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**ENVIRONMENTAL EDUCATION ORGANIZING MODEL
OF THE TEMPLES
LOCATED IN THE VICINITY OF BANGKOK METROPOLIS**

PRAPAPORN CHULILUNG
≡

**With compliments
of**

บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล

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OF THE TEMPLES
LOCATED IN THE VICINITY OF BANGKOK METROPOLIS**

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was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Doctor of Education (Environmental Education)

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This study intends to propose an appropriate model to facilitate the organization of environmental education that can be implemented by a temple. The model is synthesized from the activities of three temples located in the vicinity of the Bangkok Metropolitan area that have organized environmental education programs, namely Wat Panyanantaram, Pathum Thani; Wat Asokaram, Samutprakarn; Wat Klang Ku Wieng, Nakhon Pathom. Qualitative and quantitative methods were adopted. The model formulated in this research was examined by experts before being formatted.

The findings reveal four components of the model of environmental education, namely resources, environmental education procedures, supporting factors, and roles of the temple in environmental education. Resources, comprise having qualified personnel, management practices that adapt dhamma principles as their basic foundation, the application of available equipment to facilitate the learning process, and the solution of budgeting problems by seeking external cooperation. Environmental education procedures comprise body of knowledge or content, methods, activities, media, and evaluation. Supporting factors are categorized into two groups, namely internal factors and external factors. Roles of the temple in environmental education can be divided into three categories: pro-active roles, reactive roles, and supportive roles. Temples can contribute through an effective organization of environmental education by providing basic resources for environmental education procedures in line with target group characteristics and supportive factors that will enhance effective implementation of the temple's environmental education.

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ประภาพร ชูสิทธิ์ : รูปแบบการจัดสิ่งแวดล้อมศึกษาในวัด ในเขตปริมณฑลของกรุงเทพมหานคร (ENVIRONMENTAL EDUCATION ORGANIZING MODEL OF THE TEMPLES LOCATED IN THE VICINITY OF BANGKOK METROPOLIS). คณะกรรมการควบคุมวิทยานิพนธ์ : สิริชัย ชินะตั้งกูร , Ph.D., วินัย วีระวัฒนานนท์ , Ph.D. , พระมหาต่วน สิริธมโม , Ph.D., 261 หน้า. ISBN 974-04-2349-3

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อนำเสนอรูปแบบการจัดสิ่งแวดล้อมศึกษาที่วัดสามารถดำเนินการได้อย่างเหมาะสม เป็นการศึกษาโดยใช้กรณีศึกษาจากวัดในจังหวัดปริมณฑลของกรุงเทพมหานคร ซึ่งมีการจัดสิ่งแวดล้อมศึกษาอย่างเป็นรูปธรรมจำนวน 3 แห่ง ได้แก่ วัดปัญญานันทาราม จังหวัดปทุมธานี วัดโสภาราม จังหวัดสมุทรปราการ และวัดกลางคูเวียง จังหวัดนครปฐม การศึกษาใช้วิธีการเชิงคุณภาพและเชิงปริมาณ รูปแบบการจัดสิ่งแวดล้อมศึกษาในวัด ในเขตปริมณฑลของกรุงเทพมหานคร ที่นำเสนอได้ผ่านการตรวจสอบจากผู้ทรงคุณวุฒิก่อนนำเสนอเป็นรูปแบบที่เหมาะสม

ผลการวิจัยพบว่า รูปแบบการจัดสิ่งแวดล้อมศึกษาในวัดมีองค์ประกอบ 4 ประการ ได้แก่ ทรัพยากร กระบวนการสิ่งแวดล้อมศึกษา ปัจจัยสนับสนุน และบทบาททางสิ่งแวดล้อมศึกษาของวัด โดยในด้านทรัพยากรประกอบด้วย บุคลากรที่มีคุณภาพ การบริหารจัดการโดยนำแนวปฏิบัติในพระพุทธศาสนาเป็นพื้นฐาน มีการนำวัสดุอุปกรณ์ที่มีอยู่มาประยุกต์ให้เกิดประโยชน์ในการเรียนรู้ และแก้ไขปัญหาด้านงบประมาณที่จำเป็นต้องใช้โดยการขอความร่วมมือ ด้านกระบวนการสิ่งแวดล้อมศึกษาประกอบด้วย องค์ความรู้หรือเนื้อหา วิธีการ กิจกรรม สื่อ และการประเมินผล และด้านปัจจัยสนับสนุนสามารถแบ่งออกเป็น ปัจจัยภายในและปัจจัยภายนอก ส่วนบทบาททางสิ่งแวดล้อมศึกษาของวัดสามารถดำเนินไปได้ 3 ทิศทาง ได้แก่ บทบาทเชิงรุก บทบาทเชิงรับ และบทบาทเชิงสนับสนุน ซึ่งวัดสามารถแสดงบทบาทในการจัดสิ่งแวดล้อมศึกษาอย่างมีประสิทธิภาพได้ด้วยการนำทรัพยากรที่มีอยู่โดยพื้นฐานมาประยุกต์เข้าสู่กระบวนการสิ่งแวดล้อมศึกษาโดยพิจารณาให้สอดคล้องกับลักษณะของกลุ่มเป้าหมายและมีปัจจัยสนับสนุนเป็นสิ่งเกื้อกูลให้การจัดสิ่งแวดล้อมศึกษาของวัดเป็นไปอย่างมีประสิทธิภาพ

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CHAPTER I

INTRODUCTION

1.1 Background and Significance of the Problem

In the present time, the deterioration and non-symmetry of natural resources along the environmental pollution is the domain issue of discussion. The general recognition focuses on the human being violence. The human being is the prime mover of the environmental problem. It is believed that formal and non-formal environmental educations are measures that are able to solve and prevent environmental problems, as well as give positive outcomes in the long run. The environmental education is the process of providing knowledge, instill correct attitudes, and properly shape good performance for the people.

As for the Kingdom of Thailand, there are many organizations both governmental and non-governmental agencies playing an important role in disseminating environmental educations. Although, the organizations introduce various methods and techniques and spend an extravagant budget in environmental education on the people, the environmental pollution is still a critical problem in the present time. Kaewthep, K. (1992 : 9-16) noted the weak point of this issue in that pollution dissolutions were mainly under the responsibility of the formal sectors, such as governmental, non-governmental, as well as business organizations. As for the communities, such as private development organizations, rural people, educational

institutions, mass media, especially religious institutions in particular, they should be active participants and make use of available information to help resolve environmental pollution problems. Among the social communities, religious institutions, particularly Buddhism, is able to play a significant role to assist the formal organization to solve environmental problems (to compensate on the weak points of the environmental problem dissolution). The religious institution can play its role both in teaching and means of practice in accordance with the religious rules. In the substance of preach, Buddhism is a religion that basically concerns with the natural environment. The core of Lord Buddha's teaching graciously preaches human being to balance their living with natural environment and survive without unnecessary environmental exploitation. Furthermore, some modes of religious practice, such as conscious development, meditation, prayers, are also effective means to create a sense of harmony with natural environment. As for the Thai society, the social institution that still exercise relatively much influence over the Thai people's thought, believe, and vision is Buddhism. The Buddhism's system of thinking and believe has had an influence over the thinking, believe, and behavior of the Thai people for a long time (Suksamran, S., 1987 : 11).

