

# Chapter 1

## Introduction



### 1.1 Introduction

Phuket Island in the south of Thailand is one of the most popular tourist destination in the country partly because it is situated in a region that has one of the richest marine faunas on earth. Just off the island's coasts and in easy access to tourists, conditions for coral growth are ideal, with an average prevailing sea temperature of about 28 Celsius (TAT) and exceptionally clear waters, Phuket offers its visitors one of the most spectacular sight of a fragile and complex marine ecosystems.

As the corals shelter fish and thousands of marine organisms, taking a utilitarian view the corals, they are also an income generating environmental amenities for hundreds of tour operators. However, as the visits to the reefs grow, tourism related activities inevitably disturbs this fragile system and the quality of the reefs near the island begins to deteriorate, especially at Koh Hey, or the Coral Island where it is one of the most accessible sites for the visitors.

Tour operators are deeply concerned, as they fear the coral reefs may not be sustainable as tourist destination. In fact, there are costs associated with protecting the reefs it is important to understand the values associated with the quality of corals to determine the optimal level of protection where marginal costs of such a project would roughly be in line with the marginal benefits derived from the tourists.

Using the Coral Island as a case in focus, this study aims to estimate the potential use values of the coral reefs to the tourism industry indirectly by using a contingent value method. Potential use value represents the value of preserving the environment for individual's option for their future use, therefore it is considered as

one's potential value for that particular environmental asset.

## **1.2 Nature of Study**

### **1.2.1 Research Problems**

Environmental degradation has a negative effect to the economy that has been realized at tourist destinations. Then, both public and private sectors have started to take actions to maintain the environmental loss or to protect the environmental surroundings at tourist destinations. It is therefore, meaningful to determine the economical effects of environmental degradation at the tourist destination with understanding the relationship between the environmental quality at the destination and tourist's welfare changes.

Research questions are as follows:

- 1) What is the value of coral reef for tourists?
- 2) Does the socio-economic characteristics of a tourist have an effect on his/her WTP?
- 3) Would one Thai tourist be willing to pay for compensation to protect coral reef?

### **1.2.2 Research Objectives**

The objectives of this research are as follows:

- 1) To estimate the potential use value of coral reef at Coral Island, Phuket in monetary term
- 2) To determine the correlation of the level of coral reef quality and tourist's WTP.
- 3) To study the difference in WTP from the socio-economic characteristic.

### **1.2.3 Research Hypotheses**

Tourism industry has been taking an important role of the economic growth of Thailand. The consequence, that tourism industry is carrying the significance to the economic growth is the unique characteristic of the industry such as, as the relevant generator of foreign currency. Foreign currency is one of consequential factors to the economic growth.

Considering the important role of the tourism industry to the economic growth, it is meaningful to understand the unique characteristics of the industry. The reason, that the tourism industry became one of leading industries is probably the efficient promotion of attractive points of this country as the tourist destination. Then, thinking of some attractive points to visit Thailand depends on many factors, such as natural beauty, historical and cultural heritage, rational pricing, or good services.

The natural beauty for instance, this will turn to the commodity as tourists visit the particular site because of its attractiveness. Tourists spend the certain amount of money to visit the site, as they expect their satisfaction to be filled up to their expected level. Therefore, it is considered that the environmental quality at the destination makes changes in tourist's welfare.

This study will examine the following hypotheses;

- 1) The level of coral reef quality is correlated with tourist's WTP.
- 2) Tourists in the different socio-economic characteristics have the different WTP.
- 3) Thai tourists would be willing to pay more to conserve coral reef than foreign tourists.

#### **1.2.4 Benefit of the Study**

First of all, it is significant to understand the contribution of the surrounding environment of the destination to tourism industry. The particular reason, is that tourism is very much depending on the destination's environment. The considerable thing is that the fact confirms the importance of the environment at destination.

