants brake for food on Bangkok's roads. *The New York Times*, pp. 4.
- Fuller, T. (2008, January 20). Elephant handlers sidestep Thailand law. *The Seattle Times*, Retrieved from http://seattletimes.nwsourc.com/html/nationworld/2004135040_bangkok20.html
- Glover, R. F. (1948). The tactical handling of the elephant. *Greece & Rome*, 17(49), 1-11. Retrieved from <http://www.jstor.org/stable/640834>
- Governor states that elephant issue in Bangkok should be handled by government (translated). (2009, September 23). ASTV Manager.
- Iamsudjai, Sappasit; Kanatipa, Yingsoonthornwattana. (2004). Everywhere is elephant. Retrieved November 18, 2009. <http://www.at-bangkok.com/articles_elephants.php>.
- Kanjanapunka, S. (2009). The solution for critical Thai elephant problem. Chulalongkorn University, Veterinary Department. Retrieved January 19, 2010, from <http://lib.vet.chula.ac.th/2009/07-july/vol.%2034%20no.1-6%20%202009.pdf>
- Kashio, Mazakazu (edt), , & Baker, Iljas (edt), . (2002). *giants on our hands; proceedings*. Bangkok: FAO.
- Khan, Imran. (2009, November 18). Elephant dung: Source of livelihood, mosquito repellent. *ThaindianNews*. Retrieved February 10, 2010. from http://www.thaindian.com/newsportal/business/elephant-dung-source-of-livelihood-mosquito-repellant_100276274.html.
- Koehl, D. (1995). How much Do elephants eat and drink?. Retrieved from http://www.elephant.se/how_much_do_elephants_eat_and_drink.php?id=10
- Kumboonrueng, J. (2008 Oct 20). The Wandering Elephant. *Chiang Mai News*. Retrieved January 19, 2010, from <http://www.chiangmainews.co.th/viewnews.php?id=469&lyo=1>
- Kurlantzick, Joshua. (2000, March 16). Bangkok evicts hungry elephants: exiled pachyderms' keepers short of food. *Pittsburg Post-Gazette*, 3.
- Lohan, Roger. (2002). "The elephant situation in Thailand and a plea for co-operation. " Web. 18 Nov. 2009. < <http://www.fao.org/DOCREP/005/AD031E/ad031e0r.htm>>.
- "Love the King". (2006). The white elephants of the king. Retrieved February 24, 2010 from <http://www.raorakprajaoyuhua.com/bio/elephant.htm> Malakoff, D.(2001). The Urban elephant - city life.. Retrieved from <http://www.pbs.org/wnet/nature/episodes/the-urban-elephant/city-life/1898/>

- National Elephant Institute. (2004). Bio-gas Production from Elephant Dung at the National Elephant Institute. (Forest Industry Organization). Retrieved from http://74.125.153.132/search?q=cache:IFSBW5UNoJ0J:www.aseanenergy.org/download/aea/renewable_energy/2004/awardees/off%2520grid_bio-gas%2520production%2520from%2520elephant%2520dung%2520%2520at%2520nei_t h.pdf+elephant+dung+bio-gas&cd=1&hl=en&ct=clnk&gl=th%20http://www.google.co.th/ .
- (n.d.). Begging street elephants. Retrieved from <http://www.eleaid.com/index.php?page=streetelephants>
- Parntep, R. (2005) The role of NGOs in the management of domesticated elephants in thailand. Retrieved from <http://www.fao.org/DOCREP/005/AD031E/ad031e0q.htm>
- Pilot School with Local Community Style. Rep. The National Municipal League of Thailand. Web. 09 Sept. 2007. 4 Nov. 2009. <<http://www.sumc.in.th/images/project/20070907144818gygta.pdf>>.
- Pimmanrojnagool, Viroj, and Sawai Wanghongsa. "A study of street-wandering elephants in thailand and their mahouts. " Giants on Our Hands (2002): 35-42. Web. 17 Nov. 2009. <http://www.tistr.or.th/rap/publication/2002/2002_30_high.pdf#page=45>.
- Piragsa, S. (2010 February 14). Elephants unwelcome closer to home, too. *Bangkok Post*.
- "Prapapat Niyom. " UNESCO Bangkok. United Nations Educational Scientific and Cultural Organization, 26 Feb. 2009. Web. 4 Nov. 2009. <<http://www.unescobkk.org/education/apeid/apeid-international-conference/apeidconf08/speakers-and-speeches/prapapat-niyom/>>.
- Predicting Body Weight from Body Measurements in Asian Elephants (*Elephas maximus*) Hile, M. Elizabeth; Hintz, Harold F. ; Erb, Hollis N. Journal of Zoo and Wildlife Medicine, 1997, 28, 4, 424-427, American Association of Zoo Veterinarians
- Roong Aroon: School of Dawn. Roong Aroon School. Web. 03 Nov. 2009. http://www.roong-aroon.ac.th/web_eng/mainEng.html
- Sustainable Development Department. (1996). A Systems Approach to Bio-gas Technology (Food and Agriculture Organization of the United Nations). Retrieved from <http://www.fao.org/sd/Egdirect/EGre0022.htm> .
- The Erawan museum – symbolism of the thai cosmos. (2005). Retrieved from <http://www.tour-bangkok-legacies.com/erawan-museum.html>
- United Nations Food and Agriculture Organization. (2002). Giants on our hands: Proceeding of the international workshop on the domesticated asian elephant. RAP. Retrieved from http://www.tistr.or.th/rap/publication/2002/2002_30_high.pdf#page=167

Vaz, Richard vaz@wpi.edu (2009, October 20). Elephant Project Details [Personal Email] (2009, October 21)

Winn, P. (2009, August 14). The great elephant exodus. Global Post. Retrieved from <http://www.globalpost.com/dispatch/thailand/090813/the-great-elephant-exodus>

FIGURES CITED

Figure 1. Line art depiction of Erawan. Accessed 13 December 2009.
http://www.himmapan.com/himmapan_elephant_erawan.html

Figure 2. History of the previous Thai flag. Accessed 13 December 2009.
<http://www.letsGOPattaya.com/flag-of-thailand.html>

Figure 3. Lore of Thai kings and Burmese princes settling national disputes through elephant jousting in 1593. Accessed 13 December 2009.
http://www.csmngt.com/thailand_history.htm

Figure 5. Tourists react as they pet and feed a 3-year-old elephant. Accessed 4 February 2010.
<http://www.zimbio.com/pictures/0ZqCf1dDp6m/Urban+Elephants+Beg+Roam+Streets+Bangkok/4P-gAiQMKN>

Figure 6. Brent Elwin. The Elephant In The Room. Accessed 4 February 2010.
<http://www.needmagazine.com/blog/2009/10/22/the-elephant-in-the-room/>

