

**INFORMATION MANAGEMENT SYSTEM THROUGH
INTERNET NETWORK FOR ECOTOURISM EXTENSION OF
SAI YOK NATIONAL PARK, KANCHANABURI PROVINCE**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE
(APPROPRIATE TECHNOLOGY FOR RESOURCES AND
ENVIRONMENTAL DEVELOPMENT)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY**

2007

COPYRIGHT OF MAHIDOL UNIVERSITY

Thesis
Entitled

**INFORMATION MANAGEMENT SYSTEM THROUGH
INTERNET NETWORK FOR ECOTOURISM EXTENSION OF
SAI YOK NATIONAL PARK, KANCHANABURI PROVINCE**



Pasit Chaisorn
.....
Mr. Pasit Chaisorn
Candidate

Sura Pattanakiat
.....
Assoc.Prof. Sura Pattanakiat, Ph.D.
Major-Advisor

Charlie Navanugraha
.....
Assoc.Prof. Charlie Navanugraha, Ph.D.
Co-Advisor

B. Mahaisavariya
.....
Prof. Banchong Mahaisavariya, M.D.
Dean
Faculty of Graduate Studies

Sayam Aroonsrimorakot
.....
Assoc. Prof. Sayam Aroonsrimorakot,
MSc.
Chair
Master of Science Programme in
Appropriate Technology for Resources
and Environment Development
Faculty of Environmental and Resources
Studies

Thesis
Entitled

**INFORMATION MANAGEMENT SYSTEM THROUGH
INTERNET NETWORK FOR ECOTOURISM EXTENSION OF
SAI YOK NATIONAL PARK, KANCHANABURI PROVINCE**

was submitted to the Faculty of Graduate Studies, Mahidol University
For the degree of Master of Science
(Appropriate Technology for Resources and Environmental Development)

on
November 1, 2007

Parit Chaisorn

Mr. Pasit Chaisorn
Candidate

Chongrak Wachrinrat

Lect. Chokgrak Wachrinrat, Ph.D.
Chair

Assoc. Prof. Charlie Navanugraha

Assoc. Prof. Charlie Navanugraha, Ph.D.
Member

Sura Pattanakiat

Assoc. Prof. Sura Pattanakiat, Ph.D.
Member

B. Mahaisavariya

Prof. Banchong Mahaisavariya, M.D.
Dean
Faculty of Graduate Studies
Mahidol University

S. Dilokwanich

Asst. Prof. Sittipong Dilokwanich, Ph.D.
Dean
Faculty of Environment and Resource
Studies
Mahidol University

ACKNOWLEDGEMENT

The success of this thesis can be attributed to the extensive support and kindly assistance from my major advisor, Assoc.Prof. Dr.Sura Pattanakiat and my co-advisor, Assoc.Prof. Dr.Charlie Navanugraha. I deeply thank them for their valuable and precious advice and guidance.

I would like to thank Dr.Chokgrak Wachrinrat, Associate Dean for Administration of Faculty of Forestry, Kasetsart University, for his kindness in examining the research instrument and providing suggestions for improvement, and who was the chair of the thesis defense.

I also would like to thank Assist.Prof. Dr.Dachanee Emphandhu for advice and guidance about ecotourism content bases, Mr.Tawatchai Saichoo and all of Sai Yok National Park's authorities for guidance and helpfulness in data collecting, and my friends, namely Ratn, Nui, N'Dao and those who do not refer their names for their helpful and cheerfulness.

Finally, I am grateful to my family for their financial support, entirely care, love, and giving the best opportunity to my life.

Pasit Chaisorn

**INFORMATION MANAGEMENT SYSTEM THROUGH INTERNET NETWORK
FOR ECOTOURISM EXTENSION OF SAI YOK NATIONAL PARK,
KANCHANABURI PROVINCE**

PASIT CHAISORN 4637144 ENAT / M

**M.Sc. (APPROPRIATE TECHNOLOGY FOR RESOURCES AND
ENVIRONMENTAL DEVELOPMENT)**

**THESIS ADVISORS: SURA PATTANAKIAT, Ph.D.(FORESTRY);
CHARLIE NAVANUGRAHA, PH.D.(SOIL SCIENCE)**

ABSTRACT

This research aims to identify and develop an appropriate information system for ecotourism extension through internet network in Sai Yok National Park, Kanchanaburi province.

The research was conducted using both quantitative and qualitative approaches. Data was gathered from documents, academic articles, research studies and other sources in order to construct an ecotourism knowledge base. Also general information on Sai Yok National Park was collected. The data was then evaluated by the general public and experts using questionnaires and in-depth interviews method. The information system was developed using System Development Life Cycle (SDLC), HTML and PHP languages. Relational database management system was constructed using MySQL.

The information management system for ecotourism extension of Sai Yok National Park via an internet network consists of two parts, including the ecotourism knowledge base and Sai Yok National Park information system. The first part includes definitions, structure, components, management and activities with an ecotourism approach. The second part consists of history and the unique tourist attraction activities and facilities of Sai Yok National Park. An advantage of this study was that the development of the system was based on Freeware and Open source programs. It was accepted by the users of the network. Nearly 90% of users expressed acceptance for the network and 17% of users had increased knowledge after exposure to the network.

**KEY WORDS : INFORMATION MANAGEMENT SYSTEM / ECOTOURISM
EXTENSION / INTERNET NETWORK / RELATIONAL
DATABASE / SAI YOK NATIONAL PARK .**

71 P.

การจัดการระบบสารสนเทศเพื่อส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยคจังหวัดกาญจนบุรี
 โดยผ่านเครือข่ายอินเทอร์เน็ต (INFORMATION MANAGEMENT SYSTEM THROUGH INTERNET
 NETWORK FOR ECOTOURISM EXTENSION OF SAI YOK NATIONAL PARK,
 KANCHANABURI PROVINCE)

ภาสิษฐ์ ไชยสร 4637144 ENAT / M

วท.ม. (เทคโนโลยีที่เหมาะสมเพื่อการพัฒนาทรัพยากรและสิ่งแวดล้อม)

คณะกรรมการควบคุมวิทยานิพนธ์ : สุระ พัฒนเกียรติ, Ph.D.(FORESTRY); ชาลี นาวานุเคราะห์, Ph.D.
 (SOIL SCIENCE)

บทคัดย่อ

การวิจัยครั้งนี้ มีวัตถุประสงค์เพื่อบ่งชี้และพัฒนาสารสนเทศที่เหมาะสมต่อการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยค จังหวัดกาญจนบุรี โดยผ่านเครือข่ายอินเทอร์เน็ต วิธีการวิจัยประกอบด้วยวิธีการทั้งเชิงคุณภาพและเชิงปริมาณ โดยรวบรวมข้อมูลเนื้อหาสาระจากเอกสารตำราที่เกี่ยวข้องบทความทางวิชาการ ผลงานวิจัย และ เอกสารอื่น ๆ เกี่ยวกับฐานความรู้เรื่องการท่องเที่ยวเชิงนิเวศและรวบรวมข้อมูลเกี่ยวกับอุทยานไทรโยคเพื่อการวิเคราะห์และสังเคราะห์ ประเมินความเหมาะสมของฐานความรู้เกี่ยวกับการท่องเที่ยวเชิงนิเวศและข้อมูลอุทยานแห่งชาติไทรโยค จากความคิดเห็นของบุคคลทั่วไป และผู้เชี่ยวชาญด้านที่เกี่ยวข้อง ด้วยแบบสอบถามและการสัมภาษณ์เชิงลึกตามลำดับ ในการพัฒนารูปแบบการนำเสนอสารสนเทศบนเครือข่ายอินเทอร์เน็ต (เว็บไซต์) ได้ประยุกต์ใช้วงจรการพัฒนาแบบ (SDLC) และพัฒนาระบบด้วยภาษา HTML และ PHP โดยใช้ MySQL ในการจัดการฐานข้อมูล จากนั้น ได้ประเมินศักยภาพของระบบและความเหมาะสมของเว็บไซต์จากบุคคลทั่วไปและผู้เชี่ยวชาญด้านที่เกี่ยวข้องด้วยแบบประเมิน

ผลการวิจัยพบว่าสารสนเทศที่เหมาะสมต่อการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยค โดยผ่านเครือข่ายอินเทอร์เน็ต มีองค์ประกอบที่สำคัญ 2 ส่วน คือ 1) ฐานความรู้การท่องเที่ยวเชิงนิเวศ และ 2) สารสนเทศอุทยานแห่งชาติ ส่วนที่เป็น ฐานความรู้การท่องเที่ยวเชิงนิเวศ ได้แก่ ความหมาย แนวคิด หลักการ องค์ประกอบ ชนิด การจัดการ ลักษณะกิจกรรมและลักษณะของนักท่องเที่ยวเชิงนิเวศ ส่วนที่เป็น สารสนเทศอุทยานแห่งชาติ ได้แก่ ประวัติ เอกลักษณ์ สถานที่ท่องเที่ยว กิจกรรม สิ่งอำนวยความสะดวก ข้อมูลทรัพยากรธรรมชาติและสิ่งแวดล้อม และรูปแบบเว็บไซต์ที่เหมาะสมมีคุณสมบัติที่สำคัญ คือ พัฒนาขึ้นจาก Freeware และ Open source รองรับผู้ใช้งาน 2 ระดับ ได้แก่ ผู้ดูแลระบบและผู้ใช้งานทั่วไป มีความสะดวกในการใช้งาน มีระบบโต้ตอบระหว่างผู้ใช้งานแต่ละระดับและง่ายต่อการปรับปรุงข้อมูล จากการประเมินความพึงพอใจในการใช้งานเว็บไซต์ โดยบุคคลทั่วไป พบว่ามีความพึงพอใจอยู่ในเกณฑ์ปานกลางถึงดี (เฉลี่ย 87%) และเว็บไซต์สามารถเพิ่มความถี่เกี่ยวกับการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยคด้านต่างๆได้เฉลี่ย 17 %

CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER I INTRODUCTION	1
1.1 Background	1
1.2 Objectives	2
1.3 Conceptual Framework	2
1.4 Scope	3
1.5 Expected Results	4
1.6 Definitions of terms	5
CHAPTER II LITERATURE REVIEWS	6
2.1 Ecotourism	6
2.2 Management Information system	9
2.3 System Development Life Cycle (SDLC)	12
2.4 Internet Network and Website	14
2.5 Sai Yok National Park	18
2.6 Relevant researches	22
CHAPTER III MATERIALS AND METHODS	28
3.1 Materials	28
3.2 Methods	28

CONTENTS (continued)

	Page
CHAPTER IV RESULTS AND DISCUSSION	36
4.1 Results on appropriate information for ecotourism extension of Sai Yok National Park via internet network	36
4.2 Results on the development of an information management model for ecotourism extension of Sai Yok National Park through internet network.	39
4.3 Results on the evaluation	50
CHAPTER V CONCLUSIONS AND RECOMMENDATIONS	53
5.1 Conclusions	53
5.2 Recommendations	54
BIBLIOGRAPHY	57
APPENDIX	60
BIOGRAPHY	71

LIST OF TABLES

	Page
Table 3-1 Level of satisfactory for system for evaluation	30
Table 3-2 Range of satisfactory level in effectiveness evaluation of users	31
Table 4-1 Levels of satisfaction by general user's evaluation	51
Table 4-2 Topic of knowledge evaluations score Pre-post test	52

LIST OF FIGURES

	Page
Figure 1-1 Conceptual framework	3
Figure 1-2 Study area: Sai Yok National Park.	4
Figure 2-1 Ecotourism as a sustainable development concept	7
Figure 2-2 Goals of sustainable tourism	8
Figure 2-3 Process of SDLC	13
Figure 2-4 Location of Study Area.	18
Figure 2-5 Elevation level	19
Figure 2-6 Average temperature and rainfall amount 30 year.	20
Figure 2-7 Kitti's hog-nosed bat and Regal crab.	20
Figure 2-8 Landsat 4-5-3 Forest	21
Figure 2-7 Sai Yok National Park tourist attractions.	22
Figure 3-1 Steps of method	25
Figure 3-2 Concept of appropriate information identifies	25
Figure 3-3 Steps of information system development	27
Figure 4-1 System structure	41
Figure 4-2 Association chart illustrating relationship among users, data association, and data flow	42
Figure 4-3 website contents structure	43
Figure 4-4 Homepage	45
Figure 4-5 main page of ecotourism content base	46
Figure 4-6 main page of Sai Yok National Park content base	47
Figure 4-7 Login form of the securities system	48
Figure 4-8 Website statistic page	48
Figure 4-9 Webboard page	49
Figure 4-10 The sample of poll system	49

CHAPTER I

INTRODUCTION

1.1 Background

Ecotourism is the type of tourism in which sustainable development principles are applied so that natural resources and environment remain undisturbed or undestroyed. Moreover, it aims to promote people's learning about ecological and cultural nature of the natural area and to provide economic opportunities by which local communities gain the advantages from the conservation of their natural resources and environment. Therefore, ecotourism is a promising approach to reduce negative effects on national park resources and environment caused by tourism. Many national parks are thus promoting this type of tourism today.

One way to best support ecotourism is through information management using internet network. Systematic information management requires the study of the in-use ecotourism models in national parks and involving people's opinions' survey. These people include national park officers, entrepreneurs and general public. As a result, problems and suggestions would be analyzed and used in an appropriate promotion design and development. Besides, information will be more fully collected and revised to make the presentation up-to-date, accurate, more inclusive and corresponding to the needs of those involved. The internet network presentation mode is selected for application because of its present popularity. This mode has no limitation in terms of time and place. Inquirers can search for information all through 24 hours and can access from any place in the world by using computers that are connected to internet network. This mode of presentation obviously provides direct communication between senders and receivers, thus prevents the distortion of the transmitted information.

The researcher, therefore, regards the information management through internet network as an important approach for the ecotourism extension of national parks. The researcher has conducted this research to find the appropriate information

management for promoting national park ecotourism based mainly on the study of appropriate data and presentation model. Information portrayed in internet network was developed from the results of data analysis and used for the efficiency evaluation of national park ecotourism extension. In this research, Sai Yok National Park, Kanchanaburi Province, was selected as the study site due to its prolific natural resources, unique tourist attractions, natural beauty and cultural charm. Moreover, Sai Yok National Park management policy emphasizes sustainable development; therefore, is appropriate and meets the aims of this research work.

1.2 Objectives

1.2.1 To identify appropriate information for ecotourism extension of Sai Yok National Park by classifying and evaluating the national park data and ecotourism content bases.

1.2.2 To develop the information management system for Sai Yok National Park ecotourism extension via internet network.

1.3 Conceptual framework

The conceptual framework which puts the emphasis on the study of content and data bases was employed in attempt to identify essential information suitable for ecotourism promotion via internet network. The information, afterward, was used to develop the presentation model and information system. The information system contained inclusive contents and was presented with the model corresponding to stakeholders' needs. Its efficiency was evaluated by experts and actual users. Figure 1-1 illustrates this conceptual framework.