Within the Kingdom, temples and monks have been important institutions and centers of the Thai people's peaceful mind since the ancient time. The evidence is the fact that the temple has been the center of cultural activities, such as the community's ritual practice; the government's civil service activities; the emergency ward; the temperament court; the entertainment venue; and schooling institution for the noble and common men's children. Anyhow, when the Kingdom welcomed

western civilization and noblemen were in favour of sending their children to study in Europe and America, the new forms of institutions, that functioned on specialized duty such as hospital, court, theatre, and school were introduced to the Thai society. The role of the temple in schooling therefore gradually vanished. The temple's prosperous cultural center, as a result, remained as only the ritual activities. (Office of the National Culture Commission , 1996 : 73)

At present, the environmental conservation movement is a globalization trend and the Thai society will need inter-disciplinary science to cope with it. The knowledge comprises philosophy, sciences, social science, human science, sociology, anthropology, economics, political science, governance, and international relations. The religion will inevitably get involved with the above – mentioned science in one way or another. (Wasi, P., 1996b : 124-125). Among emerging changes within the society, there are some monks and some temples trying to be a part of the environment crisis dissolution attempt by utilizing the temple's potential. Their work are demonstrated in the form of environmental conservation activities like growing trees, Providing of waters resources, upgrading temple area to accommodate religious activities, including the temple's condition applicable as a source of schooling for the public. The afore – mentioned approach not only recovers the public's faith, but also helps to some certain extent decrease the environmental pollution which is an important issue to serve the survival of human beings. Taking part in the environmental education is a significant step in helping the country's environmental conservation and pollution dissolution attempts.

The significant roles of the temple in environmental education can be elaborated as follows:

1) a temple is an institution that provides education through several means.

Kaewdaeng, R., (2000 : 4-6) highlighted the role of the temple in his paper on “The Buddhism’s role and Educational Reform” presented at the conference held by the Division of Religious, Office of the National Education Commission, and that the vital institution in the future of the country is temple. The Code of National Education, 1999 having been in force since August 20, 1999, has an implication that the schooling role of the temple will return in the future. From the standpoint of the Code, a temple is a school, a center of education, and a source of learning. The Code of National Education, moreover, obviously regulates the temple authority to arrange the education plan into three systems:

System 1: The formal education will be adopted according to the public school system.

System 2: The non-formal education will facilitate the transfer of learner’s credits to formal education system.

System 3: The informal education, such as preaching on auspicious days, broadcasting knowledge by radio and television. Previously, people who came to learn in the temple did not consider the education, what is now known as the informal education.

Learner groups can be classified into three main categories:

Group 1: Monks and novices, totalling about 300,000, is the target-group of learners studying in the school system (formal system).

Group 2: Youths and juvenile, totalling about 14 million people, present in both in formal and non-formal schoolings.

Group 3: Elites and common people who learn to be disciplinarians.

Based on the credibility of the temple's schooling, the temple therefore is a potential institution to impulse the creation of learning, consciousness, and environmental conservation in large scale. As Srivichien, K. (1984 : 107-115) has mentioned, one of the roles of the temple in the future is the leading example in the areas of neatness, cleanliness, and economy.

2) a temple is the center of the public.

Since the temple is a natural center place for the public, it can be a place of knowledge contribution without having to recruit anyone to formally participate in forms of training and seminar. Environmental education can be provided in the forms of formal, nonformal, and informal education which facilitates a cost-saving concern.

3) a temple is a source of ready – provided resources of educational provision.

Most temples have vast empty space, buildings, and equipment that facilitate educational management.

4) a temple is a ready - provided source of human resource.

The significant human resources of the temple are monks. Most Thais are Buddhism who pay respect to and prepare to perform and practise according to the monks' preaching. Wasi, P. (1996a : 124) noted in the article "Monks and social awareness" that as trees were being grown in the area of 30,000 temples, it is not only to supplement the forest areas to the country and oxygen for human beings to breath, but also to socialize the public to follow an example.

He further commented that the innovation without the participation of religious institution is like shutting the door against a large treasure trove (monks and local wisdom). Development in the modern era that shows extensive participation of monastic institution could result in the deterioration of religious institution and the fading of the monks' roles in the society (Wasi, P., 1996a : 41 – 42)

5) Participation of the temple in environmental education could lessen public faith crisis to the religious institute.

Buddhism is the Kingdom of Thailand's religion, having the temple as symbolic representation. The temple, in the past, was the center of a community. As time passes, relationship between people in the community and the temple become less dependent. This incident is a result of the temple becoming less valuable in the eyes of people. There are many degenerated temples that are soiled, dirty, and disordered, effecting the faith of wat - goers. Such a condition makes people behave distantly toward the temple and non-submissively to the monks (Department of Religious Affairs, 1986 : 4). The study of Prommapan, B. and Wongsunthorn, K.

(1996) reveals that the faith crisis comes from monks who do not perform in accordance with the rule of discipline; follow monkhood ways of conduct and seek conventional dhamma conduct. Furthermore, some external factors such as modernization, media presentation and so on are also invoking causes of people behaving coldly toward the temple. Mass media sometimes present temple images in a negative way.

Thus, if the temple assumes its role in organizing environmental education, the temple itself will be a good learning place for common people and encouraging source for monks to rebehave themselves as a good example for the community as they always did in the past. Generally, Lord Buddha's teaching (regulations) and the law of dhamma would emphasize good harmony of nature and peaceful life within the society.

Thailand is currently facing the situation of environmental deterioration and scarce resource. Every individual of the society has to bear responsibility and cooperate with each other to restore good environmental condition to the best of one's ability. Out of 61 million people of Thailand, 57 million of them or 94 percent of the population are Buddhism. There are 31,111 temples around the Kingdom. The Kingdom also has a total number of 363,666 ordained persons, classified as 265,791 monks, and 97,875 novices residing in the temples around the Kingdom. (Department of Religious Affairs, 2000 : 3, 5) Besides the above – mentioned potential of the temple in environmental education, there apparently are some monks and some temples trying to exert the institution's potential to environmental conservation activities in various tactics and as a result reaching some impressive accomplishments.

The precedent accomplishments, somehow, have not been studied in formal or academic manner. Data and information, therefore, are not readily available either in basic format for study or practical purposes.

The afore – mentioned accomplishment of the temple on environmental conservation has created curiosity in the researcher to investigate the organization of the temple's environmental education. The outcome of the study will be beneficial to other temples that will adopt similar environmental education programs in the future.