Figure 11. Roong Aroon School. Accessed 12 November 2009. <http://www.masaru-emoto.net/english/ediary200503.html>

Figure 12. Fixed-dome Bio-gas Plant. Accessed 11 February 2010.
http://home.att.net/~cat6a/images/fuels_03.gif

Appendix A: Interviews¹

Table 3: Interview Details

Interviewee	Description	Language	Type	Date	Duration
Mahout A ²	Mahout at the Dusit Zoo	Thai	Directed Discussion	January 18, 2010	1.5 hr
Dr. Sittidet Mahasawangkul and Dr. Titiporn Keratimanochaya	Veterinarians, TECC	Thai	Directed Discussion	January 20-21, 2010	1.5 hr
Ms. Somsakao Kanitthasawat	Public Relations, Elephant Reintroduction Foundation	Thai	Phone, Directed Discussion	January 29, 2010	30 min
Mr. Paisarn Pholsomsuk	Co-operator, Elephant Nature Foundation	Thai	Phone, Directed Discussion	January 29, 2010	30 min
Ewa Narkiewicz	Spokesperson, Elephant Stay	English	Phone, Directed Discussion	February 9, 2010	50 min
Dr. Alongkorn	Elephant Veterinarian	Thai	Discussion	February 10, 2010	1 hr
Ms. Pattama	Producer	Thai	Phone, Directed Discussion	February 10, 2010	20 min
Richard Lair	Thai Elephant Activist	English	Phone, Directed Discussion	February 16, 2010	20 min
Mahouts B, C, and D	Various mahouts at the Surin Elephant Study Center	Thai	Directed Discussion	February 17-18, 2010	30 min

¹ Because a large number of the interviews we conducted were in Thai as well as a dialect spoken by mahouts, we have chosen not to directly transcribe the interviews below. . . . Instead, we have listed the questions we asked as well as the key responses by our interviewees. . . . This allows the reader to understand what was said in the interviews, but will avoid any inaccuracies as a result of translation.

² In order to ensure that all interviews with mahouts were kept anonymous, we have replaced their names with letters.

Mahout A

Q: Where are you from originally?

A: The mahout came from “Surin”.

A: He’s related to the “Shao Gui” tribe and he learned how to catch elephants since he was young.

Q: Why have you come to Bangkok?

A: He decided to bring his elephant into Bangkok because other people in his town told him that he could get more money in Bangkok (30,000 baht or \$1,000 per month), while he earned only 2,000 baht (\$60) per ceremony (wedding fair) in Surin.

Q: How did you acquire your elephant?

A: He spent most of his money to buy elephants, but he did not have enough money to feed those elephants. The cost is about 300,000 baht (\$10,000) per elephant and 600,000 baht (\$20,000) per trained elephant.

Q: Can you tell us about your elephant and your life in Bangkok?

A: He has a very close relationship with his elephants; he treats his elephants as his children.

A: The elephants need 10% of their weight of food each day.

A: The mahout and his elephant began their work at 3pm and finished at 10pm.

A: The mahout hid his elephants in his campsite.

A: The mahout usually took his elephant to heavily populated tourist areas such as Rama IX and Sukhumvit Road.

A: Elephant’s paws will become softer if they walk on the concrete.

A: Elephants can’t move when they’re hit by a car because the surface of the concrete may damage their skin, but they can’t stay lying down for a long period of time because their blood may clog.

A: Whenever elephants feel hurt, they will start to shake or dance, and since the elephants are very heavy, their skin will chafe by the concrete.

A: An elephant’s leg is the part where it gets injured the most.

A: Only few elephants die before they reach the hospital (broken leg).

Q: What will you do if your elephant get injured?

A: Whenever the urban elephants get injured, most mahouts will call Dr. Alongkorn (every mahout knows his number).

A: Dr. Alongkorn is a vet who has a very good reputation in elephant treatment.

Q: Is most of your business from Thais or tourists?

A: Most of the money he earned came from foreigners.

Q: Has your elephant sustained any injuries in Bangkok?

A: His elephant got hit by a car around Rama IX, the elephant was badly injured.

A: One of the elephants he knew fell down into a hole on street and a spike stabbed on that elephant’s leg. The elephant needed 4 months of treatment.

Q: Have you ever been fined for bringing your elephant into the city?

A: He paid a bribe (500 baht or \$15 per day) for policeman to not to arrest him.

A: If the police arrest the mahout, the police would bring the mahout’s elephant to

Lampang or Kanchanaburi.

A: If the fine is too expensive, the mahout can bargain with the police at Lampang.

Q: How did you train your elephants?

A: Mahouts use a hook to train their elephants the direction to walk.

A: They might use their hooks to hit the elephants when their elephants do something wrong.

A: Mahouts trained their elephants since the elephants were 1 year old.

A: Riding elephant is the most crucial part of training (2 months).

A: 3 months needed in order to train elephants to be ready for the show.

A: The elephants recognize their mahouts by using vision (colors), smell and sound.

Q: Have you ever had a different job?

A: He worked in a factory.

Q: Do you find your job pleasing?

A: He is satisfied to be a mahout because he thinks that the elephants are his friends, he will never be lonely, and he more freedom than he would working in factory.

Q: Has an elephant activist group ever contacted you?

A: Yes, government has been helping the mahouts by giving them some money through these activist group, but the money they gave didn't achieve elephants or their mahouts

A: Now he works for the Ayutthaya elephant camp, which has a contract with the zoo.

Dr. Sittidet Mahasawangkul and Dr. Titiporn Keratimanochaya

Q: When were you founded?

A: This center was originally founded in 1969 as adolescent elephants training center before they moved and became The Thai Elephant Conservation Center in 1992.

Q: What is your mission statement?

A: Mission statement: Conserve Thai elephants and traditional culture about elephants, also study about elephants.

Q: Where/who do the majority of your donations come from?

A: At the very beginning, the major funds were from the tourists. However, donations cover only 10-20% of expense of the organization. Another 80-90% comes from the government.

Q: Do you have any dialogue with government organizations?

A: Arrested elephants from Bangkok will be sent to here.

Q: How many active members does your organization have?

A: There are about 100 elephants and about 200 of members in the center.

Q: What are some of the past projects or efforts you have conducted in order to help the urban elephant?

A: The Thai Elephants Conservation Center used to be an Adolescent Elephants Training Center in 1969 before it changed to TECC in 1992.

Q: What are some of the current projects or efforts you are conducting in order to help the urban elephant?

A: Mahouts in this organization earn 8,000 baht salary per month.

A: There are several elephant shows were conducted for tourism.

A: They do perform about the mobile clinic and some researches including artificial insemination.

A: Mobile Elephant Clinic will be the first group to reach injured elephants; if the case becomes more serious the elephants will be sent to this center.

