

**Promoting Culture and Tradition:  
Increasing the significance  
of coconuts in Amphawa**





**WPI**



**BSAC**

## Promoting Culture and Tradition: Increasing the significance of coconuts in Amphawa

An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute and Chulalongkorn University in partial fulfillment of the requirements for the Degree of Bachelor of Science in cooperation with The Chaipattana Foundation.

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**Submitted by:**

Julien Ataya

Katie Brophy

Amani Campbell

Arianna Kan

Pattrakorn Kamolkornpannatat

Kittipat Kulkraisri

Prompasut Snitwongse Na Ayudthaya

Vichayada Vorapongpisut

**Submitted to:**

The Chaipattana Foundation

**Project Advisors:**

Prof. Numpon Insin, Chulalongkorn University

Prof. Brajendra Mishra, Worcester Polytechnic Institute

Prof. Gary F. Pollice, Worcester Polytechnic Institute

Prof. Supawan Tantayanon, Chulalongkorn University

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## Abstract

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The recent coconut price fluctuations in Thailand have caused economic distress among its coconut farmers who rely on income from these sales. The Chaipattana Foundation seeks to mitigate this problem by implementing new coconut-related activities at the Amphawa Chaipattananurak Conservation Project that will not only improve the livelihood of farmers in Amphawa, but also convey the significance of coconuts. Through research, observations, interviews, surveys, and a prototype “coconut day event,” we introduced new activities to the Amphawa Chaipattananurak Conservation Project.

## Acknowledgements

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## Authorship Page

Section	Primary Authors	Primary Editors
<b>Acknowledgements</b>	Amani Campbell	Vichayada Vorapongpisut
<b>Abstract</b>	Amani Campbell	Amani Campbell
<b>Executive Summary</b>	Vichayada Vorapongpisut, Pattrakorn Kamol Kornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
<b>1.0 Introduction</b>	Amani Campbell, Vichayada Vorapongpisut	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
<b>2.0 Background</b>		
2.1 Chaipattana Foundation	Arianna Kan	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
2.1.1 Amphawa Chaipattananurak Conservation Project	Arianna Kan, Kittipat Kulkraisri, Katie Brophy	Arianna Kan
2.2 Amphawa	Katie Brophy, Julien Ataya	Katie Brophy, Julien Ataya
2.3 Importance of coconuts in Thailand	Katie Brophy, Vichayada Vorapongpisut	Katie Brophy
2.3.1 Thai traditional uses of coconuts	Arianna Kan, Pattrakorn Kamol Kornpannatat	Arianna Kan
2.4 Case studies	Julien Ataya	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
2.4.1 Critical success factors	Julien Ataya	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
2.4.2 Factors affecting tourist experience in other regions of Thailand	Julien Ataya, Prompasut Snitwongse Na Ayudthaya	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
2.4.3 Analysis of a successful tourist site	Katie Brophy	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya

<b>3.0 Methodology</b>		
3.1 Objective 1	Katie Brophy, Prompasut Snitwongse Na Ayudthaya	Julien Ataya
3.2 Objective 2	Arianna Kan, Pattrakorn Kamolkornpannatat	Arianna Kan, Julien Ataya
3.3 Objective 3	Amani Campbell, Kittipat Kulkraisri, Julien Ataya	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
3.4 Objective 4	Arianna Kan	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
3.5 Summary	Amani Campbell	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
<b>4.0 Results</b>		
Finding 1	Arianna Kan	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Finding 2	Amani Campbell	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Finding 3	Arianna Kan	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Finding 4	Amani Campbell	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Finding 5	Arianna Kan	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Finding 6	Arianna Kan, Katie Brophy	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Finding 7	Julien Ataya	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Limitations	Katie Brophy	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya

<b>5.0 Recommendations &amp; Conclusion</b>		
Recommendation 1	Arianna Kan	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Recommendation 2	Julien Ataya	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Recommendation 3	Amani Campbell	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Recommendation 4	Katie Brophy	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Recommendation 5	Amani Campbell	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Recommendation 6	Katie Brophy	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Recommendation 7	Julien Ataya	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
Recommendation 8	Arianna Kan	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya
5.3 Conclusion	Julien Ataya, Amani Campbell	Arianna Kan, Amani Campbell, Katie Brophy, Julien Ataya

<b>Materials</b>	<b>English</b>	<b>Thai</b>	<b>Final Version</b>
<b>Survey (QR Code)</b>	Amani Campbell, Katie Brophy, Arianna Kan, Julien Ataya	Vichayada Vorapongpisut, Pattrakorn Kamol Kornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya	All
<b>Survey (Paper Form)</b>	Amani Campbell, Katie Brophy, Arianna Kan, Julien Ataya	Vichayada Vorapongpisut, Pattrakorn Kamol Kornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya	All
<b>Voting Boxes for the Event</b>	N/A	N/A	Vichayada Vorapongpisut, Pattrakorn Kamol Kornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya
<b>Filming</b>	N/A	N/A	Amani Campbell, Pattrakorn Kamol Kornpannatat,
<b>Video Editing</b>	N/A	N/A	Pattrakorn Kamol Kornpannatat
<b>Storyboard for the Video</b>	N/A	N/A	Vichayada Vorapongpisut, Pattrakorn Kamol Kornpannatat
<b>Event Layout</b>	N/A	N/A	Vichayada Vorapongpisut, Pattrakorn Kamol Kornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya



<b>Interview Facilitator</b>	Amani Campbell, Katie Brophy, Arianna Kan, Julien Ataya	Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya	All
<b>Materials Procurement</b>	N/A	N/A	Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya
<b>Interpersonal Coordinators</b>	Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya	Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya	Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya
<b>Activities Booklet</b>	Amani Campbell, Katie Brophy, Arianna Kan, Julien Ataya	Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya	Arianna Kan, Amani Campbell, Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya
<b>Cover Page</b>	N/A	N/A	Vichayada Vorapongpisut
<b>New Activity timetable (Deliverable)</b>	Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat	Pattrakorn Kamolkornpannatat	Pattrakorn Kamolkornpannatat
<b>Poster</b>	All	N/A	Pattrakorn Kamolkornpannatat

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## Executive Summary

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### The Problems, Goal, and Objectives

The price fluctuation in coconut sales over the years in Thailand has had serious ramifications for the economic well-being of coconut farmers in Amphawa. The Amphawa Chaipattananurak Conservation Project (will also be referred to as the Project or the Chaipattananurak Project), located in the Samut Songkhram province, was created by the Chaipattana Foundation in pursuit of restoration and conservation of the traditional ways of life of the Amphawa region. The Project hosts a variety of hands-on activities, within its five main attractions, centered on locally produced goods and their diverse applications. The Project purchases coconut by-products from local coconut farms for use in many of these activities, and therefore, plays an integral role in the lives of Amphawa farmers.

Recently, the number of visitors to the Project has rapidly decreased. Its predominant visitors are governmental organizations and student groups who tend to revisit the site throughout the year, resulting in the need for new and exciting activities on a constant rotation. The director of the Project, Mohm Rajawongse Srichalerm Kanjanapoo, has expressed that these activities should center around the coconut in hopes that it will increase visitor awareness of the significance of coconuts.

The goal of this project is to create a new attraction that involves one of the many diverse uses of coconuts and its by-products, targeting the untapped market of the younger generation, and financially assisting the local coconut farmers of Amphawa. To attain this goal, our team developed the following objectives:

1. **Determine** existing coconut-related activities within the Project
2. **Identify** characteristics of a successful attraction
3. **Develop** criteria for an engaging activity
4. **Assess** the feasibility of potential activities

To accomplish these objectives, we began by handing out surveys to the visiting tourists and conducting interviews with the staff to get a general idea of the current condition of the activities. We factored in first-person observations, a rank-ordering matrix (a decision matrix that is used to score ideas based on certain criteria or characteristics), a Pugh matrix (a decision matrix or tool used to evaluate concepts by strengths and weaknesses), data collected from the surveys, and comments noted in the interviews to identify a set of criteria guidelines to implement in our proposed activities. In order to assess the practicality of these activities, we designed a full-day event that hosted 205 students from local schools to test out each activity and receive feedback on its implementation and level of enjoyment.

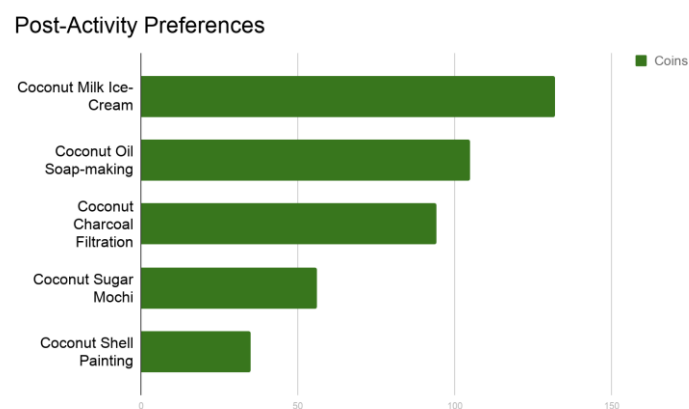
### Methodology

Our first objective was to determine the existing coconut-related activities at the Chaipattananurak Project and their current conditions. We visited the site several times throughout our project and were given the opportunity to participate in a series of its more popular activities. Having first-hand experience participating in these activities allowed us to draw conclusions about what aspects of the activities are successful. We interviewed the staff and the director of the Project regarding how the site is managed and the logistics needed to implement a new activity.

In order to identify the characteristics of a successful attraction, we surveyed and interviewed the tourists and staff to discover which activities were the most successful and the features that comprise its success. In addition to these observations, we visited the King Rama II Museum, a conservation site comparable to the Project, to analyze what aspects of the museum make it successful.

To develop the criteria for an engaging activity, we selected traits that we found were associated with these successful attractions and requested that our sponsor rank their importance through the completion of a Pugh matrix. We used this final list of characteristics to develop potential coconut-related activities for the Project to implement. After developing 12 potential activities, we held a discussion with our sponsor to determine activities that they deemed the most feasible. We concluded that our proposal will contain five activities including the making of coconut-flavored ice-cream, coconut mochi (Japanese sticky rice cake made from glutinous rice flour), and coconut oil hard soap, as well as a coconut charcoal water filtration experiment, and coconut shell painting. In the event day, we also prepared one extra activity for children to enjoy during lunch break, a coconut shell shoe race.

Our final objective was to put these activities to the test in order to assess the feasibility of implementing these activities as an addition to the Chaipattananurak Project's official program. We hosted a full-day event at the site that featured these five activities, with students from three local schools in attendance. Following each activity, we surveyed the participants on their level of interest and enjoyment for that activity and quantified that data into the following bar graph.



*Figure: Post-event ranking of each participant's favorite two activities*

## Recommendations and Key Findings

Our primary focus for this project was to create comprehensive activities for the Chaipattananurak Project to utilize various applications of the coconut. After testing the 6 activities proposed in our methodology, we recommend the Project to incorporate the following activities into their program:

- Coconut milk ice-cream
- Coconut oil soap-making
- Coconut sugar mochi
- Coconut charcoal filtration

Based on the work we did prior to our final objective, we were able to make several observations about the management and condition of the Project. We first determined that the site's main audience is governmental organizations and educational groups who revisit the site throughout the year from a series of interviews with our sponsor and their staff, in addition to first-hand observations. The site currently has an assortment of coconut-related activities that vary in popularity, according to the comments made by both the staff and the visiting tourists. These activities are available year-round, but because these organizations come back throughout the year, the need for new attractions induced the development of our activities proposal and trial event.

Based on visitor perceptions, the current activities can improve in a variety of aspects, but should find a focus on traditional Thai cooking and crafts development. A survey distributed to 18 visitors at the Chaipattananurak Project reported that 76.9% of them preferred learning traditional Thai cuisine and crafts to other categories of activities, which aligned with observations taken from the staff as to which type of activities were most prevalent among participants.

Following our trial event, we concluded that the success of an activity cannot solely rely on theory but requires a practical trial before implementation. Prior to the trial, we gave a rank-ordering matrix to our sponsor to list their criteria in order of importance, and we found that their top priorities for an activity were: informative, hands-on, involves the local community, traditional/unique, and targets youth. From this rank-ordering matrix, we identified the coconut ice-cream and the mochi activities as the highest-ranked in potential, with coconut oil soap-making having the least potential as an activity. However, after the trial, we asked the participants to rank their most favorable activities and they were the coconut ice-cream and the soap-making activities, with the mochi-making activity ranking 4th out of the five activities. This shows that although the matrix was useful in narrowing down activities based on strengths and weaknesses, the success of an activity is not guaranteed until there is a trial run.

Our next conclusion found that children are more receptive to activities that incorporate a balance between engagement and the incorporation of a tangible by-product, while also providing an educational background. From our final survey at the conclusion of the trial event, we found that the ice-cream, soap, and charcoal activities were the most successful. We then identified their leading qualities from the answers taken from the written surveys and compiled them into this finding. From observations throughout the event, the level of complexity of making mochi left the young participants struggling to form even close approximations to the size and consistency of proper mochi. The painting activity received the lowest score on the post-activity preference survey due to its almost singular aspect; it lacked a creative process that engaged participants and kept their interest. Unlike the other activities available, the coconut shell painting encompassed a single process, which could be tedious for the age group of our participants. Along with successfully designing an activity, it is important to match the demonstrator to appeal to the audience.

While creating our activities proposal and the resulting trial event, we realized that the Project has many limitations that can inhibit its potential for growth. We used the opinions of the staff and sponsor, as well as keen observations of tour groups, to assess the current state of the Project. Based on these perceptions, we concluded that despite the relevant success of several of the site's attractions, there is much to be improved in the operation and promotion of their overall activities. The staff believe demonstrations, even when considered "popular," are not as successful as their potential due to the lack of interaction by the local instructors, who provide minimal conversation and exchange. In addition, not only is the site unable to accommodate walk-ins, but it also lacks the resources to serve foreigners, as stated in an interview with the public relations staff. In fact, one such response from our tourist surveys states that they were unaware that activities were even available. There are many informational posters offered at the site, but very few are in English.

The most prevalent observation in improvements is the lack of public relations management and funding. Many of the staff have stated that the Project remains unknown to the public, recognizing the need for improvement in this aspect of administration. The Project's current website is hard to maneuver and there is very little information regarding the Chaipattananurak Project in today's leading travel sites such as TripAdvisor and Booking.com. Lastly, the limited funding to the Project inhibits its potential for growth, as there continues to be a constant need for human resources to fully service the tourists and visiting organizations. In fact, when analyzing the financial viability of implementing a new



activity, we noticed that while the farmers will profit from this, it will be at the loss of the Project, whose current expenditure exceeds their income.

We recommend the Chaipattananurak Project incorporate the coconut ice-cream, soap, and charcoal filtration activities in their current itinerary for all-ages, however, we believe the mochi-making activity would be more successful with the older audiences. We also believe that it would benefit the Project to host an annual coconut day event on Thailand's National Children's Day as a marketing tool to expand their overall presence.

The prices of current and future activities should be adjusted to mitigate financial losses, and increasing the Chaipattananurak Project's online presence will assist them in attracting more visitors. Moreover, utilizing nearby locations such as the King Rama II Memorial Park and the Amphawa Floating Market to help publicize the site will be a strong addition to their marketing plan.

