



**NATURAL HERITAGE VALUE AND SUSTAINABLE USE OF THE LOWER SEGMENT OF
THE MAE KLONG RIVER, SAMUT SONGKHRAM PROVINCE**

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

**By
Nuanpan Suravanichakit**

**A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree
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Due to natural heritage degradation and unsustainable use of natural resources in Mae Klong within the province of Samut Songkhram are at present getting very serious. To solve and prevent such problem it is vitally essential for a “bottom-up” approach to the management and use of the Mae Klong River to have more participation in solving them. Therefore the four objectives of this dissertation were: (1) to determine the natural and cultural heritage values of the downstream section of the Mae Klong River, (2) to determine if the natural and cultural resources of the Mae Klong River are being used by the local communities sustainably, (3) to assess the environmental issues (natural, cultural, social, and political) of the Mae Klong River in the context of sustainable tourism, and (4) to provide recommendations for the successful management of the Mae Klong River for sustainable tourism.

The secondary data were collected from published reports and articles from books and academic journals including oral history, traditional songs, and local stories about Mae Klong River, and government annual reports and technical publications. The primary data were gathered from all information collection from field observations and interviews. Each interview consists of four parts: 1) general information of local communities; 2) the local communities and their uses of the natural resources of the River; 3) an awareness of the local communities who value the River toward the natural and cultural attributes proper management of the River; and 4) the management and environmental issues of Mae Klong.

The local residents residing along or close to the River were found to be more knowledgeable and more aware of the natural resources of the River. The majority of the respondents has recognized the cultural value and associated symbolism of the Mae Klong River. Most of them are familiar with traditional Thai song that is linked to the River. However, only few of them appreciate the aesthetic value of the Mae Klong River due to the polluted state of the River. Most local residents are unaware and have little information about the history of the Mae Klong River but they have interest in seeing tourism development in the study area similar to Amphawa. More importantly, most of them have an interest in the sustainable use of natural resources in the Mae Klong River as well as the natural resource conservation and cooperation.

The study explored that the management should provide more environmental training and seminars on river conservation to every community household because this will ensure the sustainability of natural resources in the Mae Klong River for the benefits of the present and future generations.

Program of Architectural Heritage Management and Tourism Graduate School, Silpakorn University Academic Year 2009
Student's signature
Thesis Advisor's signature

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CHAPTER 1
INTRODUCTION AND BACKGROUND INFORMATION

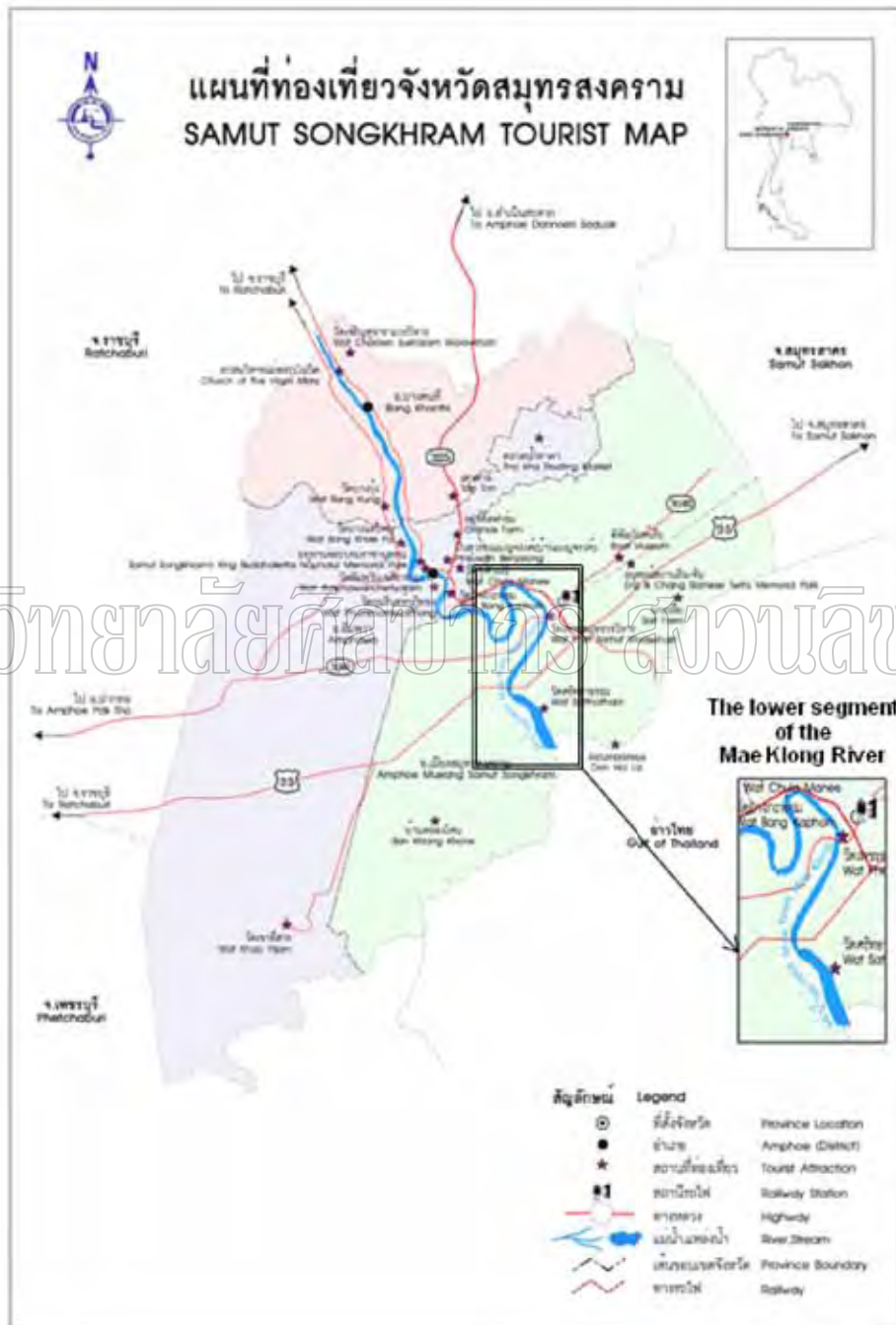


Figure 1 Samut Songkhram Province and the lower segment of the Mae Klong River
Source: Samut Songkhram POC (2008a)

PART I: THE WETLAND VALUES OF THE MAE KLONG RIVER BASIN, SAMUT SONGKHRAM PROVINCE

Section 1.1a: Wetlands in Samut Songkhram Province

The main wetlands (Ramsar sites) found in Samut Songkhram Province are mangroves, estuaries and mudflats (Table 1). Samut Songkhram Province has altogether 359 wetlands, covering an area of 23.58 square kilometers; eight shorelines and 346 canals and rivers consisting of 13.87 square kilometers; and five lakes with a total coverage of 9.71 square kilometers (Office of Environmental Policy and Planning {OEPP}, 1999). Generally, the Mae Klong River is a wetland ecosystem characterized by the presence of a diverse species of plants and aquatic animals (Chirawet, 2005). During the winter season, the Mae Klong River becomes a major habitat of numerous migratory birds from Asia mainland (Bohuwech, 2004).

Table 1 Wetlands (Ramsar sites) in Thailand.

No.	Ramsar sites	Ramsar site no.	Province
1	Phru Khuan Khi Sian, Wetland in Talay Noi Non-hunting Area	948	Phattalung Province
2	Wetlands of Bung Khong Long Non-hunting Area	1098	Nong Khai Province
3	Don Hoi Lot Wetlands—Mudflats	1099	Samut SongKhrum Province
4	Wetlands of Krabi River Estuary	1100	Krabi Province
5	Wetlands of Nong Bong Khai Non-hunting Area	1101	Chiang Rai Province
6	Wetlands of Princess Sirindhorn Wildlife Sanctuary (Phru To Daeng Peat Samp Forest)	1102	Narathiwat Province
7	Wetlands of Hat Chao Mai Marine Nation Park - Libong Islands Non-hunting Area - Trang River Estuary	1182	Trang Province
8	Wetlands of Laemson National Park - Kapoe Estuary - Kra Buri River Estuary	1183	Ranong Province
9	Wetlands in Ang Thong Islands Marine National Park	1184	Surat Thani Province
10	Wetlands Phang Nga Marine National Park	1185	Phang Nga Province

Source: ONEP, 2005

The biodiversity of the Mae Klong River includes numerous species of mangroves and palms, several species of molluscs, crustaceans, and other interesting native species such as the well-known Mae Klong short-bodied mackerel, tubeworms, mudskippers, and riverine lizard.

Appendix A lists the common wetland plants and animals found along the Mae Klong River. The listed species are those that have known economic, cultural and ecological importance.

Section 1.1b: Wetland Biodiversity in Samut Songkhram Province

The biodiversity of the Mae Klong River along with its tributaries and canals is extremely high. Although, the wetlands area of Samut Songkhram Province covers only 23.58 square kilometers or 5.66% of the provincial land area, it supports some 178 species of birds and 102 species of fish (inventoried in the Mae Klong River) and at least 18 species of wetland birds (inventoried in the Don Hoi Lot wetlands—mudflats) (Mahidol University, 2004). One significant natural landmark of the province is the Don Hoi Lot Mudflat/Wetland; it is an internationally protected site because of its value to numerous and diverse wetland birds. This wetland is a popular and valuable ecotourism destination in the country and in the world.

Section 1.1b (1): Wetland habitat: Don Hoi Lot Mudflat/ Wetland—a Ramsar Site

Don Hoi Lot Mudflat is an internationally recognized wetland and inscribed as a Ramsar site. It is situated in Bang Jakeng Sub-district, a city district within Samut Songkhram Province; it covers an area of 24.09 square kilometers or 15,056.25 rai. The wetland receives and accumulates sediments from the Mae Klong River, and therefore, it is rich in organic nutrients (OEPP, 1999). In addition to the diverse wetland birds found in Don Hoi Lot, the area is considered unique because of the presence of a sandbar located at the mouth of the Mae Klong River. The sandbar is an important habitat of the tubeworm (*Solen regularis*), locally called *Hoi-lot* (Ramsar Convention, 1998). The site is also the only habitat within Samut Songkhram Province where large populations of razor clams can be found. Some other examples of the aquatic fauna found (including those that are threatened and near-threatened in the area) are listed in (Appendix A).

PART II: TOURISM IN SAMUT SONGKHRAM PROVINCE

The different forms of tourism in Samut Songkhram Province are community-based tourism, cultural heritage tourism, home-stay tourism, and agro-tourism.

Section 1.2a: Community-based tourism

The province of Samut Songkhram can boast of many places which can be developed for community-based tourism. Some of these destinations have recently been awarded for their significant contribution to the industry. In 2007, four places in Central Thailand won the 2007 Thailand's Most Outstanding Community-based

Tourism Award. These esteemed places include Ban Bang Phlap Agrotourism Center, Ban Hua Hat Tourist Center, Klong Khlon Ecotourism Community Enterprise, and Tha Kha Home Stay. The Most Outstanding Community-based Tourism Award is one of two award categories featured in the 2007 Thailand Tourism Awards. This award is designed to promote the conservation of the country's precious natural resources and support sustainable tourism development in tandem with quality development of the Thai Tourism Industry (TAT, 2008).

Ban Bang Phlap Agrotourism Center also won an award for tourism development and promotional organizations under the concept of "Love Our Birthplace Community" (TAT, 2008).

Section 1.2b: Cultural Heritage tourism

The attractions for cultural heritage tourism include museums, aquariums, performing arts centers, archeological digs, theaters, historical sites, monuments, castles, architectural relics, religious centers, and zoos. A well-planned presentation of the historical, cultural, and/or mixture of several geographic and heritage attractions can further enrich the cultural heritage tourism experience (Bonn, Dai, Hayes, & Cave, 2007).

Samut Songkhram Province has the main attributes of an excellent cultural heritage tourism destination. The Province has dozens of century-old Thai houses, numerous ancient temples and fruit orchards lining the banks of the river and canals. Since many tourists are interested in knowing about traditional culture, the Province with its interesting traditional culture such as small-scale, farming, subsistence fishing, and palm sugar-marking, including the original floating market, has the potential to further enhance its value as a memorable tourist destination in the country (Thailand, 2006).

Section 1.2c: Home-stay tourism

Home-stay tourism has been actively promoted by the Thai government in the last four to five years (TAT, 2005). Home-stay tourism highlights Thai's traditional ways of life in rural areas where tourists can have close interactions with the local people and nature. For example, many locals living along the River have maintained their livelihood through their skills of producing palm sugar. Such activity has charmed many home-stay tourists visiting the Province. In terms of lodging, tourists have a choice from the 52 registered accommodations located in the Amphawa District (TAT, 2008).

The first home-stay tourism in Samut Songkhram Province was established on an orchard farm in 1996 by the village head of Ban Muang Mai Village, Mr. Thongyip Kaewninkul. It was originally intended to accommodate college students and other guests who wanted to learn and do research on horticulture. In 1999, two more villages (Ban Pai Pong Pang Village and Ban Tha Kha Village) adopted the home-stay business. The business is small-scale and family-oriented costing only about US\$ 10

per night including two meals (Chirawet, 2005). The affordability of home-stay accommodation is one of the tourism drawcards in the area.

Section 1.2d: Agro-tourism

Agricultural and the river-based occupations are the main sources of income for the local residents of Samut Songkhram Province (The Post Publishing, 2006). Because the province is nourished by the Mae Klong River, its land is fertile and food production is bountiful. Farmers can raise different types of fruits, such as pomelo, lychee, and coconut (TAT, 2005).

Agro-tourism is an emerging industry. With more than 300 natural and artificially dug canals, the Province can offer tourists an opportunity to paddle through the river and observe from a relatively close distance some of the orchards and farms near the shore. The fishing villages, known for producing fish sauce and processing seafood products, are also potential tourist attractions.

Samut Songkhram is considered an ideal province for agro-tourism. The TAT has promoted the Province as one of the provincial agro-tourism destinations in the Kingdom of Thailand. It shares its agro-tourism status with four other popular provinces, namely Chiangmai, Chiangrai, Loei, and Nakhon Sri Thammarat. Unlike other agro-tourism destinations, Samut Songkhram Province is only an hour drive from Bangkok, and can be reached by car or train.

PART III: NATURAL AND CULTURAL HERITAGE FEATURES OF SAMUT SONGKHRAM PROVINCE

This section introduces the relevant natural and cultural features of the study area. These features, when properly managed, can sustain not only tourism but also the livelihoods of the local people.

Section 1.3a: Major Natural Heritage Features

Section 1.3a (1) The Mae Klong River

The Mae Klong River is a significant natural heritage area in Samut Songkhram Province. The River has been the central theme of the provincial mottos, such as “The City of Hoi Lot, Top Lychee, King Rama II Memorial Park, the Mae Klong River, and Luang Pho Ban Laem,” depicting the River’s unique and interesting natural and historic features (TAT, 2005).

The value of the Mae Klong River as an ecological system and tourist destination area cannot be undermined. Its contribution to nature-based tourism or eco-tourism has long been recognized. The biodiversity in the Mae Klong River includes not only aquatic resources but also the agricultural products along the riverbank. Furthermore, the interesting natural ecosystem of the River is a tourist attraction and source of alternative or supplementary income for the local community. The economic benefits

from tourism can help rehabilitate and conserve certain sections of the wetland ecosystem for the enjoyment and long-term benefit of the present and future generations (Braatz, 1992).

As mentioned earlier, Don Hoi Lot Mudflat is one of the most attractive natural areas and a 'must see' tourism site in Thailand. Both the outer sandbar and inner sandbar cover an area of about 3 kilometers in width and 5 kilometers in length. The outer sandbar or Don Nork is situated at Mae Klong Gulf, whereas the inner sandbar or Don Nai is situated at the beach of Chu Chee Village in Bang Jakreng Sub-district and the beach of Bang Bor Village in Bang Kaew Sub-district (TAT, 2008). As a significant biodiversity site, it is the habitat of the native tubeworm, locally called Hoi Lot. The local people often call it Don Sai Kee Ped because of the shape (i.e., looks like duck faces) and the color of the substrate where it lives.

The wetland ecosystem of the study consists of important and interesting resources. Those that were considered important by the respondents and as observed by the researcher during this study are briefly discussed below.

Section 1.3a (2) Mangrove forests

The mangrove forest of Samut Songkhram Province has economic and ecological values. The forests near the eastern side of the Mae Klong River may be divided into three zones, namely the *Nipa fruticans* zone, *Rhizophora apiculata* zone, and *Rhizophora mucronata* zone (Table 2). The forest zonation of the mangroves in this area, as in other significant wetlands in Southeast Asia, indicates the diversity as well as the uniqueness of the physical and chemical properties of the water and soil (Catibog-Sinha & Heaney, 2006). Because of this zonation, different types of vegetation and plants abound – a natural feature that attracts many nature-based tourists.

The mangrove forest also provides economic benefits to the coastal communities. They provide timber and non-timber forest products, such as shrimp, crabs, and molluscs. Mangrove forest serves as a nursery site and shelter for many species of aquatic organisms, which is necessary in sustaining fisheries and aquaculture production (Piyakarnchana, 2007).

Table 2 The common plant species found in the mangrove forest of Samut Songkhram Province.

Zone	Name of Mangrove zone	Scientific name of plants
1	<i>Nipa fruticans</i> zone	<i>Nipa fruticans</i> (dominant)
		<i>Xylocarpus granatum</i>
		<i>Rhizophora apiculata</i>
		<i>Thespesia populanea</i>
		<i>Soungtratia caseolaris</i>
		<i>Xylocarpus molucensis</i>
		<i>Ceriops tagal</i>
		<i>Wedalia biflora</i>
		<i>Derris trigoliata</i> (climbing)
2	<i>Rhizophora apiculata</i> zone	<i>Rhizophora apiculata</i> (dominant)
		<i>Xylocarpus granatum</i>
		<i>Nipa fruticans</i>
3	<i>Rhizophora mucronata</i> zone	<i>Rhizophora Mucronata</i> (dominant)
		<i>Vicennia officinalis</i>
		<i>Avicennia alba</i>
		<i>Rhizophora apiculata</i>
		<i>Nipa fruticans</i>
		<i>Bruguiera cylindrical</i>
		<i>Sessurium portulacastrum</i>
<i>Sueaeda maritime</i>		

Source: Piyakarnchana, 2007

Section 1.3a (3) Mangrove palm

The Mangrove palm or Nipa palm (*Chak* in Thai language) looks like a small coconut tree. It is one of the most valuable native plants in the Province as well as in the entire Kingdom of Thailand. Mangrove palms are abundant in the shores of brackish waters where the tide can deposit the palm's floating seeds. They can tolerate fluctuating water levels and tides; they can help stabilize riverbanks, prevent soil erosion, and protect the landmass from typhoons and strong wave (Catibog-Sinha & Heaney, 2006). The vegetative parts of the palm have economic value. The young shoots are edible, and the young leaves can be used to roll cigarettes. In addition, the dried leaves can be used as roof thatching, mats, baskets, and other household items. Further, the petals of the flowers can be brewed to make an aromatic tea. Lastly, the immature fruits which are, white translucent and hard jelly-like are called Look-Chak in Thai, and are used as a sweetener in local Thai desserts (Tan, 2001). From the ecotourism point of view, this species can provide a range of tourism products, which may include souvenir merchandise, culinary items, and decorative ornaments.

Section 1.3a (4) Tropical fruits--The Land of fruit orchards

Samut Songkhram Province is well known for its tropical fruits, especially lychee, pomelo and coconuts. The harvesting period of lychee, pomelo, and coconuts are in April, in July to August, and in May to August respectively (DOAE, 2008). The statistical data from the Department of Agricultural Extension reveals that among the three Districts in Samut Songkhram Province, there are 66% of coconut farmers, 18% of pomelo farmers, and 16% of lychee farmers. In Samut Songkhram Province, Bang Khontee District has the most coconut farmers (3,669 households) and lychee farmers (1,802 households) whereas Amphawa District has the most pomelo farmers (2,109 households) of the Province (Table 3).

Table 3 Number of fruit farmers' household in Samut Songkhram Province

District	Number of fruit farmers' household in Samut Songkhram Province (2008)		
	Pomelo farmers (household)	Lychee farmers (household)	Coconut farmers (household)
Muang	300	5	3,405
Amphawa	2,109	1,511	3,642
Bang Khontee	1,539	1,802	3,669
Total household (%)	3,828 (18%)	3,463 (16%)	13,859 (66%)

Source: DOAE, 2008

Section 1.3a (5) Short-bodied mackerel

The most popular fish being sold in the local market within the study area is the short-bodied mackerel (also known as *Pla-tu* in Thai language). The *Pla-tu* from elsewhere can become the *Pla-tu Mae Klong* when they come to live in the area of the Mae Klong estuary and lay eggs. The spawning area is during February to May. *Pla-tu Mae Klong* is known for its savory flavor and is very much sought after by the local people as a special delicacy. The best time to eat the best *Pla-tu Mae Klong* is in December. The culinary flavor of this fish could be promoted in food tourism in the Province in general and in the study area in particular. The significant characteristic of steamed *Pla-tu Mae Klong* must be the frown-face and bended-neck *Pla-tu* (Figure 2) (Chirawet, 2005).



Figure 2 Short-bodied mackerel

Source: Photo by Nuanpan Suravanichakit (2009)

Section 1.3a (6) Seashell products (Molluscs)

The molluscs found in Samut Songkhram Province include the Green mussel, Telescope creeper, Ark shell, Horse mussel, Ridged Venus clam, Spotted Babylon, Tiger Moon, Tongue shell, Tubeworms (Worm shell), and Wedge shell (Bean clams). These aquatic resources thrive in the mudflats of the study area where the substrate and water salinity properties are appropriate for their growth and survival (Rabanal, Pongsuwana, Saraya, & Poochareon, 1977).

One relatively abundant species that tourists find interesting as a culinary item as well as natural resource object is the tubeworm or worm shell (Figure 3). The best time of the year to gather the worm shells is from March to May when they are most abundant (Thai Tour, 2007). The tubeworm can be promoted as a tourism brand during this period of the year. Because of its uniqueness and interesting attributes, the tubeworm can be designated as a flagship species for nature-based tourism and marine conservation. Flagships are charismatic, usually native species, which are used to symbolize the sentiments of a particular nation or locality; they are often used as an emblem in marketing and conservation campaigns (Catibog-Sinha & Heaney, 2006).



Figure 3 Tubeworm or worm shell
Source: Photo by Nuanpan Suravanichakit (2006)

Section 1.3a (7) Crustaceans

The Crustaceans found in Samut Songkhram Province and in the Mae Klong River include the Banana prawn, Fiddler crab, Giant tiger prawn, Greasy-back shrimp, Lanchester's freshwater prawn, Mantis shrimp, Meder's mangrove crab, Mysid shrimp, and serrated mud crab (Camp & Daugherty, 1988; Appendix A). The availability of a variety of edible and delicious shell products in the study area will enhance the memorable experience of tourists visiting the area.

Section 1.3a (8) Mudskippers

The mudskipper is an interesting 'amphibious' fish, which the locals and tourists find delightful to watch as it hops around the mudflats on sunny days from its burrow at low tide (Figure 4). It is not edible, but forms an important part of the ecological food chain in the estuary.



Figure 4 Mudskipper
Source: Photo by Tungkavit Sutheero (2006)

Section 1.3a (9) Riverine lizard

The riverine lizards or water monitors are often seen in the Mae Klong River. Although they are hunted for their meat and skin, the local people in the study area do not eat them and they are often ignored. The water monitor lizard can also be a natural tourist attraction because they are active, abundant and relatively large in size (Benavidez, 2000).

While the water monitor lizard is not endangered in the study area, their population in some parts of its range has declined over the years due to over-hunting and habitat destruction. Up to 1.5 million skins are legally exported each year mainly from Indonesia to Europe, Japan and the US to be made into fashion goods. In other countries, such as Sri Lanka, water monitors are considered pests and voracious predators (Tan, 2001).

Section 1.3b: Major Cultural Heritage Features

Samut Songkhram Province is also known for its cultural attributes. The Province has both tangible and intangible heritage attributes and values. The tangible heritage includes old monasteries and temples, historical landmarks, cultural landmarks, festivals and customs (folk songs, boat songs and the traditional way of life along the river and canal), and traditional craftsmanship. Intangible values are represented by the beliefs, traditions, and ideologies associated with the lifestyle of the local residents in the study area.

Section 1.3b (1) Museums, old monasteries, and temples

According to Siripoon (2004), the people of Muang Mae Klong have strong faith in Buddhism. There are numerous temples built in rural and urban centers of the Province. The old temples in Mae Klong have a distinctive architectural style, which is typical of the artistic ambience of rural central Thailand. Out of the 200 temples built so far in Samut Songkhram Province, some 110 temples are still in good shape (Appendix B). Since 1767, some 15 temples have been abandoned, but the historic remains of these temples can provide interesting artifacts for a tourism interpretative program, which may be developed in the study area to educate tourists as well as the young generation of residents of the Mae Klong basin about ancient belief and cultural practices. Samut Songkhram Province also has several local museums in Amphawa and Muang communities (Appendix C).

Section 1.3b (2) Historical and cultural landmarks

Samut Songkhram Province is a historic and cultural site. As a historic site, it was the center of government after the Ayutthaya Period. The recorded stories about the reign of King Taksin Maharaj the Great, King Rama II, and King Rama V during the Chakri Dynasty are all located within the Province (TAT, 2005). King Taksin founded Thonburi as the capital of the Kingdom in 1767; Bangkung Sub-district (now called Bang Khonthi District in Samut Songkhram Province) was established as a strategic

military camp to keep the Burmese troops at bay. The Province was the birthplace of King Rama II, also known as "Ek Akkharakhattiyasinlapin," or the Great Artist. Consequently, the Province had been bequeathed with rich arts and culture, which from the cultural tourism perspective is very valuable. The Province, being the birthplace of many other famous national artists, can be a destination site for tourists who are interested in tracing the origin and development of Thai culture and arts. Some of these artists are as follows: the In-Chan Siamese Twins, who were born in Mueng Mae Klong District in 1811; the very famous musical Thai artist that lived during the reign of King Rama VI, Luang Pradit Pairoh or Mr. Sorn Silapabanleng, who was born in Amphawa District; Kru Auey Suntornsanan, the founder of Suntraporn music brand, who was born in Bang Khonthee District; and Mr. Chuang Moonphinit, the famous natural painter from Ban Khonthee District (Figure 5-7) (Chirawet, 2005).



Figure 5 Luang Pradit Pairoh (Sorn Silapabanleng)
Source: Maeklongdee (2009)



Figure 6 Kru Auey Suntornsanan
Source: Thaieduforum (2007)



Figure 7 Mr. Chuang Moonphinit
Source: Praphansarn (2000)

During the time of King Rama V (King Chulalongkorn), the Royal family had traditionally and frequently visited the Province. The places visited by the King still exist and are now considered important cultural sites. Among these sites and places are the Wat Pradu, Residence of Ta Mor Si, King Rama II Memorial park, and Khai Bang Kung. Appendix D summarizes two of these historical landmarks, which are now being promoted as cultural heritage attractions.

The popular floating market of Thailand has also been a prominent landmark in the Province. The floating market is basically a water-based trade center where local flat boats carry and paddle all sorts of merchandise (but usually fresh fruits and vegetables, cooked foods and delicacies) to the local populace along canals and rivers. Today, the floating markets, in particular those found in the Amphawa District, are a major attraction for domestic and foreign tourists, but they are also considered a convenient market place where many local people go (TAT, 2005). The two most famous floating markets of the Province are located in Amphawa District (Table 4).

Table 4 Floating markets.

No.	Name of floating markets	District	Background
1	Floating market - Taladnam Yamyen	Amphawa	Talat Nam Yam Yen Amphawa is an afternoon floating market by the canal near Wat Amphawan Chetiyaram.
2	Floating market - Taladnam Tha Kha	Amphawa	Tha Kha floating market takes place on the 2nd, 7th, 12th days of both the waxing and waning moon of the lunar calendar. It is a rendezvous of vendor boats that carry local food, vegetable, and fruit for selling. Boat rental services are on offer for travelling to the villages and fruit orchards around Tha Kha Floating Market.

Source: TAT, 2005

To date, Muang Mae Klong or Mae Klong City attracts numerous tourists. The majority of them would like to experience the vibrant color of the floating market. The Amphawa Floating Market is considered one of the top ten attractions of the Province. It is a famous historical and cultural tourism attraction all year round (The Association of Siamese Architects under Royal Patronage {ASA}, 2008). In the study area alone, some flat boats plying the Mae Klong River and its canals are still operating and local people sell various food items to the residents and domestic visitors. A small floating market, when established within the study area, can also serve as a tourist destination.

In 2008, the Amphawa Community won the award for tour program of Central and Eastern regions namely the “Amphawa Bike Ride” presented by TAT on World Tourism Day on September 27th, 2008 (TAT, 2008). Furthermore, the Amphawa Community was a recipient of the UNESCO Asia-Pacific Award for Culture Heritage Conservation in 2008 (The Chaipattana Foundation, 2008).

Earlier in 2002, the Amphawa Community and Wat Amphawan Chetiyaram were given the Architectural Conservation Award of the Central Region in the vernacular communities’ type and religious architecture type from an ASA, respectively.

The following discussion relates the historical significance of the Amphawa Community. The River that traverses the Amphawa Community is connected downstream to the study area. It is hypothesized that upstream activities will greatly affect the downstream activities, including tourism. To promote cultural tourism, these significant features, together with its ancient stories can be capitalized on, and in some instances, revisited and revived.

1. The Amphawa Community or Amphawa Municipality is an old community, dating back to the reign of King Prasatthong of the Ayutthaya period (1594-1655 AD.). It used to be called Khwaeng Ban Chang, a part of Ratchaburi town. Later, during the reign of King Ekathat (1758-1767), it became part of Samut Songkhram Province and a Municipality in 1940 during the reign of King Rama V. The symbol of the municipality is a circle enclosing a white elephant standing in a mango grove, which used to be abundant in the area.
2. The Amphawa Community was the birthplace of King Rama II, Queen Amarintharamat (Nak), and Queen Suriyentharamat (Bunrot). The Phra Prang, a Khmer style pagoda containing some of the relics of the reign of King Rama II, was also constructed in his birthplace.
3. The Amphawa Community has always been depicted as a prominent waterfront village, which has maintained its natural beauty and prosperity. The human settlements scattered along the banks of the river and canals of the Mae Klong River are Khlong Amphawa, Khlong Bang Chak, Khlong Dawadueng, Khlong Lat Ta Chot, Khlong Phi Lok, and Khlong Bang Chang. The major ethnic populations are comprised of Thai and Chinese-Thai. There are a small percentage of ethnic people from Cambodia and Laos.
4. The Amphawa Community, along the Amphawa canal, has some of the relics of the old shop houses, which were built using native Thai architectural designs (Figure 8). Although some of these houses have been closed for business and are now used solely for residential purposes, the commercial signboards that used to adorn these places are still hanging, thus, conveying a nostalgic charm to the visitors as well as the old residents. Some of the other houses, which used to be raft houses, were lifted onto the dry land and are now supported by stilts. These raft houses have traditional Central Thai style architecture, with high-pitched roofs and decorative gable boards.



Figure 8 The Amphawa Community and the old shop houses along the Amphawa canal

Source: Photo by Tungkavit Sutheero (2006)

5. The Amphawa Community is the home of one of the most important religious place – the Wat Amphawan Chetiyaram – that was built during the reign of King Rama III (1824-1851). The temple precinct contains several other beautiful and historic buildings. The other famous temples in the Community are Wat Bang Kaphom, Wat Kasemsaranaram, and Wat Nang Wang. The other religious places include Kgek Cheng Sam Pao Keng Teng Vegetarian Centre and Chao Mae Kai Thong Shrine.
6. The Amphawa Community is known for important historic places and administrative landmarks. Examples are the King Rama II Memorial Park, Office of Amphawa Municipality, House of Nai Amphoe (Head of the District) in the reign of King Rama V (Ban Nai Chang), Chaiphattana Foundation Development Project, Amphawa Community Information Centre, and Sawatdi Amphawa Museum.

7. The Amphawa Community offers numerous leisure activities for visitors. Examples are bargain shopping at the waterfront market and evening floating market, visiting temples, taking a cruise along the canal, and firefly watching. Amphawa, therefore, is an example of a living cultural and architectural heritage site, which has been successfully promoted and sustained.

Section 1.3b (3) Festivals, customs, and traditions

Robinson and Picard (2006) state that festivals and customs that highlight cultural rituals and artistic performances are a key element in tourist itineraries. The major festivals of Samut Songkhram Province are listed in Appendix E.

One of the most celebrated festivals in the study area is the *Loi Krathong Sai Karb Kuay Mae Klong*, which is one of Thailand's oldest and best-preserved festivals; it is celebrated during the full moon of the twelfth lunar month (usually in mid-November). Loi Krathong festival or the festival of lights is a traditional Thai ritual that has been practiced by the Royal families since the *Rattanakosin* period or during the reign of King Rama IV (1768-1932). The word 'loi' or 'loy' means floating. Kratong is a small raft made of folded banana leaves. The rafts decorated with flowers, lit with candles, and scented with incense sticks, are let go onto the river. This ritual is performed by the local communities for varied reasons: to ask for favour, to thank the Mother/goddess of river, and to ask for forgiveness for human's ill acts, such as polluting the River. It was a tradition in the past for young couples to participate in this ceremony/ritual to seek for signs of good fortune and a successful personal relationship. Loi Krathong festival reflects both religious beliefs and local culture. The cultural and religious implications of the festival are still alive in some far-flung villages in Thailand.

Many tourists either observe or participate in this ritual. As this is a national celebration, it is not unusual to see many waterways in many parts of Thailand, including the study area in the Mae Klong River, glowing with lit candles. The tourism industry in Thailand intends to maintain this as a traditional practice, which can be promoted as a unique and solemn cultural attraction (TAT, 2008).

The tourist experience in the study areas as well as in many parts of the country is heightened by the presence and affordability of a variety of fruits, culinary feasts, and artistic crafts. Apparently, several kinds of Thai desserts (called Khanom in Thai) have originated from Samut Songkhram Province. The native desserts, in addition to their nice flavor and aroma, are carefully prepared and artistically presented. King Rama II even wrote a famous poem giving tribute to Thai food and desserts. Certain communities in Thailand are known for their special and unique delicacies, a feature in the promotion of the One Tambon One Product (OTOP) program of the Thai tourism government and which is being supported and embraced by the tourism industry (Appendix F).

PART IV: CULTURAL AND NATURAL HERITAGE AND SUSTAINABLE USE OF THE MAE KLONG RIVER

Section 1.4a: Definition of heritage

The United Nations Educational, Scientific and Cultural Organization or UNESCO (2009) defines heritage “as the legacy from the past, what we live today, and what we pass on to future generations.” In addition, Edson (2004) states that although heritage is assumed to be synonymous with history it is actually broader or greater than history. Hence, heritage is a combination of the representation of the past, an element of continuity and present reality, and a commodity to discover, to preserve, and to exploit. Edson (2004) further argues that heritage is not limited to sacred considerations; rather it compasses man-made, natural, and historical characters of physical materials and symbolic elements of life.

Heritage is a broad concept, encompassing not only wildlife and landscapes, but also historic sites, architectural features, collections, past and continuing cultural practices, including ceremonies, rituals, events, even language, traditional knowledge and living experiences (Eagle, McCool, & Haynes, 2002). Cultural and natural heritage are irreplaceable resources of human survival and inspiration (UNESCO, 2008; Lowenthal, 2005).

Section 1.4b: Natural heritage

Natural heritage consists of physical and biological formations or groups of such formations, geological and physiographical formations, and delineated areas which constitute the habitat of threatened species of animals and plants. Natural sites with cultural significance, such as cultural landscapes, are part of the natural heritage. Simply, natural heritage refers to the lands and seas, the soils and plants and animals, the water we drink, and the air we breathe. Natural heritage has outstanding universal value from the point of view of science, conservation, recreation and aesthetics (Edson, 2004; Lowenthal, 2005).

Section 1.4c: Cultural heritage

The 1972 UNESCO Convention on the Protection of the World’s Cultural and Natural Heritage refers to cultural heritage as one consisting of a complex of monuments, buildings and archeological sites that have outstanding universal value from the point of view of history, art or science.

Since 1972, UNESCO has aimed to set an international framework for the protection of diverse forms of heritage, initially focusing on the works of art, built environments and natural spaces (UNESCO 1970, 1972, in Robinson and Picard, 2006). Cultural heritage consists of tangible elements (Edson, 2004, UNESCO (2009), as follows:

- Monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings

and combinations of features, which are of outstanding universal value from the point of view of history, art or science;

- Groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science;
- Sites: works of man or the combined works of nature and man, and areas including archaeological sites, which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view (UNESCO, 2009).

Today, cultural heritage is no longer limited to physical or tangible objects such as those listed above. UNESCO has included the intangible aspects of heritage such as ethnographic and historic stories, beliefs and traditions in the notion of cultural heritage (UNESCO 2001, 2003, in Robinson and Picard, 2006). In 1992, World Heritage Sites included the 'cultural landscapes' in recognition of the intimate relationships between culture and nature (Robinson and Picard, 2006). The broadening of the concept of cultural heritage is recognition of the contribution of humankind to dramatic arts, languages and traditional music, as well as to the informational, spiritual and philosophical systems upon which creations are based. The concept of heritage in our time reflects the culture of the present and that of the past (UNESCO, 2008).

In summary, cultural heritage encompasses several main categories of heritage UNESCO, 2007. These are:

- a. Tangible cultural heritage:
 - i. Movable cultural heritage (paintings, sculptures, coins, manuscripts, etc.)
 - ii. immovable cultural heritage (monuments, archaeological sites, and so on)
 - iii. underwater cultural heritage (shipwrecks, underwater ruins and cities and so on)
- b. Intangible cultural heritage (oral traditions, performing arts, rituals, and so on)

Section 1.4d: Changes in the use of the Mae Klong River

The traditional way of life of the communities in the study area is very much linked to the use of the Mae Klong River, including the celebration of various festivals and other religious rituals (Bangkok Metropolitan Administration {MBA}, 2008). Historically, Mae Klong River is referred to as a sacred river called the "Benjasuthi-Kongka" (Sacred water from the River). It was the venue of the monarch's ceremonial coronation during the Ayutthaya period (Samut Songkhram, 2007). In many parts of Thailand, communities perform water-based festivals, such as the Songkran Festival (Songkran Festival is regularly held in April. It is the traditional Thai New Year, wherein water is poured and splashed on participants, Riverine Wonder of Thailand, 2004), Loy Krathong Festival is regularly held in November, wherein floating vessels pay homage

to the Goddess of water & river (Riverine Wonder of Thailand, 2004) and the Royal Barge Procession led by His Majesty (Riverine Wonder of Thailand, 2004). These festivals represent the tradition and beliefs of the people.

Evidently according to Paknamweb (2009), the krathong floats hand-crafted from Kaab Kluay were set adrift at the Samut Songkhram Provincial Centre Pavilion, the Rama II Park and Wat Phumarin Kuddee Thong Temple in Amphawa District. Other highlights of this event included the Krathong contest, Miss Noppamas beauty Contest, Thai folk song and Thai classical performances, in addition to the sales of local village products (Paknamweb, 2009).

Although there are a few traditional houses still standing along the Mae Klong River, many modern houses have been built recently, replacing some of the old houses. Most of the traditional flat boats that used to traverse the River have been replaced with motorized boats. Some families who cannot afford a motorized boat continue to use the flat boats as a means of transportation along the River and for small-scale fishing. The River, which used to be a main navigation route, has been replaced with more efficient and safe land-based roads and infrastructure. Evidently, the natural scenery of traditional Thai waterway is gradually disappearing. This could result in the loss of community identity and decline in the quality of life as the cultural and natural values in the area are being undermined. One way to revive the cultural use and natural integrity of the River is through sustainable ecotourism to bring about cultural pride and environmental responsibility among the local communities.

With increasing industrialization and modernization, the water quality of the Mae Klong River has been compromised. The pollution of the river from domestic and industrial sources is apparent. In recent past, the River had become smelly as sugar factories upstream were discharging untreated wastewater into the River. Water pollution from manufacturing industries, untreated domestic and municipal wastes, and an over-fertilized agricultural system can cause economic losses from the decline in fish production and recreational opportunities. Polluted waters can also lead to the decline of the aesthetic and cultural values of the river. The small-scale aquaculture activities occurring in the study area have replaced the traditional fishing practices. Aquaculture, if not properly managed, can contribute to water pollution. Disturbances in upstream riverine ecosystem will adversely affect the integrity of the downstream ecosystem (Catibog-Sinha & Heaney, 2006), as has been reported regularly over the years in the news, both globally and in Thailand.

The water quality forecast in year 2006 by the Pollution Control Department, Thailand indicates that the water quality of Mae Klong River is currently fair (average), but proper management is needed to maintain it at this level or in better condition (Pollution Control Department, 2004).

Section 1.4e: Role of tourism in the sustainable use of the Mae Klong River

The study aims to determine if the introduction of river-based ecotourism in the study area could help enhance local community responsibility in order to maintain the integrity of the river and the sustainability of the tourism industry.

The role of tourism in the conservation of the natural environment has been emphasized in the literature (e.g. Mieczkowski, 1995; Richardson & Fluker, 2004; SBSTTA, 1999). Nature-based tourism is a fast growing industry that provides economic and social benefits through recreation, leisure, and education. It is dependent on the conservation of biodiversity. If sustainably managed, ecotourism can provide financial support for biodiversity conservation, environmental education and research as well as enhance the local culture and regional economy (Catibog-Sinha & Heaney, 2006).

PART V: RESEARCH HYPOTHESES

The 3 hypotheses of this research are as follows:

1. The local communities are using the natural resources of the River sustainably.
2. The local communities, who value the River for its natural and cultural attributes, are aware of the proper management of the River.
3. The management and environmental issues of the Mae Klong River are complex.

PART VI: OBJECTIVES OF THE RESEARCH

The study, through field observations, questionnaire survey and interviews, aimed to understand the significance of the study area as a sustainably managed tourist destination, which takes into consideration the natural and cultural environments as well as the maintenance of the quality of life and traditional lifestyle of the local communities. The perspectives of the local residents were gathered to determine their views on several aspects of ecotourism in the study area.

Thus, the specific objectives of this study are: (1) to determine the natural and cultural heritage values of the downstream section of the Mae Klong River, (2) to determine if the natural and cultural resources of the Mae Klong River are being used by the local communities sustainably, (3) to assess the environmental issues (natural, cultural, social, and political) of the Mae Klong River in the context of sustainable tourism, and (4) to provide recommendations for the successful management of the Mae Klong River for sustainable tourism.

To put the study into context, this chapter summarizes the relevant literature review, thus providing background information regarding the coverage of this research study.

PART VII: RESEARCH METHODOLOGY

Section 1.7a: Primary data

This study consists of both primary and secondary data. The primary data include all information collected from field observations, assisted questionnaire survey, and follow-up interviews. The questionnaire survey was conducted by the researcher and one assistant who were given prior orientation on the content and intent of the survey. The follow-up interviews of some respondents were also done to validate or clarify certain answers in the questionnaire survey. The follow-up interviews were carried out either face-to-face or by telephone. The questionnaire survey, interview, and group discussion were all done in Thai language.

Section 1.7b: Secondary data

The secondary data (literature) were obtained from various sources such as statistical reports, published official reports, scientific articles from academic journals and pertinent websites, newsletters, pamphlets/brochures, and books. Local data were obtained from the Samut Songkhram (Mae Klong) Municipality annual reports. All other data were gathered from local and national libraries. The researcher referred to the websites of the following Thai organizations and offices: the Department of Fisheries, the Department of Environmental Policy and Planning, the Department of National Economic and Social Development, the Department of Land Development, the Department of Urban Planning, the Department of Environmental Quality Promotion, the Royal Forest Department, the Regional Electricity Authority, the Office of Accelerated Development, and the Community Development Department. The data collected include the recent reported statistics on population and households, land use, production of shellfish, areas covered by mangrove forests, number of factories, salt farm areas, conservation and development zones, and water quality of the River.

The lyrics of the traditional songs about the Mae Klong River were directly obtained from people who are familiar with the songs as well as from the internet and song books. The past historical use of the River as recollected by elder members of the communities was also recorded.

Section 1.7c: Field research and observation

Appendix G shows the schedule of the field activities undertaken from July-October 2006. Two preliminary visits (July 24, and July 29-30, 2006) were carried out to determine the specific location of the study area and the communities to be sampled as well as to make initial observation of tourism related activities in adjacent tourist spots (e.g. the floating market, local markets, railway market, and temples).

More in-depth field observations were conducted during August-October, 2006. Local boat trips were undertaken along the water route from Mae Klong estuary in the north (inbound upstream passing Marhon Canal) down to Moblad Canal in the south twice

during this period. These sites are within the jurisdiction of the nine communities. Photos were taken to document important features along the River.

Section 1.7d: Questionnaire survey and interviews

The questionnaire survey was divided into two phases (Table 5). Phase I consisted of preliminary testing of the instrument in Talard Community (Big market) in early November 2006. The questionnaire survey instrument was improved and finalized after eliminating the redundancy in the questionnaire, the survey of the nine communities selected for this study began (Phase II).

Table 5 A summary of the schedule of the questionnaire survey

Phase	Date	Activities	Outcome
Phase 1	Early November 4-5, 2006	-Preliminary visit of site -Pre-testing of the questionnaire at Talard Community (Big market)	Not successful because target samples did not have time to sit for the interview. QS instrument improved and shortened
Phase 2	Mid November 2006 - late Feb. 2007	Conducted questionnaire survey in nine Communities (various venues)-	Successful

The main activities during Phase II (conducted from November 2006 to February 2007) included the implementation of the assisted questionnaire survey involving 301 respondents. The researcher went to each of the 9 communities and chose specific venues, such as small kiosks (*Ran Khai Kanom*), open vegetable and fruit shops (*Ran Khai Kong Cham*), eateries, grocery stores (*Ran Kha Fair*), and motorcycle repair shops (*Win Motorcycle*) (Figure 9). In Sapansee-Wat Puangmalai, the researcher also went to the wharf or ferryboat port (Figure 10). Although the researcher attempted to make a door-to-door interview, it was found to be very inconvenient an even personally unsafe, and thus, this method was eventually abandoned. Appendix H shows the detailed schedules of the survey and interviews undertaken.



Figure 9 Small kiosks (*Ran Khai Kanom*), open vegetable and fruit shops (*Ran Khai Kong Cham*), eateries, grocery stores (*Ran Kha Fair*), and motorcycle repair shops (*Win Motorcycle*). Source: Photo by Tungkavit Sutheero (2006)



Figure 10 In Sapansee-Wat Puangmalai, the researcher also went to the wharf or ferryboat port.

Source: Photo by Tungkavit Sutheero (2006)

Only residents of the communities were surveyed in this study (N=301). The respondents included adult male and female individuals (18 years and above), elected community leaders, relevant officials of the Mae Klong Municipality, representatives of the Mae Klong River Conservation Association and other pertinent civic organizations concerned with the environmental issues of the Mae Klong River. The interview was carried out almost every weekend; an average of 15-20 sets of questions per day or 30-40 sets per weekends were completed. The completion of each survey took approximately 10-20 minutes. The schedule of the survey is shown in Appendix H.

The questionnaire survey instrument was written both in English (Appendix I) and in Thai (Appendix J). The questionnaire survey consisted of five parts, namely: the demographic and social profile of the respondents, the local use of the natural and cultural resources of the River, the local community perceptions and level of awareness of the values of natural and cultural attributes of the Mae Klong River, and the local management and environmental issues of Mae Klong.

Section 1.7e: Sampling-area and size

Although the sample size (N=301) was only 1% of the total population of the nine communities (23,789 people), the respondents or Thai nationals who participated in this study were quite knowledgeable of the study area (Table 6). This is based on the fact that the majority of them have lived in the study area for at least 10 years. While efforts were made to involve more fisher folks, only 3 respondents (1%) were willing to be interviewed. In addition, many of them were not available during the scheduled

interviews. The researcher assumed that they had gone out to sea to undertake commercial fishing during the time of the study.

The sample size was ascertained from the level of similarity of the answers provided by the respondents to the questionnaire.

Table 6 Distribution of participating community members

Community Code No.	Community name	Number of households*	Number of respondents sampled	% of sampled respondents per community
2	Soi Wat Lang Bann Community	177	19	6.3
6	Wat Petchsamut Woraviharn Community	379	27	9
7	Talad Community	322	55	18.3
8	Wat Thamnimitr Community	1,200	42	14
9	Bang Jakreng 1 Community	363	23	7.6
10	Bang Jakreng 2 Community	448	49	16.3
12	Laem Yai Community	283	62	20.6
13	Wat Pratumkhanawasd Community	333	11	3.7
14	Sapansee-Wat Puangmalai Community	743	13	4.3
		4,248	301	Range: 4-21%

* Census data from Samut Songkhram Municipality Report, 2005

Section 1.7f: Research design

The general research design is illustrated in Figure 11. The research framework consists of the three main objectives of this study and the corresponding methods used to implement each one of them.

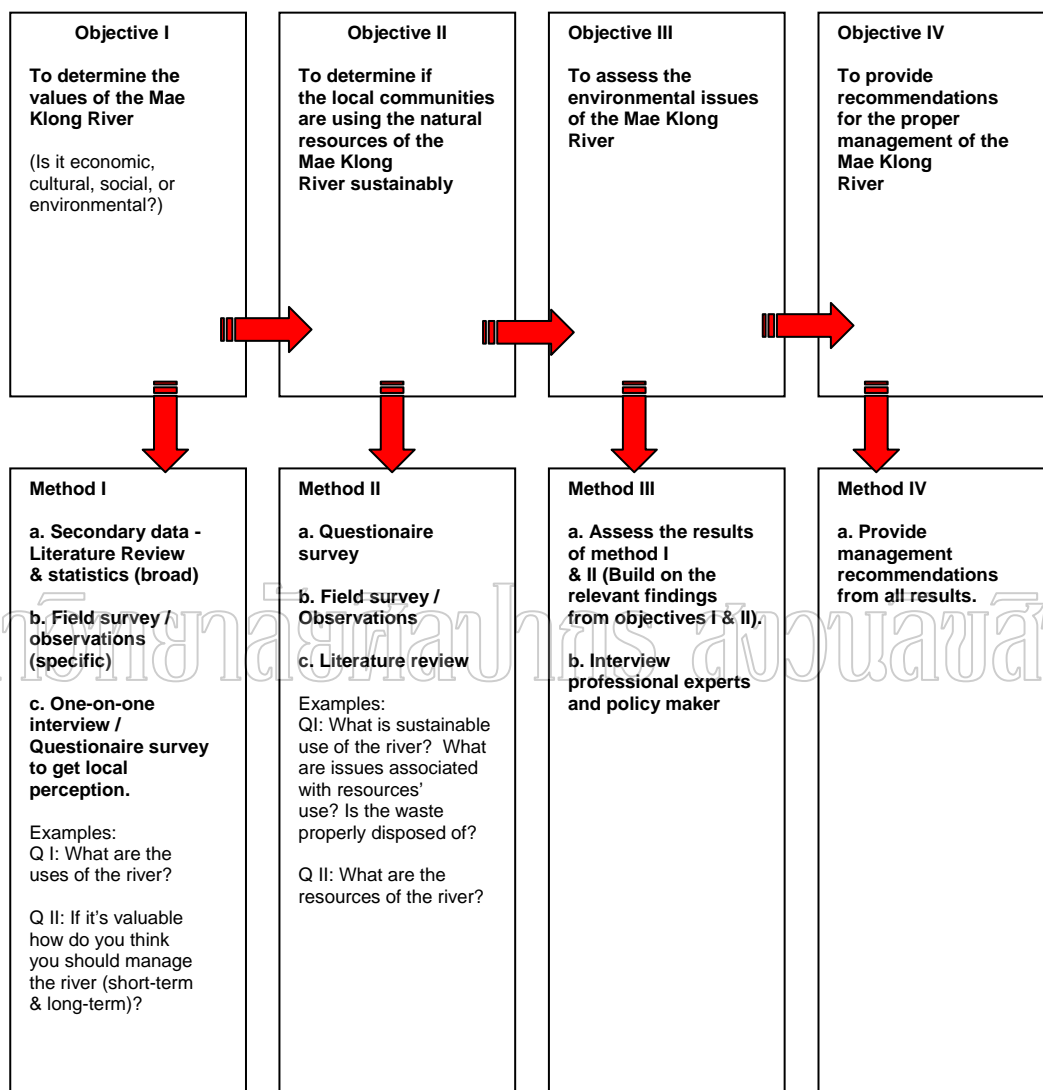


Figure 11 Research design

Section 1.7g: Analysis of data

The numerical data were analyzed by using descriptive statistics. Computed data were presented using either Tables or Figures.

PART VIII: STRUCTURE OF PRESENTATION

The five chapters in this dissertation are as follows:

- Chapter 1 – Introduction and Background
- Chapter 2 - Description of the Study Area
- Chapter 3 - Literature Review
- Chapter 4 - Results and Discussions
- Chapter 5 - Summary, Conclusions and Recommendations

PART IX: STATEMENT OF PROBLEMS

Tourism can help maintain the cultural and environmental integrity of natural areas. Tourism should not only be economically viable and socio-culturally acceptable but also environmentally sustainable. The role of tourism in the conservation of natural and cultural heritage has been expounded in the literature (e.g. Mieczkowski, 1995; Swarbrooke, 1999; UNEP, 2009; UNESCO, 2009).

The Tourism Authority of Thailand and the Ministry of Tourism and Sports reflect on the significant role that tourism has played in the country's economic, social, and cultural development. Tourism is an important source of foreign exchange as it stimulates economic investments and employment. Today, there are over 14 million foreign tourists contributing more than US\$ 12 billion per year to Thai's economy. The dramatic growth in tourism in Thailand has also contributed to the development of many local communities including the rebirth of traditional festivals, rehabilitation of natural areas for tourism, and enhancement of cultural pride. The success of tourism has also brought the country much international recognition and worldwide fame, with the Thai tourism industry and individual tourism operators winning several international awards each and every year (TAT, 2009).

This Chapter focuses on the natural and cultural features of Samut Songkhram Province of Thailand and those of the Amphawa Community, where the study area is connected. The existing tourism attractions as well as the potential development of ecotourism in these areas are also discussed. By logical extension, the development and success of the tourism industry within the Province will affect plans for tourism development at the local level, especially in rural areas, such as the local communities of the Mae Klong River that were sampled in this research.

Just like many major rivers in the world, the Mae Klong River is confronted with many environmental, social and political problems. This study looked into how a small segment of this mighty River can be sustainably managed through the possible introduction of ecotourism. The study explored the importance of the natural and cultural heritage features within the selected study area (located along the lower segment of the Mae Klong River) as a possible tourist destination in Samut Songkhram Province.

PART X: SCOPE AND LIMITATION OF RESEARCH

This study focused on the major natural and cultural attributes and uses of the Mae Klong River within Samut Songkhram Province. It aimed to determine how these attributes and uses could contribute to the sustainability of the River as a tourist attraction. It was not an ethnographic study. Research data were generated from several field observations and one-on-one interviews and conversations with local communities and residents of the Mae Klong River. Only those who were willing to express their views and perceptions were considered in this study. The field survey and interviews were conducted during the period of mid November 2006 until late February 2008.

The portion of the River included in this study was only about 2-3 kilometers long, covering nine communities. These communities are located both on the east and west banks of the River. While it is acknowledged that the River is a continuous ecosystem transcending political boundaries, this study encompassed only a segment of the River from Marhon Canal in the north down to Moblad Canal in the south due to time and resource constraints (Figure 12 & 13).



Figure 12 Mae Klong River and Marhon Canal
Source: Photo by Tungkavit Sutheero (2006)



Figure 13 Mae Klong River and Moblad Canal

Source: Photo by Tungkavit Suthero (2006)

Out of the 14 communities in Muang Samut Songkhram Municipality, only nine communities (“Chumchon”) were selected for the study as these communities are near the Mae Klong River bank. These communities are politically administered areas, each of which has an elected community leader.

PART XI: BENEFITS OF RESEARCH

The benefit of research is to explore the natural and cultural heritage values of the lower segment of the Mae Klong River, to recommend the potential tourism destination, and to provide recommendations on river conservation to every community household because this will ensure the sustainability of natural resources in the Mae Klong River for the benefits of the present and future generations.

CHAPTER 2 DESCRIPTION OF THE STUDY AREA

This chapter describes the study area at the provincial and municipal levels. A brief description of the Mae Klong River, its catchment and the communities sampled in this study is also presented.

PART I: SAMUT SONGKHRAM PROVINCE (MAE KLONG)

Samut Songkhram Province is the smallest province in Thailand with an area of only about 416 square kilometers (Figure 14). The neighboring provinces from the south, located clockwise are Phetchaburi, Ratchaburi, and Samut Sakhon (TAT, 2005).



Figure 14 Map of Samut Songkhram Province and neighboring provinces

Source: <http://maps.google.com/maps>

The province is adjacent to Ratchaburi and Samut Sakhon provinces in the north, and the Gulf of Thailand in the south. The eastern section of the province is bounded by Samut Sakhon province, and the western section is bounded by Phetchaburi and Ratchaburi provinces (Siripoon, 1996). It is located at the mouth of the Mae Klong River next to the Gulf of Thailand (Appendix K). The province is only 72 kilometers away from Bangkok, which is about a one and half-hour drive (Beek, 2007).

Samut Songkhram is a province of fertile lands, of plants and food grains, the production source of vegetables and fruits, as well as a vast variety of seafood products. It is referred to as a land without mountains (Samut Songkhram POC, 2008). The word Samut means ocean, and the word Songkhram means war.

Evidently, the name of the province literally means “War Ocean.” Unfortunately, there is no record describing the reasons behind the meaning of the naming of this province.

Samut Songkhram Province is an ancient province with an interesting story about the Rattanakosin period (1782-present, Pongsabutr, 1997). The story goes that this province was once a part of Ratchaburi Province, and at that time it was called “Suan-nork”, which means “outskirts of the orchard.” Then, towards the end of the Ayutthaya period (1350-1767) leading into the Thonburi period (1767-1782), it was separated from Ratchaburi Province and was called Mae Klong (Pongsabutr, 1997; TAT, 2005). Over the past decade, the locals like to refer to Samut Songkhram as simply “Mae Klong” as it is the old name of the town as well as the name of the Mae Klong River. Etymologically, the word Mae means mother (which connotes ‘big’ or ‘large’), and the word Klong means drum. Therefore, the meaning, “a large drum,” gives reference to the name of the City of Mae Klong. There were several records regarding the original name of Mae Klong City. Primarily, according to Samut Songkhram Provincial Operation Center (2008), the settlement of the first group of local people who lived in this river basin area came from Uthaitani Province. They were originally river people but evacuated to the new land to create a better life for themselves, and named the new land, Ban Mae Klong or Mae Klong Village, the same name as the initial village. Additionally, it was notable that the name of Mae Klong actually came from a legend known as, “the big drum man of the big log and wild ox skin,” according to a former Mae Klong sheriff (Mr. Chuen Thepsuwan or Luang Srisawad in the reign of King Rama V). After that, he donated this big drum to Yai Temple (Wat Yai) where it has remained until today. More interestingly, according to another folk tale, it states that this big drum mysteriously floated along the Mae Klong River and appeared at Wat Yai. The villagers kept this big drum and called it Mae Klong because of its size (Samut Songkhram Provincial Operation Center {Samut Songkhram POC}, 2008).

Samut Songkhram Province is administratively divided into three districts (“Amphoes”) which include Muang Samut Songkhram (locally called Mae Klong), Amphawa, and Bang Khon Thee (Department of Provincial Administration {DOPA}, 2007) (Appendix L). Moreover, the districts are further subdivided into 36 communities or *tambon* in Thai (Table 7) and 284 villages also known as a *muban* in Thai. There is one town, known as the *Thesaban Muang*, which is Samut Songkhram or Mae Klong Municipality, and covers an area of 8 square kilometers (Samut Songkhram POC, 2008). Appendix M shows the most current population census of Samut Songkhram Province had reached 195,068 residents.

Table 7 List of 36 tambons located in the 3 districts in Samut Songkhram Province

No.	Tambon in Samut Songkhram District	Tambon in Amphawa District	Tambon in Bang Khonthee District
1	Tambon Lad Yai	Tambon Bangchang	Tambon Kradang Nga
2	Tambon Bang Kaew	Tambon Kwae Oam	Tambon Bang Yeerong
3	Tambon Bang Khan Take	Tambon Suan Luang	Tambon Bang Khonthee
4	Tambon Tai Had	Tambon Prai Pongpang	Tambon Rong Heep
5	Tambon Laem Yai	Tambon Muang Mai	Tambon Bang Prom
6	Tambon Klong Klone	Tambon Bangkae	Tambon Don Manorah
7	Tambon Ban Prok	Tambon Bang Nang Lee	Tambon Bang Kung
8	Tambon Klong Kern	Tambon Prek Nam Daeng	Tambon Bang Nok Kwak
9	Tambon Nang Takien	Tambon Yeesarn	Tambon Bang Sakae
10	Tambon Bang Jakreng	Tambon Wat Pradu	Tambon Jom Puak
11	Tambon Mae Klong (Tambon in Municipality area)	Tambon Tha Kha	Tambon Ban Pramote
12		Tambon Amphawa (Tambon in Municipality area)	Tambon Bang Krabue
13			Tambon Yai Pang

Source: Samut Songkhram POC, 2008

Section 2.1a: Samut Songkhram Municipality

According to the annual yearbook of Samut Songkhram Municipality (2006), Samut Songkhram Municipality or Mae Klong Municipality or Thesaban Muang Mae Klong used to be Mae Klong Sub-district but was upgraded to Thesaban Muang Mae Klong due to the economic development of the area, increase in human population, and changes in land use (see Table 8).

Table 8 Land Use Types in Samut Songkhram Municipality

Types of land use	Size of land in square kilometers
Residential Area	3.07
Official Government Area	0.30
Business Area	0.46
Industrial Area	0.37
Public Utility	0.25
School/Temple/Church	0.59
Entertaining Place	0.03
River/Canal/Stream	2.93
Total land	8.00

Source: Samut Songkhram Municipality, 2006

To date, Samut Songkhram Municipality covers 8 square kilometers with altogether 14 communities with a population of about 35,049, belonging to 6,571 households (Table 9, Appendix N). The 9 communities sampled in this study are located along the east and west banks of the Mae Klong River (Figure 15).