1.2 Research Questions

The researcher intends to investigate as to how the temple organizes environmental education for people in the society. The finding from the case study conducted on the three selected temples should suggest proper model of environmental education arrangement of most temples.

1.3 Objectives of the Study

1) General objective

The research aims to present the temple's environmental education model that can be readily implemented in most temples.

2) Specific objectives

(1) To study resource, process, and supporting factors in the temple's environmental education programs.

(2) To study the learning process of the people who have been through the temple's environmental education programs.

(3) To synthesize a proper model of an environmental education program that a temple can implement.

1.4 Scope of the Study

1) This case study is a survey research conducted in a natural environment of the temple. The sampling temples are those that have organized environmental education programs aimed at enhancing knowledge, attitude, and behavior on environmental conservation among program participants.

2) This research selects three temples located in the surrounding provinces of the Bangkok Metropolitan area and have demonstrated concrete performances on environmental education programs. The three temples are Wat Panyanantaram of Pathum Thani Province, Wat Asokaram of Samutprakarn Province, and Wat Klang Ku Wieng of Nakhon Pathom Province.

3) The study intends to propose a model of environmental education that the temple can effectively utilize. The synthetic process integrates the following factors into the model.

(1) The condition of environmental education considering resources, process, and supporting factors of the temple's environmental education program.

(2) The learning process of the people who have undergone through environmental education program of the temple.

1.5 Research Assumptions

- 1) This study regards all documentary data are from reliable sources.
- 2) The data and information obtained from questionnaires and interviews with the respondents who are regarded as reliable sources.

1.6 Operational Definitions

Environmental education means a socialization process organized for people so that those who have undergone through it will learn and understand relationship between human being and environment, appreciate the values and importance of environment, realize environmental problems, be instilled with constructive attitudes to develop correct skills to participate in environmental conservation programs, and make decision correctly in creating behavioral standards concerning controversial issues on environmental quality.

Environmental education model means a framework or a pattern of factors involving in physical environmental organizations, as well as an education process that can enhance correct knowledge, attitude, and behavior in the learners in the direction that will conserve environment. The above-mentioned factors are outlined as follows :

- (1) resources
- (2) environmental education process
- (3) supporting factors

Environmental education of the temple means a physical environmental organization or an environmental education organization that the temples adopt and enhance correct knowledge, attitude, and behavior in the learners in the direction that will conserve environment.

Temple means the three temples located in the vicinity of the provinces surrounding the Bangkok Metropolitan Area. The three temples are

1. Wat Panyanantaram, Pathum Thani Province
2. Wat Asokaram, Samutprakarn Province
3. Wat Klang Ku Wieng, Nakhon Pathom Province.

Learning means the supplementary of experience on environment that creates knowledge and attitude that stimulate behavioral adjustment of learners to preserve environment. Learning can be measured in both qualitative and quantitative terms.

Attitudes towards environment within the temple's context means attitudes of temple – goes about environment as a result of knowledge attainment relating to dhamma and religious activities.

Behaviors affecting environment within the temple's context means behaviors enhancing environmental quality upon temple – goes as a result of knowledge attainment relating to dhamma and religious activities.

1.7 Benefits from the Study

This study will contribute in 3 main areas

1) Academic - oriented benefit

- (1) Gaining a new body of knowledge relating to environmental education.
- (2) Understanding resource, procedures, and supporting factors of environmental education arranged by the temple.
- (3) Having information illustrating the potential of the temple in providing environmental education for the people through various educational systems.

2) Policy – related benefit

The findings can be implemented by organizations as a guideline to formulate the environmental education policy and plan for the temple's role in accordance with the aspect of National Education Code, 1999, namely:

- (1) Educational contribution to a variety of people, such as monks, novices, youths, pupils, students, and people.
- (2) Preparation of temple to be the focal point of learning or community education source.

3) Operation - related benefit

Interested persons can adopt the model from this research and apply it to achieve practical outcomes.

CHAPTER II

LITERATURE REVIEW

The model of environmental education in the temple is an issue that has never been studied by anyone. The researcher utilizes the concepts, theories, academic documents, and related-research papers as a guideline to form the new body of knowledge.

Concepts, theories, and principles that are significant and related to this study comprise :

- 2.1 Concept of environmental pollution elimination
- 2.2 Concept of environmental management
- 2.3 Concept of environmental education
- 2.4 Concept of the efficiency education
- 2.5 Concept of environmental education provided by the religion institute
- 2.6 Evaluation and examination of connoisseurs
- 2.7 Related documentaries and researches
- 2.8 Conceptual framework

2.1 Concept of Environmental Pollution Elimination

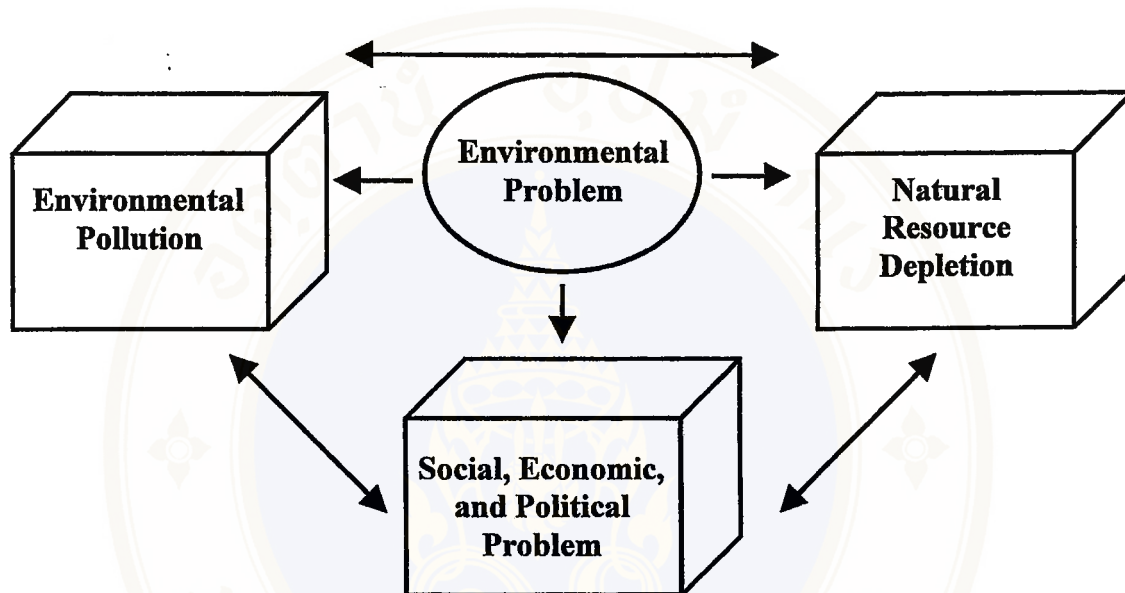
Since the Kingdom of Thailand introduced the five years plan of the National Economic and Social Development as a guidance of country development, the national modernization and economic growth are continuously progressive. Because the state puts much effort to the economic development in terms of industrialization through

the national revenue, as a result, there are an immigration of population from rural areas to urban cities which are centers of production and services. Communities in urban areas are expanding so fast as the imbalance of the social fabric becomes problems together with the transformation of the rural to urban way of life. The convenient communication is demanded. The people's value and behavior are also changed to favor the luxurious stuffs. Their typical consuming taste also favors the high price of Western style. The natural resources are more introduced to respond to the urban life style, which brings forth the pollution problems in the big cities particularly Bangkok and its vicinities.