## Conclusion

The lack of new and engaging coconut-related activities at the Project resulted in a decreased number of tourists to the area. Therefore, the Amphawa coconut farmers who rely on the site to make their sales receive a lower income. By implementing new coconut-related activities, the Chaipattananurak Project would become a more attractive tourist site as well as a noticeable coconut learning center for educational groups. As a result, visitors, especially the younger generation and educational groups, will acknowledge the significance of the coconut and consequently, the coconut farmers in Amphawa will make more profit from the coconut by-product sales necessary to host these activities. In addition to creating new coconut-related activities, we created a template for the Chaipattananurak Project to use to host a coconut event day on Wan Dek, Thailand's National Children's Day. We also equipped our sponsor with two videos, a general public relations video as well as a recap of the trial coconut event day, to be used for promotional purposes. By utilizing these resources, we believe the Project will successfully accomplish their goal of assisting the farmers and increasing the significance of coconuts.

# 1

# Introduction



## 1.0 Introduction

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The coconut, or coconut palm, is the most important cultivated palm and in Thailand it is known as the “Tree of Heaven” (Grimwood, et al, 1975; Massage, 2014). It forms from a single seed that is relatively ovoid in shape. It consists of three primary layers; the exocarp, the mesocarp and the endocarp. People use coconuts for a variety of purposes in cooking, carpentry, cosmetology, and health practices. Coconut water, for example, is rich in vitamins and minerals such as potassium and is low in sodium, calories, and fat. On the other hand, coconut cream and milk are common ingredients in a plethora of dishes and desserts (Ganguly, 2013). Cultural masks for Thai mask-dancing shows and the Thai string instrument known as a Saw-oo are made from the coconut shell (TAT, 2011).

The coconut plays an integral role in Thailand’s economy, since the country produces almost two million tons per year and ranks as one of the top ten suppliers in the world. The production of coconuts is also an imperative part of Thai culture because it produces income for Thai farmers (Morris & Nguyen, 2018). The fluctuation of coconut prices in Thailand in the past few years, especially in the Samut Songkhram province, has had serious economic ramifications for Thai farmers. Many coconut farmers and suppliers are currently in great debt due to the oversupply of coconuts from large imports. These coconuts were left unsold because many consumers decided to buy imported coconuts in place of the locally-grown ones, since the quality of the locally-grown ones had diminished due to insect invasions (Nguyen, 2018; Maneemuang, 2018). Consequently, the prices of coconuts, and the farmers’ profits, dropped.

The Amphawa Chaipattananurak Conservation Project (will also be referred to as the Project or the Chaipattananurak Project), located in Amphawa, Samut Songkhram province and established by the Chaipattana Foundation in 2008, serves to promote and preserve the traditional lifestyle of Amphawa. (The Chaipattana Foundation, n.d). The Project’s sectors consist of five main attractions in which both Thai and foreign visitors can get involved. The site requires local participation to operate all sections. The goal of the Project is to assist the local farmers, who have been affected by the price fluctuations, by creating new attraction at the site that incorporate the coconut and its by-products. These new attractions will engage both the community members and tourists, specifically children, with the aim of benefiting the local community.

In order to successfully execute this goal, our objectives are:

1. **Determine** existing coconut-related activities within the Project.
2. **Identify** characteristics of a successful attraction.
3. **Develop** criteria for an engaging activity.
4. **Assess** the feasibility of potential activities.

We collected all the necessary data through studying and reviewing case studies, conducting surveys and interviews in the Amphawa community, and making observations at the King Rama II Memorial Park. This helped us determine favorable attractions for the Chaipattananurak Project. Lastly, we designed and piloted an event where 205 students attended. This event showcased five coconut-related activities that were informative, hands-on, involved the local community, and targeted children. From this event, we assessed the most feasible activities of the ones we piloted to add to the Agricultural Demonstration Garden of the Chaipattananurak Project that would be successful and improve the overall experience of the visitors.

# 2

# Background



## 2.0 Background

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In order to develop coconut-related activities for the Chaipattananurak Project, it is imperative to build an understanding of the uses and benefits of coconuts and their relevance to Thai culture. Ideally, the implementation of these activities will help generate income for the Thai coconut farmers who struggle financially. The Chaipattana Foundation has preserved and promoted many Thai traditional practices within the Amphawa community. We seek to further support these coconut farmers through the design and implementation of additional coconut-based activities within the Chaipattananurak Project.

### 2.1 Chaipattana Foundation

For over 65 years after King Bhumibol Adulyadej ascended the throne in 1964, His Majesty has dedicated his time and efforts to the well-being of the Thai people. In 1988, His Majesty granted the initiative for the Chaipattana Foundation to carry out his objectives. The Chaipattana Foundation aimed to streamline and administer a broad range of development projects in line with royal initiatives to improve the quality of life of the people and to enable them to become self-reliant, providing prompt and efficient responses to issues affecting the Thai people without facing the impediment of government processes (Tantivejkul, 2014).



*Figure 1: Photograph of His Majesty visiting rural areas to discuss potential projects. (Chaipattana Foundation, n.d.)*

The underlying principles of King Bhumibol Adulyadej's initiatives on the development of these royal projects are simplicity and sustainability. Recognition of the need for self-sustainability of the Thai people has influenced His Majesty's mindful methodology, which begins with a discussion of the project and the expected results with the locals involved before asking if they would be willing to adopt the project (Figure 1). There are many steps taken to reach a project's end goal, and each step emphasizes the importance of community involvement towards a solution that is simple, affordable, and practical. As The King stated in a royal speech in 1996, "We [the committee members of the Chaipattana Foundation] are public-spirited developers joining to contribute to national and social development. Our joy comes when such progress is realized. That is truly 'Chaipattana' or the Victory of Development" (The Chaipattana Foundation, n.d.).

### 2.1.1 Amphawa Chaipattananurak Conservation Project

#### *History*

Since the reign of King Prasat Thong in the late Ayutthaya period during the mid-17th century, the Amphawa District has been historically known as a water-based community, stretching along the Amphawa canal and the Mae Klong river (Silapacharanan, 2010). However, as globalization continued to increase, the community began to reap the consequences of modern consumerism, which influenced the rapid growth of land transport technology. As a result, water transportation gradually diminished in practice and the Amphawa Floating Market began to lose its prominence. Furthermore, the increase in modern capitalistic influence has led to a lack of cultural recognition among the younger generations, resulting in the loss of respect for the authenticity of Amphawa's culture and traditions (Luechatham, 2011).

To mitigate this, the Chaipattana Foundation established the Amphawa Chaipattananurak Conservation Project on Dec. 21, 2008 (The Chaipattana Foundation, n.d), whose objectives were in line with the King's philosophy of Sufficiency Economy<sup>1</sup>. Her Royal Highness Princess Maha Chakri Sirindhorn granted permission to the Chaipattana Foundation to utilize a piece of land in the area to benefit the Amphawa community. The Project is located in the Samut Songkhram province, just 71 kilometers away from Bangkok, and spans almost 2 hectares.

The Chaipattananurak Project aims to restore and conserve the traditional ways of life against the backdrop of modern and western civilization by facilitating the management and development of the land in hopes of strengthening the collaboration amongst all Amphawa residents (Chaipattana Foundation, n.d.; Boonratana, 2011). In 2008, the Chaipattananurak Project received the "UNESCO Asia-Pacific for Culture Heritage Conservation" Level: Honorable Mention from UNESCO, which illustrates its initial success (Luechatham, 2011).

The main objectives of the Chaipattana Foundation for the development of the Amphawa Chaipattananurak Conservation Project are as follows:

1. Develop the marketing plan to implement the Project.
2. Develop the strategy to conserve the traditional culture and attract both local and foreign tourists, and to connect the Project to the nearby attractions.
3. Make a plan to improve the local community's knowledge and skills, as well as provide jobs to sustainably increase their income.

#### *Structure of the Project*

The five main attractions within the Chaipattananurak Project are the Agricultural Demonstration Garden for Knowledge Sharing, the PatPat Shop, the Chan Chala Shop, the Community Exhibition Room, and the Nakawarang Community Market Ground.

The Agricultural Demonstration Garden exhibits the cultivation of fruit farming, where people can learn about the traditional ways of life of the local Amphawa community. The PatPat Shop is a community shop that sells local goods and crafts, while providing strategic marketing assistance for both small and medium enterprises. Another sector, the Chan Chala Shop, is a local cafe whose ambiance is unique to the classic style of the Amphawa culture. It also serves as a promotion center for tourist activities relating to the Amphawa community. The Community Exhibition Room displays artifacts and cultural antiques involving traditional practices alongside informational features educating visitors on the heritage and folk wisdom of Amphawa. The themes and decorations of this correspond to the local culture. Similarly, the Nakawarang Community Market Ground (Figure 2) is a

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<sup>1</sup> The Philosophy of Sufficiency Economy emphasizes the importance of establishing a stable economic foundation before furthering development in a rural area. It stresses the principles of self-reliance and sustainability for a region. On a personal level, the philosophy adheres to the *middle path*, aiming awareness for moderation, reasonableness, and self-immunity in conduct. (Chaipattana Foundation, n.d.)

multi-purpose area that demonstrates the traditional lifestyle of the Thai people with performances such as the Thai traditional mask dance. These activities include Thai traditional performances and demonstrations of the preparations of local food. Tourists can also purchase locally-made souvenirs and desserts before leaving.



*Figure 2: Nakawarang Cultural Playground (Community Market Ground)*

Visiting the Project and participating in a selection of activities helped our group gauge the types of experiences that the site offers. We discovered that for 500 baht, a tour group of any size can experience the following standard attractions:

- Amphawa Chaipattananurak Conservation Project's objectives orientation
- Organic gardening demonstration and enjoying the traditional plants
- Amphawa's traditional coconut sugar-testing and demonstration
- Freedom to shop for goods that were made by the local sellers

These experiences are primarily demonstrations that last 30 minutes and do not include hands-on activities. The most popular of these is the traditional coconut sugar-testing and demonstration, as it is informative and holds the visitor's attention.

For an additional fee, visitors have the option to participate in the thirty-minute-long hands-on activities shown in Table 1. The prices of these activities depend upon the size of the tour group and the cost of the materials needed to conduct them. The activities conducted by the local volunteers are scheduled based on their availability, so tour groups seeking to participate in these must book their desired activity in advance. If a tour group fails to make a reservation, they can walk around the site free of charge; however, they do not have a tour guide to aid their experience and they do not have access to some activities. Of the additional activities, the *Luk-chup*<sup>2</sup> was the most successful, as it is interactive and allows the participants to create a dessert with a color and shape of their choice.

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<sup>2</sup> Luk-chup is a traditional Thai mung bean dessert that is molded into different shapes.

Table 1: All additional activity options

Thai traditional dessert making activities		Environmental activities	
Talum	Jha-mong-kut	Multi-purpose washing liquid making	
Dok-jok	Wong	Herbal liquid soap making	
Fhoi-Thong	Tom	Local traditional practices	
Luk-chup	Jark	Coconut-leaf weaving (animals, flowers, hats)	
Kao-tu	Bualoy-Kai-Whan	Other activity	
Sarm-Kler	Nam-muang-cheun	Herbal balm making	

The Project attracts a variety of ages (Figure 3). In an interview conducted with the management staff of the Chaipattananurak Project (Appendix C), they informed us that the majority of visitors to the site consist of governmental organizations and educational groups. Figure 4 shows the results of a demographic survey we handed out within a single day on-site. It finds that 55.3% of the 77 individuals surveyed visited the Project for educational purposes. Although the Project has had success with these groups historically, our sponsor wished to increase the presence of youth that visit (Appendix A).

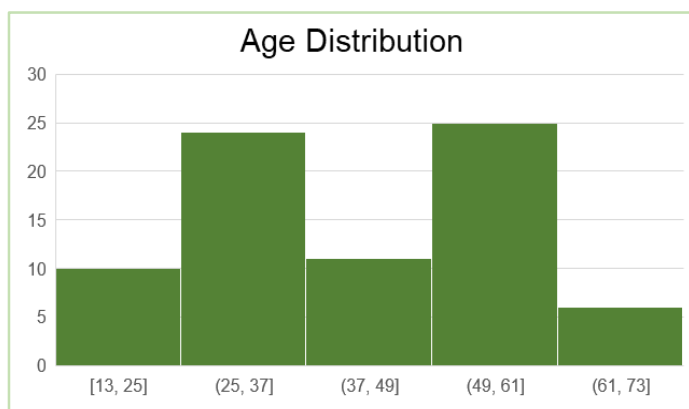


Figure 3: Age Distribution

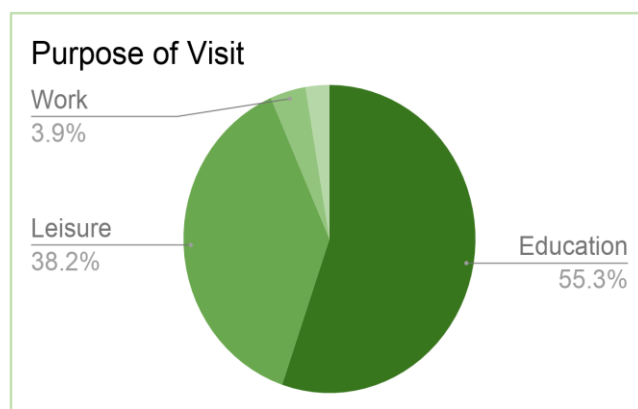
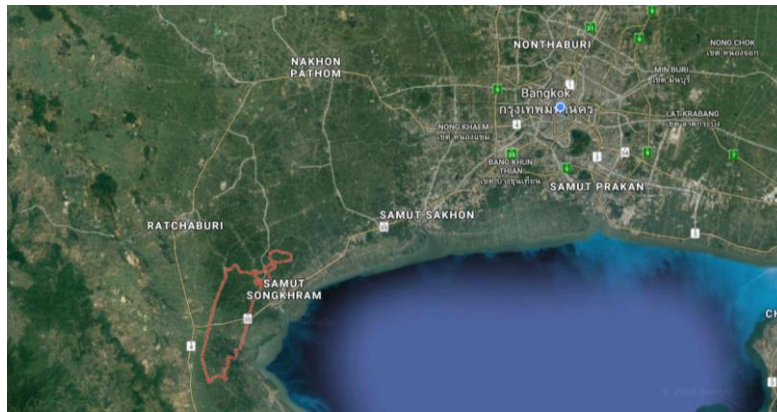


Figure 4: Purpose of Visit

## 2.2 Amphawa

Located in the Samut Songkhram province of Thailand resides the community of Amphawa (Figure 5). Amphawa is in the central region of Thailand along the banks of the Mae Klong River. The culture of the the Amphawa community is unique, having evolved over time since the early Rattanakosin period. The cultural themes of the area correlate to the residents' way of life, as many of the historical traditions and values are still prevalent. With the help of the Chaipattananurak Project, Amphawa has developed into a place where people can come to learn about history, culture, and Thai tradition. Among their most popular commodity is the coconut, which is plentiful throughout the country (Silapacharanan, 2007).