Table 9 Population and household size of the communities at Samut Songkhram Municipality (Muang Mae Klong)

Municipality's Community Code No.	Community name	East/ West riparian	Number of population	Number of household
<u>The 9 Communities</u>				
8	Wat Thamnimitr Community	East	4,947	1,200
14	Sapansee-Wat Puangmalai Community	West	4,596	743
10	Bang Jakeng II Community	East	2,902	448
9	Bang Jakeng I Community	East	2,383	363
7	Talad Community	East	2,358	322
13	Wat Pratumkhanawad Community	West	2,325	333
6	Wat Petchsamut Community	East	2,013	379
12	Laem Yai Community	West	1,172	283
2	Soi Wat Lang	East	1,093	177

	Bann Community			
Total population			23,789	4,248
<u>The other 5 communities</u>				
1	Wat Yai Community	East	2,528	422
3	Ekachai Community	East	2,688	678
4	Wat Pom Kaew Community	East	1,930	324
5	Soi Chubsai Torasub Community	East	1,540	474
11	Bang Jakeng 3-4 Community	East	2,574	425
Total population			11,260	2,323

Source: Samut Songkhram Municipality, 2006

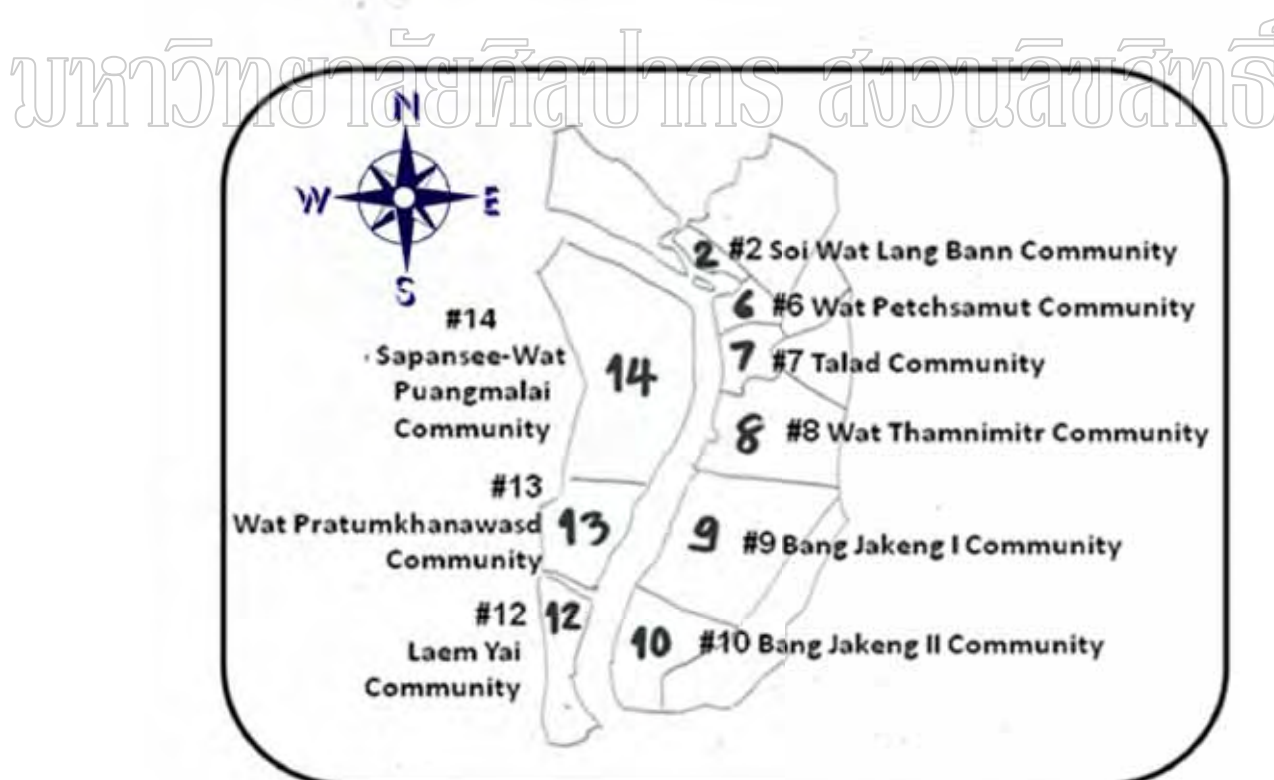


Figure 15 A self-drawn map (not to scale) indicating the location of the 9 communities.

Source: Adapted from Samut Songkhram Municipality, 2006

Section 2.1b: Samut Songkhram: Man-made wetlands

Man-made wetlands in Samut Songkhram Province are the canals and ditches built along or adjacent to natural waterways within the three districts, Muang Samut Songkhram, Bang Khonthee, and Amphawa. The total number of wetlands in the Province is 335, the majority of which are located in Bang Khonthee and Amphawa Districts, each with 136 canals and ditches (Regional Irrigation Office Samut Songkhram, 2007).

PART II: MAE KLONG RIVER BASIN

Generally, the Mae Klong River Basin covers an area of 3 million rai (Piyakarnchana, 2007) traversing seven provinces, namely Kanchanaburi, Ratchaburi, Petchburi, Nakhon Prathom, Suphanburi, Samut Sakhon, and Samut Songkhram. Geographically, the Mae Klong River Basin is bordered by Tak Province in the North, Kanchanaburi and the Myanmar frontier in the west, Suphanburi, Nakhon Prathom, and some parts of Uthaitхани in the east, and Petchburi in the south (Appendix O).

The Mae Klong River Basin originates from two main tributaries, Khwae Yai and Khwae Noi, found in the mountain range in the west, near the Myanmar border. As such, the major rivers in the Mae Klong River Basin area are the Khwae Noi River, Khwae Yai River, and Mae Klong River. Topographically, the Mae Klong River Basin is a wide plain in the shape of an alluvial fan, and bounded by the Thachin River in the East, and the Gulf of Thailand in the South. The eastern side has flat and mountainous topography, which slopes down to the south into the flat planes of the Petchburi River (Mahidol University, 2004).

The Mae Klong River Basin is divided into two sub-basins: the lower and the upper sub-basins (Appendix P). The lower sub-basin, under the influence of seawater intrusion, extends from the mouth of the Mae Klong River in Samut Songkhram Province to Sirilak Bridge in Ratchaburi Province. This lower sub-basin is about 45 kilometers long, with a highly populated area near the coast. Patches of mangrove and broad mudflats occupy the coastline of Samut Songkhram Province, supporting mussel and clam cultivation. The main activities in the coastal area include aquaculture, salt ponds, and fisheries, particularly razor clam harvesting. Some fishery products from this area include many species of fish, shellfish and jellyfish (Piumsomboon, 2006). Agriculture accounts for only a small proportion of land use in this area.

Whilst the upper sub-basin is not a part of the study area, it is an important ecological component of the Mae Klong River Basin. It extends 95 km, from Photharam district, Ratchaburi Province to the Muang district in Kanchanaburi Province. Most of the land use in this sub-basin consists of pig and duck farming, agriculture, pulp and paper production and sugar refining (Piumsomboon, 2006). These human activities could cause detrimental environmental impacts on the lower sub-basin.

The Mae Klong River Basin experiences only two seasons: the wet season with heavy rainfall during May to October, and the dry season during November to April (Piumsomboon, 2006). As shown in Table 10, the Mae Klong River Basin has a catchments area of 30,837 square kilometers. The drainage area is 33,000 square kilometers (Kuneepong, 2002).

Table 10 Catchment area of seven major river basins in Thailand

Name of River Basin	Catchment area within the country	
	Square kilometers	%
Mekong	188,623.0	36.8
Chao Phraya	157,923.0	30.8
Peninsula-east coast	63,278.0	12.4
East coast	32,289.0	6.3
Mae Klong	30,837.0	6
Peninsula - west coast	21,172.0	4.2
Salawin (Thanlwin in Myanmar)	17,920.0	3.5
Total	512,042.0	100

Source: AQUASTAT/FAO's Information System on Water and Agriculture, 1997

PART III: MAE KLONG RIVER (MAENAM MAE KLONG)

A river is called *maenam* in Thai, and the Mae Klong River is known locally as Maenam Mae Klong (Bangkok Metropolitan Administration, 2008). The River is located in southwestern Thailand and lies at 13.33°-14.00°N, 99.50°-100.09°, and it is located on the western part of the upper Gulf of Thailand (Piumsomboon, 2006). The actual origin of the River is in the Khuean Srinakarin National Park (Srinakarin Dam) in the north of Kanchanaburi Province (Appendix Q). The River begins at the confluence of the Kwaie Noi River (Kwaie Sai Yoke) and the Kwaie Yai River (Kwaie Sri Sawasdi) at Pak Phraek Sub-district in Kanchanaburi Province (Appendix R) (Davies, 1991).

The Mae Klong River runs through Ratchaburi Province emptying into the Gulf of Thailand in Samut Songkhram Province (Marine Department, 2006). Also, the River passes through different districts of Samut Songkhram Province. From the Gulf of Thailand to Muang District, the River is 6 kilometers long; to Amphawa District, it is 15 kilometers long, and to Bang Khonthee District, it is 20 kilometers. More specifically, the Mae Klong River has up to 300 canals cutting through the land mass forming a net-like configuration (Mahidol University, 2004).

The Mae Klong River is 140 kilometers long with a coastline of about 21.20 kilometers long (NSO, 2009). The total catchment area of the river basin is 30,106 square kilometers (MWA, 2007). This area covers 8 provinces including Kanchanaburi, Ratchaburi, Samut Songkhram, and parts of Supanburi, Nakorn Prathom, Samut Sakhorn, Uthai Thani, and Tak. The mean annual runoff is 7,973 million cubic meters (Kanchanapisek Network, 1999). The Mae Klong River Basin can be divided into 14

sub-river basins (Table 11). The study sites (9 communities) are located in the flat field of Mae Klong River sub-basin.

Table 11 The 14 Sub River Basins of the Mae Klong River

No.	Name of Sub River Basin	Areas (Square Kilometers)
1	Kwae Yai River	1445
2	Huay Mae Lamung	910
3	Huay Mae Chan	862
4	Kwae Yai Ton Klang River	3380
5	Kwae Yai Ton Lang River	4094
6	Huay Kha Khaen	2320
7	Huay Tapien	2627
8	Kwae Noi Ton Bon River	3947
9	Huay Kayeng	1015
10	Huay Mae Nam Noy	947
11	Huay Bonti	477
12	Kwae Noi Ton Klang River	2042
13	Lam Pachee	2453
14	The flat field of Mae Klong River	4318

Source: Kanchanapisek Network, 1999

The river ecosystem flows naturally with the tides system both spring tides and neap tides. High tides which are called spring tides, or water of birth. Low tides are referred to as neap tides, or dead water (The World of Water, 1999).

The influence of tides twice a day has made Samut Songkhram Province a city of three major zones based on the salinity of the water; these are the saltwater, brackish, and freshwater zones. Firstly, the saltwater zone covers about 3 kilometers from the mouth of River where the upper Samut Songkhram Municipality is situated. Secondly, the brackish water zone is further upstream next to the salt water zone where the Samut Songkhram Municipality and lower Amphawa District are situated. And thirdly, the freshwater zone is the upstream area beyond the brackish water zone; this zone is north of Amphawa and Bang Khonthee District. The extent to which the water becomes diversified depends on the effect of tides (Mahidol University, 2004).

According to Piyakarnchana (1979), Samut Songkhram Province is known as "The Province of Three Waters." The landscape is dominated by areas of freshwater, seawater, and brackish water. These are the three major zones of the water in the

Mae Klong River that are very typical and truly precious natural resources in the country. Thus, the water movement and fast river flow is an important factor affecting the organisms in the estuary of the Mae Klong River. Clearly, the movement of currents in the Mae Klong River is influenced by tidal movements, which in turn influence the natural features of the River.

PART IV: STUDY SITES

This study was conducted within the lower segment of the Mae Klong River starting from Marhon Canal (“Klong-marhon”) in the north down to Moblad Canal (“Klong-moblad”) in the south. The portion of the River included in this study is approximately 2-3 kilometers long, traversing the 9 communities sampled in this study (Figure 16 & 17).



Figure 16 Aerial photos showing the location of the 5 communities (Community # 2, 6, 7, 8, 14) within the study area.

Source: Adapted from Chirawet, 2005



Figure 17 Aerial photos showing the location of the 4 communities (Community # 9, 10, 12, 13) within the study area.

Source: Adapted from Chirawet, 2005

Nine communities were sampled in this study. These communities or *chumchon* are politically administered areas, each of which has an elected community leader (Appendix S). The population of the community ranges from more than 1,000 to nearly 5,000 residents. The biggest community-Wat Thamnimitr Community-has 1,200 households, while the smallest-Soi Wat Lang Ban Community-has only 177 households. Information about the socio-demographic profile of the residents is discussed in Chapter 4 (Results and Discussion).

Six of the communities sampled are located east of the River, while the rest are located in the west. These communities are facing each other, and therefore, would have more or less the same level of access to the River and its resources. Several canals and small tributaries that traverse these communities are used by the local residents for various reasons. The uses of these wetland areas and the adjoining land types are discussed in the Results and Discussion Chapter of this dissertation. The accessibility of the communities vary according the availability of the land transport facilities and infrastructure.

CHAPTER 3 LITERATURE REVIEW

This research has reviewed the literature, theories, policies, and related studies about various topics relating to the multiple values of the Mae Klong River and its tourism policy planning and management. This chapter is divided into seven parts and covers an exhaustive review of the following topics:

1. Water resources and biodiversity
2. Sustainable development
3. Sustainable tourism
4. Natural and cultural heritage and their values
5. Sustainable use of the natural and cultural assets in tourism
6. Responsibilities of the public/government and private sectors
7. Community involvement in tourism planning and management

PART I: WATER RESOURCES AND BIODIVERSITY

Section 3.1a: The World Water Resources

Globally, the total amount of water from resources in the world is estimated at approximately 43,750 cubic kilometers per year (Vallee & Margat, 2003). Rainfall is the main source of water on earth. When rain falls on the land, some seeps into the ground or becomes runoff, which flows downhill into rivers and lakes, onwards towards the seas. Some gets trapped in swamps and marshes or is held as surface water, which slowly runs off into canals, creeks, and rivers (The World of Water, 1999).

According to Vallee and Margat (2003), the world's principal rivers come from different sources and have different lengths. Among that, America continental has the largest share of the world's total freshwater resources at 45%, followed by Asia which has the second largest share of the world's total freshwater resources at 28% (Vallee & Margat, 2003).

Though Asia is not the continent with the largest share of water resources in the world, it does contain five of the longest rivers in the world with their outflows and sources still located within Asia. This includes the Chang-Jiang or Yangtze River, Huang-He River, Mekong River, Irtys River, and Lena River, respectively (World Almanac, 2008) (Table 15).

Table 12 The World's Top Ten Longest Rivers

The World's Top Ten Principal Rivers					
Rank no.	River name	Continent	Source or upper limit of length	Outflow	Length (ml)
1	Nile River	Africa	Luvironza River, Burundi	Mediterranean Sea	4,160
2	Amazon River	South America	Junction of Ucayali and Maranon Rivers, Andes mountains, Peru	Atlantic Ocean	3,900
3	Chang-Jiang River (Yangtze River)	Asia	Tibetan plateau, SW Qinghai, China	East China Sea	3,450
4	Huang-He River	Asia	Kunlun mountains, Qinghai, China	Yellow Sea	3,000
5	Congo River	Africa	Junction of Lualaba and Luava Rivers	Atlantic Ocean	2,720
6	Mekong River	Asia	East Tibetan Plateau, China	South China Sea	2,700
7	Irtys River	Asia	Kazakhstan-Russia	Ob River	2,650
8	Lena River	Asia	West Baikal range, Russia	Laptev Sea	2,648
9	Niger River	Africa	Fouta Djallon plateau, Guinea	Gulf of Guinea	2,600
10	Missouri-Red Rock River	North America	Source of Red Rock, Beaverhead Co., MT	Mississippi River	2,540

Source: World Almanac, 2008

Vallee and Margat (2003) also reported that the internal water resources in Southeast Asia, which includes Thailand, have an area of 1,939,230 square kilometers. This number represents 15.10% of the total internal water resources of the entire Asian subregions (Table 13).

Table 13 The Water resources in the Southern and Eastern Asian region

Water resources in Asia sub regions				
Water resources sub regions (By ranking)	% of Internal water resources of the region	Total area (sq km)	Total population (inh.)	Remark
Islands	40.19	3,018,420	319,855,000	<i>Brunei, Indonesia, Malaysia, Papua New Guinea, and Philippines</i>
Eastern Asia	25.45	11,285,090	1,307,238,000	<i>China, DPR Korea, and Mongolia</i>
Southeast Asia	15.10	1,939,230	207,075,000	<i>Cambodia, Lao PDR, Myanmar, Vietnam, and THAILAND</i>
Indian Subcontinent	15.04	4,487,450	1,331,975,000	<i>Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka</i>
Far East	4.23	477,060	173,836,000	<i>Japan, and Republic of Korea</i>
Total Southern and Eastern Asia	100.00	21,207,250	3,339,979,000	

Source: Vallee & Margat, 2003

Section 3.1b: Thailand Water Resources

Based on geographical characteristics, Thailand has 25 river basins. The average of annual rainfall of the country is about 1,700 mm. The total annual rainfall of all river basins is about 800,000 million m³ of which 75% of the amount is lost through evaporation, evatranspiration and the remaining 25% is in streams, rivers, and reservoirs. Therefore, the available water quality was about 3,300 m³/capital/year (WEPA, 2009) (Table 14).

Table 14: Watershed Areas and Annual Runoff of the Major River Basin in Thailand

Basin No	River Basin Name	No Watershed area	Annual run-off
		[sq.km.]	[million m ³ .]
1	Part of Salawin	17,920.19	8,156
2	Part of Mekong	57,422.07	15,800
3	Kok	7,895.38	5,119
4	Chi	49,476.58	8,035
5	Mun	69,700.44	21,767
6	Ping	33,891.71	6,686
7	Wang	10,790.74	1,429
8	Yom	23,615.59	1,430
9	Nan	34,330.16	9,518
10	Lower Chao Phraya	20,125.25	4,925
11	Sakae Krang	5,191.43	519
12	Pasak	16,292.24	2,708
13	Tha Chin	13,681.24	2,815
14	Mae Klong	30,863.76	12,943
15	Prachinburi	10,481.32	4,502
16	Bang Pakong	7,978.15	4,900
17	Part of Tonle Sap	4,149.97	1,193
18	East Coast Gulf	13,829.72	25,960
19	Phetchaburi	5,602.91	1,140
20	West Coast-Gulf	6,745.33	1,013
21	Peninsular-East Coast	26,352.78	35,624
22	Tapi	12,224.53	17,380
23	Thale Sap Songkhla	8,494.97	7,301
24	Pattani	3,857.82	3,024
25	Peninsular-West Coast	21,172.25	9,918
Total		512,065.81	214,128

Source: Office of the National Water Resources Committee (2000) from WEPA, 2009

Section 3.1c: Definition of Biodiversity

Biodiversity can also be referred to as biological diversity. It is the foundation of the human-being (UNESCO, 2009). Also, it is another component of natural heritage. Literally, the word biodiversity is constructed from two words. That is, 'bio' from the Latin *bios*, which refers to all kinds of living things, both in the present and in the past, and 'diversity,' which means varied or with differences. Thus, biodiversity literally means the variety and extent of differences among living things. This includes all living things whether they are well known or yet to be discovered despite the range in size from microscopic bacterium to gigantic elephants and whales (Catibog-Sinha & Heaney, 2006).

UNEP (1992) defines biodiversity as the variability among living organisms from all sources. This includes diversity within species, between species and of ecosystems (UNEP 1992 in Catibog-Sinha & Heaney, 2006). It is also the collections and the interactions of the genetic, the species, and the ecological diversity (Di Castri & Younes 1996 in Catibog-Sinha & Heaney, 2006). Biodiversity includes the totality of genes, species and ecosystems (WRI/IUCN/UNEP 1992 in Catibog-Sinha & Heaney, 2006) as well as the composition of the varieties and variation of living organisms in relation to their habitats and ecological involvement (Noss 1990 in Catibog-Sinha & Heaney, 2006).

Section 3.1d: The Biodiversity in Thailand

The biodiversity in Thailand is regarded as one of the world's most important assets. Because of Thailand's varied climatic conditions and altitudes, it provides numerous and varied habitats for plants and animals. Undoubtedly, Thailand is one of the richest countries in the world in terms of biodiversity. The country is comprised of six diverse ecological zones. As such, the country is endowed with wide varieties of flora and fauna, which accounts for 8-10% of plant and animal diversity in the world. That is, more than 10% of the world's known animal species (4,253 out of a total of 41,600 species) are found in Thailand. However, many species of plants and animals are endemic to Thailand and there are 111 endangered species (EAPPCED, 1994).

Close to 29,000 fish species are known in the world, of which 40% are freshwater fish. About 1,000 fish species are considered commercially important, even though only about 10 species are considered dominant the aquaculture industry (Baillie et al. 2004; Froese & Pauly 2005 cited in Catibog-Sinha & Heaney, 2006). However, most of the fish resources from freshwater and small-scale marine fisheries are for subsistence and are the source of local livelihood in developing countries (Catibog-Sinha & Heaney, 2006). At the global level, about 7,000 species are recorded as food and agricultural crops. Only 150 species are considered commercially important (Baillie, et al., 2004 cited in Catibog-Sinha & Heaney, 2006).

An estimated recorded number of species from each major taxonomic group which are found in Thailand are presented in Table 15. The highest number of species recorded in Thailand is flowering plants, but the majority group was actually found to

be water species such marine invertebrates, marine fish, and marine mollusks, estuarine/seawater fish, and freshwater fish (Vessabutr, 2005). Moreover, Thailand has 82 national parks, 57 forest parks, 42 wildlife sanctuaries, and 177 watershed conservation areas scattered all over the country (Table 16).

Table 15 Estimated Recorded Number of Species in Thailand

No.	Taxonomic Group	Number of Species
1	Flowering plants	15,000
2	Pteridophytes	658
3	Gymnosperm	32
4	Non-vascular	2,000
5	Mammals	302
6	Birds	982
7	Reptiles	350
8	Amphibians	137
9	Marine fish	2,000
10	Fresh water fish	720
11	Estuarine/seawater fish	1,672
12	Marine mollusks	2,000
13	Marine invertebrates	11,900

Sources: World Bank, 2004; ONEP, 2006 in Vessabutr, 2005

Table 16 Number and Area of National Parks, Protected Areas, and Botanical Gardens in Thailand

Category	Total Number	Total Area (sq km)	% Total Country Area
National Park	82	63,464.33	12.37
Forest Park	57	870.49	0.17
Wildlife Sanctuary	42	36,758.53	7.16
Non-hunting Area	50	4409.59	0.86
Watershed Conservation Area	177	93,090.00 (a)	18.14 (a)
Botanical Garden	15	58.96	0.01
Arboretum	54	36.08	0.01
Mangrove Conservation Site	1	428	0.08
Biosphere Reserve	4	261.00 +	0.05 +
RAMSAR Site (b)	10	3,731.80	
World Natural Heritage Site (c)	2	(a)	
ASEAN Heritage (c)	2	(a)	

Source: ONEP, 2006 in Vessabutr, 2005

(a) Having areas overlapping with other categories, e.g., national parks, etc.

(b) 8 out of 10 RAMSAR sites are protected areas.

(c) The World Heritage and ASEAN Heritage Sites are either wildlife sanctuaries or national parks.

PART II: SUSTAINABLE DEVELOPMENT

Section 3.2a: Definition of Sustainable Development

Sustainable development is defined by the World Commission on Environment and Development (1987:43) as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. The basic principle of sustainable development is intergenerational equity: development is sustainable only to the extent that the needs of today can be fulfilled without prejudice to those of future generations (WCED, 1987 in Mbaiwa, 2005; WHO, 2008).

Guzman (2000) defined the phrase sustainable development by considering the meaning of the individual words, and then of the phrase as a whole. The term development is defined as the gradual upholding, a fuller working out of the details of anything, production of natural force, the growth of what is the germ, and development is something beyond and much deeper than growth, and something that beyond and deeper than growth. Sustainable means lasting, maintenance, perpetuation, and continuance. Therefore, sustainable development refers to development that lasts.

Sustaining development involves the conservation of biodiversity and ecological integrity; maintaining the natural capital such as forest resources; ensuring intra-generational and inter-generational equity; recognizing broad perspectives at the global level, managing risk, uncertainty and irreversibility with cautious efforts; and ensuring appropriate valuation of the assets and benefits from the use of environmental resources; integration of environmental and economic goals in both policies and operations; and ensuring social equity and community participation," (Sutton, 2000).

Harris and Leiper (1995) assert that sustainability is an existence of the ecological conditions necessary to support human life. The concept of sustainability involves the behavior of not using non-renewable resources faster than renewable substitutes; not using renewable resources faster than they can be refilled; and not releasing pollutants faster than the biosphere can act to render them harmless.

In summary, sustainable development pertains to the management and conservation of the natural resource base as well as the orientation of technological and institutional change in satisfaction of human needs for present and future generations. More importantly, sustainable development must not degrade the environment, but it must be technologically appropriate, economically viable and socially acceptable (ADB, 1991, in Guzman & Guzman, 2000).

Section 3.2a (1) The World Commission on Environment and Development (WCED), or the Brundtland Commission

The concept of sustainable development started in 1983. At that time, the United Nations created the Commission in order to cautiously examine the natural and environmental threats that confront people in the world. Later, this Commission became officially known as the World Commission on Environment and Development (WCED), or what is commonly known as the Brundtland Commission (R.S. Guzman, 2000); (R.Z. Guzman, 2000).

The Brundtland Commission is the most expressed and acceptable new form of sustainable development (ADB, 1991, in R.S. Guzman, 2000; R.Z. Guzman, 2000). The Brundtland Commission was named after its chair, Dr. Gro Harlem Brundtland who is a medical doctor and Master of Public Health (Figure 18). She was born in Oslo, Norway. She is a former Prime Minister of Norway, and has served as the Director General of the World Health Organization from 1998-2003. Presently, she now serves as a Special Envoy on Climate Change to the United Nations Secretary-General Ban Ki-moon (WHO, 2008). Consequently, the Report of the Brundtland Commission, *Our Common Future*, was published in 1987. Fundamentally, the seven major proposals of *Our Common Future* for sustainable development strive to revive economic growth; change the quality of growth; meet basic needs of food, water, employment, energy and sanitation; ensure a sustainable level of population; conserve and enhance resources; reorient technology and manage risks; and put the environment and economics in decision making.



Figure 18 Dr. Gro Harlem Brundtland

Source: WHO, 2008 (<http://www.who.int/dg/brundtland/en/>)

Therefore, sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WHO, 2008).

Section 3.2a (2) The Earth Summit's Agenda 21 or the Global Agenda

Primarily, a turning point in the way we look at the environment and development happened at the first United Nations Conference on Environment and Development (UNCED Earth Summit) in 1992 in Brazil. At the Earth Summit, world leaders adopted Agenda 21. That is, Agenda 21 provides a comprehensive action programme to attain sustainable development and address both environmental and developmental issues in an integrated manner at global, national and local levels. In other words, it is a blue print to attain sustainable development in the 21st century. It includes Chapter 14, which recognizes and confirms the importance of sustainable agriculture and rural development (SARD concept, adopted at the Rio Earth Summit in 1992). It sets out programs and specific actions needed to promote the concept of SARD, and represents the commitment of United Nations member nations to implement these programs and actions (FAO, 2008).

The Earth Summit's Agenda 21 or the Global Agenda, summarized all the major issues raised during the UNCED and stated that people should serve as an eye-opener to the strategies in order to achieve sustainable development (Keating, 1994 in R.S. Guzman, 2000; R.Z. Guzman, 2000). Additionally, in terms of the travel and tourism industry (1996), Agenda 21 is a comprehensive programme of action adopted by 182 governments/countries at the UNCED, the Earth Summit at Rio de Janeiro, Brazil, on 14 June 1992. To summarize, Agenda 21 is the first document to achieve international agreement, to reflect a global consensus and political commitment at the highest level. Therefore, Agenda 21 has the capability to bring about sustainable development from several parties such governments, UN agencies, other inter-governmental and non-governmental organizations, civil society groups, business and industry, and the public to be involved in implementing the actions specified by the Agenda in order to guarantee the future of the planet. In summary, Agenda 21 aims to assist governments with taking responsibility for travel and tourism in order to achieve sustainable development at local and national levels (Agenda 21, 1996).

PART III: SUSTAINABLE TOURISM

Section 3.3a: Definition of Sustainable Tourism

Sustainable tourism is defined by the Globe 90 Conferences on Environment and Industry as the management of tourism resources that fulfills economic, social and aesthetic needs while maintaining cultural integrity, essential ecological process, and biological diversity and life support systems. Thus, there is a need to preserve the environmental resources and the cultural integrity as well as to bring the socio-economic benefit of tourism to the people living in the country (Soubert, 1999). The principles of sustainability must refer to the environmental, economic, and socio-cultural aspects of the country (WTO, 2004 in Lansing & De Vries, 2006; Myburgh & Saayman, 1999 in Mbaiwa, 2005).

Sustainable tourism is a sub-branch of sustainable development that was put on the world agenda together with the publication of the Bruntland report, an article focused

on environmental issues and the natural environment with its main themes of sustainable development and sustainable tourism (Cole, 2006). It offers tourists the prospects of a guaranteed level of satisfaction in a tourism destination (Mbaiwa, 2005). Additionally, it is applicable to all types of tourism including mass niche tourism (WHO, 2004).

Sustainable tourism development focuses on the contributions of a country to the satisfaction of its tourism destinations, reduction of poverty in local tourist destinations, promotion self-esteem in local people, acceleration of its national, regional and local economic growth, and promotion of all the mentioned objectives without compromising the ability of future generations to meet their own needs (Tosun, 2001 in Mbaiwa, 2005).

Section 3.3b: Definition of Ecotourism

Ecotourism is a type of tourism which is a subset of natural area tourism, nature-based tourism and adventure travel (Dowling, 2000). Sustainable tourism can also refer to eco-tourism. This is a new proposal in response to the negative effects of mass tourism, such as the destruction of ecological systems, and the loss of cultural heritage (Lansing & De Vries, 2006).

Historically, ecotourism first began to appear in English language academic literature in the late 1980s (Weaver & Lawton, 2007). The term 'ecotourism' was invented by Hector Ceballos-Lascurain (Ceballos-Lascurain, 2003 in Sharpley, 2006). Since then, ecotourism has demonstrated significant growth. An increasing interest in ecotourism has been taken by the alternative tourism movement in response to an increasing concern over the negative consequences of mass tourism (Sharpley, 2006). Consequently, it is notable that eco-tourism has become a popular word since the 1992 Earth Summit in Brazil (Nyawa, 2004). In the early 1990s, the World Tourism Organization (WTO) predicted an annual growth rate of 10-15% in the demand for eco-tourism (Sharpley, 2006), and by 2024, ecotourism will represent 5% of the global holiday market (Starmer-Smith, 2004 in Sharpley, 2006).

Literally, eco-tourism arises from the sect of science called ecology. The word originates from the Greek language, in which case, 'eco' from *oikos*, means house, and 'logy' from *logos*, means word. Therefore, ecotourism refers to visitation methods that minimize the disruption of the host locale's distinctive attributes (Edmonds & Leposky, 2000). Clearly, eco-tourism is an environmentally responsible type of travel and visitation to undisturbed natural areas, in order to enjoy, study and appreciate the natural and cultural features-both past and present. It is a type of tourism that promotes conservation, has low visitor impact and provides for beneficially active socio-economic involvement of local participants (Ceballos-Lascurain, 1996 in Mbaiwa, 2005). Further studies stated that ecotourism is an ecological sustainable tourism that fosters environmental and cultural understanding, together with appreciation and conservation (Beeton, 1998).

Mieczkowski (1995) suggests a broader meaning of ecotourism where tourism combines local economic development, protection of the quality of the environment and promotion of the natural advantages and the history of an area. Overall, ecotourism not only demonstrates the advantages of preserving nature and culture, but also maintenance of the social fabric and the well-being of local communities (Mieczkowski, 1995 in Avgeli, Wickens, & Saatsakis, 2006).

Truthfully, the perceptions of eco-tourism vary in different countries. Nyawa (2004) gave examples from country to country on what their perceptions were all about. In the East Malaysia of Sarawak, eco-tourism is known as a 'Hidden Paradise'. In the South American region of Costa Rica, eco-tourism focuses on the conservation and implementation of actions which benefit the environment. In Belize, community involvement and benefit are an important part of sustainable tourism. In Australia, eco-tourism involves nature-based activities that are ecologically sustainable with a focus on natural areas that foster environmental and cultural understanding, appreciation and conservation. In Thailand, it was stated in the article Tourism and Cultural Heritage in Southeast Asia that the best definitions of ecotourism were presented by Storm Cunningham. Cunningham declared that the importance factors of eco-tourism can be narrowed down to a form of tourism with three criteria. These include enhancing conservation, local community, and profitability. Cunningham also stated that any tourism activities that exclude any of these three criteria may not be considered genuine eco-tourism. In summary, eco-tourism is regarded as nature-based tourism, focusing on conservation and culture (Nyawa, 2004).

Section 3.3c: The Basic Principles of Ecotourism

Dowling (1997) and Blamey (1997) assert that there are five key principles of ecotourism which include nature based; ecologically sustainable; environmentally educative; locally beneficial; and generates tourist satisfaction (Dowling, 1997 in Dowling, 2000; Blamey 1997, 2001 in Weaver & Lawton, 2007). The development of eco-tourism is the result of the convergence of the action of environmental protection, and the dynamic change of tourist demand for new types of vacations worldwide (Boo 1992 in Avgeli, Wickens, & Saatsakis, 2006).

Sharpley (2006) suggests the three key pillars to eco-tourism development as summarized in the following list:

1. Environment: Ecotourism is low-impact tourism that should be managed in a way that contributes to the conservation of the flora and fauna of natural areas.
2. Development: Ecotourism should encourage local participation and control in developing tourism that is of sustainable socio-economical benefit to local communities.
3. Experience: Ecotourism should provide opportunities for learning and meaningful encounters between tourists and the environment/local community.

Section 3.3d: The Impacts of Ecotourism

Mieczkowski (1995) suggests the positive impacts of ecotourism as follows:

- A perfect antitoxin to hectic and complex living
- A factor to free us from noise and distractions.
- A factor to influence human's physical and mental well-being and health. For instance, viewing nature such as observing fish in aquariums could lower blood pressure, and hospital rooms with views of trees and grass outside the windows may have a positive effect on the recovery rates of patients.
- Live or recorded sounds of nature may bring about relaxation and reduce stress.

Beeton (1998) provides the following positive impacts of eco-tourism:

- An alternative sources of income.
- Opportunities for employment and experience in diversity for young people in rural areas.
- A tool to reduce reliance on industries.
- A channel to lead to enhanced community facilities and infrastructure.
- A way to increase the conservation of ethics and to highlight the value of the natural environment.
- An opportunity for local community members to meet people from different areas and exchange ideas.
- A tool to increase civic pride.
- An opportunity to create new business.

The benefits of ecotourism include the potential for implementing research and education, conservation, human resources development, recreation, enjoyment and satisfaction, knowledge, understanding and appreciation, health, tranquility, inspiration and spirituality, sharing experiences with international communities, local participation, and an economic boost for a better standard of living (Nyawa, 2004).

While the natural environment and eco-tourism provide benefits and positive impacts to local communities, tourists and tourism resources, they can also have negative impacts, factors, and some concerns that are related to the business of eco-tourism.

Ross (2003) asserts problems associated with ecotourism include a lack of coordination between related organizations, degradation, pollution, and disorder at the attraction. An explanation of some of the negative impacts from tourism was cited in Mieczkowski (1995) as follows:

- The impacts caused by natural factors completely independent from humans, such as volcano eruptions or hurricanes. This is unpreventable.
- The impacts caused by the environment due to lack of caution by tourists, such as fatalities from white-water rafting, or canoeing and mountaineering accidents, however, are preventable if tourists are not caught off-guard.

Nyawa (2004) states that ecotourism has negative impacts such environmental degradation, overdevelopment of amenities, ecological disasters, physical contact, pollution, cultural insensitivity, introduction of foreign elements, and the displacement of local traditional lifestyles, and the standard of living.

PART IV: NATURAL AND CULTURAL HERITAGE & THEIR VALUES

Section 3.4a: Definition of Heritage

UNESCO (2008) defines heritage as the legacy from the past, what we live today, and what we pass on to future generations. It is irreplaceable sources of life and inspiration (UNESCO, 2008; Lowenthal, 2005). Heritage is assumed synonymously with history but greater than history. It is the proliferation of representations of the past, an element of continuity and reality lives, a commodity to discover, to preserve, and to exploit, a belief that is not necessarily limited to sacred considerations, a human-made, natural, and historical character of the material and symbolic elements of life (Edson, 2004).

Heritage encompasses landscapes, historic places, sites, built environments, biodiversity, collections, past and continuing cultural practices including ceremonies, rituals, events, even language, traditional knowledge and living experiences. It records and expresses the history development, and the forming of diverse national, regional, indigenous and local identities. It is not only an integral part of modern life but also a dynamic social reference point and positive instrument for growth and change (ICOMOS, 2002; Eagle, Paul, McCool, Stephen, Haynes, & Christopher, 2002, p. 62).

Therefore, natural and cultural heritage belongs to all people which everyone has the right and responsibility to understand, appreciate, and to conserve its values. Presently, natural and cultural heritage as well as the diversities and living culture have become major tourism attractions of people around the world (ICOMOS, 2002).

Section 3.4b: The Natural Heritage

Natural heritage consists of ecosystems, biodiversity, and geodiversity considered significant for the existing value of present and future generations in terms of their scientific, social, aesthetic, and life support values (ICOMOS, 2002). It is the lands and seas, the soils and plants and animals, the water we drink, and the air we breathe (Lowenthal, 2005).

Natural heritage is defined by UNESCO in Edson (2004) as follows:

- Natural features consisting of physical and biological formations or groups of formations, which are of outstanding universal value from the aesthetic or scientific point of view.

- Geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation.
- Natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

Section 3.4b (1) Wetlands

According to the ONEP (2005), wetlands are considered areas of marshes, fens, peat land or water, flood plains, and bogs, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt. It includes areas of marine water the depth of which at low tide does not exceed six meters. The Ramsar Convention (an international treaty that binds contracting countries to set aside wetlands as international protected habitats for water birds) also supported that wetlands are areas that may incorporate riparian and coastal zones close to the wetlands, and islands or parts of marine water deeper than six meters at low tide lying in the wetlands (ONEP, 2005). Thus, wetlands provide valuable resources such as timber, fish products, vertebrates, aquatic and semi-aquatic plants, water supply and flood control (Nabhitabhata, 1994).

Apparently, wetlands in Thailand include many important habitats and ecosystems that support a high biological diversity (Tunhikorn, 1994). In terms of biodiversity conservation, wetlands in Thailand are described in several ways (Table 17).

Table 17 Type of wetlands in Thailand and their importance

No.	Types of wetlands	Importance of wetlands
1	Mangroves and mudflats	These ecosystems are breeding, nursery and feeding grounds for fish and other aquatic species.
		Mangrove forests support diverse species of mammals.
		Intertidal mudflats are for resident and over-wintering shorebirds.
2	Freshwater wetlands (Reservoirs, rice paddies, lakes, ponds and associated marshes)	These wetlands are habitats for wintering and passage shorebirds and waterfowl.
		These are critical to large numbers of resident wading and water birds as feeding and nesting sites.
3	Freshwater swamp forests	These are roosting and nesting sites for larger water birds such as storks, cormorants and herons.

4	Peat swamp forests	These are important to the conservation of amphibians, reptiles and other species of endangered fish.
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Source: Tunhikorn, 1994

Commonly, wetlands are scattered all over Thailand. Wetlands cover an accumulated area of 36,616.12 square kilometers or approximately 7.5% of the country's total land area. Of these wetlands, 45% are classified as freshwater wetlands, and 55.12% are classified as mangroves and mudflat wetlands (Wetland International, 2008).

According to the wetlands survey in Thailand taken during 1996–1999, the survey has listed altogether 61 of Thailand's important protected wetlands. Ten wetlands covering a total area of 3,680 square kilometers have been recognized under the Ramsar Convention. Among these wetlands, Don Hoi Lot wetlands – mudflats located in Samut Songkhram Province, which includes the Mae Klong River Basin, have been considered as one of the important international Ramsar sites (Table 18) (Wetland International, 2008).

Table 18 Ramsar sites in Thailand

No.	Ramsar sites	Ramsar site no.	Province
1	Phru Khuan Khi Sian, Wetland in Talay Noi Non-hunting Area	948	Phattalung
2	Wetlands of Bung Khong Long Non-hunting Area	1098	Nong Khai
3	Don Hoi Lot Wetlands—Mudflats	1099	Samut Songkhram
4	Wetlands of Krabi River Estuary	1100	Krabi
5	Wetlands of Nong Bong Khai Non-hunting Area	1101	Chiang Rai
6	Wetlands of Princess Sirindhorn Wildlife Sanctuary (Phru To Daeng Peat Samp Forest)	1102	Narathiwat
7	Wetlands of Hat Chao Mai Marine Nation Park - Libong Islands Non-hunting Area - Trang River Estuary	1182	Trang
8	Wetlands of Laemson National Park - Kapoe Estuary - Kra Buri River Estuary	1183	Ranong
9	Wetlands in Ang Thong Islands Marine National Park	1184	Surat Thani
10	Wetlands Phang Nga Marine National Park	1185	Phang Nga

Source: ONEP, 2005

Section 3.4b (2) Ramsar Convention

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 138 Contracting Parties to the Convention, with 1369 wetland sites, totaling 119.6 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance (ONEP, 2005). The Convention on Wetlands is formally entitled, "The Convention on Wetlands of International Importance, especially as Waterfowl Habitat." It was signed at an international conference in the Caspian seaside town of Ramsar, Iran, in 1971, and the treaty has been known informally by that name ever since (Ramsar Convention on Wetlands, 2002).

Section 3.4c: The Cultural Heritage

UNESCO (2009) and Edson (2004) provide the following list of features on cultural heritage:

- Monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science.
- Groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science.
- Sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from a historical, aesthetic, ethnological or anthropological point of view.

ICOMOS (2002) defines cultural heritage as an expression of the ways of living developed by a community which are passed on from generation to generation, including customs, practices, places, objects, artistic expression and values. It is often expressed as intangible or tangible cultural heritage. Intangible cultural heritage includes oral traditions, customs, languages, music, dance, rituals, festivals, traditional medicine and pharmacopeia, popular sports, food and the culinary arts and all kinds of special skills connected with the material aspects of culture, such as tools and the habitat. Tangible cultural heritage involves created works of humankind which include places of human habitation, villages, towns and cities, buildings, structures, art works, documents, handicrafts, musical instruments, furniture, clothing and personal decoration, religious, ritual and funeral objects, tools, machinery and equipment, and industrial systems.

Cultural heritage is, in and of it a strong reason why people travel for their holidays (Zamani-Farahani & Musa, 2008). It is considered rather distinct from natural heritage because cultural heritage comprises not only the buildings and engineering works, but also arts and crafts, languages and traditions (Lowenthal, 2005). Obviously, cultural

heritage is a deep human phenomenon (Bridgewater, Arico, & Scott, 2007). Cultural heritage can relate to material expressions such as sites and objects, and also to intangible expressions such as language and oral traditions, social practices, rituals, festive and performance events. Therefore, culture refers to much more than the ways of life and everyday practices (Robinson & Picard, 2006).

Taylor (2004) also mentioned the significant aspects of 'place' to the Burra Charter. That is, 'place' can be used to define cultural heritage resources as it can refer to a site, area, land, landscape, building or other work, group of buildings or other works and may include components, contents, spaces and views. Furthermore, 'place' could involve human activities and associated cultural traditions.

In summary, as is defined by the 1972 UNESCO Convention on the Protection of the World's Cultural and Natural Heritage, cultural heritage is the complexity of monuments, buildings and archeological sites "of outstanding universal value from the point of view of history, art or science" (Hewison 1987, p.15 cited in Peleggi, 1996, p. 432). Since 1972, UNESCO aimed to set an international framework for the protection of diverse forms of heritage, initially focusing on works of art, built environments and natural spaces since 1972, (UNESCO 1970, 1972, in Robinson and Picard, 2006, p.18). With this in mind, UNESCO has included other forms of cultural heritage, notably the notion of intangible heritage (UNESCO 2001, 2003, in Robinson and Picard, 2006, p. 18). Since 1992, World Heritage Sites have included cultural landscapes in recognition of the intimate relationships between culture and nature (Robinson and Picard, 2006).

Section 3.4d: The World Heritage Sites

The ICOMOS (2002) states that places of significant heritage have intrinsic value for all people in both cultural diversity and social development. UNESCO (2008) also seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world. This is embodied in an international treaty called the Convention concerning the Protection of the World's Cultural and Natural Heritage, as adopted by UNESCO in 1972. Globally, there are 878 World Heritage Sites, 174 of them categorized as Natural Heritage Sites, 679 of them as Cultural Heritage Sites, and 25 of them located throughout 145 countries are considered mixed. Presently, the World Heritage Committee (2007-2009) includes the following members: Australia, Bahrain, Barbados, Brazil, Canada, China, Cuba, Egypt, Israel, Jordan, Kenya, Madagascar, Mauritius, Morocco, Nigeria, Peru, Republic of Korea, Spain, Sweden, Tunisia, and United States of America.

Section 3.4d (1) World heritage sites in Thailand

Since 1989, Thailand has sent representatives to every annual meeting of the World Heritage Committee. Thailand has been one of 21 countries represented on the World Heritage Committee. Throughout the country, there are more than 700 places of particular interest to Thai Heritage (Thai, 1996).

According to UNESCO (2008), as of July 2008, five Thai Heritage Sites are registered as World Heritage Sites, three of them are Cultural Heritage Sites, and two of them are Natural Heritage Sites (Table 19).

Table 19 Thai Heritage to World Heritage

Country	Name of World Heritage Sites	Year	Cultural Site	Natural Site
Thailand	Historic City of Ayutthaya	1991	X	
	Historic Town of Sukhothai and Associated Historic Towns	1991	X	
	Thungyai-Huai Kha Khaeng Wildlife Sanctuaries	1991		X
	Ban Chiang Archaeological Site	1992	X	
	Dong Phrayayen-Khao Yai Forest Complex	2005		X

Source: UNESCO, 2008

In Thailand, it is more a source of pride and honor for Thailand's tourism industry to have these places registered as World Heritage Sites rather than a monetary one (Thai, 1996). The designation of World Heritage Sites is not only a recognition of their significance, but also a powerful means by which heritage can be liberated to a global audience. The world heritage not only signals a sense of responsibility towards our past, but also the opportunities for public access to, education about, and the experience of, such important sites (Robinson and Picard, 2006).

PART V: SUSTAINABLE USE OF THE NATURAL AND CULTURAL ASSETS IN TOURISM

The following literature review focuses on some elements of the sustainable use of the natural and cultural assets in tourism.

Section 3.5a: Sustainable Use of Assets in Tourism

Hutton (2005) describes sustainability as the management of the use of wild species and ecosystems so that it falls within biologically sustainable limits. This does not require that all species must be valued in financial terms. However, the benefits of the use must be equitably distributed, and nature must be managed by rural communities. Therefore, sustainability is not about creating incentives nor is it the turning of exploitation into a conservation tool, wildlife trade, poverty relief, or an alternative to protect areas.

UNEP (2003) suggests that in order to protect and sustain the tourism industry for the future, one has to minimize ecological, cultural and social impacts while maximizing the benefits to environmental conservation and local communities (UNEP, 2003 in R. Henkel & P. Henkel & W. Agrusa & J. Agrusa & Tanner, 2006).

Section 3.5a (1) Carrying capacity

Sustainability in tourism sites need to minimize the level of visitation or be aware of the carrying capacity (Charoenwongsa, 2004). The carrying capacity of a site is important as a theoretical and powerful management tool for site zoning, the monitoring of impacts and regular processing.

Green (2005) defines carrying capacity as an indication of the capacity of a place to withstand physical or social disturbance before degradation becomes apparent (Green, 2005).

The carrying capacity of tourist spots is to ensure that tourist attractions will not be ruined or worn out too quickly. When talking about carrying capacity, it is not only national parks, caves, and waterfalls, but also the urbanized and semi-urbanised areas particularly those areas that have become popular sites like Amphawa in Samut Songkhram Province (Attakor, 2009).

Attakor (2009) also reported that not only visitors to Samut Songkhram Province have already complained of traffic congestion and overcrowding in many tourist attractions, but also the community people have faced the disturbance sound of boats that carry tourists to a firefly watch.

Today, there are thousands of boats operating for tourists in the area due to the rising number of tourists and the rapid growth of homestays. In the past, there were only 30 but there are now more than 270 homestays on the banks of Amphawa Canal. Therefore, the direction of tourism in Samut Songkhram, especially in Amphawa, is right, but in practice, the sustainability is in doubt (Sukin, 2007).

Section 3.5a (2) Responsible tourism

As stated earlier, an increasing interest in ecotourism has been taken by the alternative tourism movement in response to increasing concern over the negative consequences of mass tourism (Sharpley, 2006). Nowadays, several researchers choose to promote alternative tourism instead of mass tourism because it takes into consideration value consciousness, quality, planning, and local control. There are many types of alternative forms of tourism that manage and value natural and cultural assets. For instance, ecotourism, heritage and cultural tourism, agro-tourism, home-stay tourism, health tourism, medical tourism, sport tourism, religious tourism, recreation tourism, adventure tourism, and marine tourism (Avgeli, Wickens & Saatsakis, 2006).

To the consequences of tourism development in environmental awareness, it has been assumed that tourists are becoming aware and responsive. Hence, they are willing to modify their behavior such that the tourist-consumer is becoming greener (Sharpley, 2006), and mass tourism is being superseded by the new tourism (Poon, 1993 in Sharpley, 2006). That is, whereas the old mass tourist was satisfied with a predictable sun-sea-sand type holiday experience, the new tourist is more

experienced and independent to seek quality experiences that educate and satisfy special interests. The new tourist also knows how to behave and consume tourism correctly (Poon, 1993 in Sharpley, 2006). To this extent, some research has revealed that 64% of UK tourists believe that tourism causes damage to environment, and this has made UK consumers willing to pay more for an environmentally appropriate tourism product (Diamantis, 1999 in Sharpley, 2006).

Section 3.5b: Definition of Tourism

ICOMOS (2002) suggests that tourism should bring benefits to host communities and provide motivation for the host communities to care for and maintain their heritage and cultural practices. Therefore, tourism is a powerful mechanism for understanding places, peoples and pasts (Bouchenaki 2004 in Robinson and Picard, 2006). However, tourism should not be considered as a panacea for all of the problems in indigenous communities. It is not a reliable source of income in many marginal economies but it may supplement incomes derived in other ways and help to disperse the risk (Tao & Wall, 2008).

Robinson and Phipps (2004) define tourism as a culture that plays a vital role in helping us to understand ourselves, and the multi-layered relationships between humanity and the material and non-material world we occupy and journey through (Robinson and Phipps, 2004, in Robinson and Picard, 2006).

Section 3.5c: The Benefits of Tourism

As mention earlier, tourism causes both positive and negative impacts (Mieczkowski, 1995).

Robinson and Picard (2006) state more about the benefits of tourism as a significant opportunity for development and for reducing balance of debts. Tourism can offer a wide range of employment opportunities, and can utilize the cultural attributes to generate foreign currency receipts. Moreover, tourism allows diversification within economies which avoids dependency on a single export sector, and allows culture to flourish and exhibit itself to a global audience which in turn raises the awareness of the nations.

SBSTTA (1999) points out the multiple benefits gained from tourism. Tourism can serve as a major educational opportunity, increasing knowledge of natural ecosystems and local communities, and an encouragement of good governance. It provides incentives to maintain traditional arts and crafts and opportunities to learn about different cultures. Also, tourism also encourages the maintenance or revitalization of traditional practices that are favorable to the sustainable use of biodiversity resources and that would be in danger of being lost.

Section 3.5c (1) Tourism's benefits to communities in Samut Songkhram Province

The TAT's community development department and the Plai Pong Pang Administrative Organisation in Samut Songkhram province initiated the "Thai House Conservation Project for Tourism" in 2000.

By doing so, the villagers met to discuss for community's capacity and tourism management, a tourism centre was built, conditions of hosting homestay were set, three houses were chosen for pilot project of 12 tourists, regulations, tour programs, and rates were set, 15 member committee was elected, and training programs were established.

After doing this, the homeowners receive 100 baht (USD\$3, 1 USD = 35 baht) per tourist after contributing to the centre, and many can make 50,000 baht (USD\$1,429) per year or more. Moreover, boatmen receive 250 baht per trip after contributing to the tourism centre. Also, the palm sugar factory owners and pomelo orchard owners benefit from tourists buying products. Even the non-participants benefit indirectly from new roads and bridges (The Post, 2008).

Section 3.5d: Tourism in Thailand

The World Tourism Organization (WTO) Tourism Vision 2020 reported that international arrivals in the next 15 years will be 1.56 billion, compared to 703 million in 2002 and to 565 million in 1995. Over the period of 1995-2020, an average growth rate of 4.1% is expected (WTO, 2001 in Lansing and De Vries, 2006, p. 77). Also, estimates from the World Tourism Organization (2005), Europe is scheduled to be the top receiving region with 717 million tourists, followed by East Asia and the Pacific with 397 million, the Americas with 282 million, and finally Africa, the Middle East and South Asia (Robinson and Picard, 2006, p. 9).

Thailand attracts nearly 10 million foreign tourists annually, and if properly planned offers opportunities for improved revenues and conservation (World Bank, 2004). In 2003, there were close to 10 million international tourists visiting Thailand generating approximately USD\$10 billion dollars in income, or 5.4% of the country's GDP (TAT, 2003; World Tourism and Travel Council, 2004 in Green, 2005). It was found that Thai residents and international visitors felt cultural sightseeing, friendly people and food were significantly important when thinking of Thailand as a tourist destination. The top three images or characteristics when thinking of Thailand as a vacation destination and the most frequently mentioned by Thai residents were culture, beaches, and historic architecture. In this regard, culture includes trips to temples, museums, crafts exhibitions, festivals, and so on. The most frequently mentioned by international travelers were culture, beaches, and food. The positive image references associated with Thailand were culture, nature, food, historical sites, friendly people and exotic places, while negative image references included low-quality products, prostitution and pollution (R. Henkel et al., 2006).

The travel statistics as of July 2008 from PATA shows that during the first quarter of 2008, international arrivals to Thailand are ranked top three with 18.7% year-on-year growth (PATA, 2009) (Table 20).

Table 20 Travel statistics by country/destination (Top tier>10% year-on-year growth)

Country/destination	Year		% Change 2008/2007
	2007	2008	
Bhutan	3,794	5,363	41.4
Fiji	110,279	131,576	19.3
Thailand	2,610,662	3,099,662	18.7
Macau SAR	6,368,922	7,506,309	17.9
Cambodia	536,289	622,993	16.2
Nepal	82,857	96,137	16.0
Vietnam	1,110,163	1,285,959	15.8
Vanuatu	42,692	49,418	15.8
Indonesia	1,214,986	1,405,456	15.7
USA (Total)	9,871,406	11,384,714	15.3
India	1,475,080	1,655,349	12.2
Korea (ROK)	1,436,106	1,608,073	12.0
Japan	1,933,817	2,139,295	10.6
Hong Kong SAR	6,615,817	7,275,521	10.0

Source: PATA, 2009 (<http://www.pata.org/patasite/index.php?id=111>)

Thus, tourism industry is very important because tourism is as a major generator of national income for the country (TAT, 2008). The Thai government sees exploiting environmental and cultural resources for tourism as a means of insuring the economic survival of many communities in the country (Green, 2005). At present, TAT has positioned Thailand as a cultural, natural, and historical destination. However, Thailand has suffered from negative effects of uncontrolled tourism, which has led the Thai government to take steps to search for ways in order to develop tourism products in a more sustainable way (Rittichainuwat & Qu, 2000 in R. Henkel et al., 2006).

Section 3.5d (1) Evolution of tourism in Thailand

Tourism in Thailand started in the late 19th century with King Chulalongkorn (Meyer 1988, in Peleggi, 1996). At that time, the itinerary of a week's sightseeing in Bangkok included places such the National Library and the University, the Grand Palace with the Temple of the Emerald Buddha, the floating market, and the ruins of Ayutthaya (Seidenfaden 1927, in Peleggi, 1996).

Later in the late 1950s, the push of mass tourism had started from an economic development initiated by Marshal Sarit Thanarat's premiership. In 1959, the Tourist Organization of Thailand (TOT), the former name of the TAT, was established. In this period, the new airline company, Thai Airways International was also created through a joint venture with the Scandinavian Airline system.

In the early 1960s, there were major contributions to the promotion of Thailand. Not only the government's campaign, (a campaign focused on the country's cleanliness (*khwamsahat*), existed as proof of a standard of civilization (*khwampen araya prathet*), which was initiated by Marshal Sarit Thanarat, but there was also the huge flow of American aid spent in the development of infrastructure, particularly roads in Thailand, and the presence of US military bases in northeastern provinces. These led to the mushrooming of hotels, restaurants, bars, nightclubs and massage parlors.

Thailand was the safest country to visit in Southeast Asia in the mid 1970s due to the regional climate of communist takeovers and rising Islamic fundamentalism in other parts of the region (Meyer 1988 in Peleggi, 1996). In 1979, in the midst of an economic slowdown, tourism became a major source of foreign exchange earnings. During this period, the TOT was renamed as the Tourist Authority of Thailand (TAT). Tourism development was added to the Fourth Economic and Social Development Plan (1977-1981) (Peleggi, 1996).

In 1980, the growth in annual tourist arrivals doubled from 2 million at the beginning of the decade to 5 million by the end (Walton 1993, in Peleggi, 1996). Obviously, tourism revenue grew dramatically from 17 million Baht in 1980 to 110 million Baht in 1990 (Somchai 1992, in Peleggi, 1996). Moreover, in the 1980s, the concept of cultural heritage had become a promotional catch. For instance, the Bangkok Bicentennial in 1982; the celebrations for the 60th birthday of King Bhumibol in 1987 coupled with the Visit Thailand Year; ceremonies for the longest reign of Thai history held in 1988; and Thailand's Arts and Crafts Year. Under the Sixth Plan (1987-1991), budget allocations started to be made directly to TAT in order to develop short and long term plans from monument conservation to road construction. The repackaging of Thailand as a destination for cultural tourism was also an aim (Ritcher 1989 in Peleggi, 1996).

In 1991-1992, a decrease in tourist arrivals was recorded for the first time since 1976. The concurrence of the world recession, the Gulf War, the February 1991 coup and the bloody events of the May 1992 crisis broke the tourism industry's dream of indefinite growth. Furthermore, the rapid deterioration of Thailand's natural resources

in the face of the growing ecotourism market and the gradual opening of long-secluded countries such as Burma and Vietnam have been forcing tourism operators and TAT to rethink strategies of development from a regional, rather than a national, perspective (Parnwell 1993, in Peleggi, 1996, p. 436).

However, now in mid 2009, Thailand's tourism industry is facing a crisis because the numbers of foreign tourists is expected to fall from 14.1 million in 2008 to 10.9 million in 2009. This is about a 22% reduction. The sharp decline of visitors would reduce tourism-related income from 540 billion Baht in 2008 to 350 billion Baht in 2009. This is about a 35% drop. This is the result of the world economic recession and domestic political conflicts, particularly the violent protests which occurred in April 2009, that lead to a reduction in foreign tourist confidence (Thailand News Online by Siam Daily News, 2009).

Section 3.5e: Sufficiency Tourism in Samut Songkhram Province

Thailand's tourism marketing and promotion policies (2007-2011) is striving to maintain a balance between economic growth and sustainable development, therefore, the new concept of "Sufficiency Economy" developed by His Majesty King Bhumibol Adulyadej, Rama IX, has been implemented.

The "Sufficient Economy" is a philosophy of the middle path. It is the plan for Thai people to live independently within their means, and to protect and nurture land and natural resources in a thoughtful, sustainable way which will ensure a prosperous and happy future for Thai culture, Thai people, and Thailand. This concept is perfectly suit to the new generation of travelers who wish to be responsible for social and environment. This has led to the popularity of community-based tourism, particularly the natural and cultural heritage. This also gives rise to new tourist attractions which eventually enable local people to raise their income levels. Visitors can enjoy beautiful scenery, appreciate local crafts, tour plantations, and buy fresh vegetables, fruits, flowers (TAT, 2007).

Samut Songkhram Province is the province with those tourism assets, particularly the natural and cultural heritage. In 2004, the provincial governors countrywide join hands in drawing up a strategic tourism development policy according to the TAT, and Samut Songkhram Province is one of the provinces in the third group of the Central that offers a combination of seaside attractions, historical sites and cultural heritage (Bangkokbank, 2009).

However, the aggressive promotion of tourism in Amphawa is a problem to the local community (Figure 19). According to the comments in the newspaper from the President of Samut Songkhram's Chamber of Commerce (Mr. Surajit Chirawate), and the owner of Ban Klanguan homestay (Mr. Thanee Maneesrikham), tourism in Amphawa and Mae Klong is not the part of their normal way of life and daily life activities for tourists to witness and learn their traditions and culture rather than just seeing. Moreover, it is not the real community-based tourism in Amphawa rather than the mass tourism even though the area has high potential to develop ecotourism and

agrotourism (water brings fertile land, river brings sea fish, and soil brings delicious fruit (Sukin, 2007).



Figure 19 Too many tourists from aggressive promotion of tourism in Amphawa, Samut Songkram Province

Source: Photo by Tungkavit Sutheero (2007)

PART VI: RESPONSIBILITIES OF THE PUBLIC/GOVERNMENT AND PRIVATE SECTORS

Many countries throughout the world have enacted their own heritage laws and organizations to protect and preserve heritage. For instance, the U.S. government enacted the Antiquities Act (1906), the National Historic Preservation Act (1966), the Endangered Species Act (1973), and the Native American Graves Protection and Repatriation Act (1991). The Canadian government established the non-profit organization Heritage Canada to conserve historic areas through recycling and adaptive reuse. The British National Trust of the United Kingdom was established in 1895 to administer historically significant homes, properties, and scenic areas, and the National Heritage Act was enacted in 1983. Egypt also has an Antiquities Protection Law, whereas, several African, Middle Eastern, and South American nations have agencies and laws to protect and preserve heritage. Additionally, Russia and many of the former Eastern bloc countries also prioritize historic preservation. Moreover, in Southeast Asia, China and Japan, there is the Law for the Protection of Cultural Properties for ancient shrines, palaces, and gardens (Edson, 2004).