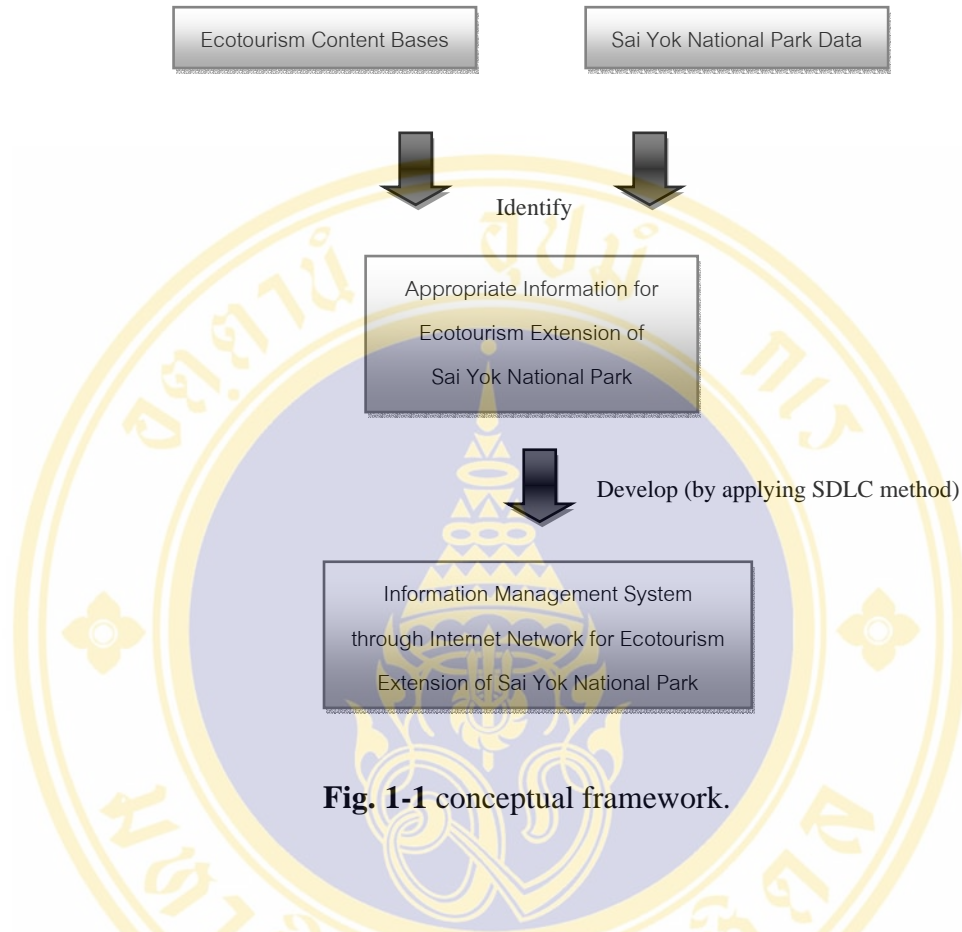


Fig. 1-1 conceptual framework.

1.4 Scope of study

1.4.1 Study area

The study area is covered 958 square kilometers of Sai Yok National Park, Kanchanaburi Province.

1.4.2 Scope of method

1.4.2.1 Ecotourism experts evaluate the classification of data characteristics to be used for Sai Yok National Park ecotourism extension.

1.4.2.2 The information management system for Sai Yok National Park ecotourism promotion through internet network was developed by applying the System Development Life Cycle (SDLC) principle.

1.4.2.3 The information management system was evaluated and tested by ecotourism experts, national park management experts, and general public.

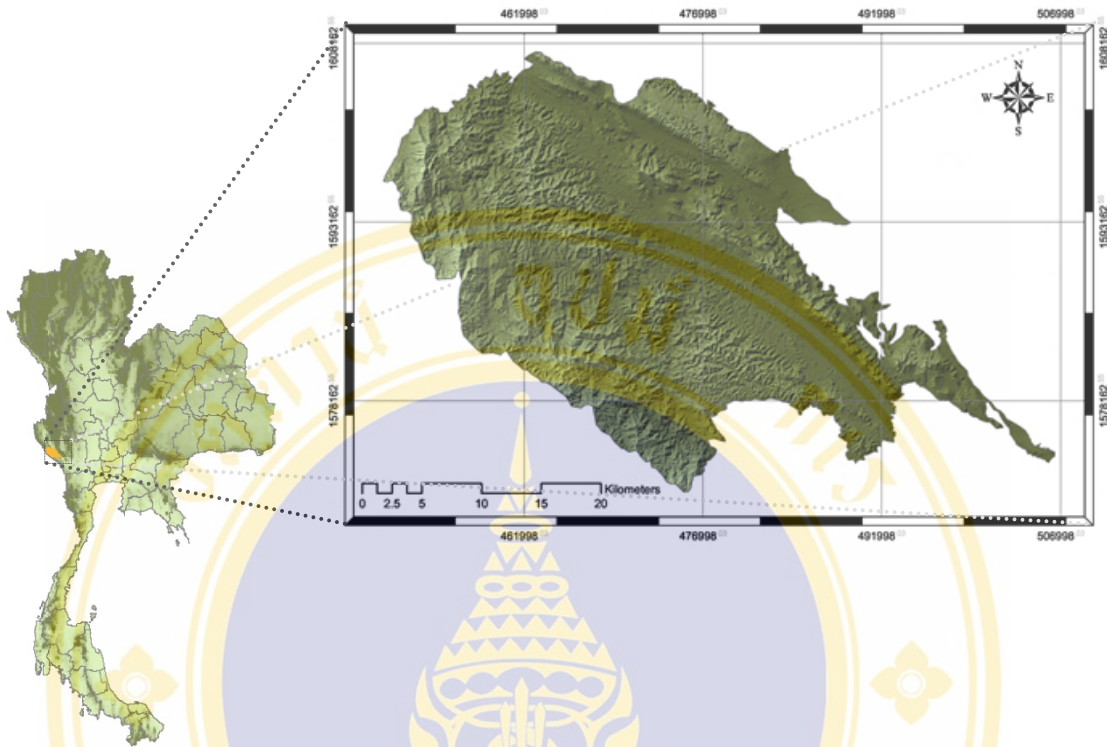


Fig. 1-2 study area.

1.5 Expected Results

1.5.1 Suitable data for Sai Yok National Park ecotourism promotion are synthesized.

1.5.2 The developed system of information management for Sai Yok National Park ecotourism promotion through internet network is responsive to the stakeholders' needs.

1.5.3 The users of the developed system gain knowledge and understanding about ecotourism including resources and environment of Sai Yok National Park.

1.6 Definitions of terms

Appropriate information means the information which can be concluded from analyzing ecotourism content bases and Sai Yok National Park data to be examined by ecotourism experts and the national park authorities, including from assessing general public's needs.

Information management model means the web presentation system designed and programmed by the System Development Life Cycle. The system was tested by Sai Yok National Park web authority Management Information System experts, and public users.

Internet network means the network system that computer of Sai Yok National Park was a main server which has accessories link processed and shared information to other public computers in the world.

CHAPTER II

LITERATURE REVIEWS

2.1 Ecotourism

2.1.1 Definition of ecotourism

Ceballos-Lascurain (1) defines ecotourism as: Tourism that involves traveling to relatively undisturbed or uncontaminated areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas.

The International Ecotourism Society (2) defines ecotourism as: responsible travel to natural areas that conserves the environment and improves the well-being of local people.

The Green Globe 21 International Ecotourism Standard (2) has adopted Ecotourism Australia's definition of ecotourism: Ecologically sustainable tourism with a primary focus on experiencing natural areas that fosters environmental and cultural understanding, appreciation and conservation.

Tourism Authority of Thailand (3) defines ecotourism as: Ecotourism is responsible travel in areas containing natural resources that possess endemic characteristics and cultural or historical resources that are integrated into the area's ecological system. Its purpose is to create awareness among all concerned parties of the need for and the measures used to conserve ecosystems and as such are oriented towards community participation as well as the provision of a joint learning experience in sustainable tourism and environmental management.

Merg (4) mentions that since the publication of Martha Honey's book "Ecotourism and Sustainable Development" has made her definition an accepted standard. Martha Honey presents her definition as: Ecotourism is travel to fragile, pristine, and usually protected areas that strive to be low impact and (usually) small scale. It helps educate the traveler; provides funds for conservation; directly benefits

the economic development and political empowerment of local communities; and fosters respect for different cultures and for human rights (5)

Fennell (6) identified 13 main principles in the definitions that he analyzed. The variables are ranked by frequency of response as: Interest in nature, Contributes to conservation, Reliance on parks and protected areas, Benefits local people/long-term benefits, Education and study, Low impact/non-consumptive, Ethics/responsibility, Management, Sustainable, Enjoyment and appreciation, Culture, Adventure and Small scale

2.1.2 Concept of ecotourism

Ecotourism aspires in all cases to achieve sustainable development results. However, it is important to clarify that all tourism activities - be they geared to holidays, business, conferences, congresses or fairs, health, adventure or ecotourism - should aim to be sustainable. This means that the planning and development of tourism infrastructure, its subsequent operation and also its marketing should focus on environmental, social, cultural and economic sustainability criteria.

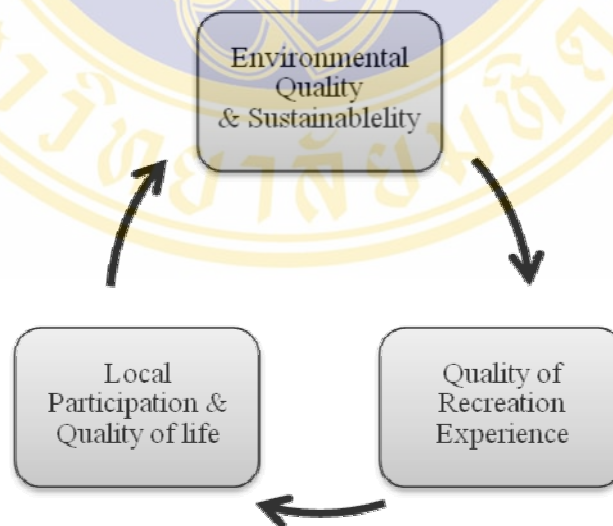


Source: Strasdas, 2000 (drawn by M. Meier) (7).

Fig. 2-1 ecotourism as a sustainable development concept.

2.1.3 Principles of Ecotourism

Minimize the negative impacts on nature and culture that can damage a destination. Educate the traveller on the importance of conservation. Stress the importance of responsible business, which works cooperatively with local authorities and people to meet local needs and deliver conservation benefits. Direct revenues to the conservation and management of natural and protected areas. Emphasize the need for regional tourism zoning and for visitor management plans designed for either regions or natural areas that are slated to become eco-destinations. Emphasize use of environmental and social base-line studies, as well as long-term monitoring programs, to assess and minimize impacts. Strive to maximize economic benefit for the host country, local business and communities, particularly peoples living in and adjacent to natural and protected areas. Seek to ensure that tourism development does not exceed the social and environmental limits of acceptable change as determined by researchers in cooperation with local residents. Rely on infrastructure that has been developed in harmony with the environment, minimizing use of fossil fuels, conserving local plants and wildlife, and blending with the natural and cultural environment.



Source: Pinfield, 1997.

Fig. 2-2 goals of sustainable tourism.

2.1.4 Components of Ecotourism

The International Ecotourism Society (2) defines components of ecotourism as:

- Contributes to conservation of biodiversity.
- Sustains the well being of local people.
- Includes an interpretation / learning experience.
- Involves responsible action on the part of tourists and the tourism industry.
- Is delivered primarily to small groups by small-scale businesses.
- Requires lowest possible consumption of non-renewable resources.
- Stresses local participation, ownership and business opportunities, partially for rural people.

2.2 Management Information System

2.2.1 Definition

2.2.1.1 Information system An information system is an organized combination of people, hardware, software, communications networks, and data resources that collects, transforms, and disseminates information in an organization. People have relied on information systems to communicate with each other using a variety of physical devices (hardware), information processing instructions and procedures (software), communications channels (networks), and stored data (data resources) since the dawn of civilization. (8)

2.2.1.2 Management information system MIS may be defined as the combination of men, machine and procedures for collecting pertinent information from the internal and external source of a firm, and processing this information for the purpose of facilitating the process of decision making. The Management Information System (MIS) is a concept of the last decade or two. It has been understood and described in a number of ways. It is also popularly known as the Information System, the Information and Decision System, the Computer-based Information System. (9)

The MIS has more than one definition, some of which are given below.

1. The MIS is defined as a system which provides information support for decision making in the organization.
2. The MIS is defined as an integrated system of man and machine for providing the information to support the operations, the management and the decision making function in the organization.
3. The MIS is defined as a system based on the he database of the organization evolved or the purpose of providing information to me people in the organization.
4. The MIS is defined as a Computer-based Information System.

2.2.2 Elements of Management information system

Kumar N (9). said the MIS can be subdivided into four categories each type of system is designed to cater to a specific requirement. The types are:

2.2.2.1 Transaction Processing System These systems are designed for processing day to day transactions occurring in the organization. These systems involve large volume of data and mainly help in the operation control area of the company.

2.2.2.2 Information Providing System Attempt is made here to generate information to help decision making activity. Starting with transaction processing system summary and exception reports is produced. Summary reports are tabulation of detail by categories. Exceptions reports provide information about deviations of actual from planned and indicate the reasons of deviations.

2.2.2.3 Decision Support System This system is for improving the analytical capability of the decision maker. Attempt is made here to create an interactive model of a real life situation, so that the decision maker can interrogate the system for generation and evaluation of various alternatives.

2.2.2.4 Programmed Decision Making System This involves creating systems for programmed decision areas, so that a decision is made by the system instead of a person this required very clear specifications of the procedure used.

2.2.3 Objectives of Management information system

In the words of *Umberg*, "The purpose of MIS is to determine and provide, an efficiently, effectively and economically as possible, what management needs to know. It should facilitate the accomplishment of objectives, prevent failure to reach the objectives and correct conditions which hamper the fulfillment of the objectives.

Three basic objectives of MIS are discussed below:

2.2.3.1 Operational Control. It is the process of assuring that the specific tasks are carried out efficiently and effectively.

2.2.3.2 Management Control. It is the process by which managers ensure that resources are obtained and used effectively and efficiently in the accomplishment of organizational objectives.

2.2.3.3 Strategic Planning. It is the process of deciding on objectives of the organization, on changes in these objectives and on the policies that govern the acquisition, use and disposition of these resources.

The nature and extent of information required for these purposes greatly depends upon the business environment in which it operates. As small or medium size organization do not have the resources nor the organization to have a systematic information system. They collect information only when required. Thus, the information needs of management vary from organization to organization depending upon the complexity of business problems each organization faces.

2.2.4 Process of management information

A manager is a person who gets things done by working with people and other resources, so as to achieve the objective. He co-ordinates the activities of others and not that he does himself. Management is a social process as it contains a series of actions that lead to the accomplishment of objectives. It is a social process as it is related to the people. It is a continuing process like education as new problems come before the old ones are fulfilled. It is a mental or intellectual process involving thought, judgment and decision. The aim of managing is to attain certain objectives understood by all who direct their activities towards its attainment. (9)

The whole information process consists of essential elements:

2.2.4.1 Planning. This consists of crystallizing objectives or targets. The management collects and synthesizes information. They develop alternative courses of actions. Management compares alternatives in terms of objectives. They find their feasibility and consequences. After this optimum course of action is selected. Later on, this leads to establishment of policies and procedures. There upon, methods, schedules and programs are chalked out. What systems are to be followed and the standards to be achieved and finally the available budget is discussed. With this planning side is completed.

2.2.4.2 Organizing. Management process gives the manager to organize the whole process. The management divides the work into component activities. People are assigned the task. Responsibilities are defined. Authority is delegated. Structural relationships are established to secure co-ordination.