*Figure 5: Map of Thailand with Amphawa indicated (Google Earth, 2018)*

### 2.3 The Importance of Coconuts in Thailand

Thailand is one of the top ten producers of coconut in the world, ranking ninth in 2018 with a total production of 1,721,640 tons according to the UN Food and Agriculture Organization. Over time, the country has increased their importation of coconuts. In 2018, Thailand imported approximately 170,000 tons worth 1.51 billion baht (Morris & Nguyen, 2018; Vietnam Plus, 2018). Not only do coconuts play an integral role in Thailand's economy, but they are also a vital source of income for Thai farmers, who harvest 90% of the nation's coconuts.

Farmers within Thailand have been struggling economically due to the fluctuating prices of their staple crop, the coconut, earning on average 57,032 Thai baht in 2017 (Thai News, 2018). Although the practice of coconut farming is extremely popular within Thailand, a majority of consumers and businesses choose to import coconuts rather than purchase those grown locally (Morris & Nguyen, 2018; Maneemuang, 2018). The decision to import became popular because the quality of the local coconut lessened. This issue stemmed from a flawed agricultural policy issued by the government that does not prioritize the research that would yield higher quality coconuts. Without this research, Thai farmers had no defensive methods when faced with insect invasion (Sukphisit, 2012). Recognizing this issue, the Thai government has made motion to freeze the importation of coconuts to ideally increase the demand for local production. Despite these efforts, the value of the coconut has not increased substantially, which leads Thai government officials to believe that the importation of the coconut is still being conducted illegally (Morris & Nguyen, 2018).

As the demand for locally grown coconuts decreases, retail prices fall consequently (Figure 6). The price of one coconut has currently fallen from approximately 15 to 5 Thai baht with a harvesting and delivery fee of 2.5 Thai baht. This price drop hinders farmers' ability to make a substantial profit, resulting in failure to even make the minimum wage of 325 Thai baht/day in Thailand (Bangkok Post, 2018; Trading Economics, 2018). Warehouses often store extra coconuts for buyers, but the supply exceeds the demand, causing the extra coconuts to be left unsold. Failure to sell a coconut within four months of harvest results in the growth of roots, stems, and leaves off of the coconut (Maneemuang, 2018). This failure to sell consequently leaves the farmers vulnerable to further potential financial loss. Due to the abundant supply and little demand, the debt of farmers is rising (Morris & Nguyen, 2018).

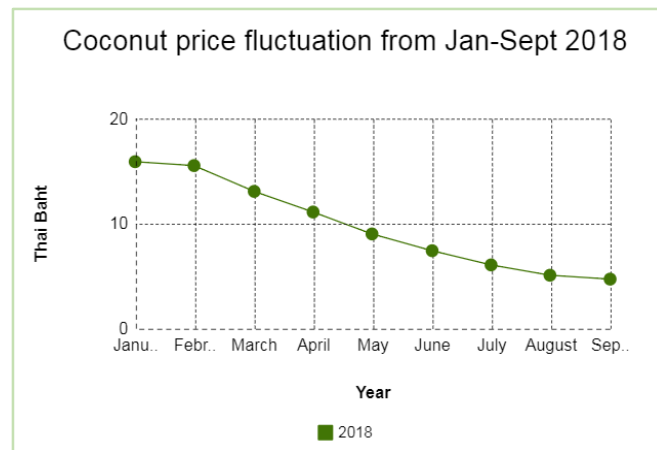


Figure 6: Line graph showing the coconut price fluctuation in Thailand for the months of Jan-Sep of 2018 (Arunmas, 2018)

To stabilize their financial situations, some farmers have decided to plant more than one kind of crop. Instead of mono-cropping coconuts, they have explored the option of mixed cropping by incorporating mangos, pineapples, and bananas. This shift supplies farmers with economic padding when one crop falls susceptible to price reduction. However, most farmers continue their practices of mono-cropping as the farming management decisions are much simpler (Tannil, 2014).

### 2.3.1 Thai traditional uses of coconuts

#### *Cultural beliefs*

The coconut palm is a cultural icon in Thailand and is often referred to as the “Trees of Heaven” or the “Trees of Life” (Massage, 2014). It is believed that planting a coconut palm in the eastern corner of a home will bring happiness to the household. Thai culture regards coconut water as a purity, believing that because the water is contained high above the ground, it never touches the dirt and remains pure in essence. Hence, they are worthy offerings to deities in both Buddhist and Brahman religious ceremonies (TAT, 2011). Due to this belief of purity, Thais use coconut water in funeral rituals in order to cleanse and purify the spirit of the deceased and allow for journey into their next life (Hale, 2015). In Thai culture individuals believe that certain coconut shells, those of the “one-eyed” coconuts<sup>3</sup>, hold with great power as they are extremely rare. These coconuts hold high significance in Buddhist temples, by breaking the body into small pieces and carving it into sacred images.

<sup>3</sup> The eye or pore of the coconut represents a carpel of the plant. Typically, a coconut has three pores on the endocarp of the coconut. (Smit, 1970) The one eyed coconut therefore, is a rare commodity that has only one pore.



### *Traditional by-products*

1. Coconut shells
2. Thatched walls from the coconut palm fronds
3. Furniture made from the palm of the coconut tree
4. Coconut palm fronds woven hat
5. Coconut husk planter
6. Decorated coconut shell hanging lamp
7. Woven palm frond bowls
8. Shredded coconut meat using a coconut rabbit grater
9. Coconut shell charcoal
10. Coconut shell shoe race

*Figure 7: Examples of coconut by-products in the Chaipattananurak Project*

As depicted in Figure 7, Thai people utilize every part of the coconut, from the palm it grows on to the flesh within. The palm of the coconut tree is sturdy and decay-resistant, thus useful in the manufacturing industry in the production and building of infrastructure, furniture, drums, and small boats. Thai people weave palm fronds in order to craft thatched roofing and walls, as well as baskets and brooms. The coconut shell, known for its durability and rigidity, produces a variety of applications. The more common uses for the coconut shell include bowls, utensils, charcoal, and planters (due to the highly porous husk). Another one of its by-products is fuel, as it is a source for both domestic and industrial purposes. Additionally, there is a new trend of using the activated carbon in the charcoal to absorb chemicals inside the body to stop diarrhea as well as in water treatment and air purification.

The meat and water of the coconut have numerous applications in cuisine and skincare products. As a result of the growing enthusiasm for organic and natural products, many local and global businesses have introduced skincare products utilizing coconut oil as its main ingredient. This oil possesses a unique combination of natural fats and has moisturizing and antibacterial properties that are essential in numerous applications, most commonly found in cosmetics. Within this category, coconut oil is often the main ingredient found in massage oils, moisturizers, deep conditioning hair care products, and antibacterial applications for wounds of all types (Figure 8). It can reduce rashes and stretch marks, remove makeup and dirt, and nourish cuticles, psoriasis, and eczema (O'Connor, 2018).



*Figure 8: An example of a coconut oil product in Amphawa*



*Figure 9: Coconut sugar produced by the Chaipattananurak Project*

Many Thai traditional cuisines use coconuts. Along with its unique flavor, the coconut is a source of digestion-friendly and satiating fiber, vitamins, and minerals. Many Thai curries and sweets use the flesh of the coconut, which when hot-pressed produces an oil used

for cooking. However, many health-conscious adults tend to extract this oil through a cold-pressed process instead, due to the higher nutrient value of the cold-pressed coconut derivative. The coconut oil derived from the cold-pressed process of oil extraction is one of the best ways to clean the mouth cavity, eliminating bacteria and unpleasant smells. The sap of the coconut palm also has application in the process of creating coconut sugar (Figure 9), which is used as a natural sweetener.

## 2.4 Case Studies

To develop creative and engaging coconut activities, it is important to examine prior attempts, both successful and failed. We analyzed case studies involving locations in Thailand as well as other regions to gain a broad understanding of different destinations and what makes their activities prosperous.

### 2.4.1 Critical success factors

In a 2012 research paper, Luis C. Ortigueira and Dinaidys Gómez-Selemeneva discussed multiple different factors surrounding the creation of a tourist destination, including the customer's perspective and the sustainability of the attraction (Ortigueira & Gómez-Selemeneva, 2012). The report refers to critical success factors (CSFs) as key elements of a development process for tourist destinations, and they analyze an example of these from selected Caribbean countries. CSFs are referred to as "the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization" (Rockart, 1979). Table 2 depicts the specific factors that the researchers derived, separated into three categories. The report mentions mapping as a tool used to determine the CSFs, highlighting three types: mental, conceptual, and cognitive, while focusing on cognitive as a more accurate tool for competitive enterprises like tourist sites.

*Table 2: List of critical success factors*

Critical Success Factors		
Cultural Appreciation	Tourist Leisure/Convenience	Nature
Systematic promotion of cultural events	Advance knowledge of agents and tour operators	Protection of biodiversity
Richness of culture	Tourist motivation	Landscape, nature, and climate
Richness of heritage	Quality leisure and recreation	
Richness of history	Receptivity of the residents	
Protection of the heritage	Communication	
Traditions	Cost of air travel	
Political, social, and economic stability	Security	
Conservation of cultural values	Financial viability	

### 2.4.2 Factors affecting tourist experience in other regions of Thailand

In 2015, Thanya Promborom and Narumon Kimphakorn conducted research on both Thai and foreign tourists in the upper northern province of Thailand with the intention of understanding the tourists' behaviors and their experiences involving, cultural, wellness, and ecotourism (Promborom & Kimphakorn, 2015). The report found that the environment and

overall atmosphere of the destinations, affordability and quality of the tourist activities, and transportation are factors that affect both foreign and local tourists' experiences. They surveyed two target audiences in order to determine their interests in different activities, shown in Table 3.

*Table 3: Tourist survey for more popular activities*

Popularity ranking	Thai tourists	Foreign tourists
1	Cultural activities	Eco-cultural and health activities
2	Eco-cultural activities	Cultural activities
3	Eco-cultural and health activities	Cultural and health activities
4	Cultural and health activities	Eco-cultural activities

The researchers identified important characteristics that a destination must have for a positive tourist experience, and they divided these into three main categories: *before*, *during*, and *after*. In the before phase, the customer needs to find the information about the attraction site prior to arriving. This could come from a website, word-of-mouth, brochures, or a video. During the tourists' time at the destination, it is important to keep them interested in the attractions. The customer should feel very engaged in the activities in order to remain entertained. After visiting the site, the customer should feel impressed with the attraction enough to recommend it to other people, thus aiding the before phase. These aspects are important for our project, as they serve as guidelines that we can follow in order to successfully create and implement a tourist attraction.

### 2.4.3 Analysis of a successful tourist site

Cultural information centers are attractions implemented globally to educate visitors on the history and practices of an area. Although these sites may be rich in information, it is imperative that they present this information in an enticing manner in order to attract tourists and maintain the attention of visitors. In order to aid the Chaipattananurak Project in developing a new and engaging activity, analyzing the success of other cultural information centers is beneficial.

Within the past 10 years the Polynesian Cultural Center has become Hawaii's most popular visitor attraction, attracting nearly one million visitors a year (Myers, 2001). The site includes a variety of hands-on activities including spear tossing, canoeing, and poi ball twirling. These activities are popular among individuals because of how they require physical involvement, which helps maintain their attention. Additionally, the Polynesian Cultural Center features demonstrations of traditional dance, musical showings, and educational lessons regarding the region's culture. The instructors of these demonstrations utilize audience participation and humor to make these attractions appealing (Levine, 2018). For example, the instructors invite visitors to assume the role of 'guest drummers' and partake in a competition to determine the audience's 'favorite drummer' (Stephenson, 2018). The Polynesian Cultural Center also owes a great margin of its success to their renowned luau dinner program where visitors pay a fee for a cultural Polynesian dinner that is accompanied by a show that includes the participation of 100 Polynesian natives, animations, and special effects (Polynesia, 2018).

# 3

## Methodology



## 3.0 Methodology

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This section describes how we determined the characteristics of a successful attraction and then used them to develop activities that we included in the trial event. We also indicate how we collected the data that we analyzed to evaluate the success or failure of the event.

### 3.1 Evaluate Existing Coconut-related Activities within Amphawa

In order to develop new coconut-related activities for the Amphawa Chaipattananurak Conservation Project, we first inventoried the existing coconut-related activities within the site and observed and evaluated them. To help us do this, we arranged a preliminary interview with the director of the Project (Appendix A). This interview gave us insight on the current status of the Project and how to proceed with collecting data from staff and tourists. We arranged a site visit with our sponsor in order to observe and evaluate the current coconut-related activities being utilized at the Project. To guide further research, our sponsor provided us with a list of all the activities available at the site. From this list, we selected several activities that we determined were the most beneficial to observe. During our first visit to Amphawa, we partook in several hands-on activities, such as coconut-leaf weaving, traditional Thai cooking of both *Kang Kala-krub*<sup>4</sup> and a dessert known as *Bualoy*<sup>5</sup>, and coconut milk production. We also observed Amphawa's traditional production of coconut sugar and *Nam Muang Cheun*<sup>6</sup>. This allowed us to further understand how well the Chaipattananurak Project was organizing and conducting the activities, as well as what the general tourist experience consists of.

### 3.2 Identify Characteristics of a Successful Attraction

Our team identified components of a successful activity to aid us in creating the news ones for the Chaipattananurak Project. In addition to our research found in the background chapter, we developed a series of interviews and surveys geared towards the different factions of the staff and the visiting tourists.

According to our follow-up interview with our sponsor (Appendix B), the staff consists of four main subsections of administration: the management team, the public relations team, the tourism team, and the local volunteers,<sup>7</sup> each with their own responsibilities. Understanding these responsibilities aided us in developing a list of interview questions for each team, which can be found in Appendices C, D, E, and F, respectively. The primary goal of these interviews was to determine what these key actors believed were the most successful and the least successful activities hosted by the Chaipattananurak Project based on their observations throughout the years. The staff also helped us determine what they believed the Chaipattana Foundation should and could improve on in regards to the progress of these attractions.

We created a tourist survey which we handed out in-person to visitors on our second day trip to the Chaipattananurak Project. Before we departed from the site, we left several copies of the tourist survey at the visitor's center and placed QR codes linking to these

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<sup>4</sup> Kang Kala-Krub is a local spicy curry dish that uses young coconut shell to give a crunchy texture. Krub means crunchy, while Kala is the coconut shell.

<sup>5</sup> Bualoy means floating lotus. It is a famous Thai dessert made from tiny glutinous rice balls and coconut milk.

<sup>6</sup> Nam Muang Cheun is a signature drink of the Chaipattananurak Project, providing a mellow flavour and scent, which is a result from the mixture of butterfly pea, lime, lemongrass, peppermint, sugar and salt. The recipe for this drink was created by Her Royal Highness, Princess Sirindhorn in the year 2008.

<sup>7</sup> The management team handles the financial distribution of the attractions, the public relations team handles the marketing aspects of the site, and the tourism team handles the organization and follow-through of the activities. The local volunteers are those who the Project employs from the local community to manage the demonstrations and hands-on activities that promote Amphawa culture and traditions.

surveys around the site so that we could continue to gather responses without physically being in Amphawa. These surveys aimed to characterize the tourists' experience at the Project; the surveys and their responses can be found in Appendix G and the results section of the report, respectively. Along with the general questions regarding demographic and marketing information, we also asked the visitors how the Project can improve with regard to their attractions and their services.

