

**THE STUDY OF READINESS OF LOCAL COMMUNITY FOR
TOURISM DEVELOPMENT
CASE STUDY: KOH CHANG, TRAT PROVINCE**

KOMGRIT TUPBURI

With compliments
of

บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล

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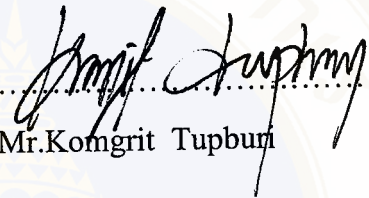
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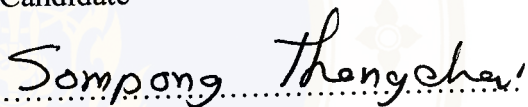
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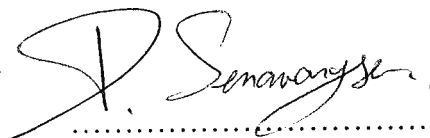

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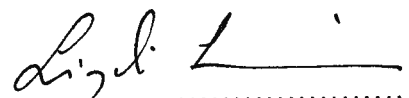

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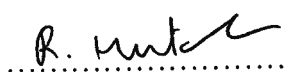
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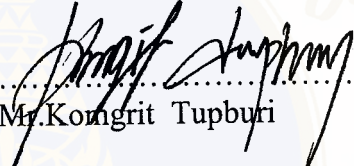
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The benefits derived from this work would be sincerely dedicated to the society and the country as a whole so that spiritual and material progress could be equal to that of developed countries.

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The objectives of this survey research were to investigate tourism activities and conditions on Koh Chang Island, to study the capacity to accommodate tourism development of the island, and to analyze the local readiness and suitable tourism development directions which were in line with local participation.

The study findings revealed that 85.90% of the sample group wanted and were ready to participate in tourism development of Koh Chang Island while only 14.10% did not. The physical capacity of the island for accommodating tourism is significant since there is over 3,360 rai of area suitable for development with plenty of underground and ground surface water. However, the restriction of travel within and to and from the island posed a problem, which would slow down the development. The problem was actually positive during the outset of development and preservation of the island and other neighboring islets. The communities themselves also harbored positive attitude toward and readiness in tourism development of the island.

It is recommended that there should be an investigation on future problems related to tourism development of the island. A comparative study on the capacity to accommodate tourism in different tourism sites should be conducted to prove factors affecting changes and to obtain further data for developments at the national level. An investigation on the capacity to accommodate of each factor should be carried out as a case study on the impact of tourism on the eco-system, forest and wildlife. Finally, there should be an assessment of the standard of public infrastructure development so that common guidelines could be obtained.

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การวิจัยครั้งนี้เป็นการวิจัยเชิงสำรวจ โดยมีวัตถุประสงค์ดังนี้ 1.) เพื่อศึกษาสภาพและกิจกรรมการท่องเที่ยวบนเกาะช้าง 2.) เพื่อศึกษาขีดความสามารถในการรองรับการพัฒนาการท่องเที่ยวของเกาะช้าง 3.) เพื่อวิเคราะห์ความพร้อมของท้องถิ่นและทิศทางที่เหมาะสมของการพัฒนาการท่องเที่ยวที่สอดคล้องกับการมีส่วนร่วมของท้องถิ่น

ผลการศึกษาพบว่ากลุ่มตัวอย่างส่วนใหญ่ร้อยละ 89.90 มีความพร้อมและต้องการมีส่วนร่วมในการพัฒนาการท่องเที่ยวของเกาะช้าง โดยมีเพียงร้อยละ 14.10 เท่านั้นที่ไม่ต้องการมีส่วนร่วมในการพัฒนาการท่องเที่ยว ส่วนความสามารถทางด้านกายภาพของเกาะช้างในการรองรับการท่องเที่ยวยังมีได้อีกมากทั้งนี้เพราะพื้นที่เหมาะสมเพื่อการท่องเที่ยวมีถึง 3,360 ไร่ ปริมาณน้ำบ่อและน้ำคลองยังมีมากแต่มีข้อจำกัดด้านการเดินทางจากภายในนอกและภายในเกาะเท่านั้น อาจทำให้การขยายตัวเป็นไปได้ช้า ๆ ซึ่งนับเป็นผลดีในระยะต้นของการพัฒนาและอนุรักษ์เกาะช้างและเกาะอื่น ๆ รวมถึงชุมชนเองก็มีทัศนคติและความพร้อมต่อการพัฒนาการท่องเที่ยวของเกาะช้างอีกด้วย

ข้อเสนอแนะในการวิจัยครั้งต่อไป 1.) ควรมีการศึกษาเกี่ยวกับปัญหาที่คาดว่าจะเกิดขึ้นกับการพัฒนาการท่องเที่ยวของพื้นที่เกาะช้าง 2.) ให้มีการศึกษาขีดความสามารถในการรองรับในเชิงเปรียบเทียบของแหล่งท่องเที่ยวต่าง ๆ ในระดับประเทศเพื่อพิสูจน์ปัจจัยที่มีผลต่อแนวโน้มการเปลี่ยนแปลงและเพื่อเป็นข้อมูลประกอบการพัฒนาในระดับประเทศ 3.) ให้มีการศึกษาขีดความสามารถในการรองรับในแต่ละปัจจัยเป็นกรณีเฉพาะการศึกษาผลกระทบจากการท่องเที่ยวต่อระบบนิเวศวิทยาป่าไม้ และสัตว์ป่า 4.) ให้มีการตรวจสอบมาตรฐานการพัฒนาด้านสาธารณสุขปโภคและสาธารณสุขบริการในแนวทางที่สอดคล้อง

CONTENTS

| | Page |
|--|-------------|
| ACKNOWLEDGEMENT | iii |
| ABSTRACT | iv |
| LIST OF TABLES | ix |
| CHAPTER | |
| I INTRODUCTION | |
| 1.1 Background | 1 |
| 1.2 The research conceptual framework | 3 |
| 1.3 Objectives | 4 |
| 1.4 Scope of the study | 4 |
| 1.5 Methodology | 4 |
| 1.6 Expected results | 5 |
| II LITERATURE REVIEW | |
| 2.1 Background and development of tourism | 6 |
| 2.2 Eco – tourism | 28 |
| 2.3 Resources and environment of Koh Chang | 29 |
| 2.4 Development plans of Koh Chang sub – district | 43 |
| 2.5 Operational plans of tourism development of the islands and coastal areas of Trat | 46 |
| 2.6 Developmental guidelines | 48 |

CONTENTS (Cont.)

| | | Page |
|------------|--|-------------|
| III | METHODOLOGY | |
| | 3.1 Patterns of the study | 58 |
| | 3.2 Steps of the study | 59 |
| | 3.3 Research instrument | 59 |
| | 3.4 Data analysis | 59 |
| | 3.5 Presentation of the study results | 60 |
| IV | RESULTS | |
| | 4.1 Environmental conditions of Koh Chang | 61 |
| | 4.2 Tourism resources of Koh Chang | 64 |
| | 4.3 Tourism market | 70 |
| | 4.4 Evaluation of accommodation capacity | 77 |
| | 4.5 The survey results on the readiness of local communities on tourism development | 85 |
| V | DISCUSSION | |
| | 5.1 Readiness on the participation in tourism development | 101 |
| | 5.2 Potentiality of development | 103 |
| | 5.3 Limitations of development | 104 |
| | 5.4 Problems of development | 105 |

CONTENTS (Cont.)

| | Page |
|---|-------------|
| VI CONCLUSIONS AND RECOMMENDTION | |
| 6.1 Summary of the research findings | 108 |
| 6.2 Conclusions | 112 |
| 6.3 Recommendations from the study | 113 |
| 6.4 Recommendations for further studies | 113 |
| BIBLIOGRAPHY | 115 |
| APPENDIX | 117 |
| BIOGRAPHY | 122 |

LIST OF TABLES

| | Page |
|--|-------------|
| TABLE | |
| 2.1 Tidal currents in the coastal area of Trat province | 33 |
| 2.2 Wind speed and size of waves in the coastal area of Trat province | 34 |
| 4.1 Tourist forecast for Koh Chang | 76 |
| 4.2 Personal information | 86 |
| 4.3 Occupation and income | 87 |
| 4.4 Settlement | 88 |
| 4.5 Attitude toward tourism | 91 |
| 4.6 Attitude toward the impacts of tourism activities on the family | 92 |
| 4.7 Attitude toward the impacts of tourism on Koh Chang | 93 |
| 4.8 Attitude toward state agencies' care for tourism sites | 94 |
| 4.9 Attitude toward public infrastructure development projects | 95 |
| 4.10 Attitude toward environmental projects | 96 |
| 4.11 Attitude toward tourism development projects | 98 |
| 4.12 Development of Koh Chang in a form of tri – lateral committee | 99 |
| 4.13 Participation in tourism development | 100 |
| 6.1 Attitude toward development projects on the island | 110 |

CHAPTER I

INTRODUCTION

1.1 Background

Tourism nowadays is more significant to and plays a vital role in national development because Thailand is rich in tourist attractions. As a consequence, economic progress is to some extent tied to the progress of tourism industry. Due to its significance to national prosperity, successive governments have put a strong emphasis on tourism development by integrating the issue in many national social and economic development plans. The present government in particular perceives the importance of the industry and thus specifies it as a policy to develop and promote tourism.

Thailand has been highly successful in tourism development, generating millions of baht from the industry. The development of tourism has not only been carried out by the Tourism Authority of Thailand (TAT), but also by related agencies interested in developing tourism so that more tourist attractions would multiply. Furthermore, the private sector has invested in more tourism-related services, causing rapid economic growth by bringing in more foreign currencies and creating more jobs.

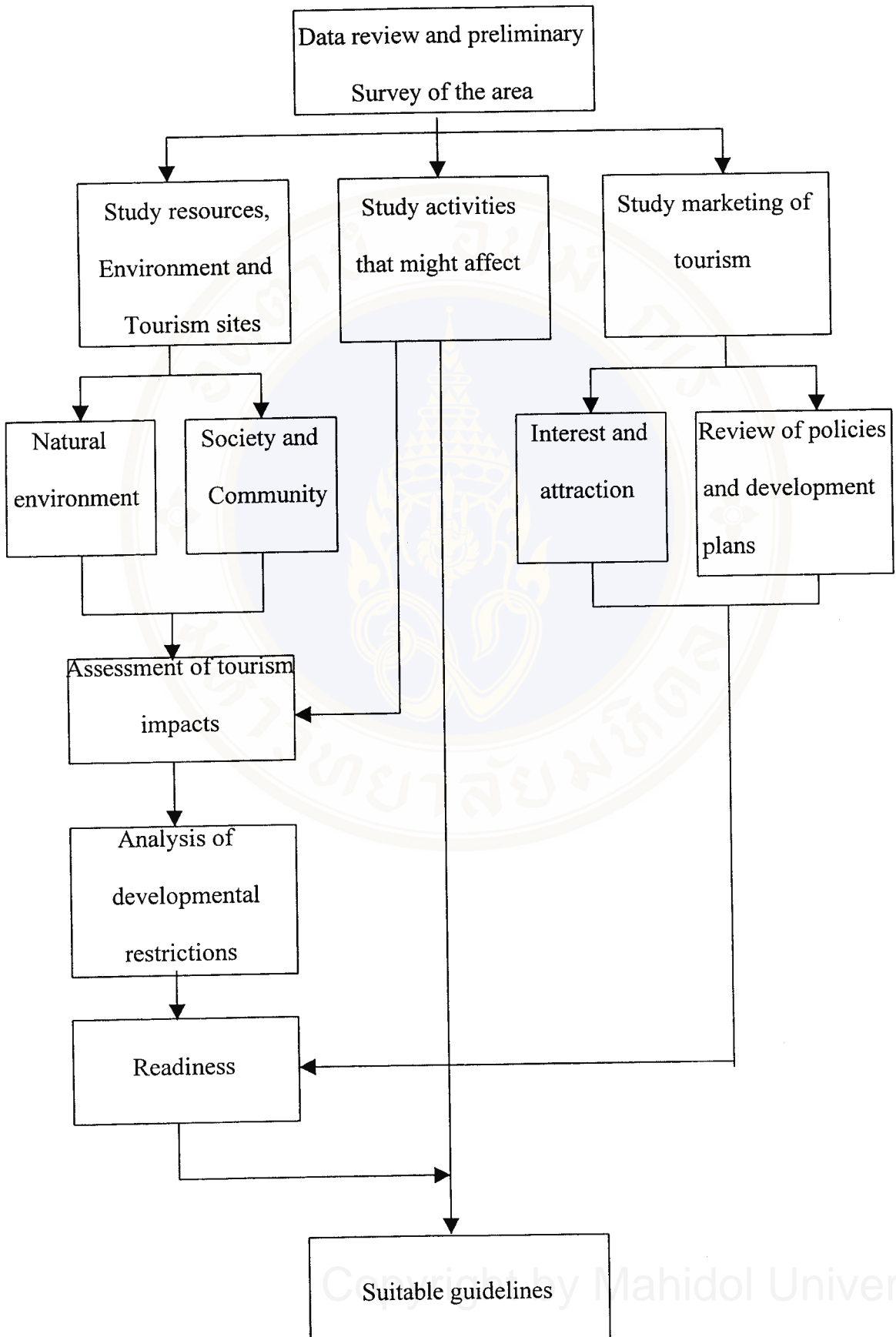
Nonetheless, tourism promotion and development without proper management could lead to deterioration and decadence of tourism resources, which have diverse impacts on various groups of people. Collective care and prevention as well as cooperation from stakeholders of tourism sites would sustain the natural states of tourism resources. Development could cause destruction of many natural resources

both with intent and without correct understanding of development guidelines. Allowing the number of tourists to overwhelm the capacity of tourism sites and improper development could reduce the level of tourist satisfaction and have negative impacts on tourism in the long run.

Koh Chang Island and the coastal area of Trat province is another area of imminent problems because the province is at the most eastern end of the region with relatively fertile natural resources, particularly beautiful islands and coastal areas. These attract large numbers of tourists and the growth of the provincial tourism in recent years have been rapid. More developments to accommodate tourists have been carried out, especially the utilization of coastal areas and islands for tourism. Such a practice could be detrimental to the environment and beauty of the area if without control and suitable development guidelines.

This study project would enable related stakeholders to specify the boundary and limitation of development as well as patterns of development more clearly, which would be in accordance with the accommodating capacity of the area

1.2 The research conceptual framework



1.3 Objectives

1. To study the tourism conditions and activities on Koh Chang
2. To investigate the capacity of Koh Chang on tourism development
3. To analyze local readiness and suitable directions of tourism development which are in accordance with local participation

1.4 Scope of the study

1. The study area is Koh Chang National Park in Trat province.
2. The target group includes residents in 9 villages on Koh Chang island.

1.5 Methodology

This investigation was a survey study in order to realize the readiness in tourism development of Koh Chang National Park. It was a preliminary data collection with the purpose of seeking suitable guidelines to promote further development. The steps were as follows:

1. Preparation steps

- Collecting secondary data
- Defining the study area
- Defining the target population and group
- Reviewing related literature

2. Steps on research designs

- Designing the area survey
- Specifying the population size and target group
- Constructing the questionnaire as a research instrument

- Trying out the questionnaire and making corrections
- Designing data analysis

3. Primary data collection steps in the field

- Preparation
- Actual operation

4. Steps on data processing and analysis

- Processing the data
- Analyzing the data
- Discussing the results

1.6 Expected results

1. Tourism activities and their impacts on the island could be realized.
2. The island's capacity to accommodate tourism development could be obtained.
3. Local readiness and suitable tourism development guidelines in line with local participation could be realized.

CHAPTER II

LITERATURE REVIEW

The concept of studying the readiness of the locality in tourism development on Koh Chang island was due to the island's popularity among large numbers of tourists and visitors, generating a good local economy. However, in order to achieve a sustainable economic development, it was imperative to have suitable guidelines of environmental development. This investigation was thus related to perceptions of the local and the findings would be fundamental data for consideration in order to get better understanding of the overall picture. This chapter contained the review of related literature in the following issues:

- Background and development of tourism
- Eco-tourism management
- Natural characteristics and natural resources
- Development plans and projects of Koh Chang Sub-district, Trat Province

2.1 Background and development of tourism

2.1.1 Definition and objectives of tourism

M.L. Tuy Chumsai defined the meaning of tourism in his book, "Overture of Tourism", as travelling and without travelling there would be no tourism. The Webster's Third New International Dictionary defined "tourism" as travelling for pleasure and tourism-related business administration. It could be seen that the word "tourism" had a diverse meaning. It did not only mean "travelling for

relaxation or pleasure, but also referred to the migration of population from one place to another. It also included travelling within a country and to other countries.

Wanna Wongwanit concluded that tourism depended on 3 conditions as follows:

1. Travelling from a place of residence to others on a temporary term
2. Travelling with voluntariness
3. Travelling with any purposes besides occupation or earning a living.

The Department of Geo-architecture, Faculty of Architecture, Chulalongkorn university defined the meaning of tourism as a type of human needs when physical and emotional needs were fulfilled. The purposes of tourism were as follows:

1) Curiosity to discover new things from tourism. There were differences in cultures, traditions, politics, society and individuals in addition to exceptional aspects of nature and natural phenomena as well as different stories and accounts from one's own.

2) Relaxation from daily stresses, such as, travelling to places with natural beauty, arts and music or other entertainment. They included travelling to amusement parks, zoos, bars, nightclubs or shopping.

3) Interests in religion and mysticism, for instance, religious pilgrimage, visiting historical or holy sites, meetings, and religious activities.

4) Vocation and business, for instance, travelling for research, conference, seminars, site visits, and education. This was like travelling to increase knowledge.

5) Other purposes of tourism, such as, visiting relatives and friends. Such a travel usually took place during holidays and festivals. It was a meeting among friends and relatives in order to relax.

Wanna Wongwanit categorized the objectives of tourism into 6 types as follows:

1) Travelling for recreation and entertainment

It was a travel for a change of atmosphere and curiosity in order to see different scenery, cultures, traditions and ways of life. It also meant travelling to other places for enjoyment and recreation for a change of atmosphere and residence. Such a travel depended on several factors, such as, personal tastes, economic status, attraction and interests of places.