A: Produce paper and bio-gas from elephants' excretion.

Q: What are some of the future projects?

A: Thai Elephant Conservation Center is going to open another branch in southern part of Thailand, Krabi.

Q: Do you work to help all elephants, or does your work focus on urban elephants?

A: It is hard to help the wild elephants since they are too aggressive and not used to humans, and it is illegal to help wild elephants without a permit.

Q: How many elephants are entering Bangkok each night?

A: They have no information about this.

Q: How often are they injured?

A: Not very often.

Q: What types of injuries

A: Car accident and lower body accidents.

Q: What is the penalty for the mahouts that bring their elephants into the cities?

A: 1,000 baht – 2,000 baht fine if arrested.

A: Mahouts are willing to pay the fine but they are more concerned about how to bring their elephants back (it takes time).

Q: Is it hard to become a mahout?

A: Some mahouts are trained to control the elephants in a very short time (entrepreneurial mahouts).

Q: What is the most frequent elephant injury that your organization treats?

A: The most frequent injured part of elephants are legs and bodies

Q: How do elephants typically react when injured?

A: The elephants will not let anyone get close to them unless their mahouts are near

Q: How does your organization treat an elephant with a broken leg?

A: They will lift the elephants up and let them stand by themselves before transporting them to the center.

A: There are no surgeries for the elephants due to their size.

A: The injured elephants will recover by themselves but it would take very long time.

A: The elephants with complete broken legs will die, no way to help.

Q: How long would it take for elephants to recover themselves?

A: It takes a long time for elephants to recover due to their size.

A: For a broken leg, it will take at least 4 months to be recovered.

Q: How long can an elephant typically lie down without suffering adverse effects?

A: Elephants can lie down for the maximum of 24 hours.

A: Usually elephants can lie down 3-4 hours in order to sleep.

A: It is hard for the elephants to breathe when they sit.

Q: How effective of the prosthetic leg?

A: Prosthetic leg does not really work for the handicap elephants because physical therapy is needed.

Q: Are there any special considerations that need to be taken into account while moving an injured elephant?

A: For elephant transportation, they lift the elephants by using a pulley for the elephant to be able to stand by themselves before moving them to the truck.

A: The device that is used to lift the elephants is tripod pulley.

A: The materials used will cause the corrosive to elephants' skin if it makes contact for certain period of time.

Q: Where are the closest hospitals to Bangkok?

A: The closest elephant hospital to Bangkok is located at Nakornpatom, and is run by Kasetsart University.

Q: What do you see as the main cause of the urban elephant problem?

A: There is not enough funding for the organizations to help all the elephants and mahouts.

A: Some organizations only hire mahouts based on season; they lose their jobs during low season.

Q: What would you suggest be attempted in order to solve the problem of urban elephants in Thailand?

A: Promoting tourism could be the most effective way in order to solve the unemployed mahout problem and can automatically solve urban elephant problem.

Ms. Somsakao Kanitthasawat

Q: How are you funded?

A: Most of the funding comes from donations.

Q: Where/who do the majority of your donations come from?

A: Tourists and foreigners.

Q: Do you have any dialogue with government organizations?

A: No, they run and support their foundation on their own.

Q: How important do you think elephants are to Thai society?

A: The importance of elephants in Thai society is very tiny compared to that of other animals.

Q: What are current projects or efforts you are conducting to help the elephant?

A: "Mobile Clinic": they go around every part of Thailand in order to check elephants' health and treat injured elephants for free.

A: They allow people to donate some money to help elephants.

Q: Do you do any work outside of Thailand?

A: They have a meeting with India and Sri Lanka.

Q: Do you know of any previous and current efforts used to actively use elephants in Thai society?

A: “Elephants Smile” which conducted by the government to help urban elephants

A: A home stay for elephants called “Kochabal” which is located in Lampang.

Q: What do you think is the biggest cause that changed the elephants' role in the past?

A: Technology replaced the elephants' role. Most people are more concerned about investment while they ignore the elephants' welfare. They utilize elephants as a part of tourism.

Q: What do you think is the biggest issue that elephants face in today's Thai society?

A: People care less about elephants' feelings.

Q: How do you think elephants can actively contribute to Thai society?

A: Involve elephants in tourism by making them as a symbol of Thailand.

Mr. Paisarn Pholsomsuk

Q: How are you funded?

A: Most of the funding comes from the owner of their foundation, Ms. Sangduen, since she conducts the tourism company. Some of the funding comes from the tourists' donations.

Q: Where/who do the majority of your donations come from?

A: 98% of donations come from tourists.

Q: Do you have any dialogue with government organizations?

A: No, they run their foundation on their own.

Q: How important do you think elephants are to Thai society?

A: The importance of elephants is now increasing, since the public is concerned more about the elephants' extinction.

Q: What are current projects or efforts you are conducting to help the elephant?

A: They raise the elephants to be able to survive in the nature, no training at all. This is because training may harm elephants.

A: They find a residence for elephants to live with sufficient food.

A: “Elephant Heaven”: they let their urban elephants live in the wild one day a week in order for the elephants to get used to the nature.

A: “Jumbo Express”: they give some financial support to people or villagers who feed the elephants.

Q: Do you do any work outside of Thailand?

A: They are in process of communicating with India and Sumatra.

Q: What do you think is the biggest cause that changed the elephants' role in the past?

A: Technology replaced elephants' role.

Q: What do you think is the biggest issue that elephants face in today's Thai society?

A: Since mahouts were not able to feed their elephants, most mahouts bring their elephants to cities. Hence, the elephants are suffering from the urban environment.

Q: What role do you think elephants currently play in Thai society?

A: Tourism, in conservative way, as to not cause elephants to suffer by training them.

Q: How do you think elephants can actively contribute to Thai society?

A: Government and non-government organizations should collaborate with each other about how to promote the importance of elephants in Thailand.

Q: What do you think is the best job for both mahouts and their elephants?

A: Find some jobs for mahouts but not for elephants, it's time to conserve elephants.

Ewa Narkiewicz

Q: What is your mission?

A: To create a sustainable future for elephants. To accomplish this, we must be flexible with our programs.

Q: What are some programs you offer?

A: Trekking, theater production, reenactments, painting

Q: How many mahouts are employed, and are they on a contract?

A: 50-60 mahouts are on a come-and-go basis due to feelings of "the grass is greener", but they often come back.

Q: What do you offer them?

A: Stable income and housing throughout the year. We focus on building a community infrastructure to support mahouts. We also encourage mahouts to bring their girlfriends and families to live there.

Q: How many elephants do you own?

A: Ayutthaya owns all of the elephants, about 90 elephants.

Q: How are mahouts and elephants matched?