To aid our research, we further relied on first-hand observations from our experiences and second-hand observations of the tourists' experiences and behaviors during their time at the site. During our second visit to Amphawa, we studied three tour groups of varying sizes and origins as they engaged in different activities. These activities initially catered groups of 50 people and also included the morning orientation video and the viewing of the coconut sugar production. Studying these various group interactions provided us with understanding of how the Project handles their customers and how their experience correlates with the success of an attraction. Our own experiences participating in activities at the Project also provided us with insight on the enjoyment of the activities and satisfaction of the management of each attraction. Following these activities, we interviewed the demonstrators – the local volunteers – to determine how popular they believed their activities were, if they were content with the status of their activity, and if they saw any room for improvement (Appendix F).

### 3.3 Develop Criteria for an Engaging Activity

After our first visit to the Project and a follow-up interview with the sponsor (Appendix B), we created a list of potential activities to propose to the sponsor. The purpose of this proposal was to not only show our sponsor the research we had done but to also gain both their opinion on the feasibility of the activities and a better understanding of what resources are available for us to use when piloting them.

In order to create an activity that is both interesting and feasible to implement, we created a set of criteria (Appendix H), a rank-ordering matrix<sup>8</sup>, and a Pugh matrix<sup>9</sup> (Appendix I) to categorize, sort, and rank the activities. We provided the sponsor with the set of criteria and the rank ordering matrix to understand what to prioritize when selecting the best activity for this site. In the activities proposal, we categorized each activity, provided a brief description, listed the materials that are needed, included instructions on how to conduct the activity, and determined the pros and cons. Lastly, we provided the sponsor with the Pugh matrix, which is designed based on the set of criteria to categorize each activity by their strengths and weaknesses.

We drafted a revised Pugh matrix (Appendix I) with the 12 most feasible picks from our activities proposal (Appendix J) with the preferences selected by our sponsor in both the rank-ordering and Pugh matrix. We used a system of +, -, and 0 to quantify our results where a + denoted a positive, - denoted a negative, and 0 denoted neither a positive or negative. Based on the results of the matrix, and based on the preferred criteria from our sponsor, we ranked the activities in the following order:

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<sup>8</sup> A rank-ordering matrix is a decision matrix that is used to score ideas based on certain criteria or characteristics. Each idea is voted on using either 1, 0.5 or -1 to denote a positive, indifferent or negative vote and then the scores are tallied at the end. The most favored ideas are ranked the highest at the end of voting.

<sup>9</sup> A Pugh matrix is a decision matrix or tool used to evaluate concepts by strengths and weaknesses. To use the matrix, the criteria is listed both on the vertical and horizontal axes. Select the datum or point of reference and then score using +, -, or 0 accordingly. If + is scored, then this means that the criteria on the horizontal axis is preferred to that on the vertical axis. If a - is scored, then the criteria on the vertical axis is preferred to that on the horizontal axis. When a 0 is scored the criteria on either axes are of equal importance.



1. Coconut milk extraction
2. Coconut sugar mochi<sup>10</sup>
3. Coconut charcoal filtration
4. Coconut ice-cream
5. Kanom Ba Bin
6. Coconut milk jelly
7. Coconut painting
8. Coconut shoe race
9. Coconut candles
10. Coconut oil soap
11. Coconut dolls
12. Coconut bowling

Before we could develop the final list of activities we needed to consider our target audience of children (Appendix H) and what traits appeal to them. We researched this by visiting the King Rama II Memorial Park, which hosts interactive activities and includes many informative exhibits. During our visit to this location, we participated in a guided tour and collected observations regarding the displays they had in hopes of identifying successful aspects for the Chaipattananurak Project to adopt. The King Rama II Memorial Park is a very successful tourist attraction and we wanted insight as to how they managed and conducted their activities. This site is in a similar location to the Project; however, it is a for-profit organization and has many more resources.

### 3.4 Assess the Feasibility of Potential Activities

To determine what activities would be best to incorporate into the Project, we hosted a small event to showcase the list of potential activities we developed based on the above criteria. From our research, we discovered multiple applications of the coconut, including coconut-flavored ice-cream and coconut oil-based soap. As part of our project, we created several hands-on, educational, and engaging activities that exhibit unique coconut by-products and techniques (Appendix J), with the intention of differentiating Amphawa from similar traditional sites. As shown in Appendix J, we developed a management plan for each of the activities, including materials needed, time constraints, staff involvement, and a how-to guide to conduct the process. Before presenting our activities in an event, we held two trial runs. The first trial run was held two weeks before we scheduled the event, where we test ran each activity in order to determine approximate measure and price of materials per participant. Our second trial run involved the Chaipattananurak Project's participation as we ran a mock event one week in advance of the official event. This test run was to ensure that the staff were up to date with the details of the event, as well as to smoothen out any potential complications regarding communication and expectations.

The official event we hosted (Appendix K) was open to the schools that were invited by the Project on the Monday of February 11th, from 9:00 am to 3:30 pm. The groups that attended consisted of fifth and sixth grade students from three different schools, and this was the target audience that our sponsor chose. We set up each activity in a distinct area within the Chaipattananurak Project on a rotational basis with each activity limited to 50 people, with a duration of 30 minutes. We also left a 15-minute transition period between each activity where we asked the participants to fill out a paper survey to give us insight on strengths and weaknesses of the respective activity (Appendix L). We also sought to identify the visitors' level of satisfaction and enjoyment after the completion of the activity. This survey includes concise questions and is short in length so that the students would not feel

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<sup>10</sup> Mochi is a Japanese sticky rice cake made from glutinous rice flour that is first coated with flour and then rolled into a ball and traditionally stuffed with a red bean paste.

discouraged from completing it in its entirety. We anticipated the participants would spend around five minutes each filling it out. Our last method of gathering data involved the children voting on the activities. We gave each participant two tokens and at the end of the day and brought out five baskets, each associated with a specific activity. They placed these tokens into their favorite two, allowing us to determine which activities were most favorable.

### 3.5 Summary

From the methods used above, we gathered important data, gained a better understanding of what attractions appeal to tourists and how to manage them from first-hand experience, observed other tourist groups, and conducted semi-structured interviews and surveys with the various stakeholders.

# Results & Analysis

# 4



## 4.0 Results & Analysis

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This section includes our analysis of the results we obtained from the methodology. We used the data indicated below in order to deduce what activities would be most viable for the Chaipattananurak Project to adopt and incorporate into the site.

### 4.1 Observations Based on Trial Event

A successful cultural attraction is dependent on many factors, with the most important being who the target audience is and what they like. Our first and second objectives were to evaluate the existing activities and identify the key characteristics of a successful attraction, in order to create the necessary criteria for our activity to be enjoyable. To do this, we interviewed three groups of people: the staff, the tourists, and the local volunteers. By interviewing these key actors, we learned which of the existing activities are the most and least successful, as well as what they believe the Chaipattananurak Project could improve to make their experience better.

***Finding 1: The existing coconut-related attractions vary in popularity, but the more popular activities focus on traditional Thai cooking and crafts.***

We interviewed the coordinators of each of group of administration and found that they agreed that the *Luk-chup* dessert-making activity is the most popular, based solely on the widely creative and hands-on aspect of the activity. It is this type of activity that our sponsor expressed greatest interest in reproducing; something that is “traditional, unique, informative, hands-on, and targets children.” According to the interview with the tourism staff (Appendix E), the three main visiting groups to the Project each have a different set of activities that are most enjoyable for them in their visit. The governmental organizations, from the Samut Songkhram province, enjoyed the orientation and coconut-leaf weaving activity due to the knowledge gained from these demonstrations, such as growing crops and creating jobs. There is a limited amount of time that the governmental organizations, from larger regions of Thailand, have available to participate in activities and observe the Project. As a result of this, the tourism staff organizes the specific activities that require the least time, while providing a well-rounded experience, such as the butterfly pea drink-making activity and the simpler Thai dessert classes. Lastly, the student groups that visit the Project tend to book activities that are inexpensive and require more movement throughout the activity, such as guided informational tours around the Agricultural Demonstration Garden. Due to their restlessness, these youth groups do not fare well during longer activities that require them to sit and listen to demonstrations. The varying successes of these activities have led us to understand that any potential activity that we create must cater to these target groups -- in other words, our criteria must incorporate characteristics of simplicity, time-sensitivity, inexpensiveness, and consistent engagement.

Most tour groups that visit the site either come with reservations to participate in two to three activities, or simply come to observe the natural surroundings of the area and learn about the products through free demonstrations. On our second visit to Amphawa, we observed three distinct tour groups, each of varying sizes of 40, 90, and 150 people. Of these tour groups, only one of them paid to participate in activities, with the other groups stating they did not set aside enough time to participate in activities. The activities booked by the last tour group mentioned above consisted of *Bualoy* dessert-making, *Nam Muang Cheun* drink-making, and coconut-leaf weaving, which is consistent with Figure 10, in which we surveyed 18 visitors that day and 76.9% of surveyors reported that they preferred learning traditional Thai cuisine and crafts to other categories of activities.

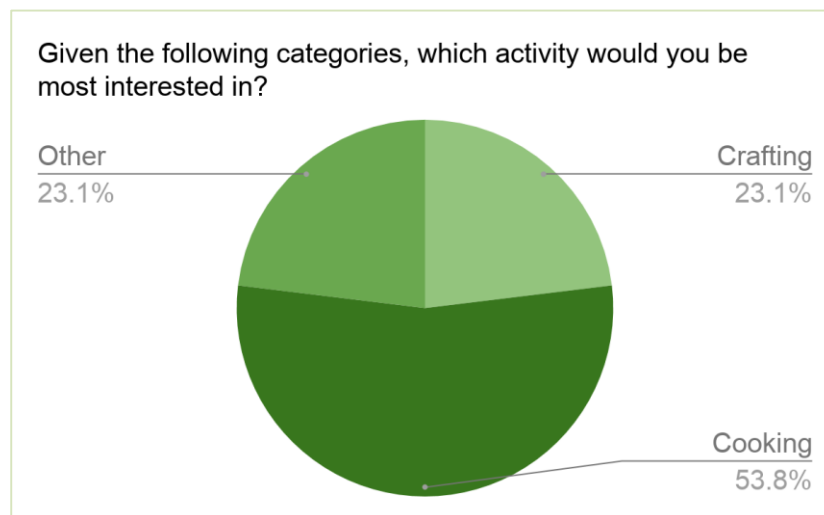


Figure 10: Interest in activities

***Finding 2: The success of an activity cannot be based solely on theory but requires a practical trial before implementation.***

After identifying characteristics of a successful attraction, we were then able to develop the criteria for the potential activities we proposed to the Chaipattananurak Project. Through interviews with our sponsor and the use of the rank-ordering matrix and Pugh matrix, we determined their priorities in creating the events. When we gave the rank-ordering matrix to our sponsor (Appendix I) to list their criteria in order of importance, we found that their top priorities for an activity were: informative, hands-on, involves the local community, traditional/unique, and targets youth.

After presenting this refined proposal of activities to our sponsor, we decided the most suitable activities given the available staff, time and cost restraints were:

1. Coconut charcoal filtration
2. Coconut sugar mochi
3. Coconut milk ice-cream
4. Coconut oil soap-making
5. Coconut shell painting
6. Coconut shell shoe race

Both the ice-cream and mochi-making activities ranked the highest, followed by the charcoal filtration activity, coconut shell painting activity, the coconut shell shoe race and the coconut oil soap-making activity. From the coconut event, we noticed that the ice-cream activity was the most popular followed by coconut oil soap-making activity. In our matrix however, the soap-making activity was ranked the lowest with a score of four, while the coconut shell painting activity was the least favorite activity, but was the 4th most favorable activity with a score of six. This shows that although the matrix was useful in narrowing down activities based on strengths and weaknesses, the success of an activity is not guaranteed until there is a trial run

***Finding 3: Children are more receptive to activities that incorporate a balance between engagement and tangibility of the by-product, while integrating an educational background.***

After hosting our event, we determined the popularity of each of our proposed activities through a coin-based survey. At the end of the event, each participant was given two coins to rank their favorite two activities. Of the five boxes laid out before them, the coconut ice-cream and the coconut oil soap-making activities were ranked the two highest, according to Figure 11, with the coconut charcoal filtration a close third. In addition, at the

end of each activity, we asked the participants to fill out a 3-question survey on what they liked about the activity and what could be improved. Based on the resulting survey answers, compiled in an Excel sheet and modified into the following chart (Figure 12), we have determined the top qualities shared by the three most successful activities: an engaging and educational program with the inclusion of a tangible by-product. We coded the above-mentioned chart based on the participants' category of response, whether they enjoyed the educational aspect of the activity, the simple and re-creatable aspect, the engaging and hands-on aspect, or the resulting by-product itself.

The chart demonstrates the most prevalent characteristics of each activity. Based on this, we found that participants were more receptive to activities that engage with them at every step and output an immediate product for enjoyment. The majority of participants commented that they enjoyed the process of making the products, as supported by the considerably high percentages of the "engaging" characteristic in each activity in Figure 12. Although painting ranked the highest for an engaging activity, we deduced that a successful activity needs to have more than just one characteristic, seeing as how painting ranked the least popular of the activities among the kids. Over 25% of participants conducting the ice-cream, soap-making, and mochi-making activities commented that they enjoyed eating or taking home their final products, leading us to consider the influence of a tangible by-product on the comprehensive enjoyment of an activity. However, the mochi-making activity was not as successful among the participants as the ice-cream, soap, and filtration activities were, despite the seemingly more balanced characteristics than the filtration activity. This is due to the higher regard for education by the target audience of student groups and educational organizations. The coconut filtration was an experiment of high educational value that demonstrated the process of water purification using the activated carbon from coconut charcoal to absorb chemicals and contaminants. Similarly, the ice-cream activity demonstrated immediate chemical reactions as the salt noticeably lowered the cooling temperature of the ice, allowing for the mixture to change from a liquid to a solid before them.

As stated above, the success of an activity is not based on a singular aspect, but rather a balance of the three most prevalent characteristics. There is an engagement threshold that an activity must reach to be successful, and if it does not reach that threshold, it must rely on other characteristics to make up for it. Ice-cream and soap-making were both creative, very interactive, and resulted in an immediate by-product, pushing these activities above the threshold, while the charcoal filtration activity was both hands-on and very educational. However, the mochi-making activity, while demonstrating a similar proportion of characteristics to the ice-cream and soap-making activities, trailed behind the next most successful activity by almost 50 coins. From observations throughout the event, the level of complexity of making mochi left the young participants struggling to form even close approximations to the size and consistency of proper mochi. The painting activity received the lowest score on the post-activity preference survey (Figure 11) due to its almost singular aspect; it lacked a creative process that engaged participants and kept their interest. Unlike the other activities available, the coconut shell painting encompassed a single process, which could be tedious for the age group of our participants.