2) Travelling for relaxation

It was to spend free time for physical and mental relaxation. It might be a recovery period after sickness. Such a travel would take the longest time as possible and the place should be peaceful, comfortable with fresh and clean air, such as, beaches, forests or mountains.

3) Travelling for cultural studies

The purpose was to seek knowledge about local cultures in addition to tourism. It included a study of local living conditions in both anthropological and sociological manners. This included visits to art and historical sites as well as watching performances.

4) Travelling for sports

This type of travel had 2 purposes. One was to watch interesting sports competition, e.g. tennis or football. When the events were moved to a new place, spectators would follow suit. The other was to play sports or physical exercises. Such travel would take place in places of interest and attraction, e.g. trekking or along the beach.

5) Travelling for business, conference and seminar

This type of travel would spare some time for excursion and the factors attracting visitors were interesting places of attractions, comfortable accommodation and fast and convenient communication systems.

6) Travelling for education

This took place when individuals travelled overseas to study, conduct research or be exchange students or professors and they had to reside and travel in the country of destination for months.

Therefore, tourism in this investigation referred to the needs to travel to other places with individual's readiness and voluntariness.

2.1.2 Types of tourism resources

The Department of Geo-architecture categorized tourism resources into 7 types as follows:

- 1) Historical places, e.g., palaces or historical buildings
- 2) Religious places, e.g., temples, chapels or pagodas
- 3) Nature, i.g., sea, beach, forest, waterfall or hot spring
- 4) Arts and culture and education, e.g., museums or arts and cultural centers
- 5) Entertainment, e.g., theaters or areas of night life
- 6) Industry and handicraft, e.g., silver, lacquer or pewter ware industries
- 7) Others, e.g., zoos, public parks or amusement parks

These tourism attractions could be available for tourists all year round or seasonally.

Wanna Wongwanit defined tourism as natural and man-made tourism sites, activities, traditions, customs and cultures that reflected unique local characteristics which attracts the interests of tourists, such as, Song Kran or Boat Racing Festivals.

She also categorized tourism resources into 2 types as follows:

1. Natural attractions. This type of resource attracted interests of tourists the most because they were born naturally. They were either beautiful or eccentric, which were subdivided into 4 types: wildlife, scenery, climate and natural phenomena

2. Manufactured attractions. This type existed mostly in big cities, including entertainment venues, shopping complex, amusement parks or hotels. In some cities, architectural buildings, such as, palaces, religious sites, museums as well as arts and cultures could be the main attractions to tourists.

Koh Chang island is regarded as a tourist attraction with natural resources, important historical sites, arts and culture, traditions and local ways of life.

2.1.3 Importance of tourism

Due to continuous development of tourism, more tourists had steadily come to visit the country from 6.95 millions in 1995 to 7.44 millions in 1996. It was forecast to be 11.16 million in 2003, earning foreign currencies of 329,720 million baht. This could be seen that the industry had played a significant role in economy, society and politics, which had contributed to better quality of life and rural community development.

Nikhom Jarumaneer summarized the roles of tourism on economic development as follows:

1) The industry had generated foreign currencies in the country since 1982. It was the number one income generating industry when compared with incomes from exporting other products.

2) Foreign currencies generated from the industry could help stabilize the national payment balance. In 1984, for instance, the income from foreign tourists amounted to 27,317 million baht while that from local tourists was only 7,208 million

baht. The surplus from tourism helped to lessen the deficit in other areas of national incomes.

3) Incomes from tourism were widely distributed to the general populace, creating more jobs and supplementing vocational incomes continuously, for instance, local handicrafts, food products, souvenirs and other tourism-related occupations for the local.

4) The industry has played a part in creating more jobs and careers as it required more people to provide services directly, such as, hotels, restaurants or travel agencies, production of local handicrafts or even labor in construction sites

5) Tourism has played a role in stimulating production and utilization of national resources for the highest benefits. Wherever tourists visit, more money is spent on food, accommodation and local products. The money would not only concentrate in businesses related to tourism but to small farmers and handicraft producers who use local materials to produce souvenirs. Despite small in amount, the money could be huge in collective terms, which would stimulate more production called “multiplier effect”.

6) The industry does not have any limits on sales and could be called the limitless industry when compared to other industries.

7) The industry does not have any limits on production because it does not depend on weather conditions. Tourism productions for sale are the beauty of nature, beaches, forest, mountain, climate and man-made creations, such as, palaces, temples, historical places, buildings as well as traditions and cultures, ways of life, and livelihood of local people. These are sustainable concrete objects independent on seasonal climate like agricultural products or other industries which require more investment and technologies. As a consequence, tourism industry is seriously promoted and stimulated from international tourism organizations and it is promoted in developing countries as a means of income generation besides conventional industries. This is an advantage of the tourism industry.

8) The industry helps revive and preserve local arts and cultures and traditions which attract tourists. The Thai society is an old society dated back many thousand years. Therefore, each region has its own unique traditions and arts and culture, which are worth reviving and preserving for future generations and for tourists to admire.

9) Tourism industry has played a part in distributing progress and modernity to all regions in the country. Wherever the industry invades, it is inevitable that new constructions would occur, e.g., hotels, restaurants and other facilities, creating progress and economic growth to those regions.

10) The industry is a standard of security and stability in areas of development for the purpose. Wherever tourists visit, they have to make sure that their destinations must be safe and secure to their lives and properties. Therefore, tourist attractions must be safe enough for them to visit.

11) Tourism industry promotes peace, friendliness and mutual understanding among human races because they have come to interact and understand one another, resulting in national and global peace and unity.

Wanna Wongwanit mentioned the roles of tourism on society as follows:

1) Tourism promotes better understanding among people from different regions as they come to exchange their ideas and strengthen national unity and harmony.

2) Tourism develops and raises the level of progress of local people.

3) Tourism strengthens social security and safety because cities must be open with convenience, safety and modernity, which would attract tourists to visit and benefit local people.

4) Tourism distributes incomes to local people thoroughly since the developments of Public health system and infrastructure for tourists are also beneficial to local people.

5) Tourism promotes better physical and mental health because travellers have seen and met new and interesting people and places as well as gained knowledge and enjoyment, which widen their perspectives and raise their quality of life.

6) Tourism helps promote cultural exchanges among people from different regions or countries.

7) Tourism helps preserve local cultures and bring them out to the outside world as a tourist attraction, creating tourism activities in local communities.

8) Tourism helps create the pride in and protection of national heritages and nature as well as helps preserve natural resources and environment for sustainable existence.

9) Tourism helps develop and beautify natural geographical and city environment.

Tourism on Koh Chang island helps develop the social and economic system of the local communities, raising their standard of living and economic status due to supplementary incomes from tourism activities.

2.1.4 Development of tourism in Thailand

Tourism in Thailand started in popularity about 40 years ago when the Tourism Promotion Organization was set up in 1960, which is presently called

Tourism Authority of Thailand (TAT). The main purpose of the organization is to promote and develop tourism in the country. Tourism has been spread widely among people of all walks of life due to efficient communications and transport linking all regions together and making travelling accessible to everyone in the society.

Important factors contributing to the rapid growth of tourism in Thailand are government supports and policies, cooperation of private businesses and Thai people, efficient work of TAT, and different tourism campaigns. Instances of them are Travel Thailand Project in 1987, Year of Thai Culture in 1994, and Amazing Thailand Years in 1998-1999. In addition, travelling to visit places in the country has been promoted in order to distribute incomes to every region. Different cities in all regions have something unique to offer visitors, making tourism even more widespread

2.1.5 Policies and strategies in tourism development

1. Tourism development policies of the present government

1) Reviving the level of relations and cooperation with neighboring countries in order to make Thailand a major gate of regional tourism

2) Managing tourism by using offensive marketing strategies and raising the country to become the center of conference, seminar and trade exhibition in the Southeast Asian region.

3) Developing, renovating and reviving arts and cultural heritages and properties in both inner and outer cities in order to create an alternative tourism with an emphasis on more community participation in tourism management.

4) Diversifying tourism patterns, e.g., eco - tourism, health tourism and agro-tourism.

5) Increasing the measures of facilities, creating safety and preventing tourists being taken advantage of as well as seriously solving tourists' problems.

It can be seen that the policies of the present government focus on the significance of tourism development by putting more emphasis on the involvement of grassroots groups, that is, allowing more community participation in managing their local tourism.

2. Tourism policies of the Tourism Authority of Thailand (TAT)

TAT has set up its policies as an annual operation framework for the years 1997-2003. The policies have been approved in general by the Committee of TAT as follows:

1) Promoting the preservation and revival of arts and culture, tourism resources and the environment with regard to the quality of sustainable tourism development in an attempt to accommodate long-term expansion of tourism and to maintain national heritage and identity.

2) Promoting cooperation between state and private sectors as well as local people in order to have a role in preventing and solving tourism problems and participate in developing and managing tourism resources so that they would be more valuable and attract more tourists.

3) Supporting the development of facilitating factors to provide services to tourists in accordance with the progress of modern technology, especially information service systems via national and international computer networks.

4) Promoting cooperation with neighboring countries in developing and promoting tourism market as well as communications and transportation networks and facilities on tourism services in order to develop Thailand to become the tourism center in this region.

5) Promoting the development of Thai people to become responsible and accountable tourists who take pride in and help preserve tourism and environmental heritages and resources as well as being generous and friendly in welcoming foreign tourists.

6) Promoting the production of personnel in the tourism industry with quality and quantity in line with market needs and international standard in an effort to accommodate free trade and service policies, in addition to encouraging more Thai people to work in the industry.

7) Supervising tourists and tourism-related business operators to get protection from the Tourism Business and Guide Act B.E. 2535 (1992) as well as seriously and continuously enforcing the standard of security and safety to tourists.

8) Promoting tourism to play a significant role in developing the quality of life and national development in general.

9) Promoting and inviting more quality foreign tourists to visit the country, to stay longer, spend more money and travel to all regions, with regard to the capacity and restrictions in accommodating tourists in particular areas.

10) Creating the values among local people to travel and spend money while traveling within the country, which is a way to generate wealth to regional areas and good to the overall economic development of the country.

11) Considering tourism businesses as necessary and appropriate in terms of investment, joint-investment or promotion of investment for national and organizational benefits.

3. Tourism development strategies of the country

From the policies of TAT as mentioned above, tourism development strategies have been set up as follows:

1) Enforcing all stakeholders to continuously take care of tourist attractions and in the correct and appropriate directions by working with state and private agencies to consider and seek common guidelines.

2) Campaigning and raising awareness among local people on the importance of tourism as well as collectively take good care of and develop their tourism sites in good conditions and be able to provide information, services and assistance to tourists visiting their localities.

3) Setting up penal codes to those violating regulations or causing destruction or decay of tourism sites and environment.

4) Emphasizing more on eco-tourism by providing correct knowledge to everyone.

5) Campaigning on clean projects in tourism sites, particularly major tourist attractions by cooperating with concerned agencies.

6) Coordinating in meeting, discussing and jointly establishing working committees with TAT on the policy and practical levels with state agencies, private sectors and people sector in order to plan tourism development and solve environmental problems in tourism sites in a concrete term.

7) Studying and developing information system and environmental and pollution monitoring systems in tourism sites nationwide.

8) Promoting and supporting the private sector to establish institutions or training in an effort to increase efficiency and quality of service personnel.

4. The essence of the national tourism development master plan

TAT authorized the Institute for Thailand Development to draw up the national tourism development master plan with its policies, targets and strategies as a

framework to define the policies of eco-tourism. The essence of the master plan could be summarized as follows:

1) It is imperative to have a consensus on the national policies in order to achieve the goals. Their significance could be ordered as follows:

(1) Developing mass transport system in every major tourism province in order to solve traffic problems, especially Bangkok.

(2) Controlling the quality of the environment and reducing pollution by increasing green areas, improving landscapes, and controlling land use.

(3) Expanding the capacity of infrastructure beyond local needs, especially waste disposal and water treatment in order to correspond to the expansion of tourism.

(4) Making people participate in managing tourism resources and benefiting from service activities.

(5) Utilizing economic, legal and social measures to control behaviors of tourists and business operators in order to maintain sustainable tourism resources.

(6) Cancelling the monopoly of services and communications related to tourism industry in an effort to promote competition and maintain service qualities.

2) A long-term goal in 2012

Thai tourism must possess the world class standard in terms of tourism sites, service provision and perfect environmental preservation. Most tourists benefiting this world class standard are local tourist as they outnumber foreign counterparts. Rapid deterioration of tourism sites would increase as they have to accommodate large numbers of local and foreign tourists. As a consequence, an important mission within the next six years includes a sustainable maintenance of tourism sites so that Thailand would remain a most beautiful country to visit in years to come.

3) A short-term goal from 1998 to 2003 “Travel Thailand... Preserve Thailand”

The goal is to develop Thai tourism in the direction that helps preserve cultural heritage and the environment sustainably. The objectives of the six-year plan are as follows:

(1) Prescribing tourism as a means to preserve heritage on national tourism resources.

(2) Prescribing tourism development as a welfare for Thai people.

(3) Prescribing tourism as a means to raise public conscience on environmental preservation.

(4) Prescribing tourism as a means of income distribution and job creation for rural people thoroughly.

(5) Prescribing tourism as a means to provide education to the young and the public.

(6) Developing Thai tourism to the world class standard.

(7) Prescribing tourism as a means to obtain foreign currencies and to keep up its ability for sustainable competition.

In addition to emphasizing on market development, the policies also focus on local areas by raising the consciousness of local people on the participation in maintaining the quality of the environment and developing tourism sites in good conditions so that income and wealth distribution to localities could be sustainably maintained.

2.16 Area tourism development strategies

Defining development and promotion activities of TAT in the following phases would be carried out under the 2 main strategies as follows:

1) Area approach. It focusses on new product development and tourism services in order to diversify the alternatives for tourists. Activities on developing and promoting new markets would be carried out according to area readiness and potentiality in accordance with market needs. The global travel trend in 2001 divides

areas of operations into 3 major groups and prioritizes the activities of market promotion and development in particular areas as follows:

| Area | Significance order of Developmental activities | Significance order Of marketing activities |
|---|--|--|
| 1. Seven areal groups of supplementary tourism area | 1 | 2 |
| 2. Major tourism areas (Phu Ket, Samui, Chiang Mai,Pattaya) | 2 | 1 |
| 3.New areas with tourism potential and bordering towns | 3 | 3 |

2) Market/segment approach. It focuses on developing and promoting sales of tourism-related products and services according to market needs by specifying markets and market groups as the goal for the operations on sales promotion and development as follows:

(1) International markets

(1.1) Target markets from 228 tourist markets visiting Thailand by defining operational targets in terms of regions and by market-base of 34 markets, with the following priority of importance:

(1.1.1) Eastasian region: Japan, China, Singapore, Korea, Taiwan, Malaysia, Hong Kong, Indonesia, the Philippines, and Indo-china.

(1.1.2) European region: England, Germany, Scandinavia, France, Switzerland, the Netherlands, Italy, Eastern Europe, Austria, Belgium, Russia, Greece, Portugal, and Turkey.

(1.1.3) The Americas: the United States, Canada, and Latin America

(1.1.4) The Oceania: Australia and New Zealand

(1.1.5) South Asia: India

(1.1.6) The Middle East: Israel and the United Arab Emirates

(1.1.7) South Africa: South Africa

After the target markets were defined, they were prioritized according to their importance in order to have clearly defined market operations as follows:

| | Major markets (Number, high income) | Potential supplementary markets (number, middle income) | Other markets | Total |
|-------------------------|--|---|--|--------------|
| Offensive operations | Japan,China,Singapore,Korea,Taiwan,England,Germany,Scandinavia,the United States and Australia | France,Switzerland,the Nethelands, Italy, Eastern Europe, Indonesia and India | - | 18 |
| Market maintenanc | Malaysia and Hong Kong | The Philippines, Austria, Belgium, Russia, Spain, South Africa, the Middle East, New Zealand and Canada | Latin America, Greece, Portugal, Turkey and Indo-china | 16 |
| Total | 12 | 17 | 5 | 34 |

(1.2) Market segments for foreign target markets, the operations focused on 2 parts as follows:

- mass market (group travel and FIT)
- Repeaters and first visitors

(1.3) Segment/niche markets, the operations were divided into 3 aspects as follows:

- Considering sales promotion in almost all markets because the products were ready and the groups had a potential for high returns. They included MICE, golfers, families, youth, honeymooners, and special interest groups (Eco, Agro, Diving).

- Considering sales promotion regarded as appropriate according to the nature of markets. They included health travel, overseas Thais, athletes, overseas Indo-chinese, religious groups, motion pictures makers, cruisers frontline agents/airline staffers, and senior citizens with long stay.

- Considering sales promotion in future major target groups. They included senior citizens, first-time visitors or health travellers.

(2) National market

(2.1.1) Segment/Niche Market

* Groups with high potential at present and selected as special focus included high income earners, families, government and state enterprise officials, youth, MICE, the elderly or pensioners, and working people.

* Other interest groups with a potential for growth. Sales may be promoted according to their potential. They included eco-adventurers, golfers, agro-tourists, health travellers, religious travellers, and other special interest groups.

It could be seen that the tourism development strategies focused on marketing and area development simultaneously in both national and international markets.

Attempts had been made to develop tourism sites with more diversity and alternatives for tourists. Such an undertaking was in line with the geographical conditions of Koh Chang island, which had a variety of tourist attractions in terms of ecology, tradition and culture, and ways of life of local communities.

2.2 Eco-tourism

The Earth Summit held at Rio de Janeiro in Brazil on June 14,1992 (7) caused 3 important trends on tourism development as follows:

1) The needs to preserve environment and natural resources at the local to the global levels in order to preserve, prevent and solve crises, particularly the preservation of the ecological system to maintain bio-diversity.

2) The needs of tourism market on education and experience on the environment and natural resources. The needs were increasing among travellers in order for concerned agencies/individuals to have knowledge and awareness on preservation. The trend resulted in the needs to expand and adjust the directions of tourism markets.

3) The needs to develop personnel and participation of grassroots groups, which would guarantee correct directions of development, and appropriately distribute incomes according to the needs of local people.