The provinces in the vicinity of Bangkok are not only under much influence of Bangkok, but also the center of development like other main regional cities. The expansion of population and economy bring about the growth of industry, tourism, transportation, commercial activities, and services. The alternative areas of soil to be used for planting and animal raising demand more raw materials from the natural resources. But the unlimited use of natural resources strongly lessen its abundance. In the mean time, the expansion of the community and its economic activity without taking care of the environment results with pollution and makes negative impacts to the people's live. Such problems receive much concern from the society.

Besides, the pollution problems come from the swift and aggressive physical changes. The social circumstances including traditions, customs, cultures, and ways of life divert from the conventional conduct of social pattern. The western culture or way of life is barely conformed although the Thai identity culture alienates through generations. The

native wisdom and its approach of traditions and customs, being kept and held on to this principle of many generation, are being neglected by the present generation. Such a social crisis phenomenon can be easy observed in a major developing city.



Source : Department of Environmental Quality Promotion , 1998 : supplement

Figure 1 Diagram of environmental pollution

The environmental pollution crisis is not only the problem of the Kingdom of Thailand, but also the global problem. The Earth Summit Conference at Rio de Janeiro, Brazil in 1992, revealed the crisis of environmental pollution problem in the global level and instigated the conscious sense that it is not simply a problem of any particular individual any longer by invoking the sense of environmental pollution resolution through cross-sector cooperation (Department of Environmental Quality Promotion, 1999 : 83).

2.2 Concept of Environmental Management

It is accepted that the environmental pollution problem occurred from the misuse of natural resources is so widespread that the potential recovery of the natural resource is far below expected demand without the efficiency administration.

Joally (1978 cited by Chankaew, K.,1997 : 471) defines the meaning of the environmental management as the process of the significance of the natural resources and made-up circumstance providing the human being's need at the lower or upper demand in the future. The definition is rather similar to the environmental conservation concept of Dasmann in that the validation of natural resource favors the maximum living standard forever. (Dasmann, 1966, cited by Chankaew, K., 1997 : 471 – 472)

The concept of environmental management is applied by the Conservative Sciences for implementation which comprise three major principles (Chankaew, K., 1984 : 1 – 6 to 1 – 7) as follows :

- 1) The valid use of natural resource and environment, use in accordance with necessity, frugal use, and no leftover mean it must not waste for nothing.
- 2) Maintaining the rare stuffs or those which are likely extinct.
- 3) The restoration of resource or environment to its former condition. Such an operation is not only to improve the environment to better conditions, but also to induce the betterment of the whole system of resources and environment.

There are 8 significant conservation methods (Chankaew, K., 1997 : 464) namely :

- 1) Usage which means every form of usage such as, direct consumption, seeing, hearing, listening, and touching, must be permanent.
- 2) Keeping which means collecting and saving the resources that are rare.
- 3) Maintenance and repairing which means restoring the problematic and deteriorated area or region.
- 4) Recovering which means reviving the decline of resources or the degenerated materials to its normal condition for further benefit.
- 5) Developing which means making the near extinct resources better known through a well-planned knowledge and technological introduction.
- 6) Protection which means preventing the negative situations from escalating, including the eruption of unexpected events.
- 7) Conservation which means keeping it and not exploiting it through any means, recovering it and preserving it within its original area.
- 8) Division of areas (Demarcation of areas) which means the division of districts or areas according to the resources' qualification, for reserving or keeping it in certain areas.

Natural resource and environmental management might be easy to understand in theory, but it is very complex and hard to understand in practice. It is highly necessary to have a carefully consideration.

2.3 Concept of Environmental Education

According to the aforementioned passages, the prevention and solution of environmental problems can be performed in many ways including the application of modern and appropriate technologies ; as well as the formulation of laws, regulations, and rules for future enforcement. These measures, however, are external enforcements that do not enhance necessary adjustments over embedded values or create proper attitudes and awareness towards nature and lives in conservation terms. The chance of sustainable development minds being embedded within people is therefore minimal because defendants will always find loopholes in the system. If no repressive measures are being introduced, on the other hand, human beings will indulge themselves in luxurious lives, as it has usually been the case.

All parties have reached a consensus that in order to direct human behaviors towards expected targets ; the society needs to formulate other measures in parallel with the development of environmental awareness inside human beings themselves. The measurement, which is an effective and efficacious supplementary way to the goal of maintaining and protecting the environmental problem in the long run, is aimed at rectifying attitude through education to enhance personal awareness in environmental promotion that will promote the quality of life and form the basis of sustainable development.

The environmental education was developed with a highest goal to encourage a person to have a responsible personality for environment, as well as a skill of thinking and

decision making in any activity without an intrusion of the environment. As the revelation of the environment target scheme was originated in the Tbilisi meeting in 1997 and was widely accepted thereafter, various countries have attached it as the environmental education policy orientation (Department of Environmental Quality Promotion, 1998 : 5). The target goals of environmental education have three orientations as follows (Veeravatnanond, V.& Sipanpong, B., 1996 : 3 and Department of Environmental Quality Promotion, 1998 : 5 - 6) :

- 1) Awareness, knowledge, or comprehension, which mean to promote the people's awareness of the relations between economic, social, political, and environmental system of both urban and rural settings.
- 2) Giving everybody chance to receive necessary knowledge, values, attitudes, commitments, and skills to protect and restore the environment.
- 3) Action which is the adaptation of behavior of persons, groups, organizations, and societies, to live in harmony with the environment.