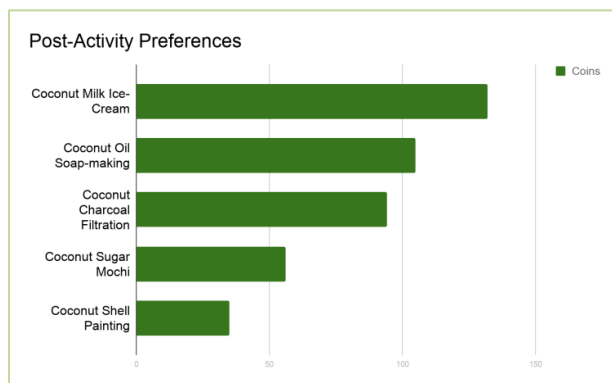


Figure 11: Post-event ranking of each participant’s favorite two activities

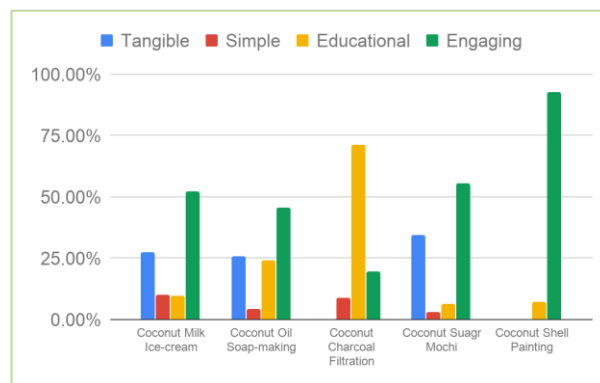


Figure 12: Graph reporting responses from each activity survey

## 4.2 Other Factors Affecting the Potential for Growth

**Finding 4: The Chaipattananurak Project is experiencing a financial deficit, which could hinder their growth in the long-term.**

Table 4: Budget and expenditure for the Amphawa Chaipattananurak Conservation Project for 2018

2018 Economy	Income (Thai baht)		Expenditure
	Expected	Actual	
Agricultural Demonstration Garden	3,212,000.00	3,736,233.00	3,209,576.76
Community Exhibition Room	1,104,000.00	460,368.00	861,515.27
Chan Chala Shop	2,654,000.00	2,538,939.00	1,495,205.05
PatPat Shop	3,460,000.00	2,702,339.00	2,021,380.13
Renting area	1,612,000.00	1,375,289.92	1,446,486.86
Center management			3,926,217.02
Muang Mai (Sub-district of Amphawa)			14,000.00
Staff payment			2,629,476.00
<b>Total</b>	<b>12,042,000.00</b>	<b>10,813,168.92</b>	<b>15,603,857.09</b>

In the process of hosting the coconut event, we asked our sponsor to provide us with their overall budget. As seen in Table 4 above, the Chaipattananurak Project received a total of 3.7M Thai baht from the Agricultural Demonstration Garden. Of this 3.7M Thai baht, 86% was spent on the overall upkeep of this department. Their total expenditure, however, exceeded their revenue by 4.8M Thai baht, therefore placing the Project in a financial deficit.

Using the data from the Project (Appendix M), the Amphawa farmer, on average, earns 118,296.25 Thai baht per year in coconut by-product sales to the Project alone. From our background research, the anticipated threshold for income for a coconut farmer in Thailand is estimated at 60,000 Thai baht per year by 2021 (Thai News, 2018), with the average farm income at 57,032 Thai baht in 2018. While it was difficult to find precise

economic information for Amphawa, we hypothesize, because of its close proximity of 1.5 hours to Bangkok, that it is close to the national average. With the assistance of the Project, the typical farmer in Amphawa earns at least twice as much as the national average. Therefore, the Project has a significant impact on the financial well-being of the farmers from the coconut by-products it purchases from the farms to be sold at the site and used in the activities. With the addition of a coconut event day and the implementation of new coconut-related activities, the Project will spend at least 45,657 Thai baht. The cost for the coconut by-products used for the event is approximately 4,860 Thai baht, which is only 0.03% of the total expenditure.

While this will not significantly hurt them financially, and these new activities will provide an additional source of income for the farmers, it has long-term rippling effects on the sustainability of the Project. Although our sponsor has stated that the debt will not affect their support of the farmers, if the financial deficit is not addressed, the debt will continue to increase with price inflations and increased interest rates in the coming years. This could potentially harm the overall success of the Project and stunt their growth.

***Finding 5: The Chaipattananurak Project could benefit from a more involved management plan.***

We interviewed each subset of administration and found that their concerns for the growth of the Project aligned with the observations taken from the visiting tourists. Despite the relevant success of some activities, the staff still believe that there is much that can be done to improve tourist experience. According to an interview with the tourism staff, communication between the Chaipattana Foundation and the local community leaves much to be desired. The Foundation partnered with the local community through the activity organizers, who would in turn notify the local volunteers hired for their skills. As the collaboration between the two progressed, the lack of communication between the volunteers and the organizers resulted in the underperformance of volunteers. Some staff believe the community organizers demonstrate a lack of responsibility, being the medium in which the Foundation's expectations are expressed. Oftentimes, the organizer will fail to update the volunteers, causing locals to come rushed and unprepared to their demonstrations. Furthermore, the staff believe demonstrations, even when considered popular, are not very enjoyable because of the lack of interaction by the local performers, who provide minimal conversation and exchange. This often causes activities to be underwhelming and less successful than their potential. Lastly, there have been several comments on the supply of human resources at the Project, stating the need to increase the number of staff and demonstrators available to fully service the tourists and visiting organizations. However, the limited funding to the Project restricts its ability to grow in this sense, as increasing the number of paid staff would lead to the necessity of increasing the cost of the activities. They would like to avoid this case because the current cost of activities already prevents tourists from participating.

***Finding 6: The lack of effective public marketing to the site inhibits the growth of the Chaipattananurak Project.***

We surveyed 77 tourists and gathered data regarding how they discovered the Project and how they preferred to receive information. We found that 31.6% of visitors found out about the site from social media (Figure 13). The survey also provided us with insight as to which social media methods are effective, as we found Facebook to be the most popular (Figure 14). Aside from social media, travel websites and word-of-mouth were other prominent mediums that attracted visitors to the Project.



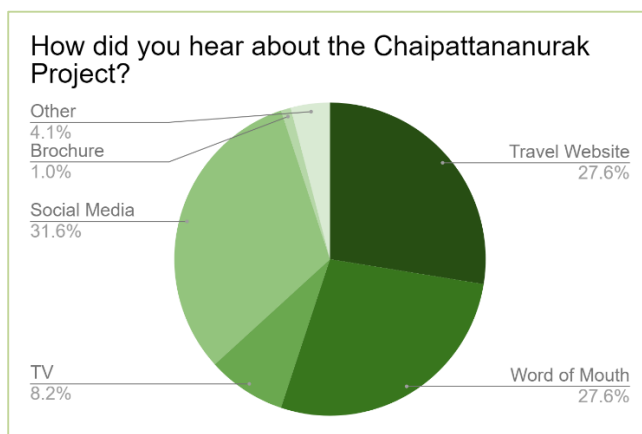


Figure 13: Source of Information

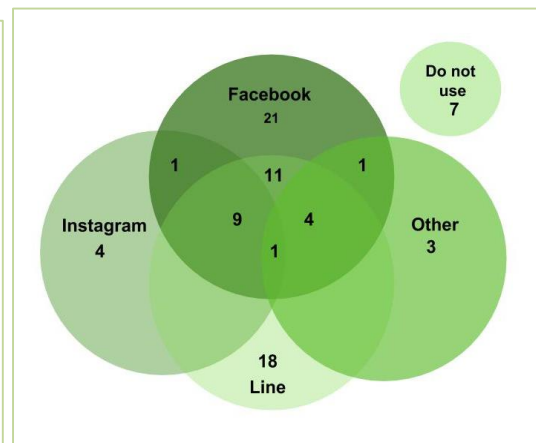


Figure 14: Social Media Preferences

Despite these various outlets for information distribution, the Chaipattananurak Project’s main obstacle remains a lack of public relations management and funding, according to the most prevalent observations taken from the staff interviews and tourists surveys. The Project is unable to accommodate walk-ins and is limited in their resources to serve foreigners, as stated in the interview with the public relations staff (Appendix D). One such response from the tourist surveys, provided by a visiting tourist family, stated that they were unaware that activities were available, which displays the Project’s struggle to accommodate walk-in tourists, as their activities are formatted in such a way that allows only for reservations made ahead of time. There are many informational posters offered at the site, but very few are in English, and none are in Chinese. We discovered that the number of Thai tourists are decreasing, while the number of foreign tourists are increasing, specifically Chinese and Korean. In addition, many have stated their concerns that the Chaipattananurak Project remains unknown to the greater public. Every staff member we interviewed, including the director of the Project, recognized the lack of promotion of the site and the need to improve this aspect of the administration. The Project’s current website is hard to maneuver and there is very little information regarding the Chaipattananurak Project in today’s leading travel sites such as TripAdvisor and Booking.com.

**Finding 7: The Chaipattananurak Project is not competitive to the King Rama II Memorial Park.**

Through our field trips both to the Project and the King Rama II Memorial Park, we made observations in regards to what aspects of a tour will allow it to be more engaging. We specifically looked at the King Rama II Museum due to its significance in Amphawa, being rated one of the five best things to do in the region by TripAdvisor. The site provided us with two tour guides who first took us to a room with a quick introduction video and then lead us on a path, stopping at various locations and giving information about King Rama II. Although the staff members accompanied us, we still could freely read and listen to the different exhibits, allowing us to feel engaged and learn at our own pace; this is something that the Chaipattananurak Project lacked, as the information they conveyed was strictly oral. Moreover, the King Rama II Museum catered to foreign tourists, having had English translations of exhibit signs, as well as an English option for the introduction video at the beginning of the tour. Although the site’s main intention was to convey important information about King Rama II, they successfully implemented methods to help make the exhibits more engaging. For example, they had one display of Amphawa, where visitors could press a button that lit up a certain location. This was a fun way of showing the different destinations in the area, and it successfully caught our attention. The museum also would play

sounds and music that were relevant to the exhibit; when we walked into one room with a Thai xylophone, we heard the sounds it makes through speakers. This museum's for-profit status allows it to possess more resources than the Project; however, the Project can benefit from this and utilize the proximity of the two sites to its advantage.

Our trip to this site involved limitations due to the time constraint we were faced with. Our time of arrival was 4:00 pm, one hour before closing, which restricted the amount of tourists we observed and intended to survey. Moreover, activities needed advanced booking, resulting in our inability to participate in them and so we only collected data based on the exhibits.

### 4.3 Limitations

The data collected and presented in our findings has limitations. We conducted the tourist survey that we utilized to gather information about the target audience and their preferences over a span of two weekdays. This limited time frame did not give us access to the variety of tourists that would visit the Project on a weekend, as the participants were primarily Thai and associated with governmental groups. Additionally, we found that those surveyed did not always complete the survey entirely, which resulted in us having an even smaller sample size for some questions. Although there are limitations to the data we collected, we still anticipate having enough information to deduce cohesive conclusions that amount to the creation of a new engaging activity for the Project.

# 5

# Recommendations & Conclusions



## 5.0 Recommendations & Conclusions

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In this chapter, we describe our recommendations in detail based upon our findings. These deliverables are intended to be used by the Amphawa Chaipattananurak Conservation Project in their attempt to both increase their coconut-related activities and expand their customer base to reach children. Our proposed plan aims to provide our sponsor with a detailed plan of action for future improvement of the Project. We seek to help promote the value of the coconut through the implementation of the activities we outline below.

### 5.1 Implementation of Coconut-Related Activities

***Recommendation 1: We recommend the Chaipattananurak Project incorporate the coconut ice-cream, soap, and charcoal filtration activities in their current itinerary for children.***

The most prevalent characteristics of the top successful activities from our coconut event are high levels of engagement, educational value, and an immediate byproduct. From these characterizations, along with the analysis of the data collected, analysis of the data collected we have determined that our most successful activities for children are the coconut ice-cream, coconut oil soap-making, and coconut charcoal filtration, due to their unique process and participant engagement at each step. We believe that these activities will be successful if incorporated into the current layout of the Project.

***Recommendation 2: We recommend implementing the mochi-making activity for adults.***

From the information we collected and analyzed after the coconut event, we deduced that the mochi-making event would be more appropriate for older age groups, specifically 40 to 60 years old. We arrived at this conclusion from our observations that we made during our day trips to Amphawa, as the adults seemed to be very intrigued during the making of *Bualoy* and *Nam Muang Cheun* while also keeping each other entertained, contrary to the children at our event. The making of the *Bualoy* is similar to that of the mochi in many ways. Both activities involve the use of flour (coloring, molding, and cooking) and the participants the participants eventually get to eat their final product. Being such a popular dessert, we believe that this process will be a successful activity and that adults would have fun with all aspects of it.

***Recommendation 3: We recommend matching the demonstrator of activities to appeal to the audience.***

On the day of the event, we observed that the children paired with the younger demonstrators of around 18 to 24 years old were more excited to interact with their demonstrator than those paired with the older generations. Because the children felt comfortable, they were inclined to willingly participate in the activities as well as energetically interact with the demonstrators. The children's excitement created a positive environment for conducting activities which resulted in a successful event. Our observations from the event day lead us to believe that young demonstrators should accompany children when completing activities. Because children were the target audience of event, we did not collect data to draw conclusions on the preferences of what demonstrators to match with adults.

***Recommendation 4: We recommend hosting an annual coconut day event at the Chaipattananurak Project.***

Based on the success of the trial event hosted by our team and the end of day debriefing with our sponsor, we recommend that the Chaipattananurak Project make this an annual event held on Thailand's National Children's Day. This will not only improve the

overall appeal of the Project as a tourist attraction, but it can be a marketing tool to advertise and increase the demand throughout the year. This would result in more income for the farmers of Amphawa who supply the coconut by-products used by the Project to host these activities. We recommend extending invitations to schools outside of Amphawa in the future so that more children will be able to experience traditional Thai practices.

From Finding 3, we believe that the sponsor should design the day so that the activities, whether solely coconut-related or not, are educational, engaging, and provide a tangible token or souvenir that the children can take home. In our trial run, the event ran from 9:00 am to 3:45 pm with a total of six coconut-related activities, inclusive of the lunch time and lunch-time activity. We recommend following closely to the event schedule (Appendix K) we designed for the trial event, with the exclusion of the time taken to conduct surveys at the end of each activity. Instead, the Chaipattananurak Project can take the time to include a more thorough demonstration and or educational and interactive aspect to each activity where suitable. The day however, should not last more than seven hours as the children may get restless and lose interest in the activities.

***Recommendation 5: We recommend re-allocating the budget to mitigate financial losses.***

Based on the price list for the activities from the coconut day trial run shown in Appendix N and Finding 4, we believe it would be beneficial for the Project to charge a flat overhead fee upon entrance per person, and not just per activity, in order to better finance departments that do not generate enough income. Alternatively, we recommend that the price of participating in each activity should be dependent on the materials and ingredients needed per person rather than per group as seen in Appendix O.

From the data in Finding 8, we recommend that the Project prioritize sourcing additional funding for the site such as capital campaigns<sup>11</sup> and or look at areas where the budget can be adjusted. These practices or some variation of them will allow the Chaipattananurak Project to live up to its mission of sustainable living not only for the community it supports, but also itself.