The following responsibilities of the public government and private sectors can be divided into the international and national level.

Section 3.6a: International level

Section 3.6a (1) Roles of Charters and Principles

The fundamental role of charters is to offer statements or principles and guidelines for the conservation and management of places of cultural significance where conservation is regarded as an integral part of the management of these places. According to China ICOMOS, every country now has national legislation to protect its heritage, but not all have a guiding methodology for effective implementation of conservation practices. (China ICOMOS in Taylor, 2004).

To make it more specific, it is very necessary to mention the two most significant Charters as follows:

1. The International Charter for the Conservation and Restoration of Monuments and Sites or the Venice Charter is the forerunner of other documents and marks concerns on conserving the past for the present and future. The Venice Charter arose from an International Congress of Architects and Technicians of Historic Monuments in Venice in May 1964. It focuses on ancient monuments and buildings, reflecting the narrow scope of conservation in the 1960s. It consists of a series of 16 Articles that define ancient monuments and set out guidelines for the treatment of places (Taylor, 2004).
2. The Australia ICOMOS Charter for Places of Cultural Significance or the International Council on Monuments and Sites (ICOMOS) developed a charter on culture and tourism in 1999. Commonly it is referred to as the Burra Charter. This document consists of 34 Articles that set a standard of practice for those who provide advice, make decisions about, or undertake works at places of cultural significance including owners, managers and custodians (Taylor, 2004).

Section 3.6a (2) Role of NGOs in Thailand

NGOs can help in sustainable development by mobilizing public opinion rapidly and effectively. They can act as brokers between government and local communities and independently manage environmental projects. The government and NGOs can be genuine partners for progress in sustainable development (EAPPCED, 1994).

Section 3.6a (3) The United Nations Educational, Scientific and cultural Organization (UNESCO)

The United Nations Educational, Scientific and Cultural Organization or UNESCO was founded on November 1945. Education, social and natural science, culture and communication are the means to a far more ambitious goal: to build peace in the

minds of men. UNESCO promotes international cooperation among its 193 member states and six Associate Members in the fields of education, science, culture and communication (UNESCO, 2007). Conceptually, UNESCO is supporting long-term community disaster preparedness initiatives, while WHO is contributing to Thailand's improvement of health services in disaster-prone areas (United Nations Thailand, 2008). Today, Thailand is involved in a number of UNESCO projects, including several dealing with the Asian region such as the Deltas in the Moonsoon Asia-Pacific region (DeltaMAP) project. This initiative seeks to improve knowledge and understanding of Asian river deltas and bridge the gaps between terrestrial, coastal and marine research (UNESCO, 2007).

In recent years, a field project of UNESCO was initiated in 1997 entitled "A place for indigenous people in protected areas, the Surin Islands, and Andaman Sea". This project was implemented by Chulalongkorn University Social Research Institute and supported by UNESCO. To date, there have been a series of workshops which concerned stakeholders who joined efforts to sustain and conserve the natural and cultural heritage of the Surin Islands. Following the workshops, a number of project activities were designed to explore sustainable development options with the Moken that allow them to maintain and enhance their lifestyle while conserving the biodiversity of the Surin Islands. The project activities include resource assessments based upon scientific and Moken ecological knowledge, preparation of reading material for Moken children, handicraft learning, basic health and welfare training, turtle conservation and giant clam mariculture (UNESCO, 2008).

Section 3.6a (4) The Thai National Commission for UNESCO

The Thai National Commission for UNESCO is responsible for the promotion of international understanding and UNESCO's work through the Sub-committee on the Associated School Project or ASP. In this regard, the Sub-committee is chaired by the Secretary General of the Thai National Commission and is comprised of representatives from some active ASP schools, the National ASP Coordinator and the President of the Centre for International Understanding or CIU. The CIU was established in 1970 to support the implementation of the ASPnet and to assist in fund-raising for the development of some projects and activities of the ASPnet in Thailand (Sriboonchoo, 2000 in Beatrice, 2000).

Section 3.6a (5) The Associated School Project (ASP)

The Associated School Project or ASP was created by UNESCO in 1953. This is an international network of some 5,000 schools in 160 countries (as of February 2000) which work with UNESCO to adapt school curricula to address the most pressing issues of our time: human rights, peace, environment, and heritage preservation. The ASP network is designed to have a multiplier effect whereby its innovations are incorporated into the education mainstream for the benefit of other schools. At present, there are more than 100 schools and educational institutions throughout Thailand participating in the ASP network. However, those who are not yet members

of ASP are also invited to participate in some activities such as the International Youth Seminar on the Conservation of World Heritage (Beatrice, 2000).

Generally, the Sub-committee on the ASPnet in Thailand meets every two months or as necessary in order to exchange views and discuss the planning of activities. A couple of the activities were such, a Youth Forum on “The Role of Youth in the 21st Century,” which took place from 8-9 June 1998 in Bangkok and Ayutthaya, a Youth Seminar on “Vision of Youth in Science,” that took place from 30 September to 2 October 1998 in Bangkok. In addition, there was also a National Youth Camp for a number of secondary school students in order to select two representatives to participate in the International Youth Parliament that was held from 23 to 27 October 1999 in France (Sriboonchoo, 2000 in Beatrice, 2000).

Section 3.6a (6) The World Conservation Union (IUCN)

The World Conservation Union or International Union for the Conservation of Nature or IUCN was created in 1948. It is the world's largest conservation-related organization, bringing together 76 states, 11 government agencies, 732 NGOs, 36 affiliates, and some 10,000 scientists and experts from 181 countries in a unique worldwide partnership. For more than half a century, IUCN has endeavored to shape a just world that values and conserves nature. Its mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. In fact, the IUCN has promoted the concepts of sustainable development and sustainable use of natural resources since *Caring for the Earth* (1992), through several initiatives which were carried out at the policy and field levels, on a global, regional, national and local basis (IUCN, 2007).

According to IUCN (2007), Thailand's relationship with the IUCN began as early as 1948 when it was one of the first Asian countries that was a signatory to the Charter. Historically, the IUCN assisted in the establishment of a national park and wildlife conservation system in Thailand in the early 1960s. Then, the IUCN gave support to the Royal Thai Government on the development of a watershed classification system in the 1980s. In the late 1990s, the IUCN provided information and discussion on the Convention on Biodiversity (CBD) and a review of the Thai Forest Master Plan. There has been a regional presence since the early 1990s with the emerging Thailand Program beginning in 2001. Furthermore, IUCN-supported efforts for tourism include sponsorship for Thai villagers in rural Thailand to rebuild their lives after the 2004 tsunami and the use of the Andaman coast community tourism as a tool for sustainable development (TAT, 2008).

Section 3.6a (7) Association of Southeast Asian Nations (ASEAN)

The Association of Southeast Asian Nations or ASEAN was established on the 8th of August 1967 in Bangkok by the five original Member Countries, namely, Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Currently, ASEAN has altogether

10 member countries. The other five are Brunei Darussalam, Cambodia, Laos, Myanmar, and Vietnam (ASEAN, 2008).

There are several ASEAN cooperative efforts in tourism development (Table 21).

Table 21 ASEAN cooperative efforts in tourism development

Endeavor	Description
ASEAN Travel Information Centre	Established in Kuala Lumpur as SCOT's permanent secretariat. Its job is to coordinate and manage ASEAN marketing programs and to act as liaison with other international tourism bodies.
ASEAN Tourism flora	Since 1981, these have been held every three years as a venue for tourism workshops and markets where ASEAN sellers of tourism meet foreign buyers. Organized and funded by ASEAN NTOs.
ASEAN promotional chapters	Six ASEAN chapters act as SCOT's promotional arms in major tourist markets: Japan, Australia, Hong Kong, UK, and the United States.
Collective representation	ASEAN NTOs periodically attend world travel markets collectively to project a common ASEAN image.
ASEAN travel films and brochure	ASEAN countries have combined resources to produce travel films and brochures.
Research and human resource training	Workshops have been conducted to discuss common tourism terminologies for data collection to facilitate information exchange among ASEAN countries, and to discuss tourism training needs.

Source: Adapted from Wong, 1987 in Timothy, 2000

Section 3.6a (8) The World Tourism Organization (WTO)

The WTO is a specialized agency of the United Nations and the leading international organization in the field of tourism. It is a global forum for tourism policy issues and plays a central role in promoting the development of sustainable tourism. Its membership includes 161 countries and territories and more than 370 affiliate members from the private sector including educational institutions, tourism associations and local tourism authorities.

Thailand has been a member of the UNWTO since 1996. The WTO project in Thailand is the Sustainable Tourism Development Master Plan (2000-2001). The missions include the review of tourism development at Inner Lake Boraphet (2006); a training programme on Rescue Techniques in River Rafting (2005); re-formulation of existing project documentation on Sustainable Tourism Development and Marketing of the Heritage Necklace Circuit (2005); a proposal to channel funds for the economic and operational recovery of SMEs affected by the Tsunami (2005); preparation of a National Tourism Development Master Plan (2004); workshops on homestay operations (2002); training course on white water rafting (2002); seminars on homestay operations (2001); assistance on the Tourism Development Master Plan (2000); seminar on TSA (1999); a proposal on energy conservation in hotels and resorts (1998); financing of projects (1984); review of the social, cultural, economic impact of tourism (1982); assessment of priority requirements (1982); development of the tourism policy (1980); identification of technical assistance needs in the field of tourism (1978); review of tourism statistics (1978); and development of tourism policy (1978) (UNWTO, 2009).

Therefore, the WTO helps to produce know-how and specific guidelines for the sustainable development and management of tourism for different types of destinations. In this way, the WTO has been disseminating good practices throughout the world, and supporting governments and the private sector with the necessary tools and advice to raise the level of sustainability (Eagle, McCool & Haynes, 2002).

Section 3.6a (9) Pacific Asia Travel Association (PATA)

The PATA is a membership association acting as a catalyst for the development of the Asia Pacific travel and tourism industry with membership across 74 countries. The newly-elected PATA Chairman of 2009 is the former Governor of the TAT. PATA has agreed to work with Green Globe to implement the best practices in sustainable travel and tourism across the triple bottom line of economic, social, and environmental management (PATA, 2009).

The PATA is among the first to develop an environmental ethic (Jansen-Verbeke & Go, 1995 in Dowling, 2000). The principles of sustainable tourism are to a large extent expressed in PATA's charter which also includes strategies for tourism development that benefit both Thailand and its population (Chon, 2000).

Section 3.6a (10) Southeast Asian Ministers of Education Organization-Regional Centre for Archaeology and Fine Arts (SEAMEO-SPAFA)

The SEAMEO-SPAFA is the Regional Centre for Archaeology and Fine Arts. It was established on the 6th of February 1987 and located in Thailand. The Centre is under the aegis of the Southeast Asian Ministers of Education Organization (SEAMEO) and is hosted by the Government of Thailand. The member countries of SEAMEO-SPAFA including the following: Brunei Darussalam, the Royal Kingdom of Cambodia, the Republic of Indonesia, the Lao People's Democratic Republic, Malaysia, the Union of Myanmar, the Republic of the Philippines, the Republic of Singapore, Timor Leste, the

Socialist Republic of Vietnam, and the Royal Kingdom of Thailand. The associated members are Australia, Canada, the Federal Republic of Germany, the Republic of France, New Zealand, the Netherlands, and Norway. SEAMEO-SPAFA works in co-operation with the SEAMEO Secretariat and SEMEO-SPAFA member countries. Support is received from donor countries (Japan, Canada, and Italy) and from international organization such as UNESCO, as well as others. The main objectives of SPAFA are to cultivate awareness and appreciation of cultural heritage, to promote and help enrich archaeological and cultural activities in the region, to further professional competence in the fields of archaeology and fine arts, and to advance mutual knowledge and understanding among the countries in Southeast Asia through regional programs. The Centres specialize in programs for Archaeology, Visual Arts and performing Arts (SEMEO-SPAFA, 2009).

Section 3.6b: National level

Section 3.6b (1) Thailand water resources and management

According to WEPA (2007), Thailand water resources are from 25 river basins. The Mae Klong River Basin occupies 6 % of the total catchments area of the entire country, and is considered the second most important river basin in the country (WEPA, 2007). The 2002 water quality survey in Thailand shows that 40% of the river basins had good water quality, 25% were moderate, 32% were poor, and 3% were rated as very poor (World Bank, 2004).

The Government of Thailand has taken initiative in adopting an integrated water resources management principle for implementation at the river basin level. Under this approach, the Government will attach equal importance to both development and management aspects of water resources in Thailand.

- A plan for integrated water resources management has been set up. This is a master plan on water resources development, water allocation, water conservation, flood mitigation and water quality which will be formulated for all 25 river basins.
- The river basin water resources management master plan will be formulated and include a master plan on water development, water allocation and usage, water conservation, flood mitigation, and polluted water treatment.
- A draft for the water resources law at national and local levels will be established for the whole country. The central agency in the water sector has already been established for the management of water resources.
- An information network for the land and land use, forest land, and some other social and economic information must be created and developed.
- An increase in water storage capacity through the development of small scale water sources such as farm ponds, shallow wells, deep wells, and rain harvest

tanks so that there will be sufficient water for domestic consumption and for farming.

- The development of groundwater in some specific areas so that there will be enough for agricultural purposes.
- The rehabilitation and modernization of the irrigation projects for the agricultural, urban, and industrial sectors. And improvement of the water delivery system because most irrigation projects are old and have poor operation performance.
- The development of the upper watershed area in order to help reduce the impacts of decreased infiltration, increased runoff, erosion and downstream sedimentation.

Section 3.6b (2) Thailand and sustainable development

Since the Earth Summit in 1992, Thailand has adopted sustainable development and Agenda 21 as a framework for the national development plan. To date, Agenda 21 has been incorporated in the National Economic and Social Development Board (NESDB) as an evaluation framework for Thailand's sustainable development with its aim to balance among the three bottom lines of development economic, social and natural resources; and environmental management (TEI, 2005).

The Ministry of Natural Resources and Environment of Thailand in collaboration with the Urbanization and Environment Program (UEP) had conducted a study of the national implementation of Agenda 21 and World Summit on Sustainable Development (WSSD). The UEP aims to provide management guidelines for innovative cultural and technological solutions. The objectives of the Program range from recommending policy options for the National Economic and Social Development Plan of Thailand, to working alongside local communities in building sustainable capacities and encouraging public participation and environmental governance. The UEP conducts policy research on the relationships between urbanization, development and environmental sustainability. The UEP implements projects on behalf of Thailand Cultural Environment Fund (TEI, 2005).

Section 3.6b (3) Thailand's support of International Conventions

Thailand has been supporting multiple international conventions. By supporting these International Conventions, Thailand confirms its commitment to protect the environment both locally and globally. For instance, Thailand signed and ratified the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). Thailand is signatory to the 1985 Vienna Convention for the Protection of the Ozone Layer, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, the Basel Convention on controlling transboundary movements of hazardous waste, the Convention on Climate Change and the Convention on Biological Diversity (EAPPCE, 1994).

Section 3.6b (4) Ministry of Tourism and Sports (MOTS)

MOTS is the major organization behind leading Thailand as the center of tourism in Asia while ensuring quality and sustainability. MOTS has the authority to promote, support and develop the tourism industry, sports, sports education, recreation and other affairs as specified by law. The internal structure of MOTS consists of the Office of the Minister, Office of the Permanent Secretary, Office of Tourism Development, Office of Sports and Recreation Development, Institute of Physical Education, Sports Authority of Thailand, and Tourism Authority of Thailand (MOTS, 2008).

Regarding the budget plan on tourism development, MOTS has created the Three-Year Tourism Development Plan (2010-2012) with a budget of 3,992 million Baht (USD\$ 114 million; 1 USD\$=35 Baht) for tourism development in every region throughout the country. This budget has been divided into 1,222.98 million Baht (USD\$ 35 million) for the year 2010, 1,422 million Baht (USD\$ 41 million) for the year 2011, and 1,353 million Baht (USD\$ 39 million) for the year 2012, respectively.

For the Northern region, the plan is focused on health tourism related to the hot springs (96.70 million Baht or USD\$ 2.7 million), cultural tourism of specially focused on the Lanna civilization or Classy Lanna (44 million Baht or USD\$ 1.3 million), eco-tourism together with adventure tourism (20 million Baht or USD\$ 0.6 million), and world heritage tourism together with eco-tourism (250 million Baht or USD\$ 7.1 million).

For the Northeastern region, the plan focuses on the Cradle of Learning and Civilization, such Amazing Pilgrimage Tourism (120.5 million Baht or USD\$ 3.4 million), cultural tourism of the lower North East region (86.5 million Baht or USD\$ 2.5 million), cultural tourism related to the Dinosaur trekking path (155 million Baht or USD\$ 4.4 million), and cultural tourism along the Mekong River (240 million Baht or USD\$ 6.9 million).

For the Central region and Eastern Seaboard, the plan is focused on the nostalgia tourism such eco-tourism in the tropical forest (36.65 million Baht or USD\$ 1.05 million), cultural tourism related to the traditional lifestyle of the people living along the river in the Central region (202.5 million Baht or USD\$ 5.8 million), and natural resource tourism related to the Affordable Active Beach (24.5 million Baht or USD\$ 0.7 million).

For the Southern region, the plan is focused on the Blue & Green, Clean & Clear which is the aim of the natural resource tourism of the Royal Coast (81 million Baht or USD\$ 2.3 million), along with the Amazing Two Oceans (850.63 million Baht or USD\$ 24.30 million) (MOTS, 2009).

In 2009, Thailand's Cabinet put tourism promotion atop the national agenda as a national priority to boost the tourism industry due to the recent political chaos such travel warnings and State of Emergency clashes between the anti-government protesters and government security personnel. The Cabinet has assigned the

Ministry of Tourism and Sports to propose a tourism boosting plan (Thailand News Online by Siam Daily News, 2009).

Section 3.6b (5) Tourism Authority of Thailand (TAT)

The TAT is under the Ministry of Tourism and Sports. It was established on the 18th of March 1960. TAT was the first organization in Thailand to be specifically responsible for the promotion of tourism. TAT supplies information and data on tourist areas to the public, publicizes Thailand with the intention of encouraging both Thai and international tourists to travel in and around Thailand, conducts studies to set development plans for tourist destinations, and co-operates with and supports the production and development of personnel in the field of tourism. Since the inception of the first local office of TAT in Chiang Mai in 1968, there are now 22 regional offices throughout Thailand. Also, TAT has established many overseas offices. The first of these offices being located in New York, has been open since 1965. During the past 30 years, TAT has established 15 more offices in different parts of the world (TAT, 2008).

In 1995, TAT reported that Thailand is at the forefront of ecotourism development within the Southeast Asian region with the release of its national ecotourism strategy (TAT, 1995 in Dowling, 2000). Thus, TAT is directly involved in the eco-tourism management of the country. Later, the national eco-tourism operational plan was set up by TAT. Moreover, TAT has completed a clear guideline for local tourism management in the communities and TAT is working at the center of networking in 360 degrees as shown in the Thailand Ecotourism Network (Appendix T). Truthfully, TAT is working with all related public and private sectors in two-way communication. For example TAT is working closely with the Sub-District Administration Organizations, Municipalities, and Provincial Administrations (Chaiyakhrot, 2004). In 2009, TAT managed the marketing plan by rehabilitating and building confidence among tourists. TAT also participated in tourism promotion in each country. The Government had allocated a budget of 1 billion Baht to TAT in order to boost the number of tourists both Thai and foreign (Thailand News Online by Siam Daily News, 2009).

The TAT's sustainable tourism development strategy aims to balance the triple bottom line: economy, environment and society mixing with the sufficiency economy concept that focuses on quality over quantity. The plan also aims to achieve three main objectives; expand the market, increase the rate of repeat tourists, and enhance Thailand's reputation (The Post, 2008). Thus, the new tourism policy focuses more on yield and expenditure per visitor than on headcount, more attention on how to best influence and improve experience for every visitor (TAT, 2007).

Section 3.6b (6) Tourism Council of Thailand (TCT)

TCT is working aggressively as one of Thailand's main tourism organizations. Recently, TCT proposed 17 measures to the government for implementing a plan to help revive domestic tourism due to the global financial crisis and domestic political

turmoil. The 17 measures included to increase public relations on re-creating a positive image of the Kingdom, and to ensure the meeting of the ASEAN summit with its dialogue partners, which was cancelled when red-shirt protestors stormed into a Pattaya hotel on April 11. The TCT also asked the government to provide a 20 billion Baht fund and loan offer to tourism operators through government banks at a moderate interest rate of 3 per cent (Thailand News Online by Siam Daily News, 2009).

Section 3.6b (7) Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment, Thailand

The ONEP is an agency of the Ministry of Natural Resources and Environment of Thailand. Its duties include the formulation of a conservation and management policy and plan for natural resources and the environment, and bringing them into practice. Additionally, ONEP is responsible for the monitoring of environmental impacts in order to strengthen the national economy and support sustainable development and the quality of life. In particular, ONEP has initiated the Policy and Prospective Plan for the Enhancement and Conservation of National Environmental Quality (1997-2016) with its aims for integration of natural resources management and enhancement, and conservation of national environmental quality, with sustainable economic and social development, and to ensure the quality of life. As such, the policies include essential strategies to accelerate rehabilitation of renewable resources and application of mitigation measures to address water pollution, air pollution, noise and vibration pollution, and pollution from solid waste and night soil, hazardous materials and hazardous waste (ONEP, 2008).

During 2002 - 2005, the ONEP and Danish International Development Assistance (Danida) collaborated on the Thailand Cultural Environment Project (TCEP). This is the project that Danida brought in through the Cultural Environmental Conservation System (CECS). This is a new technique in cultural environment conservation. From this project, the Cultural Environment Atlas was discovered as an effective tool to get cooperation from local communities and any stakeholders, and to lead to the most appropriate way of conservation in the future (Cultural, 2005).

In 2006, the Ministry of Natural Resources and Environment of Thailand received a budget of THB 127 million to develop the water resources in Samut Songkhram Province. To date, this budget has been distributed to nine sub-districts which include the Sub-district of Wat Pradu, Prak nam Daeng, Yee Sarn in Amphawa District as well as the Sub-district of Bang Khan Trak, Tai Had, Laem Yai, Ban Prok, Bang Kaew, and Klong Khone in Muang District (Yod Laem News, 2006).

Section 3.6b (8) Department of National Parks, Wildlife and Plants Conservation (DNP), Ministry of Natural Resources and Environment, Thailand

The DNP was established on October 9th, 2002. It is a government agency under the Ministry of Natural Resources and Environment of Thailand. Generally, the DNP has its missions of the conservation of natural resources, such as forestry, plants, and

wildlife. This includes the activities of getting community involvement in natural and environmental conservation. For instance, the DNP initiated a project of educating communities on conservation which is an active activity to get community involvement (DNP, 2008).

Section 3.6b (9) Thailand Environment Institute (TEI)

The TEI was established in 1993. It is a non-profit, non-governmental organization working for the conservation of natural resources and the sustainable development of the environment in Thailand and in the region. In general, the TEI advocates a participatory approach to shared environmental responsibility by working closely with the government, private sectors, local communities, civil society partners, as well as international organizations. In particular, the TEI helps to formulate environmental directives and link policy with action to encourage meaningful environmental progress in Thailand. Hence, the TEI works to advance sustainable development in the country, in the Asia-Pacific region, and beyond (TEI, 2005).

Section 3.6b (10) Institute of EcoTourism, Srinakarinwirot University, Bangkok, Thailand

The Institute of Ecotourism, Srinakarinwirot University was established in 1994. The aim is to present not only a short-term training program in ecotourism for countries in South East Asia, but also to create a longer term program in preparation of an ecotourism plan for the sub-Mekong River catchments basin which covers parts of six countries. Thus, the role of the Institute of Ecotourism, Srinakarinwirot University includes the identification of ecotourism resources and requirements in the region through the implementation of a research program; the raising of awareness about ecotourism in governments, the tourism industry, and community groups by an education program; and fostering the development of regional, national, and international ecotourism development strategies in South East Asia (Dowling, 1995).

In 1995, the Institute of Ecotourism, Srinakarinwirot University organized the International Ecotourism: Concept, Design and Strategy Conference during the 6th -8th of February 1995 in Bangkok, Thailand. This conference was sponsored by UNESCO, TAT and the Canadian International Development Agency. The Conference helped in placing ecotourism onto the public agenda for tourism development in Thailand. This event succeeded in laying the base of information from the sharing between countries with advanced ecotourism developments such as Australia, Canada and the United States, and the Asian participants. Also, it brought together academics, tourism operators, and decision-makers in the field from a number of Asian nations. However, a key failing of the conference was the lack of Thai presenters sharing about the problems and/or successes in ecotourism development in the host country (Dowling, 1995).

Section 3.6b (11) Thailand Business Council for Sustainable Development (TBCSD)

The TBCSD is a non-profit organization that was established in November 1993, with the mandate to promote sustainable development through business leadership. Presently, the current membership of business leaders of the TBCSD are from 26 Thai and multi-national companies (as of 2005). The implementation of actions oriented by the TBCSD include green labeling, the promotion of cleaner technology in Thai industry, and putting on several trainings, workshops and seminars. The active members and organizations of TBCSD are Advance Agro PCL, Amway (Thailand) Ltd., Bank of Asia PCL, Crown Property Bureau, Dow Chemical Thailand Ltd., Electricity Generating Authority of Thailand, Electricity Generating Public Company Limited, Esso (Thailand) PCL, Hewlett-Packard (Thailand) Ltd., Kasikorn Bank PCL, Krung Thai Bank PCL, Mitrphol Sugar Corp., Ltd., National Petrochemical PCL, Padaeng Industry PCL, PTT Public Company Limited, Siam City Cement PCL, T.N. Group, Thai Pure Drinks Ltd., Thailand Environment Institute, The Bangchak Petroleum PCL, The Siam Cement PCL, Toyota Motor Thailand Co., Ltd., Unilever Thai Trading, Ltd., Union Textile Industries, and the Unithai Group of Companies (TEI, 2005).

Section 3.6b (12) The Chaipattana Foundation

The Chaipattana Foundation is the initiative of His Majesty the King Bhumibol Adulyadej (King Rama IX) with its aim to help Thai people through development activities in various forms. The Chaipattana Foundation was officially registered as a juristic entity at the Ministry of Interior under the registration number 3975 on June 14th, 1988 and the registration was made public in the Royal Gazette, no. 105, section 109 on July 12th, 1988. Conceptually, the Chaipattana Foundation focuses on development activities that are not repetitions of government projects (The Chaipattana Foundation, 2008).

An example can be seen in the case of the Chaipattana Foundation assistance to Samut Songkhram Province for the Royal trip of H.R.H. Princess Maha Chakri Sirindhorn to plant mangrove in honor of His Majesty the King. H.R.H. Princess Maha Chakri Sirindhorn planted mangrove at Baan Klong Khone, Klong Khone Subdistrict, Muang District, Samut Songkhram Province (Chaipattana Foundation Journal, 2008).

Indeed, the planting of mangrove on the mud flat of coastal areas of Samut Songkhram Province began in 1990 with the aim of restoring the mangrove areas as well as creating a balance of nature. This kind of activity helps the local people to receive benefits from the mangrove forest so they won't have to move elsewhere to look for jobs. Therefore, with the intention of carrying out this mangrove afforestation program, Samut Songkhram Province has established a project called Mangrove Afforestation on the Mud Flat Coastal Area Project. The time frame of this Project was four years (1995-1998). The target was to plant mangrove on the mud flat, covering an area of 3,400 rai (1,360 acres) around the river mouth of the Mae Klong River. In 1999, Samut Songkhram Province started another project called the

Mangrove Afforestation to Honor His Majesty the King Project. The implementation area of this Project was also part of the above-mentioned Mangrove Afforestation on the Mud Flat Coastal Area Project. The duration of this Project was two years (1998-1999), covering an area of 400 rai (160 acres). The ultimate goal was to conserve a balance of nature for future generations forever (Chaipattana Foundation Journal, 2008).

Besides, the project of Amphawa Chaipattananurak is one of the Chaipattana Foundation's projects which aims to conserve vernacular architecture along the Amphawa Canal; to develop Amphawa as an orchard training grounds for orchard farmers, local community, and any interested persons; to generate incomes for the Amphawa community by setting up community shops in the area; to conserve the local culture of life along the river; and to exhibit the cultural activities especially about the way of life for the river community of the Amphawa and Mae Klong people. The festival was launched in May 2008 (The Chaipattana Foundation, 2008).

PART VII: COMMUNITY INVOLVEMENT IN TOURISM PLANNING AND MANAGEMENT

Community involvement in tourism planning and management is necessary to achieve a sustainable tourism industry for future generations (ICOMOS, 2002). That is, tourism development becomes sustainable when stakeholders, particularly local communities, have access to decision making and are able to derive benefits in an economic development process in their local environment (UNECD, 1992; WECD, 1987 in Mbaiwa, 2005). At present, local residents can get involved in tourism planning and management by helping to answer such questions about types of environmental changes, new developments, and insights of how future changes may be made compatible with existing environmental conditions and social values (Green, 2005). Thus, tourism management must become a shared responsibility between tour operators and the local people to ensure minimum damage to the environment (Mbaiwa, 2005).

Section 3.7a: Definition of Community

Beeton (1998) states the term community is about the sense of a place within a landscape that historically and typically possesses a range of traditions and values. Community occupies a particular area, which can be bounded physically by geographic landmarks such as rivers and mountains or by the proximity of the population, such as a small town. Therefore, a community must have a system of social organization and activities that range from family and heritage through to making a living in similar ways.

Section 3.7b: The Perceptions of Community in Tourism Planning and Management

Chaiyakhot (2004) states the perception of local people in the community towards tourism planning and management is mainly dependent on education. That is,

educating the local people to deal with tourism can create a better understanding of eco-tourism management and its benefits. Thus, the local people should hold meetings, have consultations, and set objectives and clear goals, and also seek out partner or a related network of collaborators to co-operate with.

Section 3.7c: The Roles of Thai Communities in Tourism Planning and Management

The World Bank (2004) reported that Thailand had done well in terms of formulating policies and frameworks for biodiversity conservation. However, empowering the environment for local participation is one of the remaining key barriers to an effective conservation program (World Bank, 2004).

In the past, many Thai communities understood that the management of tourism was the responsibility of the government. This was due to a result of the lack of knowledge, equipment, consultants, and potential leaders in the communities. This was the reason why tourism management in communities seemed impossible. Nowadays, however, since eco-tourism includes the participation of local communities in the tourist attraction management, the role of Thai communities in eco-tourism promotion and management can be divided into two parts. The first part has to do with the role which has been defined by the Act of Law and the second part has been identified as the societal role of the community.

Firstly, there is the role which has been defined by the Act of Law. Over recent years, the social structure of Thailand has changed since the Royal Thai Government signed an agreement of the UN charter during the Rio Summit 1992, and adapted Agenda 21 for the improvement of the new issue of the constitutional law, which was enforced on October 20, 1997. This was a turning point that encouraged communities, communal organizations, and various private developmental organizations to begin to learn from their experiences with the impacts of development; to manage natural resources and cultural heritage; to request for social funds; and to revise the effects of tourism based on the constitutional law.

The second part has been identified as the societal role of community which is another mechanism that communities can use as a tool to promote and manage eco-tourism. This procedure starts from the exchanging of information; debating and discussions; learning from experiences and local wisdom; completing communal research; and finally, network building and group education (Chaiyakhot, 2004).

Evidently, one of the most important activities in Thailand in promoting community involvement is educating the conservation communities (The National Parks, Wildlife and Plant Department of Thailand {DNP}, 2008). That is, DNP (2008) has planned to educate local residents as well as conservation volunteers, town office administrators and facilitators of volunteer groups, and Community group leaders and the Municipality leader. Also, DNP has initiated the community meeting which is a regular event as a community network for people in the community to exchange ideas and concerns, to share experiences, to bring up problem issues, and to discuss and look

for solutions. Moreover, DNP will continue to provide trainings and seminars, and give support to any community activities. Hence, there is no doubt that DNP significantly aims at natural conservation in the community (DNP, 2008).

Section 3.7d: The Local Community Involvement in Tourism in Samut Songkhram Province

Section 3.7d (1) Local newspapers

The local community plays a vital role in tourism planning and management. In this regard, the local newspapers are good avenues for community involvement in tourism planning and management. Thus, the newspaper acts as a voice of the local community to the related parties. For instance, according to Thai Rath Newspaper (2007), it is an indicator of community involvement in tourism planning and management. There was an article written that Samut Songkhram Province is becoming one of the most attractive ecotourism sites in Thailand. This has brought an influx of tourists into the province. However, this has also brought negative impacts that caused trouble and inconvenience to the local community. Since then, the Head of Provincial Administrative Office of Samut Songkhram has recently initiated a control policy in ecotourism management in order to stop some tourism activities that pollute and destroy the way of life of local residents. The controls that were initiated involved, among others regulations on cruise operation time, safety, proper size of the boats, food sanitation, littering, and noise control.

Chao Thai (2001) has described and compared the clear and clean Mae Klong River of the past to its present condition in order to build awareness for the conservation of the Mae Klong River.

Section 3.7d (2) Local seminars

There are seminars and campaigns held at a local level among the group of conservationists in Samut Songkhram Province. There is an active local group of people that work hard for eco-tourism. For instance, Petch Phom local newspaper (2008) published an article about a seminar concerning the environment surrounding the community that discussed the good and bad impacts of having a motorway cut across the ocean. The speakers are pro-active local conservationists such as the Chairman of Samut Songkhram Province Chamber of Commerce, Chairman of the Natural and Environmental Protection Club of Petchburi Province, and a sculpture artist.

Section 3.7d (3) Samut Songkhram Municipality (Mae Klong Municipality or Thesaban Muang Mae Klong)

Samut Songkhram or the Mae Klong Municipality (*Thesaban Muang Mae Klong*) is involved in planning for eco-tourism. The Municipality works with Local Sub-district Administration (*Aor Bor Tor*) and provides trainings in order to educate people in the community. They generally invite experts from related agencies to give knowledge of

good eco-tourism practices and share experiences on how to conserve the environment. In general, Samut Songkhram Municipality has a policy in promoting eco-tourism with collaborations from various provincial and governmental agencies as well as related tourism private sectors. The Municipality aims at implementing sustainable development and tries to encourage all parties to be involved, especially the local community. The Municipality has created a working group, namely Community Creative (*Chum Chon Thesaban Sang San*) in order to focus on solving the problems in Mae Klong City or *Muang Mae Klong*. The working group for the cleanliness policy is divided into five teams in charge of five campaigns which are the Consciousness Team, Garbage and Trash Team, Road Clearance Team, Drainage Team, and Commercial Perfect Team.

Moreover, there are many activities arranged by the Municipality, such as workshops on how to make organic fertilizer; training for consciousness and conservation in the coastline eco-system; and the activities geared towards keeping the road clean which are held on a weekly basis (Maikhen, 2007). Moreover, there is co-operation between the Municipality and the Local Sub-district Administration (*Aor Bor Tor*) of Amphawa District in teaching the local community how to strictly conserve the Mae Klong community (Siam Rath, 2002).

Section 3.7d (4) Local Sub-district Administration (*Aor Bor Tor*)

The sub-district administrator (*Aor Bor Tor*) has the primary influence in eco-tourism in the community. *Aor Bor Tor* works closely with local residents. They are a group of people who are facing the problems as the community does. Thus, they realize very well what has happened in the community. Daily News (2002) reports the role of the *Aor Bor Tor* as a group of people who are looking after the community as well as working with the Provincial Administration, sharing the concerns and problems.

Presently, there are ten *Aor Bor Tor* groups in Muang Samut Songkhram District, eleven groups in Amphawa District, and nine groups in Ban Khonthee District respectively (Samutsongkhram POC, 2008).

Besides the district and sub-district levels of co-operation, there is also the co-operation of governmental agencies at the provincial administration level. For instance, the two provincial administrations of Ratchburi Province and Samut Songkhram Province are working together on the eradication of water pollution (Khao Sod, 2005).

Section 3.7d (5) Local schools, colleges and universities

Several educational institutions have cooperated in natural and environmental conservation in Samut Songkhram Province. Their activities include not only the campaign of planting wetland plants in the wetland area and mangrove forest, but also the sharing of local wisdom in making organic fertilizer. For instance, *Wat Suan Dok* School, a public school in Muang District, is working pro-actively. This school has made its own organic fertilizer. Also, the King Mongkut Institute of Technology,

Thonburi campus had planted 1,200 Sa Mae trees (Myrsinaceae) at the mangrove forest area in Klong Khone Sub-district in Samut Songkhram Province (Siam Rath, 2004). Furthermore, some other schools have launched a project of organic garbage. Nowadays, all these initiatives are being taken by kids, youth and others in the community (Konjaidee, 2008).

Section 3.7d (6) Local Development Institute (LDI)

The LDI has the purpose of pushing for change at the local and the policy level through supporting and re-energizing local communities in order to achieve self-sufficiency on their part. Lessons and voices from local communities are focused on inducing change both in the horizontal and the vertical spheres, and eventually in the policy making. Financially, the LDI has been supported by financial aid from the Canadian International Development Agency (CIDA) for over seven years since 1991 to enhance rural development works with an accumulative amount of 7,781,648.78 CAN dollars. More interestingly, *Mae Klong Ban Rao* is a group under the Local Development Institute or LDI (*Sathaban Chumchon Thongthin Pattana*) with primary responsibility for rehabilitation of agriculture in the Province. Recently in October 2009, the *Mae Klong Ban Rao* arranged a conservation activity called 'Kids & Bikes' aimed at teaching children about the natural resources and cultural way of community life in Amphawa Community (LDI, 2009).

Section 3.7d (7) Group of Mae Klong Youth Lovers (*Khoom Yowachon Rak Mae Klong*)

This is a group of youth which was formed since the mid 1999 who are dedicated to showing their love for Mae Klong City with an aim of building consciousness of the homeland in the youth. The activities that have taken place include conservation campaigns in various schools; seminars and research projects on the development of local people's life quality; youth camps; exchange programs known as the 'Water Resource Forest Camp' which is the Mae Klong's water resource forest in Lai Wo Sub-district, Sangkhabori District, Kanchanaburi Province. There also exist the radio talk show entitled 'Eyes of the Mae Klong', and the talk show referred to as 'Old Friend....The Youth of Mae Klong Lovers.' Additionally, there are workshops with groups of Samut Songkhram's researchers; study trips to the research network provinces such Trang and Suratthani Provinces; participation in the festivities arranged by Kasetsart University referred to as 'Classroom of Community'; the camps entitled 'Get to Know Mae Klong City and People' and 'the Mangrove Forest'; all in addition to the pamphlets, booklets, and brochures describing the activities and movements of the group (Chinawong, 2009).

Section 3.7d (8) Love Mae Klong Association (*Prachakom Khon Rak Mae Klong*)

The Love Mae Klong Association or *Prachakom Khon Rak Mae Klong* is a group of local community members from Samut Songkhram Province who are interested in learning more about the local community, local wisdom, and are eager to provide information on any situation happening in the province. The assistance provided by

this group includes community development, environmental and cultural activities, and communication and information technology. Presently, there are several associations initiated in the community, such as the Street Vendor Club of Amphawa District, Prachakom Khon Rak Mae Klong, and Association of Mae Klong Youth Club which is one of the most active associations in the Province (Konjaidee, 2008).

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

CHAPTER 4 RESULTS AND DISCUSSION

This chapter is comprised of seven major parts, each presenting the results of the study and the relevant literature to support the research findings. The data collected for this chapter include the results of one-on-one assisted questionnaire survey. Out of 500 people approached, 380 people (76%) agreed to be surveyed, out of which only the output from 301 people (79%) was used in this study. The rest of the survey result were discarded because the survey forms were either incomplete or improperly filled out. The results of the follow-up interviews are incorporated under specific topics in this chapter.

The first part (Part I) of this chapter is on the socio-demographic profile of the community. The descriptive statistics of the sampled population (n=301 respondents) are presented based on sex, age, family household, educational attainment, length of residency, and occupation. The affinity of the respondents towards the River and the level of community involvement were determined based on the proximity of place of residency and workplace to the River, the existence of traditional culture and folklore, and sense of land ownership.

The second part (Part II) of this chapter is on the various local uses of natural resources found in the Mae Klong River. The types of plant and animal resources that are utilized, directly and indirectly, for domestic and commercial purposes are listed and discussed. The recreational uses of the River, such as swimming and boating, are also presented.

The third part (Part III) of this chapter explores the cultural heritage value of the Mae Klong River based on the presence of physical structures such as temples and local houses. The practice of religion, past and present, which is connected with the River, can be part of tourism attraction, and which the local communities can revitalize.

The fourth part (Part IV) of this chapter is on the perceived intangible values about the River, namely aesthetic, symbolic and cultural, historic, educational, and ecological. The tangible or economic value of the River as perceived by the local community is also presented and discussed in the context of water utilization and aquaculture production.

The fifth part (Part V) explores the potential for developing the Mae Klong River as one of the tourist destinations in Samut Songkhram Province. The perceptions of the local residents regarding the introduction of tourism in the area were determined to assess how tourism development can be appropriately established. The parameters determined to be crucial in tourism development are: accessibility to the area and

existing attractions found in nearby localities, promotion of cultural pride amongst local people, and acceptability of amongst the local residence. Based on the data gathered, a SWOT analysis was conducted and presented in this chapter.

The sixth part (Part VI) is on the major issues about the use of the Mae Klong River. Four topics are discussed, namely environmental issues, cultural issues, social issues, and political issues.

The seventh part (Part VII) is on the management concerns relevant to the study area with respect to tourism development.

PART I: SOCIO-DEMOGRAPHIC PROFILE

The respondents who participated in this study were from nine communities or villages located on both the eastern and western banks of the Mae Klong River (Figure 15). There was an uneven distribution of sample size from the communities as there were more participants from Laem Yai, Talad, and Bang Jakreng 2 (Communities 12, 7, and 10, respectively) probably because the researcher's family has quite a few affiliations and acquaintances with many of the residents in these communities.

The socio-demographic profile of the sampled population from the study area is presented below. The participants in this study were grouped according to sex, age, size of the household, educational attainment, length of residency, and occupation.

Section 4.1a: Socio-demographic parameters

Sex distribution

Figure 20 shows the sex distribution of the respondents. More females (56%, n=169) participated in the study and they appeared to be more interested in expressing their opinions about the research topic. This suggests the important role that women could play in achieving sustainable development in general and sustainable tourism in particular.

The literature on tourism and rural development studies indicates that females are generally more responsive than men are. The role of women in rural tourism is significant especially in relation to the preparation of local cuisine for tourists. For example, the One Tambon One Product (OTOP) experience shows that Thai women play a crucial role in the preparation of local cuisine for tourists. Nowadays, there are several farmer-homemaker groups in each municipality of every region of the country. Specifically, these women's groups are the main producers of Thai delicacies and handicrafts. In Samut Songkhram Province, there are altogether five farmer-homemaker groups in two districts (Amphawa and Bang Khonthee District) (Table 22) (DOAE, 2008).

The study of Paris et al. (2004 cited in Catibog-Sinha & Heaney, 2006) also revealed that the women's role in maintaining crop production has contributed to sustainable agriculture in Asia. For instance, the women in the southern Philippines are equipped with indigenous knowledge regarding productive ways of traditional farming and the selection of specific varieties of rice that are suitable for cooking and eating.

Table 22 List of Farmer-Homemaker Groups & Products, Samut Songkhram Province

No.	District	Sub-District	Names of Farmer-Homemaker Groups	Product Name
1	Amphawa	Muang Mai	Thoedthai Ruamjai	Green curry paste
				Red curry paste
				Tamarind curry paste
		Masaman curry paste		
		Paneng curry paste		
		Wat Pradu		Wat Pradupattana
Coconut juice jelly in syrup				
Coconut juice				
Tha Kha	Namnop	Chrysanthemum tea		
		Crispy dried banana		
		Lemon juice		
2	Bang Khonthee	Don Manorah	Don Manorah Sransan	Coconut juice jelly in syrup
		Kradang Nga	Kradang Nga Samakkee	

Source: DOAE, 2008

In the farming sector of Thailand, including the rural tourism sector, both men and women are involved in the whole farming process as it is usually a family enterprise. Traditionally, men assume a managerial position, while women play only a supportive role. Women are also responsible for other ancillary tasks in the household which men usually try to avoid such as washing cloth, sewing, and cooking.

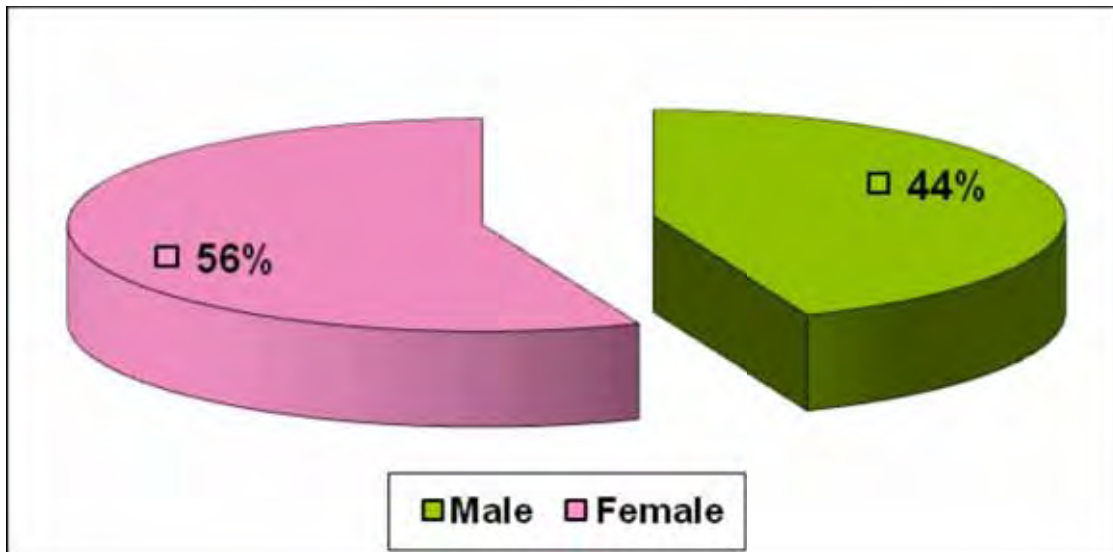


Figure 20 Sex distribution of the respondents

Age distribution

The respondents regardless of sex, grouped into three age classes (18-28 years old, 29-39 years old, and 40 years old and above), showed a similar degree of interest in this research (Figure 21). Respondents aged 40 years old and above, seemed to be relatively more cooperative than respondents belonging to the lower age groups.

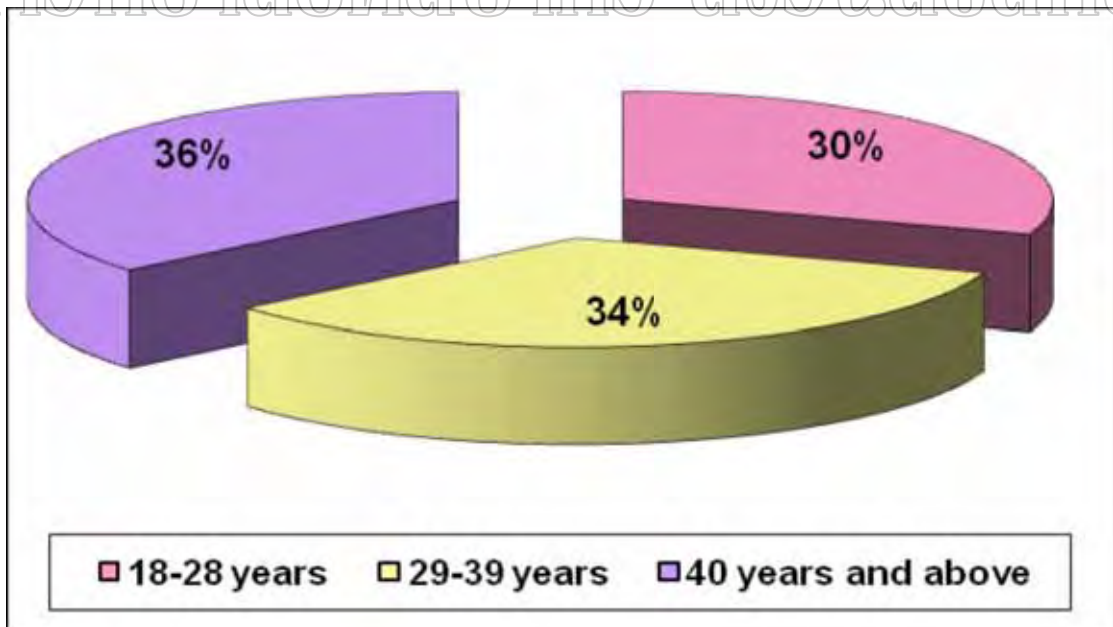


Figure 21 Age distribution of the respondents

Family household

As is in most typical family units in Thailand, the household is an extended family unit consisting of blood relatives of the family core. In this study, nearly 90% of households were comprised of 3 to 5 members, or an average household size of 4 individuals (Table 23).

Table 23 Size of family household

Items	Number of Respondents	%
Members in household: (n = 301)		
4 members	119	39.5
5 members	54	18.0
3 members	47	15.6
6 members up	32	10.6
Less than 3 members	27	9.0
6 members	22	7.3

Out of the 301 respondents, 23% were heads of the family, and the rest (77%) were members (Figure 22). The head of the family/household (usually males) was the main source of information in this survey, although the females/wives tend to be more vocal than the rest of the household members.

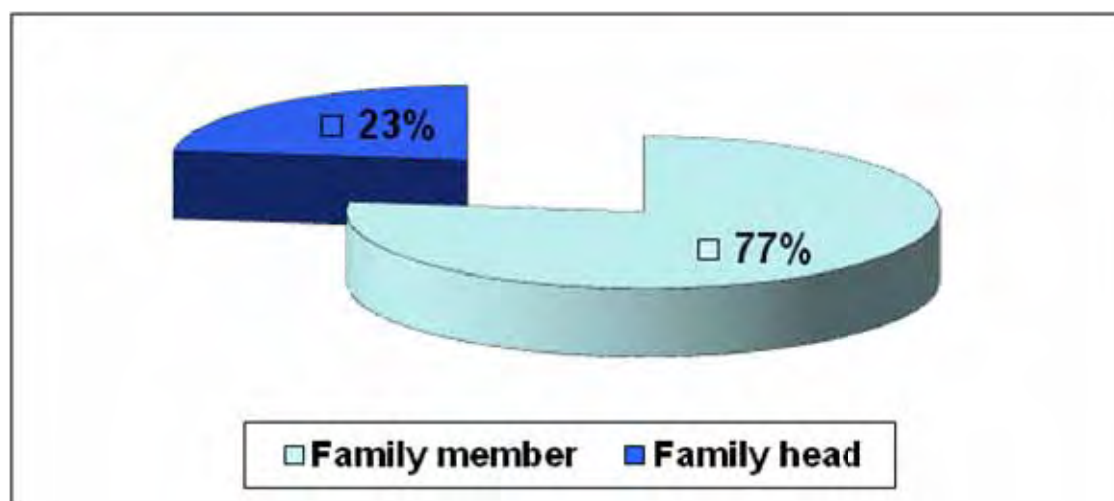


Figure 22 Family status

Educational attainment

All respondents are literate, the majority (43.8%) of whom have completed a secondary education (12 years of formal schooling) (Table 24).

Table 24 Educational attainment

Items	Number of Respondents	%
Secondary education	132	43.8
Bachelor degree	72	23.9
Primary education or below (completed & incomplete)	48	16
Career certificate	46	15.3
Others	3	1.0
Vocational school	0	0.0

Length of residency

Some 71% (n=215) of the respondents considered themselves as natives of the village because they were born and are currently residing there. Only 29% (n=86) considered themselves immigrants, having changed residency in the recent past (Figure 23). Some 118 respondents (39%) stated that they have lived in their community for 31-40 years; and 23 (8%), for more than 50 years (Table 25).

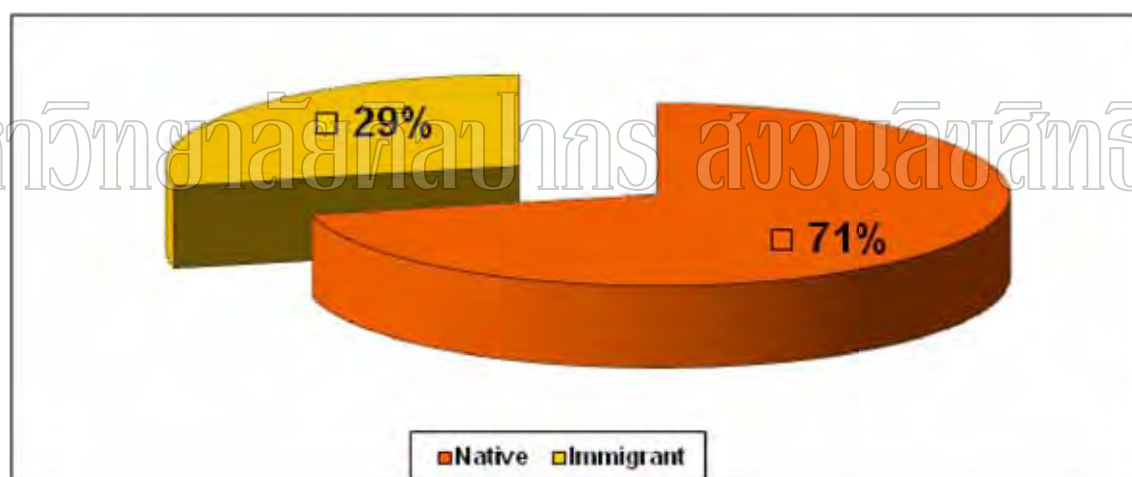


Figure 23 Place of birth

The elderly residents of the Mae Klong community have known the River since they were young. They declared that they are familiar with the 'comings and goings of the tides' and that they used to live on the natural products of the River and the mudflats. In Southeast Asia, many people prefer to reside most, if not all their entire life, near or close to the river because rivers provide for their essential needs, such as material goods (e.g. fish, fresh water, firewood) and services (e.g. transportation, recreation) for their daily subsistence and livelihood (International Rivers, 2007).

Table 25: Length of residency

Items	Number of Respondents	%
Duration of residency: (n = 301)		
31-40 years	118	39.2
10-20 years	50	16.6
21-30 years	47	15.6
Less than 10 years	47	15.6
More than 50 years	23	7.7
41-50 years	16	5.3

Occupation and source of income

All the respondents (except the homemakers and college students) are employed either in the private or government sector; a few are self-employed (Table 26). The majority of participants (43.9%) are casual or contractual employees in the manufacturing sector (e.g. fish sauce manufacturing, fish canning, plastic basket manufacturing). About 21.6% of the respondents are permanently employed. Some 31% (n=93) of the respondents have the same occupation as their fathers or immediate forefathers (Figure 24). The majority (69%) of the respondents have taken jobs or a profession in a different field.

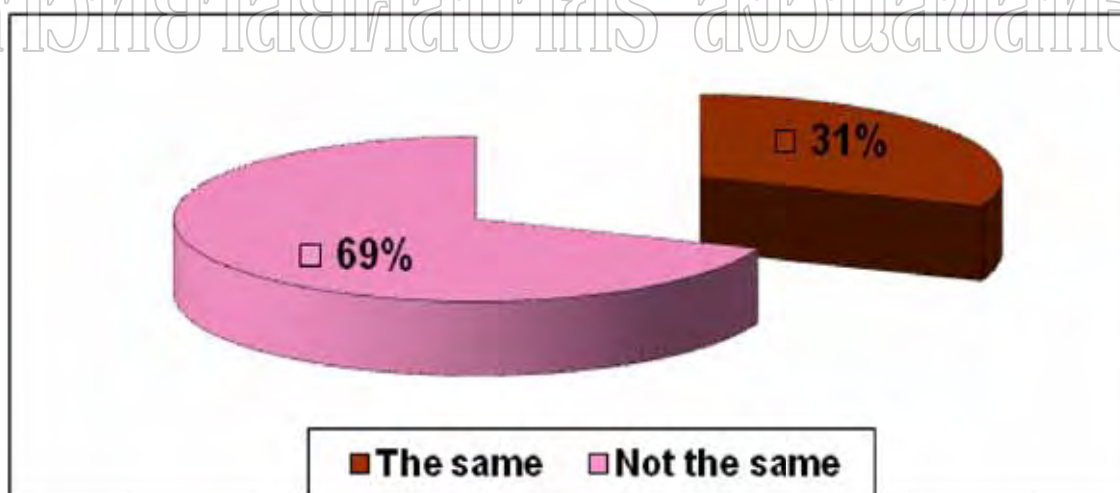


Figure 24 Occupation similarity

The main occupation or source of income of the majority of the local people used to be fishing (offshore or deep-fishing); today many of them work for manufacturing and seafood processing factories (Mahidol University, 2004). The National Statistical Office of Thailand (2004) reports that out of 661 of households whose main work is related to freshwater aquaculture (Figure 25), the majority (524 households or 79%) are residing in Samut Songkhram and Amphawa District. Some of the Samut Songkhram residents also work in fruit orchards and salt farms.



Figure 25 Freshwater aquaculture
Source: Photo by Tungkavit Sutheero (2006)

Table 26: Occupations of respondents

Items	Number of Respondents	%
Occupations: (n = 301)		
Casual employees (Factory labors)	132	43.9
Employee (permanent employee to company and receive monthly salary)	65	21.6
Merchant (shopkeeper/street vendor/hawker/small store business)	50	16.6
Government Officer	16	5.3
Housewife	14	4.7
Businessman (Company/factory owners/traders)	6	2.0
Doctor	3	1.0
College student	3	1.0
Car mechanic	3	1.0
Building contractor	3	1.0
Fishery	3	1.0
Others	3	1.0

The majority of occupations, however, are within the field of labor and manufacturing. This is because of the emergence of manufacturing factories in the study area. According to a recent report of the Samut Sonkhram Municipality (2006), the number of factories in the Province has increased gradually with 248 in 2002, 262 in 2003, and 265 in 2004. Out of 265 factories, 25% are food products factories such as fruit canneries and fish sauce plants; 18% are lumber sawmills; 9% are metal and non-metal factories; and 2% are chemical and plastic factories.

The Mae Klong River basin is not immune from the impacts of globalization. In the context of tourism – an industry which has very much become globalized – the number of hotels and visitors has increased from 452,598 to 533,156 during the period of 2006-2007 (NSO, 2004). Although the increase in tourism has brought about new jobs (especially in the areas of homestays, shops and restaurants, gifts and souvenirs, and local home-made and hand-made products), the traditional occupations such as fishing and farming, have become unpopular especially among the younger generations. Likewise, the emergence of modern technology in aquatic resource production, such as the establishment of privately owned fish processing factories has shifted the traditional occupational profile of the community from farming/fishing to fish-product manufacturing and international commerce (Figure 26).



Figure 26 Cold storage truck for fish-product manufacturing and international commerce

Source: Photo by Tungkavit Sutheero (2006)

Thailand is active in meeting the challenges of globalization and the opportunities that come with modernization. In a UNU-UNESCO's sponsored symposium held in August 2008, Princess Maha Chakri Sirindhorn highlighted these opportunities towards the attainment of social, economic and environmental sustainability (UNU, 2008). Whilst globalization provides opportunities for economic growth, the benefits arising from these opportunities are not equally or equitably shared. This disparity is also evident among the minimum wage earners. For instance, the minimum wage per day of Samut Songkhram Province (THB 155) is relatively lower than in Samut Sakhon Province (THB 194), although these provinces are adjacently located to each other (NSO, 2004).

Section 4.1b: Affinity to the Mae Klong River

Wilson (1984) coined the word 'biophilia' to explain the close connectivity between humans and nature. For thousands of years, humans have closely linked their lifestyle, culture and history with their surroundings (Gomez-Pampa, 1996; Bridgewater, 2002). Kellert (1996 cited in Catibog-Sinha & Heaney, 2006) identifies both the utilitarian (material) and non-utilitarian (non-material) values of nature. The material value includes obtaining benefits, such as food, clothing, tools, and shelter from nature to fulfill humanity's basic needs for survival. The non-material value includes the ecological, aesthetic, symbolic and moralistic benefits derived from nature. However, the relationship between nature and people in some cultures is much more important than merely the material worth derived from the goods and services that nature can provide (Pepper 1996 cited in Catibog-Sinha & Heaney, 2006).

Physical proximity to the River

One of the main factors that may affect the level of affinity of the local residents to the Mae Klong River is the relative distance of their place of residence and work stations. In this study, the majority of the respondents work in various places located near or adjacent to the River. Nearly 9% of the respondents work in facilities located right along the River, whereas 84.4% of the respondents work near but not directly along the River (Table 27). The respondents residing along or close to the River were found to be knowledgeable and aware of the natural resources of the River. They declared that their linkage with the River is both material and non-material in nature.

Table 27: Proximate location of the workplace to the River

Items	Number of Respondents	%
Workplace location: (n = 301)		
Adjacent to (near) but not along MKR	254	84.4
Right along MKR	26	8.6
No permanent workplace (rent house)	18	6.0
Near orchard farming (in-land)	3	1.0

The human's perception of the material value of nature can influence their affinity to nature. The occupations of the local residents can affect the way they perceive the River as part of their daily life. As stated earlier, the main occupation or source of income of the majority of the local people used to be fishing (offshore or deep-fishing); today many of them work for manufacturing and seafood processing factories (Mahidol University, 2004). This change in livelihood and less dependence on the river as source of economic income might have minimized some of the local residents' close affiliation with the River as compared with their ancestors and forefathers. Unfortunately, those who perceive nature only from the materialistic and short-term point of view are undermining the non-utilitarian but long-term benefits of nature to humanity (Kellert, 1996 in Catibog-Sinha & Heaney, 2006).

In rural Thailand, rivers run through every facet of its history, economy, and daily life. Furthermore, the Thai people harmonize their lives to correspond with the rhythms of the river by designing towns and villages, houses, boats, occupations, and lifestyles according to the river's moods and seasons (Van Beek, 2004). For example, traditional houses often have their entrance doors facing the river, reflecting the owners' belief in the importance of the river to their everyday existence (Figure 27).