The learning dimension in the environmental education process

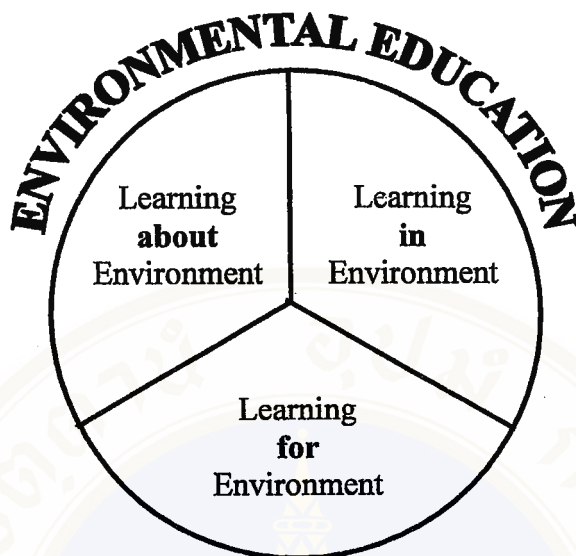
The learning in the environmental education process has three significant dimensions (Fien, J., et.al., 1997 : 1.17 and Department of Environmental Quality Promotion, 1998 : 7 – 9) which comprise

- 1) **Learning in environment** means the learning provision is open wide for the learner to have direct contact with the environment by putting oneself in the actual circumstance or in the most proximate circumstance comparable to the actual one. It promotes the skill in data collection and analysis. Within this context, the learning

process may take several forms such as observation from the real, experiment, off school studies.

2) **Learning about environment** : If the education goal was to lead one's responsible life under sustainable environment, awareness about the environment is not sufficient. The awareness should be transformed to proper behaviors and actions. To bring forth the said behavior and action to the learners, the learners must understand the workings of natural system and the effects resulting from human being activities on the nature. So the learners must learn about social, political, and cultural as well as ecological factors. The environment learning will help learners understand how the natural system functions and how the human being activities affect the natural system, so that correct decision can be made to benefit the environment with responsibility.

3) **Learning for environment** : The purpose of learning for environment is to construct the self-voluntary the way of life and ability aimed as reaching smart utilization of the nature and environment.



Source : Department of Environmental Quality Promotion, 1998 : 9

Figure 2 The dimension of environmental education process

Guiding principles for environmental education has cited that environmental education should be a life-long process provided by formal and non-formal education. (UN , 1995 : 563)

1) The formal environmental education course contains the environmental substance, which is prepared by the educational institute. This course of environmental education is also prepare educational programs for kindergarten level to the university level.

2) The non-formal education system is a part or a non-regular supplementary of formal education system. The pattern of education, i.e. the information or training presentation in the non-formal education system or extra formal education system can be called the approach to the non-formal education system.

The preparation of the non-formal environmental education system is derived from the fundamental concept that after most of the people complete their formal education system, they would pay their attention to professional pursuit. Most of them ignore the environmental awareness and lack attitudes toward the environment. As a result, these people are trouble-shooter either intentionally or unintentionally to the environment (UN , 1995 : 563). Former observations show that in the case of the inability to provide the environmental education for the youths who have no chance to attain to the formal education system, the information should be provided through the non-formal education system. At the same time, there are a large majority of adults that are slightly educated, uneducated or illiterate. These people's way of life, more or less, must have same involvement with the nature. Thus, it is necessary to provide education for these people to lead their life without violating the environment.

Generally, the approaches to non-formal environmental education system can be divided into two kinds (Unesco – UNEP , 1986 : 29 – 30) :

1) Participatory : Interested groups may participate in various forms such as giving opinions, asking questions in the lectures and seminar organized by environmental authorities.

2) Non-participatory : The target group of this kind of education is only clients. Activities can be the knowledge provision through the mass media system i.e. radio, television, printing ; organizing trips to a given place i.e. museum, zoo, aquarium museum etc., including the listening to the lecture at the local club. The non-participatory

environmental education system can be seen in every countries especially the developed countries.

United Nation (1995 : 563 –567) divided the activities of the non-formal environmental education into three categories :

1) The non-formal activities supporting the formal education

The activity of the non-formal environmental education system is assimilated within the formal education system such as, schools and universities, by being included in various institutional clubs concerning with nature and environment, natural survey, field studies, environmental camps, and other activities in the same manner.

2) Management of systematic adult education

It is an effort to integrate to environmental concepts with the adult education system by combining the principles of environmental education, especially their positive sides on the quality of life such as nutrition, hygiene to the existing system. These substantial issues will be contained in the adult education course.

3) Other educational programmes for the public

Almost every country in the Asia-Pacific region has provided an educational program and knowledge on environmental issues and problems for the public. It is hard to differentiate between the problems of education for the public and its awareness. Since these two things are always overlapping.

Kaṅhasuwan, L. (1998 : 103–104) mentioned considerations on the approach to environmental education's activity for the public as follows :

1) Should invoke the awareness of the environmental problem apparently at home, community, local level by providing the knowledge, and understanding on the basic of environment in crucial aspects, causes of the problem and the activities of human being that affects the environment, emphasizes the joint planning and the cooperation in the planned activities for the individual and collective groups.

2) The people should be invoked and encouraged to look after the environment of their own community and local, be trained to survey the problem and rank them according to their crisis and urgency. After that, they should study the cause of the problem, and form a party to pursuit the process of problem solving through valid peace means, not emotion and implement it according to the plan. Monitoring process must also be trained.

3) Should implant people to be flugal of their daily expense, the natural resource, water, electricity, and fuel ; to be aware of the regulation and discipline, kindness and non-selfishness ; and to be altruistic as a result, people will be conscious of responsibility for the environment, and become a moral man . Such people are considered to be men of environmental ethics.

Manipulation in environmental knowledge provision

As for the environmental knowledge, there are many approaches for the target group to reach their goal. But the fashionable approaches used at present are (Veeravatnanond, V. & Sipanpong, B., 1996 : 111 – 113) :

1) Studying outside the classroom : One principle in environmental education is to let the learner have direct experience. To study outside the classroom is one of the means to introduce the learner to gain direct experience by using the environment as a source of knowledge. The teacher or the activity processor can carry it out both in natural environment and the man-made surroundings, regardless of where the study setting would be. (Department of Environmental Quality Promotion, 1998 : 16)

2) The motion movie or television

3) Slides

4) Transparency

5) The simulation and games : To adopt the simulation technique is to suppose the learners exist in any situation then let each one of them discuss or make a decision to anything that they have experienced. In the aspect of game, it is something like a make-up situation. The main difference is that the game does not suppose the learner always exist in such a situation. But it is a competition in some matter.

6) Inviting the lecturer : It is an invitation of the specialized expert to give lecture or answer the learner's inquiry.

7) Experimentation : It encourages the learner to find out the problem or has a better understanding of the environment.

- 8) Interview : It is an interview with the expert directly.
- 9) The extra activity arrangement : It is the activity related to the environment so that the learner can share his or her activity by doing or receiving regular information.
- 10) Making a report : It is intended to create a research skill and information presentation ability in a learner. In addition, the more the learner does research work, the more his attitude will change.
- 11) The debate : To make the learner find out the data to confirm or support his or her ideas.
- 12) Role-playing : Each of them has to play his or her role in accordance with the plot of the novel.
- 13) Taking an opportunity : Sometimes, the changing of attitude toward the environment demand proper opportunities by using the happening situation as a means to explain it.