## 5.2 Recommendations for Future Work

***Recommendation 6: We recommend the Chaipattananurak Project increases their presence online.***

Increasing the Chaipattananurak Project's presence online would help optimize the amount of customers that it can attain. Currently there is no way for a visitor to book tours online and adding this feature to their website would market their attractions to a wider audience. We have redesigned the activities table for the booking system. Additionally, the website appears to be outdated and the Project would benefit from refining the material on the website with current events and updated information. The site could increase their presence online by encouraging visitors to leave reviews on TripAdvisor. Travel websites have become a main resource for tourists when making travel decisions, therefore we recommend their incorporation in the Project's marketing plan. With proper marketing and the development of new activities, we anticipate the Chaipattananurak Project will successfully be able to attract youth.

***Recommendation 7: We recommend utilizing the presence of the King Rama II Memorial Park and the Amphawa Floating Market to publicize the Chaipattananurak Project.***

Marketing the Chaipattananurak Project is a key aspect that we believe the Project should focus on in order to improve the overall functioning of the site. However, they are not limited to technological solutions to their marketing problem, rather they have many

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<sup>11</sup> A capital campaign is a targeting funding strategy typically used by non-profit organizations to raise a significant amount of money within a short period of time.

resources in close proximity to them that they can use. For instance, getting in contact with the King Rama II Museum to exchange brochures and have them available at each site will be a mutually beneficial exchange. Moreover, placing signs along the river will help the Chaipattananurak Project take advantage of the popularity of the Floating Market, thus increasing the tourist traffic on weekends when the market is open.

***Recommendation 8: We recommend implementing more informational posters and signs catered towards foreign visitors (English and/or Chinese)***

From the information discussed in Finding 5, we identified several limitations to the Chaipattananurak Project as a whole. On the marketing side, we found that the site's online presence is rather small, and that the majority of their signs and posters are in Thai, with very few in English and none in Chinese. Since the number of Thai tourists decreased while the number of foreign tourists increased, specifically Chinese and Korean, we recommend that they begin repairing this fault by translating the signs and posters in their most popular attractions to English and/or Chinese to broaden their audience to foreigners and walk-ins.

### 5.3 Conclusion

This project aimed to increase the value of the coconut in Amphawa, Thailand in order to aid local farmers in generating a steady source of income. By implementing our proposed activities and taking our other recommendations into consideration, we believe the Chaipattananurak Project will increase the presence of children at the site as well as convey information about coconuts to the audience.

In order to determine our approach to the problem, we researched various relevant topics such as coconuts, coconut farming, and successful tourist activities. We were able to understand the current status of the farmers and the hardships they face, as well as the importance of coconuts in Thailand and the Samut Songkhram province. Moreover, we analyzed case studies that provided us with more insight on how to create a successful tourist activity.

Our team conducted surveys and interviews with tourists and staff at the Project to better understand what the demand and areas of improvement are. Our team collaborated with our sponsor to host a coconut event trial where we invited both schools and organizations to participate. From this trial, we anticipated and also succeeded in gathering enough information about what makes an activity appealing and to what age groups. With these results, we recommended the most feasible activities to be added to the existing ones as well as ways to improve them in the future based on the feedback. In addition to using one of the new activities and incorporating it with the existing activities, we proposed an annual coconut-related event specifically targeted towards children.

Lastly, we made other recommendations and created deliverables based on the responses in our surveys and interviews to improve the marketing aspect of the Project. With all the recommendations and deliverables presented to our sponsor, we believe that the overall tourist experience and appeal of the Amphawa Chaipattananurak Conservation Project and the economic health of Amphawa farmers will improve.

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## APPENDIX A: Preliminary Sponsor Interview

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**Interview Date:** 1/6/2019

**Interviewee:** P'Klit and P'Ying

**Interviewers:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat

**Translators:** Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya

**Participants:** Julien Ataya, Amani Campbell, Arianna Kan, and Katie Brophy

**Location:** Chulalongkorn University

**Purpose:** To identify the source of the problem that is affecting the Amphawa Chaipattananurak Conservation Project

The purpose of the preliminary sponsor interview was to clarify the focus of our project and create a plan of action for how to proceed. Our sponsor informed us that the price of coconuts has been fluctuating in Thailand resulting in a lack of steady income for local coconut farmers. To help mitigate the effects of this economic hardship, the Chaipattana Foundation seeks to develop a new coconut related activity to incorporate in the Amphawa Chaipattananurak Conservation Project. A portion of the revenue generated from this activity will be given to the coconut farmers to help stabilize their economic stance. Additionally, the implementation of this activity is sought to inform tourists and the local community of the value and importance of coconuts in Amphawa.

The creation of a new coconut-related activity was delegated to us along with an anticipated vision for the activity. The sponsor requested for the activity to be traditional, unique, informative, hands-on, involve the local community, and target youth. The Project has several existing coconut-related activities; however, none that fill all of their desired criteria. To analyze the status of the current activities, we were invited to the site to participate in the activities to draw conclusions about the effectiveness of each. We also gathered information about the logistics of creating an event such as the availability of resources. For example, the Project has 20 employees and additional volunteers that help run it. The majority of the activities are conducted by volunteers, and the marketing and management of the Project are addressed by the paid employees.

The sponsor also provided us with additional concerns she had related to the Project that she would like us to address if time permits. For instance, the booking system for the Project is extensive and is not user-friendly to non-Thai tourists. The sponsor requested recommendations that made this process easier while still following the requirements of the Chaipattana Foundation. The sponsor informed us that the marketing plan of the Project would benefit from advancements as well. The website for the Project is outdated and social media is not being used to its fullest potential for marketing purposes. The sponsor concluded by reminding us that the creation of the activity is the main focus of our project, and any additional information discussed was secondary.

## APPENDIX B: Follow-up Sponsor Interview

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**Interview Date:** January 24, 2019

**Interviewee:** P’Krit

**Interviewers:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya

**Translators:** N/A

**Participants:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya, Aj. Numpon

**Location:** Chulalongkorn University

**Purpose:** To identify the specific needs of the Amphawa Chaipattananurak Conservation Project

After our follow up interview with our sponsor, we gained a better understanding of the exact needs of the Chaipattananurak Project. Our sponsor is seeking to improve and/or replace these activities with more interesting ones. They would also like to make amendments to the prices of the activities and penetrate the family market. Our sponsor explained that the Project is receptive to change, however, guidance is needed for their staff to be able to perform certain tasks.

The goal of the sponsor is to increase the number of tourists, organizations and family groups that visit the Chaipattananurak Project while providing both a quality and informative experience. The activity should be fun and interesting.

To target the family groups, our sponsor came up with an idea to host a family oriented cooking class, lasting no more than 3-4 hours and no more than 15 people at a time that showcases Thai foods, desserts and drinks.

## APPENDIX C: Management (Financial) Staff Interview

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### Management Staff Interview

This interview is intended to aid the Chaipattana Foundation's Amphawa Chaipattananurak Conservation Project, which seeks to provide coconut farmers in Amphawa with a steady source of income. If you choose to participate, your responses will be kept confidential. Your responses will give us insight regarding the local community's current appeal to tourists and what products should be highlighted. Feel free to abstain from answering any questions that you are uncomfortable with. We appreciate you reading this and hope that you take the time to answer the following questions.

**Interview Date:** January 18, 2019

**Interviewee:** P'Sai

**Interviewers:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat

**Translators:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat

**Participants:** Kittipat Kulkraisri

**Location:** *Bualoy* demonstration garden, Amphawa

### Permission Statement:

1. Will you allow us to use your name in reference of this interview? *Yes*

### Questions:

2. What is your main role as an economy staff?  
*I am the financial manager.*
3. What is the economy staff in charge of?  
*We are in charge of the making the financial plan for the Project and management of the budget granted to each section.*
4. How do you conduct your budgeting?  
*We analyze the income and expenses of each section to determine whether each section remains on track.*
  - a. Where is the budget from?  
*The Chaipattana Foundation*
5. How do you determine the cost of the activities?  
*We determine the components of each product and its average cost.*
6. What do you think you or the Amphawa Chaipattananurak Conservation Project could change to improve your activity?  
*Generally, every section has been improved in the past year. However, more coconut-related products and activities should be added to the Project and the management plan should be refined.*

### Comments:

*The budget given is not always enough, especially when the Project needs to prepare for upcoming events. For example, welcoming the Royal Highness, Princess Sirindhor*

## APPENDIX D: Marketing (PR) Staff Interview

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### Marketing/Management staff interview

This interview is intended to aid the Chaipattana Foundation's Amphawa Chaipattananurak Conservation Project, which seeks to provide coconut farmers in Amphawa with a steady source of income. If you choose to participate, your responses will be kept confidential. Your responses will give us insight regarding the local community's current appeal to tourists and what products should be highlighted. Feel free to abstain from answering any questions that you are uncomfortable with. We appreciate you reading this and hope that you take the time to answer the following questions.

**Interview Date:** January 18, 2019

**Interviewee:** P'Kate

**Interviewers:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri

**Translators:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri

**Participants:** Arianna Kan, Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya, P'Kate

**Location:** Amphawa, Chan Chala Shop

### Permission Statement:

1. Will you allow us to use your information in reference of this interview?  
*Yes*

### Questions:

2. What is your position within the business? What do you do?  
*I am the assistant for the local tourism center. I am a guide for tours, give the orientation at the beginning of the tours, and also manage the Facebook page and website. I am additionally in charge of promoting the site and coordinating the booking system.*
3. How are these activities being marketed? What platforms are used?  
*Some television channels come to participate in activities here as part of their promotional programs; however, they only come during special occasions such as mother's day. To arrange these promotional events, the Project waits for the TV programs contact to contact them because the Project is unsure of who to contact and how.*
4. Which activities do you believe are the most successful/popular?  
*The most popular activity is the making of obscure traditional desserts.*
  - a. Why do you think these activities are successful?  
*Because the most popular desserts are very well-known, so people want to come and learn how to make the lesser known desserts.*
5. Which activities do you believe are the least successful/unpopular?  
*Desserts that are well-known in Thai culture are the least popular activities because everybody knows how to do them already. The exception to this is the Luk-chup because of the activities creative aspects. I would like to stop conducting these unpopular activities because government groups and student organizations come to the Project multiple times, but the activities are always the same.*

6. Do you believe these activities are well-managed?

*No, the activities are not managed well.*

**Comments:**

*I want to be able to incorporate walk-ins in activities to the daily routine of the Project because groups do not always make reservations. Private businesses and university students come for tours as well, but not as many as the main three groups, listed under APPENDIX E.*

*The Project does not have much for support for foreigners, language-wise and activity-wise. I do not have any future plan for PR, but I want you to help create a marketing plan as a part of your project. People have heard of the Chaipattananurak Project, but most do not know what it is about and what it entails. I also want to bring in new activities. I have already contacted local businesses, such as traditional ice-cream making, hair-clips, and keychain making, to identify potential new activities. I would like you to help create more English videos, PR materials, and posters if possible. We also do not have any PR available near the Floating Market, so I would like to implement some sort of advertisement there as well, such as billboards or signs.*

## APPENDIX E: Tourism Staff Interview

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### Tourism Staff Interview

This interview is intended to aid the Chaipattana Foundation's Amphawa Chaipattananurak Conservation Project, which seeks to provide coconut farmers in Amphawa with a steady source of income. If you choose to participate, your responses will be kept confidential. Your responses will give us insight regarding the local community's current appeal to tourists and what products should be highlighted. Feel free to abstain from answering any questions that you are uncomfortable with. We appreciate you reading this and hope that you take the time to answer the following questions.

**Interview Date:** January 18, 2019

**Interviewee:** P'Lek

**Interviewers:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya

**Translators:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri

**Participants:** Arianna Kan, Julien Ataya, Amani Campbell, Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudthaya, P'Lek

**Location:** Chan Chala Shop, Amphawa

### Permission Statement:

1. Will you allow us to use your name in reference of this interview?

*Yes*

### Questions:

2. What is your position within the business? What do you do?

*I am the general manager for tourism and I receive emails for booking.*

3. What was the process like in creating these attractions?

*Some tour groups will ask for a specific activity, and if it is not currently provided, I will call the local community and ask if anyone is able to do this activity, and conduct the activity.*

4. Which activities do you believe are the most successful/popular?

*The Luk-chup (soybean) activity is universally the most popular and consists of the cooking of a Thai dessert. There are three main types of tour groups that visit the Project and the popularity of the attractions vary among them.*

- i. *Government organizations within the province: the orientation & coconut leaf weaving*
- ii. *Government organizations outside of the province: Short activities such as cooking and Thai desserts*
- iii. *Students: do not listen to directions well and get more out of a guided tour around the demonstration farm*

5. Which activities do you believe are the least successful/unpopular?

*Generally, the Thai desserts have been perceived as unpopular, but I do not want to stop conducting these activities because there still those who want to learn how to make them.*

6. Do you think there is any barrier in communicating with the tour groups?

- a. *With Thai tour groups?*

*There is no problem with communication with Thai customers.*

- b. With non-Thai tour groups?

*It is very difficult to communicate with non-Thai tour groups as the staff cannot speak English well, if at all.*

**Comments:**

*Here at the Project we rely primarily on face-to-face interaction to attract tourists to the Floating Market. The success that we have had with “word-of-mouth” marketing has made us feel that we do not need to incorporate posters and signs in our marketing efforts. Once customers come to the Floating Market we suggest that they check out our other attractions, which is usually effective as they are in such close proximity. We have younger generation volunteers stationed at Chan Chala to guide tourists from the Floating Market towards the Project.*

*In my opinion all of the activities could use advancements. The locals who conduct activities do not listen take instruction from the Chaipattana Foundation well, and do not fully prepare for their activities. Initially the volunteers seem promising; however, as time passes lack of communication between the volunteers and the organizers of the activities results in the underperformance of volunteers. The Chaipattana Foundation communicates their expectations to the activity organizers, who often fail to update the volunteers. Aside from managerial improvements, the activities themselves would benefit from revision as well. Demonstrations, even when popular, are not very enjoyable because of the lack of interaction from the local performers. They provide the bare minimum in teaching how to make a product, but will not speak more than that. This causes activities to be underwhelming and less successful than their potential.*

*The implementation of additional activities is ideal; however, the Project does not have the human resources to sustain them. In order to attain more staff, I would need to increase the cost of activities, but I do not want to do so, because that would hinder student groups from coming. We need to keep the price of activities relatively inexpensive because the current cost prevents tourists from participating already. The limited staff causes issues with scheduling as well. If multiple groups want to do the same activity at the same time, I ask them to reschedule if possible, and if not possible, I would rotate activities. I will not deny a tour group the opportunity to participate in an activity; however, it can be very difficult to supply them all with the opportunity in certain situations.*

## APPENDIX F: Local Volunteer Interview

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### Volunteer Staff Interview I

This interview is intended to aid the Chaipattana Foundation's Amphawa Chaipattananurak Conservation Project, which seeks to provide coconut farmers in Amphawa with a steady source of income. If you choose to participate, your responses will be kept confidential. Your responses will give us insight regarding the local community's current appeal to tourists and what products should be highlighted. Feel free to abstain from answering any questions that you are uncomfortable with. We appreciate you reading this and hope that you take the time to answer the following questions.