2.3 Resources and environment of Koh Chang island

2.3.1 Geographical characteristics

Of the 10 islets of Koh Chang National Park, Koh Chang island is the biggest and located about 8 kilometers from Laem Ngob peninsula. It is around 30 kilometers in length and about 14 kilometers in width. The island is almost composed of mountains. Important mountains are Khaw Larn, Khaw Jom Prasart, Khaw Khlong Mayom, and Khaw Salak Phet. The highest mountain is Khaw Salak Phet, approximately 743 meters from the mean sea level. Low-lying areas are about 10 to 700 meters from the mean sea level, e.g, the coastal area of Khlong Sarn village. The eastern coastal area is made up of narrow muddy and rocky beaches while the western one is composed mainly of sandy and rocky beaches.

Water sources in the National Park area are classified into two main types: marine and fresh water sources. Of all the islands in the National park, Koh Chang island has the most fresh water sources, consisting of creeks and streams coming from waterfalls and flowing into the inlets and the sea. These creeks and streams include Khlong Son, originating from Khaw Jom mountain and flowing into Khlong Son inlet, Khlong Mayom from Khlong Mayom mountain and into the sea at Khlong Mayom inlet, and Khlong Phrao from Khlong Phrao mountain and into the sea at Ban Khlong Phrao inlet. In addition, there are Khlong Kalung, Khlong Dan Kao, Khlong Dan Mai, Khlong Non See, Khlong Makork, Khlong Aaw Phi Lork, Khlong Yuan, Khlong Aaw Kongkang, Khlong Hu Kwang, Khlong Prong, Khlong Chaiyachet, Khlong Kloy and Khlong Wai Chaek. These streams are a most important water source for the consumption of the island's residents. Furthermore, they also create beautiful waterfalls for tourists to enjoy. Some of the interesting waterfalls are:

1. Tharn Mayom Waterfall. It is a 4-tier and the most famous waterfall in the island. It is the origin of Khlong Mayom stream with water running the whole year round. It is a medium-sized waterfall flowing from an almost vertical cliff in a fertile forest.

2. Khlong Phlu Waterfall. It is a large-sized, three-tier waterfall with water running the whole year round. The first tier is about 100 meters in height.

3. Khiri Phet Waterfall. It is a one-tier waterfall located deep into the jungle from Ban Salat Phet community.

4. Khlong Non See Waterfall. It is situated in the northeast of the island, with several small cascades like those of Mae Klang Waterfall in Chiang Mai.

5. Khlong Nueng Waterfall is a small waterfall located close to Khiri Phet's

The areas around the inlets are mangrove forests while the hinterland is mountainous. The water along the eastern coastline of the islands is rather muddy while that along the western coastline is fairly clear.

2.3.2 Geology

The geological structure of the island group is composed of ligneous, sedimentary and metamorphic rocks, gravels, sand, powdery sand, soil and mud.

2.3.3 Maritime characteristics

1) Shoreline

The coastal area from the shoreline to the sea about 8 kilometers contains the following aspects:

(1) The shoreline is divided into 3 parts. The first part starts from Pak Khlong Bang Kradarn peninsula to Laem Sork peninsula with the total length of 58 kilometers. The second part starts from Aaw Trat inlet to Saphanhin village with the total length of 154 kilometers. The first two parts are composed mostly of muddy beaches. The third part starts from Saphanhin village to Khlong Yai district with the total length of 15 kilometers.

(2) Seabed. The slopes of seabed are not even due to the existence of 40 islands. The largest island is Koh Chang with the total area of 215 square kilometers, followed by Koh Rang Yai, Koh Mai See Yai, Koh Khlum and Koh Wai. However, when the average ration of slopes is considered, it is found to be 1:3,400 meters with the deepest part at 35 meters from the surface.

2) Tidal current

The tidal current in the coastal area of Trat province is of diurnal tide, that is, the tidal current takes place once a day. From the statistics, the average highest and lowest annual tides are +35 m. and - 1.31 m. from the sea level. The difference between the highest and loucest tides keeps changing all the time, depending on the influence of the moon, wind directions, air pressure, and currents.

3) Currents

Directions and speeds of sea currents depend on the influence of tidal currents and drift currents. For the coastal area of Trat province, the currents are due to the influence of tidal currents. The flood tide flows in the direction of the northeast with the speed of approximately 0.5 km/hour while the ebb tide flows in the opposite direction with the same speed.



Table 2.1 Tidal currents in the coastal area of Trat province

| Months | Highest Level | Lowest Level | Difference |
|-----------|---------------|--------------|------------|
| January | + .46 | -1.24 | 1.70 |
| February | + .30 | -1.23 | 1.53 |
| March | + .22 | -1.23 | 1.45 |
| April | + .24 | -1.23 | 1.47 |
| May | + .57 | -1.36 | 1.93 |
| June | + .33 | -1.37 | 1.70 |
| July | + .32 | -1.39 | 1.71 |
| August | + .16 | -1.40 | 1.56 |
| September | + .11 | -1.26 | 1.37 |
| October | + .50 | -1.27 | 1.77 |
| November | + .45 | -1.37 | 1.82 |
| December | + .57 | -1.36 | 1.93 |
| Total | + .35 | -1.31 | 1.67 |

Source : The Port Department

Level in meter from the Mean Sea Level

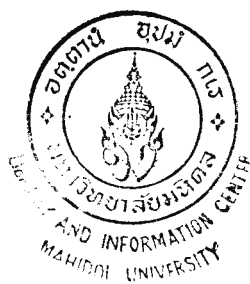


Table 2.2 Wind speed and size of waves in the coastal area of Trat province

| Months | Wind Speed | | Wave Size (meter) | | Wind Direction |
|------------------------|------------|---------|-------------------|---------|--------------------|
| | Average | Highest | Average | Highest | |
| February– September | 2.41 | 60.00 | 0.11 | 5.94 | Toward the shore |
| October–January | 4.25 | 63.00 | 0.19 | 6.24 | Outward from shore |

Source : Wind directions from the data of the Department of Meteorology

: Wave size is calculated from wind speed according to the comparative rate between wind speed and wave size by the U.S. Hydrographic Office

The rate of water speed has an important role in removing waste from land to sea. However, for the coastal area of Trat province, besides slow speed of sea current there are many islands obstructing the flow of water, causing sediments to pile up along the coast, especially between Koh Chang, Koh Mark and Koh Kut and the shoreline.

3) Waves and wind

(1) Surface waves. They are short-span waves caused by wind with possible destructive force. From the statistics of wind speed that could be used to calculate for wave size as shown in Table 2.2, it is found that during May to October is the monsoon season with wind direction toward shoreline. The average wave height is

0.11 meter and the highest ever been recorded was 5.94 meters. The rest of the year, October to February, the period of northeastern monsoon, and February to April, the period of southeastern winds, the wind direction would be outward from shoreline with an average speed of 4.25 knots and the highest speed ever been recorded was 63 knots, causing waves with the height of 0.19 meter and 6.24 meters respectively.

With the sizes of the waves, shoreline destruction has been intact but they have posed obstacles to coastal fishing since small-sized fishing trawlers and passenger boats could not be navigated during turbulent seas during the southwestern monsoon period

(2) Undercurrent waves. They are long-span waves from the influence of tidal currents and changes of the earth crust, e.g., earthquake or the eruption of volcano. Since there has not been any survey of this type of waves in the shoreline of Trat province, there is no statistics showing the sizes of such waves.

It could be summarized that waves have few impacts on shoreline and navigation except during turbulent seas when small fishing trawlers could not be out to the sea

2.3.4 Climates

The climates in the area of Koh Chang National Park are divided into 3 seasons

- The rainy season starts from May to October, with the influence of the southwestern monsoon.

- Winter starts from November to February, with the influence of the northeastern monsoon causing the drop in temperature.

- Summer starts from March to April. The sun is moving past the Equator to the northern hemisphere and the northeastern monsoon is getting weak and relatively turbulent, causing fewer rainfalls and making it hot and humid, particularly in April.

From the 30-year period of weather statistics (1961-1990) collected by the Khlong Yai Weather Station, which is situated near Koh Chang island, the general weather conditions were as follows:

1) Temperature. In general, the average temperature was 27.3°C , with the highest in April, 32.9°C , and the lowest in January, 20.7°C , respectively.

2) Relative humidity. The average relative humidity was 80%, with the highest in August, 96%, and the lowest in December, 54%, respectively.

3) Rainfalls. The average annual rainfall was 4,709.9 millimeters. In one year, the rains fall for 190.4 days, with the highest rainfall in August, 1,098.0 mm, and the lowest rainfall in December, 23.0 m.m. It was the amount close to that in Ranong province with the average rainfall during the 30 – year period of about 4,183.7 millimeters.

4) Winds. The directions of local winds varied seasonally. During June to September, the direction was westward with the speed between 2.7 knots to 3.5 knots, which was the period of strong wind, especially in August with the highest speed of 63 knots or 113.4 kilometers per hour. During October to February, the wind direction was northeastward with the speed between 2.5 knots and .5 knots. During March to April, it was a time of peaceful sea, with the wind speed from 2.9 knots to 3.1 knots.

It could be summarized that the weather conditions in the study area, specially the Koh Chang Island group are ideal for travel and relaxation as it is not too hot nor too cold. The only restriction is that travelling is very difficult during the monsoon season, May to October. During November to February, the sea is relatively calm with some occasional turbulence that may pose some difficulties for navigation.

2.3.5 Forest and land exploitation

Due to mountainous terrain of the island, most of the land is covered by rain forest, with mangrove forest in the eastern coast. Most of the arable land is used for plantation, such as, coconut, durian, or rubber.

2.3.6 Forest resources and flora

Plant diversity in the National Park is abundant and plant communities can be divided into two types, namely, natural and man-made. The latter are made by human directly or indirectly because there are many villages scattered all over the island. These plant communities could be categorized as follows:

A. Natural plant communities could be classified into the following forest types:

Tropical rain forest

The forest is relatively distant from the shoreline. Most of the soil is sandy with about 5-700 meters from the Mean Sea Level. However, at the height over 300 meters from the Mean Sea Level, the average tree height does not exceed 15 meters with short and stout trunks because they have to stand against strong winds regularly, hampering their growth. Another reason is that at that height and slope, organic collection is scarce and the soil is not thick enough for plants to grow. Some of these plants are in the Memecylon spp., Schima wallichii Korth, and Eugenia spp. families. However, at the height lower than 300 meters, there are various kinds of trees, both hard trees, bushes and undergrowth.

Some of the trees with the height of over 30 meters include Dipterocarpus alatus Roxb, Dipterocarpus turbinatus Gaemt, dipterocarpus gracilis BL, Anisoptera costata Korth, Shorea hypochra Hance, Shorea henryana Pierre, Hopearecopei Pierre, Hopea odorata Roxb, Irvingia malayana Oliv, Palaquium obovatum Engler, and Schima wallichii Korth.

Instances of the trees with the height over 20 meters but not exceeding 30 meters are Podocarpus neriifolius D.Don, Podocarpus wallchianus Presl, Calophyllum saigonense Pierre, Calophyllum calaba Linn, Myristica sp, Diospyros sp, Vatica odorata Syming, Oncosperma horrida Scheff, Quercus semiserrata Roxb, Castanopsis armata Spach, and Castanopsis pierrei Hance.

Instances of the trees with the height under 20 meters are *Garcinia hanburyi* Hook.f, *Garciniamerguensis* Wight, *Lagerstroemia floribunda* Jack, *Walsura robusta* Roxb, *Diospyros wallichii* King & Gamble, *Carallia brachiata* Merr, *Croton oblongifolius* Roxb, *Knema globularia* Warb, *Eugenia* spp, *Vitex* spp, *Memecylon* spp, and *Caryota mitis* Lour.

Instances of creepers are *Daemonorops didymophyllus* Becc, *Daemonorops angustifolia* Mart, *Korthalsia grandis* Ridl, *Myrialepis scortechinii* Becc, *Plectocomiopsis geminiflorus* Becc, *Strychnos* sp, *Bauhinia bracteata* Bak, *Gnetum tatifolium* BL, and *Freycinetia stmatrana* Hemsl.

Dependent plants residing on other trees are orchids, *Platynerium coronarium* Desv, *Microsorium scolopendria* Copel, *Epipremnum giganteum* Schott, and *Hydnophytum formicarum* Jack.

Bushes and undergrowths are berries, *Bambusa* sp, *Nenga* sp, *Ardisia* spp, Orchids, *Begonia* spp, *Pandanus* spp, Aroids, Ferns, *Amomum ovoideum* Pierre, *Amomum krervanh* Pierre, *Boesenbergia pandurata* Holtt, and *Kaempferia pulchra* Ridl.

Mangrove forest

Mangrove forest is commonly found in muddy areas at the mouth of an inlet or streams. Some important plants found in these areas are *Rhizophora mucronata* Poir, *Rhizophora apiculata* BL, *Ceriops decandra* Ding Hou, *Ceriops tagal*

C.B,Robinson, *Bruguiera gymmorrhiza* Lamk, *Bruguiera parviflora* Wight & Am, *Avicennia alba* BL, *Xylocarpus granatum* koen, *Xylocarpus moluccensis* Roem, *hibiscus tiliaceus* Linn, and *Cerbera odollum* Gaerth.

Beach forest

The forest is found in the coastal areas with sandy or gravel soil. The forest is covered with only some kinds of trees, such as, *Terminalia catappa* linn, *Calophyllum inophyllum* linn, *Eugenia grandis* Wight, *Chaetocarpus castanocarpus* Thw, *Eugenia spicata* Lamk, *Melaleuca cajuputi* Powell and *Pandanus odoratissimus* Linn.f.

Different kinds of forest on Koh Chang island provide hard trees for house and boat building, sap, firewood and charcoal. Moreover, they are an essential source of fresh water, streams and creeks, and beautiful waterfalls. In addition to beauty for human to appreciate, forests are the habitat of many types of wildlife.

Swamp forest

It is a plant community growing in an area with water all year round. Such a place can be found at Salak Khork and Salak Phet inlets and plants growing in swamp areas are *Acanthus* sp., and *Cyperus* sp.

Aquatic Pant community

Koh Chang National Park covers a water area about 70.46% of the entire area. Consequently, aquatic plant community is an important component of natural plant communities of the Park, particularly sea weeds growing on the roots of

mangrove trees, muddy beaches, rocks, gravels, shells or buried in mud. Moreover, there are sea grass and planktons, which are essential for many aquatic life as their food sources and breeding grounds.

Manufactured plant community includes agricultural plants found among the beaches and feet of the mountains, covering about 20 – 30% of the National Park area. Some of them are coconuts, para rubbers, durians, rambutans, and mangostecns.

2.3.7 Wildlife resources

Diversity of birds

From a study survey on the diversity of birds in the National Park on June 8-22, 1992, 74 types of birds in 32 families were discovered, which could be categorized according to their status as follows:

Resident birds (R). There were 61 kinds, including sea egrets, kwak, Lumphu, Kaek, and so on.

Migratory birds (M). They were migrating birds escaping from cold climate to temporarily reside in Thailand. Eight types of them were found, such as, white-winged black seagull, green egret, black-headed oriole, and Noddy.

Breeding-visitor birds (BV). Two types of them were found. Moreover, three types of Passage Migrant Birds (PM) were also discovered.

Sea egrets, Tone Yai egrets and green egrets are rare in the National park whereas migratory birds are rarely found to be indigenous in Thailand.

Diversity of mammals

The National park is located in the island area with a lot of people living on them. Some areas have been turned into agricultural regions, changing wildlife habitat and their being disturbed by human beings. One result is that certain wildlife has been extinct, such as, bears and dugongs. From the survey, 9 types of mammals from 10 families had been found and most of them were small animals, for instance, bats, rats, squirrels, boars, and barking deer. They could be categorized according to their status as follows:

Protected animals type 1. It was found to be 5 types, namely, lemurs, macaques, white-haired macaques, anteaters and weasels. Only one type of protected animals was found, barking deer, and their number was dwindling because they had been hunted down.

The remaining 23 types were not classified as reserved or protected animals because they were relatively common. Most of them were small animals, not popularly used as food except boars, and they multiplied quite easily, e.g., rats and squirrels.

2.3.8 Diversity of reptiles and amphibians

The survey found 42 types of amphibians from 22 families and they were neither reserved nor protected animals type 1. There were 7 types of protected animals type 1, namely, monitor lizards, snakes and frogs.

2.4 Development plans of Koh Chang sub-district

The plans recommended that tourism have a potential and opportunity to be developed because the island group was one of the most important and beautiful tourism sites in the country. The seas were called “Andaman of the East”, deserved to be developed as a tourism site for both local and foreign tourists.

Nevertheless, the island had encountered some problems as follows:

The problems of natural resources and environment. They included the deterioration of coral reefs around the island due to changes of global temperature, uses of explosives for fishing and tourism, forest encroachment and hunting for wildlife in the National Park, lack of suitable waste and water management systems, prawn farms releasing waste water into the sea which affected breeding grounds of aquatic life, the construction of hotels and resorts, and the invasion of bungalows into the sea and the national park area.

The problems of infrastructure. They included the problem of land ownership because most of the residents did not have title deeds since their land was in the area of the national park, shortage of water during dry seasons, inconvenient transportation due to substandard roads or bridges being swept away during the rainy season, and inaccessibility by road to some communities, e.g., Bang Bao village.

Public health problems included the outbreaks of malaria as fishermen were infected in Cambodian waters. Treatments were not convenient on the island so patients had to be treated on the mainland.

The development policies thus focused on the promotion and development of tourism in the Koh Chang island group, transportation and communication systems, water sources for consumption, issuance of land title deeds, elimination of malaria, campaigns of good health for all, prevention and suppression of coral encroachment and release of garbage and waste water into the sea, and expansion of educational opportunities for children to have adequate education.

2.4.1 Koh Chang Sub-district Development Plans

The 1997-2001 development plans specified the priority of problems needed to be solved as follows: inconvenient communication, lack of land title deeds, family health, lack of credits for production, lack of the formation of farmers' groups, lack of clean water sources for consumption, lower rate of education, lack of knowledge for vocation and raising their quality of life, lack of water sources for agriculture, digestive diseases, lack of medical welfare, and lack of education opportunity.