A: Depending on the situation, elephants are paired with a mahout based on the mahouts' skill level/experience, commitment level, and a personality match. "Some elephants are like 'Formula One Cars': you think you want one then you get it and realize it isn't so great. Other elephants are like tricycles. " Therefore, mahouts will change elephants from time to time.

Q: Are you currently implementing any alternative income sources?

A: We are currently researching fertilizer.

Q: Where do you see the role of elephants in Thailand going in the future?

A: We see no roles outside of tourism, but because tourism is so expansive that is okay as long as the symbol of elephants is preserved.

Q: How have you accomplished your goal of preserving the future of elephants in Thailand?

A: "Elephants are a part of life you can't put the problem off and say it is someone

else's problem. Put them in front and people can't ignore them".

Q: What else could be done?

A: The government could do a lot more because the mahouts need support. Society could understand the full problem and we could establish and subsidize stable alternatives for mahouts.

Q: Where do you get your elephants?

A: We purchase through different sources. We recently bought a mother and baby for 1.2 million baht. The mother wasn't producing milk, but within 2 days of being in Ayutthaya, it produced milk.

Q: Any final advice?

A: Give everything you can to elephants before you can fully understand them. "It's about the heart" and giving elephants the best possible life.

Dr. Alongkorn

Q: Why are you interested in elephants?

A: He doesn't want to see elephants go extinct.

Q: What is your mission?

A: Save the most elephants, limit not more than 5 elephant deaths each year.

Q: When did you start working with elephants?

A: Since 1977.

Q: What is your current effort?

A: Bring The Elephants Home and help promote the conservation programs that allow the tourists to live with elephants and mahout.

Q: In your opinion, what the biggest cause that changes the elephants' role?

A: Deforestation.

Q: What is the situation that elephants are now facing?

A: Health problems and the high demand for elephants in foreign countries.

Q: Where do you see the most urban elephants and their mahouts?

A: Around suburbs of Bangkok.

Q: What is the biggest problem toward elephants in Thai society?

A: There are no organizations that effectively take care of this problem.

Q: Have you ever taken any part in conservation program?

A: Yes, such as radio.

Q: How important of Thai elephants was in the past?

A: Transportation

Q: How Thai people can contribute to conservation program?

A: Participate in conservation programs.

Q: Who gives you fund?

A: S&J, Bangkok University, etc.

Q: What are some of your organization's projects?

A: Elephants Health Check to elephants in every elephant camps and wandering elephants around Thailand.

Q: How do you work?

A: Treat the elephants when the mahouts call.

Q: What do you think is the best for both mahouts and elephants?

A: Treat elephants as pets and mahouts only take responsibility for the care of elephants.

Ms. Pattama**Q: What do you think is the biggest cause that changed the elephants' role in the past?**

A: The mahouts don't have jobs and have been told from others that they can earn high income in the cities.

Q: What do you think is the biggest issue that elephants face in today's Thai society?

A: They cannot speak, so they cannot tell anyone how they feel.

A: Also, elephants are social animals; it is not easy to put them back into the forest to become wild elephants.

Q: What role do you think elephants currently play in Thai society?

A: They have been using as commercial tools for the investors.

A: The relationship between the elephants and mahouts has been reduced.

A: Thai people don't see the elephant problem as a big problem because they have been seen elephants their whole life.

Q: How do you think elephants can actively contribute to Thai society?

A: It is hard to solve this problem, but government can promote the importance of the role of elephants to foreign tourists not just use for transportation.

Q: How important do you think elephants are to Thai society?

A: There are only few countries that have elephants and Thailand is one of the country that elephant is the renowned symbol of Thailand.

Richard Lair**Q: Why are you interested in elephants?**

A: He loves elephants.

Q: What is your current and previous work?

A: He works at TECC as international relation

A: He wrote the book called "Gone Astray" which covers every country in Asia.

A: Elephant Painting (first in Thailand)

A: Orchestra (first in the world)

A: He also conducted a scientific research paper

A: Revolutionary Biology

A: Animal Behavior

A: Project about milk that can feed baby elephants, make from coconut fat instead of

cow's milk.

Q: Do you work to help all elephants, or does your work focus on wild elephants or trained elephants?

A: He started his work with wild elephants but it is too dangerous for him because he has polio since he was born, so he changed his focus to domesticated (captive) elephants.

A: In Thailand, elephants are associated with art, religion, anthropology, history, etc.

Q: Do you do any work outside Thailand?

A: Yes, around South and Southeast Asia, the habitats of Asia elephants.

Q: How important do you think elephants are in Thai society?

A: Different from other countries; Thai people love the elephants and love nature.

Q: What is the current problem that elephants are facing now?

A: The effect of deforestation.

Q: What do you think is the biggest cause that changed the elephants' role in the past and why?

A: A financial issue and the economic role change from logging to tourism.

Q: Do you know any efforts used to actively help elephants that use in Thai society?

A: Dr. Boonsong is the first person in Thailand who started to help the elephants in 1980. Many NGOs were founded after that.

Q: Do you think tourism is the only place for elephants in Thai society?

A: Basically, YES!!!

A: Tourism is the major income source for the elephants.

Q: Do you think mahouts' trust the government?

A: Yes, they know that government tries to help them.

Q: Do you think it is feasible to have camp in Bangkok area?

A: It is expensive keeping elephants, so it has to be big and well-operated. The organization should be funded by the government but operate like a private organization.

Mahouts B, C, and D

Q: What jobs do you currently hold at the Surin Elephant Study Center?

A: Master of all mahouts.

Q: Are you satisfied with your current job?

A: Yes, their elephants can live in a natural environment.

A: They also provide the residences for each mahout.

Q: Does the current job offer a stable enough income to provide for your elephants and families?

A: Yes, 8,000 per month.

Q: Do you know about the sustainable job alternatives? (Elephant dung, bio-gas, etc.)

A: They are very ok with participating in making paper and bio-gas in order to earn more money/reduced operating cost.

A: Surin Elephants Study Center is now creating a system that will produce bio-gas and paper from elephants' dung.

Q: What has been your experience with the government elephant conservation programs?

A: This "Take Elephants Back Home" is the first program he ever joined, conducted by governor of Surin collaborated with governor of Bangkok, it has been running for 4 years.

A: It has increased the number elephant from 60 to 158, and still increasing.

Q: Is your job affected by the tourist seasons? If so, what job alternatives do you look for in the tourist off-season?

A: No, get salary

Q: What job solution do you think is the best for you and your elephants?

A: Work in ceremonies

Q: Have you taken any part in the programs offered by the government?

A: No

Q: Where did you work before you came to Surin?

A: Stay in Surin for almost their lives

Q: Have you ever brought your elephant into Bangkok? What is the biggest cause that made you bring your elephant into Bangkok?