**Interview Date:** January 18, 2019

**Interviewee:** P'Bow

**Interviewers:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat

**Participants:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, P'Bow

**Location:** *Bualoy* demonstration garden, Amphawa

### Permission Statement:

1. Will you allow us to use your name in reference of this interview?

*Yes*

2. What is your position within the business? What do you do?

*I am a staff member from the Tao-Tan section.*

### Questions:

3. How popular would you say your activity is? Why or why not?

*It is very popular among various groups of people such as younger generations and adults. This is because the activity helps demonstrate what the Tao Tan shop is and what parts of the coconut can be used to make Thai desserts.*

4. What do you hope tourists will gain from your activity?

*The experiencing of witnessing the Tao Tan and the making of the products, teamwork, and having fun.*

5. Are you satisfied with the current state of your activity?

*I am satisfied to a certain extent because the tourists know that the coconut sugar and coconut syrup can be used to make Thai desserts. This would make them more interested in the products sold at the Tao Tan shop so that they buy the ingredients from there and make the deserts on their own.*

6. Do you have any new ideas for your activity that you would like to implement?

*New activities are needed, especially those that require demonstration and explanation.*

7. What do you think you or the Amphawa Chaipattananurak Conservation Project could change to improve your activity?

*Many tourists that are not from the organization do not know what is inside the Project. Therefore, public relations should be improved and there should be more methods of promoting the site.*

8. Have you observed other demonstrations?

*Yes*



- a. If yes, what are your opinions on the activity? What do you like about the activity?  
*The signature drink demonstrated at the Chan Chala shop. Visitors can learn how to make the drink at home using cheap and easy to find ingredients such as butterfly pea, lime, and lemongrass.*
- b. Is there anything that can be improved about the activity?  
*More demonstrators are needed to combat the limited availability of volunteers. This will help fully service the tourists and organizations that come.*

**Comments:**

*I feel that the activities are good, but they could be better. There are some difficulties in communication with the tourists because each of them have their own thoughts. We cannot always control them and get constant involvement from them. I would like English translations available in every section. I would like to be able to answer foreign tourists with complete information, but I am unable to.*

**Volunteer Staff Interview II**

This interview is intended to aid the Chaipattana Foundation's Amphawa Chaipattananurak Conservation Project, which seeks to provide coconut farmers in Amphawa with a steady source of income. If you choose to participate, your responses will be kept confidential. Your responses will give us insight regarding the local community's current appeal to tourists and what products should be highlighted. Feel free to abstain from answering any questions that you are uncomfortable with. We appreciate you reading this and hope that you take the time to answer the following questions.

**Interview Date:** January 18, 2019

**Interviewee:** Pa Aoy

**Interviewers:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat  
**Translators:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat\

**Participants:** Vichayada Vorapongpisut, Pattrakorn Kamolkornpannatat, Pa Aoy

**Location:** Weaving demonstration garden, Amphawa

**Permission Statement:**

1. Will you allow us to use your name in reference of this interview?  
*Yes*

**Questions:**

2. How popular would you say your activity is? Why or why not?  
*Quite popular in the community because local people are interested in hat and animal weaving and this helps create jobs for them and allows them to carry on traditional practices.*
3. What do you hope tourists will gain from your activity?  
*I want them to receive basic knowledge about weaving that they can transfer to younger generations.*

4. Are you satisfied with the current state of your activity?

*Yes*

5. Do you have any new ideas for your activity that you would like to implement?

*No*

6. What do you think you or the Amphawa Chaipattananurak Conservation Project could change to improve your activity?

*The cooking should be improved to attract tourists to try traditional Thai food and desserts.*

7. Have you observed other demonstrations?

*No*

**Comments:**

*Language is not a problem in communicating with the tourists at all because they usually come with their own guides and translators.*

## APPENDIX G: Tourist Survey

### Tourist Survey (แบบสอบถามสำหรับนักท่องเที่ยว)

This survey is intended to aid the Amphawa Chaipattananurak Conservation Project, which seeks to provide coconut farmers in Amphawa with a steady source of income. If you choose to participate, your responses will be kept confidential. Your responses will give us insight regarding the local community's current appeal to tourists and what attractions should be highlighted. Feel free to abstain from answering any questions that you are uncomfortable with. We appreciate you reading this and hope that you take the time to answer the following questions.

แบบสอบถามนี้จัดทำขึ้นเพื่อช่วยให้โครงการอัมพวา ชัยพัฒนานุรักษ์ได้ปรับปรุง พัฒนา และส่งเสริมความมั่นคงในรายได้ของเกษตรกรท้องถิ่น คำตอบของท่านจะถูกนำไปใช้ในการพัฒนากิจกรรมที่เกี่ยวข้องกับ มะพร้าว เรายืนยันว่าจะไม่นำข้อมูลของท่านไปใช้ทำการอื่นนอกจากที่ได้กล่าวไว้ ขอขอบคุณสำหรับความร่วมมือ

1. Age (อายุ): \_\_\_\_\_

2. What country are you from? (ท่านมาจากที่ไหน)

\_\_\_\_\_

3. Gender: (เพศ)

Female (หญิง)

Male (ชาย)

Other (Please specify):

(อื่นๆ (โปรดระบุ)): \_\_\_\_\_

Prefer not to answer (ไม่ประสงค์ที่จะบอก)

4. What language(s) do you speak and read fluently?

(ภาษาหลักที่ท่านใช้ตอบได้มากกว่า 1 ข้อ)

English (อังกฤษ)

Thai (ไทย)

Chinese (จีน)

Other (Please specify):

(อื่นๆ (โปรดระบุ)): \_\_\_\_\_

5. Do you have access to the internet? If so, through what medium?

(ท่านใช้อินเทอร์เน็ตผ่านอุปกรณ์ใด)

Smartphone/tablet (โทรศัพท์มือถือ/แท็บเล็ต)

Computer (คอมพิวเตอร์)

Other (Please specify):

(อื่นๆ (โปรดระบุ)): \_\_\_\_\_

I do not have access to the internet

(ไม่ได้ใช้อินเทอร์เน็ต)

6. Do you currently use any of the following form(s) social media?

(สื่อโซเชียลมีเดียไหนที่ท่านใช้บ่อยที่สุด)

Facebook

Twitter

Instagram

Line

Other (Please specify):

(อื่นๆ (โปรดระบุ)): \_\_\_\_\_

I don't use social media (ไม่ได้ใช้โซเชียลมีเดีย)

7. How did you hear about the Chaipattananurak Project?

(ท่านรู้จักอัมพวาชัยพัฒนานุรักษ์จากไหน)

Travel website (เว็บไซต์ท่องเที่ยวต่างๆ)

Social media (โซเชียลมีเดีย)

Brochure (from where?):

(ใบแผ่นพับ (จากที่ไหน)): \_\_\_\_\_

Television (โทรทัศน์)

Word-of-mouth (บอกเล่าปากต่อปาก)

Other (Please specify):

(อื่นๆ (โปรดระบุ)): \_\_\_\_\_

8. What brings you to the Chaipattananurak Project?

(ท่านมาทำอะไรที่อัมพวาชัยพัฒนานุรักษ์)

Education (การศึกษา)

Leisure (พักผ่อน)

Business (ทำงาน)

Other (Please specify):

(อื่นๆ (โปรดระบุ)): \_\_\_\_\_

9. Who did you come with?

(ท่านมากับใคร)

Friends (เพื่อน)

Family (ครอบครัว)

Alone (คนเดียว)

Educational group (Please specify):

(คณะเพื่อการศึกษา/ดูงาน

(โปรดระบุว่ามีมากับคณะใด)): \_\_\_\_\_

**10. Did you participate in any activities?**

(ท่านได้เข้าร่วมกิจกรรมใดหรือไม่)

 Yes (ใช่) No (ไม่)**11. If you answered yes, please describe the activities and what you liked about them.**

(ถ้าใช่ โปรดอธิบายเกี่ยวกับกิจกรรมของท่าน และชอบส่วนใดของกิจกรรม)

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**12. If you answered no, why did you choose not to participate in any activity?**

(ถ้าไม่ ทำไมท่านถึงเลือกที่จะไม่เข้าร่วม)

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**13. Is there anything about your experience that you wish to improve?**

(จากประสบการณ์ของท่านที่อัมพวาช่วยพัฒนานักศึกษามีสิ่งใดที่อยากให้ทางโครงการปรับปรุงหรือไม่?)

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**14. Are there any activities that you wanted to do, but did not have the chance to do it?**

(ท่านมีกิจกรรมไหนที่อยากทำแต่ไม่มีโอกาสหรือไม่)

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**15. Please put the following criteria in order of their importance to you when doing an activity: inexpensive, informative, fun, easy-to-do**

(โปรดเรียงลำดับความสำคัญในการทำกิจกรรมของท่าน: ราคาไม่แพง, ให้ความรู้, สนุก, ง่าย)

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_

**16. Would you be interested in any of the following activities? (Check all that apply)**

(ท่านสนใจที่จะทำกิจกรรมใดบ้าง ดังต่อไปนี้ ตอบได้มากกว่า 1 ข้อ)

 Cooking class (กิจกรรมทำอาหาร) Crafting (กิจกรรมเปลือกมะพร้าวประดิษฐ์) Painting (กิจกรรมระบายสีเปลือกมะพร้าว) Racing (กิจกรรมประเภทที่มีการแข่งขัน)**17. Of the 4 options in question 16, which is the most interesting to you?**

(จากข้อ 16 กิจกรรมไหนที่ท่านสนใจมากที่สุด)

 Cooking class (กิจกรรมทำอาหาร) Crafting (กิจกรรมเปลือกมะพร้าวประดิษฐ์) Painting (กิจกรรมระบายสีเปลือกมะพร้าว) Racing (กิจกรรมประเภทที่มีการแข่งขัน)**For non-Thai tourists (สำหรับชาวต่างชาติ):****18. How do you prefer to have information translated?** Pre-recorded audio Visuals w/subtitles In-person translator**19. How much of your experience is affected due to a language barrier?** Not much A little A lot

## APPENDIX H: Criteria List

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### **Inexpensive**

- **Inexpensive for the sponsor**
- **Inexpensive for the tourist**
- **Traditional/unique**

The attraction should use existing materials in Amphawa to manufacture the coconuts and coconut by-products to avoid unnecessary importation costs. This is achieved by using local farmers to harvest and transport the coconuts and equipment that is already used in the community for the manufacturing process. In addition, the involvement of the third party companies should be limited.

### **Simple**

- **Simple to implement**
- **Simple to participate in**
- **< 30 people**
- **≅ 30mins**

It should be simple for both the tourist to understand and enjoy and for the local community to operate. To achieve this, the activity should be limited to 30 minutes per cycle and between 20-30 people but, must not exceed 30 people. In order to minimize time and congestion, materials and any ingredients used should be prepared ahead of time.

Additionally, for the attraction to be simple for the Amphawa Chaipattananurak Conservation Project to implement, the staff should be limited to what they currently have and only involve a member of the local community that is already equipped with the required expertise. The amount of stakeholders involved should either be limited or a thorough plan developed to equitably distribute roles and responsibilities.

### **Incorporate tangible coconut by-product**

The coconut, and preferably a coconut by-product, must be included in the attraction in order to provide the local community income to alleviate the pressures felt by the coconut price reduction in the Samut Songkhram province. Furthermore, the tourist will be able to take the final product from the attraction as a souvenir, which would increase the overall experience and increase the likelihood of them spreading words to raise awareness of the Chaipattananurak Project.

### **Quality product/service**

- **Informative**
- **Creative**
- **Hands-on**
- **Involves the local community**

In order to provide a quality experience from the product/service at the Project a balance of utilizing both technology and people-to-people contact is necessary. Incorporating technology and media can help the tourist truly understand and appreciate the full charm of the activity. By this we mean, we have acknowledged that some of the tourists were non-Thai people and therefore, it is necessary to have a way to present the activity in multiple languages. This required a non-Thai tourist survey where we asked about their preferred means of translation to develop an appropriate medium (eg. visual subtitles, audio, etc.)

However, the activity should still involve interaction between the local community and the tourists, whether it is directly demonstrating to the tourists or giving them a hands on

opportunity in the activity. This will create a friendly atmosphere as well as maintain people-to-people contact.

**Target children**

The activity should focus on younger generation, such as elementary and middle school students, as requested by the sponsor and therefore, should be appropriate for all ages.

## APPENDIX I: Rank-ordering and Pugh Matrix

### Rank-ordering matrix

Rank ordering design goals 0 (<), 0.5 (=), 1(>)

	Inexpensive for Sponsor	Inexpensive for tourist	Traditional/Unique	Simple to implement	Simple to participate in	≤ 30mins	Tangible by-product	Informative	Creative	Hands-on	Involves the local community	Targets children	Targets families
Inexpensive for Sponsor	1		1	1	1	1	1	1	1	1	1	1	1
Inexpensive for tourist	0	1	1	1	1	1	1	1	1	1	1	1	1
Traditional/Unique	0	0	1	0	0	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5
Simple to implement	0	0	1	1	1	1	1	1	1	1	1	1	1
Simple to participate in	0	0	1	0	1	0.5	0.5	1	0.5	1	1	0.5	0.5
≤ 30mins	0	0	0.5	0	0.5	1	0.5	1	0.5	0.5	0.5	0.5	0.5
Tangible by-product	0	0	0.5	0	0.5	0.5	1	0.5	0.5	1	1	1	1
Informative	0	0	0	0	0	0	0	1	0	0	0	0	0
Creative	0	0	0.5	0	0.5	0.5	0.5	1	1	0.5	0.5	0.5	0.5
Hands-on	0	0	0.5	0	0	0.5	0.5	1	0	1	0.5	0.5	0.5
Involves the local community	0	0	0.5	0	0	0.5	0	1	0.5	0.5	1	0.5	0.5
Targets children	0	0	0.5	0	0.5	0.5	0	1	0.5	0.5	0.5	1	0.5
<b>TOTAL</b>	0	1	7	2	5	6.5	5.5	11	6	7.5	7.5	7	7.5

### Pugh matrix table

Activity Characteristics	Coconut Shell Painting	Coconut Oil Soap-making	Coconut Sugar Mochi	Coconut Milk Ice-cream	Coconut Charcoal Filtration	Coconut Shell Shoe Race
Simple to implement	1	1	0	1	1	1
Simple to participate in	1	1	1	1	1	1
Provides a tangible by-product	1	1	1	1	-1	-1
Informative	-1	0	1	0	1	0
Creative	1	1	1	1	0	-1
≤ 30mins	0	1	0	1	1	1
Hands-on	1	-1	1	1	1	1
Traditional/unique	-1	-1	1	0	1	1
Targets children	1	0	1	1	1	1
2-3 staff members	1	1	1	1	1	1
≤ 30 participants	1	1	1	1	1	1
<b>Sum</b>	<b>6</b>	<b>5</b>	<b>9</b>	<b>9</b>	<b>8</b>	<b>6</b>

## APPENDIX J: Activities Proposal

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# THE COCONUT ACTIVITIES BOOKLET





## DIY Coconut Ice-cream

This version of making coconut ice cream utilizes coconut milk and coconut sugar and equipment easily found in the kitchen such as ice, salt and a ziploc bag to create a creamy frozen delight.