Important guidelines for development included building standard roads, issuing of title deeds, promoting the construction of toilets and family environmental sanitation, establishing savings groups, a marketing demonstration center and a vocational development center, developing water sources and reservoirs, setting up pre-school children development centers, building more secondary schools, and promoting women's and vocational groups.

2.4.2 Development plans of Koh Chang Tai sub-district

The 1997-2001 development plans proposed that due to geographical conditions of the island with mountains, beaches and seas, it should be developed into a tourism site of the province. However, there were some restrictions on communications and transportation because of inadequate or substandard roads, bridges, piers and communications systems.

The problems needed to be solved included infrastructure problems, e.g., lack of water, toilets or prevalent communicable diseases, water source problems, e.g., lack of clean water for consumption or agriculture, educational and cultural problems due to lack of education after the compulsory level, problems of the environment and natural resources due to the destruction of mangrove forest, and problems of income earning especially for families with an annual income lower than 15,000 baht.

Important guidelines for development included issuing land title deeds, expanding electricity sales zones, building roads, bridges and piers, draining waterways, promoting the construction of toilets and family sanitation, providing healthcare services, monitoring and controlling communicable diseases, building village water works and expanding the water works system, developing water sources, training interest and vocational groups, providing total education, raising consciousness in natural resource preservation, campaigning for reforestation, and promoting new alternative agriculture.

2.5 Operational plans of tourism development of the islands and coastal areas of Trat

Koh Chang island and its neighboring islets are an important natural tourism site of the country. Although tourism in the area at present is not much, it tends to expand rapidly in the future to the point that might have adverse negative impacts on the environment due to lack of proper expansion directions. It is thus necessary to have suitable development measures by defining the capacity limitations of the islands so that suitable area developments could be obtained.

The areas suitable for tourism development of Koh Chang island are mostly in the western coast from Had Sai Khaw, Had Khlong Phrao to had Kai Bae beaches. For the eastern coast, the appropriate area is a long narrow band from Ban Dan Mai, Ban Dan Kao villages to Tharn Mayom beach. Other areas are Aaw son, Aaw Bang Bao and Aaw Wai Chack inlets, Had Jek Bae and Had Khlong Thien beaches. As for the mangrove areas of Khlong Salak Khork, Laem Chang Noi and Laem Bai Larn, they are in the national park area suitable for natural tourism sites with special activities and patterns.

Physical, environmental, social and economic capacity of the study area is with few limitations. However, to maintain fewer natural resources of the country and to slow the changes of tourism areas, this study recommended that Koh Chang island accommodate 10,000 tourists per day or accommodation of 4,000 rooms. This capacity could accommodate tourists until the year 2010. The tourism sites include Had Sai Khaw, Had Khlong Phrao and Had Kai Bae beaches.

The proposal of the operational plans in Koh Chang area is divided into 6 plans and each plan contains several projects which could be summarized as follows:

1) Management plan for tourism areas, land use and building control.

1.1) City plan and guidance plan project

1.2) Land ownership survey project

1.3) Measures on areas under the control of building construction

1.4) Announcement of environmental protection zones

2) Management plan on business operations

2.1) Survey project of business premises

2.2) Promotion of tourism services

2.3) Improvement of business premises sanitation

3) Management plan for the environment and natural resources

3.1) Survey project of coral data

3.2) Project to install buoys in coral zones

3.3) Measures on aquatic life preservation zone

3.4) Project to disseminate the preservation of natural resources and

environment

3.5) Koh Chang reforestation project

4) Infrastructure development plan

4.1) Improving road surfaces around Koh Chand island

4.2) Pioneering and improving roads to waterfalls (Khlung Phlu, Khlung Nueng and Khlung Phet Waterfalls)

4.3) Promoting the use of bicycles on the island

4.4) Project to study the design of reservoir construction

5) Environmental quality maintenance plan

5.1) Project to promote the installation of waste water treatment system

5.2) Managing the garbage collection systems (Ban Salak Phet)

5.3) Keep-clean campaign projects

5.4) Issuing local laws on the elimination of garbage and waste water by the private sector

6) Tourism development management plan

6.1) Establishment of a committee to jointly develop tourism on the islands and coastal areas

6.2) Measures to define pier and mooring zones

2.6 Developmental guidelines

2.6.1 Electricity

Electricity services on the island are carried out by the Regional Electricity Generating Authority laying the 3x185 mm², 22-kilo volt high power undercables for a distance of six kilometers from Thamma Chart Lang village of

Laem Norb peninsula to Aaw Saparot inlet of Koh Chang island. The high Voltage of 22 kilovolts has a distance of 50 kilometer eycles and the low voltage of 400/230 kilovolts has a distance of 30 kilometer cyeles. The total of 660 households in 8 villages of the two sub-districts or 54.1% have electricity from these services.

The future trend of electricity development on the island is that there will be an expansion to village No.1 of Ban Bang Bao in Koh Chang Tai sub-districts, which has not had electricity yet, and there will be an increase on the security of the system on the island.

2.6.2 Water management

The development of water sources on the island is aimed at providing sufficient water for the needs of the communities and these needs tend to be increasing in the future due to the increase of the population and tourists. The needs for water for agriculture at present do not pose any problems because agicultural areas could not be expanded any further because of the national park.

From the estimate in the next two decades, the population on the island would increase to 7,039 and the number of tourists would be 500,000. If the needs of water for consumption and tourism were set at 300 liters per head per day with an average stay of 3 days, the needs of water would be 1,220,771 cubic meters per year.

An important watersource is rain, averaging 4,709.9 milimeters per year. If every household collected rain water, it would be sufficient for consumption for the whole year round. For ground surface water, it is in the streams and creeks

which would be abundant during the rainy season. However, during the dry seasons, some streams may run dry because they are mostly short and flow from steep mountains into the sea rather quickly. Up to the present time, few developments have been undertaken concerning ground surface water except weirs. Reservoirs could not be constructed because low-lying areas are in the National Park, causing water shortages during the dry seasons. As for underground water, the quantity is only sufficient for household consumption. The following are some recommendations for water management on the island:

1. Constructing a reservoir in the upper low-lying area specifically for Koh Chang island
2. Studying a complete water development plan in order to allocate water for the needs of all sectors
3. Developing water storage places to exploit most benefits from them and to slow down the flow of water into the sea
4. Halting illegal logging and promoting the preservation and revival of watershed forests in order to maintain the quantity and quality of water
5. Promoting forest and chemical-free agriculture in order to maintain water quality and the environment
6. Promoting the construction of water storage to be used during dry seasons, using water thriftily, re-using treated water, and distributing water on specific times during the period of water shortages

2.6.3 communications and tele-communications

Communications and tele-communications are the responsibility of two agencies: Communications Authority of Thailand (CAT) and Telephone Organization of Thailand (TOT)

CAT provides postal, parcel delivery, registration and telegraph services nationally and internationally while postal guaranteed and money order services are provided only nationally. Furthermore, the agency also provides services on telephone radio, local, distance and overseas telephone and telex. Services on Koh Chang island are carried out by two authorized and privately-run post offices in Koh Chang subdistrict and one office in Koh Chang Tai sub-district. Money order and certain services are not available and the agency has no plans to open post offices on the island.

TOT provides basic telephone and other supplementary services. At present, coin-operated rural distance telephone is available in all the villages. The agency has plans to change into card-operated telephone in order to solve full-coined problems. It also has a project to expand 256 additional numbers at Ban Khlong Non See and Ban Dan Mai villages.

2.6.4 Flood prevention and drainage systems

Rains are common on the island and the area is mostly highland, therefore rains are flowing rapidly to low-lying areas. Road construction and community expansion usually take place horizontally along the shoreline, obstructing the flow of natural waterways. Moreover, land adjustment, shallowness or diversion

of waterways may cause flooding and water stagnation, an ideal breeding ground for mosquitos. The following are suggested guidelines of flood prevention and better drainage system.

1. Surveying and preserving natural waterways or natural drainage ways to prevent future drainage problems.
2. Keep natural drainage ways from being shallow to facilitate efficient drainage.
3. Construct roadside canals, underneath pipes and bridges to facilitate drainage and prevent road surface from being eroded or destroyed.
4. Construct canals, water control buildings and diverting canals into the sea to prevent flooding in communities, especially important and highly populated communities.
5. Control building construction and land development so that land is not so changed that the flow of ground surface water is affected.

2.6.5 Wast water management

The natural environment of Koh Chang island is sensitive to impacts. The expansion of communities, aquatic life farming on land and tourism development on beaches may have negative impacts on underground, ground surface and marine

waters. Because communities are scattered widely, waste water from households is not properly treated before being released into the sea.

Since Koh Chang island is an important area of natural preservation, some waste water management guidelines are recommended as follows:

1. Separate areas for aquatic life farming from those for tourism in order to avoid impacts on each other.
2. Control waste water sites by requiring them to have waste water treatment system before being released underground or into natural waterways or the sea. The quality of treated water however must be up to the standard required by law.
3. Require buildings to have fat storage plants and onsite waste water treatment systems and keep the systems regularly in check in order for them to function efficiently.
4. Constantly monitor and assess sea water quality and the quality of treated waste water to prevent problems or easily solve them.
5. As for densely populated communities, sea water quality may be deteriorated despite having onsite treatment systems. It is recommended that a central waste water treatment be constructed in order to treat preliminary treated water again to ensure its standardization and fees should be raised according to the quantity of waste water produced.

2.6.6 Garbage management

Garbage on the island is generated by households, tourist accommodation and facilities, and agricultural sector. Collection and disposal is done only in the area of Koh Chang sub-district, where there are a lot of tourist accommodation and facilities.

Some guidelines on garbage disposal on the island are as follows:

1. Promoting the reduction of garbage derived from tourism. Garbage from households should be used as compost by using the backyard residential composting method. The compost could be used for agriculture while waste from food could be used as animal feed.
2. Promoting the classification of garbage between wet and reusable one. In this case, the locality must provide sufficient containers
3. In the initial stage, wet garbage should be eliminated in hygienic landfill. In the long term, plans should be laid to eliminate it at Laem Ngorb peninsula.
4. Places for reusable garbage should be provided while waiting for further actions.

2.6.7 Education

With regard to state education services, there are 6 primary schools with 36 classrooms, 29 teachers, and 386 students in the total area of 75 rai 2 ngarn. The ratio between classroom and students is 1:11, between teacher and students is 1:13, and the density of students per school area is 5 per rai. The standard set up by the Ministry of Education is 1:40 between classroom and students, 1:25 between teacher and students, and at least 5 rai for the construction of a primary school in the initial stage.

For secondary school, there is only one state subsidized school under the supervision of the General Education Department at Ban Salak Phet village, Koh Chang Tai sub-district. However, in the fiscal year 2001, another state subsidized secondary school would be established at Ban Khlong Son village, Koh Chang sub-district. From the standard criteria of at least 10 rai for a secondary school, it is found to be substandard. It is recommended that in the long run, a new location be found to accommodate the growing number of students.

2.6.8 Public Health

To provide fundamental public health services to the public, there are 6 public health offices with 18 public health officers. There is one general hospital with 25 beds at Ban Dan Mai village No.2 to provide medical services for the entire population on the island, which is sufficient for present circumstances. However, when the estimated number of tourists is set at 354,500 in 2006 and 429,526 in 2016, the capacity and efficiency to accommodate patients of the hospital should be

enhanced, considering the number of tourists and the local working in the service sector in the future.

2.6.9 Security in life and property

The island has one regional police station located at Ban Dan Mai village No. 2 with 55 officers. They are in charge of security in life and property of the local and tourists both on land and in the sea.

Due to the increase in tourism activities, it is suggested that tourist police unit be established to be responsible for tourism-related activities, and water police unit in charge of operations in the sea. However, there should be an area to construct buildings to house these police units as well

2.6.10 Fire prevention and operation

Traditionally, houses and buildings are made from wood with one or two stories and scattered widely with no risk of fire because they are of agricultural society. The increase of tourism has made public buildings vulnerable to fire since they are built close together in clusters. In addition, building control is not strict, making it easier for building and expanding or adjusting existing houses. Such a practice may be vulnerable to fire and the locality has not prepared for the matter. Some recommended fire prevention and operation guidelines are as follows:

1. Strictly enforcing the law on building construction, alteration and expansion so that they are strong, safe and up to the standard.

2. Using city plan and building control measures for fire prevention.

They include designating builders using fire resistant materials to build houses in risky areas, having sufficient space between building blocks, building roads in the space as fire buffers and ways to extinguish fire, and controlling the height of building to no more than two storeys for the ease of fire operations.

3. Monitoring and assessing business operators to comply with fire prevention and operation measures as specified by law. They should install standard electric devices, have fire escape plans, provide good conditioned and sufficient fire prevention equipment, and carry out annual fire drills with staff members.

4. Campaigning the public and business operators on fire prevention.

5. Setting up a fire prevention and operation unit with permanent office, fire engines and relief operation cars because no community at present has fire hoses.

6. Establishing and training public relief volunteers with regular practices and tests every year.

CHAPTER III

METHODOLOGY

This research was conducted on tourists and communities on Koh Chang in Trat province. The present chapter focused on patterns and steps of investigation and data analysis.

3.1 Patterns of the study

The research employed a quantitative analysis and a survey by using a questionnaire as a data collection method. On the whole, the investigation was divided into 2 parts for the convenience of data study in an attempt to discover physical restrictions for tourism.

1. The study on tourism patterns included tourist information, expenses, further tourist destinations, number of stay, tourist attraction, tourist detraction, and expectations from future visits to Koh Chang National Park. The data would be used as a foundation to improve and develop tourism facilities.

2. The study on attitude of the communities included attitude toward tourism activities, information on tourism, attitude toward tourism development on the island, impacts of tourism development and expectations on tourism development.

3.2 Steps of the study

3.2.1 Stages of preparation

3.2.1.1 The investigation utilized both primary and secondary data sources as follows:

- Primary data were derived from the local communities under investigation by interviewing, observations and examination.

- Secondary data were obtained from related books, texts, documents and others from state libraries.

3.2.1.2 Defining the study area and Koh Chang island of Trat province was selected for investigation.

3.2.1.3 The target group included residents living or earning a living on the island.

3.3 Research instrument

To obtain the primary data, a questionnaire was used to illicit the attitude toward tourism development on the island.

3.4 Data analysis

After the data had been collected, the following steps were carried out.

a. Examining completion of the questionnaires for their accuracy and completeness of the answers.

b. Creating a code book

- c. Giving scores to the items according to the criteria
- d. Analyzing the data by using the SPSS/PC⁺ program in order to obtain frequency, percentage, arithmetic mean and standard deviation
- e. Presenting the analysis results according to the study objectives

3.5 Presentation of the study results

The presentation was divided into 2 parts:

- A qualitative description included the physical characteristics of the study area.
- A quantitative description included tourism patterns, attitude and readiness of the local communities on the development of Koh Chang island.

CHAPTER IV

RESULTS

4.1 Environmental conditions of Koh Chang

4.1.1 Economic conditions of Koh Chang residents

In general, the residents of Koh Chang are economically well – off, particularly the 8 village residents around the island. Most of them engage in fishing business and almost all of them own small to large fishing trawlers. A large one would have a freezer, stay out in the sea for about 2 weeks with approximately 20 – 30 crews working on it. In addition, they are involved in raising fishes in the nets and growing coconuts and fruits, especially rambutans and durians which bear fruits in the beginning of the season, commanding high prices. When tourism has been introduced, families with land plots close to the beach build guesthouses to accommodate tourists as another source of their income.

When compared with other islands in the eastern region of the country, Koh Chang archipelago's natural resources are still abundant because fishing activities by the Cambodian in there waters are relatively few and backward. Consequently, marine life have grown well in smaller islands of Koh Chang group. There are about 3,000 - 4,000 fishing trawlers from neighboring provinces coming to have their shares in this area. The establishment of Koh Chang National Reserve has affected the attitude of the local since they are afraid of being taken advantage of and losing the benefits from clearing forested areas for agriculture, ship building and construction of houses. However, urban residents welcome the establishment of the reserve as they would get more benefits from the tourism industry.

4.1.2 Survey results of the socio-economic conditions of the residents

From the investigation of local socio – economic situations in the area related to tourism it was revealed that the island is related to and most affected by tourism in the entire province because it is an important area of tourism and accommodation provision at present. From this reason, the island was selected for this investigation. Data on socio – economy were obtained by random sampling and an interview – questionnaire was constructed. The interview was conducted with 80 samples, representing 8.6% of the entire island residents. The contents of this investigation included socio-economic conditions of households in terms of occupation, income, employment, economic impacts, and attitude toward tourism.

The island is composed of 2 sub-districts or tambons, namely Koh Chang and Koh Chang Tai, consisting of 8 villages. In 1993, there were 931 households with the population of 3,945. The main communities are Ban Salak Phet of Tambon Koh Chang Tai and Bam Khlong Son of Tambon Koh Chang. The two communities are the original ones and more densely-populated. The location of the houses is along the beaches for the convenience of travelling and fishing activities. The higher part of the island is used for coconut and fruit plantation.

Moreover, the island has other types of tourist attractions, such as, beaches, islets and beautiful waterfalls, attracting both local and foreign tourists. The rapid expansion of tourism industry has turned some local residents to take up tourism-related businesses, for instance, accommodation, restaurants or tourist boats. Another indirect benefit is that local products are sold at higher prices for tourists.

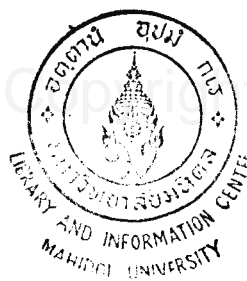
4.1.3 Cultural aspects of the residents

The cultural aspects of the province are of rural community, with the morning market as the center of activities. The cultural traits are distinctively divided into 2 types; mainland and island communities. Life in the island communities is peaceful, with schools and temples as the center of activities.

Most of Irat citizens are Chinese descendents. In the old days, the province was once under the rule of the French, with navy generals of Thai and Chinese races as governors. It is still evident that Chinese traditions have been kept strongly. An altar for deities and ancestor spirits is present in every home and Chinese festivals are observed and celebrated every year. In the fifth lunar month, there is a day when the tide is lowest and it is regarded as a sacred day. People would fetch water into their homes and houses are decorated with banyan and Wa leaves which are believed to be a symbol of auspiciousness.