2.4 Concept of the Efficiency Education

The environmental knowledge of any level or field of education mostly aims to construct attitude in favor of the environmental conservation, construction of behavior and achievement of practical results. So, the process of teaching must be to produce the learners with positive attitude toward and the public. (Veeravatnanond, V.& Sirilai, S., 1988 : 81)

It can be seen that the environmental education has its long-term purpose similar to the general education in that it demands the learner to have a new and permanent behavior. This new behavior is the result of human relationships with the environment, training, experience, together with the changing of the learner's knowledge quantity. It is not the result of the response to the nature, instinct, accident, or maturity. (Panmanee, A., 1981; Kowtrakun, S., 1990, cited by Samran, C., 2000: 23, 25) Panmanee, A. also describes Bloom's explanation about the changing after the learning process as follows :

“When a person has learnt, some changes in the following areas will occur :

- 1) The changing of knowledge, understanding, and thinking (cognitive domain) which means the learning about the new substance. It will make the learner understand more about the environment. It is a change originated from the brain.
- 2) The changing of the passion, feeling, attitude, value (affective domain) which means when a person has learnt new issues, he will feel that through his mind, his believe and his interest.
- 3) The changing of the skill (psychomotor domain) which means a person has learnt something both through thinking, understanding and as a result has created consciousness, values, and interests within oneself, a person then uses that privilege to implement and be more skillful.”

The Stages of Learning are as Follows:

1) knowledge stage

2) application stage : After the knowledge has been learnt, it should be applied.

If it were not applied or introduced, it would be regarded wasteful.

3) analysis stage : It is the stage that the learner utilizes the information and data that he has and makes suitable decision.

4) synthesis stage : It is an ability to put analyzed data into effective problem-solving activities.

5) evaluation stage : It is the stage that the learner is able to distinguish the right or wrong in his/her learning process. The learner is also able to examine the rightness of the situation, then assess it before the readmit for more information.

So, the stage of learning is like a pyramid with the biggest part (the base) being the knowledge receiving stage and other stages having gradually-smaller sizes.

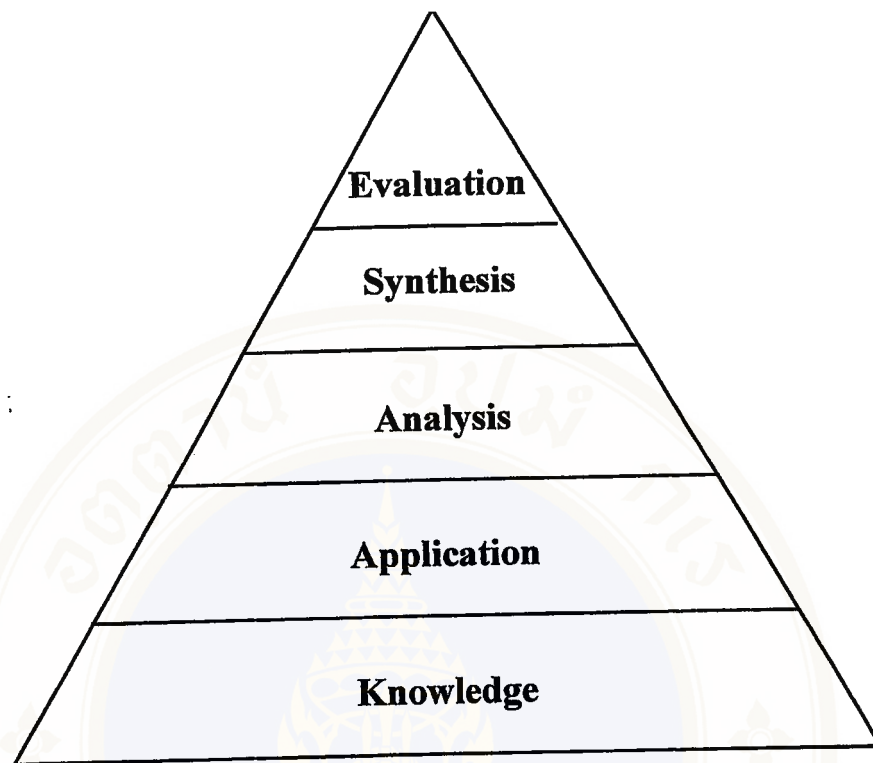


Figure 3 Pyramid of learning

Ison (1990 cited by Regional Community Forestry Training Center (RECOFTC), 2000 : 102) said that the teaching normally obstructs the learning. The learning should concentrate on self development and the increase of learning potential. As for the writing of Vinopa Rave, a person who was close to Mahatama Kandhi, it notes that there is no such a word as “teaching” in the spoken-languages of the continent. It means that a person’s learning is not originated from teaching, but can be done through other channels. Or even Phra Buddhatas has also noted that there was no such a word as “teaching” when ones provide knowledge for others. It was noted that when Lord Buddha reached enlightenment and expressed his first preach to the five ascetics, who eventually became his followers he did not use the word “teaching”. (Dulyakasem, U., 1999 : 86)

It is accepted that education is one of major processes in developing a person's quality. But in the past, Thailand's provision of education aimed more at the quantity expansion and less at the educational quality improvement. The Thai education system then could not carry out expected duties such as, transferring the Thai cultures and values in suitable forms ready for national development's demand, unable to implant scientific and productive culture into the Thai personality. Thai people love to spend and are pleased to have an easy life. The crucial point is that they are not supportive to self and continuous learning. The Thai people then lacked analytical mind, were unable to catch up with globalization or other global phenomena which modern people demand. (Chongsatityou, C., 1998 : 1-2, 127)

According to the idea of Phra Buddhadas Bhikkhu (Speech), he opined his idea that the reasons which the modern Thai education were unable to develop a person to the right way because it lacked three systems of education :

- 1) Education for literacy, brains.
- 2) Education for profession, i.e. all branches of technologies.
- 3) Education for dhamma (Buddhism right discipline) : This kind of education is for the justified human being.

In the past, a temple was a school with monks as education managers. The education system then had therefore dhamma or some issues of religion. But the present age is the age of materialism. The education is mainly to serve material demands. The schooling is just only for people to become literacy or pre-career training, but not

developing a person into the right human being. The learners only want to know the content of the book and cling to the fact that the more he makes, the more he profits.

The fact that human beings focus their attention on materials make their lives and ways of life become under the physical drive, but the ethics, culture, custom and tradition, and value, which are social environments take their roles to control human beings' behavior or activities. This makes human beings creatures that have a behavioral components dissimilar to the other beings. Exploiting resources until they become environmental problems is a result of unlimited use of resources in extravagant ways. The environment therefore cannot come to balance itself naturally. (Veeravatnanond, V., & Sirilai, S., 1988 : 19). Even Mahatama Kandhi has reminded us that : "This world has an adequate resources for the necessity of human beings, but not sufficient for the greed of them." (Thepsitha, S., 1993 : 21)

2.5 Concept of Environmental Education Provided by the Religious Institute

Lord Buddha has preached on the significance of the environment that:

"To live in a suitable country or environment is of vital auspicious."