A: Yes, high income

Mahout E

Q: What jobs do you currently hold at the Surin Elephant Study Center?

A: Mahout in the center.

Q: Are you satisfied with your current job?

A: Yes

Q: Do you know about the sustainable job alternatives? (Elephant dung, bio-gas, etc.)

A: It would be a good idea if there were anyone who could start it.

Q: What has been your experience with the government elephant conservation programs?

A: This program is her first.

Q: What job solution do you think is the best for you and your elephants?

A: They prefer to let their elephants stay in this center, since their elephants don't have to work hard.

Q: What is your opinion on the role of the elephant in Thai society?

A: The elephant is the heritage and symbol of Thailand.

Q: Where did you work before you came to Surin?

A: She used to walk her elephant in the Bangkok.

A: There was no food left in Surin.

Q: If you can't go to Bangkok, where else would you go?

A: Lampang, Ayutthaya, Pattaya, and Chang Island; the salary is very high (15,000 baht) but they need to work really hard.

Mahout F

Q: What jobs do you currently hold at the Surin Elephant Study Center?

A: Staff and Mahout in the center.

Q: Are you satisfied with your current job?

A: Yes

Q: Does the current job offer a stable enough income to provide for your elephants and families?

A: Yes

Q: Do you know about the sustainable job alternatives? (Elephant dung, bio-gas, etc.)

A: He thinks that introducing bio-gas and paper could help mahouts to earn more money.

Q: What has been your experience with the government elephant conservation programs?

A: Surin Elephants Study Center is his first experience with conservation programs; the center also cooperates with Khao Keaw zoo.

Q: What is your opinion on the role of the elephant in Thai society?

A: The elephants should not do any work but should instead be treated as pets.

Q: Where did you work before you came to Surin?

A: He has lived in Surin almost his whole life.

Q: What is the biggest cause that made you bring your elephant into Bangkok?

A: Insufficient food in Surin.

Mahouts G, H, and I

Q: What jobs do you currently hold at the Surin Elephant Study Center?

A: Mahouts

Q: Are you satisfied with your current job?

A: Yes, they are satisfied about their lives, not their income from the center.

Q: Do you know about the sustainable job alternatives? (Elephant dung, bio-gas, etc.)

A: Yes, but never conducted it.

A: The Staff and mahouts are trying to improve the quality of the elephant dung paper by feeding them pineapple trees.

Q: What has been your experience with the government elephant conservation programs?

A: This program is their first experience in conservation program.

Q: What job solution do you think is the best for you and your elephants?

A: Being mahouts in the center is best because Surin is their hometown and they can earn stable income there.

Q: What is your opinion on the role of the elephant in Thai society?

A: Let the elephants work in ceremonies.

Q: Where did you work before you came to Surin?

A: Used to be mahout in Bangkok

Q: What is the biggest cause that made you bring your elephant into Bangkok?

A: Insufficient food in Surin

Q: If you can't go to Bangkok, where else would you go?

A: Pattaya because there are many elephant organizations over there, but they care only their benefit.

Mahout J

Q: What jobs do you currently hold at the Surin Elephant Study Center?

A: Mahout in Surin Elephants Study Center.

Q: Are you satisfied with your current job?

A: Yes, Surin is her hometown and her elephants don't have to work hard.

Q: Does the current job offer a stable enough income to provide for your elephants and families?

A: Not really, since she got 6 elephants so 8,000 baht per month may not enough for her.

Q: Do you know about the sustainable job alternatives? (Elephant dung, bio-gas, etc.)

A: If she got a chance to do paper and bio-gas thing, she would do so.

A: She utilizes elephants' dung as fertilizer for her rice plantation.

Q: What has been your experience with the government elephant conservation programs?

A: This is her first time joining the conservation program.

Q: What is your opinion on the role of the elephant in Thai society?

A: We should treat elephants as a part of families.

Q: Where did you work before you came to Surin?

A: Pattaya, with an NGO because she could earn high amount of profit over there.

Mahout K

Q: What jobs do you currently hold at the Surin Elephant Study Center?

- A: A mahout in Surin Elephants Study Center.
- Q: Are you satisfied with your current job?**
A: Yes, his elephant doesn't have to work hard (just eat, sleep and make some excretion).
- Q: Does the current job offer a stable enough income to provide for your elephants and families?**
A: Yes
- Q: Do you know about sustainable job alternatives? (Elephant dung, bio-gas, etc.)**
A: He has never heard about it before, but he would agree to it if someone started it.
- Q: What has been your experience with the government elephant conservation programs?**
A: This is his first experience.
- Q: Where did you work before you came to Surin?**
A: He used to work in "Khao Yai" with a NGO.
A: His elephant worked very hard there, but earned more income.

Mahouts L and M

- Q: What jobs do you currently hold at the Surin Elephant Study Center?**
A: Mahouts in Surin Elephants Study Center.
- Q: Are you satisfied with your current job?**
A: Yes, their elephants earn insufficient food sometimes but better than bringing their elephants to wander around in the cities.
- Q: Do you know about sustainable job alternatives? (Elephant dung, bio-gas, etc.)**
A: They really prefer to conduct these alternatives; they think it will help the program.
- Q: What has been your experience with the government elephant conservation programs?**
A: The government just recently started providing them assistance.
- Q: What is your opinion on the role of the elephant in Thai society?**
A: They want Thai people support the elephants like they support the panda.
- Q: Where did you work before you came to Surin?**
A: They used to walk the elephants in Bangkok.
- Q: What is the biggest cause that made you bring your elephant into Bangkok?**
A: Insufficient food in Surin.

Appendix B: Sponsor Description

The Roong Aroon School is located in the province of Bang Khunthein, Bangkok, Thailand. The school is located in the Bangkhuntien district on the outskirts of Bangkok because it is less busy and noisy than the center of the city. The Roong Aroon School is a non-profit private school with a revolutionary educational approach; it was founded in 1997 by Prapapat Niyom (UNESCO BKK 2009). It was built at the beginning of the education reform in Thailand in 1997 to encompass the new holistic education ideals several government and non-government organizations had laid out to improve the education system. These ideals were not widely implemented at the time but only taken up in a few new schools. The pillars of the new educational approach are the five ‘learning theories’: happy learning, participatory learning, thinking process development learning, aesthetic and character development learning, and moral values and character development learning. These learning theories are the essence of the Roong Aroon School approach to education (Office of the National Education Committee n.d.).