Figure 27 Traditional houses often have their entrance doors facing the river
Source: Photo by Tungkavit Sutheero (2008)

Affinity to the River as expressed in oral and written literature

The dependence of tourism on natural features of a destination cannot be underestimated. Ceballos-Lascurian (1996) states that maintaining a 'symbiotic relationship' between nature and tourism has been one of the guiding principles for sustainability in many parts of the world. Undoubtedly, the flowing rivers are regarded by the majority of rural folks as the 'mother of life' and used to symbolize the Thai belief's in ancestral spirits, which is often expressed in religion, rites and rituals, celebrations, and art.

Table 28 lists some examples of the linkage between nature (the River) and the people. This relationship is reflected in many Thai proverbs, riddles, and children's games (Van Beek, 2004). However, modernity is gradually eroding this relationship in many rural areas, but this can be re-vitalized through sustainable ecotourism.

Table 28 Affinity of the Thai people with the river as reflected in various forms of oral and written literature

	Thai word	Meaning
Proverbs	<i>Phut Khlong pen rong nam</i> พูดคล่องเป็นร่องน้ำ	Speaking fluently like flowing water
	<i>Plaa maw tai phraw paak</i> ปลาหมอตายเพราะปาก	The Maw fish dies because it opens its mouth (releasing bubbles and fisherman can see)
	<i>Chorakhae khwaang khlong</i> จระเข้ขวางนอน	The crocodile blocks canal (The dominant individual to obstruct others)
	<i>Yiap rua song khaem</i> เหยียบเรือสองแคม	Stand in two boats (Try to please both sides and end up being trusted by no one)
	<i>Muu mai phai ya ao thao ra nam</i> มือไม่พาย อย่าเอาเท้าราน้ำ	If you're not going to paddle, at least don't drag your foot in the water
	<i>Jab plaa song muu</i> จับปลาสองมือ	Try to catch a fish in each hand (Try to accomplish two goals simultaneously, and you risk losing both)
	<i>Son chorakhae hai wai nam</i> สอนจระเข้ให้ว่ายน้ำ	It is not necessary to teach a crocodile how to swim
	<i>Nam lod, tor phud</i> น้ำลดตอผุด	When the water recedes, the stumps are revealed (When artifice is stripped away, things are seen as they really are)
	<i>Rua lom mau jord, taa bord mau kae</i> เรือล่มเมื่อจอด ตาบอดเมื่อแก่	On reaching port the boat sinks; a man becomes blind in old age (Just when one thinks he is home safely, calamity can strike)
Riddles	<i>Nam khun (Ma), plaa kin mot.</i> <i>Nam lot, mot kin plaa</i> น้ำมาปลากินหมด น้ำลดหมดกินปลา	When the river rises, the fish eats the ant. When the river falls, the ant eats the fish
	<i>Malum malum, dern wan yang kham, mai hen roi = rua</i> มะลุม มะล่ำ เดินวันยังค่ำ ไม่เห็นรอย = เรือ	Malum, malum, walks all day until night, cannot see its trace = boat
	<i>Arai euay, mee hang, mee pak, mee tha, kin plaa, ben ahan = rhak</i> อะไรเอ๋ย มีหาง มีปาก มีตา กินปลา เป็นอาหาร = แห	What has a tail, a mouth, eyes, and eats fish = a fish net

	<i>Arai euay, wela chai yon thing, wela mai chai ao pai kep wai thi hua = samaw</i> อะไรเอ๋ย เวลาใช้โยนทิ้ง เวลาไม่ใช้ เอาไปเก็บไว้ที่หัว = สมอ	What do you throw away when you use it, and put it on the head when you keep it = anchor
Children's games	<u>Game Phong Phang</u> เกมโพงพาง	
	<i>Phong phang euay โพงพางเอ๋ย</i>	The fish net
	<i>Plaa ta bod ปลาตาบอด</i>	The fish is blind
	<i>Plaa khao lod ปล้เข้าลอด</i>	The fish enters the net mouth
	<i>Khao lod phong phang</i> <i>เข้าลอดโพงพาง</i>	The mouth of the Phong Phang net
	<u>Game Ai Khe Ai Khong</u> เกมไอเค้ ไอโขง	
	<i>Ai khe ai khong ไอเค้ ไอโขง</i>	Little crocodile
	<i>Yuu nai phrong mai sak</i> <i>อยู่ในโพรงไม้สัก</i>	You live in the hollow of a teak tree
	<i>Ai khe fan hak ไอเค้ฟันหัก</i>	Your teeth break
<i>Kat khon mai khao กัดคนไม่เข้า</i>	So you can't bite people	

Source: Van Beek, 2004.

Sense of land ownership

Rural people are empowered when they are given some sense of ownership of the natural resources which they are dependent upon. However they do so only if they do not feel excluded from the management of these areas (Catibog-Sinha & Heaney, 2006). This sentiment is also expressed by the upland people who are residing in and around protected areas; they often place great value on these areas and hence they can be effective supporters of community-based conservation efforts. Thus, loss of ownership of the land tends to make people abandon their responsibility and association with nature.

Since the majority (69.3%) of the respondents owns the land where they live, it was assumed that their concern for the River and the community as a whole is much greater than that of those who were merely renting their land or home (24%), (Table 29).

Table 29 Property/land ownership

Items	Number of Respondents	%
Features of land ownership: (n = 301)		
Land owner or family owner	209	69.3
Renting	72	24.0
Relative's house	11	3.7
Temple compound/premises	6	2.0
Governmental welfare house	3	1.0

Community involvement/participation

The community involvement of the respondents in conservation and/or volunteerism in related efforts is not apparent in this study, even though they own their houses and land, and are residing near the Mae Klong River. Of the 301 respondents surveyed, only 9 respondents claimed to be members of community-based groups/committees that are involved in environmental and village developmental projects (Table 30). Of these, 3 respondents said that they were affiliated with the Wat Petchsamut Community Group. This is despite the fact that Samut Songkhram District (16 groups) and Amphawa District (15 groups) have several local natural resource conservation groups because of their proximity to the River (National Statistical Office of Thailand, 2004).

Lack of interest and time were the main reasons why the majority of the respondents could not join these groups. Accordingly, some civic groups are meant for business people and for the relatively affluent members of the community. Thus, community involvement in the study area seems to be inaccessible to the greater majority of the population.

The success of tourism development depends on the level of involvement of local people (Ap & Crompton, 1988 cited in McDowell & Choi, 2008). The government should therefore ensure that community involvement and participation is not limited to those who have power and money. Furthermore, the local people should be given more voice on matters pertaining to the management of natural and cultural heritage for conservation and sustainable tourism.

In the tourism sector, empowerment of local communities can be developed through education and training in various aspects of ecotourism (Baum & Szivas, 2009). For example, training of local residents in providing quality service in tourism is necessary (Tsaur & Yang, 2008). A government program in Thailand, known as "One Tambon One Product", supports the community, especially women, in various livelihood projects, thus, is instrumental in empowering them. The Tambon Administrative Organization, a local government agency, is establishing women's groups in each community and training them in modern and traditional food processing techniques (Polvatana, 2008). Through such programs, Thai women could be empowered to support sustainable practice in tourism given their innate knowledge and enthusiasm

in community projects. However, much more and effective efforts should be initiated to ensure that tourism does not displace local people, both the old and young, males and females, alike, through large business corporations.

Table 30 Involvement in community working groups

Items	Number of Respondents	%
Committee of community working groups: (n = 301)		
No	292	97.0
Yes	9	3.0
Items	Number of Respondents	%
Name of community working group: (n = 9)		
Do not want to disclose	6	66.7
Wat Petchsamut community working group	3	33.3
Items	Number of Respondents	%
Reasons for not joining: (n = 292)		
Since I have to go to work.	88	30.1
It's not in my interest.	204	69.9

PART II: LOCAL USE OF NATURAL RESOURCES

Nature is not only an outstanding outdoor classroom in biology and ecology. It is also an important source of materials for medicine, biotechnology, and recreation. Nature-based tourism can attract visitors and help support local economies (McCool & Watson, 1995).

Wetland ecosystems, such as the Mae Klong River, have numerous economic, cultural, and aesthetic uses and benefits.

The Mae Klong River consists of diverse plants and animals, which provide numerous direct and indirect benefits. Fishing and aquaculture are the main uses of the River. The local people and tourists can benefit from the natural products of the River; however, this can only be sustained if the level of use of these resources is properly managed.

Catibog-Sinha and Heaney (2006) enumerate the direct values of the diversity of nature (biodiversity), which can be consumptive or non-consumptive. The consumptive benefits include food sources, water for drinking, irrigation, industry, medicinal materials, fuel and energy, minerals, construction materials, clothing and shelter, fresh air, comparison animals and plants, ornaments, and genetic resources. The non-consumptive benefits, also known as the indirect value of biodiversity, are food production (through photosynthesis), maintaining groundwater and the hydrological cycle, preventing floods and droughts, regulating climate, maintaining the

gaseous components of the atmosphere, absorbing and detoxifying pollutants, cleansing water and air, pollinating crops and other plants, sustaining soil productivity and fertility, storing and cycling essential nutrients, decomposing organic wastes, providing sites for education, recreation, tourism and research. The indirect value of biodiversity is often intangible and difficult to estimate in monetary terms; however, they provide real economic value to humans.

Eco-tourism provides many benefits to the local communities. Other activities occurring at the waterfront are recreational, particularly boating and swimming. A few restaurants have also been built along the Riverbanks. If properly managed, the benefits from tourism can be sustained for a long time. However, there are also some risks and disadvantages.

According to Mieczkowski (1995), eco-tourism and the natural environment can be a perfect antitoxin to hectic and complex living; a factor to free us from noise and distractions; a factor to influence humanity's physical and mental well-being and health. For instance, viewing nature such as by observing fish in aquariums may lower blood pressure, and hospital rooms with views of trees and grass outside the windows can have a positive effect on the recovery rates of patients. Additionally, live or recorded sounds of nature can bring about relaxation and reduce stress.

According to Beeton (1998), eco-tourism can create alternative sources of income, as well as opportunities of diversity and employment for young people in rural areas. It can also be a tool to reduce reliance on industries; a channel that can lead to enhanced community facilities and infrastructure; a way to increase conservation ethics and to highlight the value of the natural environment; an opportunity for local community members to meet people from different areas and exchange ideas; a tool to increase civic pride, and an opportunity to create new business.

Furthermore, Nyawa (2004) states that eco-tourism has positive impacts on research and education; conservation; human resources development; recreation, enjoyment and satisfaction; knowledge, understanding and appreciation; health; tranquility, inspiration and spirituality; the sharing of experiences with international communities; local participation, and on the economy for a better standard of living.

However, natural factors which are unpreventable, such as volcano eruptions or hurricane, can have negative effects on tourism development. Some impacts caused by the environment are due to lack of caution on the part of the tourists, and thus preventable, such as fatalities from white-water rafting, or canoeing and mountaineering accidents. Moreover, the negative effects can result in environmental degradation; overdevelopment of amenities; ecological disasters; physical contact; pollution; cultural sensitivity; introduction of foreign elements, and the displacement of the local traditional lifestyle, and standard of living (Mieczkowski, 1995); Nyawa, 2004).

Part II discusses the different local uses of various resources of Mae Klong River. Access to the River and utilization of its resources by the respondents are further discussed below.

Section 4.2a: Utilization of aquatic animals and plants for commerce and subsistence

Table 31 lists the major aquatic resources found in the study area, and which the respondents from the nine communities surveyed indicated were providing direct benefits to them. The field survey of the local wet markets supplemented the data provided by the respondents. The plants and animals are either wild or domesticated, and mostly used for food (see Appendix G & H timetable for more details).

Table 31 Commonly utilized aquatic animals and plants in the study area (n=9 communities/villages (conducted in mid November 2006 until late Feb 2008))

No.	Types of resources	English name	Thai name
1	Fish	Short-bodied mackerel	<i>Pla-tu ปลาทุ</i>
		Bass	<i>Pla-krapong ปลากระพง</i>
		Nile Tilapia	<i>Pla-nile ปลานิล</i>
		Setipinna Melanochir	<i>Pla-maew ปลาแมว</i>
		Gourami	<i>Pla-salid ปลาสลิด</i>
		Mullet fish	<i>Pla-kaboke ปลากระบอก</i>
		Climbling Perch	<i>Pla-mor ปลาหม้อ</i>
		Giant catfish	<i>Pla-riewkiew ปลาริวกีว</i>
		Squid	<i>Pla-muet ปลาหมึก</i>
2	Crustaceans	Shrimp	<i>Kung กุ้ง</i>
		Crab	<i>Poo ปู</i>
3	Molluscs	Mussel	<i>Hoi-mangpu หอยแมงภู่</i>
		Ark shell (Thai scallop)	<i>Hoi-krang หอยแครง</i>
		Tubeworm	<i>Hoi-lot หอยหลอด</i>
		Oyster	<i>Hoi-nangrom หอยนางรม</i>
		Freshwater snail	<i>Hoi-krom หอยขม</i>
		Undulated Surf Clam (Paphia Undulata)	<i>Hoi-lai หอยลาย</i>
4	Plants	Nipa palm (fruits & leaves)	<i>Ton-chak ต้นจาก</i>
		Coconut tree (fruits & leaves)	<i>Ton-maprao ต้นมะพร้าว</i>
		Palm tree (fruits & leaves)	<i>Ton-tan ต้นตาล</i>
		Banana tree (fruits & leaves)	<i>Ton-kuay ต้นกล้วย</i>
		Mangrove tree	<i>Ton-krong-kang ต้นโกงกาง</i>
		Morning glory	<i>Pak-bung ผักบุ้ง</i>

Section 4.2a (1) Aquatic animal resources

The popularity of aquatic resources (fish, crustaceans and molluscs) as food source depends heavily on their availability and affordability. Some food items are normally purchased only during special occasions, such as birthdays, weddings, feasts, and religious festivals. The survey revealed that the most common fish consumed in the nine communities are the short-bodied mackerel (55%), followed by bass (16%), and Nile tilapia (10%). Less consumed fish include gourami (5%), mullet fish (3%), climbing perch (3%), giant catfish (1%), and squid (1%) (Figure 28).

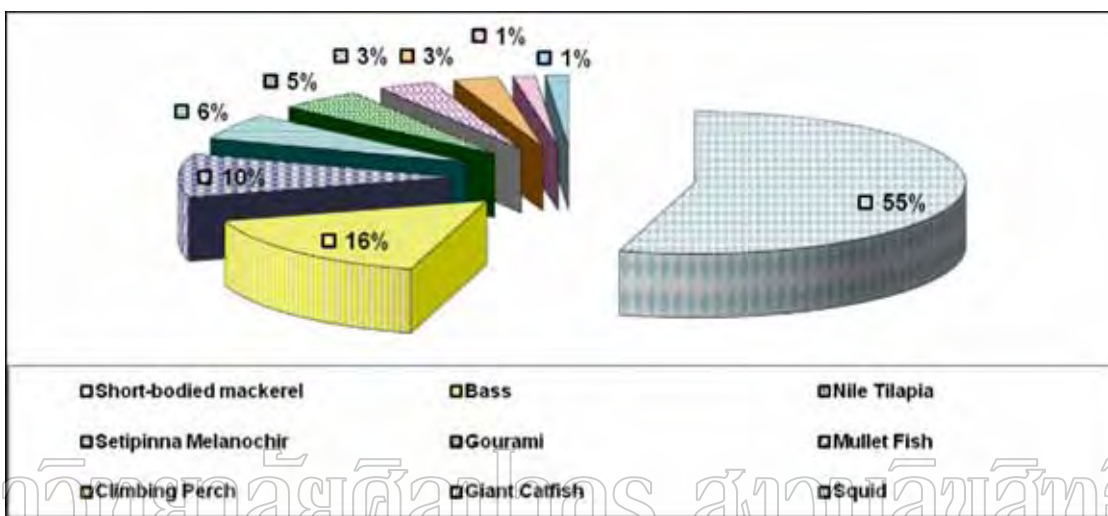


Figure 28 Fish consumed within the nine communities

Mr. Narongrit Kamoltham, a local resident, recalled that some 20 years ago when he was working as a fisherman, he could catch a boat-load of fish from the Gulf of Thailand. Accordingly, there were plenty of fish, especially the short-bodied mackerels, during those days. He also mentioned that the mackerel was the main dish served daily in the family. The mackerel is considered the most delicious dish especially when prepared the traditional way (known as Nam Prik Pla Tu) (Figure 29). Due to the declining catch, the local communities are also consuming other fish species that are available in the market.



Figure 29 Mackerel dish (Nam Prik Pla Tu)

Source: http://thaifoodcookbook.blogspot.com/2008_12_01_archive.html

The study revealed that the short-bodied mackerel has an iconic value and can be used a marketing emblem in the promotion of rural ecotourism in the area. Tourism can be a tool to the conservation of this native species as well as the other aquatic resources of the Mae Klong River, which are currently threatened due to human-driven disturbances.

In addition to fish, molluscs are also a popular food source in the nine communities surveyed. These include mussel (32%), followed by ark shell (31%), tubeworm (16%), oyster (11%), freshwater snail (5%), and undulated surf clam (5%), (Figure 30). The crustaceans consumed in the communities are mostly shrimps and crabs. The field observation and interview revealed that crustaceans, although harvested at subsistence level, are dwindling in number and body size. This was confirmed by some local fishermen who were interviewed during one of the field observation surveys.

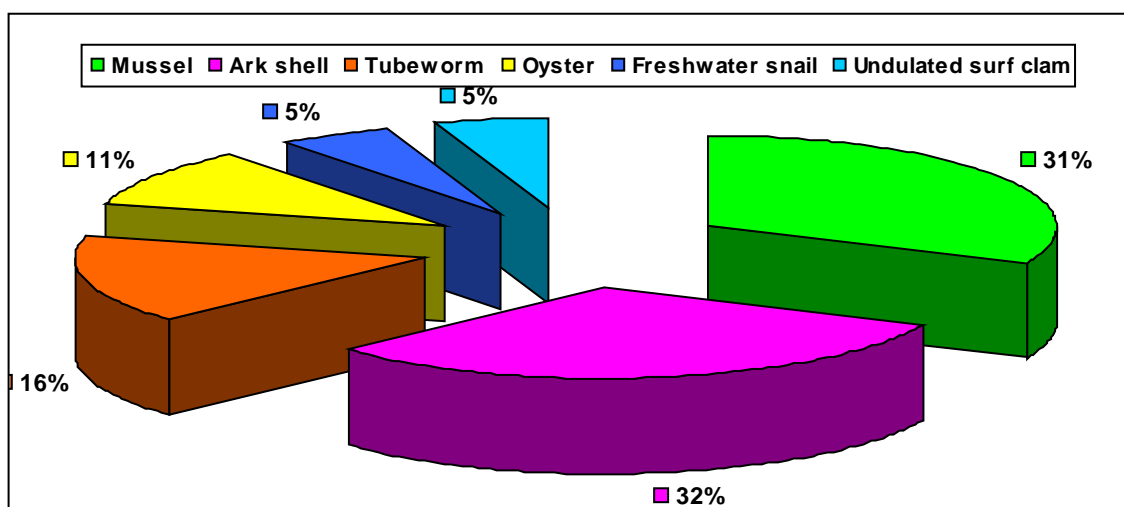


Figure 30 Types of molluscs consumed within the nine communities

Section 4.2a (2) Plant resources

Figure 31 shows the different types of plants commonly utilized in the nine communities. The plants that are found in or adjacent to the River include the nipa palm, coconut, and mangrove along with various wetland vegetables (e.g. morning glory).

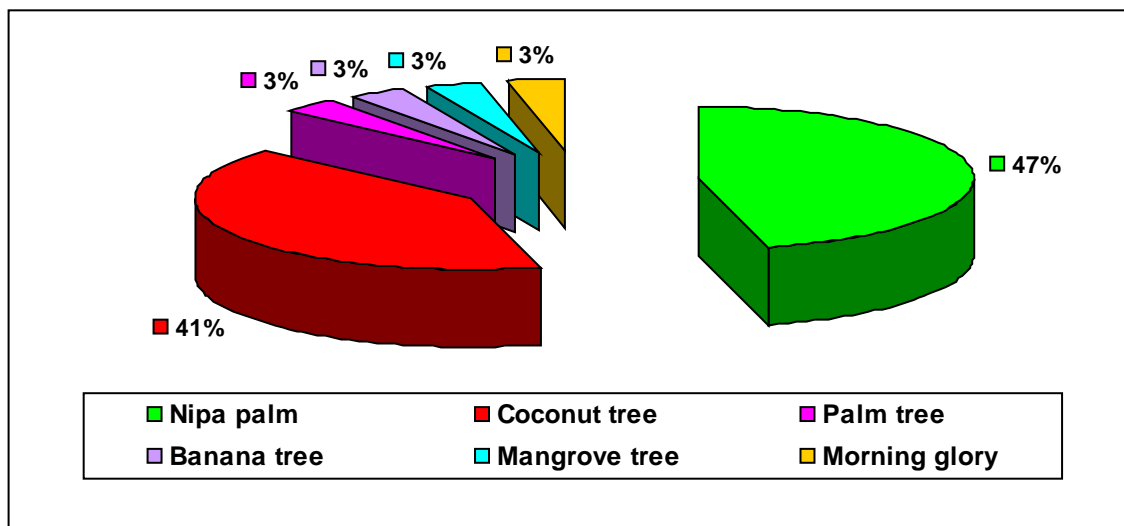


Figure 31 Plants commonly utilized in the study areas

Thailand is known for a wide variety of tropical fruits. Over the past several years, the communities of Amphawa Canal, Bang Noi Canal, and Ban Nok Kwake have been producing high quality and diverse types of vegetables and other agricultural crops, such as coconut, chili, onion, garlic, betel palm, and mild chewing tobacco. These areas are known for their sugar palm, big and mild chili, clean and firm betel palms. They used to grown orchards of various fruits, such as durian and longan (Chirawet, 2005).

The main horticultural products, which are all economically important to the Province, include lychee, pomelo, mango, and banana (See Figure 32).

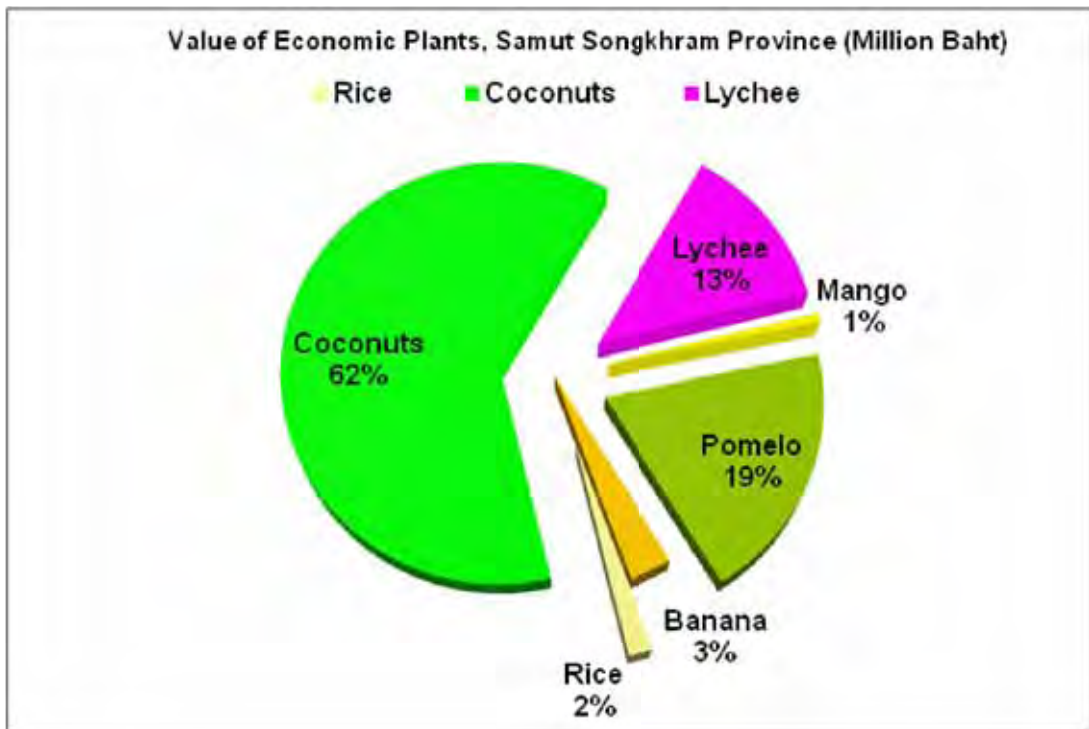


Figure 32 Value of economic plants, Samut Songkhram Province (Million Baht)

Source: DOAE, 2008

Section 4.2b: Access to the resources: Fishing Boats

Access to the Mae Klong River is determined based on availability and/or ownership of fishing boats. Majority of local residents who live along the River maintain a small wharf or dock platform (Figure 33), built next to their houses.



Figure 33 A small wharf or dock platform, built next to their houses.

Source: Photo by Prasert Suravanichakit (2009)

The data from the Fisheries Department of Thailand from 1997-2001 reveal that Samut Songkhram Province is ranked fourth in terms of the number of registered fishing boats in the country. The number of fishing boats has increased from 968 in 1997 to 1,134 in 2001 (Fisheries Department, 2001). However, a few of them especially those found in the study area at the Mae Klong River seem to have been abandoned or left unused for many years. As part of the proposed tourism development in the study area, the old and non-functioning fishing boats could be re-modeled to accommodate tourism-related activities along the River. Owners of small boats can generate supplementary income by renting out their small boats for a River cruise or short river tour.

In this study, 7% (N=22) own boats. The size of the boats ranges from 24 meters to 4 meters (Table 32), depending on their function. The boats are used either for fishing, transport, and/or recreation. Some of the other boats observed in the study area are used for commercial offshore fishing in the Gulf of Thailand and part of the Indonesian territory (Figure 34). A few of them are berthed on certain sections of the Mae Klong River for repair or cleaning (Figure 35).





Figure 34 The boats for fishing, transport, and commercial offshore fishing in the Gulf of Thailand and part of the Indonesian territory
Source: Photo by Tungkavit Sutheero (2007)



Figure 35 A few boats are berthed on certain sections of the Mae Klong River for repair or cleaning
Source: Photo by Tungkavit Sutheero (2006)

Table 32 Boat owner & size

Item	Number of Respondents	%
Boat owner: (n = 301)		
Have ownership	22	7.3
Do not have ownership	279	92.7
Boat size (n = 301)		
4 meters	4	1.3
6 meters	6	2.0
18 meters	1	0.3
24 meters	3	1.0
No answer	287	5.3

Of the 22 respondents who own boats, the majority (82%) owns only one boat. These boats are usually made from hard wood (refer to Table 33). The owners of the boats claimed that they are economically dependent on the River, as these are generally used for subsistence fishing and day-to-day transport, and occasionally, to take tourists to various tourist spots along the River (e.g. restaurants and the floating market located further upstream).

Table 33 Boats ownership

Item	Number of Respondents	%
Boat owner (fishing boat/ferry boat /Combination use): (n = 301)		
Do not own	279	92.7
Own	22	7.3
Item	Number of Respondents	%
How many boat do you own?: (n = 22)		
1 boat	18	81.9
6 boats	3	13.6
2 boats	1	4.5

Section 4.2c: Access to the resources: Subsistence and Small-scale Commercial Uses

In Samut Songkhram Province, several kinds of marine and freshwater finfish including *Pla-tu* have been reported in this study. Moreover, the fertile lands in the Province produce several kinds of agricultural crops. Both local fishery and agricultural production have brought a great amount of revenue to the Province.

One of the direct economic benefits derived from the Mae Klong River and its tributaries is through the selling or vending of fish and other aquatic products. The economic scale of the trade is at a subsistence level only. Of the 301 respondents surveyed, 59 (20%) are involved in the selling or vending of aquatic products (e.g. fresh/dried fish, molluscs, or crustaceans) (as shown in Table 34). Of those who sell fish, nearly 90% (n=53) are small-scale independent vendors, i.e. They catch and sell the fish themselves at a retail price at the local markets. In some cases, these vendors rove around the villages in their 3-wheeled motorcycles (*sam-lor*) to sell fish. The majority of the fishers are males (usually the male spouse), and the vendors are females (usually wives or elder sisters). The volume of fish is usually in small quantities and sold at a retail price (Figure 36).



Figure 36 Vendors rove around the villages in 3-wheeled motorcycles (*sam-lor*) to sell fish and female vendors.
Source: Photo by Tungkavit Sutheero (2007)

Table 34 Selling of aquatic animals in the community

Item	Number of Respondents	%
Do you sell aquatic animals?: (n = 301)		
Yes	59	19.6
No	242	80.4
Item	Number of Respondents	%
How do you sell it?: (n = 59)		
Fisher- vendor (Self employed)	53	89.8
Vendor (via wholesaler) trader	6	10.2
Item	Number of Respondents	%
For self employment, where do you sell?: (n = 53)		
In the market	36	67.9
Nearby house	7	13.2
In front of Wat Petchsamut	7	13.2
At home	3	5.7

Every year, Samut Songkhram Province holds an annual fair known as, 'The Best of Mae Klong,' where several local fish and agricultural products are exhibited and sold to the public. This festival provides an opportunity by which tourism can promote the local economy and support local fishery products. For example, the Mae Klong River can be developed as a destination area known for its fish products such as in the Maldives where tourism and fishing combined generate an estimated 31 percent of GDP (IGES, 2005).

Section 4.2d: Access to resources: Recreational uses

Swimming in the Mae Klong River used to be a very popular recreational activity, but this is seldom observed in recent times because of various reasons listed in Table 35 (Figure 37). The River, however, is still used for other purposes, such as bathing, washing, and cleaning household utensils. The water-based activities, which can be allowed for safe recreational purposes are line fishing, leisure boating, and perhaps, jet skiing and in-water boat scooting (Figure 38).

Table 35 Swimming in the Mae Klong River

Item	Number of Respondents	%
Have you ever swim in Mae Klong River?: (n = 301)		
Yes, I used to swim in the river.	202	67.1
No, never.	99	32.9
Item	Number of Respondents	%
Reasons for not swimming in the river: (n = 99)		
I do not like to swim in river.	37	37.4
I cannot swim in the river.	20	20.2
It's dirty.	12	12.1
It's not convenient.	11	11.1
I have no time to swim.	10	10.1
I like to swim in the canal rather than the river	9	9.1

The poor water quality of rivers is one of the main reasons why recreational pursuits, especially swimming and water-contact sports, have diminished over the years. According to the Pollution Control Department (2001), the water quality of the Mae Klong River has a Water Quality Index (WQI) of 66% or an average rating, but the rivers in the northern regions have a lower rating (Table 36). The upstream rivers inevitably affect the water quality of the downstream river.



Figure 37 Swimming in the Mae Klong River
Source: Photo by Tungkavit Sutheero (2006)

มหาวิทยาลัยทักษิณ ๒๐๑๖ สงวนลิขสิทธิ์



Figure 38 Line fishing and leisure boating in the Mae Klong River
Source: Photo by Tungkavit Sutheero (2006)

The maintenance of safe recreational water contributes not only to the general well-being of humans but also to the enhancement of local and regional economies through water-based tourism and other forms of local livelihoods (Catibog-Sinha, 2008). Cabelli, Dufour, McCabe, and Levin (1982, p. 610) state that “swimming even in marginally polluted marine bathing water is a significant route of transmission for the observed gastroenteritis.”

Table 36 Water Quality Index in important water sources, categorized by region (2001).

Water Quality Rating	% WQI	Water Source (River's name)	Region
Low	31	Central Chao Phraya	Central
	47	Pasak	Central
	51	Bangpakong	East
	51	Kao (Lamphun)	North
	53	Yom	North
	56	Nan	North
	60	Wang	North
Average	62	Prachinburi	East
	62	Parkpanang	South
	63	Ping (Chiang Mai)	North
	63	Chee	Northeast
	64	Kaew Yai	Central
	66	Moon	Northeast
	66	Mae Klong	Central
70	Saiburi	South	
Good	72	Songkram	Northeast
	77	Southern Nampong	Northeast

Source: Pollution Control Department, 2001

PART III: CULTURAL HERITAGE OF THE MAE KLONG RIVER

According to UNESCO (2007), cultural heritage includes both tangible (e.g. monuments and buildings) and intangible (e.g. traditions and religious) values. The linkage between cultural heritage and natural heritage is also part of the expanded meaning of cultural heritage. Vines (2005) states that the combination of 'bricks and mortar' and associated narratives or stories contributes to the uniqueness of a destination area (Vines, 2005).

This section discusses the tangible and intangible components of cultural tourism. The various cultural attributes (e.g. temples, traditional houses and buildings) of the study area, including the pertinent religious rituals, beliefs and traditional practices are presented. These attributes are assessed in the context of possible tourism development in the Mae Klong River.

Section 4.3a: Temples

Religious temples are important tourist attractions in Thailand because they represent ancient fine arts and architecture including literature and mural paintings. As of July 2008, UNESCO (2008) has inscribed five Thai Heritage Sites in the World Heritage list, three of which are categorized as Cultural Heritage Sites (Table 37). Of the three world heritage cultural sites, two are temples. These are the Historic City of Ayutthaya, Historic Town of Sukhothai and Associated Historic Towns. Inscriptions of these sites have brought pride and honor to the Thai people as well as added an asset to the tourism industry (Thai, 1996). The designation of areas as World Heritage Sites gives a recognition of the importance of these areas for the present and future generations worldwide. They provide opportunities for public access to learn about and experience these places (Robinson & Picard, 2006).

Table 37 Thai Heritage to World Heritage

Country	Name of World Heritage Sites	Year	Cultural Site	Natural Site
Thailand	Historic City of Ayutthaya	1991	X	
	Historic Town of Sukhothai and Associated Historic Towns	1991	X	
	Thungyai-Huai Kha Khaeng Wildlife Sanctuaries	1991		X
	Ban Chiang Archaeological Site	1992	X	
	Dong Phrayayen-Khao Yai Forest Complex	2005		X

Source: UNESCO, 2008

Although Samut Songkhram Province is the smallest province of the 76 provinces in Thailand, there are many religious buildings in nearly every village throughout the province. These include not only Buddhist temples but also Catholic churches (St.

Jacob'se Catholic Church and the Cathedral of the Nativity of Our Lady) and Islamic mosques (Damrong Mosque) in Ban Khlong Khaek and Tambon Plai Phong Phang where there are significant Muslim populations (Maeklongcenter, 2007). These tangible cultural heritage assets can all contribute to cultural tourism. The Thai people visit temples and tour operators organize day trips for both domestic and foreign tourists.

In the Mae Klong River, the prominent man-made structural features, apart from the local residential houses, are the Buddhist temples. Temples or *Wat* are built in harmony with nature. For example, temples are always facing the river or the rising sun to commemorate Buddha's enlightenment on a river bank. Many of the Ayutthaya's sermon halls or vihan have a deck built parallel to the length of the river.

Within the nine sampled communities of Samut Songkhram Municipality, this study listed 5 significant Buddhist temples, and some can be seen from the boat cruise along Mae Klong River (Table 38). The temples are relatively small, but they are all colorful and intricately designed (Figure 39). The presence of the temples along the River could add value to the tourist experience. The local tour guides can tell stories about the temples and the religious beliefs associated with them.

Table 38 The 9 participating communities of this study located in Samut Songkhram Municipality.

Community code	Community name	Number of temples found in each community
2	Soi Wat Lang Ban Community-East bank	None
6	Wat Petchsamut Woraviharn Community -East bank	Wat Petchsamut Woraviharn Community
7	Talad Community-East bank	None
8	Wat Thamnimitr Community-East bank	Wat Thamnimitr
9	Bang Jakeng 1 Community-East bank	None
10	Bang Jakeng 2 Community-East bank	Wat Catholic (Wat Daruneenukul)
12	Laem Yai Community-West bank	None
13	Wat Pratumkanawasd Community-West bank	Wat Pratumkanawasd
14	Sapansee-Wat Puangmalai Community-West bank	Wat Puangmalai

Source: Samut Songkhram Municipality, 2006

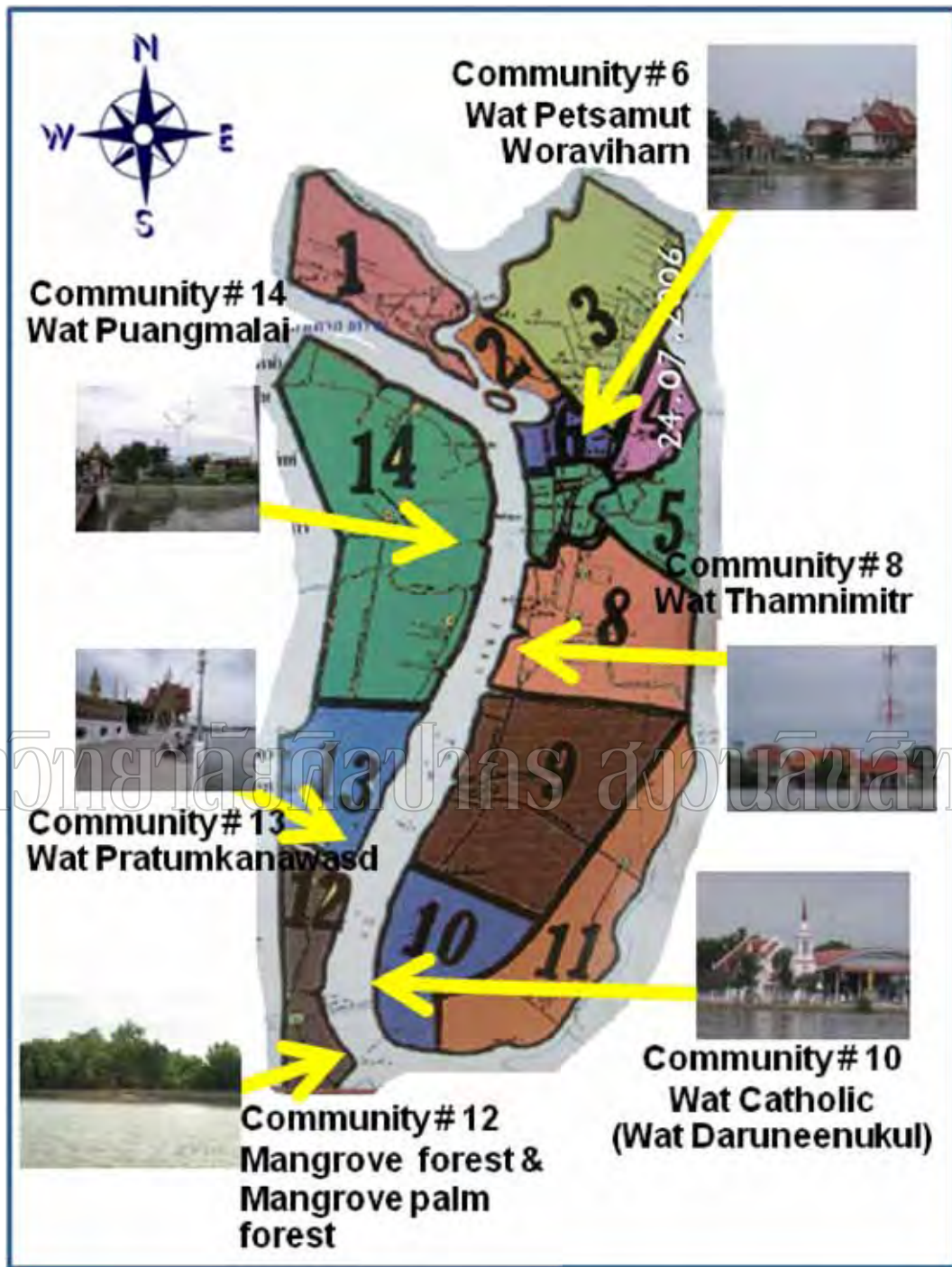


Figure 39 Temples along the Mae Klong River
Source: Photo by Prasert Suravanichakit (2009)

Section 4.3b: Local beliefs; Goddess of the River

Thai people, including some of the local communities of the Mae Klong River, respect the goddess of nature. The Guardian Goddess of the River/water or “the Mother of River,” is locally known as, “Phra Mae Kong-Ka.” The word ‘Phra Mae’ means goddess, and ‘Kong-Ka’ refers to the River. Hence, the name of ‘Phra Mae Kong-Ka’ literally translates as Guardian Goddess of the River. She is also the Goddess of food which symbolizes wealth and prosperity. This ancient belief originated in the early *Rattanakosin* period or during the reign of King Rama IV (1768-1932). Public show of reverence of the Goddess occurs especially during the Loy Kratong Festival or Float Festival (Van Beek, 2004).

Among the 301 respondents, 89 (30%) expressed their belief in the Goddess of the River, but only 28% (n=25) of them were able to recall the actual name of this Goddess (Table 39). The majority of those who believe stated that the Goddess will punish those who pollute the River. Fishermen including those involved with boat maintenance (e.g. boat carpenters, painters, and turners) and those in the fishing industry (fish sorting, freezing and manufacturing) also believe, to a certain degree, in the Goddess of the River or more specifically the Goddess of boats. The Guardian Goddess of boats is locally called *Mae Ya Nang*. The word *Mae* means mother, *Ya* means grandmother, and *Nang* means women (Van Beek, 2004).

While this philosophy of the relationship between the spiritual and material is rarely seen in modern times, tourism could help revive this belief as an ideological basis in wetland conservation and water-based recreational management. For example, the belief in the connectivity between the land and ancestral spirit in Fiji was observed in the cultural norms and traditional beliefs of the local people. Catibog-Sinha and Bushell (2002, p. 35) state that *vanua* (meaning ‘land’) ‘could serve as a powerful mechanism promoting the linkage between biodiversity conservation and tourism management’.

In some provinces in Thailand (e.g. Nan and Phichit), the longboat races, to commemorate a religious festival, are held in September and October. In this race, each Wat has a team and a craft, measuring eight meters long. The boat’s prow is shaped like the head of a bird, or (nok) in Thai, which determines the crew’s success and their religious belief. The day before the race, team members chant prayers for a safe and successful race (Van Beek, 2004).

Table 39 Belief in the River Goddess

Item	Number of Respondents	%
Do you believe in the River Goddess?: (n = 301)		
No	212	70.4
Yes	89	29.6
IF YES (n=89)		
What is the Goddess’ name?		

Her name is Pra Mae Kong Kha.	64	71.9
Do not know the Goddess' name.	25	28.1
Why do you believe in the River Goddess?		
I was taught to believe a long time ago.	38	42.7
It's part of my faith.	31	34.9
There is evidence in the Loy-kratong Festival (Float Festival).	16	17.9
I believe the Goddess of the River will protect us and continue to give good water for our daily needs.	4	4.5
Do you believe that the River Goddess will punish polluters?		
Yes	38	42.7
No	4	4.5
Do not know	47	52.8
IF NO (N=212)		
Reasons for lack of belief in the River Goddess		
I do not have faith in that belief but I do not scorn it either.	29	13.7
There is no evidence or proof.	183	86.3

Section 4.3c: Local houses

The architectural design of residential houses has both functional and aesthetic appeal (Figure 40). A Thai style house has several distinct features: steep roof pointing towards the sky, several doors and windows, open space, and elevated from the ground. Some parts of the old houses were built with little or no nails. The height of the roof keeps the house cool. More doors and windows mean better air ventilation. An open space provides a comfortable living space as well as an open area to keep livestock and store foods and grains. An elevated house is safe from floods and hostile wildlife. The doorsill is raised above the floor because of the superstitious belief that this will keep evil spirits away as well as prevent small children from falling into the water (Chirawet, 2005). In the old town of Amphawa District, several old traditional Thai houses and shops, usually made of wood, still exist along the waterfront. The shops carry items for both domestic and foreign tourists as well as items that are used on a daily basis by local residents.



Figure 40 A Thai style houses along the Mae Klong River
Source: Photo by Tungkavit Sutheero (2006)

Many of the residential houses in the study area are made of wood and/or a combination of wood and cement. According to 5.6% of the respondents, their houses are modern, whereas, 5% said they have a traditional Thai style home (Table 40). The majority of the respondents (47%) said the houses are relatively old, having been built 20-50 years ago (Figure 41).

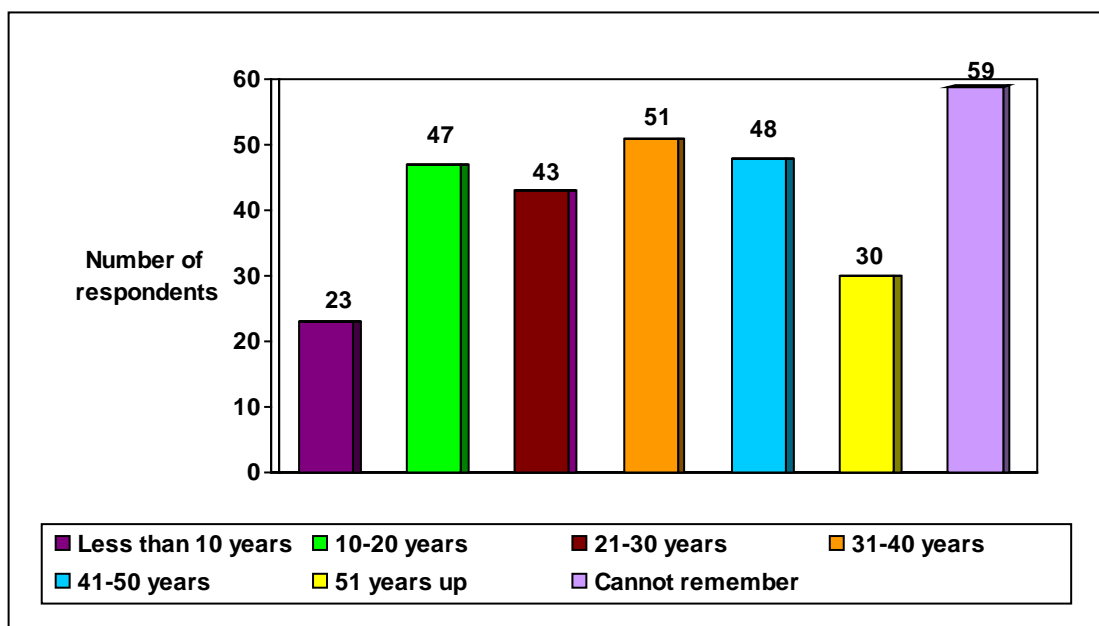


Figure 41 Age of house

Table 40 Features of the houses

Items	Number of Respondents	%
Features of the houses: (n = 301)		
Combination of wood & concrete	141	46.8
Wood	128	42.6
Modern western style	17	5.6
Traditional Thai style	15	5.0
Cottage/hut/shack	0	0

Many of the local residential houses along the River are either in disrepair and/or have been abandoned (Figure 42). Some 35.5 % of the respondents said that only a few houses have been refurbished or re-modeled (Figure 43). This indicates that the sampled communities have maintained a traditional rural setting along the River. The set up also represents the economic or social status of residents, although the poorer populace seems to be more dominant.



Figure 42 Many of the local residential houses along the Mae Klong River are either in disrepair and/or have been abandoned.

Source: Photo by Tungkavit Sutheero (2006)

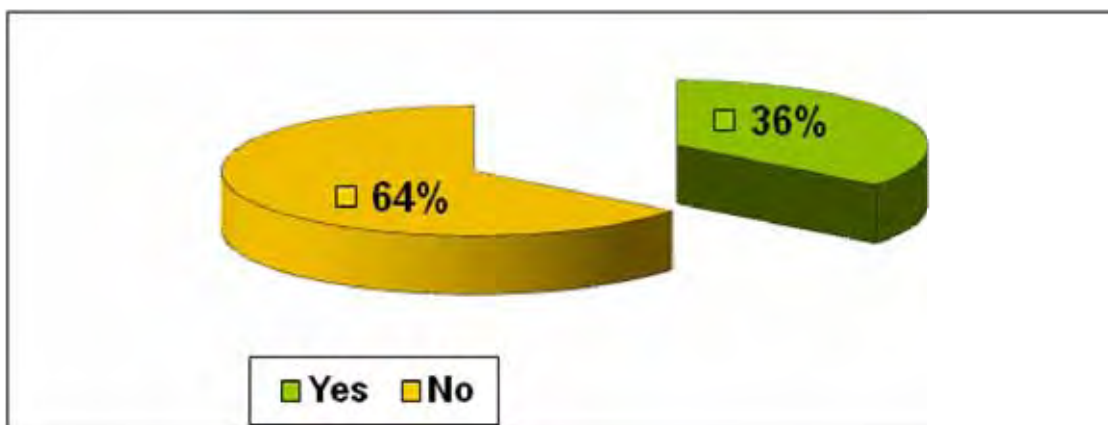


Figure 43 House refurbishment

Whilst tourists would like to experience the ambience of the 'old' Mae Klong River via the presence of old traditional houses along the River, the poor structural condition of some houses, due to the absence of effective or adequate sewerage, could contribute to water pollution. Thus, government assistance and/or community support will be needed to refurbish these old houses.

The Thai house and way of life on the River in the Amphawa Community have cultural significance and social value for past, present, or future generations (Figure 44). Amphawa market is formerly the most famous floating market on the Mae Klong River some 60 years ago. The charms of the area are the old shop houses on the riverfront, wooden structures with folding doors standing in a long row of almost 500 units (The Riverine Wonder of Thailand, 2004). This is in part due to its landscape which has been a setting with spiritual and cultural sentiments to a river community of Chinese and Thai people for over 40-50 years. The Burra Charter of the ICOMOS (1999) defines the basic principles and procedures to be observed in the conservation of important sites which can be applied to such places as buildings, sites, areas, structures, ruins, archaeological sites and landscapes modified by human activity. Thus, care for significant fabric requires a cautious approach of changing as much as necessary but as little as possible. This means changes should not diminish, destroy or conceal significant fabric or the elements and materials that make up the place.



Figure 44 Thai house and way of life on the River in the Amphawa Community
Source: Photo by Tungkavit Sutheero (2006)

PART IV: PERCEIVED VALUES OF THE RIVER

The perception and understanding of a phenomenon is a social construct determined by the person's economic, cultural, and educational background as well as his/her previous and present experiences. The perceived value of natural ecosystems, such as rivers, varies depending on the tangible and intangible benefits that a particular person would derive from it. Howard (2003) states that different people perceive or experience heritage features and heritage space differently due to the symbolic meaning they ascribe to them.

The types of values of nature as classified by Kellert (1996) are utilitarian, naturalistic, ecological-scientific, aesthetic, symbolic, dominative, humanistic, moralistic, and negativistic. The perceived values of the Mae Klong River community were classified based on Kellert's definition. And the results are aesthetic, symbolic and cultural, historic, educational, ecological-scientific, and utilitarian/economical.

The Mae Klong River, like many other wetland areas in the world, has multiple benefits and ascribed values. In this study, both intangible and tangible values as perceived by the sampled population are discussed below.

Section 4.4a: Perceived Aesthetic value

According to the Burra Charter of the ICOMOS (1999, page 12), aesthetic value includes "aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, color, texture and material of the fabric; the smells and sounds associated with the place and its use." The aesthetic value as expounded by Kellert refers to a feeling of pleasure, awe, and harmony felt in relation to the perceived beauty of nature and life diversity. Examples are viewing landscapes, seascapes; appreciation of wildlife, aromatic plants (Catibog-Sinha & Heaney, 2006). Aesthetic value also includes aspects of the sensory perception (e.g. sight, touch, sound, taste, smell) including the form, scale, color, as well as the natural and physical elements, and the smell and sounds connected with the place and its use (Australian Heritage Commission, 2003).

The aesthetic value of Samut Songkhram Province in general has been ascribed to its rural areas (e.g. farms and local markets) and waterways. The study reveals that 67 respondents (22%) expressed appreciation of the aesthetic value of the Mae Klong River, for the following reasons: the way of life on the River is very relaxing and pleasant, and the River is a pleasant place for leisurely boating (Table 41 & Figure 45). On the other hand, the reasons why the majority of respondents (78%) did not appreciate the aesthetic value of the River are due to the polluted state of the River, whereby swimming was perceived as unsafe, as well as the decline of aquatic animals including fireflies.

Some respondents mentioned the declining frequency and abundance of fireflies in the River. Watching fireflies at night while on a boat cruise along the Amphawa Canal (which connects to the Mae Klong River) used to be one of the tourist highlights. The glow of thousand and thousands of fireflies complements the aesthetic and romantic appeal of the River which used to attract over 5,000 tourists each weekend. It is believed that the noise from tourist boats has disturbed the fireflies, and the trees (Lampoo) where fireflies live have disappeared due to human disturbances (MCOT News, 2008).

With increasing industrialization and modernization, the water quality of the Mae Klong River has been compromised. The untreated effluents from industries and domestic and municipal sources as well as from over-fertilized farms can cause not only economic losses but also the decline of the aesthetic and cultural values of the

River. The respondents also mentioned that swimming is no longer a pleasurable experience, probably because of the brownish color of the River. Additionally, there has been an emergence of alternative and modern sources of leisure and relaxation in the township. Despite these problems, the River with its natural grandeur, offers beautiful scenery, especially as it merges with the Gulf of Thailand.

Table 41 Perceived aesthetic value of the Mae Klong River

Item	Number of Respondents	%
The basic understanding (general perception) of the value of the River		
Aesthetic value: (n = 301)		
No	234	77.7
Yes	67	22.3

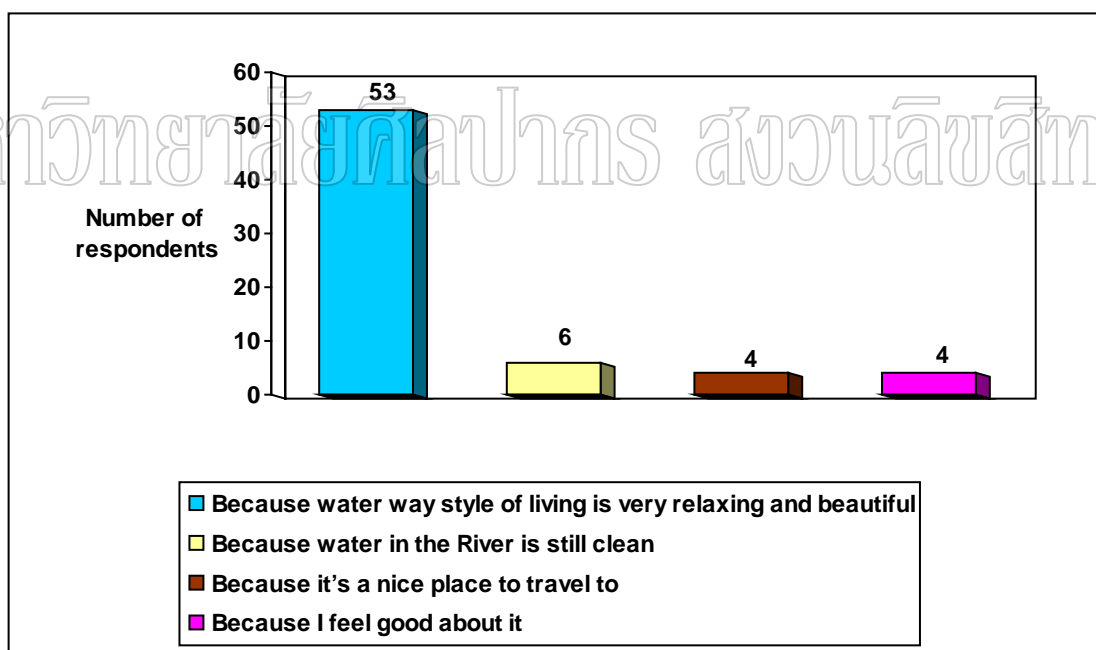


Figure 45 Factors that contribute to the aesthetic value of the Mae Klong River

Section 4.4b: Perceived symbolic and cultural values

Cultural heritage pertains to ideas, thoughts, emotions, and aspirations expressed in traditional songs. UNESCO (2001 in Robinson & Picard, 2006) defines cultural heritage as one that relates not only to material expressions such as sites and objects, but also to tangible expressions such as language and oral tradition, social practices, rituals, festive and performance events. Culture is seen much more as

means to refer to a way of life and everyday practice as well as being visible in buildings, sites, and monuments (UNESCO 2001 in Robinson & Picard, 2006).

The symbolic value placed by people on nature is a way for them to express or communicate ideas, thoughts, emotions, and aspirations. Examples of symbols are language, stories, myths, fairy tales, poems, marketing, and educational interpretations. Anthropomorphism (humans disguised as animals) in children's stories is also an example of symbols used by people (Kellert 1996 in Catibog-Sinha & Heaney, 2006).

Section 4.4b (1) Perceived Symbolic values: The Mae Klong River

About 61% of the respondents (n=184) has recognized the cultural value and associated symbolism of the Mae Klong River (Table 42). This perception is influenced by the popularity of the River as an iconic tourist destination in the province, similar to the Amphawa floating market in the upstream river. The way of life on the Mae Klong River has always been considered a unique but typical lifestyle in rural areas both in the past and the present (Figure 46).



Figure 46 The Mae Klong River has always been considered a unique but typical lifestyle in rural areas both in the past and the present.

Source: Photo by Tungkavit Sutheero (2007)

There was an expressed feeling of national pride among some of the respondents. However, the majority felt that the water quality of the River has to be restored and the traditional cultural practices be revitalized not only for the sustainability of the cultural identity of the local communities but also for long-term economic and ecological benefits.

Table 42 Symbolic value

Item	Number of Respondents	%
Symbolic value: (n = 301)		
Yes	184	61.1
No	117	38.9
Item	Number of Respondents	%
Reason of Symbolic value: (n = 184)		
Everyone knows about Mae Klong Province from the Mae Klong River	57	31.0
The Mae Klong River is very unique.	38	20.7
The Mae Klong River has a distinct way of life which is very typical of rural areas.	29	15.8
The Mae Klong River is the icon of the province.	26	14.0
Everyone knows the Mae Klong River.	16	8.7
The Mae Klong River represents the local people.	15	8.2
The province's motto mentions the Mae Klong River.	3	1.6

Section 4.4b (2) Symbolic values reflected in Thai songs about the Mae Klong River

In this study, about 70% (n=212) of the respondents were found to be familiar with at least one traditional Thai song that is linked to the River and/or nature (Figure 47). Knowledge of traditional songs about the River can reflect, although indirectly, one's appreciation of the cultural value of the River.

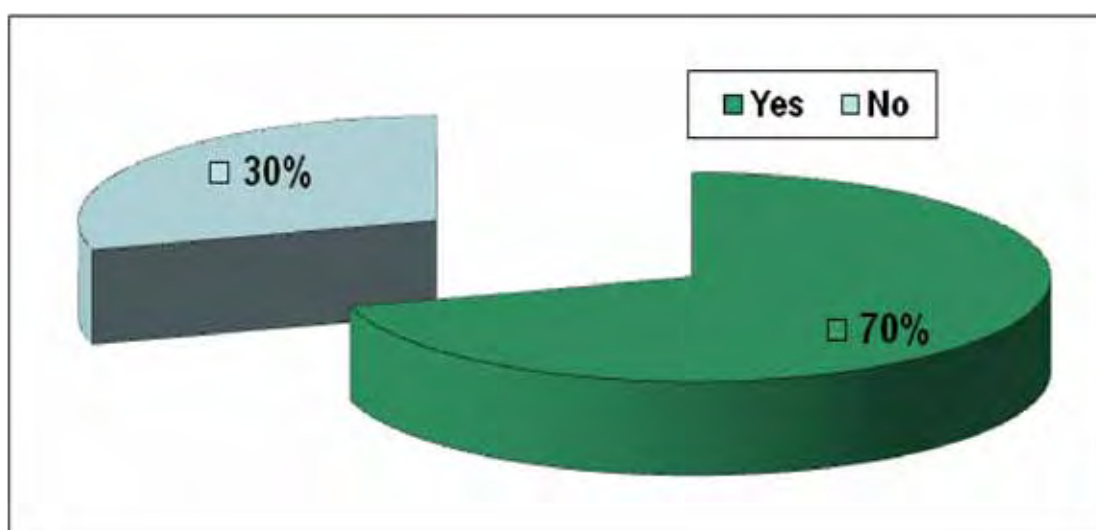


Figure 47 Respondents who are familiar with at least one traditional song linked to the River

Two of these traditional songs have been translated in English in this report; the words linked with the cultural significance of the River are highlighted (Tables 43 & 44). These verses generally imply the feminine and loving nature of the river-it represents love and joy. The respondents stated that they enjoy singing these verses because it makes them feel good although they have some sad and nostalgic memories of the Mae Klong (Table 45). The songs give tribute to the River, which represents a woman who is beautiful and loving. The River, just like a woman (or a mother), gives joy and happiness to the beholder. The older respondents, who saw the River in its pristine state some years back when they were still young, generally felt a feeling of nostalgia about the cultural and romantic value of the River.

Since these songs may still be heard over local radios, the potential to revive the appreciation for the River is great and should be considered as a step forward in the proper management and/or rehabilitation of the River for tourism. In fact, Chirawet (2005) spoke about his future vision of the city of Mae Klong. He saw it as the "Last Venice of the East," due to its cultural and romantic appeal. The governor of Samut Songkhram Province, Mr. Opas Savetmanee, was greatly enthused by this idea as he wanted to revive some of the lost cultural significance of the Mae Klong River in particular and the Amphawa Canal in general. Thus, he supports the idea of raising environmental awareness among the local people and tourists on the importance of preserving the River and the quality of life of the local people. The governor envisions tourists experiencing the local lifestyle firsthand. For example, tourists can sit and row in the flat boats, just like in Italy's famous gondolas. Furthermore, there was a plan to renovate 20 retired paddling boats that are over 100 years old. Evidently, these boats were to be back on the River as of August 20, 2008 (MCOT News, 2008). However, Vines (2005) states that the involvement of the local community is very important in this endeavor. Thus, building owners, tenants, business operators, local residents and religious communities need to have a sense of participation and ownership for any future management plan to be successful.