The preaching means residing in proper environment will assist life development to have dhamma. When human beings have dhamma, they will seek to develop environment. Whenever human being have no dhamma, the environmental conservation cannot be done. (Phraraj Voramuni (Prayoon Dhammachitto), speech in Suckavanich, N., (Ed.), 1999 : 41)

The environmental problem that is being worried at present is not a strange issue for Buddhism because Lord Buddha foresaw and preached the Buddhists to practice this issue since the time he was alive. It might be said that Lord Buddha is a first person of the world who sees the significance of environmental problem. He also preached the way to prevent them. This fact can be seen from Buddhism canons which outline principal practice for monks and novices. Buddhism disciplines also involve practice patterns concerning natural and environmental conservation and protection. Even though the merit principles such as the kindness, the piety are teachings for everybody, they are matters that Lord Buddha always taught monks and laymen. Buddha's disciples are to have consciousness of natural protection and conservation, know how to use the nature at the right occasion and know the limit of natural utilization. (Nyanasara, Somdet Phra (Suvattano), (1990) : speech)

The relationship between Buddhism and the environment can be studied in two ways (Adivatanasit, C., in Chaiwongkot, S.(Ed.), 1989 : 68-70; Sroysakam, K., 2000 : 45 ; and Chaiyota, D., 2000 : 374-375) namely

2.5.1 Scrutinize Lord Buddha's biography

2.5.2 Scrutinize the way of life of the monk

2.5.1 Lord Buddha's biography

Lord Buddha's biography reveals to use that the Buddha stayed close to the natural environment throughout his whole life, especially the most of significant time of his life, namely when he was born, reached enlightenment, and nipara (passed away).



According to Lord Buddha's biography, written both in Thai and foreign languages, he was born under the tree named "Sala" in the forest park of the Kapilavastu Kingdom. The name of the park was Lumbini. The event was in the midst of the trip taken by his mother "Queen Sirimahamaya" to visit Devadaha which was her native country. (Department of Religious Affairs, 2001 : 29,31)

When he was growing up, his father, King Sutthotana, built a three-seasoned castle, fit for his son to stay in summer, winter, and rainy times. Instead, his son perceived the castle as being built from power usage and thought that these things were not bringing about permanent happiness comparable to the nature. He then went out to be ordain as a monk. (Pariyatbodi, Phraraj, 1999 : 41 – 42)

When he became a monk seeking for the ultimate truth, he went to live in the forest. He foresaw the forest as a good place for him to stay away from possible disturbances. Finally, he reached the ultimate truth by himself while he stayed under the big tree, Prasrimahapoti, in the forest area of the town of Uruvelasanarnikom, Kingdom of Makot.

After Lord Buddha had discovered the ultimate truth and went out to propagate his ultimate discovery to the public, he spent most of his time in quiet gardens and forests. He resided at occasionally bamboo, palm, and mango forests.

At the end of his life, the forest also plays a vital role. Lord Buddha nipara at the forest garden named Salawan, near the Kingdom of Kusinara (Kusinnakorn)

From Lord Buddha's biography, it can be seen that the nature had close relations with Lord Buddha, particularly the duration of his significant events namely birth, enlightenment, and nirvana. The nature was a major factor helping Lord Buddha discover the ultimate truth.

2.5.2 The monk's way of life

The way of life of the monk favors the environment in the following manners

1) The cost of living : The monk has a simple, frugal, secluded, and ascetic life. The means to support on which the bhikkhu - life depends are called "the four Nissaya":

- (1) living on pindapata ;
- (2) wearing pamsukula robes (discarded cloth taken from the rubbish heap or from the charnel ground) ;
- (3) dwelling at the foot of the tree ;
- (4) taking medicines pickled in stale urine.

2) Life in the teaching principle

Buddhism is a religion of a moderate way of life. The principle mostly aims at the proper way of life, not too tight and not too slack. The main point is to realize the sufficient way of life. This matter includes having proper consumer goods and consumer utilities. (Bhojane mattannuta).

Buddhism's teaching of the moderate way shows that Buddhism emphasizes issues on direct natural resource conservation. The present world has tried to

cope with many parts of the environment crises such as human being's over consumption of natural resources. The crises concerning natural resources and pollution are derived from the key issues that human beings do not know how to live with the nature properly and in proper harmony.

The teaching principle on the forest and the environment can be found in many aspects. The teaching principle is as follows :

(1) Teach the monk to stay in the forest, live in the midst of natural environment, because such a place will benefit and is the most suitable place to practice dhamma. Lord Buddha once instructed the monks, *"Monks, that is the bole of the tree, that is the empty house. You have to practice the perception, practice your mind not to be careless, and with that you will not feel sorry for what you have done."* Or *"the tiger hides itself in the forest, hunts for meat to be its food. Therefore the disciples of Lord Buddha, diligent people, should go to the forest to search for the chance to reach the ultimate truth"*

(2) Teach that when the monk lives in the forest, the forest can persist beautifully. No one can harm it. The monk living in the forest is an indirect environmental conservation. Lord Buddha once said : *"the shady forest is beautiful, when the monks live to practice dhamma."*

(3) Teach that the monk, living in any environment should realize the benefit of that environment, should not damage or deteriorate the forest. The principle of dhamma and the story showed that Lord Buddha realized the value of the environment. As a text of sermon goes : *"A person who sits or sleeps under the shady of the any trees*

should not break the branch of the tree. Whoever injures friends is a bad person." This text of sermon comes from the consciousness towards the bodhi tree (a bo tree is often found in the wat's grounds as it was under such a tree that Lord Siddhartha found enlightenment and became the Buddha) that he practiced the perception until he reached enlightenment and understood the ultimate truth.

(4) The teaching principle on piety is not only to realize or to compensate the services performed by human beings, but also to cover animals and environments namely, forest, mountain, river. These are beneficial to human beings as they try to conserve environments for the public. To do such a thing is a return of services rendered to them.

3) life in the Vinaya rules.: The monk has strict rules about the environment and nature to perform. The rules toward various parts of the nature can be classified as follows :

3.1) Vegetation

(1) refrain from harming the vegetation means refrain from destroying the tree's seed, off-shoot, and root. Doing that will obstruct the trees from breeding expansion.

(2) refrain from destroying the trees means monks are forbidden to destroy trees. As for the Bhutagamavagga Rule 1, it notes,

"If a bhikkhu removes any part of a growing plant so that it is broken away from its place of growth, it is a pacittiya."

Bhutagamavagga Rule is further explained as five kinds of propagation; what is propagated from root, stems, joints, cuttings and seeds. As for the Chullavagga, it also reads,

“The monk should not burn grass. The monk who burns it transgresses a tugghot.”