Second of all, it is meaningful to interpret the relationship between the tourism industry and the changes in qualities of the environment of the tourist destination, because the tourism industry has vital impacts to the environment. To put it the other way, the quality changes in the environment relatively effect to tourism industry, which is the key source of economic growth in Thailand.

Third of all, it is beneficial to identify efficient policies and strategies of the management to utilize the natural resource, from the point of view of sustainable development.

It should be mentioned, that there are some other environmental problems, which caused by tourism industry involved. Therefore this study is one of exercises of environmental economics analysis in tourism industry. This exercise will lead to apply to some other environmental problems in tourism industry by understanding this analysis as one of steps. Then, finally it will conduct to understand the whole relationship between the economical impacts and the environmental impacts of tourism industry at tourist destination, that positively introduce more comprehensive policies and strategies of management for further sustainable tourism and sustainable development.

The outputs of this study will be significant factors for future sustainable tourism, which creates more benefits to both economical and environmental factors in long term, because of the sustainability in economics and environment. In addition, this will be the part of incentive factors to lead the sustainable development, which should be concerned in any industries nowadays.

It should be also added that tourism industry has been becoming an important industry especially in developing countries, because of its positive economic characteristic therefore, this outcome is also efficient for those countries, which are weighting on the tourism industry as the source of country's economic growth.

### **1.2.5 Tourism in Thailand**

It is undeniable that several developing countries earn their main income from tourism industry. Thailand is no exception. Since 1987, tourism has become a major earner of foreign exchange, occasionally outdistancing even Thailand's largest single export, textiles, with receipts as high as 270 billion baht per annum. (TAT)

In 1996, Thailand ranked tenth worldwide in tourism receipts and was the 19<sup>th</sup> most visited global destination in terms of foreign tourist arrivals. (Gilchrist, 2000) The country has its reputation in having variety of activities offering to tourists at a considerably bargaining price. (Gilchrist, 2000) As a result, more tourists came to Thailand. An estimated 7.44 million international tourists visited Thailand in 1996 compared to the figure of 1.2 million arrivals in 1975, fivefold increase in two decades.

(TAT)

The country is selling off their natural environment in order to boost up its income from tourism. This has been evidenced since the fourth National plan (see Box 2.1). Unfortunately, mismanagement and shortsightedness in some tourism policies have rendered and encouraged the degradation of the environment, seen in many tourist sites as a result.

Marine resources are also threatened by improper management ways. The upper portion of the Gulf of Thailand, was once one of the most fertile marine areas in the world. Now it is virtually dead due to overfishing and the release of mainland pollutants.

Over development on Phuket Island, southern Thailand; famous for the exceeding of tourists quantity over the site's carrying capacity, is starving the surrounding coral reefs by blocking nutrient-rich run-off from the island's interior, and also smothering the reefs with pollutants. These sorts of stories have been told repeatedly in the newspapers. However, nothing much has been done to curb with the problems.

### Box 1 Thailand Tourism Policies

The trends of current tourism policies have been derived from the National Economic Development Plans. The first few plans (during 1961-1976) focused on investments in basic infrastructure and social development. And in 1976, Tourism Authority of Thailand (TAT) was established as a result from these developments, mainly then to deal with domestic tourists. It was not until year 1977 or during the fourth plan that Thailand considered tourism as a major means of earning foreign exchange income. During such period, the plan targeted an increase in the number of international tourists from 1.4 million (in 1977) to 2.2 million by the year 1981. (TAT) To achieve its goal, the plan called for the need to prioritize tourism sites, human resource development for the industries and participation of local communities. To secure the preparation of physical planning and implementation of tourism projects, the government budget was allocated 375 million baht to such projects, plus foreign loans of 250 million baht and foreign grants of 20 million baht.

The fifth Plan (during 1982-1986) further emphasized the need to utilize tourism as a foreign exchange earner. Such period was the time when the government seriously reduced the outbound tourists and considered the importance of Thais touring abroad to the national economy. It was the first plan to also emphasize land use and building control as necessary measures to prevent further negative impacts.