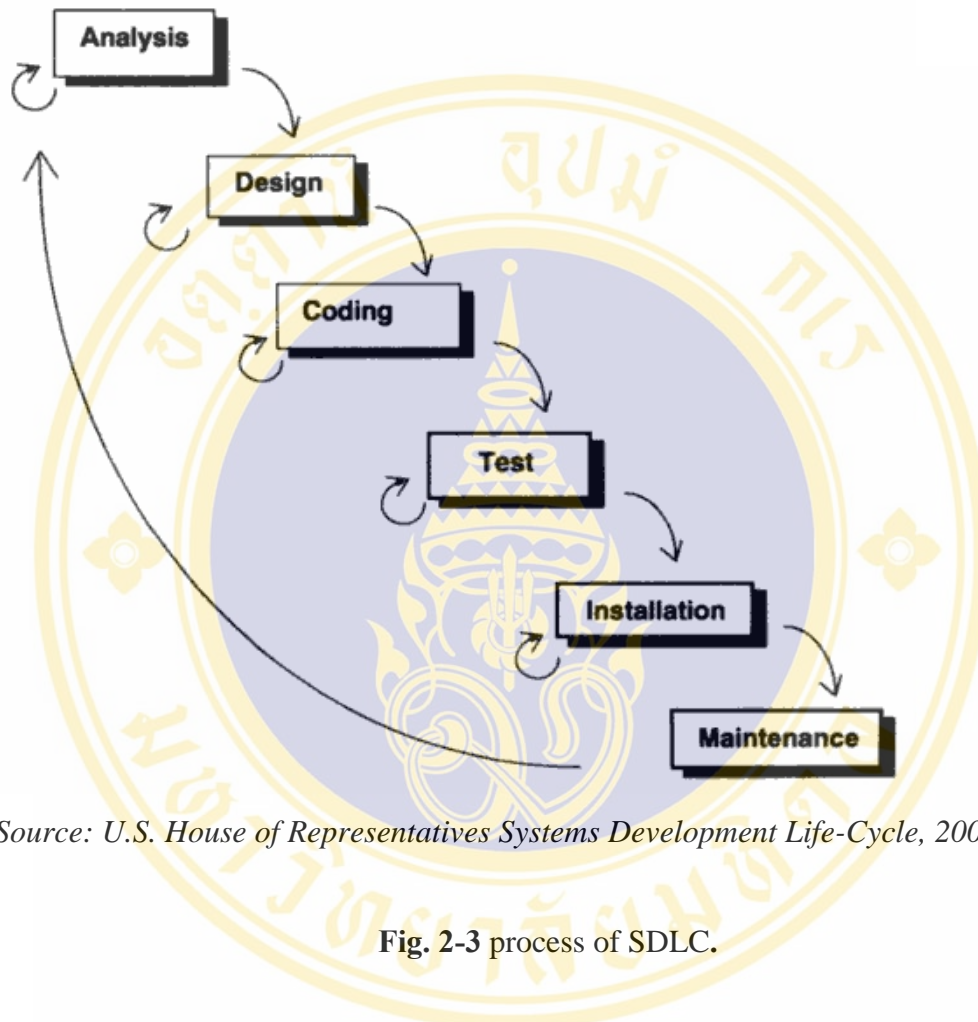
2.2.4.3 Motivating. The third step in the management process is given to motivating. Management must provide the effective leadership. People and tasks are integrated and they are convinced to assist in the performance. There must be effective communication between the management and employees may be of a direct nature. The atmosphere should be such that subordinate's development is properly carried on for filling the higher posts when needed to fill.

2.2.4.4 Controlling. Under the management process the last and the most important thing comes the factor of controlling. Management must identify potential problems. Out of the many modes, they must give preference to the best modes of control. Audit measures should be applied in time. The whole things be evaluated in terms of planning. Significance deviations be pinpointed. Point out the exact causes of deviations and so take the remedial action if possible.

2.3 System Development Life Cycle (SDLC)

The life cycle is the basic planning formal that has been applied to most development programs from the early days of software systems to the present time. It enables all the different organizational resources to be applied to the development

process in an effective and timely manner. One variant of the SDLC model (System Development Life Cycle) (10) is shown in Figure 2-3.



Source: U.S. House of Representatives Systems Development Life-Cycle, 2000.

Fig. 2-3 process of SDLC.

2.3.1 Analysis

There are two main activities here. The first will involve a detailed examination of the previous system, whether verbal, paper-based or computerized. This data is then translated into a set of symbols on graphic drawings which will represent the model of how the old system works.

2.3.2 Design

Again two stages. First the 'logical design' is implemented. This is a process where every logical item defined in the analysis above is examined for ways to create more cost effectiveness, performance improvement, user friendliness, enhanced office

automation, better compatibility with standards, extended facilities and so on. These new logical elements eventually become the basis for the new system. The physical design then identifies the actual products. Say, the data files to be used screen layouts, report formats and so on. When all these physical elements are eventually assembled and installed on the client's site, they will form the new working system.

2.3.3 Coding

The formal programming section where the actual system instructions are prepared. These instructions, based on the logical design criteria, will conform to the grammar and syntax of the selected programming language.

2.3.4 Test

The process where sub-routines, blocks of software and, eventually, entire systems are subjected to a set of simulated real-life test sequences to check for a) obvious errors of design, and b) conformance to the original system specifications in terms of operations and performance.

2.3.5 Installation

The transference of the finished system from the developer's test-bed conditions to the client's operational environment.

2.3.6 Maintenance

All the additional work on the system that is carried out after hand-over. This may include error-fixing, adding extra features, or full performance upgrades. Regardless, each maintenance activity is seen as a system redesign which will call for a whole new life cycle of activity.

The life cycle is not used as a planning tool by itself, but it is an important conceptual part of a number of methodologies which are used as planning tools. Popular examples of such methodologies include SSADM (Great Britain), Merise (France), and YSM (United States).

2.4 Internet Network and Website.

2.4.1 Internet

Internet is an extensive computer network system linking computers worldwide together in a web-like arrangement. Today, the Internet has a major role in this information era through numerous utilizations: in communication, messages, publicity, data transfers, commerce, or even school-like learning, and many others. Internet is a public network system open unlimitedly to all to share and use resource; connection of networks is under the same standard called Transmission Control Protocol / Internet Protocol (TCP/IP).

Communication between computers for cooperative sharing of resources requires interdependencies between computers. The computer that provides services to others is called "Server", while those requesting services from the Server are called "Clients." In the Internet system, there are 2 modes of communication: data upload and data download, of which the server computer sends data to the client computers, which receive those data. This computing model is called "Client-server system.

2.4.2 World Wide Web (WWW)

WWW is a type of client-server system, the purpose of which is data communication of computers via the Internet. WWW services can store and retrieve data in Multimedia forms: texts, graphics, sounds, movies, etc. Presently, this service is very popular, as can be seen from publicity of countless organizations that incorporate URL or Web site addresses to have interested persons visit and pursue information and news, using Web browsers for data retrieval.

2.4.3 Hypertext Markup Language

Hypertext Markup Language (HTML) is a document format applied with HTTP protocol, which is an application-level protocol used for transmission and reception of documents in the WWW. When the web browser receives data in HTML document format, which are files with .htm or .html extensions, the information is displayed as

web pages. Inside HTML documents is a language whose coding attributes are texts in ASCII standard, from which computers of all operating systems can read.

The features of HTML documents or web pages can be divided into 2 formats, as:

2.4.3.1 Static The behavior of a static web page is similar to a normal paper page, in that the web browsers have no interaction with users, only act as data requester from the server and display as a web page for user's viewing. This type of web page has a drawback in the lack of interest for viewing, and is a burden to the server, since all processing and error checking are server's tasks. Static web pages are appropriate for display of general information and details, in the same way of opening up a book for reading, and data in HTML documents are not to be changed until revised.

2.4.3.2 Dynamic These are web pages with interaction with users through the web browsers in the users' computers. For that reason, the interaction is fast, which enables gimmicks to increase interest of the web pages. And importantly, data verification in database application on the Internet is possible through addition of scripts into web pages, for benefits in calculation, displays, verification, data uploads-downloads, besides greatly reducing burdens on servers and network. HTML documents in dynamic formats can be changed in response to database search conditionals.

The two different HTML document formats can be utilized as formats of documents or web pages -as appropriate, in various parts of Rice Insect Pest Control Information System. In parts where information are shown contents, knowing additional details which are not frequently revised or updated e.g. detailed information of rice insect pests, natural enemies, rice varieties, will be in static format. On the other hand, web pages incorporating data upload-download or connection to databases will be in dynamic format.

2.4.4 Website Development Process

Website Development is a four-step process for co-coordinating the creation of a new website, or implementing changes to one already in use. (Keith Darlington,2005) These steps are:

- Planning
- Design
- Construction
- Testing

In simple terms, the development process represents a framework within which all the activities of lifecycle management from inception to review (and eventual demise, if necessary) can take place.

2.4.4.1 Website Planning Website Planning is a process for identifying the Business Objectives and User Needs that drive the Development Cycle. From these, a set of Goals and Deliverables can be devised and used to steer site production.

2.4.4.2 Website Design Design is the process of originating and developing a plan for an aesthetic and functional object, which usually requires considerable research, thought, modeling and iterative adjustment. With regard to the web, this involves the transformation of Goals and Deliverables into graphical models that can be used to produce a site. Some of the ways in which good design can add value to a site include:

- By facilitating a visitor's online experience, e.g. through clear navigation and an intuitive structure.
- By communicating information, e.g. through diagrams and charts.
- By transmitting brand values, e.g. by using corporate colors.
- By creating or reinforcing a desired emotional response, e.g. through an appropriate use of imagery, color and other elements.

2.4.4.3 Website Construction After planning and preparation, all the groundwork needed to allow site construction to proceed is finally in place. This is the

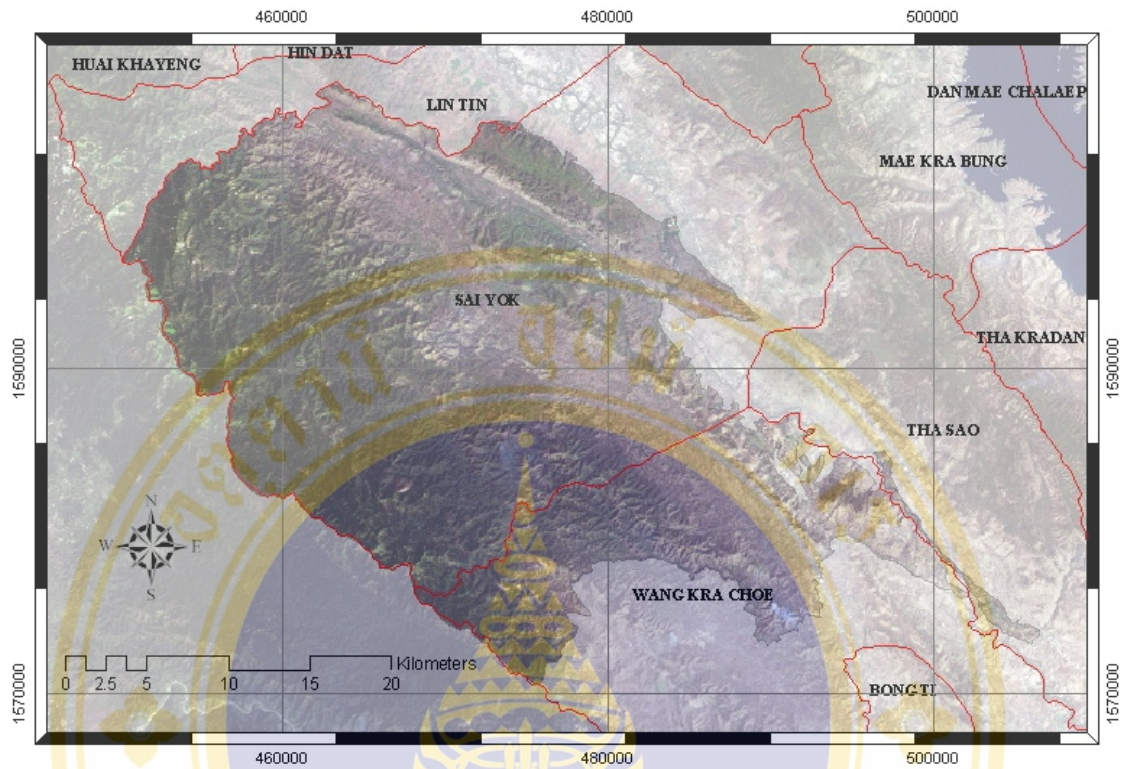
moment your Developers have been waiting for the real work of coding can now commence.

2.4.4.4 Website Testing Website Testing is a process for evaluating the conformance of a site to an agreed set of guidelines. The purpose of testing is to ensure a website is capable of operating to a minimum acceptable standard in order to meet the Goals that have been set for it.

2.5 Sai Yok National Park

2.5.1 General Information

Sai Yok National Park is 98 km. from Kanchanaburi, located in Amphur Thong Pha Phum and Sai Yok . The Park was designated on the 27th October 1980 as the 11th National Park of Thailand, with a total area of 500 km². The park is mountainous; mostly limestone mountain runs on north-south axis. In the past, Sai Yok National Park is an area King Rama 5 used to visit and take a bath in a stream. Later, there was a composer, who composed a song describes the wonderful of Sai Yok Waterfall, the waterfall becoming famous (11).

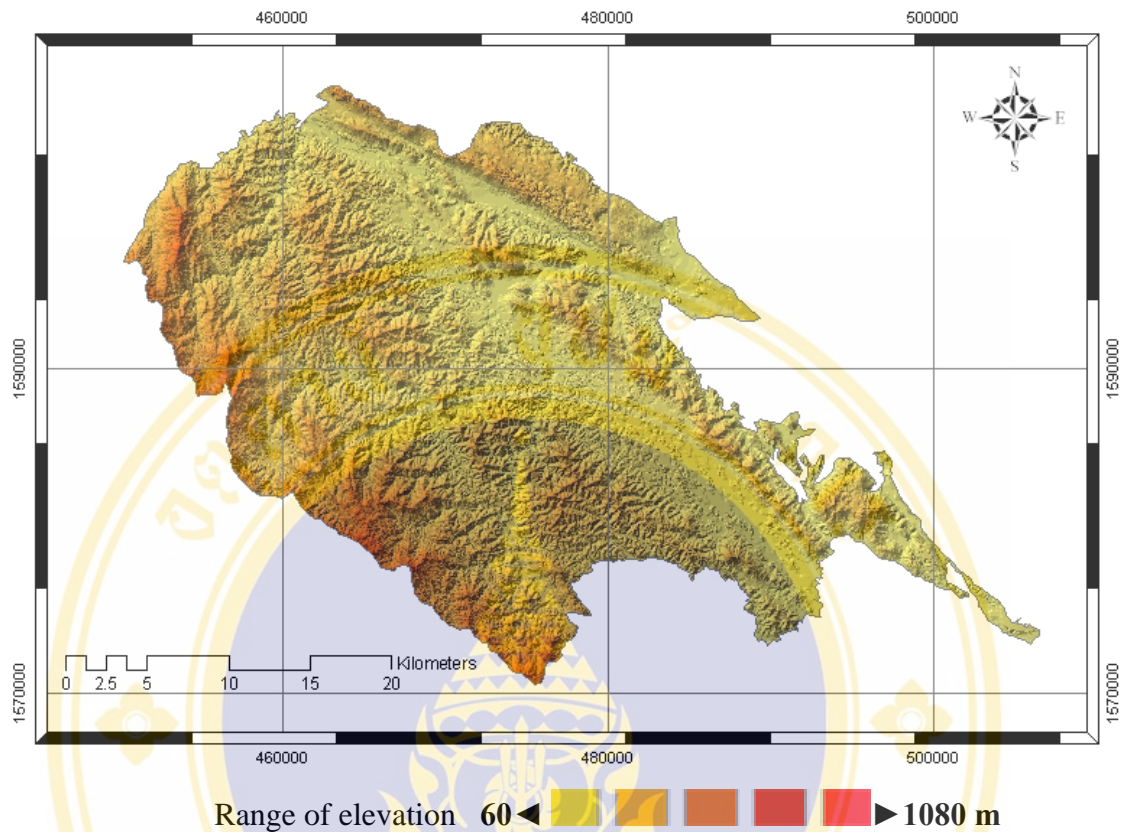


Source: Department of Environmental Quality Promotion, 1977.

Fig. 2-4 location of study area.