The Roong Aroon School uses the Buddhadharma Approach to education. This consists of linking the students’ everyday life to the factual knowledge they are learning. It is a holistic approach to learning that is extremely hands on; students learn by doing. Trades and education that will be useful in their communities are the main focus. The school encompasses students from kindergarten through 12th grade and is divided into schools-within-a-school, including a first school, a primary school, and a secondary school. Each school has a separate headmaster and all are overseen by the School Committee, which is currently chaired by Prawes Wa-see. The teachers in these schools foster individual learning and work as a group to create meaningful activities for the students. Parents are also expected to be involved in the learning process and often come in to the school to teach about topics in which they have particular knowledge or expertise. Another aspect of the Roong Aroon School is its emphasis on moral and spiritual development of children. They believe that in order to learn all aspects of a child’s imagination and self must be nourished (Roong Aroon n.d.).

The Roong Aroon School currently stands as the inspiration for the reform of the public school system in Khonkaen municipality. Currently, most public schools in Thailand emphasize rote memorization of facts. However, the public school system in Khonkaen municipality is

undergoing reforms to foster more critical thinking skills and to encourage learning about energy and environmental conservation, and they are looking to the Roong Aroon School as a leader (National Municipal League of Thailand 2007). The chair of the Roong Aroon School Committee, Prawes Wa-see, is one of the most well-known education reformists in Thailand and Venerable Phra Dhammapitaka leads the School Advisory Board. Venerable Phra Dhammapitaka is one of the most well know Buddhist scholars who applies Buddhist teachings to education.

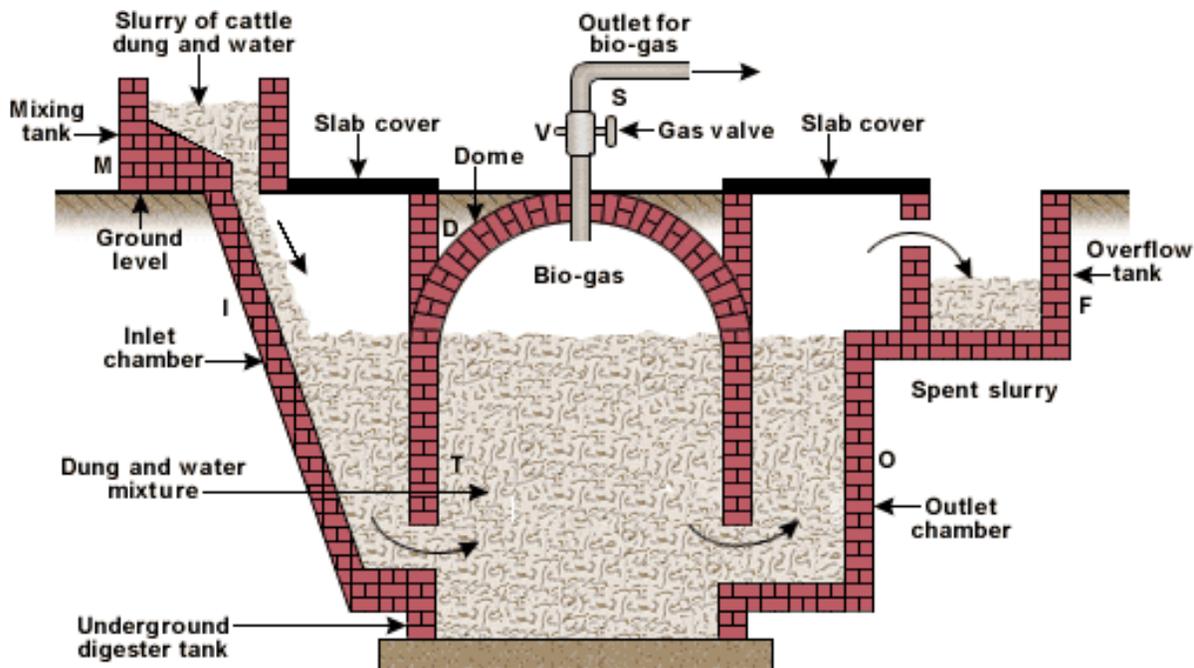


Figure 11: Photo of Roong Aroon School

The Roong Aroon School is extremely progressive and is a leader in many projects to better the community (Roong Aroon n.d.). For example, the Roong Aroon School curriculum emphasizes the study of nature and environmental sustainability. The school itself is constructed of wood with many trees and a pond on its 20 acre grounds (see Figure 2). The buildings are low, only two or three stories, to fit into the natural landscape and classes are taught indoors and out. One of its core principles is developing life as a whole and working towards solutions to community problems (Roong Aroon n.d.). Thus it is not surprising that in the fall of 2009 the students of the Roong Aroon School started questioning why elephants are in urban areas in the first place, and how they can be helped. Some of their questions include: “*What causes the mahouts and the elephants to leave their land?; What are the consequences of this new behavior to the elephants, to the city, and to the community?; What are the effective solutions to solves these problems?*” (Vaz, 2009). Our proposed project is an effort to answer their initial questions and working alongside a team of students from Roong Aroon we hope to find an effective solution to the problem.

Appendix C: The Bio-gas Making Process

Bio-gas is the mixture of gasses produced by methanogenic bacteria degrading biomaterials in anaerobic (no oxygen) conditions (Sustainable Development Department 1996). The end bio-gas product can consist of different component concentrations depending on the substrates being degraded. The largest component in bio-gas, when it is produced correctly, is methane. Methane is the desired gas for collection as it can be used in cooking stoves and converted to other types of energy. In order to produce the most bio-gas the carbon to nitrogen (C/N) ratio of the input material is very important. The ideal C/N ratio for producing bio-gas is 20-30. Elephant dung has a C/N ratio of 43 and is close to being ideal for producing bio-gas. However it must be mixed with a component with a lower C/N ratio to produce ideal bio-gas conditions. The dung is mixed in a ratio of 1:1 with water and kept in the airtight digester tank. Bacteria eventually break down the dung solution into acids that are then processed by the methanogenic bacteria to produce methane (Sustainable Development Department 1996). This methane can then be collected and used in methane cooking stoves or converted into other kinds of energy (Figure 12).



Fixed-dome type bio-gas plant.

Figure 12: The Bio-gas Making Process

The TECC used concrete tanks sunk into the ground. Tanks can easily be made from homemade materials in a much more inexpensive fashion. Theera Kadesrimek, a professor at Chulalongkorn University in Bangkok, made a 200 liter digester that converts bio-material into methane and the cooking stove it connects to for only 2500 baht (Personal communication Theera Kadesrimek, February 2010). His particular bio-gas system operates by mixing 3 kg of food waste with 3 kg of water (ratio of 1:1) in 200 L tank. The tank will be filled up to 2/3 and 1/3 of space is left in the tank. The pH of the mixture of food waste and water needs to be maintained at 6. 8-7. 2. To reduce the pH more food waste needs to be added. The ideal temperature to produce the bio-gas is 25-30 C. Therefore, because of the climate in Thailand, additional climate control would not be needed. The system will generate the pure methane gas after one and a half months. A special stove needs to be specifically made with the bigger holes in order to cook with methane gas, but this stove is dangerous to use with regular cooking gas. The amounts of methane that was produced from a 200 L tank can fry 5 eggs per day for 4 days before the food waste in the tank needs to be changed. However, elephant excrement has much higher methane productivity compared to the food waste, and could produce even more gas.