Until the sixth Plan (during 1987-1991), the Thai government announced the year 1987 as a "Visit Thailand Year" and the campaign in the international market was very successful. It was the time that the country could secure a loan from Overseas Economic Co-operation Fund of Japan (OEFC) of 1.3 billion baht for the development and promotion of the tourism industry. The loan was significant in the sense that it was the first time the Japanese government provided funds for tourism projects in a developing country.

During Thailand's economic boom or after the coup in May 1992, several factors marked a significant change in the seventh Plan (during 1992-1996). The tourism strategies reflected public concern for the environment resulting from rising incomes. And the current plan, the eighth Plan (during 1997-2002), has been more integrated and bottom up approached. The Plan stressed the following main strategies: Increased international competitiveness; human resource development; and environmental conservation.

Source: *Tourism Development in Thailand*, TDRI

The recent promotional campaign, called “Amazing Thailand 1998/1999” was well-conceived. Nevertheless, the ailing economy truncated plans for a global front as the TAT’s promotional budget was slashed by half. Still, credit card expenditures in Thailand spurred by the cheap baht, increased 101% over the previous season. The cheap baht and the political crisis in neighboring countries, like crisis in Indonesia helped the in-bound tourism, despite budget cutbacks.

A major tourism study conducted by TDRl confirms that ‘although the daily expenditure of typical guesthouse tourists may not be as high as that of hotel dwellers, they do, in fact, normally spend more because they usually stay in the country much longer. Income generated by these tourists is thought to penetrate more deeply and widely to the poorer segments of the industry.

**Table 1.1 Tourism Facts**

<b>Percentage of tourist arrivals by age:</b>	
under 25	15.22%
25-34	27.02%
35-44	23.71%
<b>Percentage of tourist arrivals by sex:</b>	
Male	62.06%
Female	37.94%
<b>Nationality</b>	<b>Average length of stay in days</b>
India	17.06
Nepal	12.17
Switzerland	15.10
Germany	15.04
Denmark	14.45
Netherlands	14.07
UK	12.49
France	11.46
Italy	10.71
Canada	10.97
USA	9.72
Australia	9.54

Source: *Tourism Authority of Thailand Statistical Report. 1998*

The biggest growth in tourism since 1990 has been among the Thais themselves. Spurred by steady economic growth earlier the 90's, and by the general lack of funds for international travel in the present economic situation, an estimated 40 million Thais per year are now taking domestic leisure trips. 10 or 15 years ago western tourists often outnumbered Thais at some of the nation's most famous tourist attractions. Now the opposite is true; except at major international beach destinations like Phuket and Koh Samui, Thai tourists tend to outnumber foreign tourists in most places at a rate of more than five to one.

After a thorough review Thailand existing tourism policies, the Thai government may have to be more mindful of the growing importance of the domestic tourism sector. Management strategies tend to focus almost exclusively upon international visitors. The spending habits, tastes, reliability and cultural traits of Thai tourists differ from those of foreign travelers. These changing demographics and failure to adapt the tourism policies in accordance with such movement have resulted in an incapability to provide Thailand with the greatest possible benefits from this industry.

#### **1.2.6 Tourism and Coral Reefs**

Tourism is a powerful tool for economic development of nations. It is one of fastest growing area of international trade, particularly for many developing countries. It is because, the environment itself takes significant parts in this industry. However, environmental degradation has been realized in many regions as the result of development of tourism industry. Therefore, the strategies for successful tourism industry is to seek maximize the total benefit from development and preserve the natural environment.

Tourism growth has also had significant environmental impact, however particularly in relation to important ecosystem such as mangroves, forest, and coral reefs. Impact on the physical environment is largely related to tourism infrastructure development (including resort, hotels, and coastal zone management activities), including soil erosion, landslides, sedimentation, and water pollution. For example, unplanned development of infrastructure too close to the shoreline has affected coastal natural processes and led to beach erosion, particularly in Fiji, Indonesia, Maldives, Malaysia, and Sri Lanka. (UNEP, 1997)



Coral reefs are one of the primary tourist attractions in the region. Damage to coral reefs from sedimentation is widespread, particularly in Thailand where 51 % of coral reefs are under threat (UNEP, 1997)

The causes of coral reef degradation are understood in two major ways, which are man-made stress and natural stress.