Table 43 Song and lyrics Mon Rak Mae Klong มนต์รักแม่กลอง

Song Lyric	Key words and contents
<p><u>Song name</u>: Mon Rak Mae Klong มนต์รักแม่กลอง <u>Song writer</u>: Mr. Paiboon Butkhan <u>Singer (Original)</u>: Mr. Sornkeyree Sriprachab</p> <p>เจ็ยแจ้วแจ้วเสียงสำเนียงขับร้อง ดังเพลงมนต์รักแม่กลอง ล่องลอยพริ้วหวานข้ามมา กล่อม สวางามบ้านอัมพวา มนต์รักแม่กลองแว้วมา เหมือนสายธาราแม่กลองรำพัน ที่ต้องจากลาขวัญตานีมน้อง ไม่ลืมลาสาวแม่กลอง ต้องครวญหวนมาสักวัน กลิ่น เนื้อนางไม่จางสัมพันธ์ เราสองล่องเรือร่วมกัน ร้องเพลง<u>ชมจันทร์ลุ่มน้ำแม่กลอง</u> ไม่ลืม น้ำใจไมตรี <u>สวางามบ้านบางคณที</u> เอื้ออารีเรียกร้อง <u>ให้ตีมน้ำตาล</u> พร้อมกับยิ้มหวาน ของนวลละออง ก่อนลาจากสาวแม่กลอง เรา ร่วม<u>ปิดทองงานวัดบ้านแหลม</u> เจ็ยแจ้วแจ้วเสียงสำเนียงขับร้อง คร่ำครวญลาสาวแม่กลอง ล่องลอยเมื่อคืนข้างแรม กรุ่น <u>หอมไอทะเลเคล้าแซม</u> มนต์รักแม่กลองแทรกแซม คิดถึงฟางแกมนวลสาวแม่กลอง</p>	<p>The name of the music is Mon Rak Mae Klong which means the magic of the Mae Klong River. The music is about the Mae Klong River (<u>สายธาราแม่กลอง</u>) and its aesthetic and cultural values including the beautiful women of Amphawa and Ban Khonthee District (<u>สวางามบ้านอัมพวาและบางคณที</u>), Wat Petchsamut Temple and cover Luang Por Ban Laem Buddha Image with gold leaves (<u>ปิดทองงานวัดบ้านแหลม</u>), the delicious palm juice (<u>ให้ตีมน้ำตาล</u>), the boat and the relaxed and wonderful feeling while cruising along the Mae Klong River (<u>ล่องเรือ</u>), sea fragrance (<u>หอมไอทะเล</u>), watching moonlight and beautiful scenery. (<u>ชมจันทร์ลุ่มน้ำแม่กลอง</u>).</p> <p>The music is about a local guy who is going to leave the town. He really misses his beautiful girlfriend who lives in Amphawa District. He feels that the stream of the River represents his sadness. The smell of the sea and the Mae Klong River make him miss this woman much more. He recalls the time when he and this woman were together on a cruise, watching the moonlight and enjoying the scenery surrounding the Mae Klong River.</p>

Source: Maemaiplengthai, 2008: interpretation in English is the researcher's.

Table 44 Song and lyrics La Sao Mae Klong ลาสาวแม่กลอง

Song Lyric	Key words and contents
<p><u>Song name</u>: La Sao Mae Klong ลาสาวแม่กลอง <u>Song</u></p> <p><u>g writer</u>: Mr. Kasem Suwanmena</p> <p><u>Singer (Original)</u>: Mr. Panom Nopporn</p> <p><u>สิ้นแสงดาวดहेว่าเร้าร้อง จากสมทมลมน้ำแม่กลอง</u></p> <p><u>พิจำจากน่องคนงาม แว่วหวดรถไฟ</u></p> <p><u>พิจำสนอาลัยสมทรวงศรรม คงละเมอเพ้อพรำ</u></p> <p><u>คิดถึงคนงามที่อยู่แม่กลอง ราชการทหารเรียกใช้</u></p> <p><u>ลูกน้ำเค็ม โฉ่ทัพเรือไทยฝึกเตรียมเอาไว้</u></p>	<p>The name of this music is La Sao Mae Klong which means Good bye Mae Klong women. The music is about the Mae Klong River and the pain of heartache that she feels upon retiring at bedtime as she misses the beauty of the river, starlight, and the song of birds (<i>genus Dicrurus or Dissemurus</i>) (<u>ดเหว่าเร้าร้อง</u>), Mae Klong</p>

Source: Musicatm, 2008: interpretation in English is the researcher's.

Table 45 Respondents' familiarity with traditional songs about Mae Klong River

Item	Number of Respondents	%
What is the song's name?: (n = 212)		
Mon-rak-mae-klong	109	51.4
La-sao-mae-klong	87	41.1
Mon-rak-mae-klong & La-sao-mae-klong	16	7.5
Item	Number of Respondents	%
Source of song about MK river: (n = 212)		
Radio	201	94.8
Tape cassette/CD	11	5.2
Item	Number of Respondents	%
When and how did you learn about these stories/songs?: (n=212)		
When I was young	139	65.6
A long time ago	30	14.1
Recently from the radio	43	20.3
Item	Number of Respondents	%
Do you feel nostalgic about the message of these stories/songs?: (n = 212)		
Yes	180	84.9
No	32	15.1
Item	Number of Respondents	%
Why do you feel nostalgic from listening to these songs?: (n = 212)		
It makes me homesick.	73	34.4

It makes me dream of the MK river as a good source of clean water.	49	23.1
It reminds me of the old days when I was young.	32	15.1
It reminds me of the old days when the MK river was clear & clean.	24	11.3
The Mae Klong River has always had a lasting impression on me.	18	8.5
It reminds me of my admiration for all the music composers of the old day.	12	5.7
The song is a classic and easy listening.	4	1.9

The religious or spiritual symbolism of the Mae Klong River was also expressed by a relatively small percentage of the population sampled (32.6%, n=98), (Table 46). Most of them prefer to go to sacred temples in Mae Klong City, especially to the well-known sacred Buddha image of Ban Laem Temple.

Table 46 Spiritual/religious value

Item	Number of Respondents	%
Culture/religion value: (n = 301)		
No	203	67.4
Yes	98	32.6
Item	Number of Respondents	%
Reason of Culture/religion value: (n = 98)		
There are so many sacred temples along the MK river.	55	56.1
I believe in the sacred Buddha image of Ban Laem Temple.	43	43.9

Section 4.4c: Perceived intangible values: Historic, educational, and ecological-scientific

Section 4.4c (1) Perceived historic values

According to the Burra Charter, historic value encompasses the history of aesthetics, science and society, consisting of a range of values ascribed to a heritage site. A place has historic value if it has influenced or has been influenced by a figure, event, phase or activity in the past (Australian Heritage Commission, 2003).

The study revealed that the majority of the respondents (73%) are either unaware of and/or have very little information about the history of the Mae Klong River. The rest of the respondents (27%) have limited knowledge of the place, and referred only to the Memorial Park of King Rama II, who was born in the area (Table 47).

Table 47 Historic value

Item	Number of Respondents	%
Historical Value: (n = 301)		
No	220	73.1
Yes	81	26.9
Item	Number of Respondents	%
Reason of Historic Value: (n = 81)		
The King Rama II Memorial Park is located along the River	38	46.9
It's a river with a long history.	18	22.2
It's an old city w/ an old pier.	11	13.6
It has so many old temples.	11	13.6
It's an old town and the birth place of King Rama II.	3	3.7

One of these stories, as narrated below, can be promoted as part of tourism, and provide avenue to improve the local residents' awareness and pride of their cultural history. The story is about certain historical events that occurred in Amphawa District and Khao Yeesarn Sub-district, a trading port in the old times.

The Amphawa or Bangchang community (the old name of Amphawa) used to be a famous place in the old days, similar to Bangkok, the capital of Thailand. At that time, when the Thai people mentioned Bangkok and Banchang, there was a saying they referred to, '*Suan Nai Bangkok, Suan Nork Bangchang*' or '*Bangchang Suan Nork, Bangkok Suan Nai*'. *Suan Nork* is an outer farm, *Suan Nai* is inner farm. Thus, the saying refers to the location and topography of both cities. Both cities are surrounded by rivers that flow into the Gulf of Thailand. Whereas, Bangkok has the Chao Phraya River, Amphawa or Bangchang has Mae Klong River. Both rivers were a port for transportation to other places. The main career of the people from these areas involved the growing of fruit in local orchards and trading with cargo ships. Therefore, the Mae Klong River has been seen as a major river throughout the past decades. A primitive Mae Klong River that was used as a main transportation route was called the Oam Canal or *Klong Oam*. There were ruins of a ship mast, Chinese style pottery of the Tang, Song, and Yuan Dynasties, ancient remains, accessories, and pottery from the Dvaravati period (6th - 11th centuries) found in this area (Samut Songkhram POC, 2008).

From several old historical records, it is known that there were once four settlements of the old communities in the Amphawa District. It included the community of the Oam Canal (which stretched from the Mae Klong River to Wat Pleng District), the community located on the two sides of the Mae Klong River (from Amphawa District to Bang Khonthee District which was where most of the fruit orchards were densely grown), the community of Ban Laem, and the community of Khao Yeesarn (a trading port in the old times but not for fruit orchards because of the quality of its soil and land).

The Community of Khao Yeesarn has become the most significant historical place of the Province. There are historical remains of stoneware (Sukhothai stoneware) in this community which led to an assumption of three main careers of people at that time including river trader, fisherman, and mangrove charcoal maker. Further, Khao Yeesarn was recorded as the place which the famous poet Sunthornpoo used as a shortcut to Petchburi Province during the Rattanakosin period. Besides, there are old monasteries located there, namely Noy Temple (Wat Noy) in the community of Khao Yeesarn which were built during the 19th-20th centuries (Samut Songkhram POC, 2008).

Section 4.4c (2) Perceived educational values

The educational value of the Mae Klong River was perceived by only 7% (n=23) of the respondents (Table 48). The low public awareness of the value of natural heritage including the valuable services and goods they provide to humanity is very alarming. Such lack of awareness could lead to the further deterioration of the river and eventual loss of its biodiversity benefits. The significance of the natural ecosystems in terms of its biodiversity and geological diversity is essential to sustain the present or future generations (Australian Heritage Commission, 2003).

Table 48 Educational value

Item	Number of Respondents	%
Education value: (n = 301)		
No	278	92.4
Yes	23	7.6
Item	Number of Respondents	%
Reason of Education value: (n = 23)		
It's an old town	23	100.0

Section 4.4 (3) Perceived ecological-scientific value

An ecological-scientific value is about gaining knowledge regarding the biological and physical components of biodiversity, in particular the different types of wildlife (plants and animals) and nature's their ecological roles and functions. Examples of these values are perceived through research, nature exploration, systematic studies in the field and laboratory, and learning about history (Kellert 1996 in Catibog-Sinha & Heaney, 2006). Moreover, the scientific value to the community will depend on the importance of the data involved, on its rareness, quality or portrayal of the specimen, and on the degree to which the place may contribute any significant information (Australian Heritage Commission, 2003).

The cognitive basis for a better public appreciation of the importance of the Mae Klong River is crucial as it provides field data (both from research and experience) on the possible consequences of human disturbance on ecological systems.

An ecosystem is a complex arrangement between the organisms that make up a community and the non-living environment where the organisms live (Australian Heritage Commission, 2003). It is essential for the public to recognize that the management of natural resources and conservation of biodiversity is essential in tourism management. The Mae Klong River has certain hydrodynamics and geographical features typical of many other rivers and natural sites, which the public, in particular the local community, should appreciate. However, this seems not to be the case in the study area. Among 301 interviews, none of them understood the ecological value of the Mae Klong River (Table 49). The lack of knowledge and understanding on the part of the locals about the ecological importance of the River could lead to further decline of the ecological integrity of the Mae Klong River and its tributaries due to intended and unintended disturbances and overexploitation of aquatic resources.

The social perceptions of nature can influence human behavior and subsequently the condition of an ecosystem (Kellert 1996 in Catibog-Sinha & Heaney, 2006). Knowing the dynamics and structure of the river's ecosystem helps in understanding the fact that improper use of the upstream ecosystem will adversely affect the integrity of the downstream ecosystems. Thus, the linkage of these ecosystems will enable management to use resources in the upstream in a more sustainable manner in order not to affect the resources downstream.

Moreover, a healthy river is the mirror of a healthy human society (Catibog-Sinha & Heaney, 2006). When the River is polluted its ecological properties are disturbed and modified. The greatest threat to the River is pollution from untreated effluents coming from domestic, industrial, and agricultural sources. The pollution can be in the form of solid, liquid, and gas which causes direct and indirect effects on ecosystem (Catibog-Sinha & Heaney, 2006).

Table 49 Ecological value

Item	Number of Respondents	%
Ecological value: (n = 301)		
Yes	0	0
No	301	100.0

Section 4.4d: Perceived tangible values (utilitarian/economical value)

Food, water, clothing, medicines, tools, implements, and other extractive products are examples of tangible products from nature which humans can utilize for their basic needs for survival and development (Kellert 1996 in Catibog-Sinha & Heaney, 2006).

Section 4.4d (1) The use of water in the Mae Klong River

Based on the interviews, the aquatic resources in the River are utilised as listed in Table 44. Only 43 respondents (14%) claimed to have used or have been using the

water from the Mae Klong River for domestic purpose; most of respondents preferred to collect water from a public tap (Table 50).

Table 50 Water in the Mae Klong River for domestic use

Item	Number of Respondents	%
Water for domestic use: (n = 301)		
Use water from the public tap (Public utilities)	236	78.4
Use water from the Mae Klong River	43	14.3
Use water from the River and public tap water	15	5.0
Use water from an individual deep well	7	2.3

Section 4.4d (2) Aquaculture value

At present, the aquaculture production of bass (*Lates calcarifer*), is a dominant livelihood activity along the river within the study area. The 239 respondents (80%) felt good or satisfied with the locally based aquaculture venture because it provides them with economic revenue. It is considered an important and viable economic revenue for the community (Table 51) (Figure 48). However, the respondents are faced with a dilemma since 85% of them also believed that uncontrolled construction of bass pens in the River could lead to further degradation of water quality for sustainable aquaculture as well as the loss of the natural aesthetic appeal of the River.



Figure 48 Aquaculture production of bass along the Mae Klong River
Source: Photo by Tungkavit Sutheero (2006)

Table 51: Aquaculture production of bass in the Mae Klong River

Item	Number of Respondents	%
Opinion about the bass aquaculture along the River: (n = 301)		
Good	239	79.4
Bad	62	20.6
Item	Number of Respondents	%
Benefits of having bass aquaculture along the river: (n = 239)		
It's a job	217	90.7
It can increase income	22	9.3
Item	Number of Respondents	%
Negative effects of having bass aquaculture along the river: (n = 62)		
Water pollution	53	85.5
Ruin the scenery	9	14.5

PART V: TOURIST DEVELOPMENT: A PROSPECT FOR THE MAE KLONG RIVER

This section explores the possible introduction of tourism development at the lower segment of the Mae Klong River area and its promotion as one of the tourist destinations in the Samut Songkhram Province.

The general perceptions of the local residents regarding tourism development in the lower segment of the Mae Klong River area are discussed below.

A brief review of the statistical data from TAT on the tourism activity in the Province is also presented to show the potential of the study area as an ecotourism destination. The lower segment of the Mae Klong River can be a good adjunct attraction to the popular sites (e.g. the Amphawa floating market) in the Province.

Section 4.5 a: People's perception of the value of tourism development

The study surveyed the views of the community members regarding the idea of developing a river-based tourism in the area (Table 52). About 73% (n=219) of the respondents expressed interest in seeing tourism developed in the study area; they were hoping to have one similar to the tourism activities in Amphawa where the floating market is well known in the country and very popular to international tourists. The main reasons for agreeing to tourism development are as follows: tourism will generate supplementary income to the local community (39.7%), there will be an added tourist attraction (34.7%), and it will make the province more well-known (10.5%). Economical reasons were high on the list. According to Lansing and De Vries (2006), tourism development provides economic benefits, but he argued that if

tourism has to be sustainable, it should occur in a way that leads to long term improvements for all of the parties involved, especially among the local communities. The assumption here is that nature-based tourism, if properly managed in accordance with the principles of sustainable development, can be an effective tool in increasing public awareness of the ecological, educational and cultural values of the River. The low level of appreciation for both the tangible and intangible values of the Mae Klong River in the study area indicates that sustainable tourism may be one way to address this issue. If the local residents benefit directly from tourism, perhaps they will be compelled to appreciate the River and will strive to protect its ecological and cultural integrity for the present and future generations.

On the other hand, 27% (n=82) of the respondents were neither interested in nor in disagreement with the idea of developing any form of tourism attractions in the area. They claimed that it was not possible to duplicate Amphawa in Mae Klong as these two rivers segments are different from each other (Table 52).

The local residents, especially those who have lived in the area for a long time and are relatively familiar with the local environmental and social situations, felt apprehensive of the possible environmental and social problems that would arise from tourism development. Green (2005), states that this sense of awareness and familiarity is expected. The social problems as defined by the community refer to the responses of society to the physical restructuring of their environments including displacements and relocations of human settlements, changes in social demographics related institutional and economic impacts, as well as, the disruptions of community cohesion and lifestyles (Shields, 1975 in Green, 2005). In the case of the lower segment of the Mae Klong River, the perceived social problems attributable to tourism development were associated with the pollution of the River due to inadequate waste management measures and the serious threat of pollution to public health. Furthermore, the growth in tourism could lead to a decline in over-all environmental quality, congestion and flooding of nearby streets, degradation of cultural integrity, modernization and replacement of culturally significant buildings, and an increase in crime rate (Green, 2005).

Table 52 Participant's interest in the setting up of tourist attractions along the river

Item	Number of Respondents	%
How would you like to see a tourist attraction set up in this segment of the River similar to that of Amphawa?: (n = 301)		
Yes, I would really like to see it happen here.	219	72.8
No, I wouldn't like to see it happen in my hometown.	82	27.2
Item	Number of Respondents	%

IF YES, Why would you like to see a tourist attraction set up in this segment of the River similar to that of Amphawa: (n = 219)		
It brings added income to the local community.	87	39.7
There will be an added tourist attraction.	76	34.7
It will make the province more well-known.	23	10.5
It is a good attraction for the city.	18	8.3
It is a good place for the tourism industry.	4	1.8
The Mae Klong will become a strong symbol of the way of life on the river.	4	1.8
It will create cooperation within the tourism industry on the river.	4	1.8
I can use my land to charge for public parking and can benefit monetarily.	3	1.4
Item	Number of Respondents	%
IF NO, Why wouldn't you like to see a tourist attraction set up in this segment of the River similar to that of Amphawa? (n = 82)		
The project would be too difficult as Mae Klong is not the same type of village as Amphawa.	35	42.7
It will destroy the natural resources. More people will bring more pollution.	27	32.9
It cannot possibly be as good as Amphawa.	13	15.9
There are already too many places like Amphawa now.	7	8.5

Section 4.5b: Potentials and expectations: Local tourism development

The economic value of tourism development of the Mae Klong River was re-affirmed in this study by the majority of the respondents. Based on interviews and literature review, the good indicators of the potential success of tourism development at the Mae Klong River are briefly discussed below:

Section 4.5b (1) Accessibility to the area and existing attractions found in nearby localities

Samut Songkhram Province is a popular destination for Thai residents and for both international and domestic tourists. A much larger percentage of tourists recorded during the period 2006-2007 visiting the Province are Thai residents (TAT, 2008).

The TAT reports that Thai visitors have increased from 432,688 to 539,262 (24.63% increment), whereas, the number of foreigners has dropped from 19,910 to 19,064 (4.25%), (Figure 49). Interestingly, visitors of the age group between 55 and over have dramatically increased (from 1,391 to 22,234), followed by those of the age

group 45-54 (472.17%), and 35-44 (168.54%), respectively (Figure 50). These data indicate that Thai residents, in particularly the baby boomers, have more discretionary time and money to see and enjoy Thailand.

Tourists visit the Province mostly by land and come as a group or independently. Travel arrangements made via group tours have increased by 83.99% from 39,396 in 2006 to 72,486 in 2007 (Figure 51). However, travel arrangements made by non-group tours (independent travel) have consistently remained at the top of the list since 2006, with a high of 413,202 and continues to rise, as this type of travel was last recorded at 17.58% in 2007 (485,840).

The modes of transportation to and from Mae Klong have increased at 32.64% by automobile, and at 3.26% by bus (Figure 52). Surprisingly, none have traveled by train on the Mae Klong railway, known as the Mae Klong-Wongwienyai Route which is mainly used for transporting commodities, such as food and other agricultural products. There are two lines to serve the commuters. The first train runs (Samut Songkhram POC 2008) out of Ban Laem Station in Samut Songkhram Province to Mahachai Station in Samut Sakhon Province (33.10 kilometers). Commuters continue on the second one which operates from Mahachai Station to Wongwienyai Station in Bangkok (33.80 kilometers).

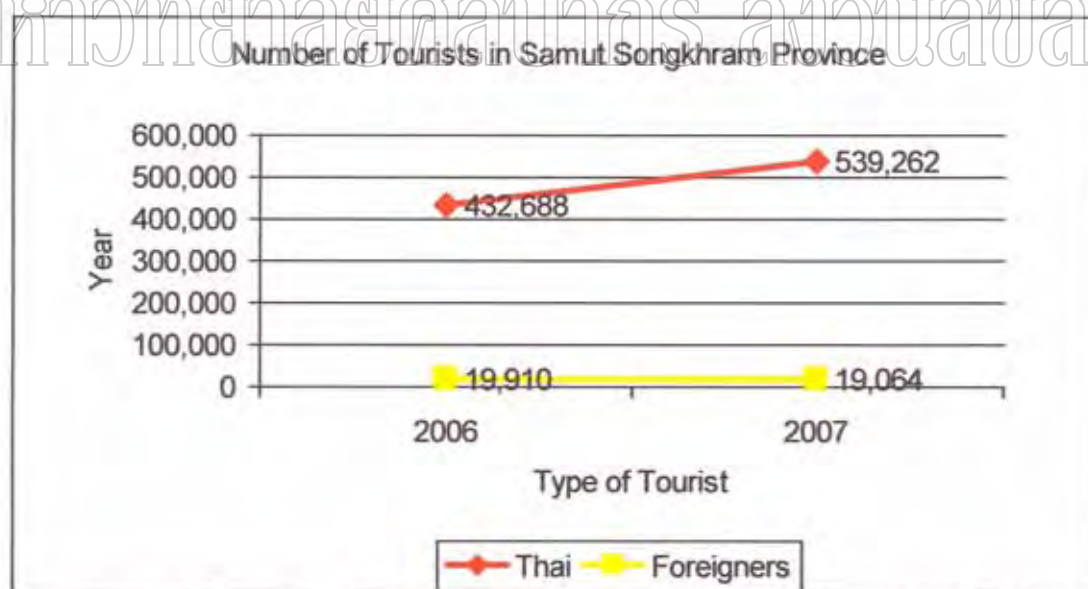


Figure 49 Number of Tourists in Samut Songkhram Province (2006-2007)

Source: TAT, 2008

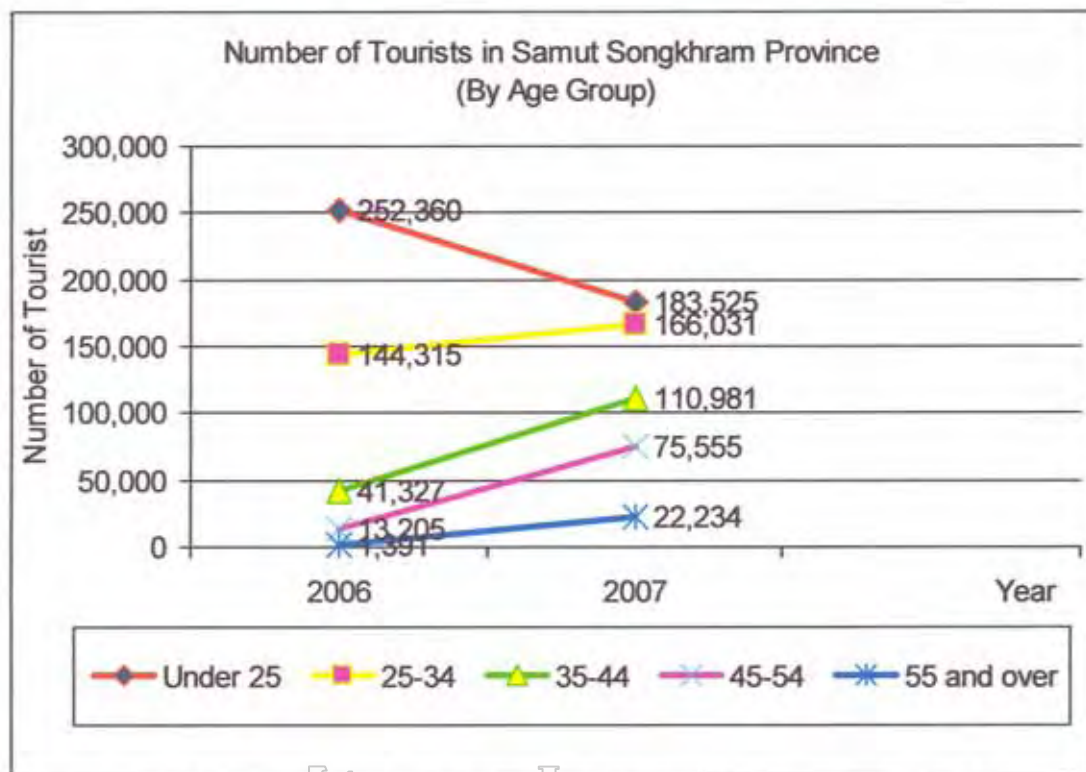


Figure 50 Number of Tourists in Samut Songkhram Province (By Age Group)

Source: TAT, 2008

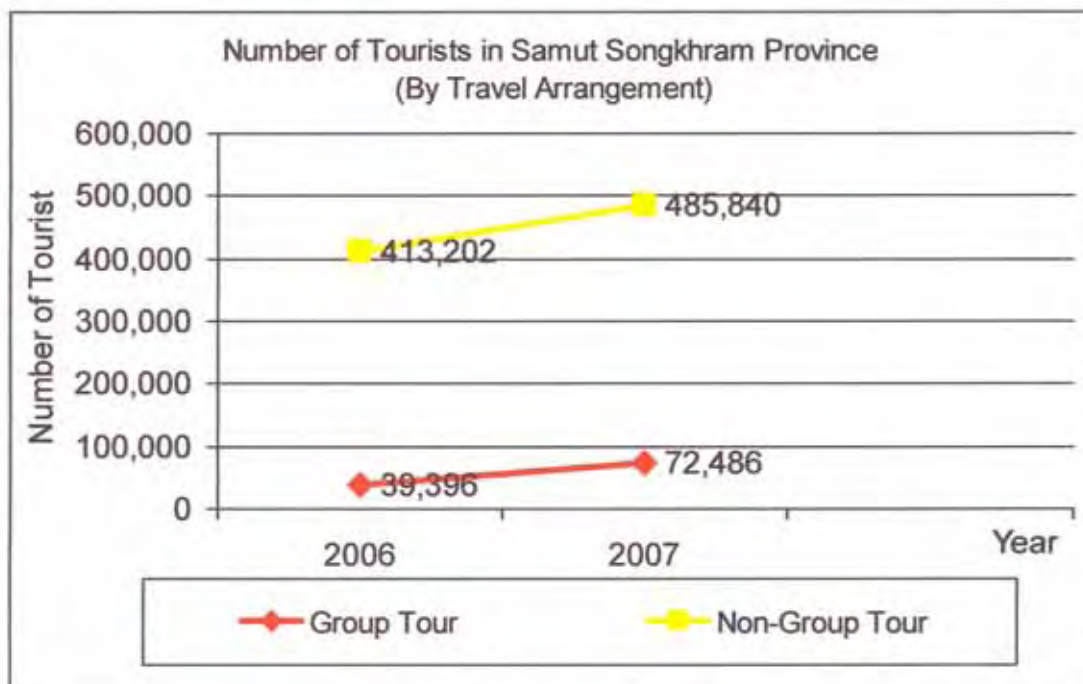


Figure 51 Number of Tourist in Samut Songkhram Province
(By Travel Arrangement)

Source: TAT, 2008

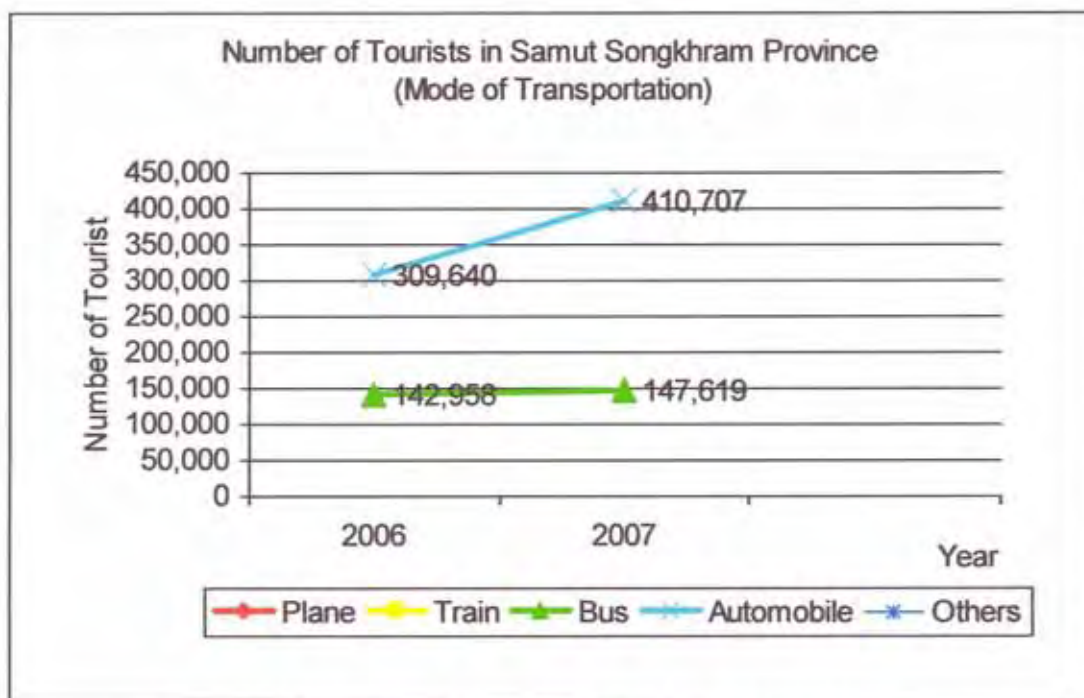


Figure 52 Number of Tourists in Samut Songkhram Province
(Modes of Transportation)
Source: TAT, 2008

มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี

Section 4.5b (2) Cultural pride amongst local people

The local residents of Mae Klong, in general, are generally proud of their hometown because there are so many existing and potential attractions in the locality and nearby towns. These places are mentioned in several recent Thai poems because of their inherent aesthetic natural beauty, as well as, for their cultural and historical significance (Choksaguan, 2008).

Table 53 lists verses from poems mentioning these noteworthy places, ideals and commodities, which includes the Mae Klong River, Ban Laem Buddha Image, Thai way of life, the City of Pure Nature, the City of Fruit Orchards, lychee and palm sugar, Amphawa Canal, Yam Yen floating market, firefly watching, Pla-Tu Eating Festival, the Best Pla-Tu, Don Hoi Lot, Pomelo Khao Yai, Khao Yee Sarn, the birthplace of the Siamese Twins In-Chan, communities living along the River, economical fishery zone, sustainable tourism, and the King Rama II Memorial Park (Table 53).

Table 53 The verses of poems mentioning the natural and culturally rich places, ideals and commodities in Samut Songkhram Province (Poet: Choksaguan, P.)

Poem	Keywords and contents
ดราบแม่กลองล่องไหลไม่เหือดแห่ง อยู่ด้วยแรงศรัทธาอันกล้าหาญ	Mae Klong River
หลวงพ่อบ้านแหลม เอกองค์คงตำนาน เราลูกหลานสมุทรสงครามคงความดี เป็นเมืองงามพร้อมพร้อมหล่อหลอมจิต เป็นชีวิตแบบไทยในวิถี	Ban Laem Buddha Image
เมืองแห่งธรรมชาติปราศาศึ	Thai way of life
เขี้ยวขจีสวนผลไม้ร่มใบบัง	The City of Nature
บางคนเห็นลิ้นจี่หวานน้ำตาลหอม	The City of Fruit Orchards
คลองแควอ้อมอ้อมพวาพาสมหวัง	Lychee & palm sugar
ตลาดน้ำยามเย็นก็เด่นดัง	Amphawa Canal
คำคืนยังชมหิ่งห้อยงามพร้อยพราว	Yam Yen Floating Market
เทศกาลกินปลาหูกูเมืองสมุทร	Firefly watching
อร่อยสุดปลาทุไทยยามใกล้หนาว	Pla-Tu Eating Festival
ดอนหอยหลอดแลเห็นเป็นดอนยาว	The Best Pla-Tu
ส้มโอขาวใหญ่มีชื่อเสียงทั่วเมือง	Don Hoi Lot
เขายี่สารอาบแสงสัศคารไปเที่ยว ดูเขาเดี่ยวที่เห็นเด่นกระเดื่อง	The Best Pomelo Khao-Yai
อินจันแฝดสยามนามประเทือง	Khao Yee sam
ความรุ่งเรืองระบือไปในทุกทิศ	Birthplace of Siamese Twins In-Chan
คือวิถีชีวิตไทยคู่สายน้ำ	Communities along the River
ประมงน่าเป็นเขตเศรษฐกิจ	Economical Fishery zone
การท่องเที่ยวแบบพอเพียงเลี้ยงชีวิต	Sustainable tourism
เชิญมาเยือนสักนิดจะติดใจ	
ดราบแม่กลองล่องไหลไม่เหือดแห่ง คงความหมายสมุทรสงครามงามสดใส	
อุทยานพระพุทธเลิศหล้านภาลัย	King Rama II Memorial Park
เป็นหนึ่งในเมืองงาม นามแม่กลอง	

Source: Choksaguan, 2008

As mentioned earlier, the local community is also proud to mention the existence of the short-bodied mackerel (also known as *pla-tu* in the Thai language), which used to be abundant in the River. In the past, the villages of Muang Mae Klong used a large native bamboo trap (called a *Poh*) to catch the mackerel. Unfortunately, large fine nets are currently being set across the River to trap the fish. The unregulated commercial harvesting of the fish in addition to the increased level of water pollution have caused a massive population decline of this unique species (Chirawet, 2005). To partly solve this problem, the provincial Chamber of Commerce has initiated an annual celebration to promote the mackerel as a flagship species during the "Mae Klong Mackerel Festival" or the "Pla-tu Eating Festival" from late November to December, when mackerels are quite abundant. The tourism income generated from

the sale of the fresh mackerel, which is sold for about USD\$ 2 (THB 70) per kilogram, and from the tourism-related activities would be substantial. About 400,000 visitors come annually for the festival, generating about USD\$ 2 million (THB 80 million) (Chirawet, 2005).

The promotion of the short-bodied mackerel as a tourism flagship or emblem could greatly improve the public awareness of the ecological and economic importance of the species, which can be used as a good rationale for a more sustainable harvesting practice and the conservation of its habitat in the Mae Klong River. Furthermore, the revenue generated from tourism can help provide government funding for the protection of the species and its habitat. This is necessary because the success and sustainability of the "Mae Klong Mackerel Festival" depends on the sustainability of the mackerel.

Section 4.5b (3) Acceptability amongst the local residence

As mentioned earlier in this chapter, the majority (73%) of the respondents agreed to develop tourism in the area, more particularly along the river banks. When respondents were asked if they think that more tourists should be encouraged to visit the study area, 87% of them agreed. Nearly all of them reasoned that tourism is good for the local economy. They believed that tourism development will generate better household income, provide more jobs, and make Mae Klong more popular (Figure 53). The minority of the respondents (13%) (Table 54 & Figure 54) disagreed because of the perceived environmental impact of tourism on the River. They believed that tourism will further aggravate the pollution level of the River.

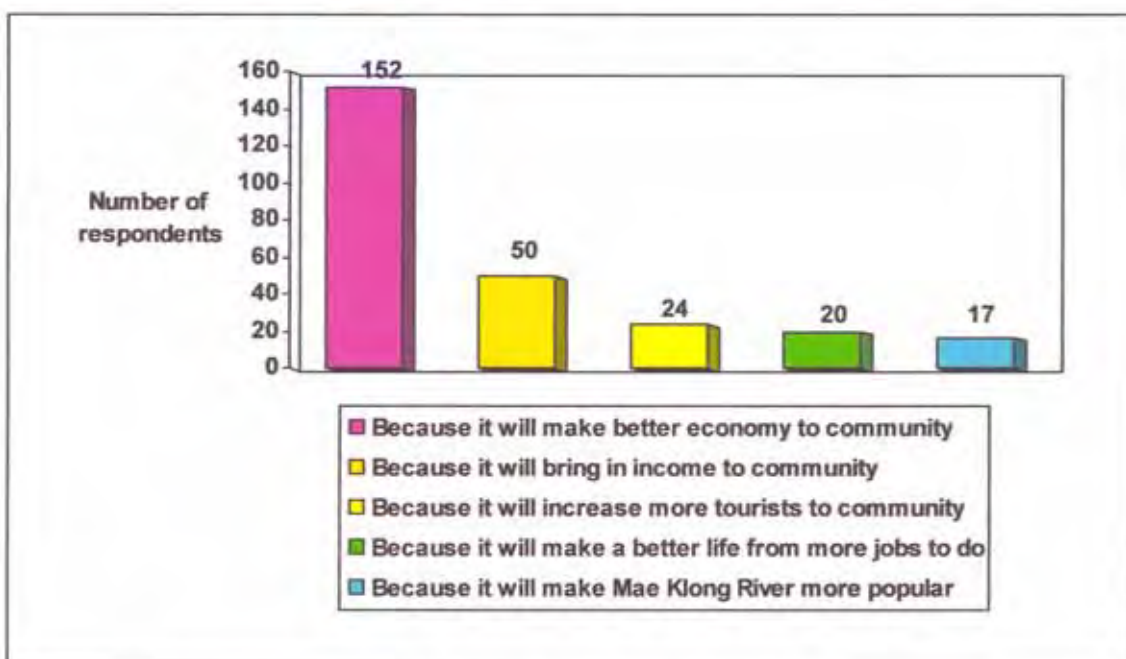


Figure 53 Reasons for the need of more tourists in community

Table 54 Tourist development

Item	Number of Respondents	%
Do you need more tourists: (n=301)		
Yes	263	87.4
No	38	12.6

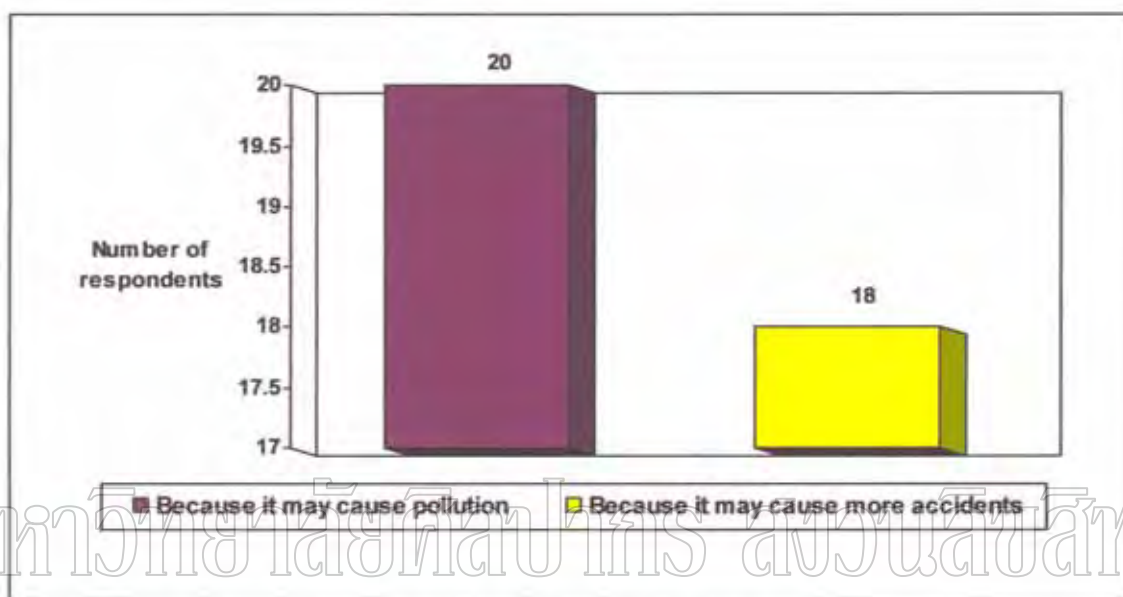


Figure 54 Reasons for the need of fewer tourists in community

SWOT Analysis of Samut Songkhram Province

According to Lansing & De Vries (2006), the public perception of the potential impacts of tourism can either cause disagreement or agreement. The judgement whether to agree or disagree would depend, therefore, on balancing the positive and negative consequences of the proposed tourism development. Those who see strengths and opportunities from tourism recognize its positive outcome, while those who do not agree recognize only the threats and weaknesses associated with tourism development. The following SWOT analysis was based on collected field data from 301 respondents in the lower segment of the Mae Klong River.

Strengths

Samut Songkhram Province due to its idyllic location and abundant natural and cultural resources, plays a significant role in tourism development. Tourism will contribute to household income, provide more job opportunities, and promote Mae Klong as a popular tourist destination. Majority of respondents have an interest in seeing tourism developed in the study area (Figure 55). For the Thai populace and domestic tourists, it is an ideal spot located not far from Bangkok. It is very easy to access by car. Tourists can make it a day trip and enjoy the many advantages of Samut Songkhram Province. Hence, there are several reasons explaining why many

tourists choose to visit this province and also why most of them choose to return to Samut Songkhram again and again.



Figure 55: Hospitality and warm welcome
from local residence in the study area
Source: Photo by Tungkavit Sutheero (2006)

Another very important strength is the beautiful setting of the province. The province itself is full of greenery with its mangrove forest, fruit orchards, and the Mae Klong River. This natural value has made this place even more pleasurable to visit. Moreover, there are many activities to keep tourists active and interested. For example, they can visit the outdoor "Walking Street" market of Amphawa, go on a boat outing in Don Hoi Lot to tour several places, watch the fireflies along the river, and much more.

Possible attractions can be developed en route from the Mae Klong River to other sites in the province. Thus, the revenue generated from tourism can help provide government funding for the protection of the species and their habitats.

Weaknesses

The weaknesses in tourism development in Samut Songkhram Province involve the lack of appropriate public relations and marketing support, improper management in keeping to the principles of sustainable development, public transportation, and the limitations of the carrying capacity of the place, especially in the Amphawa floating market area.

If tourism development is not properly managed, it can be a damaging factor in the efforts to increase public awareness of the ecological, educational and cultural values of the River. Additionally, the concept of an area's carrying capacity, both physical and social, is an indicator of the ability of a certain place to withstand physical or social disturbances before degradation becomes apparent. The quality of environmental experiences can deteriorate due to overcrowding and noise, or when the beauty and peace of natural settings become degraded (Green, 2005).

Amphawa is a good example of failing carrying capacity management. Every weekend, there is an influx of tourists to this area. The negative impact has resulted in problems with traffic congestion from the entrance of the main street, insufficient public parking, overcrowding at the scenic point of attraction, the quality of foods, the price control of foods, parking lots, traffic control, W.C., and the public garbage cans.

Opportunities

Because of the inherent strengths of Mae Klong River as a tourist destination, it has tremendous potential to attract investors and funding support from the government. Initial financial support from governments (provincial and/or national) to tourism development is needed to establish tourism facilities, improve infrastructure development, develop human capacity of the local community, marketing and promotion. Sustainable tourism can lead to long-term improvements for all of the parties involved, especially for the local communities.

Nature-based tourism, if properly managed, can be an effective tool in increasing public awareness of the ecological, educational and cultural values of the River. Thus, all those involved will strive to protect its ecological and cultural integrity for the present and future generations.

Threats

The major threats are the environmental and social problems that would arise from inappropriate tourism development. The Mae Klong River may quickly become polluted due to oil that could leak from unmaintained commercial and tourism boats. The pollution of the River from domestic and industrial sources is a serious threat to health of the public and of the ecosystem. Unregulated tourism growth could lead to a general decline in environmental quality, congestion and flooding of streets, degradation of cultural integrity, modernization and replacement of culturally significant buildings (Figure 56), and an increase in crime rate.

It is also possible that abandonment of traditional livelihoods could occur as local dependence on tourism increases. This, of course, would dramatically change the way of life of the local Thai people. If the local residents have to endure such negative consequences with little benefit from tourism, they may not have any appreciation for the River or much inspiration to protect the ecological and cultural integrity of the area for the present and future generations.



Figure 56 Modernization and replacement of culturally significant buildings along the Mae Klong River
Source: Photo by Tungkavit Sutheero (2006)

PART VI: MAJOR ISSUES ON THE SUSTAINABLE USE OF THE MAE KLONG RIVER

Section 4.6a: The concept of sustainable use

The International Union for the Conservation of Nature (1990 cited in Catibog-Sinha & Heaney, 1996, p.332) states that the "sustainable use can provide an alternative or supplementary means of productive land-use, and can be consistent with conservation, where such use is in accordance with appropriate safeguards," (Recommendation 18.24, IUCN 18th Session of the General Assembly, Perth, 1990). The IUCN (2009) further states that sustainable use of natural resources provides people with incentives to conserve natural resources whilst extracting them within sustainable level. Furthermore, sustainable use can be achieved by continually improving management as new challenges arise through 'adaptive management'. Adaptive management involves monitoring, assessment and applying the research results by adjusting management regimes to achieve the desired result." In the case of the Mae Klong River, the sustainable use of the natural resources would depend upon sufficient knowledge, education and training, and capital investment at the tourist destination area.

In terms of knowledge, there have been several attempts to solve the water quality problem of Mae Klong River. Because of the increasing population and the rapid industrialization of the country since 1976, many of the natural ecosystems, such as the Mae Klong River, have been adversely disturbed. For instance, many factories and other manufacturing establishments were built next to the River, resulting in water degradation and, subsequently, preventing the local people from effectively using the valuable resources of the River. Fortunately, there are some academic institutions, such as Mahidol University, that have developed alternative strategies to address water pollution. For instance, the University developed an organic farming technique using natural products; in addition local researchers have been trained on how to implement this technology including the dissemination of this knowledge to other communities using the local media (Anonymous, 2009).

Knowledge should be complemented with proper skill in the implementation of clean technology at the ground level. In other words, the experts should be able to train and teach the local people on how to address their issues properly through the introduced technology. Thus, in the context of tourism, its sustainability as a local industry would be feasible if the community was sufficiently trained in tourism related services, such as hospitality, marketing, and site protection.

It was suggested that sustainable tourism in Thailand may be possible only if Thai residents themselves are made aware of and responsible for the production and promotion of tourism products (Roy, Pattaya, Wendy, Jerome, & Tanner, 2006). Thus, the Tourism Authority of Thailand (TAT) should endeavor to educate and inform Thai residents as well as the international tourists about the positive tourism aspects of the country through responsible marketing campaigns. Roy et al. (2006) found that the positive images of Thailand among tourists include culture, nature, food, historical sites, and friendly people. However, there are also negative images of Thailand as perceived by the tourists which include low quality products, prostitution and pollution. The survey conducted by the above-mentioned authors also found that both domestic and international tourists have a positive image of Thailand's natural attractions. The tourist perceptions regarding the issues relating to the cleanliness of the community, quality of public trains, buses, taxis and subways, availability of clean drinking water and friendliness of residents were considered important for tourism management. The interviewed Thai residents felt almost neutral in their perception of the seriousness of these issues, but the international tourists felt that these issues were very important for tourism.

In terms of capital and knowledge support, the study area can benefit from the grand project on the Greater Mekong Sub-region (GMS) which focuses on the development of the region for economic prosperity and tourism. The GMS has received tremendous support for capital investment and human resource development from the Asian Development Bank (ADB), which plays a vital role in development by acting as a catalyst, facilitator and broker by assisting in project identification, design and execution. With the GMS program, the regional integration for tourism development has been formed between national governments, private enterprises, regional development institutions, regional travel associations, non-government organizations,

and other concerned stakeholders. The cooperation across national boundaries of the six constituent states of the Greater Meklong Sub region (GMS), namely China, Myanmar, Laos, Vietnam, Cambodia, and Thailand has been set up (Parnwell, 2001). The study area in Mae Klong River can benefit from this regional cooperation in the area of tourism and local community development.

Section 4.6b: Environmental issues

This section discusses the major environmental issues associated with the use of the Mae Klong River. All data were derived from field observations, interviews, and literature review.

Section 4.6b (1) Water pollution: from factory effluents

The pollution of the Mae Klong River has greatly affected the integrity of the aquatic ecosystem. The main sources of pollution are factories, boats, and households as they directly discharged, one way or the other, untreated wastewater into the River. To this day, pollution of the Mae Klong River has damaged cockles, farms for razor clam beds, shrimp farms, and fish farms in the estuarine vicinity (Piyakarnchana, 2007).

According to recent report of Samut Songkhram Municipality (2006), the number of factories has increased gradually from 248 in 2002 to 262 in 2003, and 265 in 2004. Out of 265 factories, 25% are food product factories such as fruit canneries and fish sauce plants; 18% are lumber sawmills; 9% are metal and non-metal factories; and 2% are chemical and plastic factories (Samut Songkhram Municipality, 2006). Since these factories are located close to the Mae Klong River, it seems likely that the factory effluents are deposited into the River, which eventually flows and contaminates the lower segment of the river into the inner Thailand Gulf. One example of a pollution incident had occurred in Don Hoi Lot and the mouth of the Mae Klong Gulf (Khao Nha, 2001).

Failure to recognize environmental problems is a major issue, if the community denies the possible occurrence and the causes of pollution. For example, in this study, 8 respondents (3%) claimed that factories do not contribute to pollution (Figure 57). The management of a factory in the study area (S.P. Plastic Factory) claimed that they do not discharge untreated effluents into the Mae Klong River, and that the pollution of the River might have come from other sources. The majority of the respondents (97%), however believe that the factories are a major source of pollution. These conflicting perceptions are a vital management concern which should be addressed if tourism development is to be established in the study area. Inability of the government to reduce pollution, whether from domestic or industrial sources, will reduce its natural and cultural value, and hence its attractiveness as a heritage tourist destination.

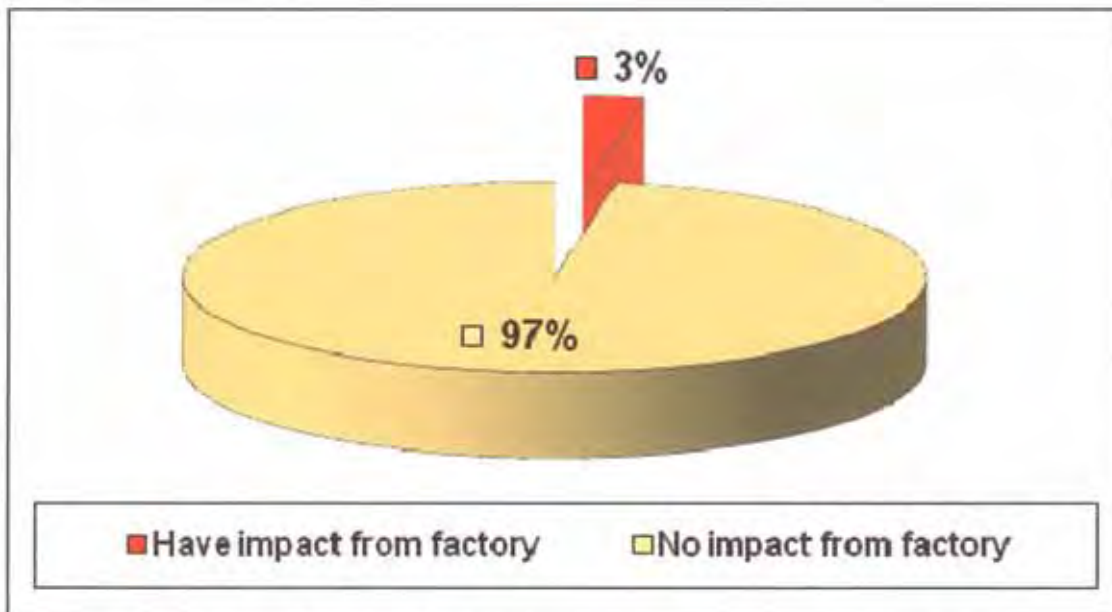


Figure 57 Impacts from the factory

Section 4.6b (2) Water pollution: Impacts from domestic waste

According to Fernandez and Guevarra (2008), solid waste is a result of economic growth, population increase, advancement and reprehensible use of technology, a fast-paced lifestyle and rapid urbanization. However, the natural environment cannot absorb the amount of solid waste produced daily, thus, resulting in pollution, and health problems (Fernandez & Guevarra, 2008). Therefore, effective waste management programs are urgently needed to accommodate the rapidly increasing number of visitors (World Bank, 2004).

Out of 301 responses, over 80% of the respondents claimed that it is not proper to dispose of domestic sewage and other domestic wastes into the River. Despite this, a minority (2.3%) stated that the River is an acceptable place to dispose of rubbish. Some of the houses along the river banks do not have a proper sewage tank; hence, all kitchen and bathroom water from washing is drained into the River (Table 58) (Figure 58).





Figure 58 Domestic and industrial sources of water pollution at the Mae Klong River

Source: Photo by Tungkavit Sutheero (2007)

Table 55 Domestic waste disposal

Item	Number of Respondents	%
How is domestic rubbish disposed of?: (n = 301)		
Via public waste collection system	269	89.4
Do not know	25	8.3
Goes into the river	7	2.3
Item	Number of Respondents	%
Place to dispose of effluents & water from washing: (n = 301)		
The septic tank	241	80.1
Do not know	53	17.6
Goes into the river	7	2.3

Section 4.6c: Socio-cultural issues

Section 4.6c (1) Public awareness and understanding

According to Williamson and Hirsch (1996), people who are highly familiar with a place and long-term residency are often acutely aware of environmental and social problems because they have witnessed their evolution over time (Williamson and Hirsch, 1996, in Green, 2005).

Some 75% of respondents have an interest in the sustainable use of natural resources in the Mae Klong River with reasons mainly involved with natural resource conservation and conservation cooperation (Table 56).

One of the socio-economic issues in the study area is the low level of understanding regarding the long-term impact of pollution, and subsequently, their lack of ability to solve the problem. For instance, only 22 respondents, (7.3%) of the respondents

would actually take action if they saw others polluting the River, although they claimed that they were "ashamed" or "uncomfortable" when they see the River being polluted by other residents (Table 56). They believe that the Guardian Goddess of the River will eventually punish those people.

Table 56 Reaction of local residents to polluters

Item	Number of Respondents	%
Your reaction when you see people litter in the river: (n = 301)		
Feel ashamed for those careless people	265	88.0
Do something to prevent them from doing it again	22	7.3
Do/feel nothing because it's not a surprise	11	3.7
Do nothing as it's not my business	3	1.0

Section 4.6c (2) Awareness of government regulation

Among the 301 respondents, 121 (40.2%) were aware of the government regulations on proper waste disposal in the River. However, another 59.8% (180 respondents), claimed that they need to be more aware and therefore need to be careful and vigilant (Table 57).

Table 57 Awareness of government regulations

Item	Number of Respondents	%
What do you think about your awareness? Are you aware of any government regulations regarding the proper disposal of waste in the River?: (n = 301)		
Yes, I think I'm aware and very careful.	121	40.2
No, I don't think I'm aware enough.	180	59.8

Section 4.6c (3) Government fines and penalty

Among the 301 respondents, 275 (91.4%) agreed with the government's policy on penalizing river polluters. However, 26 (8.6%) of the respondents, disagreed with this punitive policy. This is either because they do not care (4 respondents) or they believe that this measure is ineffective and difficult to implement (22 respondents), (Table 58). However, the majority of local residents (275 respondents) would want the River to remain clean and would like the government to implement the waste management regulation (Figure 59).

Table 58 Reaction to a government fine and penalty

Item	Number of Respondents	%
Do you want the government to fine people who pollute the River?: (n = 301)		
Yes	275	91.4
No	26	8.6
Item	Number of Respondents	%
Why wouldn't you want the government to fine people who litter into the River?: (n=26)		
A fine will not help	22	84.6
Do not care	4	15.4



Figure 59 Reasons for the need of a government fine and penalty

Section 4.6d: Political issues

According to the government's policy, Ross (2003) stated that the idea of ecotourism or any form of sustainable tourism is not practiced in Thailand. He reported that although the former governments had recognized the importance of protecting national parks, marine parks and nature reserves for conservation, the present governments seems to focus more on promoting tourism in these areas. Thus, conflicts between conservationists, local people, developers, and the government have occurred (Ross, 2003).

Another deterrent to sustainable tourism comes from political uncertainty. As a result, it was found that Asian tourists have begun turning away from Thailand because of its continuing political uncertainty and security concerns. The official statistics show that

the number of tourists from East Asia dropped by 7.3 percent in 2007, compared to 2006. Moreover, the TAT showed the drop-off number of tourists from around the world fell by 6 percent (Wiriyapong, 2007).

Sustainable tourism should meet three specific requirements. These include meeting the needs of host populations (improved standards of living); attending to the demands of the growing numbers of tourists; and safeguarding the environment (Cater, 1991 in Mbaiwa, 2005). Sustainable tourism has both conceptual and practical deficiencies (Tao & Wall, 2008). Tourism, while helping to boost the local economy, also brings with it innumerable problems such destruction of the environment, and deterioration of indigenous communities and traditional lifestyles (Chindahporn, 2001 in Green, 2005). Thus, tourism development can be a catalyst for environmental and social impacts such as displacement and relocation of families, demographic, institutional, and economic impacts, and disruptions to community cohesion and lifestyles (Green, 2005).

PART VII: MANAGEMENT OF THE STUDY AREA ALONG THE MAE KLONG RIVER FOR TOURISM

Part VII aims to present a comprehensive discussion of the management of the study area as a tourist destination. The discussion is based on both literature review and primary data.

Section 4.7a: Background information

In April 2009, the Amphawa community has been voted as Thailand's most popular destination, chosen from a list of more than 300 possibilities, and by more than 15,000 people (Exploring Southeast Asia, 2009). The increase of visitors has had a big impact on the natural environment. This has raised an important concern for the proper environment management on the Mae Klong River.

Generally, the implementation of environmental management for tourism in Thailand has been undertaken through combined regulation and control, promotional measures, and educational campaign (UNESCAP, 2009).

This study determined major management issues on environmental regulations and control measures. Moreover, there are community issues regarding the need for educational measures to make the public aware of environmental conservation in tourism development as well as a proper domestic water utilization, and the collaboration of local stakeholders in tourism management.

Section 4.7b: Environmental regulatory and control measures

The basic regulations and controls that relate to tourism are stated in the Proclamation of the Enhancement and Conservation of the National Environmental Quality Act of B.E. 2535 (1992). This Act includes such measures as "the polluter pays" principle (tourism operators must hold themselves accountable for causing

environmental problems), designation of environmental conservation and protection zones (operations and activities in the area must not damage the environment), pollution control zones (areas are subject to strict anti-pollution measures), and special working groups (working groups have been appointed to solve problems in major destinations) (UNESCAP, 2009).

Actually, Thailand has a long history of protected area management. However, it is still a central government responsibility with little local participation. Thailand needs to make enforcement more effective because an inadequate enforcement is a serious problem which needs to incorporate better education of local people (World Bank, 2004). A couple of examples of ineffective and inadequate enforcement in the environmental management in Thailand are discussed below.

It has been estimated that the country loses about 5-20 meters of shoreline each year due to coastal erosion from human activities, including the construction of breakwaters, jetties, groins, sea walls and deep-sea ports. Even though coastal protection structures have been built by the Marine Department, the problem still exists (Wipatayotin, 2008).

Also, Samut Songkhram Province has launched certain regulations pertinent to proper management of the Mae Klong River throughout the province. For instance, the motorboat pilots are required to reduce engine noise which frightens away the fireflies. Additionally, there is the consideration to allow motorboats to run only on the Mae Klong River and not in the canal for several reasons. Often they get mixed up with small paddling boats, cause many environmental problems and require a lot of energy consumption. To this day, this idea to replace the motorboats with paddle boats is still being disputed. A local resident agreed with the idea of decreasing the number of motorboats in the canal as suggested by the Governor of Samut Songkhram Province, Mr. Opas Savetmanee, as they go too fast and make the sailing of paddle boats difficult. However, a motorboat owner disagreed because he stated it is his source of income. Moreover, many merchants prefer the rapidness and passenger load capacity of the motorboats (MCOT News, 2008).

Section 4.7c: Promotional measures to the public awareness of environmental conservation in tourism

The knowledge of tourism comes from experience, guides and the government's tourism awareness program (Cole, 2006). Raising awareness among local people and tourists on the importance of preserving nature and the local way of life is necessary in the management of tourism in Mae Kong River.

The ICOMOS International Cultural Tourism Charter (2002), an international body concerned with the conservation of the world's cultural heritage, reiterates the importance of public awareness in heritage conservation. The Charter states that the host community and visitors should understand the community's heritage and culture first hand. This can be done by such activities as providing a narrative of historical development for visitors to appreciate heritage significance; presenting the natural

and cultural heritage significance with appropriate forms of education, media, technology and personal explanation of historical, environmental and cultural information; presenting the high level of public awareness for the long term survival of natural and cultural heritage; and presenting not only the diversities of the area and the host community but also the minority of different cultural values (ICOMOS, 2002).

According to UNESCAP (2009), TAT plays an important role in making the public aware of environmental conservation in tourism. These public relations are conducted via mass media (radio, television, newspapers and magazines), the TAT publications, such as 'Anusarn Or-Sor-Tor' (TAT Travel Magazine), and 'Chulasarn Karn Thongthio' (Tourism Review). Additionally, some special campaigns in clean-up activities have been launched, such as 'the Beautiful Muang Khon' (Beautiful City of Nakhon Si Thammarat), 'Beautiful Phuket' (Beautiful City of Phuket), 'Ko Lan Environmental Campaign' (Lan Island in Pattaya), and 'Love Umphang, Love Nature' (Project in Tak Province) (UNESCAP, 2009).

In Thailand, there is also the initiative to raise environmental awareness through the Seven Greens project as developed by TAT (Table 59). It involves collaboration of all tourism stakeholders which includes state agencies, private tourism operators, tourism-related service providers, as well as public and non-governmental organizations, communities, media representatives and individual tourists both Thai and foreign (TAT, 2009).