Appendix D: Culture Essays

Laura-Ashley Alegbeleye: Diversity in Thailand

My overall cultural experience in Thailand actually embraces many of my every day cultural experiences that all stem from the same root: my skin color. From the time I decided to apply to Thailand for IQP until my first relative cultural experience, the thought of my skin color having an impact on the way people perceive me in Thailand never crossed my mind. I never thought that it would be an issue I would face while in Thailand. I grew up in a very diverse area and therefore, have experienced many different cultures, so it was also very hard for me to understand the lack of diversity in Thailand. Then I began to think about it. Based on my time spent in Thailand, I have observed that many Thais are introduced to different cultures via visual media sources. Tourism only extends to certain areas of Thailand. I, myself, am always surprised to see another “black” person in Thailand. We always give each other a look like “What are you doing here?” I wish somebody had warned me that I would have experiences completely different from other “farangs”, or foreigners. While it would not have solved the initial problem, I still would have been able to somewhat mentally prepare myself.

I remember walking to MBK Mall the first day I arrived in Bangkok. On the walk, there was an advertisement that depicted a man holding a skin tone ruler up to his face, with his skin tone matching the lightest shade on the ruler. I did not think anything of it, and continued onto MBK. On arriving to MBK, I stopped in a pharmacy and wanted to buy lotion. However, the majority of lotions available had whitening cream in it. This confused me and I would continue to see this in every pharmacy I visited throughout Bangkok. This was the first time that I noticed the issue of skin color in Thailand. Likewise, the first time I noticed stares, giggles, and whispers, was the weekend trip to Kanchanaburi. At the resotel the IQP-SSP groups stayed at, I would notice the employees staring at me, and then running away to get their fellow employees, so they could also stare.

There have definitely been other negative aspects of being a different kind of foreigner in Thailand. For the weekend trip to Kanchanaburi, we traveled to Erawan Falls. I noticed the stares and whispers a lot more because of the large groups that were also there. While on the way up to the waterfalls, I would pass groups of people that would just stop and stare at me. For

example, a boy passed me and proclaimed an extended “Whoa, oh my God!” and was too busy looking at me instead of where he was going, that he tripped. On this weekend trip, we also visited the Kwai River Bridge. The double-decker bus we were on parked directly beside another double-decker bus filled with Thais. Within 5 minutes, I had about 20 Thais on the other bus staring and pointing at me. I think me staring back just entertained them and brought more stares, so I eventually had to close the window curtain.

While in Kanchanaburi, we also went elephant riding. The mahouts that were not guiding the elephants were off to the side, under some shade. At the end of my ride, while getting dropped off, I felt something touch me from under the elephant. I looked down to see one of the mahouts touching my leg, while another was taking a picture. I laughed it off, but I really could not believe it. It made me feel really uncomfortable. By the end of the weekend trip, I was irritated and just wanted to go home – back to the U.S. After the first weekend, I began to feel like everyone was staring at me. At Tesco, I would sit down to use the Internet and lift my head up a few minutes later to see people staring at me. I also went to the WPI student-proclaimed “Noodle Lady” on Chula Soi 12, and she hurried to get her employees to come and see me. They ended up watching me eat my whole meal. It was a very uncomfortable experience, and this was just the beginning of the trip! These experiences made me paranoid and thought that I was offending Thais in some way by just being in their country. I began to evaluate everything that I did. It was very hard to express my feelings of frustration to anyone else on the trip with me because no one would feel the same way as me, they would think I was being very negative about the whole thing, or they would laugh it off most likely from discomfort.

I have not felt this negativity for all aspects of my IQP experience. While I do feel that educated Thais, have no excuse for the action of staring for long periods of time, I completely understand when little Thai children innocently stare at me. They are acting their age, and have honestly never seen a person like me before. For my project, I work alongside high school students from the Roong Aroon School. They have never treated me disrespectfully in any aspect. The high level of respect to elders is followed by all in Thai culture. When the Roong Aroon students greet me, they always wai, and will even crouch so they will not be higher than me. I have realized that in Thailand, respect is both colorblind and age-sensitive. I have never felt uncomfortable or unwelcome at the Roong Aroon School.

I also remember initially meeting my Thai partners, Blue and Grit. They have treated me no differently from anyone else, and are extremely kind. I also know that this is because they have been to the United States and have experienced diversity. I have also expressed my problem to them and shared my experiences. We always joke about it, as that is the Thai way of dealing with discomfort. I understand that it is not something that they see as an issue, and it is hard for them to understand how I feel. However, they have taught me how to address the problem in a very curt way - "Mong aray", which means, "What are you looking at?" While I do not see myself saying it to people, I definitely wish I knew that phrase earlier in my IQP experience. The Roong Aroon students and my Thai partners are very interested in learning more about me. Blue and Grit always ask me questions about my Nigerian culture and Niche, one of the Roong Aroon students, thinks my hair is "so cool". I feel like the people on my street are starting to get used to me as well. A lady that owns a shop near the dorms always says "Hi" when she sees me. The last time I came into her store, she spoke to me more. While she does not speak much English, she managed to point to my skin and say "Chan chop" - "I like" and touch my hair and say "Suay" - "Pretty".

It took me awhile to get over my frustration, and by this point of the trip, I just smile about it. I understand that staring is not seen as disrespectful to Thais. They are just initially somewhat shocked and curious when they see me. The only way I can understand it from their point-of-view, is thinking of how shocked I would be if I saw a purple person walking around. I also feel that since Thais place such a high importance on a having lighter skin tone, they are amazed that I have dark skin. Moreover, I feel that by being in Thailand, I am spreading a little bit of diversity. Now when I see people staring, I just smile, wave, and say, "Hi, I'm black."

Emily Silva: Respect

One experience that stands out in my mind from my time in Thailand is the level of respect I received from the students that I worked with. On my first day of work, I met the four high school students from the Roong Aroon School my group would be working with. When the students entered the room they immediately waived to me and when they walked past me they crouched down in order to keep their heads below mine. I have also noticed sometimes the Roong Aroon students smile and nod when they do not understand what we are saying in an

effort to seem like they are not criticizing us for not explaining it well enough. We have to directly ask them if they understood everything before they would admit they need us to repeat or go over a topic again. I had heard before I arrived in Thailand that respect for elders and people of higher status was a major part of the culture, however I was not prepared to receive this level of respect myself.