2.5.2 Topography

Topography is mountainous covered by mixed deciduous and dry evergreen forest with bamboo forest. Besides, there is a teak forest along the Kwaie river side, habitat of much wildlife (11)

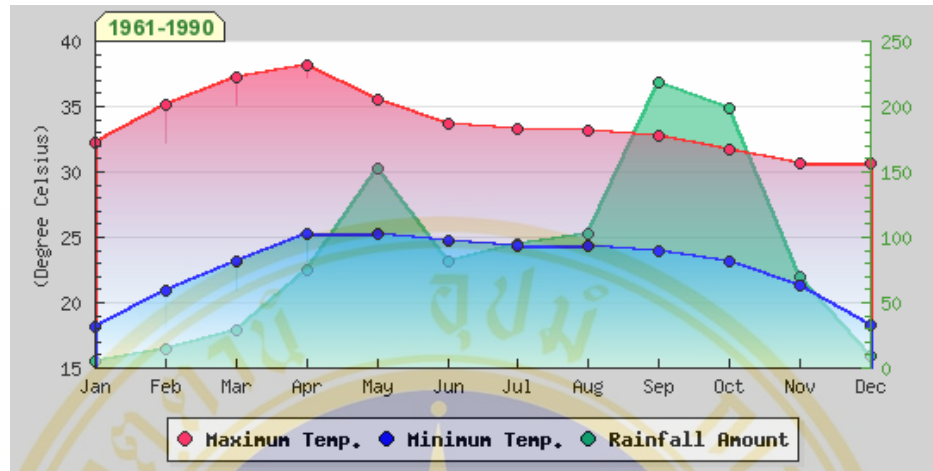


Source: *Spatial analyzed, 2006.*

Fig. 2-5 elevation level.

2.5.3 Climate

The temperature is approximately 15 – 30 degrees Celsius. The weather is quite cold, heavy fog in winter, and heavy rain in rainy season especially from May to October, and is very dry from December to February. The winter is suitable for enjoying traveling to Sai Yoke Waterfall with the evergreen forest, powerful and lively water, and cluster of mist smoothly flowing over Kwai Noi River; all is so attractive for visitor.

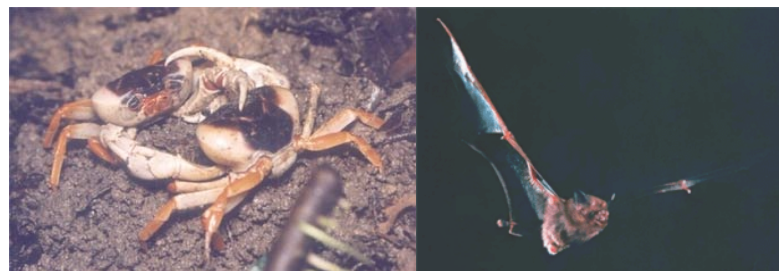


Source: Thai Meteorological department, 2006

Fig. 2-6 Average temperature and rainfall amount 30 years (1961-1990).

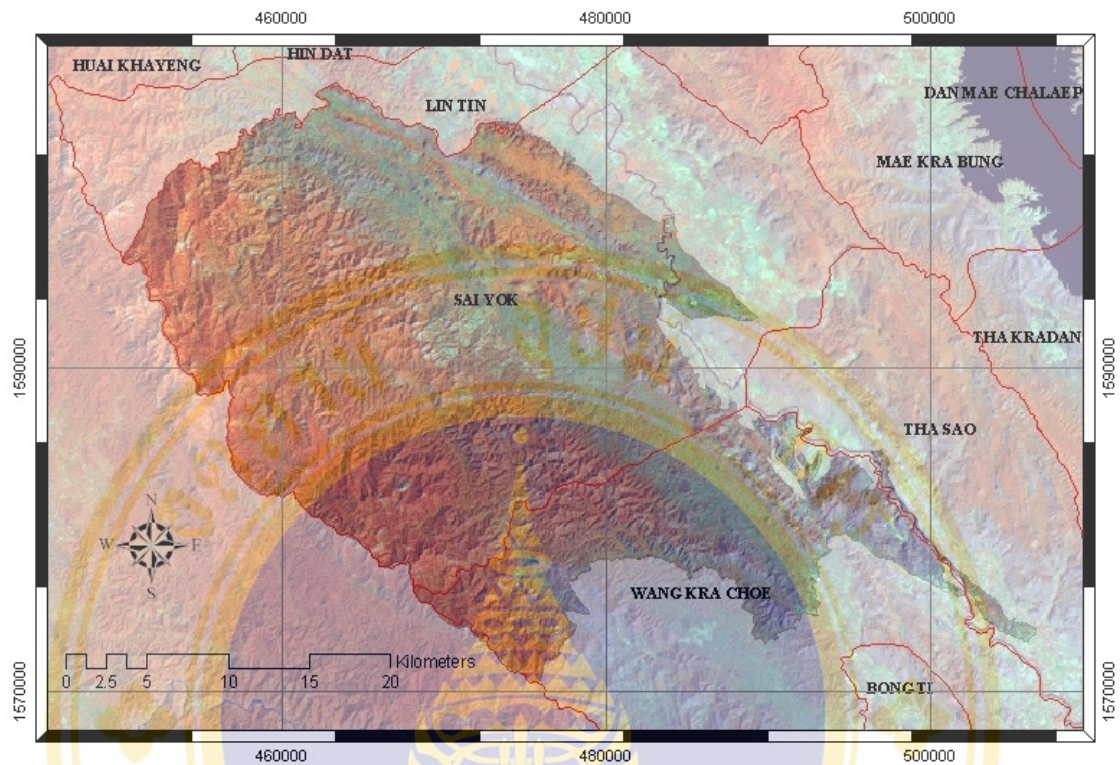
2.5.4 Flora and Fauna

The wildlife are bull, red cow, tiger, wild pig, samba deer, barking deer and birds, this wildlife will live in Thai Burmese borders. Moreover, Khun Kitti Bat-the world smallest bat, Khun Kitti Bat has scientific name as *Crasoomyeteris thonglongya*. It is named after Mr. Kitti Thonglongya who first discovered this kind of the bat in 1973. It is a new family and one in the world bat, not only the smallest bat in Thailand but also the smallest mammal in the world with 1.5 – 2.0 grams, 2.5 – 3.0 centimeters long and 10 centimeters of wing-span. Its ears are quite big and its nose looks like pig’s nose. They inhabit in caves and quickly move away when disturbing by people. Now They are only found in Sai Yoke National Park. And Poo Rachinee (Queen Crab) the colorful crab are found in this area (11).



Source: Field trip, 2006

Fig. 2-7 Kitti’s hog-nosed bat and Regal crab.



Source: GISTDA, 2005.

Fig. 2-8 Landsat Data (Layer4-5-3)

2.5.5 Tourist attraction

- Sai Yok Waterfall
- Sai Yok Noi Waterfall
- Mae Nam Noi
- Kwaie Noi River
- Dao Daung Cave
- Krew Cave
- Lawa Cave
- Nature Trail



Source: Field trip, 2006

Fig 2-8 Sai Yok National Park tourist attractions.

2.6 Relevant Research

2.6.1 Information System

Kachonchai (12) study in Internet Based Learning Courseware In Homepage Making. Show that the internet plays was an important role in the educational system, especially in long-distance learning in this era at globalization. Because of its capability and variety in communication and informational presentation, the Internet has been replacing older media such as books, radio and television. This method, the greatly improves the distribution of knowledge and information to learners and students via the interactive system between teachers and students; moreover, the interactive between teachers and students is faster and easier than the older media. The objective of this research is to apply the Internet to the educational system to encourage students in learning and to expand the boundary of education. This study is an attempt to contribute to the scholarly literature on Internet-based learning courseware in web page development. However, this is a pioneer project to encourage other researchers for further study and development of the courseware. Internet-based courseware and manuals have been produced as the results of this research for educating students in web page development. Three types of courseware were produced: a student manual, a teacher manual and the creation of an instructive webpage. Thus, teachers could apply this for making lessons more interesting and students also would have a chance to revise the lesson from the Internet. In addition,

there is also an opportunity for many other people to access this information through the Internet.

Pannida (13) study in *The Development of Tourism Data Entry and Information Retrieval System for Trip Planning via Internet*. Show that The Information Technology Division, Tourism Authority of Thailand, is responsible for the analysis and design of a tourism information system to disseminate tourism data to the public via the Internet. Therefore, all data must be accurate and consistently up-to-date. The present study found that the working system of the Information Technology Division is subject to delays and overlaps in data compilation and storage. In addition, there has been no retrieval system for trip planning established to support dissemination of data. The development of this tourism data system has been designed as a three-tier architecture with Internet Explorer or Netscape Communicator (Web Browser) as Front End, with Netscape Enterprise Serve (Web Server) as Middle End, and with Microsoft SQL Server (Database Server) as Back End. All of these are activated on the Windows NT 4.0 Operating System. The main languages being used in the development of the system are server-side Java Script and Client-Side Java Script. The prototypes of the data entry program and the information retrieval program are entirely split 2 systems. The data entry system is divided into Data Management for User and Data Entry Packages. The user will be able to feed 4 categories of data, i.e. accommodation data, entertainment data, festival data and restaurant data. As for information retrieval system, tourists will be able to attain information by either using the keywords (searcher will have to select category of required information) or by searching via the requirement of the program. The searcher will begin by selecting regions where the search is needed, followed by province, and finally, category of information, (e.g., tourist attractions, festivals, accommodations, restaurants, entertainment venues), in that particular province. The searcher will also be able to search for related tourist data in provinces situated nearby the targeted geographical area.

Pongthep (14) study in *Create an Information System for Water Quality Monitoring and Management of the Petchburi River by SDLC*. Show that the output

as information system will be taken to support the decision-making, plan and policy definition about water quality in the Petchburi River. Steps of SDLC are Preliminary investigation, System requirements determination, System Analysis, System Design, System Development using the Visual Basic 6.0 for program creation and-Seagate Crystal Report 7.0 for report creation, The MabObject LT for geographical map displaying, System Testing, System Revise and System Implementation. The result of this study is that the database was completely designed, along with information system or program application as well as the program installation guide and user manual.

Areerat (15) study in Develop the Information System for the Operational Activities of the Community Forestry Development Sub-Division, Royal Forestry Department. Show that the Community Forestry Development Sub-division's activities include an annual plan and preparation for Community Forest Promotions and Development in buffer zone areas, Technical Studies in Community Forestry and the activities of the Community Forestry Study and Development Center. A SDLC approach and DFDs was applied in order to collect data for the existing system, user requirements, and system analysis and system design. The database was developed with Microsoft Access 97 and Microsoft Visual Basic 6.0 was used to develop graphic user interfaces. The results show that users had satisfied the system at a moderate level and at an excellent level for accuracy and speed performance. As a result, it would be very useful if the system could cover the Urban Forestry activities in further research.

2.6.2 Ecotourism

Sumalee (16) study in Information System To Support The Ecotourism Activities Of Khao Chamao- Khao Wong National Park. The Information System To Support The Ecotourism Activities Of Khao Chamao – Khao Wong National Park Was Developed. The information system is divided into 2 main parts; (1) tourist information and (2) baseline information. For the tourist information, it was designed store quantitative and qualitative data and manipulates the data to perform statistical analysis. The statistical analysis is used to evaluate characteristics and attitudes of

tourists for use in the management of the national park. The database has a data entry form for the input of tourist data. Microsoft access was used to design the database. The user interface was designed to be easy to use. Baseline information is spatial information about the park, represented in the form of maps or text. Baseline information includes physical, biological and other similar information. The arcview program was used to represent most of the baseline information. The system was designed to support 2 groups of users; tourists and national park staff. Tourists can utilize the first part of the system to input attitude information and the second part to learn about the park. Staff can utilize both parts of the system in order to edit, improve and analyze data to support the further management of the park.

Chalatorn (17) study in Knowledge And Attitude On Ecotourism Of Vocational Education College Students In Kanchanaburi. The purpose of this survey research is to study the knowledge and attitude of the students at Kanchanaburi Vocational Education College about ecotourism and to study the relationship of their knowledge and attitude to relevant factors including sex, educational level, fields of study, and the extent of exposure to mass media, membership of activity clubs, experiences and training. In conducting this study, data was obtained from a questionnaire given 306 respondents who were studying at Kanchanaburi Vocational Education College. Data analysis was done through, Percentage, Mean, Standard Deviation and Chi-Square. It was found that most students had an average level of knowledge and attitude on ecotourism. They need more exposure information from the television media. From the coefficient relationship testing result, the knowledge and attitude of the Students in Kanchanaburi Vocational Education College has influenced in relationship with education level and fields of study that be implied in statistic level at 0.05 The recommendation is that educational institutions or other concerned departments should continuously give support and cooperation in preserving natural resources and the environment. Giving training, forming clubs, and undertaking learning activities for the sake of building infrastructure and creating knowledge and good attitude on ecotourism will help ecotourism in Kanchanaburi province.

Suchaya (18) study in *The Construction Of Multimedia Computer Assisted Instructions On "Ecotourism" For Youth*. This study aimed to construct and apply a multimedia computer assisted instruction set on "Ecotourism" for youth. The authoring system program was used to construct the content and instructions, afterward the constructed instructions were checked by experts. There were three trials for the modified instructions with a number of high school students of the Bangmodwittaya School. The revision and modification procedure was made again after each trial of the constructed instructions. The modified instructions were used by 120 high school students of the Dhaweewattana School. A pre-test control group of 60 students who did not use the constructed instructions was designed to help compare and investigate and evaluate knowledge gained by the experimental group of 60 students who did use the constructed instructions. The results showed that the post-test scores of the 60 students who used the multimedia computer assisted instructions were statistically significantly higher than their pre-test scores at a 0.05 level, and higher than post-test scores of the control group students who did not use the computer assisted instructions at a 0.05 level. The results from this study might conclude that these students could gain knowledge on "Ecotourism" by using the constructed computer assisted instructions. Recommendations from the study are that, research about learning with CAI lessons for other topics in order to develop the teaching-learning process to be more efficiency should be conducted. Also CAI lessons on ecotourism for other groups should be developed.

CHAPTER III

MATERIALS AND METHODS

3.1 Materials

1. Computer equipments with Web-programming, Database, GIS, RS and Statistic software, i.e. PHP 4, phpMyAdmin 2.8, Arcview 3.3 and ERDAS Imagine 8.6.
2. Questionnaire for surveying the general public's opinions concerning the characteristics of data and the presentation mode via internet network appropriate for Sai Yok Nation Park ecotourism extension.
3. Kanchanaburi's Topography Map, at scale of 1: 50,000.
4. Kanchanaburi's Satellites data, Landsat 5 (TM), Pat: 130, Row: 50 at 16/02/2005.
5. GIS databases of environment and resources 10 Themes (Digital data) in provincial level scale 1:50,000 from Department of Environmental Quality Promotion at 1977 with updated by ground survey 2006.
6. Geographical Positioning System (GPS).

3.2 Methods

This research, aiming at analyzing and classifying data to identify appropriate information for Sai Yok National Park ecotourism extension and developing of an information management system model using internet network, has the following steps.

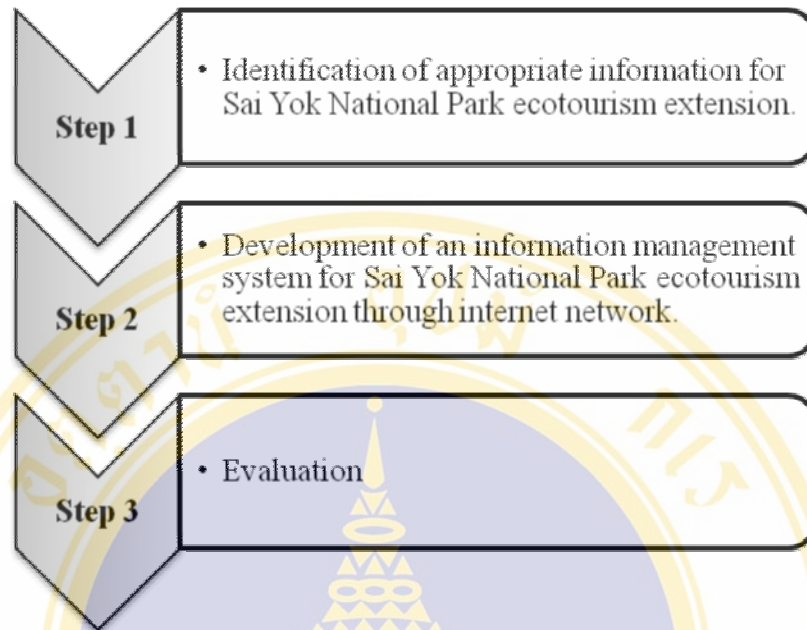


Fig. 3-1 steps of Method.