Table 59 TAT's Seven Greens Program

No.	Name of Concept	Cooperative framework
1	Green Heart	To urge tourists to be socially responsible and environmentally aware as well as to be part of global efforts to help protect and preserve the environment at all tourist attractions
2	Green Logistics	To encourage more environmentally-friendly tourism-related modes of transport to minimize direct and indirect environmental impact
3	Green Destinations	To promote responsibly managed tourist sites that respect the environment
4	Green Communities	To support community-based tourism in both urban and rural areas that place greater importance on responsible tourism management, and that also promote conservation of the environment, local traditions and ways of life

5	Green Activities	To promote tourism activities that are well-suited to local communities. These provide visitors with engaging and culturally-enriching experiences without compromising the integrity of the environment. This includes taking carrying capacity into proper consideration.
6	Green Service	To urge all tourism-related service providers to create positive first impressions for visitors, and to win hearts and minds by attaining higher quality assurance standards whilst demonstrating respect, care and concern for the environment
7	Green Plus	To encourage Corporate Social Responsibility (CSR) among operators by encouraging them to give back to the communities in which they operate. For example, by refraining from undertaking any acts that might cause environmental damage. It also includes seeking their active participation in various activities and seeking their support for tourism business operators, manufacturers and organizations that promote energy-saving initiatives or develop renewable energy sources and environmentally-friendly products

Source: TAT, 2009

Presently, TAT is trying to encourage local people to protect and preserve their motherland's tourism resources. TAT is working with strategic partners to promote conservation and environmental education and awareness campaigns such as the Campaign called 'Keep Thailand Beautiful' (TAT, 2009).

In Samut Songkhram Province, there are eco-tourism tours which cultivate awareness, such as the homestays and trips arranged by REST (Responsible Ecological Social Tours) at the Homestay Baan Song Thai Plai Pong Pang in the Amphawa community. The homestay in Amphawa won a TAT award for keeping its environment in balance (Cornwel, 2009).

From the survey data collected in this study, only 42% of the respondents claimed that they have knowledge on the sustainable use of natural resources of the Mae Klong River (Table 60). Therefore, there seems to be a need to provide more environmental awareness as well as cognitive information about the River.

Table 60 Interest in sustainable use

Item	Number of Respondents	%
Do you have any knowledge on the sustainable use of natural resources in the Mae Klong River?: (n = 301)		
No	175	58.1
Yes	126	41.9
Item	Number of Respondents	%
Are you interest in the sustainable use of natural resources in the Mae Klong River?: (n = 301)		
Yes	226	75.1
No	75	24.9
Item	Number of Respondents	%
Why do you want to learn more about the sustainable use of natural resources in the Mae Klong River?: (n=226)		
So I can help in the conservation of natural resources.	126	55.8
I want more knowledge.	41	18.1
It will create a higher quality of water in the Mae Klong River.	39	17.2
If the Mae Klong is clean and has a higher quality of water, it will lead to a higher economical value.	16	7.1
Conservation needs more and more cooperation from the community and I want to participate.	4	1.8

Section 4.7d: Educational measures

According to Pyakuryal (2000), the legislation alone cannot empower people. They need an enabling environment through education, motivation, empathy and support from professional organizations (Pyakuryal, 2000 in Akama & Kieti, 2007). Thailand needs to incorporate better education of the protected area management (World Bank, 2004). Actually, there is instruction provided for tourism personnel for development in Thailand through lectures for students, guides, government servants, monks, receptionists, food service personnel, drivers, boatmen, and vendors; conferences and seminars on tourism issues (i.e. the seminar on the impacts of tourism on the coastal resorts in Phuket and Pattaya); and studies on the impacts of tourism (i.e. The impact of tourism on Thai society and culture in Chiang Mai, trekking tours, and the carrying capacities of Samui, Krabi, Phi Phi, and Lan Islands)

(UNESCAP, 2009). Furthermore, Thailand has developed significant research, but it tends to be implemented in an uncoordinated manner. Moreover, there is a disconnection between researchers, government and local communities. This leads to the lack of utilization of research findings in designing policies and projects (World Bank, 2004).

Results from the interviews in this study revealed that the above mentioned environmental training and seminars did not actually reach every community household. Out of 301 respondents, 86% did not receive any training on river conservation which was provided by the Municipality or from any other related parties (Figure 60). This indicates the lack of collaboration on the part of the relevant parties in ensuring access to these training opportunities by the relevant stakeholders.

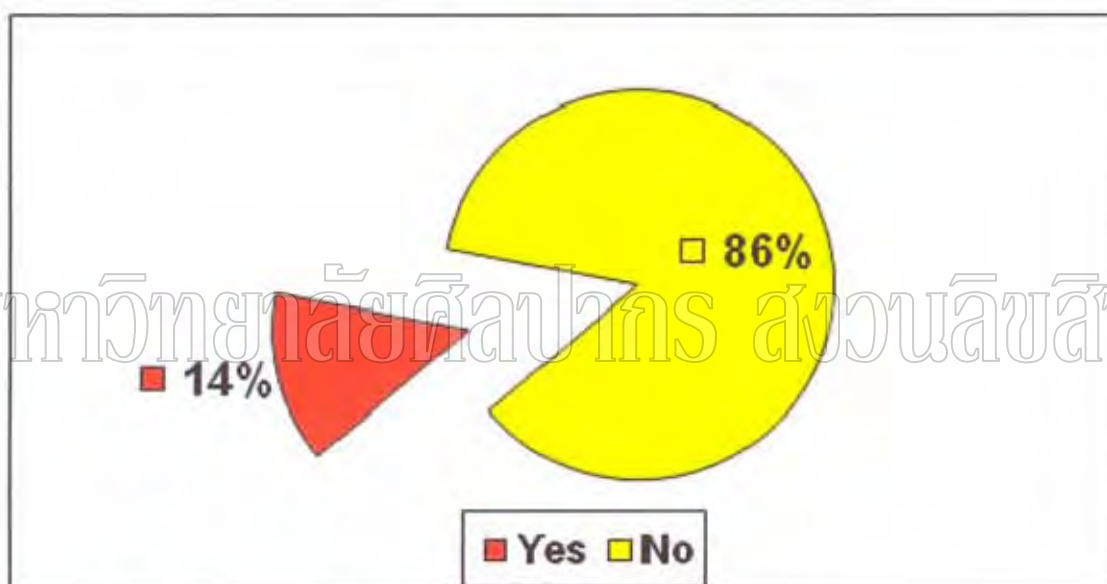


Figure 60 Environment training & seminars

Samut Songkhram employees of government and certain private entities need training development in various fields. According to the NSO's report (2008), among the 1,311 employees in the Province, 731 employees need training in the field of home economics (56%), followed by industrial techniques (23%), computer skills (17%), commerce (2%), management (1%), and arts & crafts (1%) respectively (Table 61).

Table 61 Number of employees in Samut Songkhram Province that need training development (Grouped by courses needed)

Ranking no.	Needed courses	Number of employee	%
1	Home economics	731	56
	<i>Food and nutrition</i>	482	
	<i>Beauty</i>	122	
	<i>Sewing</i>	128	
2	Industrial technician	309	23
	<i>Electrician</i>	234	
	<i>Builder</i>	75	
3	Computer Skills	217	17
	<i>Programmer</i>	217	
4	Commerce	24	2
	<i>Accounting & Banking</i>	24	
5	Management	16	1
	<i>General management</i>	16	
6	Art & crafts	14	1
	<i>Textiles & handmade items</i>	14	
	Total	1311	

Source: NSO, 2008 (http://web.nso.go.th/thai/cwd_ctr.htm)

These statistics indicate that the training courses that could directly support the tourism industry include arts and crafts training (textiles and handmade items) and management training (general management). However, only 1% under each training field was reported to be needed. Furthermore, environmental conservation and river management can be included as a major focus in the instruction on general management as this can help the training in the field of tourism management become more effective and efficient.

Governments (at the local, national, and regional levels) can promote the benefits of educational tourism programs, networks and groups of organizations across the education and tourism sector. Thus, marketing and regional development opportunities will be increased by which a mutually beneficial relationship can be developed between education providers and the tourism industry (Rohmy & Tahir, 2008).

Furthermore, universities can help in providing courses on tourism management. Krutwaysho (2008) studied about university curriculum development for tourism and hospitality in Phuket for both the 2001 and the 2007 terms, and suggested that it should incorporate depth and breadth of the specifications of the field. For instance, changing teaching directions: teach in English; offer more subjects with reference to sustainable development and management; focus on environmental and social responsibilities; push more cooperation with government and private sectors; provide greater access to international materials and publications in the university libraries;

provide courses on computer skills and information technology; provide more opportunities for staff and students to participate in international exchange programs; and finally, conduct a compulsory exit exam (Krutwaysho, 2008).

Section 4.7e: Water utilization and water saving

Thai people normally use water with less conservation awareness for water saving and quality. This has resulted in serious problems, such as water use conflict, water pollution, water shortages, floods, and droughts (Nitivattananon, 2005).

During the rainy season, there are large quantities of rain fall, but increasing populations are demanding more fresh water. Very little water is recycled in Thailand and less than one third of municipal districts have facilities for treating sewage. This is resulting in contamination of ground and surface waters which further increases the need to recycle water (Angloinfo, 2009).

From the interview, the re-use of water seems to be a very complicated method and new concept for this community. Out of 301 responses, 76% (229) of the respondents do not re-use water. However, only a minority of 24% actually knows how to re-use water (Table 62).

Table 62 Re-use of water in the community

Item	Number of Respondents	%
How do you re-use water in your household: (n = 301)		
Watering plants	60	19.9
Cleaning the floor	8	2.7
Washing the car	4	1.3
Do not re-cycle	229	76.1

However, the Energy Policy and Planning Office (EPPO) in the Ministry of Energy of Thailand, has launched a water saving campaign known as, "Divide by 2—Use Water Efficiently," to create public consciousness which will eventually lead to sustainable water behavior, based on the "Reduce, Avoid and Stop" concept. The campaign activities for festive and special events include 'Thanon Khon Rak nam' (Street of Water Conservation) in Chiang Mai Province, 'Water Conservation Street' in Phuket Province, and 'Preserve Water for the Future' in Bangkok (Thaienergynews, 2009).

Section 4.7f: Collaboration of stakeholder in tourism management

The tourism destinations can be managed more effectively through improved stakeholder collaboration. The benefits of stakeholder collaboration have been widely discussed in tourism management. There are multiple studies on tourism that suggest the enhanced understanding and mutual benefits generated among stakeholders will lead to better outcomes for the host community (Yodsuwan &

Butcher, 2008). Moreover, Swarbrooke (2000) also supported the idea that stakeholders in tourism should work together if they wish to develop a more sustainable tourism (Swarbrooke, 2000 in Yodsuwan & Butcher, 2008).

In Samut Songkhram Province, there are many government offices (Appendix U). However, in this research, the involvement of various stakeholders in tourism management includes only particular several government agencies (TAT, and Mae Klong Municipality), non-government agencies (the community leader, and people in the community), private sectors, and both business and non-business owners.

Section 4.7f (1) Government agencies

The local government is crucial in establishing tourism development policies (Bouquet & Winter, 1987; Perce, 1989 in Farahani & Musa, 2008). Mason (2008) states that the government should be involved in setting a coherent national strategy and creating a smooth implementation to address the concerns of various stakeholders.

In Thailand, the Ministry of Tourism and Sports has authority to promote, support and develop the tourism industry. The Ministry has several tourism networks through the government sectors (e.g. Tourist Police Division and Tourist Assistance Center), state enterprises, International agencies (e.g. World Tourism Organization), public sectors, private sectors (e.g. Tourism Council of Thailand), and business and non-business owners (MOTS, 2008). According to Kongrut (2001), the conservation master plan was pursued by the National Policy on Rivers and Canals Restoration to provide more protection to canals and rivers from runaway development. This master plan called for legal enforcement and action from state agencies in seven areas which includes an enforcement of land use and zoning policy; cultural heritage conservation; regulating communities along waterways; water quality treatment; promoting waterway transport for sustainable use; promoting public awareness of conservation through cultural events; and revising laws concerning canal and river management within various agencies. Finally, this master plan has become a general guideline for all projects and actions on rivers and canals. One of the chosen pilot sites is the Amphawa Canal, a popular tourist destination and a model of good cultural heritage conservation in Samut Songkhram Province (Kongrut, 2001).

Tourism Authority of Thailand (TAT)

The TAT is working in collaboration with all stakeholders in the Thai tourism industry countrywide in order to chart an appropriate course and clearly identify the individual roles and responsibilities. TAT also works together with partners in both the private and government sectors in order to ensure that the implementation of the initial phase is successfully completed during a three-year pilot period from 2008-2010 (TAT, 2009).

As TAT is the national tourism organization in Thailand, it recognizes the significance of positioning Thailand as an environmentally-responsible player on the world stage. Thus, the Thai tourism industry must voice strong support for global efforts to

minimize and offset the effects of global warming. Therefore, the TAT has recently launched environmentally-friendly and energy-saving tourism programs and travel packages designed to create as little negative impact on the environment as possible which is called the TAT's Green Initiatives for Thai tourism. Within these programs, the implementation of the Seven Greens concept has been launched in the seven areas which include Green Heart, Green Logistics, Green Destinations, Green Communities, Green Activities, Green Services, and Green Plus. Samut Songkhram Province has collaborated in this Seven Green concept. For example, the Amphawa Bike Ride, an environmentally-friendly bicycle tour, is in the Seven Greens concept of Green Logistics; Khlong Khlon Ecotourism Community Enterprise, Ban Bang Phlap Agrotourism Center, and Ban Hua Hat Tourist Center. Winners of the 2007 Thailand Tourism Awards for Community-Based Tourism are in the Seven Greens concept of Green Communities (TAT, 2009).

Mae Klong Municipality

The Mae Klong Municipality has played an important role in the local community. In the perception of 301 interviewees, the Municipality has helped them in cleaning the streets, teaching how to separate their garbage, providing garbage bags, conducting training, and carrying out some public relations for community cleanliness (Figure 61 & 62).

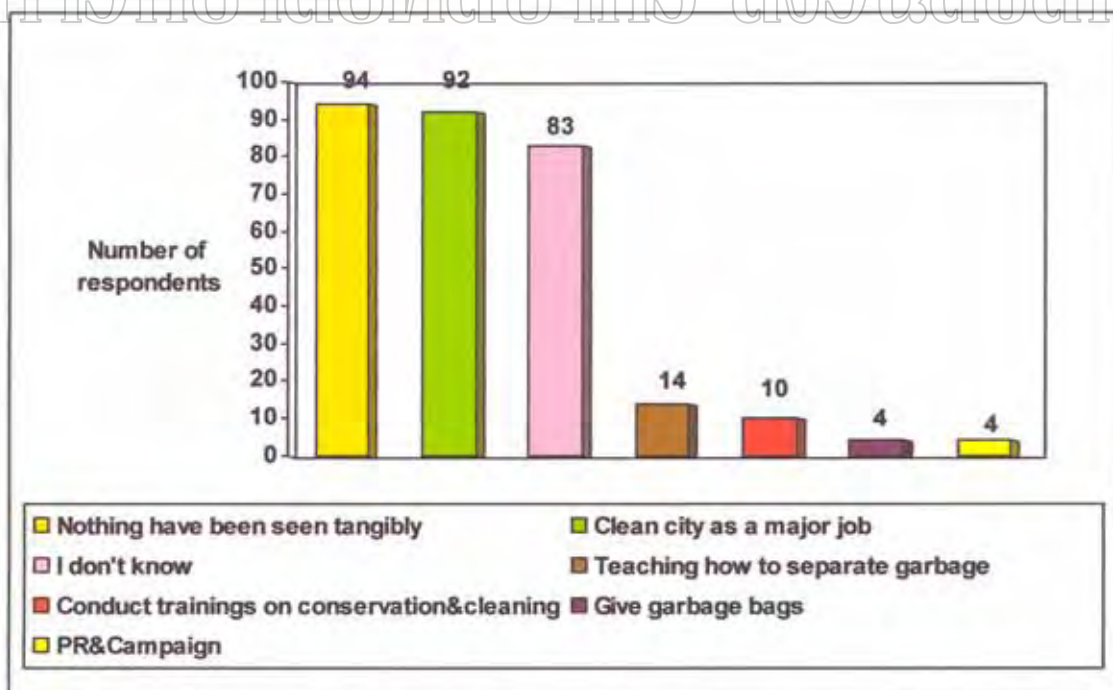


Figure 61 The role of the Mae Klong Municipality in natural conservation of the Mae Klong River



Figure 62 The Municipality has helped them in cleaning the streets

Source: Photo by Tungkavit Sutheero (2007)

In the present time, Mr. Somkiat Saengvanich is the Mayor of the Municipality. The Municipality has its own provincial vision which can be described in the following way: "A pleasurable city with an education center, social and quality of life, organic foods and fruits, sufficient economy, cultural conservation, local Thai wisdom preservation, good management and governance, transparency and fairness, and community involvement in city development". The Municipality is working closely with several community leaders, who in turn work with the community committees. The Municipality has also planned to increase the number of tourists by 3% per year and tourism revenue by 1.5% per year. Moreover, there is a policy to develop the province as the city of seafood and organic fruits and the city of eco-tourism focusing on canal tourism (Samut Songkhram Municipality, 2006).

However, among 301 interviewees, none of them has received a helping hand in the conservation of natural resources from any political party (Figure 63).

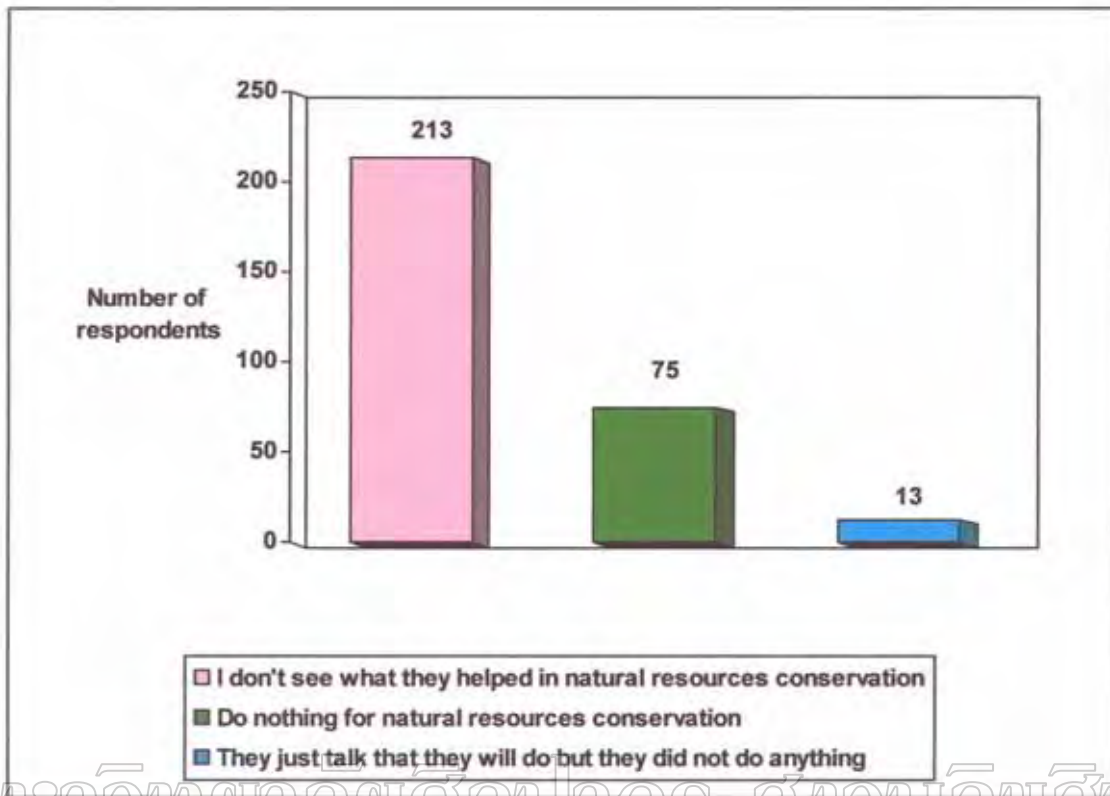


Figure 63 Role of political party in natural resources conservation of the Mae Klong River

Section 4.7f (2) Community leadership and civic groups

Community leader

The majority of the respondents knew their respective politically elected/nominated community leaders (Figure 64). About 58% of the respondents did not receive any advice on sustainable use of natural resources in the Mae Klong River from their community leaders (Figures 65).

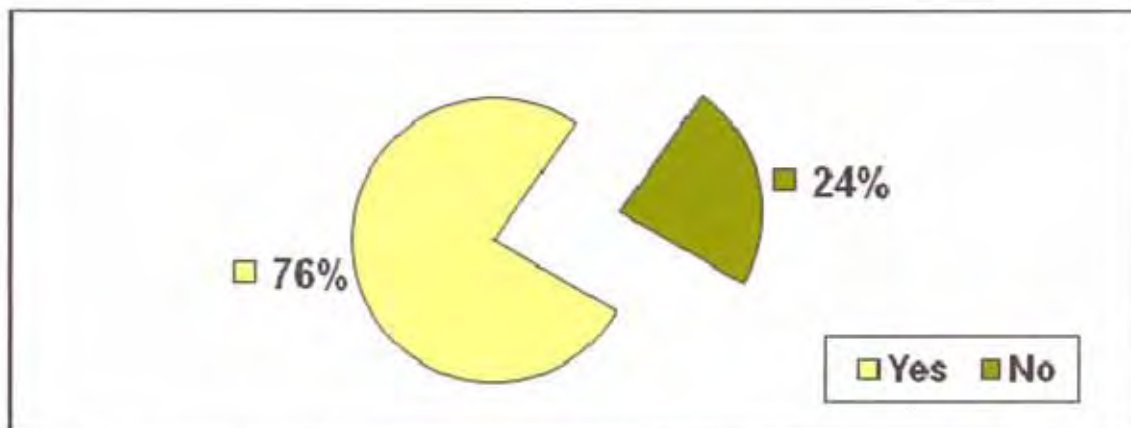


Figure 64 Percentage of respondents who know their local community leader

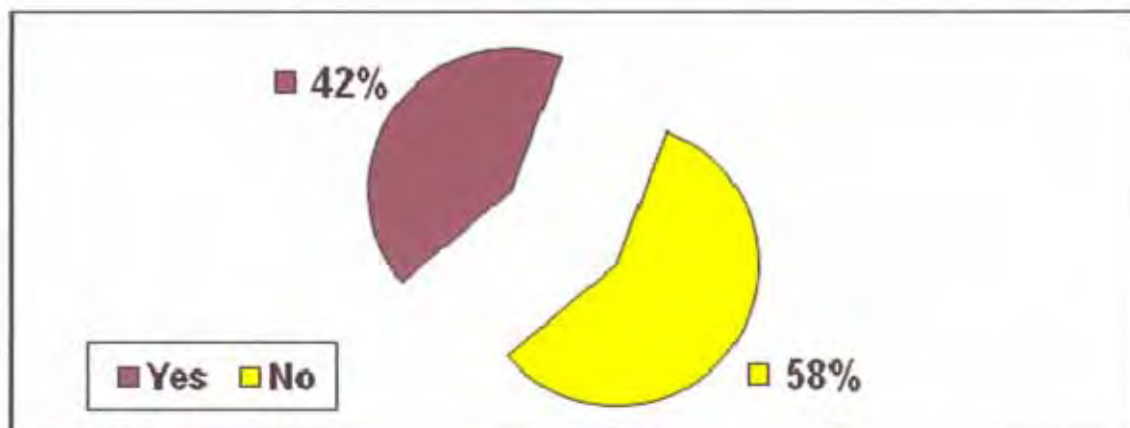


Figure 65 Percentage of respondents with information about sustainable use of natural resources from community leaders.

The researcher found that the community leaders among the 14 communities (refer to Appendix S) are actually a group of businessmen who have lived in the community for a long time. They know their communities very well as they were able to answer all the questions and give precise information when the researcher interviewed them on issues such as temples, community location, the Mae Klong River, and more. However, the researcher was told by people in the community that only a certain group of community members, especially the businessmen, could become a member of the community committees. Thus, the researcher could see a gap between the rich and the poor. This situation exemplifies the powerlessness of the poor who are usually cut off from having a voice in their community planning, whether in the area of politics or tourism (Sen, 1997 in Akama & Kieti, 2007). Sen (1997) also suggests that the more vulnerable groups, such as women and youth, need to be provided with an opportunity to gain access to economic opportunities and basic living conditions (Akama & Kieti, 2007).

However, the researcher found that there was a rising trend in the people's interest to participate to the conservation groups. Of the 301 respondents, 83% of respondents have an interest in persuading other people to become a member of a conservation group (Table 63).

Table 63 Interest in persuading other people in becoming a member of the conservation group

Item	Number of Respondents	%
If you are a member, would you be interested in persuading other people in becoming a member?: (n = 301)		
Yes	249	82.7
No	52	17.3

Item	Number of Respondents	%
Reasons to persuade other people in becoming a member?: (n=249)		
They are my friends.	122	49.0
We are from same family.	56	22.5
More people can help.	68	27.3
They are immediate relatives.	3	1.2
Item	Number of Respondents	%
Reasons not to persuade other people in becoming a member?: (n=52)		
No interest	37	71.2
No time	15	28.8

People in the community

The concept of community participation for sustainable tourism is widely discussed. Farahani & Musa (2008) proposed that for the sustainability of tourism development, future planning should consider the inclusion of local people (Farahani & Musa, 2008).

Fundamentally, local communities have a strong tradition of respect for wildlife and natural environments. And generally, local communities understand the importance of getting the right balance between what they can realistically rely on, and what natural resources they have to depend on, from generations of living in the area (Tsonis, 2008). In this study, people participation and level of real understanding of the implication of tourism development for sustainability are wanting.

According to Cole (2006), active local community participation or empowerment of locals is considered an essential step to ensure sustainable tourism development. The meaningful participation and empowerment cannot take place before a community understands what they are to make decisions about (Cole, 1999; Sofield, 2003 in Cole, 2006). An understanding of tourists and tourism is the first stage of empowering the local communities to make informed and appropriate decisions about their tourism development. The community participation is considered necessary to obtain community support and acceptance of tourism development projects, to ensure that the benefits relate to the local community needs, and to increase awareness and interest in local and regional issues. However, barriers include the lack of knowledge, confidence, time, interest, ownership, capital, skills, and ignorance (Cole, 2006).

Out of 301 responses, 178 people (59%) believe that they are the ones who play the most important role in natural resources conservation. They know the practical and simplest actions that they can participate in such as no littering in the river, conserving natural resources begins today, and teaching young people to conserve the use of the river (Figure 66-67).

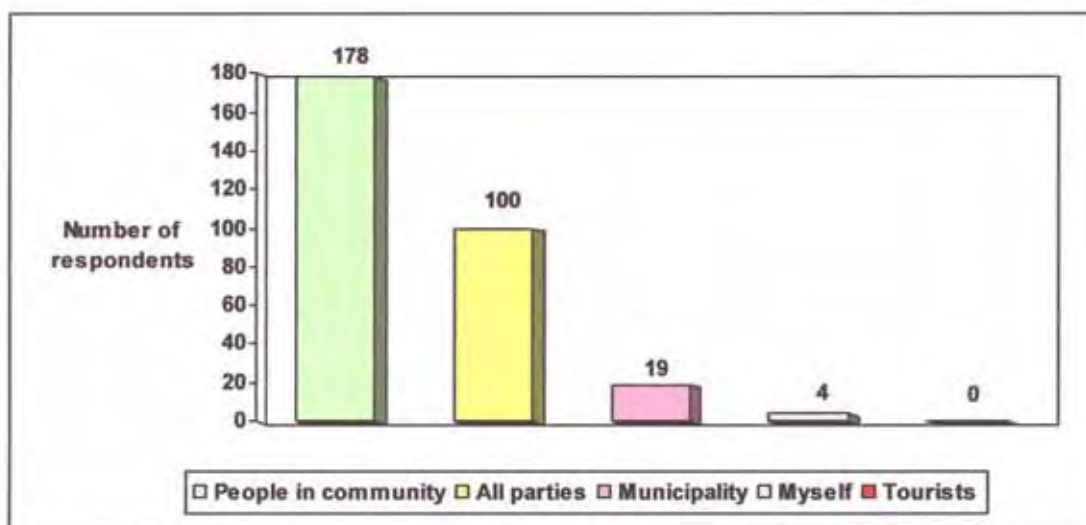


Figure 66 Group of people who play the most important role in any natural conservation in the community

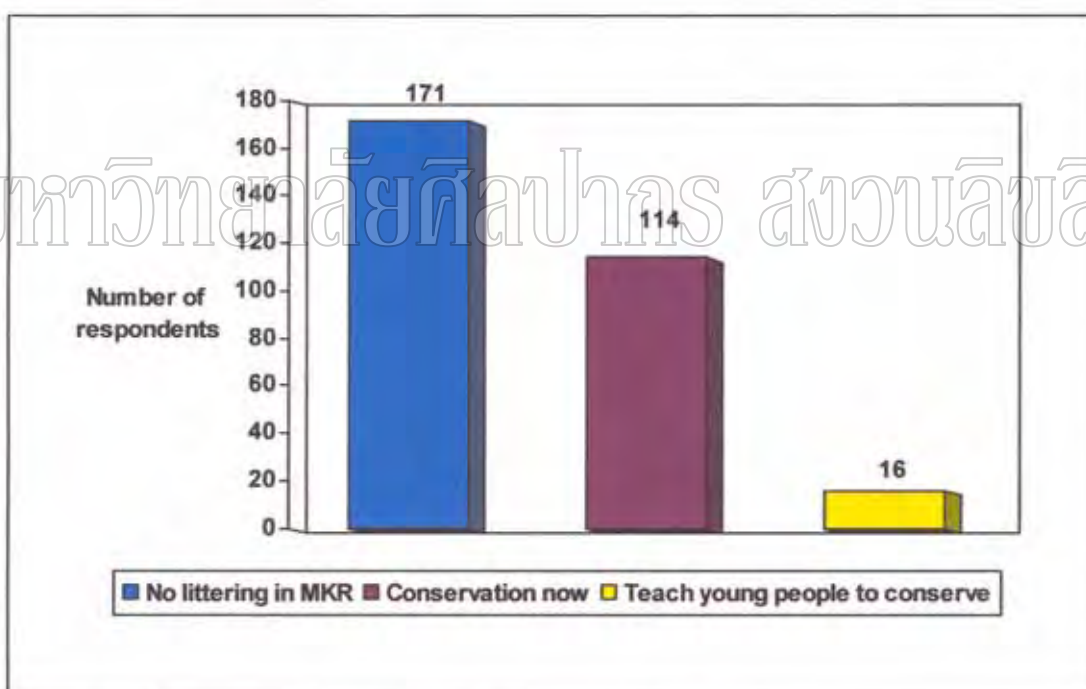


Figure 67 Activities that people in the community can help with

Thus, the sense of belonging is the most important for appropriate natural resource management because community members tend to protect their resources when they feel ownership of them. One important activity for the local people to be able to identify and solve problems is the setting up of a conservation group in each community. In Thailand, there are some communities that already have active members from those participating in the water management program, such as 'Muang Fai' (the community irrigation systems of the Ping River basin in Northern Thailand which runs without assistance from the government), 'We Love Tha Chin Club' (the Tha Chin River basin management which is headed by a group of monks, government

officials, industrial plant owners, businessmen, communities, and local people), and the Bang Pakong River basin management (Nitivattananon, 2005).

In Samut Songkhram Province, there are several conservation groups playing a significant role in natural and cultural conservation. One of them is the Association of Love Mae Klong or namely in Thai '*Pra-chakom-khon-rak-Mae-Klong*'. The leader of this association is the Chairman of Mae Klong Chamber of Commerce (Mr. Surajit Chirawet) who is working pro-actively and aggressively to conserve the Mae Klong River. This Association has collaborated with the government agency namely the Office of the National Human Rights Commission of Thailand for the project of rehabilitation of three water management (NHRC, 2009).

However, only 114 people (38%) recognized the Association of Love Mae Klong (Figure 68). This indicates that the active participation, much less collaboration, is not yet happening on a significant level between the local people and this Association. Thus, it is a very important step to convince the local people that they should participate in co-managed conservation efforts in order to gain economic incentives. Furthermore, it is also important for community members to have a clear understanding of intra-community dynamics and perceptions of external groups, in order to design appropriate strategies for co-management or community-based conservation (Horowitz, 2008).

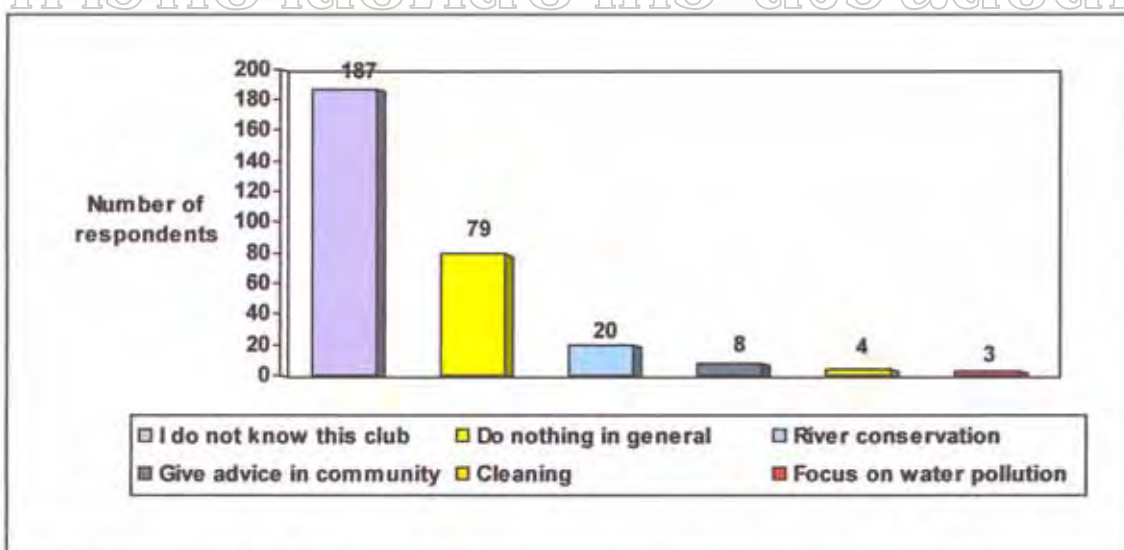


Figure 68 Role of Mae Klong's Lover Community in any natural conservation practice of the Mae Klong River

Summary:

The major findings of this study are:

A. Socio-demographic profile

- More females (56%) participated in the study and they appeared to be more interested in expressing their opinions about the research topic.
- Respondents aged 40 years old and above, seemed to be relatively more cooperative than respondents belonging to the lower age groups.
- The most household is an extended family unit consisting of blood relatives of the family core. Nearly 90% of households were comprised of 3 to 5 members, or an average household size of 4 individuals.
- The head of the family/household (usually males) was the main source of information in this survey, although the females/wives tend to be more vocal than the rest of the household members.
- All the respondents (except the homemakers and college students) are employed either in the private or government sector, a few are self-employed. The majority of participants (43.9%) are casual or contractual employees in the manufacturing sector (e.g. fish sauce manufacturing, fish canning, plastic basket manufacturing). About 21.6% of the respondents are permanently employed. Some 31% of the respondents have the same occupation as their fathers or immediate forefathers. The majority (69%) of the respondents have taken jobs or a profession in a different field.

Positive issues

- All respondents are literate, the majority (43.8%) of whom have completed a secondary education (12 years of formal schooling).
- Some 71% of the respondents considered themselves as natives of the village because they were born and are currently residing there. Only 29% considered themselves immigrants, having changed residency in the recent past. Some 118 respondents (39%) stated that they have lived in their community for 31-40 years; and 23 (8%), for more than 50 years.

Negative issues

- The majority of occupations of the respondents are within the field of labor and manufacturing. This is because of the emergence of manufacturing factories in the study area.

- The majority of the respondents work in various places located near or adjacent to the River. Nearly 9% of the respondents work in facilities located right along the River, whereas 84.4% of the respondents work near but not directly along the River.

B. Community involvement

Positive issues

- The respondents residing along or close to the River were found to be knowledgeable and aware of the natural resources of the River. They declared that their linkage with the River is both material and non-material in nature.
- The majority (69.3%) of the respondents owns the land where they live, it was assumed that their concern for the River and the community as a whole is much greater than that of those who were merely renting their land or home (24%).

Negative issues

- The community involvement of the respondents in conservation and/or volunteerism in related efforts is not apparent in this study, even though they own their houses and land, and are residing near the Mae Klong River. Only 9 respondents claimed to be members of community-based groups/committees that are involved in environmental and village developmental projects.
- Lack of interest and time were the main reasons why the majority of the respondents could not join these groups. Thus, community involvement in the study area seems to be inaccessible to the greater majority of the population.

C. Natural resources-value and utilization

- The most common fish consumed in the nine communities are the short-bodied mackerel (55%), followed by bass (16%), and Nile tilapia (10%). Less consumed fish include gourami (5%), mullet fish (3%), climbing perch (3%), giant catfish (1%), and squid (1%). In addition to fish, molluscs are also a popular food source in the nine communities surveyed. These include mussel (32%), followed by ark shell (31%), tubeworm (16%), oyster (11%), freshwater snail (5%), and undulated surf clam (5%). The crustaceans consumed in the communities are mostly shrimps and crabs. The field observation and interview revealed that crustaceans, although harvested at subsistence level are dwindling in number and body size.

Positive issues

- The study revealed that the short-bodied mackerel has an iconic value and can be used a marketing emblem in the promotion of rural ecotourism in the area. Tourism can be a tool to the conservation of this native species as well as the

other aquatic resources of the Mae Klong River, which are currently threatened due to human-driven disturbances.

- The plants that are found in or adjacent to the River include the nipa palm, coconut, and mangrove along with various wetland vegetables (e.g. morning glory).

Boats are important means of travel along the Mae Klong River.

- Only 7% (22 respondents) own boats. And the majority (82%) owns only one boat. These boats are usually made from hard wood.
- There are 20% of the respondents in this study area are involved in the selling or vending of aquatic products (e.g. fresh/dried fish, molluscs, or crustaceans). Of those who sell fish, nearly 90% are small-scale independent vendors, i.e. they catch and sell the fish themselves at a retail price at the local markets.

Positive issues

- Only 14% claimed to have used or have been using the water from the Mae Klong River for domestic purpose; most of respondents preferred to collect water from a public tap.

Negative issues

- Swimming in the Mae Klong River used to be a very popular recreational activity, but this is seldom observed in recent times. The River is still used for other purposes, such as bathing, washing, and cleaning household utensils. The water-based activities, which can be allowed for safe recreational purposes are line fishing, leisure boating, and perhaps, jet skiing and in-water boat scooting.

D. Cultural value

Positive issues

- About 61% of the respondents has recognized the cultural value and associated symbolism of the Mae Klong River.
- This study listed 5 significant temples, which can be seen from the boat cruise along Mae Klong River. The temples are relatively small, but they are all colorful and intricately designed. The presence of the temples along the River could add value to the tourist experience.
- Many of the residential houses in the study area are made of wood and/or a combination of wood and cement. The majority of the respondents (47%) said the houses are relatively old, having been built 20-50 years ago.

- Many of the local residential houses along the River are either in disrepair and/or have been abandoned. Some 35.5 % of the respondents said that only a few houses have been refurbished or re-modeled. This indicates that the sampled communities have maintained a traditional rural setting along the River. The set up also represents the economic or social status of residents, although the poorer populace seems to be more dominant.
- The majority felt that the water quality of the River has to be restored and the traditional cultural practices be revitalized not only for the sustainability of the cultural identity of the local communities but also for long-term economic and ecological benefits.
- About 70% of the respondents were found to be familiar with at least one traditional Thai song that is linked to the River and/or nature. Since these songs may still be heard over local radios, the potential to revive the appreciation for the River is great and should be considered as a step forward in the proper management and/or rehabilitation of the River for tourism.

Negative issues

- There are 30% of respondents expressed their belief in the Goddess of the River.
- Only 22% of respondents expressed appreciation of the aesthetic value of the Mae Klong River due to the polluted state of the River, whereby swimming was perceived as unsafe, as well as the decline of aquatic animals including fireflies.

E. Educational value

Positive issues

- The 239 respondents (80%) felt good or satisfied with the locally based aquaculture venture because it provides them with economic revenue. However, the respondents are faced with a dilemma since 85% of them also believed that uncontrolled construction of bass pens in the River could lead to further degradation of water quality for sustainable aquaculture as well as the loss of the natural aesthetic appeal of the River.

Negative issues

- The majority of the respondents (73%) are either unaware of and/or have very little information about the history of the Mae Klong River. The rest of the respondents (27%) have limited knowledge of the place.
- The educational value of the Mae Klong River was perceived by only 7% of the respondents. The low public awareness of the value of natural heritage including the valuable services and goods they provide to humanity is very alarming.

F. Prospect of tourism development-issues and concerns

Positive issues

- About 73% of the respondents expressed interest in seeing tourism developed in the study area; they were hoping to have one similar to the tourism activities in Amphawa where the floating market is well known in the country and very popular to international tourists. The main reasons for agreeing to tourism development are as follows: tourism will generate supplementary income to the local community (39.7%), there will be an added tourist attraction (34.7%), and it will make the province more well-known (10.5%). Economical reasons were high on the list. On the other hand, 27% of the respondents were neither interested in nor in disagreement with the idea of developing any form of tourism attractions in the area. They claimed that it was not possible to duplicate Amphawa in Mae Klong as these two rivers segments are different from each other.
- The majority of the respondents (97%) believe that the factories are a major source of pollution, and this can be a deterrent in pursuing a successful tourism development.
- The practice of religion, past and present, which is connected with the River, can be part of tourism attraction, and which the local communities can revitalize.
- Over 80% of the respondents claimed that it is not proper to dispose of domestic sewage and other domestic wastes into the River. Despite this, a minority (2.3%) stated that the River is an acceptable place to dispose of rubbish. Some of the houses along the river banks do not have a proper sewage tank; hence, all kitchen and bathroom water from washing is drained into the River.
- Some 75% of respondents have an interest in the sustainable use of natural resources in the Mae Klong River with reasons mainly involved with natural resource conservation and conservation cooperation.

Negative issues

- One of the socio-economic issues in the study area is the low level of understanding regarding the long-term impact of pollution, and subsequently, their lack of ability to solve the problem. For instance, only 22 respondents, (7.3%) of the respondents would actually take action if they saw others polluting the River, although they claimed that they were "ashamed" or "uncomfortable" when they see the River being polluted by other residents.

G. The role of government and non-government organizations

Positive issues

- There are 91.4% of the respondents agreed with the government's policy on penalizing river polluters. However, 8.6% of the respondents, disagreed with this punitive policy.
- The majority of local residents (275 respondents) would want the River to remain clean and would like the government to implement the waste management regulation.
- Only 42% of the respondents claimed that they have knowledge on the sustainable use of natural resources of the Mae Klong River. Therefore, there seems to be a need for external organizations to provide more environmental awareness as well as cognitive information about the River.
- The Mae Klong Municipality has played an important role in the local community. In the perception of all respondents, the Municipality has helped them in cleaning the streets, teaching how to separate their garbage, providing garbage bags, conducting training, and carrying out some public relations for community cleanliness.
 - There was a rising trend in the people's interest to participate to the conservation groups. Of the 301 respondents, 83% of respondents have an interest in persuading other people to become a member of a conservation group.
 - There are 59% of the respondents believe that they are the ones who play the most important role in natural resources conservation. They know the practical and simplest actions that they can participate in such as no littering in the river, conserving natural resources begins today, and teaching young people to conserve the use of the river.
 - The sense of belonging is the most important for appropriate natural resource management because community members tend to protect their resources when they feel ownership of them.

Negative issues

- Only 40.2% were aware of the government regulations on proper waste disposal in the River. However, another 59.8% claimed that they need to be more aware and therefore need to be careful and vigilant.
- Results from the interviews in this study revealed that the above mentioned environmental training and seminars did not actually reach every community household. There are 86% did not receive any training on river conservation which was provided by the Municipality or from any other related parties. This

indicates the lack of collaboration on the part of the responsible parties in ensuring access to these training opportunities by the relevant stakeholders.

- The re-use of water seems to be a very complicated method and new concept for this community. There are 76% of the respondents do not re-use water. However, only a minority of 24% actually knows how to re-use water.
- None of the respondents have received a helping hand in the conservation of natural resources from any political party.
- The majority of the respondents knew their respective politically elected/nominated community leaders. But about 58% of the respondents did not receive any advice on sustainable use of natural resources in the Mae Klong River from their community leaders.
- Only 38% recognized the Association of Love Mae Klong. This indicates that the active participation, much less collaboration, is not yet happening on a significant level between the local people and this Association.

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CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is comprised of two sections. The first section presents the summary and conclusions of this research. The second section discusses some recommendations for tourism management. A summary list of the major findings of this study is presented at the end of Chapter 4.

SECTION I: SUMMARY AND CONCLUSIONS

This study was conducted to determine the natural and cultural heritage values of the downstream section of the Mae Klong River, to determine if the natural and cultural resources of the River are being used by the local communities sustainably, to assess the local environmental issues (natural, cultural, social, and political) in the context of sustainable tourism, and to provide recommendations for the successful management of the Mae Klong River for sustainable tourism.

This research was built on both primary and secondary data. The primary data were collected from field observations, assisted questionnaire survey, and follow-up interviews. The secondary data were obtained from various sources such as statistical reports, published official reports, scientific articles from academic journals and pertinent websites, newsletters, pamphlets/brochures, and books. The majority of site-specific data were obtained from the annual official reports of the Samut Songkhram (Mae Klong) Municipality. Additionally, the lyrics of the traditional songs about the Mae Klong River were directly obtained from people who are familiar with the songs as well as from the internet and Thai song books. The past historical use of the River as recollected by elder members of the communities was also recorded.

Natural heritage features

The Mae Klong River is a significant natural heritage area in Samut Songkhram Province. The biodiversity of the Mae Klong River includes not only the aquatic and wetland resources but also the agricultural products grown along the riverbank. One of the most popular natural heritage sites in the Province is the Don Hoi Lot wetland/mudflat. It is an internationally recognized wetland and inscribed as a Ramsar site because of its outstanding conservation value for wetland birds. The site is the only habitat within Samut Songkhram Province where large populations of razor clams can be found.

The other natural heritage features of the Mae Klong River within the province of Samut Songkhram are as follows:

Mangrove forest:

The mangrove resources have economic and ecological values. They provide timber and non-timber forest products, such as shrimp, crabs, and molluscs.

Mangrove palm:

Also known as the nipa palm, the mangrove palm is one of the most valuable native plants in the Province. This species can provide a range of raw materials for tourism products such as souvenir, and culinary items and decorative ornaments.

Tropical fruits:

The Province is well known for its tropical fruits, especially lychee, pomelo and coconut. The most availability period of lychee, pomelo, and coconuts are in April, in July to August, and in May to August respectively. These agricultural products are very popular to both domestic and international tourists.

Short-bodied mackerel:

This native species is the most iconic fish in the study area. The spawning area is during February to May. It is available at the local market. Its culinary flavor could be promoted in food tourism in the Province in general and in the study area in particular.

Seashell products (Molluscs):

The molluscs found in Samut Songkhram Province include the Green mussel, Telescope creeper, Ark shell, Horse mussel, Ridged Venus clam, Spotted Babylon, Tiger Moon, Tongue shell, Tubeworms (Worm shell), and Wedge shell (Bean clams). The tubeworm can be promoted as a brand in cultural tourism because of its uniqueness and interesting attributes. This study recommends that the tubeworm be considered a flagship species for nature-based tourism and marine conservation.

Crustaceans:

The crustaceans found in Samut Songkhram Province as well as in the Mae Klong River include the Banana prawn, Fiddler crab, Giant tiger prawn, Greasy-back shrimp, Lanchester's freshwater prawn, Mantis shrimp, Meder's mangrove crab, Mysid shrimp, and serrated mud crab. These species are interesting items in food tourism.

Mudskipper:

The mudskipper is an interesting 'amphibious' fish, which the locals and tourists find delightful to watch as it hops around the mudflats on sunny days from its burrow at low tide. Although not edible, it forms an important role in the ecological food chain within the estuary.

Riverine lizard:

Also known as water monitors, the riverine lizards are common sightings in the Mae Klong River. The water monitor lizard, because of its interesting features and the associated superstitious beliefs about it, can be a natural tourist attraction. The anecdotal stories about the lizard are interesting narratives for international tourists.

Cultural heritage features

The cultural heritage of the study area is rich and diverse. This study inventoried the heritage features of the area and assessed their potential to enrich not only tourism development but also the cultural pride and identity of the local communities. The following is a summary of the significant heritage features found in the study area:

Museums, old monasteries, and temples:

There are numerous temples and several local museums built in the Province. Out of the 200 temples built so far in Samut Songkhram Province, some 110 temples are still in good shape. Within the study area, 5 temples, of various sizes and colors, aligned the River bank. These temples are interesting tourist attraction while on a river cruise.

Historical and cultural landmarks:

Samut Songkhram Province has been a historical and cultural site since the Ayutthaya Period. The popular floating market of Thailand has also been a prominent landmark in the Province. Today, the floating market in Amphawa District is a major attraction. A small version of a floating market, if properly managed, can be established as a focal tourist attraction in the study area.

Festivals, customs, and traditions:

Major festivals that are held at Samut Songkhram Province throughout the year include King Rama II Memorial Festival, Lychee Fruit Festival, *Songnam Luang Por Ban Laem* Buddha Image & Worship Festival, *Tawan Ron at Don Hoi Lot & Kradarn Len* Racing Festival, Large White Pomelo (*Som O Kao Yai*) Fruit Festival, *Loy Krathong Sai Mae Klong*, Annual Longboat Racing in Loy Krathong Festival, *Khao Yee San* Annual Festival, and Mackerel Eating and Mae Klong Famous Products Festival (*Pla-tu* Fish Festival). These festivals are tourist attractions, which the study area can capitalize for tourism development.

Answer to research questions

The study aimed to determine some insights into three research questions concerning the natural heritage value and sustainable use of Mae Klong River. Data were derived from the analyses of the questionnaire survey results and field observations. The answers to these questions can provide some guidelines regarding the development of tourism in the study area. The research questions explored in the study are as follows:

- 1: The local communities are using the natural resources of the River sustainably.
- 2: The local communities, who value the River for its natural and cultural attributes, are aware of the proper management of the River.
- 3: The management and environmental issues of the Mae Klong River are complex.

1: The local communities are using the natural resources of the River sustainably

The River is used for various purposes, such as bathing, washing, and cleaning household utensils. These activities, if not properly regulated, can lead to irreversible damage to the River. The water-based activities, which may be considered for safe recreational purposes are line fishing, leisure boating, and perhaps, jet skiing and in-water boat scooting.

The 239 respondents (80%) felt good or satisfied with the locally based aquaculture venture because it provides them with economic revenue. However, the respondents are faced with a dilemma since 85% of them also believed that uncontrolled construction of bass pens in the River could lead to further degradation of water quality for sustainable aquaculture as well as the loss of the natural aesthetic appeal of the River. More the 80% of the respondents claimed that it is not proper to dispose of domestic sewage and other domestic wastes into the River. Despite this, 2.3% of the respondents thought that the River is an acceptable place to dispose of domestic rubbish as well as sewage; their houses are not equipped with proper septic tanks. The benefits from the River were acknowledged by the local communities, especially by groups (75%) interested in the sustainable use of natural resources in the Mae Klong River (Figure 69).



Figure 69 The benefits from the River were acknowledged by the local communities, especially by groups (75%) interested in the sustainable use of natural resources in the Mae Klong River

Source: Photo by Tungkavit Sutheero (2006)

2: The local communities, who value the River for its natural and cultural attributes, are aware of the proper management of the River.

The low public awareness of the value of natural heritage as provider of valuable ecological services and goods to humanity is very alarming. The educational value of the Mae Klong River was perceived by only 7% of the respondents. The study showed that residents living close to the River and those who own the land where they reside are more knowledgeable of the existing natural resources of the River. They declared that their linkage with the River is both material and non-material in nature.

Most of the respondents believed that they are the ones who should play a major role in natural resources conservation of the Mae Klong River. The majority felt that the water quality of the River has to be restored and that the traditional cultural practices should be revitalized not only for the sustainability of the cultural integrity of the local communities but also for long-term economic and ecological benefits (Figure 70).



Figure 70 Most of the respondents believed that they are the ones who should play a major role in natural resources conservation of the Mae Klong River.

Source: Photo by Tungkavit Sutheero (2006)

The majority of the respondents claimed that they need to be more aware and, therefore, more careful and vigilant regarding the proper use and management of the River. Although less than half of the respondents surveyed were aware of the government regulations on proper waste disposal, the majority of the respondents agreed with punitive measures for river polluters. There was an expressed interest among respondents (83%) to participate in various community-based projects including those on river conservation; however, empowerment and access to the benefits have yet to be realized. The sense of belonging is an important incentive for local people to undertake appropriate natural resource management because humans tend to protect their resources when they have a sense of ownership and responsibility for them.

3: The management and environmental issues of the Mae Klong River are complex.

The study found that the community, in general, has low level of understanding regarding the long-term impact of pollution, and subsequently, they do not have the capacity to address the relevant socio-environmental problems in the study area. For instance, only 22 respondents, (7.3%) of the respondents would actually take action if they saw others polluting the River, although they claimed that they were “ashamed” or “uncomfortable” when they see the River being polluted by other residents. The majority of the respondents (97%) believed that the factories located near the River are a major source of pollution, and this can be a deterrent in pursuing a successful tourism development (Figure 71).



Figure 71 The majority of the respondents (97%) believed that the factories located near the River are a major source of pollution.

Source: Photo by Tungkavit Sutheero (2006)

The respondents argued that the Mae Klong Municipality plays an important role in the management of the Mae Klong River and the surrounding basin. All respondents claimed that the Municipality's role include cleaning the streets, teaching people how to separate their garbage, providing garbage bags, conducting training, and carrying out some public relations for community cleanliness.

The majority of local residents would want the River to remain clean and would like the government to implement the waste management regulation. Therefore, there seems to be a need for other external organizations to implement environmental awareness strategies as well as to provide scientific information about the River. Results from the interviews in this study revealed that the environmental training and seminars conducted in the past did not actually filter into or reach the community households.

None of the respondents in the study had received any assistance or logistic support from any political party regarding the management and conservation of natural resources. Likewise, the majority of the respondents did not receive any advice from their community leaders on matters pertaining to the sustainable use of natural resources in the Mae Klong River. Only 38% of the respondents recognized the Association of Love Mae Klong, a community organization that advocates for the protection of the River. This indicates that the active participation, much less collaboration, is not yet happening at the local level. This also indicates the lack of collaboration on the part of the responsible agencies in ensuring access to these training opportunities by the relevant stakeholders.

Potential of tourism development at Mae Klong River

About 73% of the respondents expressed interest in seeing tourism developed in the study area: they were hoping to have one similar to the tourism activities in Amphawa where the floating market is well known in the country and very popular to international tourists. The main reasons for agreeing to tourism development are as follows: tourism will generate supplementary income to the local community (39.7%), there will be an added tourist attraction (34.7%), and it will make the province more well-known (10.5%). Economical reasons were high on the list.

SECTION II: RECOMMENDATIONS

The recommended strategies for the conservation and sustainable use of natural and cultural heritage of Mae Klong River are as follows:

Tourism planning and management

Tourism planning should incorporate the socio-cultural-economic and ecological aspects of the environment. Thus, an environmental management framework for sustainable tourism planning for specific tourist attractions, such as on firefly watching, can be developed. The framework that can be applied to the management of any form of nature-based tourism that links biodiversity with tourism. The framework should endeavor to improve one's understanding about the environment, the focal species and their interactions; promoting economic profitability without destroying or depleting the natural capital; implementation and monitoring of legislative and other control measures; enhancing tourist experience and knowledge; engaging the host community in planning and decision making; and conducting research through scientific enquiry on the technical and social implications of tourism on biodiversity conservation (Catibog-Sinha & Bushell, 2004).

The implementation of EIA or Environmental Impact Assessment should be considered. This EIA will help provide strategic ideas for the management plan, which includes a plan of action, project time frame in relation to conservation measures and carrying capacity, development and presentation guidelines, reinforcement of rules and regulations, and cultural rights consideration (Tourism, 2004).

It is necessary for the local community to decide and to agree which is the most appropriate and practical conservation management strategies suited for the Mae Klong River area. Examples of such strategies are establishing zones in and around some areas to maintain important habitats, regulate commercial use such as aquaculture as well as reduce water pollution from both domestic and industrial sources.

TAT can be pro-active in raising tourism standards by overseeing a system of certification for tour guides and other actors within the tourism industry. TAT should review its charter and adopt policies that will ensure environmental and economics sustainability as well as the protection for the country's biodiversity and its unique

ecosystems. Moreover, tour operators should have strong commitment to sustainable development, environmental conservation, cultural integrity and ethical business practices. Furthermore, tour guides should be trained in local ecology and cultural history, as well as in the environmental and social impacts of their activities.

Capacity building

The capability of the local stakeholders can be enhanced through formal and informal training as well as providing them opportunities to communicate and interact with each other on issues pertaining to tourism development and the sustainable use of the Mae Klong River. Enhancing the spirit of stewardship and responsibility among the members of the local communities is essential.

Training courses, especially for government and non-government representatives, on applied natural resources conservation, sustainable use, and sustainable development should be provided regularly not sporadically. The courses may incorporate subjects pertaining to the local environment and culture including local indigenous knowledge. The goals should include building capacity in natural conservation and raising awareness of sustainable use of natural resources. The local communities, especially tour operators, should receive training on how to run ecotourism business not only to generate economic revenue for the local community, but also to enhance their stewardship role for heritage conservation.

Exchanges program should be initiated for selected community members and/or community leaders. This may involve actual field trips/visits to some tourism model sites in various parts of the country to have insights on the proper management of natural and cultural sites for sustainable tourism.

Awards and small grants for deserving tour operators (as company or individuals, both young and adult, both male and female) will provide both material and non-material incentives to the industry. This can be the stimulus for creating a group of knowledgeable people who can serve as authoritative facilitators or trainers at the community level.

Public awareness

There is a need to discuss the significance of biodiversity, natural resources of Mae Klong River at the national and local levels. Local people need to be aware of the environmental impacts from unsustainable use (Figure 72). Information on the proper care and government regulations can be included in tourism brochures, the Municipality's newsletters, and other public for a being held at the community level. The Mae Klong Municipality should create mechanisms to motivate people in the community to be able to report the bad behaviors as well names of polluters.



Figure 72 The capability of the local stakeholders can be enhanced through formal and informal training as well as providing them opportunities to communicate and interact with each other on issues pertaining to tourism development and the sustainable use of the Mae Klong River.

Source: Photo by Tungkavit Sutheero (2006)

Research and Collaboration

Pertinent stakeholders should contribute to conservation and sustainable use of biodiversity of Mae Klong River. The TAT, the Central Government, Provincial Office, local Municipality, and other relevant policy makers must cooperate and work together harmoniously. As a group, they can propose to obtain financial and technical assistance from Regional organization, such as UNESCO, IUCN, and etc.

The colleges and schools in Samut Songkram Municipality can encourage students to do research of their hometown, especially based on environment and natural resources of Mae Klong River. The more they study and have knowledge of nature, the better they would realize the importance of the River.

There is an urgent need to establish a user-friendly biodiversity database of Mae Klong River on the website of Samut Songkram Province.