On a Buddhist holy day, all secular activities are stopped and followers observe precepts, make merits and listen to sermons in the temple.

For a funeral, it is assumed as the responsibility of every member to participate and help without invitation. The dead would be cremated within 3 – 7 days, depending on the economic status of the family. Chinese decorations are put into the finest manner. Close relatives wear white clothes while distant ones wear black with a white scarf over the shoulders. The funeral ceremony is simple like that of a rural community.



On the day when the lent ends, it is believed that the Lord Buddha descends from heaven. Buddha statues are decorated in beautiful floats and paraded around the city. Food is given to monks and it is also a day of merit and merry making.

4.2 Tourism resources of Koh Chang

4.2.1 Types and number of tourism sites

The island has a number of natural, historical and cultural sites for tourists. Due to a short distance from Bangkok, the place is a main attraction for both local and foreign tourists, especially nature, such as, beaches and islets. Furthermore, the island still has coral reefs for divers to enjoy. These tourism resources are valuable for the island. However, tourism on the island is seasonal with the monsoon as a significant variable.

4.2.1.1 Natural tourism sites

There are 3 types of tourist attraction for the island

1) Beaches. They are a coastal attraction including sandy, muddy and rocky beaches and rocky peninsula. Instances are

- Tharn Mayom beach
- Aw Sapat beach
- Sai Khao beach
- Khlong Phrao beach
- Kai Bae beach
- Bang Bao beach
- Sai Yao beach
- Khlong Son inlet

- Khor Khao Khat-Premwadee inlet.

2) Waterfalls include

- Khlong phlu
- Non See
- Khiriphet
- Klong Nung.

3) Islets. There are 15 islets with beautiful corals, marine plants and fishing spots. They include

- Phrao
- Lao ya
- Ngam
- Khum
- Wai
- Rang Chang Noi
- Man Nok – Man Nai

4.2.1.2 Cultural and historical tourism sites.

Tourism sites telling the history and ways of life are not many. They include

- Ban Salakphet – Rong Than village
- Bang Bao Fishing village
- Kho Chang Battle Field

4.2.2 Characteristics of tourism sites

Each tourism site has its unique aspects and significance, which can be deliberated as follows:

1) Tharn Mayom Beach. It is a medium – sized beach located in the east of the island. Khlong Tharn Mayom riverine flows through the middle of the beach. It is also the location of Koh Chang National Reserve Unit, Fishing Unit, a large-sized sea port and bungalows.

2) Tharn Mayom Waterfall. It is a medium- sized most famous waterfall on the island with water running the whole year. It is located about 500 meters behind the National Reserve unit in the durian orchard. Many kings and royal family members have visited the waterfall, such as, King Rama III in 1876, King Rama VI in 1927, and Queen Ramphai Phunee, the Royal consort of King Rama VII in 1927.

The water from this waterfall is the main source for public consumption. However, water pipes have not been hidden properly, causing a sore eyesight for the landscape.

3) Chang Noi islet and peninsula. The islet is located on the topmost in the northern part of the island, consisting of rocks and small trees and the peninsula is also at the same place, consisting of mostly rocks. However there is a coral reef around the islet and peninsula.

4) Khor Khao Khat inlet and Premwadee port. It is at the topmost of the island and the isthmus between the island and Chang Noi islet is called Khor Khao Khat. There are accommodation, a small community and a port named Premwadee.

5) Sapatrot inlet. It is the location of a small community next to Khor Khao Khat inlet, composing mostly of rocks. It is also a port for fishing and passenger boats during the monsoon season.

6) Khlong Son inlet. Situated on the top of the eastern coast of the island, it is a location of Khlong Son Community and low budget bungalows. There is a coral reef near the inlet.

7) Sai Khao beach. It is a long white sandy beach with around 10 low budget bungalows. Behind the beach are coconut plantations and forest, with the road running closest to the beach.

8) Khlong Phrao and Chaiya Chet inlets. They are good quality sandy beaches with land slopes enabling people to swim safely. There are some low budget bungalows and the standard one with air- conditioned room is Koh Chang Resort. In the north of Khlong Phrao inlet is Chaiya Chet inlet and peninsula. They are beautiful but rocky, making swimming unsafe or impossible. There is however a fishing village producing shrimp paste and dried squids.

9) Kai Bae beach. The beach is next to Khlong Phrao beach with land slopes safe enough for swimming. There are about 10 bungalows for low-budget travellers. There is a small community nearby

10) Bang Bao Fishing Village and Beach. It is the most interesting village on the island. Houses are built on high stilts in the sea and wooden bridges connect houses together. In addition, there are 3 concrete bridges for fishing trawlers to moor. The village is generally very clean, suitable for strolling. There are 2 bungalows and a state-run primary school with some 30 students. There is a coral reef nearby for snorkelling. From here, it is possible to see the views of Khum, Wai and Rung islet, and Bang Bao peninsula.

11) Koh Chang Navy Battlefield. During 1940-1941, the Thai government was fighting with the French colonialists over the territory dispute for the eastern region. The French had occupied Chanthaburi since 1903. On January 16, 1941 the French intruded the Thai air space in the areas of Koh Chong, Koh Kut, Koh Samet and Sattahip. Chantnaburi Air Force sent its aircrafts to chase the enemy away. On January 17, 1941, the same incident took place over Koh Chang and the plane bombed buildings on Koh Ngam. Songkhla and Luang Chonburi Royal Fleets retaliated by firing and downed the enemy plane into the sea, south of Koh Wai. The enemy responded by sending 7 warships into the Thai waters, south of Koh Chang, headed by a patrol ship named La Moot Piquet. The ship fired at the remaining buildings on Koh Ngam and at the Thai fleet. The result was that three Thai royal ships with a large number of the soldiers were destroyed in the battle.

12) Salak Khork village and inlet. The village is a large community located around the inlet with an open mouth into the sea. The inlet grows mangrove trees and is used as a mooring site during monsoons. There are one mooring port, a temple and a canal or Klong which is used for navigation and a place of fertile mangrove trees.

13) Had Sai Yao beach is situated next to Salak Khork inlet. The surrounding area is covered by coconut plantations and forest. There are one or two bungalows in service.

14) Salak Phet and Rong Tharn Villages are the largest communities on the island, located in the southern part around Salak Phet inlet, which is the largest inlet. Most of the villagers are fishermen and there are many mooring stations and trawlers. Rong Than village is a residence community with one Buddhist temple on a hill, called Atulaporn Banphot. In Salakphet village, there are fishing houses, bungalows, food shops, a temple and boat services to Laem Ngorb peninsula. There is a telegraph office in the village. sending signals to the mainland at Laem Ngorb. The road within the village is made from gravels.

15) Khlong Phlu Waterfall is a large three-tier waterfall. The height of the first tier is about 100 meters and the second and third tiers are much higher than the first one. The forest is pristine and there are many tributaries branching out from the stream. The way to visit the waterfall starts at the Khlong Phrao community, which is about 3 kilometers and a 20 – minute walk through the jungle. The path leading to the waterfall is not very convenient. It is believed that King Rama III visited the fall 2 times.

16) Khlong Non See Waterfall is situated in the northeast of the island. To get to the place, it takes 3 hours by foot from Ban Dan Mai or 4 kilometers from the Office of the National Reserve.

17) Kiriphet Waterfall is a very high one-tier waterfall about 3 kilometers from Salak Phet community through rubber plantations. Residents of the community use the water from the fall for consumption.

18) Khlong Nung Waterfall is a small waterfall close to Kiriphet Fall.

4.3 Tourism market

4.3.1 Tourism market at the regional level

From the 1992 report on tourism situations by the Tourism Authority of Thailand, Rayong office, it was summarized that the tourism market in the Eastern region: Pattaya, Rayong, Chanthaburi and Trat was 10.98% of the market share. 79.65% were local tourists and excursionists and 20.35% were foreign counterparts. When the market share of tourists was compared, it was revealed that Pattaya had a market share of 47.55%, Rayong 31.80% Chanthaburi 17.22%, and Trat 3.43% respectively.

4.3.2 Tourism market of Koh Chang

4.3.2.1 Distribution of tourists

From the approximation of tourists visiting places of attraction in Trat, appeared in the report on preservable natural sources compiled by the Provincial Office in 1991, it classified tourists into 4 groups. Laem Ngorb group was the highest

in number, followed by Koh Kut group, Khlong Yai group, and Muang district group respectively. Each group was sub-classified according to the nature of tourist places: waterfall, beach and islet, totaling 26 places. It was found that tourists were most densely distributed in Laem Ngorb and Koh Chang, averaging 4,340 and 3,000 tourists/week.

In terms of accommodation overnight, tourists on Koh Chang were free to choose their own accommodation. Excursionists visiting each place were from different places of accommodation. It could be stated that there were very few night spenders on the islands, except excursionists from one island to another. Of the 200,722 tourists on Koh Chang, 62,622 , 46,559 and 25,374 spent their nights at and visited Had Sai Khao, Had Kai Bae, Had Khlong Phrao and Klong Son respectively. There were 99,419 and 45,499 tourists/excursionists visiting Khlong Phlu and Tharn Mayom Waterfalls. When the total number of tourists was calculated, it was found to be 472,479 tourists-day/year. Of these, 134,725 visited Had Sai Khao beach, 119,700 visited Had Kai Bae beach, and 100,167 visited Had Khlong Phlu beach.

4.3.2.2 Number of tourists per day

When the number of tourists on a daily basis was taken into account, it was found that there were on average 1,479 tourists/excursionists visiting Koh Chang a day. Had Sai Khao beach had the highest with 424 tourists/day (396 stayed overnight), followed by Had Kai Bae beach with 377 tourists/day, Had Khlong Phrao beach with 315 tourists/day, Khlong Phlu Waterfall with 27 tourists/day and Tharn

Mayom with 15 tourists/day. For other islets, there were not many tourists on a daily basis, but Koh Kut had 105 tourists/day.

However, the number of tourists in the Koh Chang island group would be highest during the off monsoon season and long holiday weekends with over 2 days. The highest average number of tourists on a daily basis was at Koh Chang, numbering 3,853 per day. There were 502 tourists/day visiting the beaches, 258 visiting the islets in the National Reserve, 261 visiting Koh Kut, 370 visiting Koh Mark islets, and 350 visiting Khlong Yai respectively. Moreover, 1,087 tourists per day visited Had Sai Khao beach, 985 visited Had Kai Bae beach, 824 visited Had Khlong Phrao beach, 647 visited Khlong Phlu waterfall, 578 visited Tharn Mayom National Reserve Unit, 378 visited Tharn Mayom waterfall, and 449 visited Khlong Son respectively.

4.3.2.3 Tourist seasons

The tourist seasons for the sea in the area of Trat province are different from those on the Gulf of Thailand. On the Gulf, the northeastern monsoon is strong and turbulent from mid-October to mid-February. On the Andaman Sea, the southwestern monsoon is strong and turbulent from mid-May to September. Despite being located on the Gulf of Siam, the tourist seasons of Trat coincide with those of the Andaman Sea because the area is close to Phnom Dongrek Mountain Range. When the northeastern monsoon comes, the winds would be blown over the islands of Trat to the coastal areas of Trat, Parchuabkirikhan, Chumporn, Surat Thani and Nakhorn Sri Thamarat. Nevertheless, when the southwestern monsoon comes, the

winds would be deterred by the mountains on the mainland and blown over to sea areas of Samui and Trat.

As a consequence, the tourist seasons of Koh Chang islands are from mid-October to mid-April. During this period, the sky is cloudless with no rains nor storms. The period is in line with the tourist season of Koh Chang islands, when both local and foreign tourists flock to the islands.

Koh Chang National Reserve Office compiled the statistics of tourists from 1984-1993. It was revealed that the number of tourists had increased from 49,750 to 200,766. In this investigation, the data from 1988-1993 revealed that the highest number of tourists visiting the National Reserve was in April, with the medium level from December to February, and the lowest level from August and September.

The high tourist season coincides with several holidays and festivals, namely Loy Krathong, New Year, Chinese New Year and traditional Thai New year in April. In the same period, Western travelers visit the tropical areas to escape the cold climate from their countries. However, June to October is the period of monsoon when storms and turbulent seas prevail.

From the six-year statistics, the number of tourists could be used to represent the distribution of tourists on a monthly basis in the province. It was found that in April, it was estimated that 227,632 tourists in Koh Chang, 2,653 in Koh Kut, 4,187 in Mark islands, 2,535 in the islands of the National Reserve, and 39,860 in the

total area of investigation. The approximation of the total tourists in April was 65,043 per day, 5,725 per day, 7,260 per day, 5,470 per day and 91,744 per day respectively. The highest average per day in April was estimated at 22,168 per day, 191 per day, 2,242 per day, 18 per day and 3,017 per day respectively.

4.3.3 Forecast of tourist number

From the previous statistics of Koh Chang National Reserve, it was found that the expansion would be at a moderate level, which was in line with the aspects of tourism development in the area. In the past, Koh Chang was not a popular destination due to travel difficulties and seasonal restriction. With coordination from both state and private sectors, more facilities have been developed and therefore the expansion rate should be higher than that in the past. As a consequence, the trend of expansion rate is taken into consideration, which is composed of low, medium and high levels as follows:

When the provincial economic expansion was considered, the gross domestic product (GDP) on services during 1981-1989 was taken into account for the rate of change. This rate could be used to forecast the number of tourists because changes in services were in accordance with changes in tourism services in the same period.

From considering the GDP on services of the province by the regression of the 3 models, namely Linear, Exponential and Power, in an attempt to obtain suitable models to be used for tourist number forecast, it was discovered that the exponential model was most suitable, followed by Linear and Power models. Consequently,

Exponential and Linear models were employed for the prediction, which yielded different expansion rates.

1) Forecast of tourist number at the provincial level

From the results of the forecast in the province, by areas and areas of investigation, it is predicted that in 1998, 2003, 2008, and 2013 the number of tourists in the province would be 427,255; 556,954 and 923,545, Koh Chang would be 291,855; 391,121; 524,150 and 702,424, and Koh Kut islands would be 64,543; 86,495; 115,914 and 155,339 respectively. The details were shown in Table 4.1

2) Forecast of tourist number by group

From the results of forecast of tourist number by group by using the increase rate coupled with forecast at the provincial level and estimation of the highest tourist number in some groups, it was revealed that the number of tourists visiting Koh Chang, Koh Kut, Koh Chang islands and Koh Kut islands in 2013 would be 660,946; 155,339; 44,765 and 78,946 respectively.

3) Forecast of local and international tourists

In this forecast, it was specified that the number of international tourists would be higher than that of local travellers. The rate of increase was set at a constant level of 9% per year in the coastal areas, 8% per year in the areas of Koh Chang, Koh Kut, Koh Mark islands and Khlong Yai, and 6.3% per year in the area of islands National Reserve. This would raise the ratio of international tourists, but in most areas the number of local tourists still outweighed that of international ones. The

exception would be in Koh Chang and Koh Kut islands where the ratio of international tourists would be 3.85% and 26.35% in 2013 respectively.

4) Forecast of tourists by overnight stay

The ratio between tourists and excursionists tended to change to some extent, depending on travel convenience. Nevertheless, when the areas and travel patterns were taken into account, it was found that tourists with overnight stay played a major important role in the forecast. It was therefore hypothesized that the proportion of tourists with overnight stay remained constant.

Table 4.1 Tourist forecast for Koh Chang

| Year | Koh Chang Islands | |
|------|-------------------|---------------|
| | Number | Increase Rate |
| 1993 | 217,783 | |
| 1994 | 230,915 | 6.03 |
| 1995 | 244,840 | 6.03 |
| 1996 | 259,603 | 6.03 |
| 1997 | 275,257 | 6.03 |
| 1998 | 291,855 | 6.03 |
| 1999 | 309,454 | 6.03 |
| 2000 | 328,114 | 6.03 |
| 2001 | 347,900 | 6.03 |
| 2002 | 368,878 | 6.03 |
| 2003 | 391,121 | 6.03 |
| 2004 | 141,706 | 6.03 |

| | | |
|------|---------|------|
| 2005 | 439,713 | 6.03 |
| 2006 | 466,227 | 6.03 |
| 2007 | 494,341 | 6.03 |
| 2008 | 524,150 | 6.03 |
| 2009 | 555,756 | 6.03 |
| 2010 | 589,268 | 6.03 |
| 2011 | 624,801 | 6.03 |
| 2012 | 662,476 | 6.03 |
| 2013 | 702,424 | 6.03 |

4.4 Evaluation of accommodation capacity

4.4.1 Evaluation of physical capacity

4.4.1.1 Evaluation of buildings and land use

1) Evaluation in areas of services

Land exploitation at present concentrated on the coastal areas of the islands while the hinterland was mountains and plantations. Koh Chang has 0.16% for residential areas or 460 rai and 0.39% for tourism areas or 1,300 rai, with about 400 rai for areas of services. Koh Kut has 1.9% of residential areas or 1,250 rai, with 6 beaches for tourism while other islets and mainland coasts do not have many areas for tourism.

When the evaluation on the proportion of land use in the 400 rai of Koh Chang was carried out, it was found that there were 9227 bungalows with the highest number of tourists per day of 3,853. The proportion was 2 – 3 rooms/rai and 9.6 tourists/rai. It could be seen that tourism areas could still be expanded because the

average room size was 12 square meters and more buildings could be constructed and still there was a lot of empty space. Under the present density, if the area were to be fully exploited, it should be 360 rai, with the highest capacity to accommodate 65,000 tourists-day/day or 21,000 tourists/day. The potential to accommodate tourism development in terms of building and land use of the island was very good. Moreover, service provision by means of higher density with big buildings, e.g., shophouses or buildings with more than one storey would enable the island to accommodate more tourists. Koh Kut has an approximate area of 2,770 rai with the highest capacity to accommodate 55,000 tourists-day/day or 18,000 tourists/day.

Consequently, building control measures would help maintain the accommodation capacity at an appropriate level. Standardization of building sizes suitable for services would create an atmosphere of land use for tourism.