3.2.1 Identification of appropriate information for Sai Yok National Park ecotourism extension.

In this step, the researcher analyzed knowledge bases relating to ecotourism and Say Yok National Park data to detect essential information to be used in communicating through internet network. The concept and procedures are included as follows:

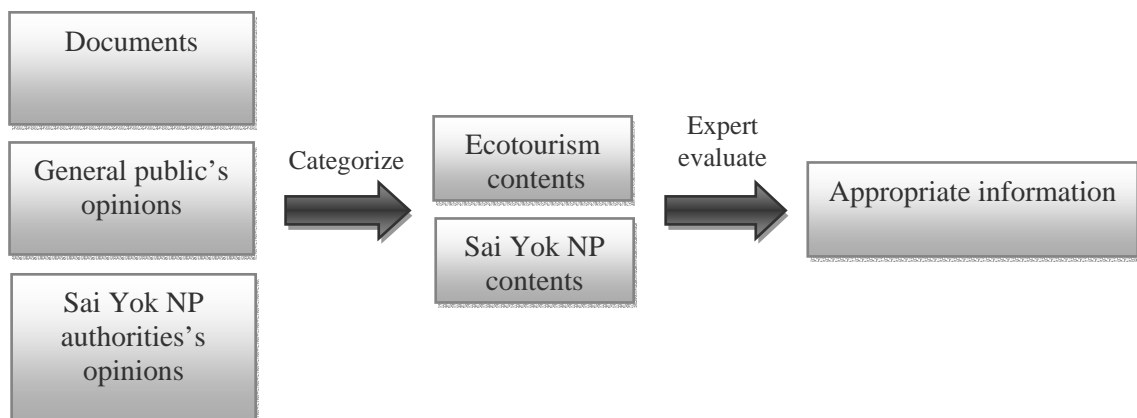


Fig. 3-2 concept of appropriate information identifies.

1) Classify and analyzing ecotourism content bases : Ecotourism data were collected from related articles documents, lessons, and research studies. The data were analyzed to classify crucial information suitable for promoting ecotourism through internet networking communications. The results were then evaluated by experts in ecotourism, resources and environment.

2) Classifying and analyzing data relating to Sai Yok National Park: Spatial and non-spatial data were collected. Secondary data were collected from brochures, posters, exhibition boards, annual reports, Sai Yok National Park Master Plan, research finding, geographical maps, satellites data (Landsat 5 TM), GIS databases of environment and resources -- 10 themes (digital data). Primary data were collected by actual area surveying and in-depth interview with Sai Yok National Park personnel staff. All data were then categorized and sent to Sai Yok National Park authorities for evaluation and approval so that appropriate information was initially identified for internet network communication.

3) Surveying general public's opinions concerning the appropriateness of the information.

Data from (1) and (2) were used to construct the questionnaires, three-level rating scale, to find out general public's opinions and needs concerning Sai Yok National Park ecotourism extension. The questionnaires were distributed to 30 samples. Prior to the distribution, 20 people were asked to use the questionnaire in order to assure the language and content validity. The information classification was then evaluated by ecotourism experts.

4) Determine information appropriate for Sai Yok National Park ecotourism extension through internet network.

3.2.2 Development of an information management system for Sai Yok National Park ecotourism extension through internet network. System Development Life Cycle (SDLC) principles were applied in the system development process as illustrated in Figure 3-3.

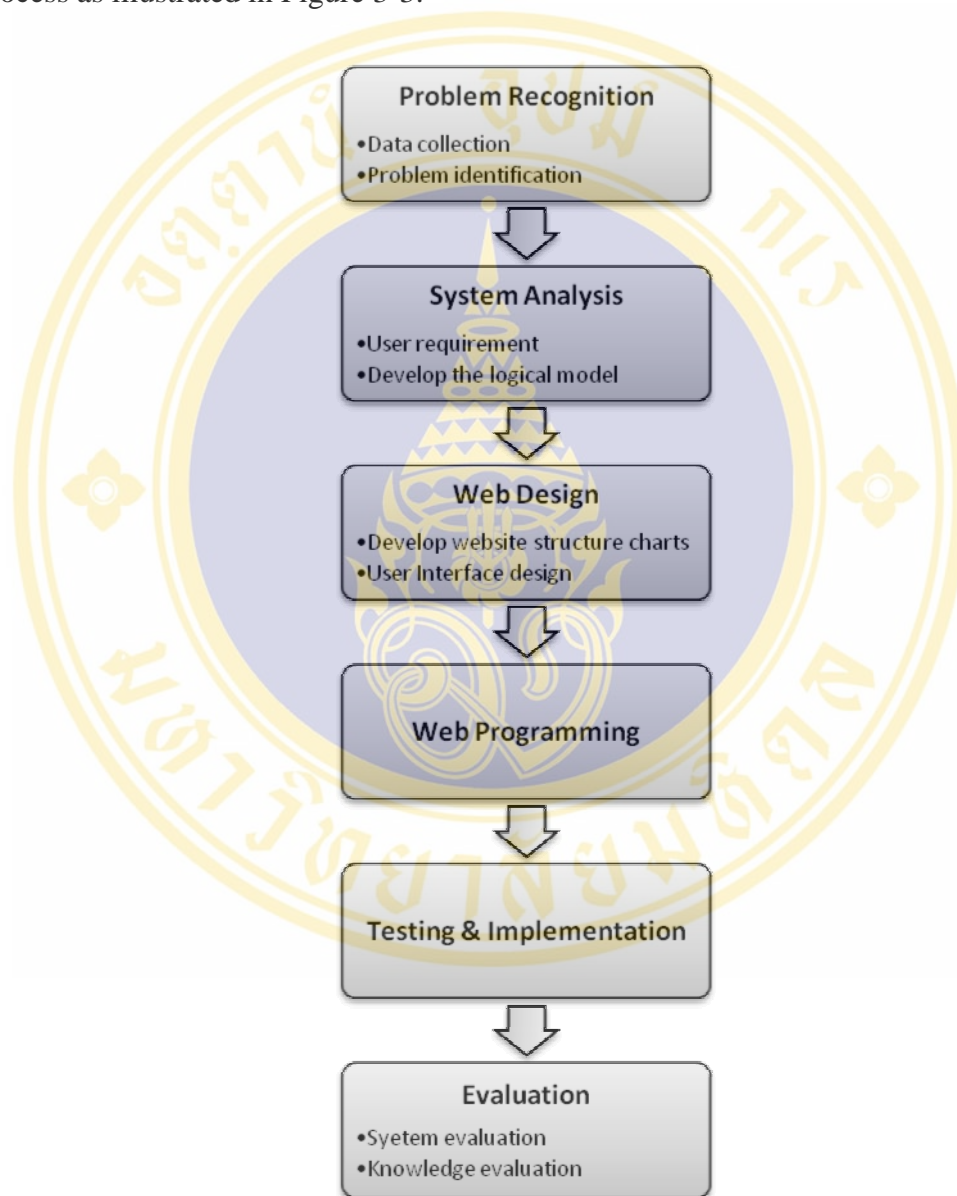


Fig. 3-3 steps of information system development.

3.2.2.1 Problem recognition

In this step, data, situations, and current extension strategies used for Sai Yok National Park ecotourism were collected and studied in order to identify problems and obstacles occurred and consequently, to evaluate the feasibility and to determine the scope of the development of information management model. The model was expected to be adequately clear and inclusive. This step consists of two sub-steps as follows.

1). Data collection

Data relating to current modes of presentation for Sai Yok National Park ecotourism extension were collected by interviewing the park personnel authorities about situations, results of public relation activities, problems faced, future plans for presentation, and opinions on presentation mode via internet network. The researcher also conducted an in-depth survey to find out the park's feasibility and potentiality for equipments expansion and internet network development.

2). Problem identification

Problems were identified from the above data analysis. Scope of examination and ways to solve the problems were determined in order to make the information management on the internet network suitable for the conditions of Sai Yok National Park.

3.2.2.2 System analysis

This step included the analysis of collected data and of the opinions and needs of the information management system users, and the development of a logical model. The two sub-steps were as follows.

1). User requirement

This study specified two groups of users i.e. Sai Yok National Park authorities and the general public. Their opinions and needs concerning characteristics of data and presentation modes through internet network were surveyed. In - depth interview was used with the National Park authorities and 30 sets of questionnaires were distributed to the general public. Prior to the distribution, 20 people were asked to use the questionnaire in order to assure the language and content validity.

2). Developing the logical model

Data from the users' needs assessment and data from earlier collection were together analyzed and developed into a logical model to be used for constructing the more precise information management model for Sai Yok National Park ecotourism extension through internet network. These were illustrated by the researcher - constructed Data Flow Diagram and Context Diagram in chapter 4.

3.2.2.3 Web design

The results of this analysis were used in designing information management system model for Sai Yok National Park ecotourism extension through internet network. The researcher used two steps to design the websites.

1). Developing website structure charts

Website structure was designed by determining components and their connections. Map site was created to show the connections of each of the web pages. The structure was then used as a guideline for programming.

2). User interface design

This step was to design the outlook of the website to present to the system users. The design emphasized attractiveness, uniqueness and systematic sequence of contents in order to induce and pertain users' interests. Also the simplicity of the design would enable the users to easily understand how to use the website.

3.2.2.4 Web programming

The website design was used as a guideline for program writing by which HTML and PHP were employed as principal languages. The main programs used for developing the website were PHP 4, phpMyAdmin 2.8, and MySQL 4.0. Besides, ArcView v.3.2 and Photoshop 7 were used for creating maps and pictures.

3.2.2.5 Implementation testing

Before actual use, the developed website was tested for its accuracy in terms of language, connections of the web components, and contents so that necessary revision and improvement was made.

3.3 Evaluation

This step was divided into two parts.

3.3.1 Satisfaction evaluation

The usage system of the developed website was evaluated by experts in Sai Yok National Park and ecotourism, and thirty people of general public. The instrument employed was the efficiency evaluation form for the usage of information system on internet network for Sai Yok National Park ecotourism extension.

Table 3-1 Point of satisfactory levels for system evaluation.

Level of Satisfactory	Points
High	3
Moderate	2
Low	1

This step uses the points from each person to calculate for average points in each item by using this formula as follow;

$$\bar{X} = \frac{1}{N} \sum_{i=1}^n f_i x_i$$

Define as following;

\bar{X} = Average value

f_i = Frequency of evaluators with evaluation topic in level i

X_i = Point of level i

N = $\sum_{i=1}^n f_i$

And classify into 3 groups by Standard Deviation (SD).

Range of satisfactory level as shown in table 3-2.

Table 3-2 Range of satisfactory level in effectiveness evaluation of users

Level of Satisfactory	Range
High	$> \bar{X} + SD$
Moderate	$\bar{X} - SD \leq x \leq \bar{X} + SD$
Low	$< \bar{X} - SD$

3.3.2 Knowledge evaluation

The users' knowledge gained from using the website both knowledge about Sai Yok National Park and knowledge of ecotourism was evaluated. The first covered natural resources and environment, natural and cultural tourist attraction areas, tourist activities within the national park, historical background and national park management. The latter covered meanings, concepts, components, activities models, and characteristics of ecotourists. For this, thirty sets of pre - post test of learning through information system on internet network for Sai Yok National Park ecotourism extension were given to the general public. Percentage and means were used for the statistical analysis of the evaluation results.

CHAPTER IV

RESULTS

The results of this research were following 3 parts of method as follows:

- Appropriate information for ecotourism extension of Sai Yok National Park via internet network.
- The development of an information management system for ecotourism extension of Sai Yok National Park through internet network.
- The evaluations.

4.1 Appropriate information for ecotourism extension of Sai Yok National Park via internet network

The appropriateness of the information for Sai Yok National Park ecotourism extension was determined in the following three aspects, the order of which runs from the most important consideration respectively:

1) The completeness of content according to academic principles and things people should know about ecotourism. Assist.Prof. Dr.Dachanee Emphandhu was an expert of ecotourism contents who advice and guidance for this research.

2) The information according to the park's authorities needs to present to public including projects, activities, and the campaigns of ecotourism. (The national park (web owner) and system manager). Three personnel staffs were purposively selected to examine and approve appropriate information on Sai Yok National Park and media communication

3) Thirty people were sampled randomly to give data relating to three aspects i.e. needs for Sai Yok National Park ecotourism, their satisfaction in the developed appropriate information.

The analysis of collected data from the documents, general public's opinions, and experts' evaluation and suggestions yielded two main categories of data and information needed i.e. knowledge of ecotourism and data of Sai Yok National Park. The appropriate information was identified as follows. (Table illustrating general public's opinions, in-depth interview of the park authorities, and experts' opinions can be seen in the appendix.)

4.1.1 The knowledge of ecotourism

From the classification and analysis of collected data, experts pointed out that the following contents would be adequate for the ecotourism promotion of Sai Yok national park.)

- The definition of ecotourism
- The principles of sustainable tourism
- The main concepts of ecotourism
- The component of ecotourism
- Types of ecotourism
- Activities for ecotourism
- Appropriated eco-tourists' behavior
- Ecotourism management

Data about ecotourism content bases which park authorities want to present to the public and general public's interests and needs were already included in the experts' list above. Therefore, appropriated information relating to knowledge of ecotourism to be later used in the web design was based on the experts' identification.

4.1.2 The data of Sai Yok National Park.

From the classification and analysis of collected data, most data came from park authorities who specified what should be presented to the public. Besides, they would like to have on-line resources databases, both for spatial and non-spatial data. General public and park authorities thought that ecotourism activities, attractions, and facilities should be presented on the web. Therefore, Sai Yok National Park should provide the following data for the public.

- History
- Dominant features
- Tourist attractions
 - Natural tourist attractions
 - Sai Yok Yai waterfall
 - Sai Yok Noi waterfall
 - Kwa Noi river
 - La Wa cave
 - Daowadung Cave
 - Kaew Cave
 - Historical tourist attractions
 - Historical bridge
 - Japanese militaries' stove
- Activities at Sai Yok national park
 - Walking through nature, nature study
 - Trekking
 - Canoeing
 - White water rafting
 - 'Kun Kitti' Bat watching in Kaew cave
- Facilities
 - Information center
 - Accommodation and camping ground
 - Food and drinks
 - Other facilities
- Natural resources databases of Sai Yok National Park
 - Physical resources
 - Geography
 - Weather
 - Geological resources
 - Soil resources
 - Water resources
 - Biological resources

- Forestry
- Wild animals
- Policy and plans for Sai Yok National Park management
- Articles, knowledge tips from visitors
- Contact address or places for enquiry

4.2 Development of an information management system for ecotourism extension of Sai Yok National Park through internet network.

From the attained appropriate information for ecotourism extension for Sai Yok National Park through internet network, the research applied the principles of System Development Life Cycle (SDLC) in constructing an information management model for the park ecotourism extension. The results are as follows.

4.2.1 Problem Recognition

4.2.1.1 Data collection

The analysis of collected data revealed that Sai Yok National Park has used presentation and promotion media which could only reach limited target groups and were narrowly disseminated. These media were brochures, posters, exhibition boards and direct guide from park authorities at the park's tourist service center. Contents in the presentation were mostly introduction of tourist attractions, activities and facilities provided by the park. Ecotourism contents were very limited. It was found, however, that Sai Yok National Park had policy and guidelines for park management through internet network. But problems and obstacles prevailed.