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มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

Appendices

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

Appendix A

The common wetland plants and animals found along the Mae Klong River, Samut Songkhram Province
Source: Mahidol University, 2004; OEPP, 1999; MOI, 2006; Thailand Freshwater Fish Information, 2005

No.	Common name (English)	Common name (Thai)	Scientific name	Found in
PLANTS				
1	Areca palm, Betel palm	"Mak"	Areca Cathecu	Samut Songkhram Province
2	Avicenniaceae Indian mangrove	"Samae-dam"	Avicennia officinalis	Mae Klong River & Don Hoi Lot
3	Bamboo	"Pai"	Genus bambusa	Samut Songkhram Province
4	Banana	"Kuay"	Genus Musa	Samut Songkhram Province
5	Betel pepper	"Pool"	Piper betle L.	Samut Songkhram Province
6	Bird pepper	"Prik Kee Noo"	Capsicum Frutescens	Samut Songkhram Province
7	Black mangrove	"Prasak"	Bruguiera spp.	Don Hoi Lot
8	Blue-green algae	"Sarai-see-kieow-kam-nam-gnen"	Cyanobacteria	Don Hoi Lot
9	Camachile tree	"Ma-kam-thet"	Pithecolobium dulce	Samut Songkhram Province
10	Chinese bitter cucumber	"Mara-chin"	Momordica charantia Linn.	Samut Songkhram Province
11	Chinese cabbage	"Phak kwang-tung"	N/A	Samut Songkhram Province
12	Chinese Kale	"Ka-naa"	Brassica alboglabra	Samut Songkhram Province
13	Citron	"Ma-now"	Citrus Medica	Samut Songkhram Province
14	Coconut palm	"Ma-prow"	Cocos Nucifera	Samut Songkhram Province
15	Cork tree	"Lampoo"	Sonneratia caseolaris	Samut Songkhram Province
16	Cowpea	"Tua Fak Yao"	Genus Vigna	Samut Songkhram Province
17	Crabapple Mangrove	"Lam-poo"	Sonneratia caseolaris	Mae Klong River
18	Cucumber	"Tan-kwa"	Genus Cucumis	Samut Songkhram Province
19	Garlic	"Kra-tiem"	Genus Allium	Samut Songkhram Province
20	Golden leather fern	"Prong-talay"	Acrostichum aureum	Mae Klong River
21	Grape white malaga	"R-goon white malaga"	N/A	Samut Songkhram Province

22	Guava	"Farang"	Psidium Guejava	Samut Songkhram Province
23	Jujube	"Pus-sar"	Genus ziziphus	Samut Songkhram Province
24	Lemongrass	"Ta kai"	Cymbopogon flexuosus	Samut Songkhram Province
25	Lichee	"Lin-chee"	Litchi chinensis	Samut Songkhram Province
26	Longan	"Lam-yai"	Euphoria longana	Samut Songkhram Province
27	Luffa	"Buab"	Luffa cylindrical	Samut Songkhram Province
28	Mango	"Ma-muang"	Mangifera Indica	Samut Songkhram Province
29	Mangrove	"Kon-kang"	Genus Rhizophora	Samut Songkhram Province
30	Mangrove Palm (Atap Palm)	"Ton Chak"	Genus Nipa (Nypa fruticans)	Samut Songkhram Province
31	Mangroves of Andaman	"Kong-kang-bai-lek"	Rhizophora apiculata	Mae Klong River & Don Hoi Lot
32	Mind Chewing Tobacco	"Yajeed"	N/A	Samut Songkhram Province
33	Multiply Onion	"Ton hom (Hom-Beng)"	Aliumcepa var aggregatum	Samut Songkhram Province
34	Orange	"Som"	Citrus plants	Samut Songkhram Province
35	Papaya	"Mar La Gor"	Carica Papaya	Samut Songkhram Province
36	Paper-gum	"Samed"	Melaleuca cajuputi Powell	Samut Songkhram Province
37	Parsley	"Pak-chee"	Genus Petroselinum	Samut Songkhram Province
38	Plum mango (Gandaria)	"Ma-prang"	Anacardiaceae	Samut Songkhram Province
39	Pomelo	"Som-O"	Citrus grandis	Samut Songkhram Province
40	Portia tree	"Poh-talay"	Thespesia populnea	Mae Klong River & Don Hoi Lot
41	Pumpkin	"Fuck Thong"	Genus cucurbita	Samut Songkhram Province
42	Red algae	"Sarai-see-daeng"	Rhodophyta	Don Hoi Lot
43	Reed	"Kok"	Sedge genus cyperus	Samut Songkhram Province
44	Rhizophoraceae Asiatic mangrove	"Kong-kang-bai-yai"	Rhizophora mucronata	Mae Klong River & Don Hoi Lot
45	Rice	"Khao"	N/A	Samut Songkhram Province
46	Rose apple	"Chom-poo"	Genus Eugenia	Samut Songkhram Province
47	Santol (wild mangosteen)	"Gra-torn"	Sandoricum Indicum	Samut Songkhram Province

48	Sapodilla	"La Moot"	N/A	Samut Songkhram Province
49	Sea blite	"Cha-kram"	Genus suaeda	Samut Songkhram Province
50	Sea Holly	"Nguak pla-mor-dok-khao"	Acanthus ebracteatus	Mae Klong River
51	Sugarcane	"Aoy"	Saccharum Officinarum	Samut Songkhram Province
52	Swamp morning Glory	"Phak-bung"	Ipocaea Aquatica	Samut Songkhram Province
53	Sweet basil	"Kra-prao"	Genus ocimum	Samut Songkhram Province
54	Sweet corn	"Khao Pode-wan"	N/A	Samut Songkhram Province
55	Turmeric	"Kamin"	Genus curcuma	Samut Songkhram Province
56	Water hyacinth	"Pak tob-chawa"	Genus Eichhornia	Samut Songkhram Province
57	Water hyacinth	"Pak tob-chawa"	Eichornia crassipes	Mae Klong River
58	Wax gourd	"Fuck keow"	Benincasa hispida	Samut Songkhram Province
59	White mangrove	"Samaedum"	Avicennia officinalis	Samut Songkhram Province
60	White mangrove	"Samae-khao"	Avicennia alba	Mae Klong River & Don Hoi Lot
61	Yam bean	"Monkaew"	Pachyrhizus erosus	Samut Songkhram Province
	<u>AQUATIC ANIMAL</u>			
1	Armed spiny eel	"Pla krating"	Mastocembelus armatus	Mae Klong river
2	Asian redtail catfish	"Pla kod Lueng"	Hemibagrus nemurus	Mae Klong River
3	Bagarius, sisorid, catfish	"Pla kae (Pla tuk-kae)"	Bagarius bagarius	Mae Klong river
4	Barred Siamese catfish	"Pla kod-hin (Pla kayeng-hin)"	Leiocassis siamensis	Mae Klong river
5	Batrachian walking catfish	"Pla duk"	Ciarias batrachus	Samut Songkhram Province
6	Black catfish (Black diamond)	"Pla kod-dam"	Mystus wyckii	Mae Klong river
7	Blotched Snake-head	"Pla kasong"	Channa Lucius	Mae Klong river
8	Blue-stripped catfish	"Pla kayen-kan-lai"	Mystus vittatus	Mae Klong river
9	Bocourt 's river catfish	"Pla kayeng thon"	Heterobagrus Bocourti	Mae Klong river
10	Catfish	"Pla Kayaeng"	Mystus mysticetus	Samut Songkhram Province
11	Catfish	"Pla kod talay"	Tachysurus sp.	Mae Klong River
12	Catfish	"Pla duk oui"	Ciarias macrocephalus	Mae Klong river
13	Climbing perch	"Pla mor thai"	Anabas testudineus	Mae Klong River

14	Common carp	"Pla nai"	Cyprinus carpio	Samut Songkhram Province
15	Common Carp	"Pla nai"	Cyprinus carpio	Mae Klong river
16	Common freshwater-pipefish	"Pla jim fun jorake"	Microphis boaja	Mae Klong River
17	Common Sheatfish	"Pla nam-gnen"	Kryptopterus apogon	Mae Klong river
18	Common silver barb	"Pla Tapien"	Barbodes gonionotus	Samut Songkhram Province
19	Common silver barb	"Pla tapien khao"	Barbodes gonionotus	Mae Klong River
20	Crustacea--Banana prawn French	"Kung share-buay"	Penaeus merguensis	Samut Songkhram Province
21	Crustacea--Fiddler crab	"Poo kram dab"	Uca vocans	Samut Songkhram Province
22	Crustacea--Giant tiger prawn	"Kung kula-dam"	Penaeus monodon	Samut Songkhram Province
23	Crustacea--Greasy-back shrimp	"Kung takard-hin"	Metapenaeus ensis	Samut Songkhram Province
24	Crustacea--Lanchester's freshwater prawn	"Kung Foi"	Macrobrachium lanchesteri	Samut Songkhram Province
25	Crustacea--Macrobrachium	"Kung kram kam"	Macrobrachium rosenbergii	Mae Klong River
26	Crustacea--Mantis shrimp	"Kang"	Enaeus monodon fabricius	Samut Songkhram Province
27	Crustacea--Meder's mangrove crab	"Poo samae"	Sesarma mederi	Samut Songkhram Province
28	Crustacea--Mysid Shrimps	"kung khoei"	Mysidopsis bahia	Samut Songkhram Province
29	Crustacea--Serrated mud crab	"Poo talay"	Socylla serrata	Samut Songkhram Province
30	Crustacea--Shrimp	"Kung"	Enaeus monodon fabricius	Samut Songkhram Province
31	Edible jellyfish	"Meng kra-prun-nang"	Rhizostomaeae	Don Hoi Lot
32	Eye-spot barb	"Pla kra-soop-jud"	Hampala dispar	Mae Klong river
33	Fire jellyfish	"Meng kra-prun-fai"	Physalia physalis	Don Hoi Lot
34	Giant carp	"Pla kraho"	Catlocarpio siamensis	Mae Klong river
35	Giant snakehead fish	"Pla chado"	Channa micropeltes	Mae Klong river
36	Goby	"Pla Bu"	Glossogobius giuris	Samut Songkhram Province
37	Gourami	"Pla kra-dee"	N/A	Mae Klong river

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38	Great white sheatfish	"Pla kao khao"	Wallagonia attu	Mae Klong river
39	Greater black shark	"Pla ka"	Morulus chrysophekadion	Mae Klong river
40	Greater brook carp	"Pla vien"	Tor tambroides	Mae Klong River
41	Greenway barb	"Pla kee-york (Pla ta-sai)"	Mystacoleucus greenwayi	Mae Klong river
42	Grey featherback, knife fish	"Pla salard"	Notopterus notopterus	Mae Klong river
43	Gunther's walking catfish	"Pla duk oui"	Clarius macrocephalus	Mae Klong River
44	Hérons, Egrets and Bitterns	"Nok yang"	Genus Egretta	Samut Songkhram Province
45	Java Tilapia	"Pla Mor Tet"	Oreochromis mossambicus	Samut Songkhram Province
46	King ragworm	"Mae prieng-talay"	Neanthes sp.	Don Hoi Lot
47	Long whiskers catfish	"Pla e-kong"	Mystus gulio	Mae Klong River
48	Long-fatty finned Mystus	"Pla kayeng baikhao"	Mystus cavasius	Mae Klong river
49	Marbled sleepy goby, Sand goby	"Pla boo sai"	Oxyleotris marmoratus	Mae Klong river
50	Mekong Giant catfish	"Pla buek"	Pangasianodon gigas	Mae Klong river
51	Minnows or carps	"Pla pak-pieng"	Scaphognathops Bandanensis	Mae Klong river
52	Minnows or carps	"Pla pak-nuad"	Hypsibarbus vernayi	Mae Klong river
53	Mollusc--Ark shell or cockle	"Hoi Krang"	Anadara Granosa	Samut Songkhram Province
54	Mollusc--Golden apple snail	"Hoi Cherry"	Pomecea canaliculata	Samut Songkhram Province
55	Mollusc--Green mussel	"Hoi meng-poo"	Perna viridis	Samut Songkhram Province
56	Mollusc--Horse mussel	"Hoi krapong"	Musculus senhousia (Benson)	Samut Songkhram Province
57	Mollusc-- Telescope creeper	"Hoi Kee-ka (Hoi Kee-korn)"	Telescopium telescopium (Linne)	Samut Songkhram Province
58	Mollusc--Ark shell	"Hoi kreng"	Arca sp.	Don Hoi Lot
59	Mollusc--Horse mussel	"Hoi krapong"	Modiola senhauseni	Don Hoi Lot
60	Mollusc--N/A	"Hoi hin"	Solen vitreus	Don Hoi Lot
61	Mollusc--Ridged venus clam	"Hoi krapook (Hoi Talab)"	Trapez tergicus	Don Hoi Lot
62	Mollusc--Screw turritella	"Hoi muan-poo"	Territella terebra	Don Hoi Lot
63	Mollusc--Spotted babylon	"Hoi tuk-kae (Hoi wan)"	Babylonia areolata	Don Hoi Lot
64	Mollusc--Tiger Moon	"Hoi takai"	Natica maculosa	Don Hoi Lot

65	Mollusc--Tongue Shell	"Hoi phak-ped"	Lingula anatina	Don Hoi Lot
66	Mollusc--Tubeworms (Worm shell)	"Hoi lot"	Solen regularis	Don Hoi Lot
67	Mollusc--Wedge shell (Bean clam)	"Hoi siep"	Donax faba	Don Hoi Lot
68	Moonbeam gourami	"Pla kra-dee nang"	Trichogaster microlepis	Mae Klong river
69	Mudskippers	"Pla Teen"	Genus Periophthalmodon	Samut Songkhram Province
70	Mullet fish	"Pla Kra Bok"	Valamugil sahai	Samut Songkhram Province
71	N/A	"Pla pap-kwai"	Paralabuca typus	Mae Klong river
72	N/A	"Pla sai-tan-ta-daeng"	Cylocheilichthys apogon	Mae Klong river
73	N/A	"Pla sai-tan-ta-khao"	Cylocheilichthys repasson	Mae Klong river
74	N/A	"Pla kra-mun"	Puntioplites proctozystron	Mae Klong river
75	N/A	"Pla sah"	Lates calcanifer	Mae Klong river
76	N/A	"Pla siew-nuad-yao"	Esomus metallicus	Mae Klong river
77	N/A	"Pla siew aow"	Luciosoma bleekeri	Mae Klong river
78	N/A	"Pla tapien-khao"	Barbodes gonionotus	Mae Klong river
79	N/A	"Pla tapien-thong"	Barbodes altus	Mae Klong river
80	N/A	"Pla takok"	Cylocheilichthys Enoplos	Mae Klong river
81	N/A	"Pla takak"	Cosmochilus hairmandi	Mae Klong river
82	N/A	"Pla tamin"	Amblyrhynchichthys truncates	Mae Klong river
83	N/A	"Pla tu-naa (Pla lai hoodam)"	Anguilla bicolor	Mae Klong river
84	N/A	"Pla nang-aow"	Raiamas guttatus	Mae Klong river
85	N/A	"Pla nam-fai"	Sikukia stejnegeri	Mae Klong river
86	N/A	"Pla bua"	Labeo Dyocheilus	Mae Klong river
87	N/A	"Pla baa"	Leptobarbus hoeveni	Mae Klong river
88	N/A	"Pla yeesak-thong"	Probarbus jullieni	Mae Klong river
89	N/A	"Pla sroy-khao"	Henicorhynchus Siamensis	Mae Klong river
90	N/A	"Pla sroy-luk-quay"	Labiobarbus siamensis	Mae Klong river

มหาวิทยาลัยศิลปากร สาขาวิชาสัตวศาสตร์

91	N/A	"Pla sa-gae (Pla lai-hoo-khao)"	Anguilla bengalensis	Mae Klong river
92	N/A	"Pla nam lang (Pla kee-york)"	Mystacoleucus Marginatus	Mae Klong river
93	N/A	"Pla wa-na-nor"	Bangana behri	Mae Klong river
94	N/A	"Pla hang buang"	Barbichthys nitidus	Mae Klong river
95	N/A	"Pla kred-thee"	Thynnichthys thynnoides	Mae Klong river
96	N/A	"Meng kra-prun-kee-kai"	N/A	Don Hoi Lot
97	Nieuhof's walking catfish	"Pla duk lampan"	Prophagorus nieuhoffi	Mae Klong river
98	Nile tilapia	"Pla nil"	Tilapia nilotica	Samut Songkhram Province
99	One-spot glass catfish	"Pla cha-aone"	Ompok bimaculatus	Mae Klong river
100	Pacific tarpon	"Pla ta-luak"	Megalop cyprinoids	Mae Klong river
101	Paradise threadfin	"Pla nuak pramin"	Polynemus paradiseus	Mae Klong River
102	Pink-ruby tilapia	"Pla Tap-tim"	N/A	Samut Songkhram Province
103	Pygmy gourami	"Pla krim"	Trichopsis pumilus	Mae Klong river
104	Rasbora	"Pla siew-kaew"	Clupeichthys	Mae Klong river
105	Red-checked barb	"Pla kam-cham"	Puntius Orphoides	Mae Klong river
106	Red-finned black shark	"Pla ka-daeng"	Epaizeorhynchus Frenatus	Mae Klong river
107	Redtail Rasbora	"Pla siew-han-daeng"	Rasbora Borapetensis	Mae Klong river
108	Red-tailed mystus	"Pla kod kaew"	Mystus wycki	Mae Klong river
109	Red-Tailed snakehead	"Pla kang"	Channa gachua	Mae Klong river
110	Ribbon worms	"Nol-ribbin"	Baseodiscus Quirquilineat	Don Hoi Lot
111	Riverine lizard	"Mungkorn"	N/A	Samut Songkhram Province
112	Rohu	"Pla yeesak-thet"	Labeo Rohita	Mae Klong river
113	Round-tailed garfish	"Pla Kra Tung Hell"	Xenentodon cancila	Samut Songkhram Province
114	Seven-spotted accher fish	"Pla suar-pon-nam"	Toxotes chatareus	Mae Klong river
115	Sheath fish	"Pla daeng"	Kryptopterus bleekeri	Mae Klong river
116	Sheath fish	"Pla sai-kai (Pla nur-on)"	Kyptopterus cryopterus	Mae Klong river
117	Shorebird--Black-winged Stilt	"Nok teen-tien"	Himantopus himantopus	Samut Songkhram Province
118	Short-bodied mackerel	"Pla Tu"	Rastrelliger Chrysozonus	Samut Songkhram Province

119	Siamese glassfish	"Pla pang"	Chanda siamensis	Mae Klong river
120	Snake head fish	"Pla chon"	Channa striatus	Mae Klong River
121	Snakeskin gourami	"Pla slid"	Trichogaster pectoralis	Samut Songkhram Province
122	Soldier croaker	"Pla ma"	Nibeia soldado	Mae Klong River
123	Stream barilius	"Pla nam-muek"	Barilius pulchellus	Mae Klong river
124	Striped catfish	"Pla sawai" (Pla Te-poh)	Pangasius sutchi	Samut Songkhram Province
125	Striped sea catfish	"Pla duk talay"	Plotosus canius	Mae Klong River
126	Striped knife fish (Tiger knife fish)	"Pla tonglai"	Notopterus blanci	Mae Klong river
127	Sumatran Tiger Barb	"Pla suar-sumatra"	Puntius Partipentazona	Mae Klong river
128	Swamp eel	"Pla lai"	Fluta alba	Samut Songkhram Province
129	Swamp eel	"Pla lai"	Monopterus albus	Mae Klong River
130	Three-spot gourami	"Pla kra-dee mor (Pla salak)"	Trichogaster trichopterus	Mae Klong river
131	Tiger Loach	"Pla moo-kang-lai"	Botia Hymenophysa	Mae Klong river
132	Tinfoil barb (Schwanfeld's barb)	"Pla kra-hae"	Puntius schwanfeldii	Mae Klong river
133	Transverse-bar barb	"Pla kra-soop-kid"	Hampala Macrolepidota	Mae Klong river
134	Trichopodus	"Pla Kra Dee"	Trichogaster trichopterus	Samut Songkhram Province
135	Twisted-jaw sheath fish	"Pla bieow"	Wallago dinema	Mae Klong river
136	Waanders 's bony lipped barb	"Pla rong-mai-tab"	Osteochilus Waandersi	Mae Klong river
137	Walking catfish	"Pla duk-dan"	Ciarias batrachus	Mae Klong river
138	Whipfin mojarra	"Pla dok-mak"	Gerres filamentosus	Mae Klong River
139	Wrestling half-beak	"Pla kem"	Dermogenus pusillus	Mae Klong river
140	Yellow mystus	"Pla kod-luang (Pla kalan)"	Mystus nemurus	Mae Klong river
141	Yellow tail barb (Golden belly barb)	"Pla tapak"	Puntius daruphani	Mae Klong river
<u>BIRDS (EXISTENT)</u>				
1	Javan Pond Heron	"Nok yang-krok-pan-chawa"	Ardeola speciosa	Don Hoi Lot
2	Whiskered Tern	"Nok nan-nuan-krab-krao-khao"	Chlidonias hybridus	Don Hoi Lot
<u>FISHES (EXTINCT IN THE WILD)</u>				
1	Siamese tiger fish	"Pla suar tor lai yai"	Coius microlepis	Mae Klong River

	<u>BIRDS & FISHES (ENDANGERED)</u>			
1	Bumblebee Catfish	"Pla ka-yaeng-hin"	Leiocassis poecilopterus	Mae Klong River
2	Giant Carp	"Pla kra-ho"	Catlocarprio siamensis	Mae Klong River
3	Giant featherback	"Pla sa-tee"	Chitala lopis	Mae Klong River
4	Grey Heron	"Nok kra-sa-nuan"	Ardea cinerea	Don Hoi Lot
5	N/A	"Pla kor-tam"	Nemacheilus troglodactylus	Mae Klong River
6	N/A	"Pla kor-jaruthanini"	Schistura jaruthanini	Mae Klong River
7	Red-tailed black shark	"Pla song kreng (Pla chalarm han daeng)"	Epalzeorhynchus bicolor	Mae Klong River
8	Whisker Sheatfish	"Pla nue-on (Pla pik-kai-nuad-yao)"	Kryptopterus limpok	Mae Klong River
	<u>FISHES (VULNERABLE)</u>			
1	Batrachian walking catfish	"Pla duk-dhan"	Clarias batrachus	Mae Klong River & Don Hoi Lot
2	Bigmouth Sea Catfish	"Pla kod-hua-toh"	Ketengus typus	Don Hoi Lot
3	Black sheatfish	"Pla kao-dam"	Wallagonia miosfoma	Mae Klong River
4	Bocourt's river catfish	"Pla ka-yaeng-thon"	Heterobagrus bocourti	Mae Klong River
5	Chao-phaya giant catfish	"Pla tepa"	Pangasius sanitwongsei	Mae Klong River
6	Giant freshwater stingray	"Pla kra-ben-rahoo"	Himantura chaophraya	Don Hoi Lot
7	Moustached taper-tail anchovy	"Pla han-kai"	Coilia lindmanni	Mae Klong River
8	N/A	"Pla maew-hoo-yao"	Lycothrissa crocodilus	Mae Klong River
9	Red fin hard-head Catfish	"Pla kod-poh"	Hemipimelodus borneensis	Don Hoi Lot
10	Seven-stripped Carp	"Pla yee-sok"	Probarbus jullieni	Mae Klong River & Don Hoi Lot
11	Small scale mud carp	"Pla nuan chan nam jeed"	Cirrhinus microlepis	Mae Klong River
	<u>REPTILES (VULNERABLE)</u>			
1	Narrow-headed Softshell Turtle	"Tapap-manlai"	Chitra Chitra	Mae Klong River
	<u>FISHES (ENDEMIC)</u>			
1	N/A	"Pla kor-tam"	Nemacheilus troglodactylus	Mae Klong River

2	N/A	"Pla kor-jaruthanini"	Schistura jaruthanini	Mae Klong River
3	Red tailed black shark	"Pla song kreng (Pla chalaam han daeng)"	Epalzeorhynchus bicolor	Mae Klong River
<u>BIRDS (NEAR THREATENED)</u>				
1	Brown Hornbill	"Nok guek-see-namtan"	Ptilaemus tickelli	Don Hoi Lot
2	Cave Barb	"Pla pung-tam"	Poropuntius speleops	Mae Klong River
3	Great Hornbill	"Nok kahan (Nok kok)"	Buceros bicornis	Don Hoi Lot
4	Great Slaty Woodpecker	"Nok hua-kwan-yai-see-tao"	Mulleripicus pulverulentus	Don Hoi Lot
5	Little Tern	"Nok nang-nuan-klab-tek"	Sterna albifrons	Don Hoi Lot
6	Mrigal	"Pla nuanchan-thet"	Cirrhinus mirigala	Mae Klong River
7	N/A	"Pla siew-krae-sam-jud"	Three-spotted Dwarf Minnow	Mae Klong River
8	Orange-breasted Green Pigeon	"Nok pao-aok-see-muang-namtan"	Treron bincincta	Don Hoi Lot
9	Pompadour Green Pigeon	"Nok pao-na-luang"	Treron pompadora	Don Hoi Lot
10	Red-backed Sea Eagle	"Yiaw daeng"	Haliastur indus	Don Hoi Lot
11	Siamese tiger fish	"Pla suar tor"	Danioides microlepis	Mae Klong River
12	Swiftlet (Edible-nest-Swiftlet)	"Nok an-kin-rang"	Aerodramus fuciphagus	Don Hoi Lot
13	Wreathed Hornbill	"Nok Coke-kwam-chang"	Rhyticeros undulatus	Don Hoi Lot
<u>BUGS (THREATENED)</u>				
1	Firefly	"Hing-hoy"	Lampyridae	Samut Songkhram Province

Appendix B
110 Temples in Samut Songkhram Province
Source: Siripoon, 2004

No.	Name of Temples (Wat)	District	Sub-District	Year of construction	Cultural Significances	Background
1	Wat Thammanimitr	Muang Samut Songkhram	Mae Klong	End of Ayudhaya period	The Reclining Buddha (1860-1907)	
2	Wat Pratumkanawas (Wat Bon)	Muang Samut Songkhram	Mae Klong	Before 1908	The Buddha Image 'Luang Por San' (1857)	
3	Wat Pom Kaew (Wat Kyai Samut Songkram/Wat Lang Pom)	Muang Samut Songkhram	Mae Klong	1648	The Buddha Image 'Luang Por Khen Chan' (1648)	
4	Wat Puangmalai	Muang Samut Songkhram	Mae Klong	1882-1887 (Reign of King Rama V)	The Buddha Images, Reclining Buddha, Pagoda in Burmese style	

5	Wat Phetsamut (Wat Sri Jampa/Wat Ban Laem)	Muang Samut Songkhram	Mae Klong	1508 (over 500 years old)	The Buddha Image 'Luang Por Ban Laem', and etc.	<p>According to history, in B.E. 2307 (1764) the Burmese invaded Muang Phetburi but Ayutthaya's troops protected the city. Ban Laem people in Phetburi migrated to escape from the Burmese and settled down at Mae Klong, further up from Wat Sri Champa, and called this village Ban Laem, the same name as their former village in Phetburi. The people gave it the new name of Wat Ban Laem. One day, they went to catch fish using a net in the Mae Klong Gulf, two Buddha images were caught in the net: one was a seated image, another was a standing image. The sitting image of the Buddha was enshrined at Wat Khao Ta Krau, Phetburi province. For the second standing image of the Buddha, the image was 1.67 metres high and holding an alms-bowl, unfortunately, the bowl could not be recovered. This Buddha image was enshrined at Wat Ban Laem and was called Luang Pho Ban Laem.</p>
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5	Wat Phetsamut (Wat Sri Jampa/Wat Ban Laem)	Muang Samut Songkhram	Mae Klong	1508 (over 500 years old)	The Buddha Image 'Luang Por Ban Laem', and etc.	<p>This is a very sacred Buddha and many miracles have been associated making the image highly revered by all. Wat Ban Laem which once was a small and disregarded temple, prospered and was enlarged mainly from the donations made by the people out of their faith and from their merit making and worshipping Luang Pho Ban Laem. Later, this temple was promoted to the status of royal temple of the class Worawihan and was granted the name of Wat Phet Samut Worawihan by the King. To replace the lost alms-bowl of Luang Pho Ban Laem, Prince Phanuphanwongworadej presented a blue glass-bowl which can still be seen today. In the temple compound, there is a monk museum, exhibiting Buddha images, amulets from various periods, artifacts, antiques, and a pulpit from the Ayutthaya period.</p>
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6	Wat Yai (Wat Kok Nuen Derm Mee)	Muang Samut Songkhram	Mae Klong	1657	Bug Drum, the Buddha Image 'Luang Por Khen Chan' (1657)	
7	Wat Thammasathit Wararam (Wat Ku Thammasathit)	Muang Samut Songkhram	Bang Khan Threk	Before 1757	An old Church with preserved handiwork gable	
8	Wat Bang Khan Threk	Muang Samut Songkhram	Bang Khan Threk	Before 1657	The Buddha Image 'Luang Por Hin (Sila)'	
9	Wat Prong Prang	Muang Samut Songkhram	Bang Khan Threk	Before 1808	The Buddha Images, cemetery with different styles of cinerary urns	

10	Wat Srisuwankongkaram	Muang Samut Songkhram	Bang Khan Threk	1941	The hip roof teakwood church	
11	Wat Nang Pim	Muang Samut Songkhram	Bang Khan Threk	Before 1760	Hall for keeping scripture	
12	Wat Bang Nang Chin Klang	Muang Samut Songkhram	Bang Khan Threk	Before 1608	The Buddha Image Sukholthai style, Hall for scripture, Pulpit King Rama I	
13	Wat Mae Nam (Wat Nang Chin Nok)	Muang Samut Songkhram	Bang Khan Threk	Before 1657	The Standing Buddha Image, Buddha Image Sukholthai style, Church	

14	Wat Noy Saengchan	Muang Samut Songkhram	Lad Yai (Sunak Horn)	1916	The old church, Buddha Images, and Hall for sermons in monastery	
15	Wat Lad Yai	Muang Samut Songkhram	Lad Yai (Sunak Horn)	1957	Hall for sermons in monastery, and Hall for scripture	
16	Wat Bang Prachan	Muang Samut Songkhram	Lad Yai (Sunak Horn)	End of Ayudhaya period	The standing Buddha Image 'Luang Por Tri', Buddha Images, and old Church	
17	Wat Suan Kaew Uthayan	Muang Samut Songkhram	Lad Yai (Sunak Horn)	Before Reign of King Rama IV	The Buddha Image, the Reclining Buddha Image, Big Pagoda	

18	Wat Kaew Fah	Muang Samut Songkhram	Ban Prok	Before Reign of King Rama V	Big Pagoda	
19	Wat Chan Charoensuk	Muang Samut Songkhram	Ban Prok	Before 1859	The Buddha Images, The 4 Pagodas, and wooden church	
20	Wat Patraram	Muang Samut Songkhram	Ban Prok	1803	The Buddha Images, and the wooden Hall for sermons	
21	Wat Koo Sanamchan	Muang Samut Songkhram	Ban Prok	Ayudhaya period	The Buddha Images, and the old stupa	

22	Wat Chonglom	Muang Samut Songkhram	Ban Prok	Before 1830	The Buddha Images, and Pagoda in an earthen jar shape	
23	Wat Rongtham	Muang Samut Songkhram	Ban Prok	Beginning of Ratanakosin period	The Buddha Image, wooden bed, and parapet Hall for scripture	
24	Wat Chareonsuntraram	Muang Samut Songkhram	Bang Kaew	1938	The ruin of traditional old boat	
25	Wat Bang Kaew	Muang Samut Songkhram	Bang Kaew	1977	The Buddha Image, and built in the area of salt farm land	

26	Wat Tai Had	Muang Samut Songkhram	Tai Had	1920	The Buddha Image and Ubosot	
27	Wat Wachirakram (Wat Bang Nag Chin Nai)	Muang Samut Songkhram	Tai Had	1757	The Buddha Image 'Pra Buddha Pichai Songkram' and Ubosot	
28	Wat Pak Samut (Wat Lang)	Muang Samut Songkhram	Laem Yai	1857	The Buddha Image 'Luang Por Dam'	
29	Wat Dao Dong (Wat Dusitdaram)	Muang Samut Songkhram	Klong Khen	1807 (Reign of King Rama II-III)	The Buddha Image and Museum	

30	Wat Pak Lad	Muang Samut Songkhram	Klong Khen	Before 1866	Buddha Images	
31	Wat Nang Takien (Wat Dheptharam)	Muang Samut Songkhram	Klong Khen	Ayudhaya period	Buddha Images, an old 'Mon Dhop' (a square structure with four arches and a pyramidal roof), the two Pagodas, an old brass bell mixed with stone, and a pulpit	
32	Wat Sri Sathatham	Muang Samut Songkhram	Klong Khen	Before 1969	Buddha Image, Ubosot, and coconut farms and orchards	
33	Wat Klong Khone (Wat Saowakhon)	Muang Samut Songkhram	Klong Khone	NA (very old temple)	Buddha Images, 'Luang Por Pu', and Ubosot Thai hip roof	

34	Wat Thammaprasit (Wat Klong Chong)	Muang Samut Songkhram	Klong Khone	1944	Buddha Images, 'Luang Por Wat Klong Chong'	
35	Wat Thammapradit (Wat Tai Nut/Wat Klong Khone Nai)	Muang Samut Songkhram	Klong Khone	1937	Buddha Images	
36	Wat Thammawutharam (Wat Bang Pueen)	Muang Samut Songkhram	Nang Takien	1954	Buddha Image and Ubosot	
37	Wat Lad Peng	Muang Samut Songkhram	Nang Takien	NA (very old temple)	Buddha Image, old pagoda, and Reproduce Buddha Images of 'Luang Por Sothorn', 'Luang Por Ban Laem', and 'Luang Por Wat Khao Trakrao'	
38	Wat Bang Jakreng (Wat Intakongkha)	Muang Samut Songkhram	Bang Jakreng	1780	Buddha Image, old style cabinet, and Buddha's footprint	

39	Wat Sathatham (Wat Morn)	Muang Samut Songkhram	Bang Jakreng	1797	Teakwood Ubosot, mural painting	<p>Wat Sathatham is made from golden teak wood and the inner walls are set with pearl-inlay. It was built in the year 2535 B.E. (1982) by Phra Khru Samutwisutthiwong, the former abbot. Inside the main building, Ubosot, there are paintings depicting Buddha's life, paintings about the Ramayana epic, painting of famous monks. The temple is highly revered by the local people and neighbouring provinces. A landmark is the Ubosot (ordination hall) built by Phrakhrusamutwisutthiwong (former abbot) in 1992.</p>
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39	Wat Sathatham (Wat Morn)	Muang Samut Songkhram	Bang Jakreng	1797	Teakwood Ubosot, mural painting	<p>The ordination hall is made of golden teak with mother-of-pearl-inlaid walls both inside and outside. The designs are exquisite, depicting the Lord Buddha's history and Ramayana episodes. Housed inside the ordination hall are Buddha images: Luangpho Ban Laem, Luangpu Thuat Yiap Nam Thale Chuet, and Luangpho Phuttha Sothon, which are worshipped by the people of Samut Songkhram and nearby provinces. On the temple grounds, Kalamae-Raman or coconut toffee is sold. It is a famous dessert of the temple, made uniquely wrapped in Kap Mak (leaf sheath of a betel nut tree).</p>
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40	Wat Kasemsoranaram (Wat Mai Ta Phet)	Amphawa	Amphawa	1807	Old Ubosot Rattanakosin period style, Buddha Images, and Pagoda	
41	Wat Nang Wang	Amphawa	Amphawa	Before 1917	Buddha Image 'Luang Por Daeng' and the biggest buddha image in Ubosot	

42	Wat Bang Krapom	Amphawa	Amphawa	1769	<p>The biggest Buddha image in Ubosot, the Buddha's footprint, the Chinese style church, and the reclining Buddha image</p>	<p>Wat Bang Kaphom This ancient temple was built in the late Ayutthaya period. The old Wihan (image hall) is very interesting. On the upper part of the walls, there are unusual mural paintings in the form of stucco reliefs depicting the Lord Buddha's history. On the lower part of the walls, there are niches with Buddha images inside. In the centre of the hall, a large replica of four superimposing Buddha's footprints in different sizes is enshrined. It was presumed that the footprints were built in the Thon Buri period. Initially, they were covered by silver sheets which were later stolen during a war. The footprint at the deepest level which is made from mother-of-pearl-inlaid wood still retains its beautiful design. On the temple grounds, a small coffee shop offers traditional tasty tea and coffee.</p>
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43	Wat Amphawanjetiyaram	Amphawa	Amphawa	1782	<p>The birthplace and the ที่บรรพชา of King Rama II, the hometown of King Rama I & his Queen, monument of King Rama II, Buddha images, mural painting, and ancient artefacts date back to early Rattanakosin period.</p>	<p>Wat Amphawan Chetiyaram is located near King Rama II Memorial Park. This temple belongs to the Bang Chang family. It was constructed by Princess Phrarubisirisopharkmahanaknari, the mother of Queen Amarintharamat. The area behind this temple was the residence of Luang Yokkrabat and Khun Nak. It is believed that area about the position of the chedi at present of Wat Amphawan is the place where Khun Nak gave birth to a son (Khun Chim) who later became King Rama II. Later, Wat Amphawan was renovated by King Rama III, IV, and V. At present it is a second class royal monastery. The beautiful main building and precious antiques inside the temple are of an early Rattanakosin period architectural and arts style.</p>
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44	Wat Thong Kung (Wat Rachaburana)	Amphawa	Suan Luang	1767	Buddha images 'Luang Por Wat Thong Kung'	
45	Wat Bang Nang Lee Yai	Amphawa	Suan Luang	1280	Buddha images 'Luang Por Ta Kien', 'Luang Por Sam', and place of <i>พระพรหม</i> <i>นักโทษ</i> in the old time	

46	Wat Poomarin Kudeethong	Amphawa	Suan Luang	1787	Buddha image 'Luang Por Toh, museum, and Golden Church, School of Musical House	<p>This temple is located on the bank of Mae Klong River. It is accessible by boat from Wat Amphawan pier or King Rama II Memorial Park pier. An interesting attraction in the temple is the Kudee Thong (golden hermitage). According to a legend, Khun Nak's millionaire father asked the abbot of Wat Bang Li to foretell Khun Nak's fortune. The abbot predicted that Khun Nak would become a Queen. Khun Nak's father vowed that he will build the golden hermitage for Wat Bang Li if the prediction came true, hence the reason for the name of Wat Ban Li Kudi Thong. Later, Wat Bang Li was flooded and part of the land was gouged out by water, so the Kudi Thong was taken down and reconstructed at this temple.</p>
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47	Wat Woraphum Ratbamrung	Amphawa	Suan Luang	1862	Buddha image and Thai Hip Roof Hall, and Pavillion	
48	Wat Wan Chan	Amphawa	Suan Luang	1797	Buddha image, Ubosot Thai Hip roof, and Hall for sermons in monastery	
49	Wat Suan Luang	Amphawa	Suan Luang	1702	Buddha image ' <i>Phra Chak Narai</i> ', and Pagoda	
50	Wat Dheprasitkanawas (Wat Wiharn)	Amphawa	Tha Kha	1882	Buddha image	

51	Wat Maneesan	Amphawa	Tha Kha	1826	Buddha image 'Phra Phitheecheaimongkol', Ubosot	
52	Wat Chonglomwannaram	Amphawa	Wat Pradu	1898	Buddha image and the Buddha's footprint	
53	Wat Pradu	Amphawa	Wat Pradu	1767	Historical place of King Rama V and 'Pradu' tree, Buddha image, museum, Pavillions, mural painting on ceiling, the royal barge seat, wooden beds, wooden book cabinets, water pitchers, and King lunch boxes.	
54	Wat Kaew Chareon	Amphawa	Muang Mai	1797	Buddha images, Boat Museum, Thai architecture	

55	Wat Nong Krapong	Amphawa	Muang Mai	1988	Buddha image and ubosot	
56	Wat Mueng Mai	Amphawa	Muang Mai	1757	Historical temple of King Rama V, Buddha images, and Pagoda	
57	Wat Lamood (Wat Lamood Suthawas)	Amphawa	Muang Mai	1603	Buddha images, and Ubosot	
58	Wat Intharam	Amphawa	Muang Mai	1757	Buddha image, Pagoda, Pla Tapien Thong & Pla Tapien Gnen area, and Pomelo & Lychee Fair	<p>Wat Intharam is located in Tambon Mueang Mai. This ancient temple was built in 1757 during the Ayutthaya period. It was renovated during the reign of King Rama III. There are many interesting points within the temple compound. Luangpho To, the Buddha image here is over 300 years old. The Ubosot (ordination hall), which was built from marble, has teak doors and window panels carved with proverbs.</p>

59	Wat Tung Sethee	Amphawa	Muang Mai	2003	Buddha image, and 'Chamchuree Tree' from King Rama IX	
60	Wat Bang Wan Thong	Amphawa	Muang Mai	1705	Buddha images, White Ubosot, Drum Hall or Bell Hall	
61	Wat Ratburana	Amphawa	Muang Mai	1757	Buddha image, Thai house architecture, and 'Ta Kien' & 'Pikun' Tree	
62	Wat Sadej	Amphawa	Muang Mai	1891	Buddha image, Ubosot, viharn	
63	Wat Chulamane (Wat Mae Ya Chao Thip)	Amphawa	Bang Chang	1630-1655 (Reign of King Prasarthong, Ayudhaya period)	Birthplace of 4 ladies in Chakri Dynasty, and Marble Ubosot	Wat Chulamani is an ancient temple located on the bank of Khlong Amphawa. Behind it is an area which used to be the residence of Sombet Phra Amarintharamat and Somdet Phra Suriyentharamat, the Queens of King Rama I and King Rama II. This temple was constructed by Thao Kao Phlung (Noi), Chang Market Control Officer, who established the Na Bang Chang family name during the Ayutthaya era.

64	Wat Daowadung	Amphawa	Bang Chang	1557	Buddha images, Monks articles from King Rama V, Thai house architecture	
65	Wat Prayayad	Amphawa	Bang Chang	1800	Buddha image, and Pulpit of King Rama II	
66	Wat Alongkorn (Wat Mai Ta Korn)	Amphawa	Bang Chang	1887	Buddha image, Teakwood Ubosot with Thai hip roof, 'Viharn Luang Pu Rithichai Ronarit'	
67	Wat Chang Puank	Amphawa	Bang Chang	1692	Buddha images, and Free and Herb Center	
68	Wat Bang Prom	Amphawa	Bang Chang	1782	Buddha images, 'Viharn Prasart', and Pagoda	
69	Wat Langka	Amphawa	Bang Chang	1836	Buddha image, and a teakwood Thai house architecture for Buddhist priest	
70	Wat Bang Kro Thepasak	Amphawa	Kwai Oam	1757	Buddha images, 'Mondhop' for Buddha's footprint, and 'Viharn'	

71	Wat Bang Kae Noi	Amphawa	Kwai Oam	1868	Buddha image, teak chapel (teak Ubosot), Thai house for Buddhist priest, exquisite workmanship (ceiling carvings depict teachings and life of Lord Buddha).	This temple was built by Khunying Chui (Noi) Wongsarot in 1868. Initially, the Ubosot (ordination hall) was built on the bamboo raft tied to a Bodhi tree on the river bank. At present, the temple is well restored. The most interesting thing is the ordination hall's inside walls which are woodcarvings depicting the Lord Buddha's history, birth, enlightenment, and nirvana, as well as stories of the Lord Buddha's Ten Incarnations or Jatakas.
72	Wat Bang Kae Yai	Amphawa	Kwai Oam	1814	Buddha images, 'Viharn Kor', Stupa, Pagoda, teakwood Thai house for Buddhist priest, and mural painting	Wat Bang Khae Yai Located on the west bank of the Mae Klong River opposite the King Rama II Memorial Park, this temple houses beautiful mural paintings depicting a story about the Thai-Burmese wars. These paintings, completed during the reign of King Rama II, are some of the most important in Thailand. Green, white, red, black, blue and brown coloured powder and glue were used. The value of these paintings lies in the skill of the artists and historical background.

73	Wat Pak Nam	Amphawa	Kwai Oam	1915	Buddha images, 'Viharn', and ancient remains	
74	Wat Kok Ket Bunyasiri	Amphawa	Prai Prongpang	1897	Buddha image, Thai house for Buddhist priest, and สำนักชี 'Ketsantinaree'	
75	Wat Pracha Kositaram (Wat Bang Nok Kwak)	Amphawa	Prai Prongpang	1708	Buddha image 'Phra Mongkol Kosit'	
76	Wat See Yek Radbarnung	Amphawa	Prai Prongpang	1757	Buddha images, Thai house teakwood Ubosot, and many ancient remains	
77	Wat Amaravadee (Wat Lam Mo Kang)	Amphawa	Prai Prongpang	1902	Buddha images, and 'Luang Por Prasert'	

78	Wat Bang Kae Klang (Wat Bang Kae Nai)	Amphawa	Bang Kae	1830	Buddha images, Ubosot, and Thai house for Buddhist priest	
79	Wat Prok Suthammaram	Amphawa	Bang Kae	1828	Buddha images ' <i>Luang Por Pid Ta Mahalarb</i> ', Buddha's footprint, Ubosot, Shrine of Takien Goddress, and ancient bell hall	
80	Wat Sathu Chanaram	Amphawa	Bang Kae	1928	Buddha image ' <i>Luang Por Toh</i> ', ' <i>Luang Por Daeng</i> ', Ubosot, and Viharn	
81	Wat Klong Kud Lek	Amphawa	Prak Namdaeng	1994	Buddha image	
82	Wat Charoen Ratanaram	Amphawa	Prak Namdaeng	1926	Teakwood Ubosot, and Mondhop	

83	Wat Khao Yeesarn	Amphawa	Yeesarn	1703	Ubosot and Viharn, Museum of community, Shrine 'Khun Pu Sriraj'	<p>It is believed to have been constructed in late Ayutthaya period. The interesting attraction is a boat shaped building (Wihan) situated on top of the mountain. There, enshrined, are the 4 traces of Lord Buddhas Footprints. The Mondop and wooden doors are of a supreme craftsmanship. There also is Luang Pho Poo Pu Sriracha Shrine, which is highly revered by all. The worship fair of Luang Pho Poo Pu Sriracha is held annually in the middle of November. Ban Khao Yi San Museum is situated on the temple grounds, using Sala Kan Parian (preaching hall) as its building. It was established in 1996 with full cooperation from the villagers of the Yi San Community who have been aware of their local history. Yi San is an ancient community of the same age as the Ayutthaya Kingdom, with people living in it continuously. The museum presents the stories of the community which are important and worth a study.</p>
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84	Wat Boonnak Prachasan	Amphawa	Yeearn	1970	Buddha images	
85	Wat Radwatthanaram	Amphawa	Bang Nan Lee	1979	Buddha image, and Thai house for Buddhist priest	
86	Wat Krao Kaew	Bang Khontee	Kradangna	1757	Buddha images	
87	Wat Sai	Bang Khontee	Kradangna	1480	Ubosot, Thai house for Buddhist priest, and palm leaves tripitaka	
88	Wat Bang Yai	Bang Khontee	Kradangna	1782	Buddha images, and Shrine	
89	Wat Koh Yai	Bang Khontee	Kradangna	1742	Buddha images, Pagoda, and bell hall	
90	Wat Bang Khonthee Nok	Bang Khontee	Kradangna	1863 (Reign of King Rama IV)	Buddha image, Ubosot, and teakwood Hall	
91	Wat Pak Gnam	Bang Khontee	Kradangna	1762	Buddha images, 'Luang Por Kesorn', mural painting, Ancient Pagoda, Hall for scripture, Hall for sermons in monastery, and over 200 year-old Myrobalan Tree	

92	Wat Bang Sakrae	Bang Khontee	Bang Sakrae	1780	Buddha images, and teakwood sculpture of God Visnu & Garuda	
93	Wat Ketarakaram	Bang Khontee	Rong Hib	1890	Buddha images, 'Luang Por Puanak', 'Luang Por Ket Mongkol Buddha Prom Bordee', and Ubosot	
94	Wat Prok Rad Rangsana	Bang Khontee	Rong Hib	1857	Buddha images, and Ubosot with Thonburi period art at gable	
95	Wat Bang Kuay	Bang Khontee	Rong Hib	1807	Buddha images, and ancient remains	
96	Wat Bang Khonthee Nai	Bang Khontee	Bang Khonthee	1782	Ubosot, and ancient Pagoda	
97	Wat Sinwiset Sathatham (Wat Ton Mamuang)	Bang Khontee	Bang Khonthee	1782	Buddha images 'Luang Por Toh', 'Luang Por Thong', 'Luang Por Phetch', and Pavillion Thai house	

98	Wat Don Manora	Bang Khontee	Don Manora	1890	<i>Luang Por Samrit</i> , and teakwood Ubosot	
99	Wat Khan Chan Charoen	Bang Khontee	Bang Prom	1807	Buddha images, and mural painting of King rama I - IX	
100	Wat Bang Pup	Bang Khontee	Bang Prom	1705	Historical place in the reign of King Taksin the Great as it was as a hub for Thai soldiers, Ubosot, Buddha images, and ancient remains	
101	Wat Klang Nue	Bang Khontee	Bang Kung	1760	Buddha images, Ubosot, big Pagoda, and ancient remains	
102	Wat Bang Kung	Bang Khontee	Bang Kung	1707-1757	Large stucco Buddha images, ' <i>Luang Por Dhep Nimitr Mongkol</i> ', ' <i>Luang Por Nilmanee</i> ', statue of King Taksin the Great, ancient pond, and ancient Ubosot or small chapel enmeshed in roots of an old banyan tree.	Wat Bang Kung is located in the same area as the Bang Kung Camp, on the opposite side and separated by a road. Within the temple, there is an old ordination hall which houses a large sculptured Buddha image commonly called by villagers as Luangpho Bot Noi.

102	Wat Bang Kung	Bang Khontee	Bang Kung	1707-1757		Mural paintings from the late Ayutthaya period depict Lord Buddha while he was sitting in the niche and preaching, flanked by the disciples in paying respect to him.
103	Wat Amarathep	Bang Khontee	Bang Kung	1892	Ubosot, Thai house for Buddhist priest, and House for Buddhist priest	
104	Wat Tri Jinda Wathanaram (Wat Mai Sam Chin)	Bang Khontee	Bang Kung	1835	Buddha images, and Buddha's footprint	
105	Wat Bod	Bang Khontee	Bang Kung	1757	Buddha images, Ubosot style Ayudhaya period, Ayudhaya style Pagodas, and Thai & Western style house for Buddhist priest	
106	Wat Bang Noy	Bang Khontee	Jom Puank	1672	Buddha images, 'Luang Por Rod', the longest Reclining Buddha in Samut Songkram Province, Buddha's footprint, Viharn, and ancient remains	

107	Wat Charoen Sukharam Worawiharn	Bang Khontee	Bang Nok Kwak	1883	Buddha image 'Luang Por Toh', Ubosot, and Viharn	This temple is about 4 Kilometres from Amphoe Muang. Luang Pho Toa Buddha image, which is highly revered by people, is enshrined in the main building (Ubosot). The body of the Buddha image is made of laterite and cast in the attitude of Subduing Mara of Sukhothai period style. Measuring 178 cms. wide at the lap and 208 cms. high from the base to the tip of the tonsure. In front of the temple, there are various kinds of fish in the stream, especially silver and red-tail tinfoil barbs.
108	Wat Poh Gnam	Bang Khontee	Bang Nok Kwak	1853	Buddha images, 'Luang Por Yoy', Thai House for Buddhist priest, and ancient Pagoda	
109	Wat Tranod Rai	Bang Khontee	Bang Krabue	1792	Buddha images, and Viharns	
110	Wat Pramote	Bang Khontee	Ban Pramote	1898	Buddha image 'Phra Intra Prasert', 'Luang Por Toh', Ubosot, Viharn, and ancient remains	

Appendix C
Local museums in Samut Songkhram Province
Source: Local museum database, 2008

No.	Name	District	Sub-district	Established year	Admission Fee	Management	Displayed items
1	Ban Khao Yi San Museum	Amphawa	Yi San	1996	Free	Community	Exhibit local wisdom: Old-fashioned hypodermic syringes, pottery and herbal medicine tubs
2	King Rama II Museum	Amphawa	NA	NA	Adult USD\$0.7 /Children USD\$0.2	Private	Exhibit life history
3	Wat Phummarin Kudithong Museum	Amphawa	Suan Luang	NA	Free	Temple & Community	NA
4	Wat Pak Mab Miniature Dock Museum	Muang	Bang Kaew	1994	NA	Community	NA
5	Boat Museum	Muang	Lat Yai	NA	NA	Temple	NA
6	Culture Hall Samut Songkhram Province	Muang	Mae Klong	NA	Free	School	NA
7	Wat Pradu Museum	Amphawa	Wat Pradu	NA	NA	Temple	Exhibit monastery
8	Ancient Thai Cat Reservation Center	Amphawa	Kwai Om	2000	Free	Private	Exhibit natural science

Appendix D
Examples of the main historical landmarks
Source: TAT, 2005

No.	Name of historical landmark	District	Sub-District	Year of construction	Cultural Significances	Background
1	King Rama II Memorial park	Amphawa	Amphawa	Reign of King Rama I	Historical place and National heritage: A Royal Birthplace King Rama II.	This park was built to honor King Rama II, by the King Rama II Phraboromachanusorn Foundation under royal patronage. It was built to commemorate his patron to the arts and culture. In the park, there are many places of interest including King Rama II Museum - 4 buildings built in traditional Thai architectural style. The museum displays the ancient art objects dating back to the early Rattanakosin era, the lifestyle of the Thais during King Rama II period. Other attractions are Ho Klang (the main hall, which houses the statue of King Rama II and artifacts), Ho Non Chai (which depicts the lifestyle of Thai men), Ho Non Ying (which depicts the lifestyle of Thai women), and Chan Ruean (a corridor, which depicts the traditional Thai style house).

2	Bang Kung Camp (Khai Bang Kung)	Bang Khon Thee	Bang Kung	1767	<p>Historical place: A famous old Naval Forces Camp. A location of great strategic importance to and great heroism of Mae Klong people over invaders during the late Ayutthaya going on to the Thonburi periods.</p>	<p>Khai Bang Kung is a famous old Naval Forces Camp that is etched into Thai history. Both Thai and Chinese soldiers, under the leadership of King Taksin The Great, annihilated and repelled the invading Burmese army. This powerful camp was feared by the Burmese. The old Wat Bot and Wat Bang Kung are also located in this Camp area. Within the main building is a large stucco Buddha image that locals called Luang Pho Bot Noi. There are also murals of the late Ayutthaya period depicting the story of Lord Buddha's life.</p>
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Appendix E

The 9 Festivals in Samut Songkhram Province

Source: Daily News Online, 1999-2007; Mae Klong, 2009; Naewna, 2005-2006; Ohocity, 2009; Siamontour, 2008; TAT, 2005; and TAT, 2009

No.	Name of Festivals/Events	Month	Venue	District	Activities
1	King Rama II Memorial Festival	February (Early)	King Rama II Memorial Park	Amphawa	Shows, demonstrations of traditional Thai dessert making, folk entertainment, out-door Khon performance, handicrafts and a variety of local products (TAT, 2005).
2	Lychee Fruit Festival	April (Early)		Amphawa	Takes place in some years, depending on the quantity of lychees (TAT, 2005).
3	Songnam Luang Por Ban Laem Buddha Image & Worship Festival	April (13-19)	Wat Phet Samut Worawihan	Muang	The general public gets to bathe (by sprinkling scented water) Luang Pho Wat Ban Laem Buddha image as a way of merit making (TAT, 2005).
4	Tawan Ron at Don Hoi Lot & Kradarn Len Racing Festival	May	Don Hoi Lot	Muang -Chu Chee Village, Tambon Bangjakreng	There are many activities in the evening such as light and sound show, cooking Hoi Lot contest, a boat procession show, and mud sled contest (propel a plank on mud bank) (Daily News Online, 2007).
5	Large White Pomelo (Som O Kao Yai) Fruit Festival	August (Late)	N/A	Amphawa	This fair has the best and largest white pomelos to sell to tourists at a very reasonable price. In addition, many interesting agricultural exhibits are displayed (Ohocity, 2009).

6	Loy Krathong Sai Mae Klong	November	King Rama II Memorial Park	Amphawa	In preparation for Loi Krathong Sai Mae Klong, the trunk of banana trees is used to make krathong floats. The trunk of the banana tree is cut into 8-10 inch sections and the fibrous layer of the trunk is stripped away. Incense sticks are stuck into the banana trunk floats. Folk performances, performances of Hun Krabok traditional Thai puppets, Thai music and traditional boat songs are some of the other festive highlights (TAT, 2009).
7	Annual Longboat Racing in Loy Krathong Festival	November	Wat Rat Peng	Muang	Annual Longboat Racing is held during the Loy Krathong Provincial Festival in November at Wat Rat Peng, Amphoe Mueang, Samut Songkhram Province (Thai tour, 2007).
8	Khao Yee San Annual Festival	December	Wat Khao Yee San	Amphawa	There will be the best of Khao Yee San for sale, an annual festival to pay homage to the sacred Luang Poo Khao Yee San Buddha Image, and the conservation of mangrove forest activity (Naewna, 2005-2006).
9	Mackerel Eating and Mae Klong Famous Products Festival (Pla-tu Fish Festival)	December	In front of City Hall	Muang	This festival is held to promote fishery and agriculture to stimulate tourism interest throughout Samut Songkhram Province. The activities in this festival are selling a variety of food made of Pla-Tu from Mae Klong (Mae Klong, 2009).

Appendix F
Local Wisdoms
Source: TAT, 2005

No.	Local wisdom	District	Sub-District	Cultural Significances	Background
1	Organic pomelo	Amphawa	Bang Khontee	Cultural legacy: orchard & farm	The organic pomelo orchard in is organically using compost fertilizer. The pomelo is almost seedless pomelo that can grow only in this region (TAT, 2005).
2	Salt farm (Naklua)	Border of Samut Songkhram and		Salt farming production is one of the local community knowledge for a long time. This province is also known as a major producer of brine salt.	The four provinces in that mainly produce ocean salt are Phetchburi, Samut Prakarn, Samut Sakhon, and . Salt farm production is becoming in an alarming rate due to the production process, experienced labors, and climate change. The industrial salt is gradually replacing the brine salt. Thus, salt farming should be preserved before it inexist (Cablephet, 2008) (Rajabhat, 2008).

3	Willowware – Benjarong crockery	Amphaw a	Bang Chang	<p>Cultural legacy: Craftsmanship. These have been in production for hundreds of years date back to the 18th century for Thai Royal family. It takes great talent to make Benjarong and only a very few artists can make Benjarong. It can take them days just to complete a single items. It can take up to 15 years just to perfect the art of Benjarong (Thaitambon, 2008).</p>	<p>Benjarong wares are porcelain heritage from Samut Songkram Province. This is where beautiful Bencharong crockery that represents the exquisite craftsmanship and the beauty of Thai Art, are produced. Benjarong is traditional Thai five basic colors style pottery (Thaitambon, 2008).</p>
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4	Boat song	N/A	N/A	Cultural legacy: traditional folk song	<p>Folk songs in the central plains and the east of are closely related to the waterside lifestyles and agricultural occupations of the people - rice farming, fishing, etc. Thai folk songs such as Pleng Rua or boat song is performed for festivals, fairs, and rituals. The star attraction of Thai folk song is the witty exchanges between the performers or singers as well as improvised lyrics. The singers include male and female leaders which are called in Thai as Pho Pleng and Mae Pleng as well as the chorus which are called Look Ku. Each singer must use his or her own wit to reply or sing back. Musical instruments of Thai folk songs are used only to keep time such as using small cup-shaped cymbals or Ching, and drum or Klong (Thailand, 2008).</p>
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5	Steamed Pla Tu (Pla Tu Nueng)	Muang	N/A	Cultural legacy: cuisine and dessert (OTOP products)	Pla Tu Nueng' (steamed Pla Tu) is another delectable Thai dish. 2-3 fish are placed into a round bamboo wicker tray under which water is brought to boil. The fish are steamed to perfection and served with spicy chili dip and vegetables (Bohwongprasert, 2006).
6	Fish Sauce (Pla)	Muang	N/A	Cultural legacy: cuisine and dessert (OTOP products)	Among the three of 's major exports, there are products from coconut, fresh marine fish, and fish sauce or Nam Pla (TourismThailand, 2008).

7	Shrimp Paste (Kapi)	Muang	N/A	Cultural legacy: cuisine and dessert (OTOP products)	<p>An ever-present feature of the Thai kitchen, Kapi (shrimp paste) is one of the essential ingredients in Thai food, for instance as curries and chili dips. Shrimp paste is made of Khoei, a very tiny shrimp-like marine creature with small dotted black eyes, and a clear, almost transparent body. Living at the tree roots in the mangrove, Khoei is available in every season. Villagers usually go seek Khoei in the morning, and the wash them and salt them for preservation. The salted Khoei is left overnight, and is then set out to dry in strong sunlight for 2-3 days. Villagers massage the sun-dried Khoei. Eventually, the dough-like Khoei will be packed and sold. Khlong Shrimp Paste is famous because it is produced from top-quality Khoei (Mae Klong Today, 2008).</p>
8	Preserved Tube Worm (Dried Hoi Lot)	Muang	Bang Jakreng	Cultural legacy: cuisine and dessert (OTOP products)	Can be found only in Mae Klong.

9	Coconut Palm Sugar (Namtan Maprao)	Amphawa	N/A	Cultural legacy: cuisine and dessert (OTOP products)	<p>Along both sides of Mae Klong Bang Pae route, the profession of making home-made palm sugar is quite important. At present, visitors often stop to see the stoves that are used in making palm sugar. There are many kinds of stoves (or Tao) that are used in making palm sugar, such as Tao Waan, Tao Tan Dee, and Tao Thai Derm. In the morning, villagers climb a coconut tree to retrieve coconut nectar collected in containers made from cut-bamboo sections that were hung overnight from the coconut trees. The nectar is boiled in a large pan until it turns brown and dry. The boiling time is between 08.30. 14.00. Some parts of the sugar palm could be made into a fresh palm juice, which is also a famous beverage (TAT, 2005).</p>
10	Coconut Pudding (Kanom Jak)	Muang	Bang Jakreng	Cultural legacy: cuisine and dessert (OTOP products)	This dessert is made of coconut and flour.

11	Coconut Caramel Toffee (Kalamer Raman)	Muang	Bang Jakreng	Cultural legacy: cuisine and dessert (OTOP products)	<p>It is a dessert made of glutinous rice, coconut cream, and sugar. It takes a lot of time and labour to make. Kalamae. In the old time, people living in the same village would come to help each other in preparing and making in a large amount. This was a good chance for Thai people in the old time to develop friendly relationship and strengthen unity among them. Then, the desserts of unity were taken to offer to the Buddhist monks at a temple. But nowadays, Kalamae is made for sale (Mae Klong Today, 2008).</p>
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12	Kanom in Thai literature - Kanom Jar Mongkut	Muang	N/A	Cultural legacy: cuisine and dessert (OTOP products)	<p>Kanom Jar Mongkut is a typical Thai dessert of . It is only found in this province. It is the most exceptional and intricate preparation of the Thai desserts in this province. This dessert is one of the Thai desserts in Thai literature, especially in poem chom kregng kao wan of King Rama II created with admiration for his Queen, Queen Phrasiriyentra Boromrachachonnani who made all Thai foods and desserts. In this poem, there are more than 15 kinds of Thai desserts and Jar Mongkut in the one in this poem (Mae Klong Today, 2008).</p>
13	Coconut palm sugar production	Amphawa	N/A	Cultural legacy: cuisine and dessert (OTOP products)	<p>has a famous coconut sugar. Coconut essence is extracted by boiling, and the boiling coconut sugar is poured into a small bowl-shaped mold. Coconut has long been a basic cash crop. Coconut sugar has been a major agricultural product (TAT, 2005).</p>
14	Mae Klong River Thapthim fish	Muang	N/A	Cultural legacy: cuisine and dessert (OTOP products)	<p>has natural fish farm along the that raises fish called Thapthim Krachang. Farmers use krachang, a special kind of cage that the river water can flow through, for raising Thapthim fish (TAT, 2005).</p>

15	Tao Tan Sugar palm	Amphawa	N/A	Cultural legacy: cuisine and dessert (OTOP products)	<p>Tao Tan Sugar palm is a famous quality product of Samut Songkhram. When a coconut tree is about 3-4 years old, its spadices are cut, so that farmers can collect its sweet sap, they simmer it over a fire until it becomes brown and dry. A place where palm sugar is made is called "Tao Tan". There are some 5 Tao Tans in existence (TAT, 2005).</p>
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Appendix G
 Timetable of field research/observation
 (Schedule of field observation undertaken from July-October 2006)

No.	Date of visit	Time of visit	Hrs.	Place of visit
1	Sat/July 24, 2006	15:00 p.m.-18:00 p.m.	3	Take private boat trip along
2	Sat/July 29, 2006	16:00 p.m.-18:00 p.m.	2	Take private boat trip along
3	Sun/July 30, 2006	15:00 p.m.-16:00 p.m.	2	Don Hoi Lot & Soi Wat Lang Ban Community & Amphawa Floating Market
4	Sat/Aug.5, 2006	13:00 p.m.-14:00 p.m.	1	9 communities
5	Sun/Aug.6, 2006	9:00 a.m.-12:00 noon	3	9 communities
6	Sat/Aug.19, 2006	13:00 p.m.-14:00 p.m.	1	Take public ferry boat across River
7	Sun/Aug.20, 2006	17:00 p.m.-18:00 p.m.	1	Don Hoi Lot
8	Sat/Oct 21, 2006	10:00 a.m.-12:00 a.m.	2	9 communities
9	Sun/Oct 22, 2006	16:00 p.m.-18:00 p.m.	2	Take private boat trip to Amphawa Floating Market
10	Mon/Oct 23, 2006	9:00 a.m.-10:00 p.m.	1	9 communities
Total (hrs.)			18	

Appendix H
 Timetable of observation and one-on-one interview (Detailed schedules of survey/interview)

No.	Date of visit	Time of visit	Hrs.	Name of community
1	Sat/Nov. 4, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Talard Community (Mae Klong Market)
2	Sun/Nov. 5, 2006	10:00-12:00 noon & 17:00-18:00 p.m.	4	Talard Community (Mae Klong Market)
3	Sat/Nov.11, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Talard Community
4	Sun/Nov.12, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Talard Community
5	Sat/Nov.18, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Bang Jakeng 2 Community
6	Sun/Nov.19, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Bang Jakeng 2 Community
7	Sat/Nov.25, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Thamimitr Community
8	Sun/Nov.26, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Thamimitr Community
9	Sat/Dec.2, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Laem Yai Community
10	Sun/Dec.3, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Laem Yai Community
11	Mon/Dec.4, 2006	11:00-13:00 a.m. & 16:00-18:00 p.m.	4	Laem Yai Community
12	Tue/Dec.5, 2006	11:00-13:00 a.m. & 16:00-18:00 p.m.	4	Laem Yai Community

No.	Date of visit	Time of visit	Hrs.	Name of community
13	Sat/Dec.9, 2006	11:00-13:00 a.m. & 16:00-18:00 p.m.	4	Sapensee-Wat Puangmalai Community
14	Sun/Dec.10, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Sapensee-Wat Puangmalai Community
15	Sat/Dec.16, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Petchsamut Woraviharn Community
16	Sun/Dec.17, 2006	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Petchsamut Woraviharn Community
17	Sat/Jan.6, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Bang Jakeng 1 Community
18	Sun/Jan.7, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Bang Jakeng 1 Community
19	Sat/Jan.13, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Soi Wat Lang Ban Community
20	Sun/Jan.14, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Soi Wat Lang Ban Community
21	Sat/Jan.20, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Pratumkanawasd Community
22	Sun/Jan.21, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Pratumkanawasd Community
23	Sat/Jan.27, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Pratumkanawasd Community

24	Sun/Jan.28, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Pratumkanawasd Community
25	Sat/Feb.3, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Soi Wat Lang Ban Community
26	Sun/Feb.4, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Soi Wat Lang Ban Community
27	Sat/Feb.10, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Sapanssee-Wat Puangmalai Community
28	Sun/Feb.11, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Sapanssee-Wat Puangmalai Community
29	Sat/Feb.17, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Bang Jakeng 1 Community
30	Sun/Feb.18, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Bang Jakeng 2 Community
31	Sat/Feb.24, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Thamnimitr Community
32	Sun/Feb.25, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Wat Petchsamut Woraviharn Community
33	Mon/Feb.26, 2007	11:00-13:00 a.m. & 16:00-18:00 p.m.	4	Laem Yai Community
34	Tue/Feb.27, 2007	9:00-11:00 a.m. & 13:00-16:00 p.m.	5	Laem Yai Community
35	Wed/Feb.28, 2007	10:00-12:00 noon	2	Talard Community
		Total (hrs.)	167	

Appendix I
Questionnaire survey in English

Part I: General Information of local communities

1. (Mr./Mrs./Miss).....Surname.....Age.....Years
Address no.....Moo.....Street.....Tel.....