In the U.S., everyone is granted a basic level of respect but greater respect is withheld until it is earned. In Thailand, it seems this respect is given instantly. The heart may not be behind it, but one is granted that respect based on his/her station in life. Children here are taught from a very young age to respect their elders and people in higher stations than themselves. I feel that if I were born in Thailand, I would not have noticed this at all; it simply would have been a way of life since childhood. Through talking to Grit and Blue, my Thai partners, and observing interactions between other people of differing stature I have learned education is very important to respect. People respect elders because they have things to teach them, they have more life experiences, and younger people hope to gain their wisdom. Age is respected because of its informal ability to educate.

At first, receiving this level of respect made me very uncomfortable. I felt like I did not deserve this respect, after all I am only a few years older than these high school students. As time went on I began to get more used to the high school students behaving towards me in this way. I got to know them as people and it helped me realize that even though they respect us a lot, they don't see us as distant or too high to talk to. I think my initial uncomfortable feelings were simply due to culture shock. I have never experienced people acting in such a way towards me. Once I better understood the Thai value of respect, my discomfort began to dissipate. Thai people simply have a more visible style of showing respect than Americans. This also shows more respect in general for teachers and educated people than is shown in America. The Thai style of respect is different and has its benefits as compared to the American form of respect as well as its downfalls.

One of the downfalls of the Thai level of respect is not speaking up about things in an effort not to offend someone in a higher station than you. This can affect interactions in the workplace greatly and lower the quality of the final product. One of the benefits of this level of respect is it

very polite and can make you feel very welcome. It also eliminates a lot of minor conflicts from the workplace.

While I do not see one system of respect as better than the other, I do realize that both have their benefits and their downfalls. I think it is important to evaluate your feelings about the situation when a new experience is had in a new culture, as well as the reasons behind those feelings. If you take a moment to see the situation from another perspective, it will widen your own perspective and make you more sensitive to others.

Ty Tremblay: My First Trip to a Wat

My IQP team took a trip to Lampang, Thailand during the first week of our project work. On the way back, we stopped at a wat, or temple. The place was beautifully constructed and everyone had the urge to whisper once they entered. We stopped at the central building and removed our shoes before walking up the stairs. The Thai students walked to the space in front of the large Buddha and began praying by kneeling and placing their forehead to the ground. As the Thai students prayed, my WPI partners took pictures of the wat. I, however, did not take pictures. After the Thai students finished praying, we were asked if we would like to pray. Again, some students prayed while I did not.

On the bus ride home, I started thinking about why I hadn't taken pictures or prayed when asked if I would like to. I understand that others in my group may be more comfortable with other religions, but I wondered what their true motives were behind praying in the wat. Were they praying to Buddha or their own god? Were they praying out of respect to the Thai students? Personally, I did not feel as though I knew enough about the Thai student's god to pray to it. I felt that making the motions without understanding their significance would be more disrespectful than not making them. Additionally, I was raised as a Christian. One of the Ten Commandments is to not worship false idols, and I was uncomfortable with disrespecting my own religion.

I originally came to the decision that while I respect the culture and religion of the country I'm in, I feel a greater pressure to assimilate into Thailand's culture than I do to assimilate into

Thailand's religion. In retrospect, I don't believe that such a distinct line can be drawn between religion and culture because they both influence each other. This influence changes throughout cultures however, and I believe that Buddhism heavily influences Thai culture in everyday life, while Christianity's influence is not as noticeable in my culture. I feel as though I was justified in not praying at the wat, but I also learned that religion has taken a much smaller part in my life than I'd like.

John Wyatt: Dining Cross-Culturally

I believe that cultural differences are important, and I enjoy exploring other cultures and the significance behind them. Therefore, I feel that cultural relativism best fits my views on cultures. It is my feeling that you cannot really compare cultures to one another with the aim of finding a better one, because I believe that people are people and that the cultures they create are all just as sound as the next one. It is important to question what you do, but overall people are different and we will all value different things and interpret situations in varying ways. It is important to note and understand these differences in order to interact with one another. Beyond this point, it is just fun to explore different ways of doing things and open your mind to alternative thought processes. This allows you to better yourself personally by giving you tools to better solve problems that you may face in life or work.

Though we all have many similarities, all cultures are different, and it is important to note these differences. One such difference between the American and Thai cultures is how we approach eating our meals in a group setting. In America, we typically have our own plate, with our own food, and next to it is our own drink. In Thailand however, meals are approached in a more communal method. Here there are several dishes in the middle that are all shared. I first experienced this eating style when my group first met our Chula counterparts; they wanted to take us out for lunch to get to know each other better. All of us WPI students were very excited to become more familiar with our new acquaintances as well, so we all rushed off to eat together. Once at the restaurant, the Thai students began ordering dish after dish and we WPI students were all a bit confused at first. We looked around and saw that the other tables were all sharing food. After seeing this we knew what was about to happen to us. I thought that it would be awkward for me to help myself to the communal food, or having other people put food on my

plate, especially since it was all strange new foods. I felt, however that it was important to experience this part of Thai culture in order to understand my new teammates, so I along with the rest of our group dove right in.

The family style meal, as practiced by the Thai people, is also common practice in. This ritual tends to only occur in a home setting, where most of the diners are likely to be families. The places that you would rarely see family dining in America are in restaurants. Different to my perspective, Thai people may view our individualistic approach these meals as being selfish. Seeing us in restaurants, ordering food for just ourselves may seem like we are only caring about our own enjoyment. It however, seems more fitting to me because I am less likely to be as close to people I eat in restaurants with than at home.

When I talked to Grit about the meaning behind family meals in Thai culture he told me that it is an example of how Thai culture values sharing. He said that we are all part of the Thai community and sharing means that we are a big family. He continued saying “When you dine together it make your bond and relationship closer”. After partaking in the family style meal, as practiced by the Thai people, I agree that it promotes a community relationship, and I value how eating without Thai group members has strengthened our group. Beyond this I see that it is very effective in incorporating everyone at the table with what is going on, because it forces involvement. I feel however, that this is no better than the way Americans typically approach meals. Instead it is just a different approach at accomplishing the same goal. Cross culturally, meals are not only times to eat, but bonding experiences. No matter whether you are eating in the USA or in Thailand, you are likely going to communicate with the people you are eating with. Therefore meals have always been a staple of building bonds between persons. In America, families eat together and tell stories about their days, friends eat together and share their experiences, and during courtship a couple will dine together and explore each other’s personalities and histories. It has been my observation during my short time in Thailand that all of these instances remain true here as well.

On a lighter note, I do very much enjoy the Thai style of meals because it gives you a wide sample of the foods. This has allowed me to get a better feeling of the taste of the local cuisine.

I do intend on practicing this style to some degree in the future, as I like experiencing new foods and want to try a little of everything here.