4.2.1.2 Problem identification

Problems could be identified as follows:

1) **People ware.** Sai Yok National Park lack personnel with adequate competencies to develop and manage websites.

2) **Hardware.** The computers available for use at Sai Yok National Park were those with hardware of rather low performance for website development.

3) **Network.** Sai Yok National Park had no network system that could be linked to the internet system because at the time of this study, the park just made the request of permission to set up the system.

4) **Software.** Sai Yok National Park had no appropriate website development and management program at the time.

4.2.2 System analysis

4.2.2.1 User requirement

From the above analysis, needs for an information management model for ecotourism extension of Sai Yok National Park through internet network can be concluded as follows:

1) The website to be developed should be the inclusive knowledge base for ecotourism and Sai Yok National Park data source for general public's use.

2) The website to be developed should be the medium for receiving opinions and suggestions from people in order to improve and manage Sai Yok National Park.

3) The website to be developed should be the place where ecotourism experiences can be shared with general public.

4) The website to be developed should be used to publicize the activities of Sai Yok National Park.

5) The website to be developed should be easy to access and search in general internet system.

6) The website to be developed should be designed to link with or search for other related data in the internet system.

7) The website to be developed should be easy to manage and could serve two levels of users: general public and system manager. The system manager can modify data on the web.

4.2.2.2 Develop the logical model

From the analysis of needs concerning the information development model for ecotourism extension of Sai Yok National Park, the system structure can be divided into two parts: Static structure and dynamic structure. The structure is illustrated in figure 4-1.

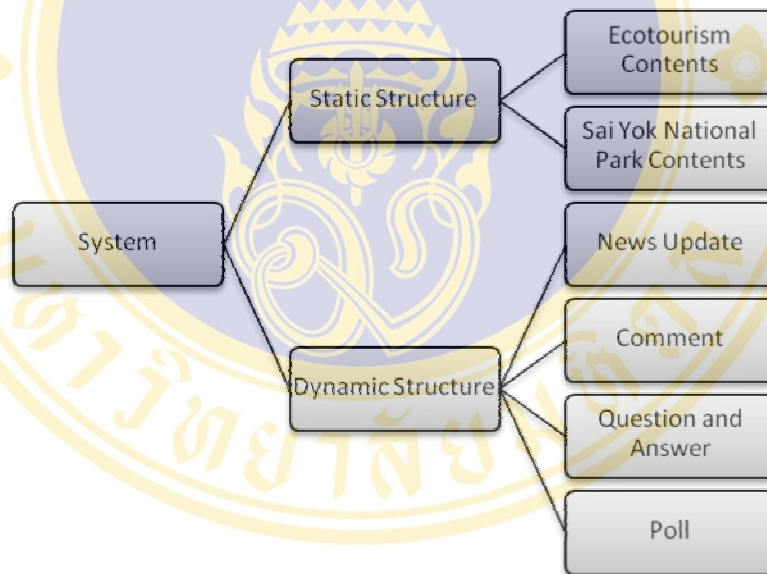


Fig. 4-1 System structure

From the system structure, when considering on the relationship among users, data association and data flow, the association chart can be observed in figure 4-2.

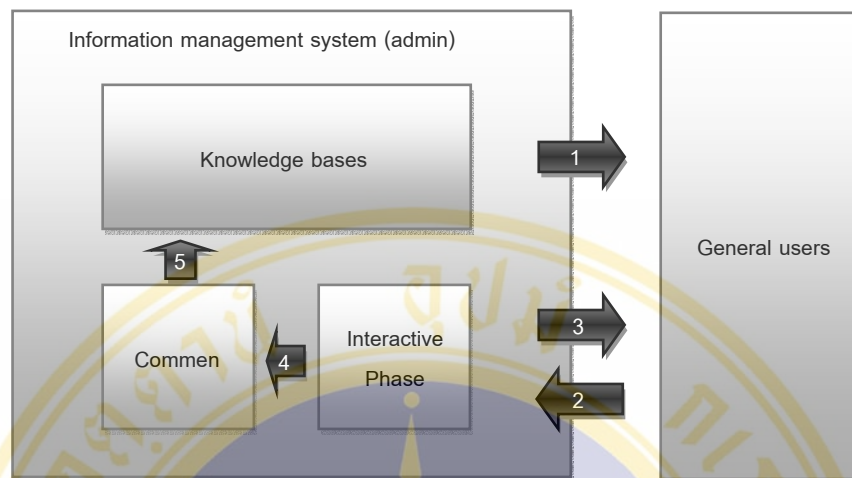


Fig. 4-2 Association chart illustrating relationship among users, data association, and data flow

From the chart, five parts of data flow can be observed.

- 1 = content bases on ecotourism and data of Sai Yok National Park
- 2 = issues and questions raised or suggestions from general public
- 3 = responses, explanations, and news from Sai Yok National Park
- 4 = suggestions and opinions from general public
- 5 = data for improvement of content and databases

4.2.3 Web design

Website was designed into parts as followed:

Static structures used only HTML languages for develop labeled and organized pages.

Dynamic structures applied Simple Machines Forum (SMF), an open source webboard management system from Simple Machines LLC, and modify poll system, three level securities system (for administrator, website member, and guests), and website statistic system with PHP languages.

4.2.3.1 Develop website contents structure

From the above analysis, the appropriate website contents structure for ecotourism extension can be constructed and illustrated in Figure 4-3.

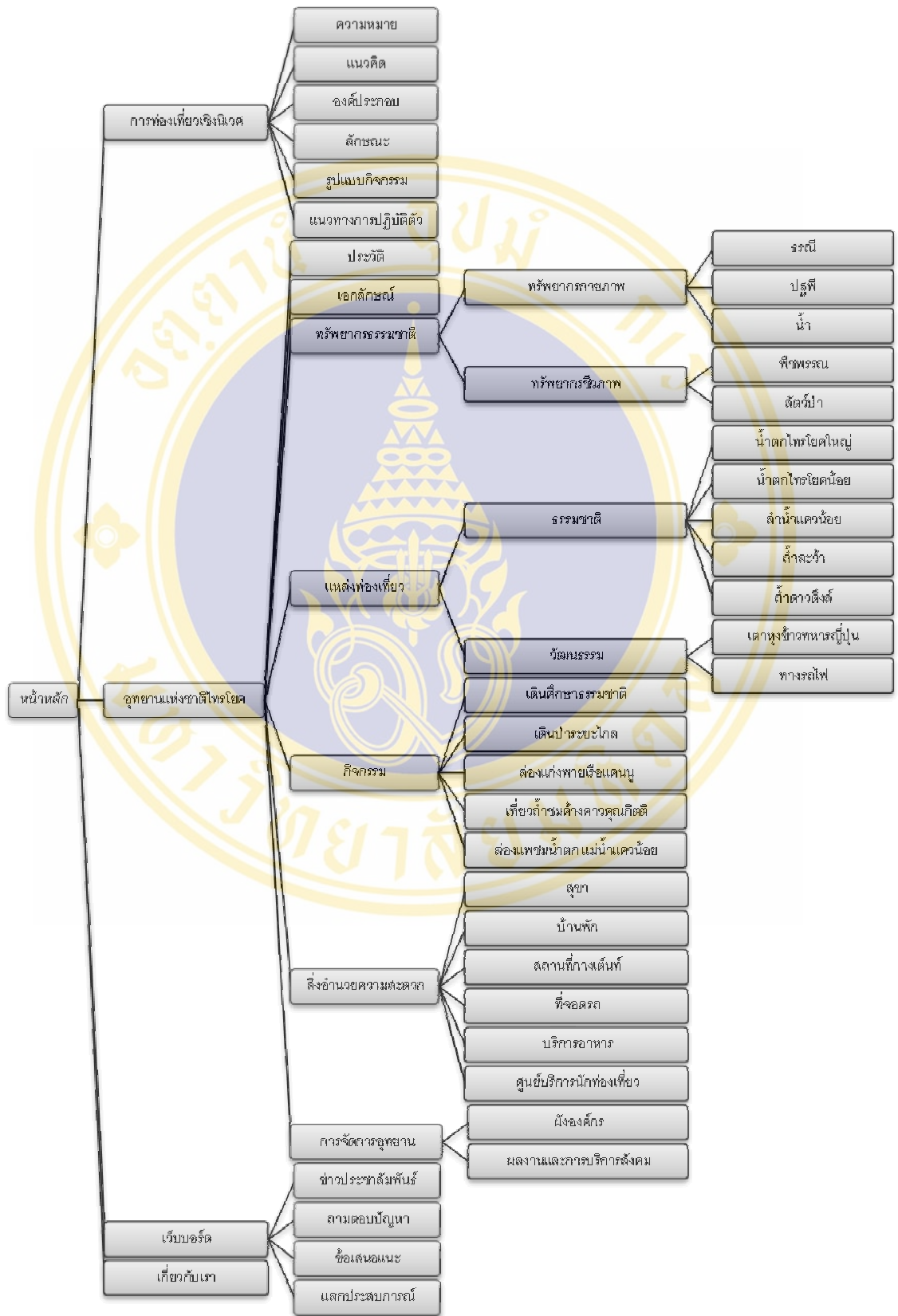


Fig. 4-3 website contents structure.

4.2.3.2 User interface design

In this designed information system for ecotourism of Sai Yok National Park, Karnchanaburi Province, and Graphics User Interface (GUI) was selected due to its capacity to support for using both words and pictures in communication so that users can understand and use the system easily.

4.2.4 Web Programming

Website was then developed. For static structure, the researcher used HTML languages. For dynamic structure used PHP languages, and MySQL was used to connect data and phpMyAdmin program was used for database management. Important details of the website can be concluded as follows:

1) **Homepage** This is the first page of the website which can be linked to other parts of the website both static structure and dynamic structure. There are six main components in this page:

- Main menu
- News update box
- Search box
- Body contents
- Administrator login form
- External links

As illustrated in figure 4-4



Fig. 4-4 homepage (index.html)

2) **Content bases on ecotourism** This page is the main page for knowledge of ecotourism which can be linked to other contents. It contains the topics of the definition of ecotourism, principles of sustainable tourism, concepts of ecotourism, components of ecotourism, types of ecotourism, models of ecotourism activities, guidelines for tourists' behavior, and ecotourism management. This page is illustrated in Figure 4-5.



Fig. 4-5 main page of ecotourism content bases (ecotourism.html).

3) Content bases on Sai Yok National Park This is the main page of Sai Yok National Park data which can be linked to other contents. It covers history of the park, dominant features, tourist attractions, park activities, facilities and services, databases for Sai Yok National Park natural resources, and the park’s policy and management plans. This page is illustrated in figure 4-6.



Fig. 4-6 main page of Sai Yok National Park content bases (saiyok.html).

4) Securities system. The securities system was design for three levels of users, administrator who was completely management system, website member who can view, answer, create topic, and vote poll in webboard, and guest who can only view a webboard. The login form of the securities system is illustrated in figure 4-7.

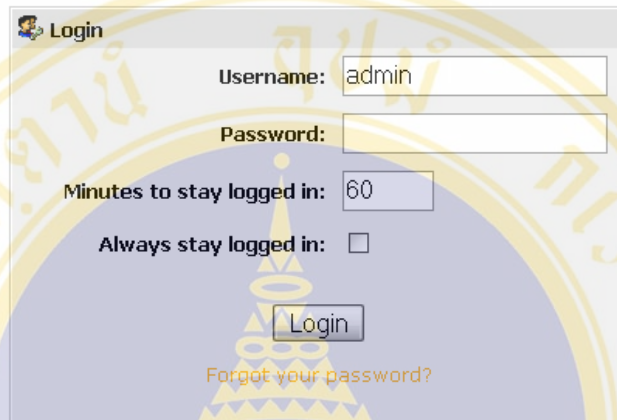


Fig. 4-7 Login form of the securities system.

5) Website statistic system. This part is used for record the number of users who visit website. The sample of website statistic is shown in figure 4-8

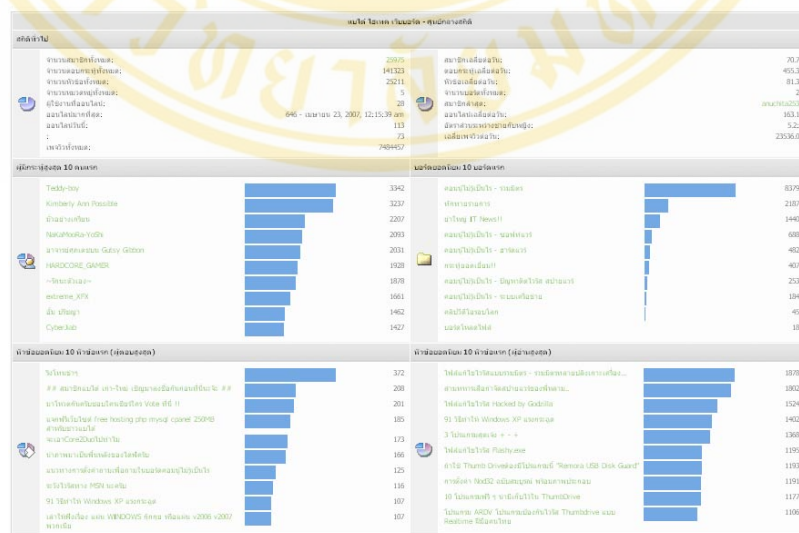


Fig. 4-8 website statistic page.

6) Webboard system This part is used for interactive correspondence among general public, park authorities, and system managers by create and post a question and answer. The sample of webboard is shown in figure 4-9

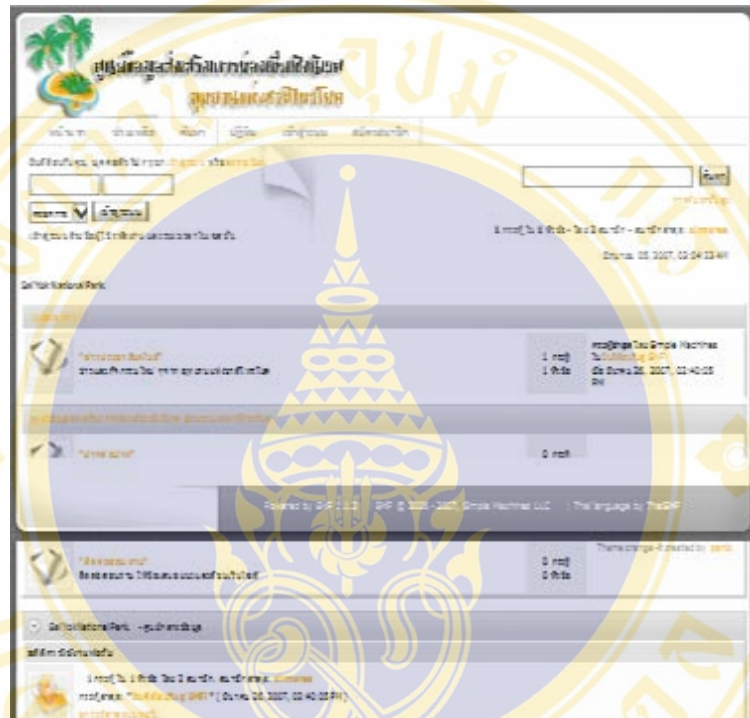


Fig. 4-9 the webboard page.