Please indicate your community name below:

- Wat Lang Ban Community-East bank
- Wat Petchsamut Community-East bank
- Talad Community-East bank
- Wat Thamnimitr Community-East bank
- Bang Jakang I Community-East bank
- Bang Jakang II Community-East bank
- Laem Yai Community-West bank
- Wat Pratumkhanawasd Community-West bank
- Sapan IV or Wat Puangmalai Community-West bank

2. Family status

- Family header
- Family member

3. Highest Education

- Primary education or below
- Secondary education
- Career certificate
- Vocational school
- Bachelor degree or higher
- Others (specify).....

4. Length of educationyears

5. Primary occupation.....Secondary occupation.....

6. Where is your workplace located (relative to the location to the Meklong River).....
.....

7. Marital

- Single
- Married
- Divorced
- Separate

8. Do you have an extended family staying in this residence? If yes, how many adults.....and young.....?

9. Household members.....persons

10. Number of children

- None
- 1 only
- 2-3
- 3 up

11. How long have you lived in this community?.....years

12. Are you native to this community?

- Native
- Immigration from Tambon.....Amphur.....Province.....

13. Is the residential lot properly titled?YesNo Why so?.....

.....

14. Why did you choose to build your house here?.....

.....

.....

15. At present, are you a committee of a community organization?

- No, because.....
- Yes, I am a member of.....

16. Location of house

- River side
- Road side
- River and road side

17. Living time.....years

18. Land Ownership

- Landlord
- Rental
- Other (specify).....

19. How old is this house? yearsmonths

20. Has your present house been refurbished?Yes.....No
When?.....

21. Features of houses

- Traditional Thai
- Combination of wood and concrete
- Cottage
- Modern westernized

- Others (specify).....
22. Characterize the ground floor:
- concrete flooring
 - open dirt space
 - other.....
23. Number of floor in the house (more than 1 answer)
- One-storey house
 - Two-storey house
24. The use of the ground floor
- Relaxation
 - Agriculture
 - Parking ship
 - Toilet
 - Others (specify).....

Part II: The local communities and their uses of the natural resources of the River (H1: The local communities are using the natural resources of the River sustainably.)

25. Do you have your own boat?
- Yes.....boats made of.....with size.....
 - No (If no, then please go ahead to question no.29)
26. Size of boat (indicate dimension of the boat and capacity or number of people that can be loaded at a single time).....
27. What is the main function of the boat? (multiple answers)
- fishing (where along
 - transporting locals
 - transporting tourists
 - others.....
28. Do you lease your boat from someone?
- Yes
 - No.
- Reasons for the lease:.....
- Arrangement of the lease:.....
- (examples: xxBaht for xx number of hours; monthly lease)
29. What is the main occupation?
- Fishing
 - Aquaculture
 - Shrimp farming
 - Food merchant

Others (specify).....

30. Do you have family relations who share the same job?

- No
 Yes.

If yes, who?..... (examples; brother, cousin, father, etc.)

31. How do you sell your products?

- Self selling (specify location).....
 Using traders (specify location).....
 Others (specify).....

Question no.22-23 is just for fishery occupation

32. What is the average volume of catch per day per season? Species of animals (fish, shrimps, clams, etc.) caught or gathered..... weight or volume of catch per harvesting effort and indicate the average...

33. How much is your daily income from products taken/sold from the River?....

34. Do you notice any difference in the amount/volume of harvest of these products over the years?

- Decline
 Increase
 No change; over.....years

35. Currently, what are the problems relating to occupation in your community? (more than 1 answer)

- Lack of good water
 Lack of capital
 Lack of manpower
 Lack of land
 lack of skill
 lack of job opportunities/employment
 lack of clean water from the river ?
 Others (specify).....

36. Where does the water source for your occupation? (more than 1 answer)

- River
 Ground water
 Tap water
 Others (specify).....

37. Where does the water source for your consumption? (more than 1 answer)

- River
 Ground water

- Utilities
- Others (specify).....

38. Do you swim in the River?

- Yes
- No because.....

39. Do you use the River for

- Recreational swimming
- Bathing
- Washing clothes
- Catching aquatic animals
- Other uses.....

40. Questions can be presented in a tabular form. (Find out if respondents are aware of the ecological/scientific value of the River. The resources may not have immediate monetary value)

Natural products/resources of the River	Do you eat?	Do you sell?	Other uses (e.g. religious, medicinal artcraft, curios, souvenir items, decorations, construction materials)	Explanation/description
Fish (indicate the types/names of fish- short-bodied mackerel, mudskipper, etc.)				
Crustaceans (e.g. shrimps, crabs, etc.)				
Molluscs (indicate the types/names of molluscs –e.g. clams, arkshells, tubeworms, oysters, mussels, etc.)				
Water monitor lizard				
Snakes				
Other animals				

Plants (indicate parts gathered and used) -Nipa palms -Mangrove -Water hyacinth				
Other plants				

41. How do you feel about the fishing net in the river?

- I think it's the smart way to get fish
- I think it's not a sustainable way to get fish
- I think it's reducing aquatic animals
- No comment
- Other (specify).....

Part III: An awareness of the local communities who value the River toward the natural and cultural attributes proper management of the River

(H2: The local communities, who value the River for its natural and cultural attributes, are aware of the proper management of the River.)

42. What are your general perceptions about the value of the River (multiple answers)? What is the basis of this perception? (or Why so?)

- Utilitarian
- Aesthetic
- Symbolic
- cultural/religious
- historic
- educational
- ecological
- other

43. Do you know of any oral stories or songs about the values of the River? What are these?

44. When and how did you learn about these stories/songs?.....
.....
.....

45. Do you feel nostalgic about the message of these stories/songs? Why?.....
.....
.....

46. Are there any impacts from the factory?
 Yes (specify).....
 No (specify).....

47. How are the toilet effluents and washings from houses disposed?.....

48. Where will the household waste go?

- Mae Klong River
- Drainage of Community
- Others (specify).....

49. How do you re-cycle household wastes?.....

50. Are you aware of any government regulations regarding the proper disposal of wastes into the River?.....

51. Questions addressed to the local government units responsible for pollution control measures in the Province.....

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52. Questions addressed to the business sector (manufacturer, retail/wholesale shops, ship yard owners, boat repairers, tour operators) regarding the proper use of the river.....

53. Would you like to set up a tourist attraction in this segment of the River similar to that in Amphawa (i.e., floating market?)

- Yes because.....
- No because.....

54. In your opinion, do you think the snapper aquaculture along the River good or bad to the River?

- Good (specify).....
- Bad (specify).....

55. Do you want the government to fine people who make dirt into the River?

- Yes because.....
- No because.....

56. How much the fine should be?.....bahts/time because.....

57. Are you a member of any conservation association of Mae Klong?
 Yes (specify).....
 No (specify).....
58. If you are a member, do you try to persuade other people to be a member?
 Yes (specify).....
 No (specify).....
59. What is your reaction when you see people litter in the river?
 Feel ashamed to those careless people
 Do something to prevent them to do it again
 Do nothing as it's not your business
 Feel nothing because it's not a surprise
60. What is your belief to the guardian of the river?
 Yes (specify).....
 No (specify).....
61. Do you want to see more tourists coming in to visit Mae Klong?
 Yes (specify).....
 No (specify).....
62. In your opinion, which community in Mae Klong is the role model for natural resources conservation?
 Wat Lang Ban Community-East bank
 Wat Petchsamut Community-East bank
 Talad Community-East bank
 Wat Thamnimitr Community-East bank
 Bang Jakang I Community-East bank
 Bang Jakang II Community-East bank
 Laem Yai Community-West bank
 Wat Pratumkanawasd Community-West bank
 Sapan IV or Wat Puangmalai Community-West bank
63. And vice versa, which area in Mae Klong is the worst?
 Wat Lang Ban Community-East bank
 Wat Petchsamut Community-East bank
 Talad Community-East bank
 Wat Thamnimitr Community-East bank
 Bang Jakang I Community-East bank
 Bang Jakang II Community-East bank
 Laem Yai Community-West bank
 Wat Pratumkanawasd Community-West bank
 Sapan IV or Wat Puangmalai Community-West bank

Part IV: The management and environmental issues of Mae Klong

(H3: The management and environmental issues of Mae Klong River are complex.)

64. Has there been any training from government sectors in your community since last year (2005)?
- Yes (specify).....
 - No
65. Do you have a community leader?
- Yes (specify).....
 - No
66. Do you have any knowledge of sustainable use of natural resources in Mae Klong River?
- Yes (specify).....
 - No
67. Are you interested in sustainable use of natural resources in Mae Klong River?
- Yes (specify).....
 - No (specify).....
68. Do you want TAT to help more for tourism campaign?
- Yes (specify).....
 - No (specify).....
69. Who pay the most important role in any natural conservation in your community?
- Municipality
 - Myself
 - People in community
 - Tourists
 - Others.....
70. What did they do to help?
71. Who pay the least important role in any natural conservation in your community?
- Municipality
 - Myself
 - People in community
 - Tourists
 - Others.....
72. What did they do to help?

73. What did the MK Municipality help you in any natural conservation of Mae Klong River?
.....

74. What did the political party list help you in any natural conservation of Mae Klong River?

75. What did the MK's Lovers Club help you in any natural conservation of Mae Klong River?.....

76. Are there any fines or penalties to the misuse of people who live along the River?

Yes (specify).....

No (specify).....

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Appendix J
Questionnaire survey in Thai

ชุดที่ 1: ข้อมูลทั่วไปเกี่ยวกับชุมชนแม่กลอง

1. (นาย/นาง/นางสาว).....นามสกุล.....อายุ.....ปี ที่
อยู่เลขที่.....หมู่ที่.....ถนน.....โทร.....
กรุณาระบุชุมชนของท่าน ข้างล่างนี้
 - ชุมชนวัดหลังบ้าน
 - ชุมชนวัดเพชรสมุทร
 - ชุมชนตลาด
 - ชุมชนวัดธรรมนิมิตร
 - ชุมชนบางจะเกร็ง 1
 - ชุมชนบางจะเกร็ง 2
 - ชุมชนแหลมใหญ่
 - ชุมชนวัดประทุมคณาวาส
 - ชุมชนสะพาน 4 หรือ วัดพวงมาลัย

2. สถานะครอบครัว
 - หัวหน้าครอบครัว
 - สมาชิกครอบครัว

3. การศึกษาขั้นสูงสุด
 - ระดับประถม หรือ น้อยกว่า
 - ระดับมัธยม
 - ประกาศนียบัตรวิชาชีพ
 - โรงเรียนอาชีวศึกษา
 - ปริญญาตรี หรือ สูงกว่า
 - อื่นๆ (ระบุ).....

4. ระยะเวลาการเรียนปี

5. อาชีพหลัก.....อาชีพรอง.....

6. สถานที่ทำงานของคุณอยู่ที่ไหน? (ติดกับแม่น้ำแม่กลองหรือไม่ อย่างไร).....
.....
.....

7. สถานภาพการสมรส
 - โสด
 - แต่งงานแล้ว
 - หย่า
 - แยกกันอยู่

8. คุณมีลูกหลานอาศัยอยู่ด้วยกันในบ้านนี้หรือไม่? ถ้ามี มีผู้ใหญ่กี่คนและมีเด็กกี่คน
ผู้ใหญ่.....คนและเด็ก.....คน

9. สมาชิกในบ้านมี.....คน
10. จำนวนสมาชิกเด็กในบ้าน
- ไม่มี
 - 1 คน เท่านั้น
 - 2-3 คน
 - มากกว่า 3 คน
11. คุณได้อาศัยอยู่ในชุมชนนี้เป็นเวลา.....ปี
12. คุณเป็นคนของชุมชนนี้แต่กำเนิดหรือไม่?
- ใช่
 - ไม่ใช่ แต่ย้ายมาจาก ตำบล.....อำเภอ.....จังหวัด.....
13. ที่ดินของคุณเป็นที่ดินที่มีโฉนดอย่างถูกต้องแล้วใช่หรือไม่ใช่?
- ใช่
 - ไม่ใช่ เพราะ.....
14. ทำไมคุณถึงเลือกสร้างบ้านที่นี่?.....
.....
15. ขณะนี้คุณเป็นสมาชิกชุมชนใดหรือไม่?
- ไม่ได้เป็นสมาชิก เพราะ.....
 - เป็นสมาชิกของ.....
16. ที่ตั้งของบ้านคุณอยู่ติดกับอะไร?
- แม่น้ำ
 - ถนน
 - แม่น้ำและถนน
17. คุณอาศัยมาเป็นเวลา.....ปี
18. ลักษณะการเป็นเจ้าของ
- เจ้าของที่ดิน
 - เช่า
 - อื่นๆ (โปรดระบุ).....
19. อายุของบ้านหลังนี้? ปีเดือน
20. เคยตกแต่งบ้านหลังนี้ใหม่บ้างหรือไม่?เคย.....ไม่เคย เมื่อไหร่?.....
21. ลักษณะบ้านคือ
- บ้านเรือนไทย
 - บ้านไม้ผสมกับคอนกรีต
 - กระท่อม
 - บ้านแบบสมัยใหม่สไตล์ตะวันตก
 - อื่นๆ (โปรดระบุ).....

22. ลักษณะของชั้นล่าง:
พื้นคอนกรีต
พื้นเปิดโล่งคลุมดิน
อื่นๆ.....
23. บ้านมีกี่ชั้น
 บ้านชั้นเดียว
 บ้านสองชั้น
24. ลักษณะการใช้งานของชั้นล่าง (ตอบได้มากกว่า 1 คำตอบ)
 พักผ่อนหย่อนใจ
 เพาะปลูก
 จอดเรือ
 ห้องน้ำ
 อื่นๆ (โปรดระบุ).....

ชุดที่ 2: ชุมชนแม่กลองกับลักษณะการใช้ทรัพยากรทางธรรมชาติของแม่น้ำ-แม่กลอง (สมมุติฐาน1:ชุมชนท้องถิ่นรู้จักใช้ทรัพยากรทางธรรมชาติในแม่น้ำอย่างยั่งยืน)

25. คุณมีเรือหรือไม่?
 มี.....ลำ เป็นเรือทำด้วย.....ขนาด.....
 ไม่มี (ข้ามไปตอบข้อ 29)
26. ขนาดเรือ(ระบุขนาดของเรือและจำนวนผู้โดยสารที่สามารถขึ้นเรือได้ในแต่ละครั้ง)

27. เรือของคุณมีไว้เพื่ออะไรเป็นหลัก? (ตอบได้หลายคำตอบ)
ตกปลา (ที่ไหน?.....)
เป็นยานพาหนะของชุมชน
เป็นยานพาหนะของนักท่องเที่ยว
อื่นๆ.....
28. คุณให้บริการเช่าเรือหรือไม่?ให้เช่าไม่ให้เช่า เหตุผลที่ให้เช่าคือ.....

 การจัดการให้เช่าคิดค่าบริการอย่างไร (เช่นก็บาทต่อกี่ชั่วโมงหรือต่อรายเดือน เป็นต้น).....
29. อาชีพหลักของคุณ?
 ประมง
 เพาะเลี้ยงสัตว์
 ฟาร์มกุ้ง
 ขายอาหาร
 อื่นๆ (โปรดระบุ).....
30. คุณมีญาติที่ทำอาชีพเดียวกันกับคุณหรือไม่?ไม่มีมี ถ้ามีคือใคร.....(เช่น น้องชาย ลูกพี่ลูกน้อง พ่อ แม่ เป็นต้น)

31. คุณค้าขายอย่างไร?
 ค้าขายตรง (ไปรตระบุสถานที่).....
 ผ่านพ่อค้าคนกลาง (ไปรตระบุสถานที่).....
 อื่นๆ (ไปรตระบุ).....
 ต่อไปในข้อ32 และข้อ33 เป็นคำถามสำหรับผู้ทำอาชีพประมง
32. ค่าเฉลี่ยการจับสัตว์น้ำต่อวันต่อฤดูกาล? (ชนิดของปลา กุ้ง หอยและอื่นๆที่จับได้)

 น้ำหนัก หรือปริมาณโดยเฉลี่ยที่จับได้ต่อการออกเรือแต่ละครั้ง.....

33. รายได้แต่ละวันจากการขายผลผลิตที่ได้มาจากแม่น้ำแม่กลอง?.....

34. คุณสังเกตหรือไม่ว่าผลผลิตที่ได้นั้นลดลงหรือเพิ่มขึ้น?ลดลง.....เพิ่มขึ้น
 ไม่เปลี่ยนแปลงในช่วง.....ปี (คำถามนี้ต้องการลงลึกรายละเอียด จากผู้ให้
 สัมภาษณ์—ต้องถามถึงแนวโน้มของการเก็บเกี่ยวผลผลิตในช่วงปีที่ผ่านมา
 รวมทั้งสาเหตุที่เป็นไปได้ของการเปลี่ยนแปลงในจำนวนผลผลิต).....

35. ในปัจจุบันนี้ อะไรคือปัญหาในการประกอบอาชีพของคุณในชุมชนนี้? (ตอบได้
 มากกว่า 1 คำตอบ)
 ขาดแคลนน้ำที่มีคุณภาพ เพราะ.....
 ขาดแคลนทุนทรัพย์ เพราะ.....
 ขาดแคลนแรงงาน เพราะ.....
 ขาดแคลนที่ดิน เพราะ.....
 ขาดแคลนความสามารถ เพราะ.....
 ขาดแคลนการว่าจ้างงาน เพราะ.....
 ขาดแคลนน้ำสะอาดจากแม่น้ำแม่กลอง เพราะ.....
 อื่นๆ (ไปรตระบุ).....
36. แหล่งน้ำสำหรับอาชีพของคุณมาจากที่ใด? (ตอบได้มากกว่า 1 คำตอบ)
 แม่น้ำแม่กลอง
 น้ำบาดาล
 น้ำประปา
 อื่นๆ (ไปรตระบุ).....
37. แหล่งน้ำเพื่อการบริโภคมาจากแหล่งไหน? (ตอบได้มากกว่า 1 คำตอบ)
 แม่น้ำแม่กลอง
 น้ำบาดาล
 น้ำประปา
 อื่นๆ (ไปรตระบุ).....

38. คุณเล่นน้ำในแม่น้ำแม่กลองหรือไม่?

- เคย
 ไม่เคย เพราะ.....

39. คุณใช้แม่น้ำแม่กลองเพื่อการ

- เล่นน้ำ
 อาบน้ำ
 ซักผ้า
 จับสัตว์น้ำ (โปรดระบุ).....
 อื่นๆ (โปรดระบุ).....

40. คำถามในรูปแบบตาราง (เพื่อให้ทราบเกี่ยวกับผู้ตอบแบบสอบถามในเรื่องของการระมัดระวังถึงคุณค่าทางชีววิทยาและคุณค่าทางวิทยาศาสตร์ของแม่น้ำแม่กลอง. โดยอาจไม่เกี่ยวโดยตรงกับคุณค่าทางการเงิน)

ทรัพยากรและผลผลิตทางธรรมชาติของแม่น้ำ	ใช้เพื่อรับประทาน (กรณาระบุชนิดของสัตว์น้ำ)	ใช้เพื่อขาย	ใช้ในทางอื่นๆ (เช่น เพื่อพิธีทางศาสนา เพื่อทำยาเพื่อเก็บเป็นของเก่า เพื่อเก็บเป็นของที่ระลึก เพื่อเป็นของแต่งบ้าน เพื่อทำวัสดุก่อสร้าง)	คำอธิบาย
ปลา (ระบุชื่อชนิดของปลา เช่น ปลาทู ปลาดุก และอื่นๆ เป็นต้น)				
สัตว์ทะเลมีเปลือก (เช่น กุ้ง ปู และอื่นๆ เป็นต้น)				
สัตว์จำพวกหอย (ระบุชื่อชนิดของหอย เช่น หอยนางรม (oysters) หอยหลอด (tubeworms) หอยแมลงภู่ (mussels) หอยกาบ)				

(clams) หอยแครง (arkshells) และ อื่นๆ เป็นต้น				
ตัวเงินตัวทอง				
งู				
สัตว์อื่นๆ (ไปรตระบ)				
พืช ต้นไม้ (ระบุ ส่วนที่เก็บ นำมาใช้) -ต้นจาก -โก่งกาง -ผักตบชวา				
พืช ต้นไม้ อื่นๆ (ไปรตระบ)				

41. คุณมีความเห็นอย่างไรกับการใช้อวนตาถี่จับปลาในแม่น้ำ?

- คิดว่าเป็นความชาญฉลาดของมนุษย์ที่จะจับปลา
- คิดว่าไม่ใช่วิธีของกรใช้ทรัพยากรอย่างยั่งยืน
- คิดว่าจะทำให้สัตว์น้ำลดน้อยลงในอนาคต
- ไม่มีความคิดเห็น
- อื่นๆ (ไปรตระบ).....

**ชุดที่ 3: การระแวงระวังและการจัดการต่อลักษณะทางธรรมชาติและ
วัฒนธรรมที่เหมาะสมของผู้ที่เห็นคุณค่าของแม่น้ำในชุมชน**

(สมมุติฐาน2: ชุมชนท้องถิ่นผู้รู้ถึงคุณค่าและลักษณะของทรัพยากรทางธรรมชาติใน
แม่น้ำ รู้จักระวังในเรื่องของการจัดการแม่น้ำที่เหมาะสม)

42. ความเข้าใจพื้นฐานของคุณเกี่ยวกับคุณค่าของแม่น้ำ (ตอบได้มากกว่า 1 คำตอบ)
(เหตุใดถึงเข้าใจเช่นนั้น?)

- คุณค่าทางสาธารณูปโภค เหตุผล.....
- คุณค่าทางความงาม เหตุผล.....
- คุณค่าของความเป็นสัญลักษณ์ของแม่กลอง เหตุผล.....
- คุณค่าทางศาสนาและวัฒนธรรม เหตุผล.....
- คุณค่าทางประวัติศาสตร์ เหตุผล.....
- คุณค่าทางการศึกษา เหตุผล.....
- คุณค่าทางชีววิทยา เหตุผล.....
- อื่นๆ

43. คุณรู้จักเรื่องเล่าหรือบทเพลงอะไรเกี่ยวกับคุณค่าของแม่น้ำแม่กลองหรือไม่? หาก
ทราบ ชื่อเพลงหรือเรื่องเล่า ไปรตระบ.....

.....

.....

.....

.....

44. คุณรู้จักเรื่องเล่าหรือบทเพลงนี้ได้อย่างไรและตั้งแต่เมื่อไหร่?.....

45. คุณเคยรู้สึกหวนนึกถึงความหลังเวลาได้ยินเพลงเกี่ยวกับแม่น้ำหรือไม่? เพราะอะไร?.....

46. คุณได้รับผลกระทบหรือไม่ อย่างไรจากโรงงานในชุมชน?
 ได้ (โปรดระบุ).....
 ไม่ได้ (โปรดระบุ).....
47. คุณทำอย่างไรกับการปล่อยน้ำเสียจากบ้าน?.....

48. คุณปล่อยน้ำเสียจากท่อระบายน้ำที่บ้าน ลงสู่ที่ใด?
 แม่น้ำแม่กลอง
 ท่อน้ำทิ้งของชุมชน
 อื่นๆ (โปรดระบุ).....

49. คุณปฏิบัติอย่างไรบ้างกับการนำน้ำเสียกลับไปใช้อีกครั้งในบ้านของคุณ?.....

50. คุณเป็นผู้ที่ระมัดระวังเรื่องกฎเกณฑ์ของทางที่มีต่อการกำจัดน้ำเสียลงแม่น้ำลำคลองหรือไม่ อย่างไร?.....

คำถามถามส่วนปกครองท้องถิ่น

51. คำถามถามส่วนปกครองท้องถิ่นในจังหวัดที่มีส่วนรับผิดชอบเรื่องมาตรการการควบคุมมลพิษ ว่ามีมาตรการการควบคุมมลพิษ อย่างไร.....

คำถามถามองค์กรธุรกิจในจังหวัด

52. คำถามถามองค์กรธุรกิจในจังหวัด เช่น ผู้ผลิต ร้านขายปลีก คำสั่ง เจ้าของอู่เรือ คนซ่อมเรือ ธุรกิจการท่องเที่ยว เกี่ยวกับการใช้แม่น้ำแม่กลองอย่างยั่งยืนว่าท่านจะปฏิบัติอย่างไรได้บ้าง.....

.....

 53. คุณต้องการให้รัฐบาลปรับปรุงและจัดตั้งสถานที่ท่องเที่ยวทางน้ำคล้ายกับตลาดน้ำอัมพวาหรือไม่?

- ต้องการ เพราะ.....
 ไม่ต้องการ เพราะ.....

54. ในความคิดของคุณ คุณคิดว่าการเพาะปลากะพงตามริมน้ำในแม่น้ำแม่กลองนั้น ดีหรือไม่?

- ดี (โปรดระบุ).....
 ไม่ดี (โปรดระบุ).....

55. คุณต้องการให้รัฐบาลปรับผู้ที่ทำให้แม่น้ำสกปรกหรือไม่?

- ต้องการ เพราะ.....
 ไม่ต้องการ เพราะ.....

56. ค่าปรับควรเป็นเท่าไร?.....บาท/ครั้ง เพราะ.....

57. คุณเป็นสมาชิกของสมาคมการอนุรักษ์แม่กลองใด หรือไม่?

- เป็นสมาชิก (โปรดระบุ).....
 ไม่เป็นสมาชิก (โปรดระบุ).....

58. หากคุณเป็นสมาชิก คุณจะชวนผู้อื่นเข้าร่วมเป็นสมาชิกกับคุณด้วยหรือไม่?

- ชวน (โปรดระบุ).....
 ไม่ชวน (โปรดระบุ).....

59. คุณจะมีปฏิกิริยาอย่างไรเมื่อเห็นผู้ที่ทิ้งขยะลงในแม่น้ำแม่กลอง?

- รู้สึกว่าบุคคลผู้นั้นเป็นคนมกง่าย
 จะพยายามพูดแนะนำไม่ให้ทิ้งขยะลงในแม่น้ำแม่กลองเพื่อให้แม่น้ำสะอาดตลอดไป
 เฉยและไม่ทำอะไรเนื่องจากข้าพเจ้าก็ทำเป็นประจำ
 ใครๆ เขาก็ทำกันทั้งนั้น เห็นมาตั้งแต่เด็ก ๆ

60. ท่านเชื่อว่ามีเทพเจ้าแห่งแม่น้ำหรือไม่ ?

- เชื่อ เทพเจ้าคือ..... เพราะ.....
 ไม่เชื่อ เพราะ.....

ถ้าคุณเชื่อ คุณคิดว่าเทพเจ้าแห่งแม่น้ำ จะโกรธและลงโทษผู้ที่ทิ้งขยะและของเสียลงในแม่น้ำหรือไม่?.....

61. คุณต้องการให้มีนักท่องเที่ยวมาเที่ยวแม่กลองมากขึ้นหรือไม่?

- ต้องการ เพราะ.....
 ไม่ต้องการ เพราะ.....

62. ในความคิดของคุณ คุณคิดว่าชุมชนใดเป็นตัวช่วยในการอนุรักษ์
ทรัพยากรธรรมชาติในแม่น้ำแม่กลองบ้าง?

- ชุมชนวัดหลังบ้าน-ฝั่งตะวันออก เพราะ.....
- ชุมชนวัดเพชรสมุทระ-ฝั่งตะวันออก เพราะ.....
- ชุมชนตลาด-ฝั่งตะวันออก เพราะ.....
- ชุมชนวัดธรรมนิมิตร-ฝั่งตะวันออก เพราะ.....
- ชุมชนบางจะเกร็ง I-ฝั่งตะวันออก เพราะ.....
- ชุมชนบางจะเกร็ง II-ฝั่งตะวันออก เพราะ.....
- ชุมชนแหลมใหญ่-ฝั่งตะวันตก เพราะ.....
- ชุมชนวัดประทุมคณาวาส-ฝั่งตะวันตก เพราะ.....
- ชุมชนสะพาน 4 หรือ วัดพวงมาลัย-ฝั่งตะวันตก เพราะ.....

63. และในทางตรงข้าม คุณคิดว่าชุมชนใดไม่เป็นตัวช่วยในการอนุรักษ์
ทรัพยากรธรรมชาติในแม่น้ำแม่กลองเลย?

- ชุมชนวัดหลังบ้าน-ฝั่งตะวันออก เพราะ.....
- ชุมชนวัดเพชรสมุทระ-ฝั่งตะวันออก เพราะ.....
- ชุมชนตลาด-ฝั่งตะวันออก เพราะ.....
- ชุมชนวัดธรรมนิมิตร-ฝั่งตะวันออก เพราะ.....
- ชุมชนบางจะเกร็ง I-ฝั่งตะวันออก เพราะ.....
- ชุมชนบางจะเกร็ง II-ฝั่งตะวันออก เพราะ.....
- ชุมชนแหลมใหญ่-ฝั่งตะวันตก เพราะ.....
- ชุมชนวัดประทุมคณาวาส-ฝั่งตะวันตก เพราะ.....
- ชุมชนสะพาน 4 หรือ วัดพวงมาลัย-ฝั่งตะวันตก เพราะ.....

ชุดที่ 4: การจัดการด้านสิ่งแวดล้อมในชุมชนแม่กลอง

(สมมุติฐาน 3: เรื่องของสิ่งแวดล้อมและการจัดการแม่น้ำแม่กลองเป็นเรื่องที่ยั่งยืน)

64. เคยมีการจัดอบรมเรื่อง การใช้ทรัพยากรจากแม่น้ำกลอง การรักษาความสะอาด
ในแม่น้ำแม่กลอง จากทางราชการให้กับชุมชนของท่านบ้างหรือไม่ นับตั้งแต่ปีที่
แล้ว (พ.ศ.2548)?

- มี (โปรดระบุ).....
- ไม่มี

65. คุณมีผู้นำชุมชนหรือไม่?

- มี (โปรดระบุ).....
- ไม่มี

66. คุณมีความรู้ในเรื่องของการใช้ทรัพยากรทางธรรมชาติในแม่น้ำแม่กลองอย่าง
ยั่งยืนหรือไม่?

- มี (โปรดระบุ).....
- ไม่มี

67. คุณสนใจในเรื่องของการใช้ทรัพยากรทางธรรมชาติของแม่น้ำแม่กลองอย่างยั่งยืน
หรือไม่?

- สนใจ เพราะ.....
- ไม่สนใจ เพราะ.....

68. คุณต้องการให้ ททท ช่วยในการโปรโมทการท่องเที่ยวหรือไม่?
 ต้องการ เพราะ.....
 ไม่ต้องการ เพราะ.....
69. ใครหรือฝ่ายใดที่ช่วยหรือมีบทบาทในเรื่องของการอนุรักษ์ธรรมชาติของแม่น้ำแม่กลองในชุมชนนี้มากที่สุด?
 เทศบาล
 ตัวข้าพเจ้า
 คนในชุมชน
 นักท่องเที่ยว
 อื่นๆ (โปรดระบุ).....
70. ช่วยหรือมีบทบาทในเรื่องใด?.....

71. ใครหรือฝ่ายใดที่ช่วยหรือมีบทบาทในเรื่องของการอนุรักษ์ธรรมชาติของแม่น้ำแม่กลองของชุมชนนี้น้อยที่สุด?
 เทศบาล
 ตัวข้าพเจ้า
 คนในชุมชน
 นักท่องเที่ยว
 อื่นๆ (โปรดระบุ).....
72. ช่วยหรือมีบทบาทในเรื่องใด?.....

73. เทศบาลเมืองช่วยทำอะไรในเรื่องของการอนุรักษ์ธรรมชาติของแม่น้ำแม่กลองของชุมชนนี้?.....

74. พรรคการเมืองช่วยทำอะไรในเรื่องของการอนุรักษ์ธรรมชาติของแม่น้ำแม่กลองของชุมชนนี้บ้าง?.....

75. ชุมชนคนรักแม่กลอง ช่วยอะไร ในการอนุรักษ์ธรรมชาติของแม่น้ำแม่กลองในชุมชนนี้?.....

76. มีการปรับพื้นที่อาศัยอยู่ริมน้ำและกระทำผิดต่อการใช้น้ำในแม่น้ำหรือไม่
 มี (โปรดระบุ).....
 ไม่มี และคิดว่าควรมีหรือไม่ โปรดระบุเหตุผล.....

Appendix K
Samut Songkhram Province is located at the mouth of the Mae Klong River next to the Gulf of Thailand.
Source: <http://maps.google.com/maps>



มหาวิทยาลัยศิลปากร ส่วนลิขสิทธิ์

Appendix L

The 3 Districts of Samut Songkhram Province; Muang Samut Songkhram (locally called Mae Klong), Amphawa, and Bang Khontee District

Source: http://en.wikipedia.org/wiki/Samut_Songkhram_Province



Appendix M
Total Populations of 3 Districts in Samut Songkhram Province
Source: DOPA, 2008

No.	District	Tambon Admin.	Boundary (Square Kilometer)	Distance from SMSK Province (KM.)	Established since	Number		Population		
						Tambon	Village	Male	Female	Total
1	Samut Songkhram	10 (11)	169.057	-	1897	11	87	49,859	53,409	103,268
2	Ban Khontee	12 (13)	77.486	12	1915	13	101	15,926	17,815	33,741
3	Amphawa	11 (12)	170.164	6	1915	12	96	28,108	29,951	58,059
TOTAL								93,893	101,175	195,068

Appendix N

The 14 communities in Samut Songkhram Municipality

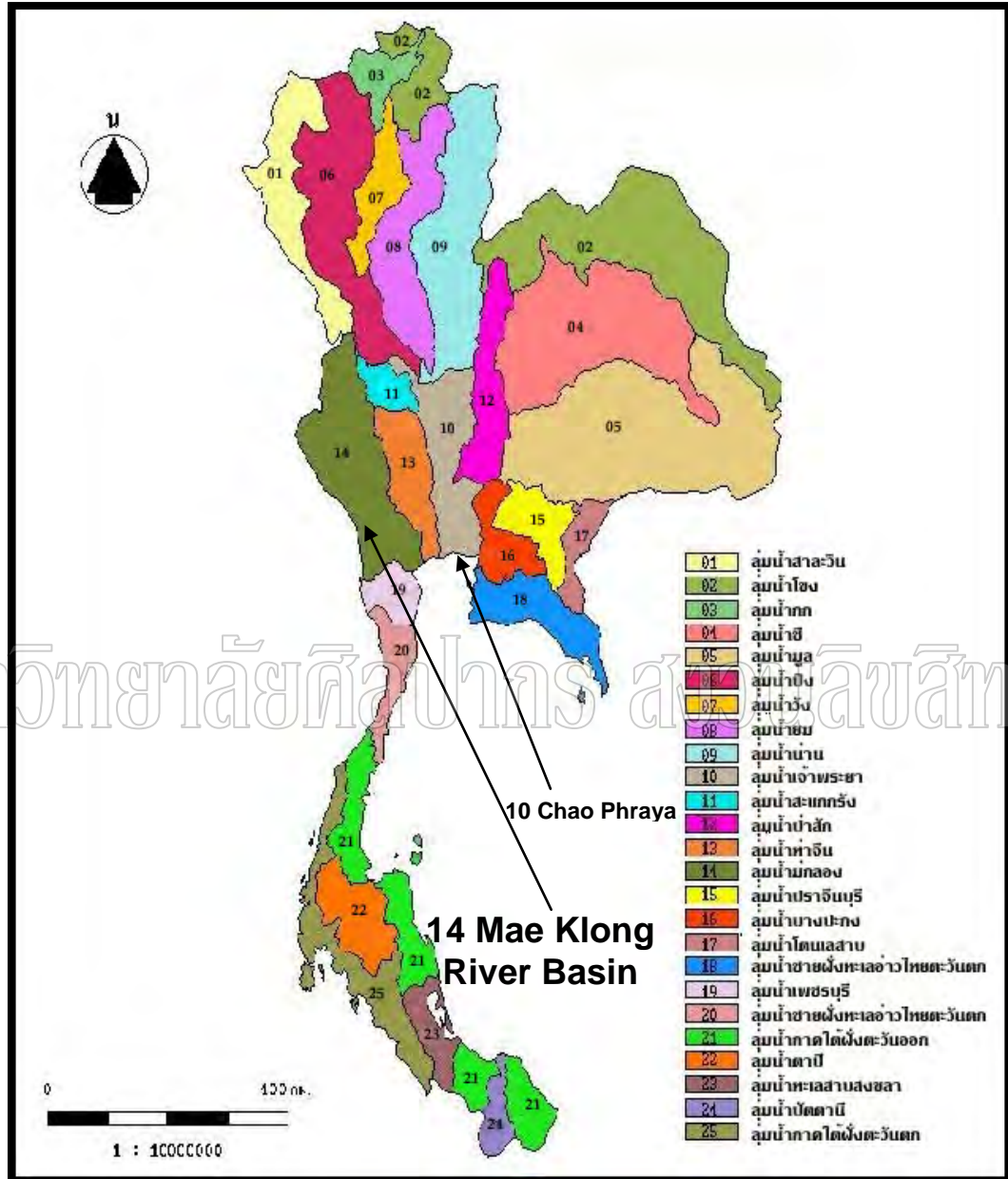
Source: Samut Songkhram Municipality, 2005



Appendix O

Map of Mae Klong River Basin & the 25 River Basins in Thailand

Source: www.khlong-u-taphao.com/index.php?file=article&obj=forum.forprint



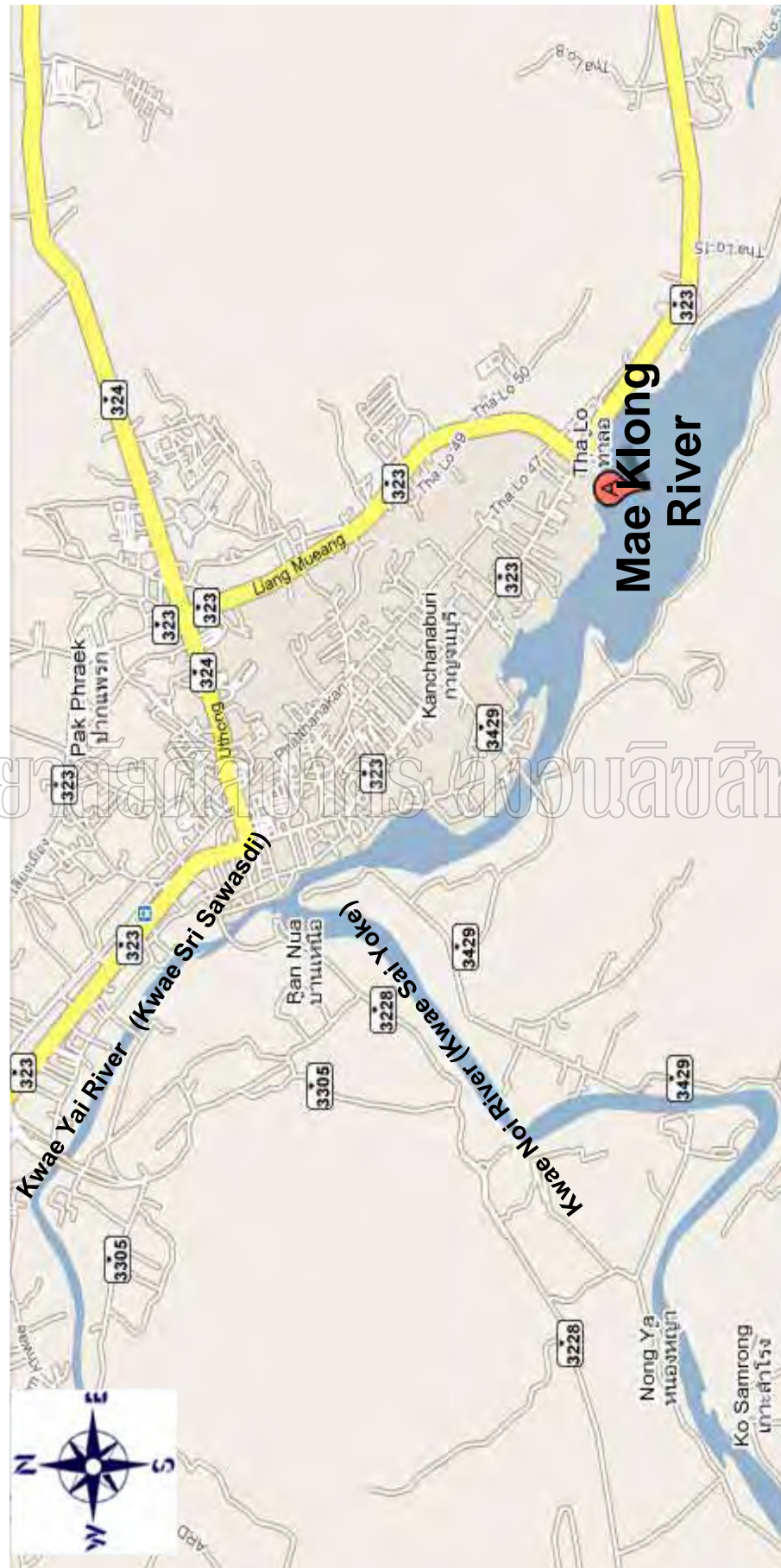
Appendix Q
Srinakarín Dam in the north of Kanchanaburi Province
Source: <http://maps.google.com/maps>



มหาวิทยาลัยศิลปากร ส่วนวิจัยเทคโนโลยี

Appendix R

The Mae Klong River begins at the confluence of the Kwaee Noi River (Kwaee Sai Yoke) and the Kwaee Yai River (Kwaee Sri Sawasdi) at Pak Phraek Sub-district in Kanchanaburi Province
Source: <http://maps.google.com/maps>

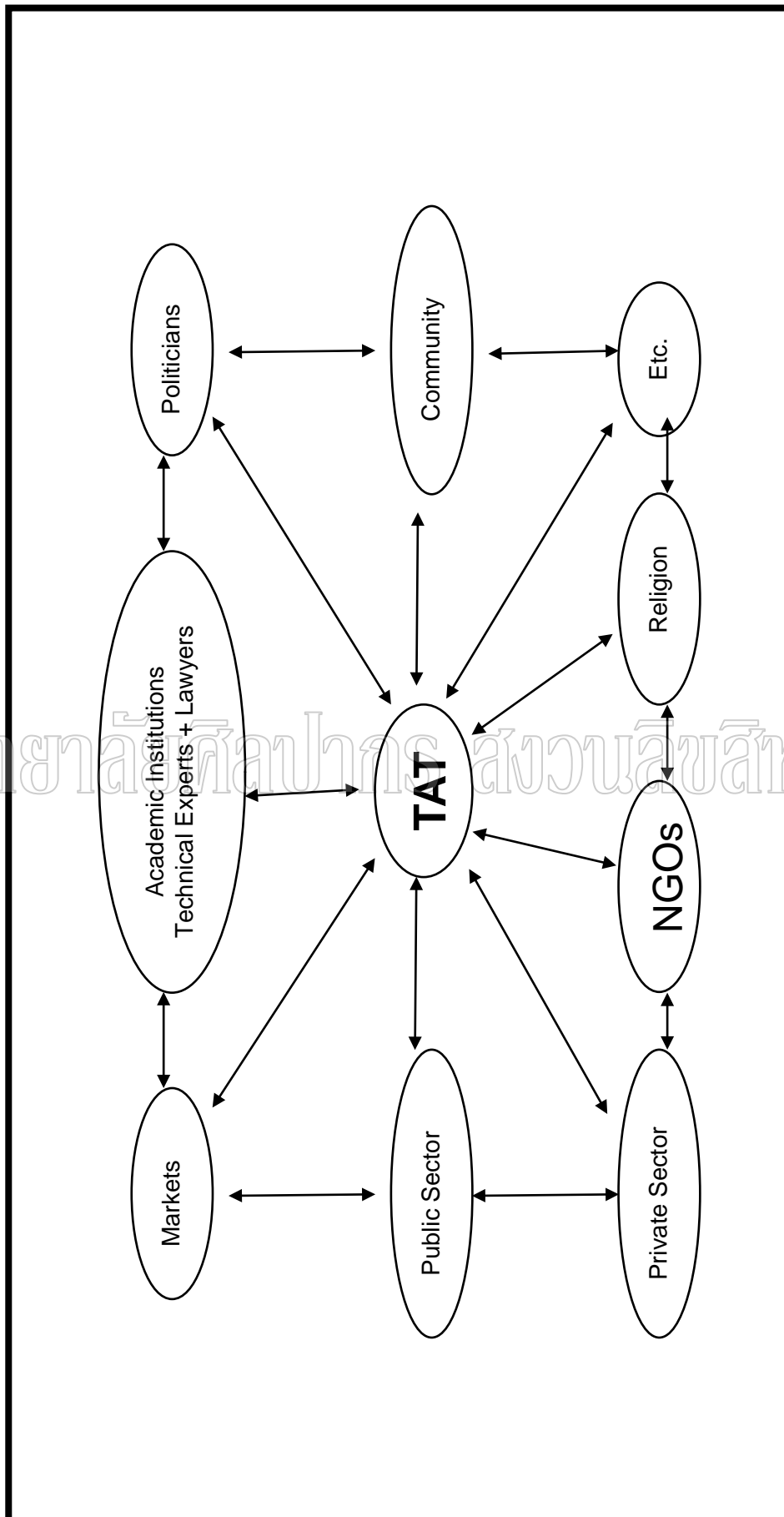


Appendix S
The community leaders, households, and populations of the 9 communities included in the study area as of 2006
Source: Samut Songkhram Municipality, 2006

Community Code No.	Community name	East/West riparian	Name of community leader	Contact number	Name of former community leader	Number of households	Number of population
2	Soi Wat Lang Ban Community	East	Mr. Sutthichai Chantarangsu	086-750-8800	NA	177	1,093
6	Wat Petchsamut Woraviharn Community	East	Ms. Chutiprapha Duangmorakoy (Jay Muay)	081-778-7086	NA	379	2,013
7	Talad Community	East			Mr. Waraporn Saengwanich (081-857-7855)	322	2,358
8	Wat Thamimitr Community	East	Mr. Anek Thaicharoen	081-981-4576	NA	1,200	4,947
9	Bang Jakeng 1 Community	East	Mr. Sompong Thaikimhor	081-308-9125	NA	363	2,383

Community Code No.	Community name	East/West riparian	Name of community leader	Contact number	Name of former community leader	Number of households	Number of population
10	Bang Jakeng 2 Community	East	Mr. Prapan Laohakanwanich	081-880-0526	NA	448	2,902
12	Laem Yai Community	West	Mr. Anek SukPhut	081-858-7812	Mr. Narongrit Kamolatham (081-943-0930)	283	1,172
13	Wat Pratumkhanawasd Community	West	Mr. Kittisak Horswanwong		Ms. Rin (089-546-7485)	333	2,325
14	Sapansee-Wat Puangmalai Community	West	Mr. Sommai Suksomboonthana	089-018-1824	NA	743	4,596
						4248	23,789

Appendix T
Thailand Ecotourism Network
Source: Chaiyakhot, 2004



Appendix U

Governmental Offices in Samut Songkhram Province

Source: Samut Songkhram Province, 2009

Governmental Offices in Samut Songkhram Province	
Name in Thai	Name in English
ที่ทำการปกครองจังหวัด	Samut Songkhram Provincial Administration Office
สนง.พัฒนาชุมชนจังหวัด	Samut Songkhram Provincial Community Development Office
สนง.สาธารณสุขจังหวัด	Samut Songkhram Provincial Public Health Office
สถานีตำรวจภูธรจังหวัด	Samut Songkhram Provincial Police
สนง.เกษตรจังหวัด	Samut Songkhram Provincial Agricultural Office
สนง.อุตสาหกรรมจังหวัด	Samut Songkhram Provincial Industrial Office
สนง.สวัสดิการและคุ้มครองแรงงานจังหวัด	Samut Songkhram Provincial Labor Protection and Welfare
สนง.จัดหางานจังหวัด	Samut Songkhram Provincial Employment Office
สนง.โยธาธิการและผังเมืองจังหวัด	Samut Songkhram Office of Public Works and Town & Country Planning
สนง.วัฒนธรรมจังหวัด	Samut Songkhram Provincial Cultural Office
สนง.การค้าภายในจังหวัด	Samut Songkhram Provincial Internal Trade Office
อำเภอเมืองสมุทรสงคราม	Samut Songkhram District
อำเภอบางคนที	Bang Khon Thee District
ธนาคารเพื่อการเกษตรฯ	Bank for Agriculture and Agricultural Cooperatives
การกีฬาแห่งประเทศไทยจังหวัด	Samut Songkhram Provincial Sports Authority of Thailand
สนง.ขนส่งจังหวัด	Samut Songkhram Provincial Transportation Office
บริษัท ทศท คอร์ปอเรชั่น จำกัด	Telephone Organization of Thailand
สนง.ป้องกันและบรรเทาสาธารณภัยจังหวัด	Samut Songkhram Provincial Office of Disaster Prevention and Mitigation
อบต.ลาดใหญ่	Aor Bor Tor Lad Yai
สนง.ประชาสัมพันธ์จังหวัด	Samut Songkhram Province Public Relations Office
องค์การบริหารส่วนจังหวัด	Samut Songkhram Provincial Administration Office
ศูนย์พัฒนาฝีมือแรงงานจังหวัดสมุทรสงคราม	Samut Songkhram Provincial Center for Skill Development
สนง.ทรัพยากรธรรมชาติและสิ่งแวดล้อม	Samut Songkhram Provincial Natural Resources & Environment Office
สนง.การเลือกตั้งจังหวัด	Samut Songkhram Provincial Election Office

สนง.ตรวจบัญชีสหกรณ์จังหวัด	Samut Songkhram Provincial Cooperative Auditing Office
ศูนย์ปฏิบัติการอาชีพศึกษาจังหวัดสมุทรสงคราม	Samut Songkhram Vocation Provincial Operation Center
สำนักงานสาธารณสุขอำเภออัมพวา	Amphawa District Public Health Office
สำนักงานบังคับคดีจังหวัดสมุทรสงคราม	Samut Songkhram Legal Execution Office
ศูนย์ต่อสู้เพื่อเอาชนะยาเสพติด	Drug Treatment & Rehabilitation Center
เทศบาลตำบลบางนกแขวก	Bang Nok Kwaek Sub-district Municipality
สนง.ป้องกันและบรรเทาสาธารณภัยจังหวัด	Office of Disaster Prevention and Mitigation
สนง.เขตพื้นที่การศึกษาจังหวัด	Samut Songkhram Provincial Educational Area Center
สนง.สถิติจังหวัด	Samut Songkhram Provincial Statistical Office
สนง.เกษตรและสหกรณ์จังหวัด	Samut Songkhram Provincial Office of Agriculture and Cooperatives
สนง.ที่ดินจังหวัด	Samut Songkhram Provincial Land Office
สนง.แรงงานจังหวัดสมุทรสงคราม	Samut Songkhram Provincial Labor Protection and Welfare Office
สนง.ประกันสังคมจังหวัด	Samut Songkhram Provincial Social Security Office
สนง.สรรพากรพื้นที่จังหวัด	Samut Songkhram Area Revenue Office
สนง.ทรัพยากรธรรมชาติและสิ่งแวดล้อมจังหวัด	Samut Songkhram Provincial Natural Resources & Environment Division
สนง.พัฒนาธุรกิจการค้าจังหวัด	Samut Songkhram Provincial Commerce Development Division
สนง.สรรพสามิตพื้นที่	Department for Thriving Economy, Better Society, and Improved Environment
อำเภออัมพวา	Amphawa District
สนง.เทศบาลเมืองฯ	Muang Municipality office
สนง.ทางหลวงชนบทจังหวัด	Office of Rural Highway, Samut Songkhram
สนง.พัฒนาสังคมและสวัสดิการจังหวัด	Samut Songkhram Provincial Social Developmental Welfare Office
อบต.นางตะเคียน	Aor Bor Tor Nang Takian
สนง.พาณิชย์จังหวัด	Samut Songkhram Provincial Commerce Office
สนง.ประมงจังหวัด	Samut Songkhram Provincial Fishery Office
สนง.คลังจังหวัด	Samut Songkhram Provincial Treasury Office
สนง.บำรุงทางจังหวัดสมุทรสงครามและราชบุรี	Samut Songkhram Highway Maintenance District Office
เรือนจำกลางสมุทรสงคราม	Corrections Forum of Samut Songkhram

สนง.สหกรณ์จังหวัด	Samut Songkhram Province and Farmer Cooperatives
สนง.พัฒนาสังคมและความมั่นคงของมนุษย์	Samut Songkhram Provincial Social Development and Human Security Office
สนง.ประกันภัยจังหวัด	Samut Songkhram Provincial Insurance Office
สนง.การขนส่งทางน้ำที่ 3 สาขาสมุทรสงคราม	Promotion of Water Transportation Agency, Samut Songkhram
สภต.ลาดใหญ่	Police Station Lad Yai
สำนักงานคุมประพฤติจังหวัดสมุทรสงคราม	Office Probation Office Samut Songkhram
อบต.บางสะแก	Aor Bor Tor Bangsakae
ศูนย์วิทยาศาสตร์การแพทย์สมุทรสงคราม	Samut Songkhram Knowledge Management & Learning Organization
โครงการชลประทานสมุทรสงคราม	Office of Samut Songkhram Irrigation Project

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

Appendix V
Abbreviation

ADB	Asian Development Bank
ASA	Association of Siamese Architects Under Royal Patronage
ASEAN	Association of Southeast Asian Nations
ASP	Associated School Project
AUSRIVAS	Australian River Assessment Scheme
BMA	Bangkok Metropolitan Administration
CECS	Cultural Environmental Conservation System
CIDA	Canadian International Development Agency
DANCED	Danish Cooperation on Environment and Development
Danida	Danish International Development Assistance
DNP	Department of National Parks, Wildlife and Plants Conservation
DOAE	Department of Agricultural Extension
DOPA	Department of Provincial Administration
EAPPCED	East Asia & Pacific Parliamentarians' Conference on Environment and Development
EPPO	Energy Policy and Planning Office
FAO	Food and Agriculture Organization of the United Nations
GMS	Greater Mekong Sub-region
ICOMOS	International Council on Monuments and Sites
IGES	Institute for Global Environmental Strategies
IUCN	World Conservation Union
LDI	Local Development Institute
MOTS	Ministry of Tourism and Sports
MWA	Metropolitan Waterworks Authority
NGO	Non-governmental Organization
NHRC	Office of the National Human Rights Commission of Thailand
NSO	National Statistical Office Thailand
OEPP	Office of Environmental Policy and Planning
ONEP	Office of Natural Resources and Environmental Policy and Planning
ONREPP	Office of Natural Resources and Environmental Policy and Planning
OTOP	One Tambon One Products
PATA	Pacific Asia Travel Association
PCD	Pollution Control Department
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SEMEO-SPAFA	Southeast Asian Ministers of Education Organization-Regional Centre for Archaeology and Fine Arts
TAT	Tourism Authority of Thailand
TBCSD	Thailand Business Council for Sustainable Development
TCEP	Thailand Cultural Environment Project
TCT	Tourism Council of Thailand
TEI	Thailand Environment Institute

THAICID	The National Committee on Irrigation and Drainage
Thailand CEF	Thailand Cultural Environment Fund
UEP	The Urbanization and Environment Program
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNU	United Nations University
UNWTO	United Nations World Tourism Organization
USG	U.S. Geological Survey
WEPA	Water Environment Partnership in Asia
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WTO	World Tourism Organization
WTTC-WTO	World Travel & Tourism Council, World Tourism Organization

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

Appendix W

Glossary

Agenda 21 A blue print to attain sustainable development in the 21st Century.

Agro-tourism Agricultural and the river-based occupations.

Burra Charter An Australia ICOMOS Charter for Places of Cultural Significance or the International Council on Monuments and Sites (ICOMOS) that developed a charter on culture and tourism in 1999 which is commonly referred to as the Burra Charter.

Carrying capacity A theoretical and powerful management tool for site zoning, the monitoring of impacts and regular processing.

Community-based tourism A tourism that promotes the conservation of the country's precious natural resources and support sustainable tourism development in tandem with quality development of the Thai Tourism Industry.

Cultural heritage tourism A tourism that include attractions such museums, aquariums, performing arts centers, archeological digs, theaters, historical sites, monuments, castles, architectural relics, religious centers, and zoos.

Cultural heritage An expression of the ways of living developed by a community which are passed on from generation to generation, including customs, practices, places, objects, artistic expression and values.

Ecotourism A type of tourism which is a subset of natural area tourism, nature-based tourism and adventure travel. This is a new proposal in response to the negative effects of mass tourism.

Floating market A water-based trade center.

Heritage Legacy from the past, what we live today, and what we pass on to future generations.

Home-stay tourism A tourism that highlights Thai's traditional ways of life in rural areas where tourists can have close interactions with the local people and nature.

Natural heritage The lands and the seas, the soils and plants and animals, the water we drink, and the air we breathe.

Ramsar Convention The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Ramsar sites The wetlands that have been recognized under the Ramsar Convention.

Sustainable development Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable tourism A sub-branch of sustainable development. The management of tourism resources that fulfills economic, social and aesthetic needs while maintaining cultural integrity, essential ecological process, and biological diversity and life support systems.

Venice Charter The International Charter for the Conservation and Restoration of Monuments and Sites or the Venice Charter is the forerunner of other documents and marks concerns on conserving the past for the present and future. The Venice Charter arose from an International Congress of Architects and Technicians of Historic Monuments in Venice in May 1964. It focuses on ancient monuments and buildings, reflecting the narrow scope of conservation in the 1960s.

Wetlands Areas of marches, fens, peat land or water, flood plains, and bogs, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt. It includes areas of marine water the depth of which at low tide does not exceed six meters.

Autobiography

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Educational Background

- Master of Arts in International Policy Studies with a specialization in Japanese, Monterey Institute of International Studies, Monterey, California, USA.
- Bachelor of Arts in Japanese Language studies, Thammasat University.

Special Training

- Regional Training – Creating Client Delight, Bangkok, Thailand in 2008.
- Regional Training – Regaining Client Trust Workshop, Bangkok, Thailand in 2008.
- Regional Training - Leadership I, Bangkok, Thailand in 2008.
- Regional Training - Telephone Engagement Workshop, Bangkok, Thailand in 2007.
- Regional Training - Achieving Client Engagement, Bangkok, Thailand in 2007.
- Direct Sales Training Academy, Bangkok, Thailand in 2006.
- Regional Training - Ultimate Secret of Citibank Service Leadership, Bangkok, Thailand in 2006.
- Exporter and Intertrader Training Programs, Department of Exporting Promotion of Thailand, Bangkok, Thailand in 2003.
- Citibank - Service Excellence Training Program, Bangkok, Thailand in 1995.
- Citibank - Train to be the Trainer, Bangkok, Thailand in 1993.

International Seminar/Workshop

- Direct Sales Training Academy Workshop, Chennai, India in 2008.
- Destination Indiana Program, Department of States, (Granted), Indiana, USA in 2002.
- NAFSA Conference 2002 (Granted), Texas, USA in 2002.
- U.S. Based Training Program (Granted), Washington, D.C., USA in 2002.
- Regional NAFSA Conference 2000 (Granted), Iowa, USA in 2002.
- NAFSA Conference 1999, Colorado, USA in 1999.
- Linden Educational Service - Workshop, Singapore in 1998.
- East Asia Regional Conference for Senior Educational Advisers, Singapore in 1997.
- Linden Educational Service - Workshop, Penang, Malaysia in 1997.