DURATION: 30 minutes

SERVES 1 person

2 tbsps. coconut sugar  
½ cup coconut milk  
½ cup salt  
1 cup crushed ice

### EQUIPMENT

- Gallon Ziploc bag (1)
- Sandwich Ziploc bag (1)
- Measuring cup (1)
- Table spoon (1)

### HOW-TO

1. Mix ½ cup coconut milk with 1-2 tbsp of coconut sugar in a small Ziploc bag.
2. Mix 1 cup of ice with ½ cup of salt in a gallon-size ziploc bag.
3. Place the small bag of milk into the gallon-size ziploc bag, then shake the bag to distribute the ice around the milk for 5-10 minutes.

### Tips

You can add different flavors, toppings and sugars to your liking.

## Coconut Oil Soap-making

Coconut oil soap-making is an interactive activity that utilizes the coconut oil and other essential oils to create different soaps of all shapes that leave your hands moisturized and clean.

DURATION: 30 minutes

SERVES 20 people

2 tbsps. coconut oil  
500 g glycerin base  
5-10 drops essential oil

### EQUIPMENT

- Burner (1)
- Medium sized stainless steel bowl (1)
- Large spoon for stirring (1)
- Measuring spoon (1)
- Dropper (1)
- Soap molds with volume of roughly 200 cm cubed (20)
  - Sheet of wax paper with dimensions of roughly 12x12 cm (20)

### HOW-TO

1. Melt the glycerin base in a stainless steel bowl.
2. Mix the coconut oil into the solution and stir.
3. Add the essential oil while stirring.
4. Pour the solution into the mold and let sit for 10-15 minutes.
5. Once hardened, the coconut soap-making activity is complete.
6. Remove the soap from the mold and wrap the soap in wax paper for transportation purposes.

### Tips

Butterfly-pea drink and other food coloring can be added to the soap mixture to create variety of colors

## Coconut Mochi

A unique approach to traditional Thai desserts, coconut sugar mochi is made with coconut milk and coconut sugar to create a sweet dessert that could be made with a variety of fillings.

DURATION: 30 minutes

SERVES 20 people

8 oz. glutinous rice flour  
¼ cup coconut water  
½ cup coconut sugar  
1 ¼ cup butterfly pea coloring  
Filling:  
Dried bananas  
Coconut meat

### EQUIPMENT

- Burner (1)
- Metal pot (1)
- Stainless steel bowl (1)
- Stirring spoon (1)
- Flat metal baking sheet (1)

### HOW-TO

1. Mix the flour, coconut water, and coconut sugar together in a bowl, stir until the mixture is sticky.
2. Take the mixture out of the pot and place onto a pan covered with a layer of flour. Spread a light layer of flour over the dough to make sure it does not stick to the pan..
3. Flatten the dough using the palm of your hand into the shape of a circle.
4. Take a small amount of filling and place it in the center of the dough.
5. Wrap and pinch the dough around filling.

### Tips

Filling can be chosen based on the user's tastes, and can include red bean and various fruit past

## Coconut Shell Charcoal Filtration

This method of filtration uses grounded coconut charcoal to filter debris, other contaminants, and smells.

DURATION: **30 minutes**

CREATES **1 filter** (2-10 people)

$\frac{1}{3}$  cup grounded coconut charcoal

Cotton or filter cloth/paper

$\frac{2}{3}$  cup sand

$\frac{1}{4}$  cup gravel

$\frac{1}{4}$  cup pebbles

Empty water bottle (1)

Scissors (1)

### HOW-TO

1. Cut the bottom of the bottle.
2. Flip the bottle over and place the cap into the bottom layer.
3. Place cloth in cap and ensure that nothing can fall through.
4. Fill ingredients based on the figure.
5. Pour dirty water at the top and watch the water filter.

### Tips

We do not recommended drinking this water after filtration as it needs to be boiled and treated.



## Coconut Shell Shoe Race

Description: This is a Thai traditional toy used by children made from the endocarp of the coconut shell, which is cut in halves and strung using a rope. Children are able to walk, run and compete with each other with this simple game.

DURATION: 15 minutes

CREATES 1 pair of coconut shell shoes

1 Empty halved pair of coconut shells  
1 Rope

### MAKE THE SHOES

1. Take the empty halves of the coconut shells and drill a hole through the top.
2. String one end of the rope through the top of one of the coconut shells and tie a knot and string the other end through the top of the other shell and tie a knot.

### HOW-TO

#### PLAY THE GAME

1. Place the rope between the big toe and the index toe and stand on the top.
2. Pull on the side of the rope for each shoe to lift each foot to walk.
3. Orchestrate a fun relay race, where each team must complete a course first, switching runners at each intersection.

#### Tips

Offer prizes for the winners.

## Coconut Shell Painting

Description: Coconut shell painting is not just for relaxation and enjoyment, but it can be used as home decoration and traditional bowl.

DURATION: 30 minutes

CREATES 1 coconut shell painting

1 Empty halved pair of coconut shells  
Acrylic Paint

### EQUIPMENT

- Paint brush (1)
- Cup for water (1)
- Color tray (1)
- Newspaper (1)

### HOW-TO

1. Cover the table with newspaper to avoid spilling of colors on the table
2. Mix acrylic paint with water to make it less viscous and easier to apply colors on
3. If the paint brush is new, make sure to soak it with water for a while
4. Paint your own style of coconut shell

### Tips

The instructor should be interactive with the youth

# APPENDIX K: Event Schedule

## EVENT SCHEDULE

<b>Date:</b>	February 12, 2019	<b>Event Coordinators:</b>	Amani Campbell, Arianna Kan, Julien Ataya, Katie Brophy, Kittipat Kulkraisri, Prompasut Snitwongse Na Ayudhaya, Pattrakorn Kamolkornpannatat, Vichayada Vorapongpisut
<b>Location:</b>	Amphawa Chaipattananurak Conservation Project		

ACTIVITY	TIME	Group 1	Group 2	Group 3	Group 4	Group 5
Arrival	8:30 - 9:00					
Orientation Introduction	9:00 - 9:15					
Transition	9:15 - 9:30					
<b>ACTIVITY 1</b>	9:30 - 10:15					
Demonstration	9:30 - 9:40	Coconut Shell Charcoal Filtration	DIY Coconut Ice-Cream	Coconut Sugar Mochi	Coconut Oil Soap-Making	Coconut Shell Painting
Activity	9:40 - 10:00					
Survey	10:00 - 10:05					
Transition	10:05 - 10:15					
<b>ACTIVITY 2</b>	10:15 - 11:00	DIY Coconut Ice-Cream	Coconut Sugar Mochi	Coconut Oil Soap-Making	Coconut Shell Painting	
Demonstration	10:15 - 10:25					Coconut Charcoal Filtration
Activity	10:25 - 10:45					
Survey	10:45 - 10:50					
Transition	10:50 - 11:00					
<b>ACTIVITY 3</b>	11:00 - 11:45					
Demonstration	11:00 - 11:10	Coconut Sugar Mochi	Coconut Oil Soap-Making	Coconut Shell Painting	Coconut Charcoal Filtration	DIY Coconut Ice-Cream
Activity	11:10 - 11:30					
Survey	11:30 - 11:35					
Transition	11:35 - 11:45					
<b>LUNCH</b>	11:45 - 13:00	Coconut Shell Shoe Race				
Lunch + Lunch-time Activity	11:45 - 12:45					
Transition	12:45 - 13:00					
<b>ACTIVITY 4</b>	13:00 - 13:45					
Demonstration	13:00 - 13:10	Coconut Oil Soap-Making	Coconut Shell Painting	Coconut Charcoal Filtration	DIY Coconut Ice-Cream	Coconut Sugar Mochi
Activity	13:10 - 13:30					
Survey	13:30 - 13:35					
Transition	13:35 - 13:45					
<b>ACTIVITY 5</b>	13:45 - 14:30					
Demonstration	13:45 - 13:55	Coconut Shell Painting	Coconut Charcoal Filtration	DIY Coconut Ice-Cream	Coconut Sugar Mochi	Coconut Oil Soap-Making
Activity	13:55 - 14:15					
Survey	14:15 - 14:20					
<b>VOTING</b>	14:20 - 14:45					

## APPENDIX L: Activity Follow-up Survey

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This survey is intended to aid the Amphawa Chaipattananurak Conservation Project, which seeks to provide coconut farmers in Amphawa with a steady source of income. If you choose to participate, your responses will be kept confidential and will also give us insight regarding the feasibility and appeal of this activity as a future addition to this site. Feel free to abstain from answering any questions that you are uncomfortable with. We appreciate you reading this and hope that you take the time to answer the following questions.

1. คุณอายุเท่าไร?  
(How old are you?)  
\_\_\_\_\_
  
2. คุณชอบอะไรในกิจกรรมนี้?  
(What did you like about this activity?)  
\_\_\_\_\_
  
3. คุณคิดว่ากิจกรรมนี้ควรพัฒนาหรือปรับปรุงอะไรบ้าง?  
(What would you improve?)  
\_\_\_\_\_
  
4. คุณจะแนะนำกิจกรรมนี้ให้คนอื่นต่อหรือไม่  
(Would you recommend to a friend?)
  - a. แนะนำ (Yes)
  - b. ไม่แนะนำ (No)



## APPENDIX M: The Chaipattananurak Project's Annual Expenditure on Coconut By-products

<b>Group: Ruen Nam Horm</b>			
<b>Product</b>	<b>Quantity</b>	<b>Price</b>	<b>Total price</b>
Coconut oil soap	450	50	22,500
Coconut oil lotion	270	100	27,000
Coconut oil 100 ml	100	80	8,000
<b>Total</b>			<b>57,500</b>
<b>Group: Jak Sarn Karn Maprao Bang Chang</b>			
<b>Product</b>	<b>Quantity</b>	<b>Price</b>	<b>Total price</b>
Cloche food (S)	30	200	6,000
Cloche food (M)	15	640	9,600
Cloche food (L)	6	800	4,800
Cloche food (XL)	2	1,200	2,400
Cloche food (XXL)	1	2,400	2,400
○Basket (S)	200	80	16,000
○Basket (M)	7	120	840
○Basket (L)	40	200	8,000
○Basket (XL)	40	240	9,600
○Basket (XXL)	50	280	14,000
Basket for wine bottle	60	72	4,320
<b>Total</b>			<b>77,960</b>
<b>Group: Suan Nork Coconut</b>			
<b>Product</b>	<b>Quantity</b>	<b>Price</b>	<b>Total price</b>
Big coconut oil lotion	290	150	43,500
Small coconut oil lotion	130	80	10,400
Coconut oil 500 ml	255	250	63,750
Coconut oil 100 ml	280	80	22,400
Coconut hair conditioner	130	250	32,500
Coconut lipstick	370	60	22,200
<b>Total</b>			<b>194,750</b>
<b>Group: Pleun Samut Coconut Oil</b>			
<b>Product</b>	<b>Quantity</b>	<b>Price</b>	<b>Total price</b>
Coconut oil 1000 ml	125	385	48,125
Coconut oil 500 ml	150	210	31,500
Coconut oil 250 ml	100	154	15,400
Coconut oil 100 ml	170	84	14,280
Coconut oil mixed Pandan 1000 ml	40	406	16,240

Coconut oil mixed Pandan 500 ml	50	231	11,550
Coconut oil mixed Pandan 100 ml	60	98	5,880
<b>Total</b>			<b>142,975</b>

## APPENDIX N: Event Price List

Items	Price (฿)	Site's payment
Van	5,800.00	
Fan weaving + Name tag	4,900.00	
Young coconut meat	150.00	
Tray from coconut leaves	200.00	
Ice-cream	2,100.00	
Acrylic paint + Gravel	230.00	
Clear glass bottle	120.00	
Materials from Sampeng Amphawa	770.00	
Kitchenware	1,190.00	
Plants for decoration	1,610.00	
Bamboo fan for decoration	180.00	
Snacks from BigC	751.50	
Snacks from BigC	376.50	
Coconut milk	1,260.00	
Coconut shell for painting	2,400.00	
Coconut shell for shoe race	500.00	
<i>Materials*</i>	8,544.00	
Food 300 boxes	10,500.00	
Drinking water	500.00	
Ice	500.00	
Cold pressed coconut oil	300.00	
Coconut sugar dessert (for mochi)		335.00
Coconut sugar		180.00
Coconut syrup		800.00
Coconut meat + Coconut water		800.00
Lychee	160.00	
Butterfly pea drink	500.00	
<b>Subtotal</b>	<b>43,542.00</b>	<b>2,115.00</b>
<b>Total</b>	<b>45,657.00</b>	

### *Materials\**

Materials	Price (฿)
Plastic bottles	320.00
Cotton	472.00
Charcoal	400.00
Sand	108.00
Glutinous rice flour + Maize flour	1,885.00
Sticky rice	50.00

Coconut milk	90.00
Mango + Lychee	120.00
Glycerin soap base	840.00
Mold	720.00
Brush for painting	1,143.00
Salt + Ice	100.00
Zip lock bag	170.00
Nylon rope	120.00
Tissue	236.00
Ice-cream cup	220.00
Waxed paper	240.00
Other materials for soap and mochi-making	1,310.00
<b>Total</b>	<b>8,544.00</b>

## APPENDIX O: Amphawa Chaipattananurak Conservation Project Activities Table

Time (min)	Activities	Cost	Location
30	Orientation	500 BAHT	Nakhawarang
30	Organic gardening demonstration and enjoying the traditional plants		The Agricultural demonstration farm
30	Amphawa's traditional coconut sugar-testing and demonstration		The Agricultural demonstration farm
30	Shopping goods that were made by the local sellers		Pat Pat Shop
	<b>Choose your desire activity provided by the Chaipattananurak Project</b>		
30-40	<b>Thai traditional dessert making activity</b>		
	dessert 1 (Talum)	1-25ppl = 1,500 baht, 26-50ppl = 2,200, 51-100ppl = 4,000, >100ppl = 35 baht/person	
	dessert 2 (Dok-jok)	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	dessert 3 (Fhoi-Thong)	1-25ppl = 1,500 baht, 26-50ppl = 2,200, 51-100ppl = 4,000, >100ppl = 35 baht/person	
*popular*	dessert 4 (Look-Chub)	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	dessert 5 (Kao-tu)	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	dessert 6 (Sarm-Kler)	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	dessert 7 (Jha-mong-kut)	1-25ppl = 1,500 baht, 26-50ppl = 2,200, 51-100ppl = 4,000, >100ppl = 35 baht/person	
	dessert 8 (Wong)	1-25ppl = 1,500 baht, 26-50ppl = 2,200, 51-100ppl = 4,000, >100ppl = 35 baht/person	
	dessert 9 (Tom)	1-25ppl = 1,500 baht, 26-50ppl = 2,200, 51-100ppl = 4,000, >100ppl = 35 baht/person	
	dessert 10 (Jark)	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	dessert 11 (Bualoy-Kai-Whan)	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	purple drink making (Nam-muang-cheun-chan-chala)	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	<b>Environmental activity</b>		
	multi-purpose washing liquid	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	herbal liquid soap	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	<b>Local traditional practices</b>		
	weaving coconut leaves (Animals, Flowers, Hat)	1-25ppl = 1,300 baht, 26-50ppl = 1,900, 51-100ppl = 3,500, >100ppl = 30 baht/person	
	<b>Other activities</b>		
	herbal balm making	1-25ppl = 1,500 baht, 26-50ppl = 2,200, 51-100ppl = 4,000, >100ppl = 35 baht/person	

**Note: The timetable can be adjusted according to your preference**