2) Evaluation of beach use

The coastal areas for tourism are relatively long, especially Had Sai Khao, Had Khlong Phrao and Had Kai Bae. Had Sai Khao Beach, with 6 kilometers in length, has a capacity to accommodate 2,000 tourists/time (20 persons/rai), which could be calculated the entire number of tourists of 10,000 persons-day/day or 25 persons/rai at the present tourism areas or only 2.5 persons/rai of the whole suitable areas.

4.4.1. The evaluation of public infrastructure

Needs to obtain state facilities increase according to the rising quantity of businesses and services or changing consumption behaviors. The facilities are as follows:

1) Water

From a survey of the Institute for Science and Technology Research, it was estimated that on average a tourist used 160 liters of water per day. At present, the average needs to use water were 240 m³/day (or the highest average of 616 m³/day).

Water sources of Koh Chang and other islands included natural water sources from canals and waterfalls, water wells, and rains. In the rainy season, water volumes from various sources could be estimated as follows:

- Rains. The residents mainly used rain water for drinking. The needs of rain water were not so significant because other water sources were still available.

- Well water. The evaluation of well water was difficult to make since there were no clear data. However, from the estimation according to the geological structure, it was found that Koh Chang had the volumes of underground water of about 5 m³ per hour with the full capacity of water within the radius of one square kilometer. It was estimated that underground water was capable of accommodating over 22,000 tourists-day/day. Nonetheless, the beach areas might encounter the problem of brine water at certain times.

- Surface water. This included water from canals and waterfalls. Surface water was a crucial source for the community and service premises. The volumes of water were sufficient for the whole year round, though they were reduced in summer. Therefore, storing water for consumption in the dry season was necessary because the volume of rain water fluctuated.

2) Evaluation of communication and electricity use

The sub-marine electric cable project to Koh Chang would enable the residents to have sufficient electricity. Although in the beginning the project might not cover all areas or the generating systems might not be in full functions, but in the long run, the difficulties could eventually be overcome.

Regarding communications, the systems were still inadequate. The present radio system had a lot of restrictions and therefore telephone systems were a necessity, especially for convenience and other measures of business premises. It was estimated that within this decade, the tourism industry of Koh Chang required over 150 numbers. Using the mobile phone system could ease the problem if the signal network covered the area.

3) Evaluation on needs of transportation

Current passenger boats were insufficient in number and small in size, which were not convenient for travelling, particularly during high seas. In addition, there was a temporal restriction for services, but present needs and future trends were still not high. This was coupled with the expansion of passenger boats, which was in line with market mechanism and not a restriction for tourism industry. As for the

needs to have ferry boats from Laem Ngorb and Koh Chang, it was considered unsuitable in terms of investment and there might be unnecessary acceleration of development in Koh Chang area.

As for public transportation on land, the road along the coast could only be used in dry seasons and therefore public transportation was available only from Saparot inlet to Kai Bae beach. The number of public buses in service was small and the needs to use them were at a moderate level. Due to a constant change of wind currents, it was estimated that the daily needs to travel within the island were about 300 times. At the moment, tourists hired motorcycles and other vehicles to go from place to place. The service could be expanded if the road was improved to be in use the whole year round.

4.4.2 Evaluation on environmental capacity

4.4.2.1 Water quality

From reviewing the data on the quality of sea water and water for consumption in the area, it was revealed that the quality was good, unaffected by tourism and other activities since pollution derived from those activities was relatively little and waste water had not been released into waterways in large quantities. Waste water released into wells was all absorbed by sand and ground layers. However, a small amount of waste water might be released untreated into waterways by bungalows near the beaches.

From the estimation of the highest water use by tourists at 347 cubic meters per day in April, the average waste water would be 277 m³/day in 1993 and would increase to 888 m³ in 2013 (annual increase rate of 6%). In Koh Kut, the highest water consumption of tourists was merely 27 m³ per day, with 22 m³ as waste water. With this amount of waste water, suitable waste water treatment wells could deal with the problem. There were many tourists at Had Sai Khao Beach, Had Khlong Phrao Beach and Had Kai Bae Beach, accounting for 27%, 20% and 5% of the tourists in the entire area. It was estimated that in 2013, daily waste water in the three beaches would be 240 m³, 177 m³ and 222 m³ respectively. The amount could be manageable with the treatment system in particular areas or the entire area. As a consequence, environmental capacity on water quality was limitless if properly managed.

4.4.2.2 Garbage

The highest average of garbage related to tourism was recorded at 1,344 m³ per day. Garbage generated at Had Sai Khao beach, Had Kai Bae beach and Had Khlong Phrao beach was approximately 283 m³, 268 m³ and 336 m³ per day respectively. Elimination of garbage was done by piling, burning and burying and the present methods were unhygienic. The Tourism Authority of Thailand provided a budget of 2,497,495 baht to build three incinerators at Had Sai Khao beach, Khlong Phrao inlet and the Office of Tharn Mayom National Reserve. At the initial stage, each incinerator could accommodate 50 Kg of garbage per day or 100% of all garbage. The amount of garbage would increase every year and it was expected that the incinerators were able to accommodate until 2006. After that, the capacity must be increased.

However, in distant areas, such as, Ban Salak Phet, Ban Bang Bao, Ban Dan Mai and Ban Dan Kao, transporting garbage to the incinerators would be difficult and inconvenient and the problem would remain in those areas. Furthermore, the three incinerators could not accommodate all the garbage generated by the entire population on Koh Chang.

Consequently, the capacity to deal with garbage would be manageable and probably without limits if properly managed. At any rate, if the three incinerators could accommodate only the garbage generated by tourists, the problem would surface in 2006, when the volume of garbage outweighed the capacity to handle it.

4.4.2.3 Forest and wild life

The forest on Koh Chang is relatively fertile, particularly on the mountains and coastal areas and mouths of the canals where mangroves grow. Wildlife are common in most of the forest area and birds are very common in all areas (10 – 20 wildlife per 100 meters of investigation). There are one type of rare animals and 3 types of uncommon animals. Preservation of forest and wildlife is a necessity for the National Park. In relation to tourism, only coastal areas are used, therefore the impacts are relatively few, with exception of coastal trees which are cleared for land improvement. Constructing a road through the national park would have strong impacts on trees and soil erosion. Nevertheless, the impacts of tourism on wildlife and forest are small since current tourism patterns do not include trekking except to a few waterfalls.

If the patterns persist, the environmental capacity on forest and wildlife would remain for a long time, except trekking which would affect undergrowths and some wild animals. Therefore, suitable management of the national park is a necessity. As for Koh Kut and other islands, forest and wildlife are fewer despite the existence of bio-diversity. Organizing activities in the forest should be avoided, if possible.

4.4.2.4 Corals

The state of coral abundance in Koh Chang is at a moderate level at Khlong Son and Koh Chang Noi whereas in other areas it is in a deterioration condition except at smaller islets. A popular activity is snorkelling in shallow areas so the effects are likely to take place due to improper practices of divers and boats. However, care taken by the National park and better understanding of tourist business operators would lessen coral destruction. It is thus possible to preserve corals to accommodate more tourists.

4.4.3 Evaluation on social capacity

The society accepts tourism at a satisfactory level. The society in this case includes both local residents and tourists.

4.4.3.1 Attitude of tourists

Most tourists are Thais and spend a shorter period of time than foreign ones despite relatively few in number. Most of them were impressed with the island and would return in the future, indicating that they were satisfied. The satisfaction with current services was at a good level, but some cases needed improvement.

Their opinions on the project were positive, especially Koh Chang should control the construction of buildings, ferry boat services and a permanent port. However, they were against the construction of road around the island (foreign tourists) and cable cars. This indicated that they needed comfort and convenience at a certain extent but did not want too much modern developments.

It could be summarized that both local and foreign tourists and the residents required and accepted the expansion at an acceptable and satisfactory extent, but did not want too much modern developments. The finding indicated the social capability on development at a moderate level, which would increase the number of tourists from the present situation.

4.5 The survey results on the readiness of local communities on tourism development

4.5.1 Fundamental data

The survey employed a questionnaire as a guideline to interview the community members. It was revealed that 43% of the interviewees were male and 47% were female with an average age of 40 years. Most of them, 61.50%, had a primary school education, 22.20% had a secondary school education and 11.10% had no education. In terms of religion, 98.50% were Buddhists and only 1.50% were Christian. The average household members were 4.33. The details were shown in Table 4.2

With regard to occupation, the majority, 31.10% were farmers, 25.20% were in business-related profession and the rest were fishermen, government officials,

employees and housewives. The average income was 5,170 baht and the average expenditure was 22,856 baht per month. The details were shown in Table 4.3

Table 4.2 Personal information

| | | Number | Percentage |
|--|------------------|--------|------------|
| Sex | | | |
| | Male | 58 | 43.00 |
| | Female | 77 | 57.00 |
| Age | | | |
| 1 | 0 – 20 | 13 | 9.60 |
| 2 | 21 – 40 | 64 | 47.40 |
| 3 | 41 – 60 | 45 | 33.30 |
| 4 | 61 and over | 13 | 9.60 |
| $\bar{x} = 39.5185$, $SD = 14.1130$, $Min = 14.00$, $Max = 76.00$ | | | |
| Education | | | |
| | Primary school | 83 | 16.50 |
| | Secondary school | 30 | 22.20 |
| | Diploma | 4 | 3.00 |
| | Bachelor degree | 3 | 2.20 |
| | No education | 15 | 11.10 |
| $\bar{x} = 1.2370$, $SD = 0.7747$, $Min = 0.00$, $Max = 4.00$ | | | |

Table 4.2 (Cont.)

| | | | |
|--|-------------|-----|-------|
| Religion | | | |
| | Buddhists | 132 | 95.50 |
| | Christians | 2 | 1.50 |
| Household members | | | |
| 1 | 1 - 3 | 41 | 30.40 |
| 2 | 4 - 6 | 84 | 62.20 |
| 3 | 7 - 9 | 7 | 5.20 |
| 4 | 10 and over | 3 | 2.20 |
| $\bar{x} = 4.3259, SD = 1.7655, Min = 1.00, Max = 11.00$ | | | |

Table 4.3 Occupation and income

| | Number | Percentage |
|--|--------|------------|
| Occupation | | |
| Farmers | 42 | 31.10 |
| Merchants | 34 | 25.20 |
| Fishermen | 18 | 13.30 |
| Government officials | 5 | 3.70 |
| Others | 36 | 26.70 |
| Average income | | |
| 1 Not exceeding 3000 | 64 | 47.40 |
| 2 3001 - 6000 | 45 | 33.30 |
| 3 6001 - 9000 | 14 | 10.40 |
| 4 9001 and Over | 12 | 8.90 |
| $\bar{x} = 5107.4074, SD = 9079.3815, Min = 0.00, Max = 100000.00$ | | |

| Average expenditure | | |
|--|----|-------|
| 1 Not exceeding 3000 | 90 | 66.70 |
| 2 3001 – 6000 | 39 | 28.90 |
| 3 6001 – 9000 | 2 | 1.50 |
| 4 9001 and over | 4 | 3.00 |
| $\bar{x} = 2751.8519$, $SD = 3310.4956$, $Min = 0.00$, $Max = 30000.00$ | | |

Regarding settlement at Koh Chang, 83.70% originated from Trat and the rest, 16.3% migrated from other places. On average, they had resided on the island for 26.90 years and the main reasons for migration were occupation (43.70%) and marriage (10.40%) It was further found that 81.50% of the interviewees were permanent settlers. 14.80% were unsure whether they would move out and 3.70% expected to move to other places in the future. On average, their residence were approximately 2.39 Kilometers from the National Park. As for commuting within the community, 29.60% used motorcycles, 12.60 used motorcycles and cars, and 10.4% used bicycles. The details were shown in Table 4.4

Table 4.4 Settlement

| | Number | Percentage |
|------------------------------------|--------|------------|
| Original Hometown | | |
| Trat | 113 | 83.70 |
| From others | 22 | 16.30 |
| Duration of residence at Koh Chang | | |
| 1 1 – 20 | 61 | 45.20 |
| 2 21 – 40 | 41 | 30.40 |

Table 4.4 (Cont.)

| | | | |
|---|---------------|-----|-------|
| 3 | 41 – 60 | 25 | 18.50 |
| 4 | 61 – 80 | 8 | 5.90 |
| $\bar{x} = 26.8963, SD = 19.2122, Min = 1.00, Max = 75.00$ | | | |
| Reasons of in-migration | | | |
| | Marriage | 14 | 10.40 |
| | Family | 8 | 5.90 |
| | Occupation | 59 | 43.70 |
| | Not specified | 12 | 8.90 |
| | Others | 42 | 31.10 |
| Future migration from Koh Chang | | | |
| | NO | 110 | 81.50 |
| | Yes | 5 | 3.70 |
| | Unsure | 20 | 14.80 |
| $\bar{x} = 2751.8519, SD = 3310.4956, Min = 0.00, Max = 30000.00$ | | | |
| Distance of residence from the National Park | | | |
| 1 | 1 - 3 | 49 | 36.30 |
| 2 | 4 - 6 | 12 | 8.90 |
| 3 | 7 - 9 | 3 | 2.20 |
| 4 | 10 – 12 | 8 | 5.90 |
| 5 | 13 – 15 | 4 | 3.00 |
| $\bar{x} = 2.3852, SD = 3.5323, Min = 0.00, Max = 15.00$ | | | |

| Vehicles used | | | |
|---------------|-------|----|-------|
| 1 | 0 | 1 | 0.70 |
| 2 | 1 | 14 | 10.40 |
| 3 | 2 | 40 | 29.60 |
| 4 | 3 | 9 | 6.70 |
| 5 | 4 | 29 | 21.50 |
| 6 | 1,2 | 5 | 3.70 |
| 7 | 1,3 | 5 | 3.70 |
| 8 | 1,4 | 1 | 0.70 |
| 9 | 2,3 | 17 | 12.60 |
| 10 | 2,4 | 2 | 1.50 |
| 11 | 1,2,3 | 11 | 8.10 |
| 12 | 2,3,4 | 1 | 0.70 |

* 1 = Bicycle 2 = Motoveycle 3 = car 4 = others

4.5.2 Attitude and opinions toward the impacts of tourism development

Attitude toward physical characteristics of tourism

From interviewing the local people on what aspects of the island that gave the impression to visitors/tourists, it was discovered that 2.87% thought that tourists were impressed by the beauty of nature, 2.78% by the fertility of natural forest and 2.76% by the beauty of beaches. In addition, they were also impressed by the clear sea, friendliness of the local residents and beauty of waterfalls respectively. The details were shown in Table 4.5

Attitude toward the impacts of tourism activities on the family

From interviewing the local residents on the issue, it was found that 28.90% thought the impacts were positive, 27.4% thought there were on impacts, 25.20% did not know or answer, and 3% thought they were negative. The details were shown in Table 4.6

Table 4.5 Attitude toward tourism

| NO. | Tourism Environment | Levels of Impression | | | | \bar{x} |
|-----|--|----------------------|--------|------|----------------|-----------|
| | | High | Medium | Low | NotKnown | |
| | | % | % | % | No answer % | |
| 1. | Beauty of nature | 86.7 | 13.3 | - | - | 2.8667 |
| 2. | Fertility of natural forests | 80 | 18.5 | 1.5 | - | 2.7852 |
| 3. | Diversity and interest of wildlife and birds | 54.8 | 30.4 | 11.1 | 3.7 | 2.3660 |
| 4. | Ways of life and livelihood of the local community | 43.7 | 45.2 | 10.8 | 0.7 | 2.3185 |
| 5. | Interesting history of places | 37.8 | 38.5 | 17.0 | 6.7 | 2.0741 |
| 6. | Beauty of beaches | 78.5 | 18.5 | 3.0 | - | 2.7566 |
| 7. | Clear sea | 76.3 | 20.7 | 3.0 | - | 2.7333 |
| 8. | Beauty and fertility of corals | 62.2 | 28.9 | 5.2 | 3.7 | 2.4963 |
| 9. | Beauty of waterfalls | 66.7 | 28.9 | 3.7 | 0.7 | 2.6148 |
| 10 | Friendliness of local residents | 66.7 | 29.6 | 3.7 | - | 2.6296 |
| 11. | Fun from entertainment venues | 39.3 | 28.1 | 31.1 | 1.5 | 2.0519 |

Table 4.6 Attitude toward the impacts of tourism activities on the family

| | Number | Percentage |
|-------------------|--------|------------|
| Positive | 39 | 28.90 |
| Negative | 4 | 3.00 |
| No impacts | 37 | 27.40 |
| Not known | 34 | 25.20 |
| Positive/Negative | 21 | 15.60 |

Attitude toward the impacts of tourism on Koh Chang

The attitude under investigation was divided into 2 aspects, namely attitude toward negative impacts on the physical aspects of the island and toward positive impacts on local and national tourism and economic development. From interviewing the local residents, it was found that, on the negative impacts, their attitude toward the shortages of water for consumption was at 2.2519, waste remains at 2.2000 and land encroachment for building at 1.9407 respectively. On the positive impacts, their attitude toward tourism and economic development at the national level was at 2.822 at the local level at 2.7556 and at the provincial level at 2.759 respectively. The details were shown in Table 4.7

Attitude toward state agencies' care for tourism sites

The investigation revealed that 41.50% of the interviewees perceived that responsible state agencies took care of tourism sites on the island at a quite good level, 27.40% at a fair level, 25.90% at a very good level, and 5.20% at a no good level. The details were shown in Table 4.8

Table 4.7 Attitude toward the impacts of tourism on Koh Chang

| NO. | Impacts on Tourism | Levels of Impression | | | | |
|-----|--|----------------------|--------|------|-----------------------|-----------|
| | | High | Medium | Low | NotKnown No answer | \bar{x} |
| 1. | Negative impacts on the fertility of natural resources | 29.6 | 31.1 | 37.0 | 2.2 | 1.8815 |
| 2. | Negative impacts on coastal water quality | 20.7 | 39.3 | 38.5 | 1.5 | 1.7926 |
| 3. | Negative impacts on the beauty of beaches | 28.1 | 31.1 | 40.0 | 0.7 | 1.8667 |
| 4. | Negative impacts on the fertility of corals | 23.7 | 28.9 | 45.9 | 1.5 | 1.7481 |
| 5. | Negative impacts on land encroachment for building | 32.6 | 31.1 | 34.1 | 2.2 | 1.9407 |
| 6. | Negative impacts on shortages of water for consumption | 43.7 | 31.1 | 24.4 | 0.7 | 2.1778 |
| 7. | Negative impacts on waste remains | 45.2 | 29.6 | 25.2 | - | 2.2000 |
| 8. | Positive impacts on local economic development | 63.0 | 28.1 | 8.1 | 0.7 | 2.5333 |
| 9. | Positive impacts on provincial economy and tourism | 77.0 | 18.5 | 4.4 | - | 2.7259 |
| 10 | Positive impacts on national economy and tourism | 76.3 | 17.0 | 4.4 | 2.2 | 2.6741 |

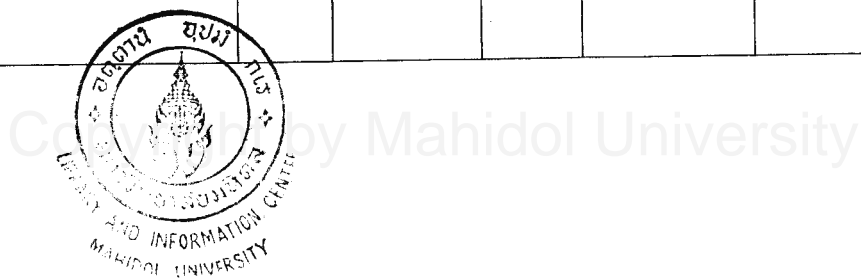


Table 4.8 Attitude toward state agencies' care for tourism sites

| | Number | Percentage |
|------------|--------|------------|
| Very good | 35 | 25.90 |
| Quite good | 56 | 41.50 |
| Fair | 37 | 27.40 |
| No good | 7 | 5.20 |

4.5.3 Attitude and opinions toward tourism development projects on Koh Chang

This section was divided as follows:

- Attitude toward public infrastructure development projects
- Attitude toward environmental projects
- Attitude toward tourism development projects
- Readiness and participation in local tourism development

4.5.3.1 Attitude toward public infrastructure development projects

(1) In the plan to develop a 48.8 km main road network on the island connecting communities, tourism sites and tourist accommodations in an attempt to facilitate travelling, transporting agricultural produce and local residents, it was found that 50.4% strongly agreed, 49.6% agreed and no one disagreed on this project.