**Table 1.2 Stress on Coral Reefs**

Man-made stress	Natural stress
Pressure from population increase. (Including migration and intensified uses.)	Crown of Thorns (Starfish) predator outbreaks.
Depletion of fish stocks.	Tropical storm damage.
Destructive fishing method, such as dynamite, blasting and poisons (cyanide)	Warmer ocean temper fluctuations resulting in coral bleaching.
Excessive non-point source pollution, E.g., from agriculture runoff and contamination of aquifers.	Earthquakes.
Ship-based pollution; including oil, plastics and bilge water.	Wave action.
Mangrove harvesting or displacement for aqua culture products.	Flooding.
Increased sedimentation as a result of deforestation and poor land use.	Flooding and surface water run-off.
Coral and Coral reefs sand mining.	Natural diseases.
Unplanned tourism – including inadequate wasted water treatment, unregulated construction, collection of coral and ornamental reef species, spear fishing, etc	
Land based and urban constriction actives including dredging, filling and increased salutation.	

Source: UNEP, 1997

## Box 2 Coral Reefs

Coral reefs are composed of calcium carbonate or limestone. Each shell and each layer of the colony was constructed and extended by the animals themselves. Each tiny coral is the result of a remarkable relationship between a coelenterate related to jellyfish and sea anemones and one celled algae, called zooxanthellae.

The algae burrow into the tissue of the coral in great numbers, providing the color of living coral reefs, mainly yellow, brown, green and pink. Coral skeletons are usually white but can be red, blue or the now rare black coral valued for jewelry. The interaction between the coral animal and the alga is complex, and not yet well understood.

The coral supplies carbon dioxide, food, shelter and support for the plant, which returns oxygen, food, and reef-building energy for the production of the calcium carbonate shells that protect them both and form the colony.

Coral is believed to have first evolved in the area of the Malay Peninsula. As a result of this and the diversity of environments found here, there are a great variety of corals, particularly near Phuket. 75 genera containing 200 species are found in this area alone.

Typically, a coral reef is composed of many kinds of corals. Both the structure and the variety attract the broadest spectrum of animals found in any environment. 33 phyla, representing nearly every major group of animals, from sponges to the chordates which includes vertebrates such a fish, reptiles and mammals live in, on, or next to coral reefs.

*Source: Gerald, 2000*

Coral reefs in the Southeast Asian region are among the most biologically diverse in the world. They are valuable to the local people as fishing grounds and as sources of other important products including shells. With increasing pressure from human activities, coral reef destruction is one of serious problems in Thailand. The destruction includes blast fishing, over-fishing, and the indiscriminate collection of corals as well as pollution, tourism and development project. (Ghazally, 1998)

### **1.3 Synopsis of This Research**

This thesis contains five chapters including this chapter which outlines introduction of this study, research questions, objectives, hypothesis, benefit of this study and the study site. The later chapters discuss various issues as summarized below.

Chapter 2 reviews the literature regarding the subject of this study which includes the various kinds economic evaluation techniques for environmental goods together with economic evaluation study of coral reef, tourism issues with environmental problems.

The design and methodology of the study are discussed in Chapter 3. It includes the details of the survey method used, the questionnaire design, sampling techniques, and methods of data collection and analysis.

Chapter 4 indicates the full results of data analysis from questionnaire survey. Frequencies of demographic and characteristics of respondents are provided.

Chapter 5 provided calculations of the study and makes recommendation for future economic evaluation studies.

Appendix 1 contains crosstab and the summarized result of collected data. Appendix 2 contains the result of first and second regression analysis, and the computation of WTP. Appendix 3 contains the questionnaire in Thai and English. Appendix 4 contains the description of variables and primary data.