7) Poll system. This part is used for survey the opinions of users about any contents. The sample is shown in figure 4-10

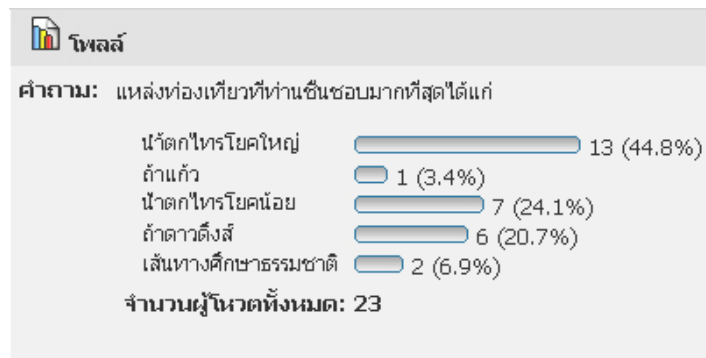


Fig. 4-10 the sample of poll system.

4.3 Information system evaluation

4.3.1 Implementation testing

The result from the system testing could be divided into 3 levels as follows;

1. Database system testing: the accuracy of system performance was tested. Each part of the program was tested by the samples and the results were found to be satisfactory.
2. Sub-function of program testing: Test of the data linked between each parts of subsystem and the results from each subsystem were satisfied.
3. System testing: The author had verified all operations of the system to find out the problems and all of errors. Then it was improved until the complete system could be used with the accurate, rapid and efficient performance.

4.3.2 Satisfaction evaluation

The evaluations of satisfaction in system performance were conducted to include experts' evaluation and general public's evaluation.

4.3.1.1 Sai Yok National Park experts. These were park authorities responsible for promotion and dissemination of park data. Their satisfaction in the designed system was at the good level especially in the parts of data connection, access to the system, interaction among users of all levels, convenience in using, presentation model and contents. Their satisfaction toward data improvement system was at the moderate level. They suggested that this data modification or improvement page should be changed to make it easier for admin to use and that other information download system should be provided so that brochures and announcements could be downloaded.

4.3.2.2 Results on general users’s evaluation Thirty

samples’s satisfaction of the system by generals’ users is presented the table below.

Table 4-1 Level of satisfactory by general users’s evaluation.

Topic	Frequency of satisfactory (f_i)			N	\bar{X}	Level of Satisfactory
	High f_3	Moderate f_2	Low f_1			
Speed						
1. The homepage downloads efficiently.	7	20	3	30	2.13	Moderate
Home page						
2. The homepage is attractive, has strong eye appeal.	19	11	0	30	2.63	High
3. Users’ inter-communication (Webboard, exams, email , poll, etc.)	24	5	1	30	2.77	High
Ease of navigation						
4. Directions are clear and easy to follow.	17	13	0	30	2.57	High
5. The links to other pages within the site are helpful and appropriate.	11	17	2	30	2.30	Moderate
6. Internal and external links are working properly (no dead ends, no incorrect links, etc.)	14	16	0	30	2.47	High
Use of multimedia						
7. Each graphic, Font style, Font size, Color etc., serves a clear purpose.	8	21	1	30	2.23	Moderate
8. The graphics, animations, etc., make a significant contribution to the site.	10	18	2	30	2.27	Moderate
Browser compatibility						
9. Site is equally effective with a variety of browsers such as Netscape and Internet Explorer.	19	11	0	30	2.63	High
Content Presentation						
10. The information is clearly labeled and organized.	22	8	0	30	2.73	High
11. Information is easy to find.	18	12	0	30	2.60	High
12. Website structure.	8	22	0	30	2.27	Moderate
Website Contents						
13. Ecotourism contents.	26	4	0	30	2.87	High
14. Sai Yok National Park contents.	25	5	0	30	2.83	High
Total	228	183	9	420	2.52	High

(Point of satisfactory level i (x_i): High (x_3) = 3, Moderate(x_2) = 2, Low(x_1) = 1)

Their average satisfaction in the system performance was at the high level (Avg. points = 2.52), especially in the parts of website contents, homepage design, browser compatibility, and content presentation. Their satisfaction ease of navigation, user of multimedia, and speed were at the moderate level. In this case the highest satisfaction topic was website contents (Avg. points 2.87 for ecotourism contents and Avg. points 2.83 for Sai Yok National park contents) and the lowest was speed of data loading (Avg. points = 2.13).

4.3.3 Knowledge evaluation

The result of knowledge evaluation by pre-post test of thirty generals' users as shown in table 4-2.

Table 4-2 Topic of knowledge evaluations score Pre-post test

Topic	Pre test (Avg. score)	Post-test (Avg. score)	% changed
Ecotourism concept	6.80	8.21	+14.1
Sai Yok National Park information	5.83	7.17	+13.4
Ecotourism Guidelines For Responsible Travelers	7.03	8.73	+17.0

All topics of knowledge evaluations were increase. The ecotourism guidelines for responsible travelers were the highest percents changed (increased 17 %).

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

According to the research and development of The Information Management through Internet Network for Ecotourism Extension of Sai Yok National Park, Kanchanaburi Province. It's had been concluded as follow:

5.1 Conclusion

The research was conducted using both qualitative and quantitative methodologies. Content bases from related textbooks, academic articles, research studies and other documents concerning ecotourism content bases and data of Sai Yok National Park were collected, analyzed and synthesized. Some in-depth interviews with the park's authorities, ecotourism experts, national park management experts were conducted. Moreover, the questionnaires were used to find out general public's opinions and needs concerning Sai Yok National Park ecotourism extension.

For the development of information management through internet network, system development life cycle (SDLC) principles were applied while HTML and PHP are the principal languages for website programming. The website system potentiality and appropriateness were also evaluated by general public and experts using evaluation forms.

The Result on appropriate information for ecotourism extension of Sai Yok National Park via internet network was found that appropriate information had two main components: the knowledge base on ecotourism and the national park's information. The former included definitions, concepts, principles, components, types, activities in ecotourism, appropriate eco-tourists' behavior, and ecotourism management. The latter included history, dominant features, tourist attractions, activities at Sai Yok National Park, facilities, resources and environment data. And the appropriate website model constructed had significant features i.e. developed from freeware and open source, supportive to both program managers and general

users, convenient for operation, designed interactive system for each level of users and easy to modify data.

Results on the development of an information management system for ecotourism extension of Sai Yok National Park through internet network were responsive to the stakeholders' needs. Results on the evaluations was found that users' satisfaction in the website was found to be at the moderate to high level (Avg. points = 2.52, the website had the potentiality in modification of various aspects Sai Yok National Park ecotourism content bases). And the users of the developed system gain knowledge and understanding about ecotourism including resources and environment of Sai Yok National Park especially in ecotourism guidelines for responsible travelers (increased 17 %)

5.2 Recommendations

For this study, the recommendation could be made for those interested in the improvement of the similar website for future development of efficient system and further studies. The details of recommendation are defined as following.

5.2.1 Recommendations for website development.

These recommendations are the following weak points (topics that got moderate level in satisfaction evaluation) of information system evaluation results as follows:

Download efficiency:

- 1) Used flash animation technique to get more faster data loading.
- 2) Replace image in JPG format with Gif format to decrease files size.
- 3) Reduce the contents per page.

User interface:

- 1) Increase font size to 14 pt.
- 2) Adjust a colour of website to lower brightness and contrast.
- 3) Used flash animation technique to get more users attractive.
- 4) Designe an appropriate graphics with contents.

Web structure:

- 1) Use slide menu to classify topic's contents.
- 2) Add internal website search system (Tag and Keyword).
- 3) Create map-site page to show website structures.

Other recommendations:

1) Sai Yok National Park authorities should be trained concerning developed website programming before edited or updated the system in real use for more efficiently in their operation.

2) Computer hardware and internet system should be supported minimum website programming software requirement. (Microsoft Windows XP requirement)

: PC with 300 MHz or higher processor clock speed recommended

: 128 MB of RAM or higher recommended

: 1.5 GB of available hard disk space

: SVGA (800 x 600) or higher-resolution video adapter and monitor

: CD-ROM or DVD drive

: Keyboard and Microsoft Mouse or compatible pointing device

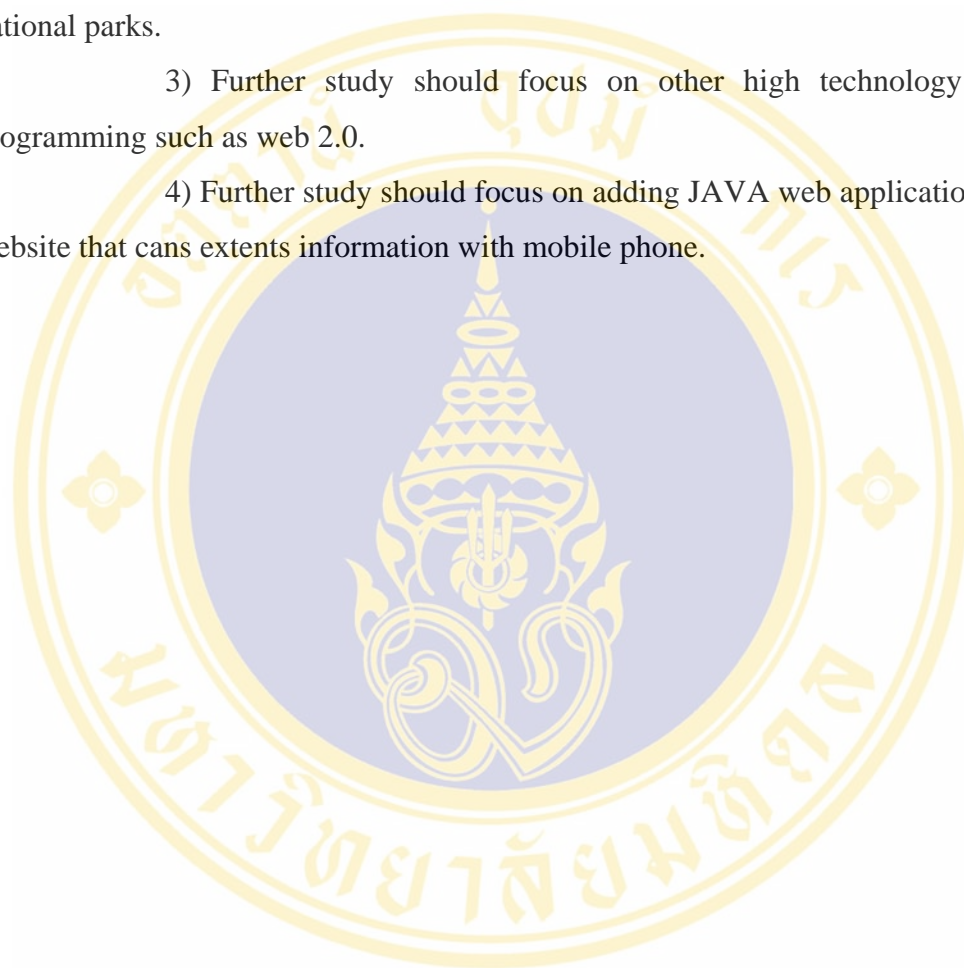
: Hi-speed Internet 256Kbit/s or higher

4) Used Search Engine Optimization (SEO) technique to get the earlier website is presented in the search results, or the higher it ranks.

5) Developed website into Multilanguage support.

5.2.2 Recommendations for further studies.

- 1) Further study should focus on the web using behavior of general public.
- 2) Further study should focus on the comparative studies with other national parks.
- 3) Further study should focus on other high technology of web programming such as web 2.0.
- 4) Further study should focus on adding JAVA web application base to website that can extend information with mobile phone.



BIBLIOGRAPHY

1. Ceballos-Lascurain, H. Tourism. **Ecotourism and Protected Areas**. In Kusler, (ed.) *Eco-tourism and Resource Conservation*, Vol. 1. Eco-tourism and resource conservation project, 1991.
2. The International Ecotourism Society. **Ecotourism definition**, 2003.
Available from: URL <http://www.ecotourism.org/index2.php?what-is-ecotourism> (29 Mar. 2004)
3. Tourism Authority of Thailand (TAT). **Ecotourism**. Available from: URL <http://www.tat.or.th/stat/index.html>. (Aug, 2003)
4. Merg, M. **Defining Ecotourism**, 1999 Available from:
URL <http://www.untamedpath.com/Ecotourism/defining.html> (29 Mar. 2004).
5. Honey, M. **Ecotourism and Sustainable Development: Who Owns Paradise?** Washington D.C.. Island Press, 1999.
6. Fennell, D.A. **Ecotourism: An Introduction**. New York: Rout ledge. Green Globe 21. About Ecotourism, 1999. Available from:
URL <http://www.greenglobe21.com/AboutEcotourism.aspx> (29 Mar. 2004).
7. Strasdas. **Sustainable Tourism Training the Trainers Program**. Principles of sustainable development Ecological Tourism in Europe, 2001 E.T.E. ppt
8. James A. O'Brien. *Introduction to Information Systems: Essentials for the Internetworked*, 2000.
9. Kumar N, **Management Information System**, 1997.
10. Michael Bronzite. **System Development: A Strategic Framework**, 2000.
11. มหาวิทยาลัยเกษตรศาสตร์. **แผนแม่บทการจัดการพื้นที่อุทยานแห่งชาติไทรโยค จังหวัดกาญจนบุรี**. คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์. กรุงเทพฯ, 2535.
12. Kachonchai Bijayendrayodhin, **Internet based learning courseware in homepage making**. Thesis: Master of Science, Environmental and Recourse Study, Mahidol University, 1999.

13. Pannida Viravaidhya. **The Development Of Tourism Data Entry And Information Retrieval System For Trip Planning Via Internet**, Thesis: Master of Science, Environmental and Recourse Study, Mahidol University, 2001.
14. Pongthep Meankeaw. **Information System for Water Quality Monitoring and Management of The Petchburi River**. Thesis: Master of Science, Environmental and Recourse Study, Mahidol University, 2002
15. อารีรัตน์ อนันตสุข. **ระบบสารสนเทศเพื่อการจัดการกิจกรรมวนศาสตร์ชุมชน กรณีศึกษาฝายพัฒนามวนศาสตร์ชุมชน กรมป่าไม้**. วิทยานิพนธ์ปริญญาโทมหาบัณฑิต คณะสิ่งแวดล้อมและทรัพยากรศาสตร์ มหาวิทยาลัยมหิดล, 2548
16. Sumalee Phavasuttipisit. **Information system to support the ecotourism activities of khao chamao- khao wong national park**. Thesis: Master of Science, Environmental and Recourse Study, Mahidol University, 1998.
17. Chalatorn Tanprasert. **Knowledge and attitude on ecotourism of vocational education college students in kanchanaburi**. Thesis: Master of Science, Environmental and Recourse Study, Mahidol University, 2003.
18. Suchaya Pinyo, **The construction of multimedia computer assisted instructions on "ecotourism" for youth**, Thesis: Master of Science, Environmental and Recourse Study, Mahidol University, 2003.
19. วรณพร วณิชชานุกร. **การท่องเที่ยวเชิงอนุรักษ์**. กองวิชาการและฝึกอบรม การท่องเที่ยว. กรุงเทพฯ, 2540.
20. **การท่องเที่ยวแห่งประเทศไทย. ข้อมูลแหล่งท่องเที่ยวและสิ่งอำนวยความสะดวกทางการท่องเที่ยว**. กรุงเทพฯ, 2541.
21. สุรัตน์ วรางค์รัตน์. **การท่องเที่ยวเชิงอนุรักษ์ จ. สกลนคร**. โครงการศูนย์รวบรวมข้อมูลสิ่งแวดล้อม ศิลปกรรม สำนักศิลปวัฒนธรรม สถาบันราชภัฏสกลนคร, 2541 .
22. สร้อยทิพย์ สมัคร์เขตรการณ. **การพัฒนาคู่มือศึกษาธรรมชาติเพื่อการท่องเที่ยวเชิงนิเวศประจำเส้นทางศึกษา ธรรมชาติอุทยานแห่งชาติน้ำหนาว**. กรุงเทพฯ, 2543.
23. ซาลี นาวานุเคราะห์. **โครงการศึกษาและจัดทำข้อมูลสารสนเทศภูมิศาสตร์ จังหวัดบุรีรัมย์**. กรมส่งเสริมคุณภาพสิ่งแวดล้อม. กรุงเทพฯ, 2545.