(2) On the issues of enlarging existing reservoirs and developing community water works in order to solve water shortages in dry seasons, accommodate more tourist numbers and have clean water sources for sufficient and hygienic

consumption, it was discovered that 60.70% of the interviewees strongly agreed, 37% agreed and 2.20% disagreed.

(3) Ban Khlong Nonsee and Ban Dan Mai communities were assigned to be the Koh Chang Sub-District center of government services and center in an attempt to prevent floods from destroying lives and properties and to raise the level of life quality of the community by developing flood prevention and drainage system projects. It was found that 57% of the residents agreed, 42.20% strongly agreed and 0.70% disagreed, as shown in Table 4.9

Table 4.9 Attitude toward public infrastructure development projects

| | Number | Percentage |
|---|--------|------------|
| The main road development project | | |
| Strongly agree | 68 | 50.40 |
| Agree | 67 | 49.60 |
| Disagree | 0 | 0.00 |
| Water works and reservoir development projects | | |
| Strongly agree | 82 | 60.70 |
| Agree | 50 | 37.00 |
| Disagree | 3 | 2.20 |
| Flood prevention and drainage system projects | | |
| Strongly agree | 57 | 42.20 |
| Agree | 77 | 57.00 |
| Disagree | 1 | 0.70 |

4.5.3.2 Attitude toward environmental projects

(1) Tourism areas on the island particularly the National Park were to be developed for an eco-tourism and nature studies organized by the National Park and the Forest Department. The development would be conducted with the least possible impacts on the natural state of the areas. It was found that 51.90% strongly agreed with the notion, 46.70% agreed and 1.5% disagreed respectively.

(2) Providing more tourism facilities and activities would have impacts on nature. It was revealed that 72.60% perceived that there would be no impacts, 52.90% thought that there would be some impacts while 1.50% abstained from answering. The details were shown in Table 4.10

Table 4.10 Attitude toward environmental projects

| | Number | Percentage |
|--|--------|------------|
| Developing the island especially the National Park | | |
| To become an eco-tourism center and nature studies | | |
| Operated by the National park and the Forest Department | | |
| Strongly agree | 70 | 51.90 |
| Agree | 63 | 46.70 |
| Disagree | 2 | 1.5 |
| Attitude toward impacts of tourism activities and activities | | |
| Affected | 35 | 25.90 |
| Not affected | 98 | 72.60 |
| No answer | 2 | 1.50 |

4.5.3.3 Attitude toward tourism development projects

(1) A government policy emphasized on developing tourism as a way to solve national economic problems and Koh Chang island was thought to have a high potential for such a development. It was found that 56.30% strongly agreed to the project, 39.30% agreed and 4.40% disagreed.

(2) In the development plan, parking areas, security units, information service centers, restrooms and rest areas would be established in waterfall areas in the National Park in an attempt to provide facilities to tourists/excursionists so that economic activities and incomes could be generated. It was found that 53.30% strongly agreed to the proposal, 43% agreed and 3.70% disagreed.

(3) A walkway of 10 kilometers with meaning communication systems from Tharn Mayom to Khlong Phlu waterfalls and a 5-kilometer walkway from Pa Khrae area to Faimai inlet would be constructed in order to develop eco-tourism activities and diversify tourism sites and activities in the National Park. It was discovered that 51.90% agreed with the proposal, 46.70% strongly agreed while 1.50% disagreed.

(4) In developing tourism activities and sites, regulations and National Park officers were issued and given the authority to supervise and control the number of tourists in an attempt to prevent the impacts of tourism on the natural states on the island. It was found that 19.30% were unsure that such an undertaking would be effective, 9.60% did not know whereas 2.20% thought it would be ineffective respectively. The details were shown in Table 4.11

Table 4.11 Attitude toward tourism development projects

| | Number | Percentage |
|--|--------|------------|
| Developing Koh Chang as a high potential tourism site | | |
| Strongly agree | 76 | 56.30 |
| Agree | 53 | 39.30 |
| Disagree | 6 | 4.40 |
| Developing physical facilities in waterfall areas | | |
| Strongly agree | 58 | 43.00 |
| Agree | 72 | 53.30 |
| Disagree | 5 | 3.70 |
| Constructing the 10-and 5-kilometer walkways in two tourism sites | | |
| Strongly agree | 63 | 46.70 |
| Agree | 70 | 51.90 |
| Disagree | 2 | 1.50 |
| Regulations and officers to supervise and control the number of tourists to minimize the impacts of tourism on nature | | |
| Possible | 93 | 68.90 |
| Impossible | 3 | 2.20 |
| Unsure | 26 | 19.30 |
| Not known/No answer | 13 | 9.60 |

4.5.3.4 Readiness and participation in tourism developments of the local community

(1) On the issue of developing Koh Chang in the form of a tri-lateral committee, comprising of the National Park as the state sector, Tambon Administration Organization and housewives' groups as the people sector, and tourism-related business operators as the private sector in an attempt to exchange opinions and make compromises from one another in order to achieve a sustainable tourism development. It was revealed that 83.70% agreed with the notion while 6.90% disagreed. The details were shown in Table 4.1

Table 4.12 Development of Koh Chang in a form of tri-lateral committee

| | Number | Percentage |
|-----------|--------|------------|
| Agree | 9 | 6.70 |
| Disagree | 113 | 83.70 |
| No answer | 13 | 9.60 |

(2) Attitude toward readiness and participation in tourism development

The interview focused on whether or not and how the respondents were ready to participate in developing tourism on the island. It was found that 85.90% were ready and wanted to participate in tourism of the island while 14.10 did not want to. The details were shown in Table 4.13

Table 4.13 Participation in tourism development

| | Number | Percentage |
|--|--------|------------|
| No | 19 | 14.10 |
| Yes | 116 | 85.90 |
| - But not giving opinions | 5 | 3.70 |
| - By directly receiving information | 59 | 43.70 |
| - By providing information for considering projects | 58 | 43.00 |
| - By partaking in considering projects | 36 | 26.70 |
| - By investing in project development | 11 | 8.10 |
| - By providing labor for developing projects | 41 | 30.40 |
| - By taking care of projects | 92 | 68.10 |
| - By assessing the impacts | 27 | 20.00 |

CHAPTER V

DISCUSSIONS

Koh Chang island is an important tourism site of Trat province and the Eastern region, which still maintains fertile nature and marine and land eco-system. Tourism sites are within and beyond the area of Koh Chang National Park. Due to tourism potential and developments of roads and ports, the number of tourists visiting the island has increased rapidly. As a consequence, it is necessary to develop the island particularly for tourism so that it would grow systematically and orderly. It would therefore be developed for nature tourism and environmental preservation in order to become sustainable.

In planning for a development prototype for tourism in the island, a review on operational plans and other related development plans for tourism development of the island groups and coastal areas of Trat province by the Tourism Authority of Thailand was conducted. Other circumstances have also been changed. It is thus necessary to have new data and opinions from concerned agencies, e.g., state and private sectors as well as tourism associations in the Central, Trat province and Koh Chang sub-district. In addition, opinions were from the local participating in a workshop jointly organized by Koh Chang and Koh Chang Tai Tambon Administration Organizations.

5.1 Readiness on the participation in tourism development

The study findings revealed that 85.90% of the sample group were ready and wanted to participate in tourism development of the island. When each item of readiness was taken into account, it was revealed that 68.10% were ready to take care,

43.70% were ready to receive information directly, 43% were ready to provide information for the consideration of tourism development projects, 30.40% were ready to provide labor for development projects, 26.70% wanted to consider projects and only 8.10% were ready for investment of projects.

Most of the sample group were ready to participate in taking care of and directly receiving information about development projects because they viewed that everyone should be responsible for all developments in the communities and that collectively taking care of development projects was a correct and suitable mean to solve problems. However, a portion of the sample group viewed that tourism development was solely the responsibility of the state. While others thought that developments would have negative impacts on the balance of eco-system and on local identity. In addition, community members may not pay interest to community problems because they might have little or no effects. Economic insufficiency was another reason for wanting to participate in tourism development projects by investing in them. Moreover, there were no clear incentives to participate in development projects since the local did not know how their life quality would be improved when tourism development was carried out. Furthermore, there were no substantial benefits for the local to gain from such undertakings.

It was further found that 20% of the sample group wanted and were ready to participate in assessing the impacts because they wanted concerned agencies to take actions seriously in order to reduce current problems. Additionally, They did not want tourism development to create environmental problems that affected local quality of life.

From the above reasons, the local wanted to participate in other areas, such as, providing information for the consideration of projects, participating in considering projects, and providing labor for the development of projects

5.2 Potentiality of development

The location of Koh Chang island, coupled with existing natural resources, previous development, tendency, and related policies and plans has made the island an ideal place for natural resource preservation, self-sufficiency community settlement, eco-tourism, and sustainable development. The development potentiality of the island includes:

1. Being an island with some distance from the mainland, it is possible to control developmental directions easily.
2. There is an abundance and diversity of natural resources, with land and marine eco-systems beneficial to livelihood and research studies.
3. It is located in a national park, being protected by the 1961 National Park Act.
4. Indigenous communities on the island are small agricultural communities, leading a life in relation to nature suitable for sustainable development.
5. Physical, natural and cultural resources are conducive to eco-tourism and recreation.

6. Resource and management components make the island a marine tourism site that maintains good natural diversity with good facilities for tourists when compared with other marine tourism sites.

7. It is not far from Bangkok and Pattaya, which are two significant tourist markets of the country.

8. The development of transport and communications network systems, carried out by state and private sectors, makes access to the island convenient and safe.

9. In the long run, the cooperation among the countries in the Mekhong sub-region would make the island and Trat province on a coastal tourism route from Bangkok to Ho Chi Minh City.

5.3 Limitations of development

Despite its tourism development potential, the island has some major restrictions as follows:

1. The island's eco-system is vulnerable to the point of easy destruction if developments are not based on the importance of the environment and eco-system for the sustainability of the island.

2. The areas to be developed are limited and scattered in wide areas. Most are mountains and elevated land suitable for preservation of natural resources and watersheds to keep the balance of environmental and eco-systems.

3. In spite of a large area for water reservation and rainfalls, there are limitations to develop water sources for agriculture, household consumption and tourism that would be increasing in the future.

4. Sparce and scattered settlement makes it difficult and non-economical for the state to provide services on public infrastructure.

5. A long and heavily rainy period of the island makes it less cost-effective to develop tourism and recreation. Tourism-related businesses have to stop their operations due to difficult access during the rainy season.

6. The number of Koh Chang residents are few and they have to work on family agriculture. Business operators have to employ people elsewhere.

7. The locality has restrictions on personnel resources, budget and techniques to solve problems and to prepare for future development.

5.4 Problems of development

From an opinion survey on developments of the sample group, it was revealed that the tourism development of the island should start from public infrastructure first and tourism facilities, transport and communication systems, water consumption sources, and waste management should ensue.

Previous developments had encountered the following problems:

1. Earning a living of the local communities is limited in terms of area expansion and fishing resource deterioration due to overfishing and disregard to ecological damage.
2. Local people have limited access to education. Most of them have only compulsory education. Due to underpopulation, education provided by the state is limited to only the compulsory level. Continuing education on the mainland is difficult and expensive. Only children from economically well-off families are able to get access to higher education. Having little education, they are deprived of opportunities to get good jobs.
3. Transportation is difficult because roads are not in good conditions. Some communities, such as, Bang Bao have no roads and could get through only by boat. During the monsoon periods, they are virtually cut off from the outside world. Transporting agricultural produce is inconvenient and very costly.
4. There is ongoing destruction of natural resources, for instance, illegal logging, fishing with illegal equipments, fishing in protected areas, using explosives for fishing, mooring and tourism in coral reefs.
5. There are shortages of water for agriculture and clean water for consumption, especially in dry seasons because of insufficient water reservoir development.

6. Communication and telecommunication are difficult and insufficient. There are only rural long distance public phone services and mobile phones available. Moreover, phone signals are inaccessible in some areas.

7. Rapid expansion of tourism results in uncontrolled and disorderly development of accommodation and facilities. Beaches and waterways are encroached and architectural designs do not promote the atmosphere of tourism and recreation, resulting in visual pollution.

8. Lack of good waste and water management causes the problems of waste remains. These are breeding grounds of diseases and carriers, affecting landscape and Odor. Waste water from inefficient treatment causes contamination and affects the quality of sea water.

9. Ferry services attract large number of vehicles to the island, particularly on weekends. This causes traffic congestion and parking problems as well as increases the frequency of road accidents.

10. On the issue of land ownership, most residents have not had land title deeds, making it even more difficult to deal with conflict management between individuals and individuals and between private and state sectors. It is also favorable to forest, public land and waterway encroachment to expand arable land.

11. The locality do not have sufficient incomes to solve their own problems and develop their area of responsibility.

CHAPTER VI

CONCLUSIONS AND RECOMMENDTION

The study on the readiness of local communities for tourism development at Koh Chang island, Trat province aimed at investigating conditions and tourism activities on the island, the ability to accommodate tourism development, and analyzing local readiness and appropriate directions of tourism development that were in accordance with local participation. Data were collected from all nine villages on the island, involving 135 samples by using a questionnaire. The questionnaire was composed of three parts, namely personal factors of the sample group, on tourism, and readiness measurement on attitude toward tourism development on the island. The data were then analyzed by using the SPSS for Windows in order to obtain percentage, arithmetic mean, lowest and highest values, and standard deviation. The findings could be summarized as follows:

6.1 Summary of the research findings

6.1.1 General information on socio-economic and community aspects

It was revealed that 47.40% of the sample group were in the age range of 24 – 40 years, 43% were male, 95.50% were Buddhists, 61.50% had a compulsory primary education, and 62.20% had 4 – 6 household members. In addition, 31.10% were farmers with an average monthly income of 5,107 bath, and 54.80% had resided on the island for more than 20 years.

6.1.2 Information on attitude toward tourism

When asked why tourists visited the island, most of the respondents thought that it was because of the pristine forests, fertility of natural forests and beauty of beaches with the mean of 2.87, 8.78 and 2.76 respectively. The nature of the island included forests, waterfalls, coral reefs and other islets, which have attracted tourists even during the present time.

6.1.3 Information on attitude toward impacts from tourism

It was revealed that 28.90% thought the impacts were positive, 227.40% thought there would be no impacts, 25.20% did not know, 15.60 thought the impacts were both positive and negative while 3% perceived the impacts to be negative. The most negative impact was on the shortages of water for consumption with a mean of 2.17 whereas the most positive impact would be on the provincial tourism and economic situation with a mean of 2.72

6.1.4 Information on the readiness on tourism development of the island

From an opinion survey on various projects according to national economic development plans and state policies, it could be summarized in Table 6.1

Table 6.1 Attitude toward development projects on the island

| | Number | Percentage |
|---|--------|------------|
| Development of the island to become a tourist attraction with high potential | | |
| Strongly agree | 76 | 56.30 |
| Agree | 53 | 39.30 |
| Disagree | 6 | 4.40 |
| Developing the area of the National Park as a tourism site for nature studies operated by the National Park and the Forest Department | | |
| Strongly agree | 70 | 51.90 |
| Agree | 63 | 46.70 |
| Disagree | 2 | 1.5 |
| The main road project connecting communities and tourism sites on the island | | |
| Strongly agree | 68 | 50.40 |
| Agree | 67 | 49.60 |
| Disagree | 0 | 0.00 |

Table 6.1 (Cont.)

| | Number | Percentage |
|---|--------|------------|
| Reservoir and community waterworks | | |
| development projects | | |
| Strongly agree | 82 | 60.70 |
| Agree | 50 | 37.00 |
| Disagree | 3 | 2.20 |
| Developing facilities in waterfalls, e.g., parking areas, toilets or rest areas | | |
| Strongly agree | 58 | 43.00 |
| Agree | 72 | 53.30 |
| Disagree | 5 | 3.70 |
| The projects to construct a 10 – km nature study path from tharn Mayom to Khlong Phlu waterfalls and a 5 – km path in the area of Pa Khrae and Aaw Fai Mai inlet | | |
| Strongly agree | 63 | 46.70 |
| Agree | 70 | 51.90 |
| Disagree | 2 | 1.50 |

Table 6.1 (Cont.)

| | Number | Percentage |
|--|--------|------------|
| Projects to construct flood prevention and drainage systems in the areas of Ban Khlong Non See and Ban Dan Mai | | |
| Strongly agree | 57 | 42.20 |
| Agree | 77 | 57.00 |
| Disagree | 1 | 0.70 |

In terms of readiness to participate in tourism development, it was revealed that 85.90% were ready and wanted to partake, with the highest percentage (4.70%) to participate in providing information for the consideration of projects.

6.2 Conclusions

The physical ability of the island to accommodate tourism is huge because there is an area of ,360 rai suitable for tourism in addition to a reserve area two times as much (Koh Kut has 2,700 rai and other areas of islets and the mainland coast). There are additionally a large volume of underground and canal water. However, there are restrictions to travel outside and within the island, making the expansion gradual. This is positive in the early stage of developing and preserving Koh Chang and other islands. Moreover, local communities have positive attitude toward and readiness on tourism development of the island.

6.3 Recommendations from the study

Agencies and individuals involved in the development of Koh Chang island suggested that there should be other control and management measures accompanying development. They included:

- Defining areas for tourism
- Managing tourism areas, land use and building control
- Managing forest areas, wildlife and coral reefs
- Managing, promoting and controlling business premises
- Developing public infrastructure
- Taking care of the quality of environment
- Having guidelines on legal and administrative organizations

Furthermore, there should be other management guidelines, for instance, coordinating on the understanding of business operators as well as between private and state sectors, having measures to indirectly collect incomes from tourists for the development and preservation of islands, promoting agricultural production in the remaining areas, developing public health system, raising the standard of local public health office by having permanent doctors, and advocating preservation education among local youths and business operators.

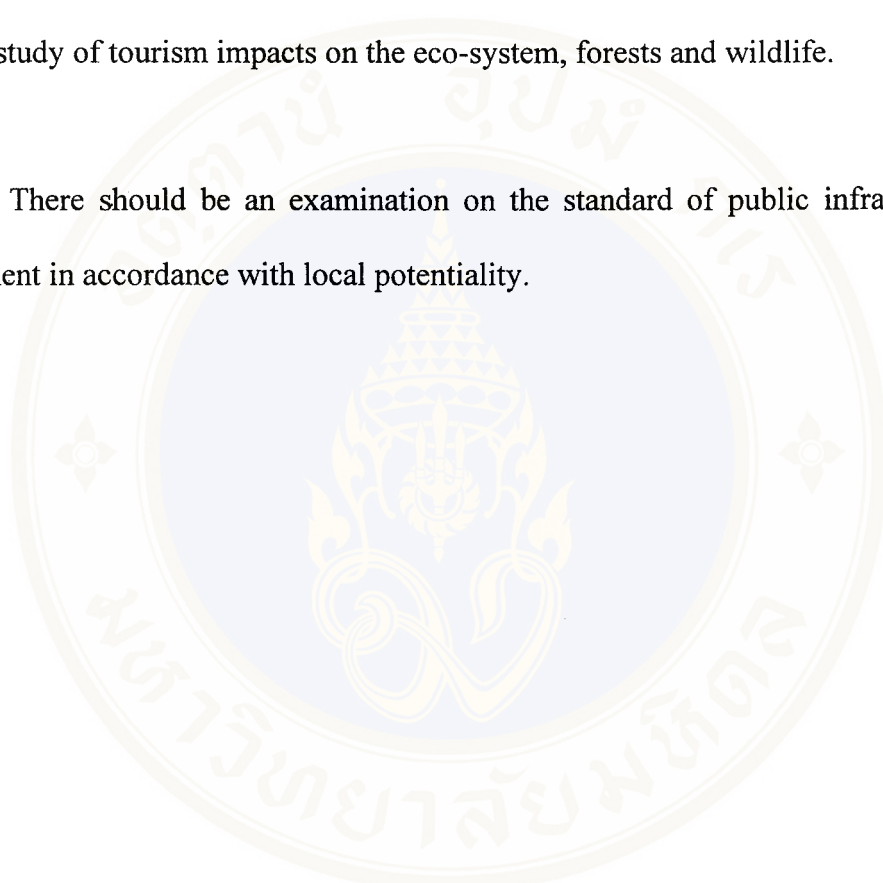
6.4 Recommendations for further studies

1. A study on future problems related to tourism development in the area of Koh Chang island and other surrounding islets should be conducted.

2. A comparative study should be carried out on the ability to accommodate tourists in various tourism sites at the national level in order to prove factors affecting the changing trends and to use as basic data for development at the national level.

3. It is recommended that a study on the ability to accommodate of each factor as a case study of tourism impacts on the eco-system, forests and wildlife.

4. There should be an examination on the standard of public infrastructure development in accordance with local potentiality.



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แบบสอบถามทัศนคติของชุมชน
โครงการศึกษาความพร้อมของชุมชนท้องถิ่นต่อการพัฒนาการท่องเที่ยวเกาะช้าง จังหวัดตราด

บริเวณที่สำรวจ..... ตำบล.....อำเภอ.....
จังหวัด.....วัน / เดือน / ปี.....เวลา.....ชุดที่.....

ตอนที่ 1 ข้อมูลทั่วไป

- 1.เพศ ชาย หญิง
- 2.อายุ.....ปี
- 3.ระดับการศึกษา.....
- 4.ศาสนา
 พุทธ คริสต์ อิสลาม อื่นๆ โปรดระบุ.....
- 5.อาชีพหลัก..... อาชีพรอง.....
- 6.รายได้เฉลี่ย.....บาท/เดือน รายได้ครัวเรือน.....บาท
รายจ่ายเฉลี่ย.....บาท/เดือน รายจ่ายครัวเรือน.....บาท
- 7.ภูมิลำเนาเดิมอยู่ที่จังหวัด..... อยู่เกาะช้างมานาน.....ปี
สาเหตุที่ย้ายมาอยู่ที่นี้ แต่งงาน ย้ายตามครอบครัว ประกอบอาชีพ อื่น ๆ ระบุ.....
คิดจะย้ายไปอยู่ที่อื่นหรือไม่ ไม่ย้าย ย้าย เพราะ.....
- 8.ที่พักอาศัยอยู่ห่างจากเขตอุทยานแห่งชาติ.....
- 9.จำนวนสมาชิกในครัวเรือน.....คน
- 10.พาหนะที่ท่านมีใช้เดินทางภายในเกาะของครัวเรือน
 รถจักรยาน.....คัน รถจักรยานยนต์.....คัน
 รถยนต์.....คัน อื่น ๆ ระบุ.....

ตอนที่ 2 ความรู้ทัศนคติต่อการท่องเที่ยว

11. ท่านคิดว่านักท่องเที่ยวประทับใจสิ่งใดจากการท่องเที่ยวบนเกาะช้าง

| ลำดับ | สภาพแวดล้อมของการท่องเที่ยว | ระดับความประทับใจ | | | |
|-------|--|-------------------|---------|------|----------------|
| | | มาก | ปานกลาง | น้อย | ไม่ตอบ/ไม่ทราบ |
| 1 | ความสวยงามของภูมิประเทศป่าเขา | | | | |
| 2 | ความอุดมสมบูรณ์ของป่าธรรมชาติ | | | | |
| 3 | ความหลากหลายและน่าสนใจของสัตว์ป่า นกต่าง ๆ | | | | |
| 4 | วิถีชีวิตและความเป็นอยู่ของชุมชนท้องถิ่น | | | | |
| 5 | ประวัติศาสตร์ที่น่าสนใจของสถานที่ต่าง ๆ | | | | |

| | | | | | |
|----|---------------------------------|--|--|--|--|
| 6 | ความสวยงามของชายหาด | | | | |
| 7 | ความใสสะอาดของน้ำทะเล | | | | |
| 8 | ความสวยงามอุดมสมบูรณ์ของปะการัง | | | | |
| 9 | ความสวยงามของน้ำตกต่าง ๆ | | | | |
| 10 | ความเป็นมิตรของคนไทยในท้องถิ่น | | | | |
| 11 | ความสนุกสนานจากสถานบันเทิง | | | | |

12. ท่านคิดว่ากรณีกิจกรรมการท่องเที่ยวบนเกาะช้าง ก่อให้เกิดผลกระทบต่อครอบครัวของท่านหรือไม่อย่างไร

- ผลดี คือ.....
- ผลเสีย คือ.....
- ไม่มีผลเกี่ยวข้อง คือ.....
- ไม่ทราบไม่ตอบ

13. ท่านคิดว่าผลจากกิจกรรมการท่องเที่ยวที่ผ่านมาก่อให้เกิดผลดีผลเสียต่อเกาะช้างอย่างไร

| ลำดับ | สภาพแวดล้อมของการท่องเที่ยว | ผลกระทบ | | | |
|-------|---|---------|---------|------|----------------|
| | | มาก | ปานกลาง | น้อย | ไม่ตอบ/ไม่ทราบ |
| 1 | ผลเสียต่อความสมบูรณ์ของทรัพยากรธรรมชาติ | | | | |
| 2 | ผลเสียต่อคุณภาพน้ำทะเลชายฝั่ง | | | | |
| 3 | ผลเสียต่อความสวยงามของชายหาด | | | | |
| 4 | ผลเสียต่อความสมบูรณ์ของปะการัง | | | | |
| 5 | ผลเสียต่อการรุกพื้นที่เพื่อการก่อสร้าง | | | | |
| 6 | ผลต่อความขาดแคลนน้ำกินน้ำใช้ | | | | |
| 7 | การตกค้างของขยะ | | | | |
| 8 | ผลดีต่อการพัฒนาเศรษฐกิจท้องถิ่น | | | | |
| 9 | ผลดีต่อการท่องเที่ยวและเศรษฐกิจของจังหวัด | | | | |
| 10 | ผลดีต่อการท่องเที่ยวและเศรษฐกิจของประเทศ | | | | |

14. ท่านคิดว่าส่วนราชการที่ดูแลรับผิดชอบพื้นที่บนเกาะช้างมีความเอาใจใส่ดูแลความสมบูรณ์ของแหล่งท่องเที่ยวอย่างไรบ้าง

- ดีมาก ดีปานกลาง พอใช้ ไม่ดีเพราะ.....

ตอนที่ 3 ทิศนคติต่อการพัฒนาการท่องเที่ยวบนเกาะช้าง

15. ตามนโยบายของรัฐบาลที่เน้นการพัฒนาการท่องเที่ยวเพื่อเป็นการแก้ปัญหาเศรษฐกิจของประเทศ และมีแนวคิดในการพัฒนาเกาะช้างเป็นแหล่งท่องเที่ยวที่มีศักยภาพสูง ท่านมีความเห็นอย่างไร

- เห็นด้วยอย่างยิ่ง เห็นด้วย ไม่เห็นด้วย เพราะ.....

16. การพัฒนาการท่องเที่ยวของเกาะช้างเฉพาะพื้นที่อุทยานแห่งชาติ ให้เป็นแหล่งท่องเที่ยวในทาง
ศึกษารวมชาติ โดยการดำเนินการของอุทยาน ฯ และกรมป่าไม้ ด้วยการพัฒนาตามความจำเป็นให้คงสภาพทางธรรมชาติ
ให้มากที่สุด และเปลี่ยนสภาพให้น้อยที่สุด ตามแนวทางการพัฒนาการท่องเที่ยวเชิงอนุรักษ์ ท่านมีความเห็นอย่างไร
- เห็นด้วยอย่างยิ่ง เห็นด้วย ไม่เห็นด้วย เพราะ.....
17. ในแผนงานพัฒนาโครงข่ายถนนสายประธานบนเกาะช้างที่เชื่อมโยงชุมชน แหล่งท่องเที่ยวและที่พักนักท่องเที่ยวเข้าด้วยกัน
กันร่วมเส้นทางระยะทาง 48.8 กิโลเมตร เพื่อความสะดวกในการเดินทางท่องเที่ยว สนับสนุนการขนส่งผลผลิตทาง
การเกษตร อำนวยความสะดวกแก่ประชาชน ท่านมีความคิดเห็นอย่างไร
- เห็นด้วยอย่างยิ่ง เห็นด้วย ไม่เห็นด้วย เพราะ.....
18. การพัฒนาเพิ่มขนาดแหล่งเก็บกักน้ำพัฒนาประปาชุมชนเพื่อแก้ไขปัญหาการขาดแคลนน้ำอุปโภค บริโภคในฤดูแล้งและ
รองรับการขยายตัวของนักท่องเที่ยวมีแหล่งน้ำสะอาดสำหรับอุปโภคบริโภคอย่างเพียงพอ และถูกหลักสุขาภิบาล ท่าน
มีความคิดเห็นอย่างไร
- เห็นด้วยอย่างยิ่ง เห็นด้วย ไม่เห็นด้วย เพราะ.....
19. ในแผนการพัฒนาสิ่งอำนวยความสะดวกโดยการสร้างลานจอดรถ หน่วยรักษาการณ์ บริการข้อมูลข่าวสารและสื่อความ
หมาย ห้องสุขา ศาลาที่พัก ในแหล่งท่องเที่ยวประเภทน้ำตกในเขตอุทยานแห่งชาติหมู่เกาะช้าง เพื่ออำนวยความสะดวก
แก่นักท่องเที่ยวและทำให้เกิดการกระจายกิจกรรมทางเศรษฐกิจและรายได้ ท่านมีความคิดเห็นอย่างไร
- เห็นด้วยอย่างยิ่ง เห็นด้วย ไม่เห็นด้วย เพราะ.....
20. การสร้างทางเดินศึกษาธรรมชาติพร้อมระบบสื่อความหมาย จากน้ำตกธารมะยมถึงน้ำตกคลองพลู ระยะทางประมาณ
10 กิโลเมตร และบริเวณป่าแคะ อ่าวไฟไหม้ ระยะทางประมาณ 5 กิโลเมตร เพื่อพัฒนากิจกรรมท่องเที่ยวเชิงนิเวศ
ในเขตอุทยาน ฯ และเพื่อเพิ่มความหลากหลายของแหล่งท่องเที่ยวและกิจกรรม ท่านมีความคิดเห็นอย่างไร
- เห็นด้วยอย่างยิ่ง เห็นด้วย ไม่เห็นด้วย เพราะ.....
21. ชุมชนบ้านคลองนทรีและบ้านด่านใหม่ ถูกกำหนดให้เป็นศูนย์กลางกิ่งอำเภอเกาะช้างเป็นที่ตั้งของศูนย์ราชการและ
บริการของรัฐ เพื่อป้องกันการเกิดอุทกภัยมิให้เกิดความเสียหายแก่ชีวิตและทรัพย์สินเพื่อยกระดับคุณภาพชีวิตของชุม
ชน ท่านมีความคิดเห็นอย่างไรต่อโครงการก่อสร้างระบบป้องกันน้ำท่วมและระบายน้ำ
- เห็นด้วยอย่างยิ่ง เห็นด้วย ไม่เห็นด้วย เพราะ.....
22. ท่านคิดว่าในการพัฒนาต่าง ๆ เพื่อรองรับการท่องเที่ยว โดยนักท่องเที่ยวทางธรรมชาติและคารอนุรักษ์สภาพแวดล้อม
โดยมีกฎระเบียบและเจ้าหน้าที่อุทยานแห่งชาติคอยดูแลและการควบคุมจำนวนนักท่องเที่ยวจะสามารถป้องกันผล
กระทบจากการท่องเที่ยวได้หรือไม่
- ได้ ไม่ได้ เพราะ..... ไม่แน่ใจ ไม่ทราบ/ไม่ตอบ
23. ท่านคิดว่าทำให้มีสิ่งอำนวยความสะดวกและกิจกรรมการท่องเที่ยวทางธรรมชาติเพิ่มมากขึ้น จะก่อให้เกิดผล
กระทบอย่างไร
- เกิดผลกระทบ คือ 1.
2.....
3.....
- ไม่มีผลกระทบ

24. ท่านคิดว่าท่านจะสามารถมีส่วนร่วมในการพัฒนาการท่องเที่ยวของเกาะ

ข้างหรือ ไม่อย่างไร

ไม่ต้องการมีส่วนร่วม เพราะ.....

ต้องการมีส่วนร่วม เพราะ.....

โดย

ร่วมรับรู้ข้อมูลโดยตรง

ร่วมให้ข้อมูลเพื่อพิจารณาโครงการ

ร่วมพิจารณาโครงการ

ร่วมลงทุนพัฒนาโครงการ

ร่วมออกแรงพัฒนาโครงการ

ร่วมดูแลรักษา

ร่วมติดตามตรวจสอบผลกระทบ (ตอบได้มากกว่า 1 ข้อ)

25. ท่านเห็นด้วยหรือไม่ที่จะให้มีการพัฒนาเกาะข้างในรูปแบบคณะกรรมการไตรภาคีมีอุทยานแห่งชาติเป็นภาคีรัฐ มีอบต.

และกลุ่มแม่บ้านกลุ่มองค์กรชาวบ้านเป็นภาคีประชาชน และมีผู้ประกอบการท่องเที่ยวหรือกิจกรรมที่เกี่ยวข้องกับการท่องเที่ยวเป็นภาคีเอกชน เพื่อร่วมกันคิดร่วมกันทำรับฟังซึ่งกันและกัน ประนีประนอมระหว่างกัน ให้เกิดการพัฒนากการท่องเที่ยวอย่างยั่งยืน

ไม่เห็นด้วย เพราะ.....

เห็นด้วย เพราะ.....

26. ข้อเสนอแนะอื่น ๆ ในการพัฒนาการท่องเที่ยวเกาะข้าง

1.....

2.....

3.....

ขอขอบพระคุณในการสละอันเวลาอันมีค่าของท่านในการตอบแบบสอบถามนี้
เพื่อประโยชน์ต่อการพัฒนาการท่องเที่ยวของประเทศ

BIOGRAPHY



| | |
|-----------------------------|---|
| NAME | MR. KOMGRIT TUPBURI |
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