24. ดร.รชนี เอมพันธุ์. การจัดการการท่องเที่ยวในอุทยานแห่งชาติ. เอกสารประกอบการสอน วิชา 308511 คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์, 2541.
25. ดร.รชนี เอมพันธุ์, สุทัศน์ วรรณเลิศ และ เรณูกา รัชโน. คู่มือการจำแนกเขตท่องเที่ยวเชิงนิเวศโดยหลักการช่วงชั้นโอกาสด้านนันทนาการ. คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์ เสนอต่อ การท่องเที่ยวแห่งประเทศไทย. บริษัทเท็กซ์ แอนด์เจอร์นัล พับลิเคชัน จำกัด. กรุงเทพฯ, 2547.
26. Shores, J.N. **Dealing with Definitions: When is it ecotourism? And when is it not?**, 2003. Available from: URL http://www.geocities.com/shores_system/ecot/definitions.html (29 Mar. 2004)
27. Simmons, D, G. **Eco-tourism: product or process**. Paper presented to the Manaaki Whenua (Cherishing the Land) Conference, Landcare Crown Research Institute, Te Papa, Wellington, 21st April, 1999.
28. น.ภววรรณ ฐานะกาญจน์ สุรเชษฐ์ เศรษฐมาต ดร.รชนี เอมพันธุ์ นัฏฐ พิษกรรม เล็ก เดิมตระกูล สมเกียรติ สิงหรวุฒิ และสิริพงษ์ ราชศิริ. คู่มือพัฒนาและออกแบบสิ่งอำนวยความสะดวกในแหล่งท่องเที่ยวแบบการท่องเที่ยวเชิงอนุรักษ์. การท่องเที่ยวแห่งประเทศไทย. กรุงเทพฯ, 2541.
29. เสาวลักษณ์ นวเจริญกุล. พฤติกรรมการท่องเที่ยวเชิงนิเวศของนักท่องเที่ยวชาวไทยในเขตอุทยานแห่งชาติไทรโยคจังหวัดกาญจนบุรี. วิทยานิพนธ์ปริญญาโทมหาบัณฑิต คณะสิ่งแวดล้อมและทรัพยากรศาสตร์ มหาวิทยาลัยมหิดล, 2541.
30. ยศ สันตสมบัติ และคณะ. การท่องเที่ยวเชิงนิเวศ ความหลากหลายทางวัฒนธรรมและการจัดการทรัพยากร. เชียงใหม่ : โรงพิมพ์นพบุรีการพิมพ์, 2544.
31. สถาบันวิจัยวิทยาศาสตร์และเทคโนโลยีแห่งประเทศไทย. รายงานสรุปการดำเนินการเพื่อกำหนดนโยบายการท่องเที่ยวเพื่อรักษาระบบนิเวศ. ม.ป.ท, 2540.
32. Keith Darlington. **Effective Website Development: Tools and Techniques**, 2005.
33. Mader, R. Definitions. Available from: URL <http://www.planeta.com/ecotravel/tour/definitions.html> (29 Mar. 2004).
34. สุรเชษฐ์ เศรษฐมาต. การสื่อความหมายธรรมชาติ. เอกสารโรเนียวประกอบการสอนวิชาเทคนิคการสื่อความหมายสิ่งแวดล้อม ภาควิชาอนุรักษ์วิทยา คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์, ไม่ระบุปี พ.ศ..
35. สุระ พัฒนเกียรติ. ระบบภูมิสารสนเทศในทางนิเวศวิทยาและสิ่งแวดล้อม. (พิมพ์ครั้งที่ 1). กรุงเทพฯ. ห้างหุ้นส่วนจำกัด โรงพิมพ์ยูไนเต็ดโปรดักชั่น, 2546.

36. ศูนย์วิจัยป่าไม้. คู่มือพัฒนาและออกแบบสิ่งอำนวยความสะดวกในแหล่งท่องเที่ยวแบบการท่องเที่ยวเชิงอนุรักษ์. คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์ เสนอต่อ การท่องเที่ยวแห่งประเทศไทย, 2541.
37. พิมพ์ลภัส ชันหลวง. ผลกระทบทางจิตวิทยาและการกำหนดขีดความสามารถทางจิตวิทยาของแหล่งนันทนาการประเภทน้ำตก. วิทยานิพนธ์ปริญญาโทบัณฑิต บัณฑิตวิทยาลัย มหาวิทยาลัยเกษตรศาสตร์, 2545.
38. Pinfield G. **Sustainability indicators: a new tools for evaluation?** Farthing SM ed Evaluation of local environmental policy. Aldershot, Avebury ,1997.





APPENDEX A



“ซึ่งมีวัตถุประสงค์ในการนำข้อมูลไปใช้ประโยชน์ทางการศึกษาเท่านั้นและไม่เปิดเผย”

ชื่อผู้ให้สัมภาษณ์.....
ที่อยู่ปัจจุบัน.....

ผู้สัมภาษณ์ : นายภาลิสฎ์ ไชยสร : วันที่ สัมภาษณ์ 2549

ส่วนที่ 1 ข้อมูลทั่วไปส่วนบุคคล

1.1 เพศ

- ชาย
- หญิง

1.2 อายุ

- น้อยกว่า 15 ปี
- 15-25 ปี
- 25-60 ปี
- มากกว่า 60 ปี

1.3 ระดับการศึกษา

- ประถมศึกษา
- มัธยมศึกษา
- ปริญญาตรี
- ปริญญาโท
- อาชีวศึกษา
- ไม่ได้เข้ารับการศึกษ
- อื่น ๆ ระบุ.....

1.4 อาชีพ

- นักเรียน
- นักศึกษา
- ข้าราชการ
- พนักงานเอกชน
- ค้าขาย
- อื่น ๆ ระบุ.....

1.5 รายได้เฉลี่ยต่อเดือน

ระบุบาท

ส่วนที่ 2 ข้อมูลเกี่ยวกับลักษณะของข้อมูลที่เหมาะสมต่อการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยค โดยผ่านเครือข่ายอินเทอร์เน็ต

2.1 ลักษณะของเนื้อหาที่เหมาะสมต่อการนำเสนอ ได้แก่

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

2.1 อันดับของเนื้อหาที่ท่านให้ความสำคัญ 5 อันดับแรก

- 1)
- 2)
- 3)
- 4)
- 5)

**ส่วนที่ 3 ข้อมูลเกี่ยวกับรูปแบบของข้อมูลที่เหมาะสมต่อการส่งเสริมการท่องเที่ยวเชิงนิเวศ
ของอุทยานแห่งชาติไทรโยค โดยผ่านเครือข่ายอินเทอร์เน็ต**

3.1 รูปแบบของเนื้อหาที่เหมาะสมต่อการนำเสนอ ได้แก่

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

ข้อเสนอแนะอื่น ๆ

.....

.....

.....

.....

.....

.....

.....

.....

ขอบคุณครับ

APPENDEX B

แบบบันทึกการสัมภาษณ์เชิงลึก

เรื่อง

ลักษณะและรูปแบบการนำเสนอข้อมูลผ่านเครือข่ายอินเทอร์เน็ต
ที่เหมาะสมต่อการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยค

การสัมภาษณ์นี้เป็นส่วนหนึ่งของการทำวิทยานิพนธ์ของนักศึกษาหลักสูตรวิทยาศาสตรมหาบัณฑิต
สาขาเทคโนโลยีที่เหมาะสมเพื่อการพัฒนาทรัพยากรและสิ่งแวดล้อม
คณะสิ่งแวดล้อมและทรัพยากรศาสตร์ มหาวิทยาลัยมหิดล

ปีการศึกษา 2549

“ซึ่งมีวัตถุประสงค์ในการนำข้อมูลไปใช้ประโยชน์ทางการศึกษาเท่านั้นและไม่เปิดเผย”

รายละเอียดผู้เชี่ยวชาญ

ชื่อ-นามสกุล.....ตำแหน่ง.....

สังกัด.....

สาขาที่เชี่ยวชาญ.....

ผู้สัมภาษณ์ : นายภาติษณ์ ไชยสร : วันที่ สัมภาษณ์ 2549

หัวข้อการสัมภาษณ์เชิงลึก

1. การส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยคในปัจจุบัน

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

2. แผนการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยคในอนาคต

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

3. ความคิดเห็นเกี่ยวกับการใช้เว็บไซต์เป็นสื่อในการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยค

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

4. ปัญหาและอุปสรรคเกี่ยวกับการใช้เว็บไซต์เป็นสื่อในการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยค

.....

.....

.....

.....

.....

.....

.....

.....

5. ความคิดเห็นเกี่ยวกับลักษณะและรูปแบบการนำเสนอข้อมูลผ่านเครือข่ายอินเทอร์เน็ตที่เหมาะสมต่อการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยค

1) ลักษณะข้อมูลที่เหมาะสมต่อการส่งเสริมการท่องเที่ยวเชิงนิเวศของอุทยานแห่งชาติไทรโยค

.....

.....

.....

.....

.....

.....

.....

.....

2) รูปแบบการนำเสนอข้อมูลที่เหมาะสมต่อการส่งเสริมการท่องเที่ยวเชิงนิเวศผ่านเครือข่ายอินเทอร์เน็ต

.....

.....

.....

.....

.....

.....

.....

.....

ข้อเสนอแนะอื่น ๆ

.....

.....

.....

.....

.....

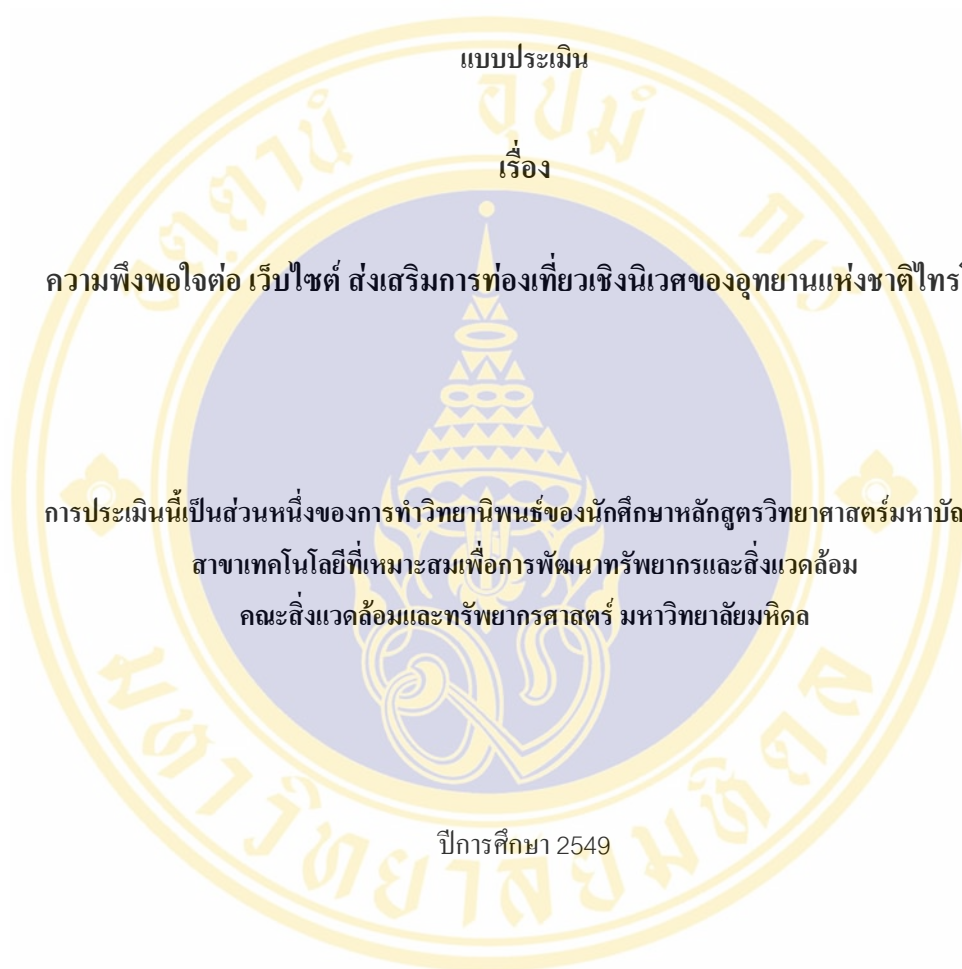
.....

.....

.....



APPENDEX C



“ซึ่งมีวัตถุประสงค์ในการนำข้อมูลไปใช้ประโยชน์ทางการศึกษาเท่านั้นและไม่เปิดเผย”

ชื่อผู้ให้สัมภาษณ์..... ที่อยู่ปัจจุบัน.....

ผู้สัมภาษณ์ : นายภาสิษฐ์ ไชยศรี : วันที่ สัมภาษณ์ 2549

ส่วนที่ 1 ข้อมูลเกี่ยวกับผู้ประเมินระบบ

1.1 เพศ

- ชาย หญิง

1.2 อายุ

- น้อยกว่า 15 ปี 15-25 ปี
 25-60 ปี มากกว่า 60 ปี

1.3 ระดับการศึกษา

- ประถมศึกษา มัธยมศึกษา ปริญญาตรี
 ปริญญาโท อาชีวศึกษา ไม่ได้เข้ารับการศึกษ
 อื่น ๆ ระบุ.....

1.4 ความรู้และการใช้งานคอมพิวเตอร์

- ไม่รู้เลย รู้พอใช้งานได้ รู้ในระดับดี

1.5 การใช้งานโปรแกรมฐานข้อมูลและพัฒนาเว็บไซต์

- ไม่เคย เคย

ส่วนที่ 2 ความพึงพอใจด้านต่าง ๆ

ประเด็น	ระดับความพึงพอใจ		
	สูง	กลาง	ต่ำ
Speed			
1. ความเร็วในการดาวน์โหลดข้อมูลและแสดงผล.			
Home page			
2. ความประทับใจแรกเมื่อเห็นเว็บไซต์.			
3. ความสามารถในการโต้ตอบกับผู้ใช้งาน (Webboard, exams, email, etc.)			
Ease of navigation			
4. ความชัดเจน, เข้าใจ เกี่ยวกับการใช้งาน.			
5. ความเหมาะสมของการเชื่อมต่อในส่วนต่าง ๆ ทั่วภายนอก.			
6. ความถูกต้องของการเชื่อมต่อในส่วนต่าง ๆ			

ประเด็น	ระดับความพึงพอใจ		
	สูง	กลาง	ต่ำ
Use of multimedia			
7. สีและลักษณะตัวอักษร.			
8. การออกแบบกราฟิก.			
Browser compatibility			
9. ความเหมาะสมกับ Browser ที่ใช้.			
Content Presentation			
10. ความชัดเจนของรูปแบบการนำเสนอข้อมูล.			
11. การค้นหาข้อมูล.			
12. โครงสร้างเว็บไซต์.			
Website Contents			
13. เนื้อหาการท่องเที่ยวเชิงนิเวศ.			
14. ข้อมูลของอุทยานแห่งชาติไทรโยค.			

ส่วนที่ 3 ข้อเสนอแนะอื่นๆ

.....

.....

.....

.....

.....

.....

.....

.....


.....

.....

.....

ขอบคุณครับ

BIOGRAPHY



NAME Mr.Pasit Chaisorn

DATE OF BIRTH March 5, 1981

PLACE OF BIRTH Chiang Mai, Thailand

INSTITUTIONS ATTENDED Kasetsart University, 2003 :
B.Sc.(Environmental Science)
Mahidol University, 2007 :
M.Sc. (Appropriate Technology
for Resources and Environment
Development)

HOME ADDRESS 15 Sirorot Rd. Soi 3, Suthep,
Muaeng District, Chiang Mai,
Thailand 50200

Phone +6653808876

E-Mail TheGargz@hotmail.com