This shows that Lord Buddha demands the party of monks pays respect and is aware of the value of nature and all species of plant. Because Lord Buddha foresaw that the monks must rely on the tree's shade when they stay in the forest. The forest seems like the house of the monk. The monk has to rely on the herb to cure himself whenever he becomes sick. To cut or to uproot the plant is equivalent to injure the plant form which the monk gets benefits. It also exposes selfishness because that also harms small animals whose lives depend on the plant.

3.2) Animal

Lord Buddha enacted the Buddhist monkhood (priesthood) disciple to forbid the monk from harming all kinds of animal to death but to conserve them as stated in the following example :

In Sappanavagga Rule 1:

“If a bhikkhu intentionally kills living beings, it is a pacittiya.”

Rule 2 :

“If a bhikkhu, knowing that water has living beings in it, uses that water, it is a pacittiya.”

In Bhutagamavagga Rule 10 :

“Whatever monk, knowing that the water contains life, should sprinkle grass or clay or should have them sprinkled, there is an offence.” (cited by Kabilsingh, C., 1998 : 133)

In Ratanavagga, Rule 4.

“If a bhikkhu makes, or asks to have made, a needle case of bone, ivory or horn, it is a pacittiya.”

(3) Source of water

Forbid passing the feces, urine, and spitting into the canal or river. This forbidden term is evident in Sekhiyavatta (Pakinnaka Rule 3) :

A bhikkhu should train himself thus :

“If I am not sick I will not defecate, urinate or spit into water.”

The precept was enacted because the canal or river should be well conserved. The water source is protected from being polluted because water is a vital factor of human being's life and the survival of other animals. If the canal or river became polluted, human being's benefits will be harmed and water animal would be killed.

(4) Weather

The evidence is in Surapanavagga Rule 6 that :

“If a bhikkhu, who does not have any fever, lights a fire himself or gets someone else to light it for the purpose of warming himself, it is a pacittiya. If it is lit for other purposes there is no offence.”

By the virtue of caring for the forest fire, the cause of air pollution, burn the forest and lives of animals, but this regulation allow the monk to lit a fire in the case that the forest fire occurs with the aim to reduce damage as a result of larger forest fire. It is a way of forest fire prevention.

The situation of environmental problems and the significance of the religion are major drive forces in the environmental protection and solution that compel the party of monks to have a resolution on the role of monk in the environment protection and solution. During the religious conference on the approach to environmental management, on November 14, 1990 (Thepsitha, S., 1995: 49-53), the meeting was concluded with the following resolutions.

- 1) The role in leading the training to implant the public with environmental consciousness.
- 2) The role of a leader to campaign on the solutions to environmental problems.
- 3) The role in conserving the antiques, the ruin palace, and art environment.

In addition, according to the project organized to create the consciousness on the environment held by the Sub-Committee, entitled “The religion and the environmental

problem” participants have discussed the role of the temple and the monk on the environment as follows :

1) To be a leader of the environmental campaign by leading, training, to create environmental awareness to the public.

2) To encourage the temple to grow trees on the temple ground. To explain, suggest, support, the public to foresee the value of the trees and love trees, as well as to cultivate a tree spout to contribute to the public. To make the temple look clean and shady. To fulfill the temple and place with pleasure. It is supposed to be an example for the community and Buddhists.

3) To distribute to the public the fact that Lord Buddha is the protectionist of the forest and environment. The Buddhist, who is his follower, has to follow his behavior and campaign for the forest and natural environment conservation.

4) To persuade the public to participate in the environmental development and conservation by announcing that to do such a thing will gain a great merit. Because Lord Buddha has said in the Vanaropasuta that

“anyone who grows the crop plant, grows the forest, builds a bridge, builds a water confinement, digs a pond, donates the accommodation, can gain merit both in daytime and nighttime.”

5) To rely on the Buddhism principle in inducing the public to conserve and develop the environment. The Buddhism principle that can be introduced to conserve and develop the environment such as, a piety to the born ground and inhabitants, the 4

Dhamma of layman, namely truth, fact, patience, refrain the temper, and forgive, sacrifice, and the Four Padhana (Diligent Efforts), comprise

(1) Samvarappadhana – the diligent effort to be careful not to let evil and bad states arise in one's character (habits).

(2) Pahanappadhana – the diligent effort to get rid of evil and bad states that have already arisen.

(3) Bhavanappadhana – the diligent effort to cause good and healthy states to arise in one's character (habits).

(4) Anurakkhanappadhana - the diligent effort to guard the good and healthy states that have already arisen, by not letting them deteriorate.

6) To train the youths, public, civil service, and the businessmen to be aware of the danger and damage that might occur from the environmental problem. To have the environmental awareness and to join the environmental development and conservation, for the present generation and later generations.

7) To insert the environment subject in the sermon, lecture, and speech for the training sessions at the temple, the Government organizations, as well as on-air programs so that listeners realize the environmental problem and the environmental awareness. With this regard, everyone must lend their hands to solve the environmental problem, conservation, and development. The performance of the King, and the lecture given by the King and Queen should be inserted for the listener so that they can follow or do as the King and Queen has demonstrated.

2.6 Evaluated and Examined by Connoisseurs

Some newly discovered patterns, processes, and methods may be found to be improper in practice because there various limitations in terms of time, place, personnel, and budget. This is especially true in the educational field. For the social presentation to be firmly accepted, it must be evaluated and examined, or criticized by the specialists for the research study. On the other hands, the values of the social discoveries should be appraised by the specialists' sense of justification. This approach is developed from Eisner's concert and research Stanford University (Pahner , 1992 : 18).

Eisner has introduced the evaluation by connoisseurship technique because he realizes problems which normally occur under scientific or quantitative research methodologies. The connoisseurship technique is another research methodology that has different fundamental characteristics from most existing techniques. Because of the sensitive and different nature of some study areas, the selection of specialists will mainly focus on professional status, experiences, and level of credibility.

The research study presents the model of the environmental education in the temples adjacent to Bangkok territory. This study adopts various interdisciplinary sciences such as, environmental education, religions, and social sciences. To test the finding of this study through pilot project will be both budget and time consuming. In order to have the reliable and valid model, therefore, the researcher has adopted the connoisseurship technique in the evaluation and testing process on this newly-found results.

2.7 Related Documents and Researches

2.7.1 Research study on the role of monks and educational management

Wongyimyong, W. (1996) has studied the changing role of the monk in the community. From her study, she found that the monk as personnel of the religious institution still has important role relating provided that some management activities be organized so that the community envisions the importance of this institution in terms of religious propagation and maintenance, educational provision, and community development. The monk used to perform as a teacher who provided education for the public, although at present this role is taken over by governmental institution. The findings, however, show us that the monk still has important roles in providing education for the community in the aspects of the principles of the Buddhism and other kinds of knowledge. It might be said that the non-formal education is a more efficient and suitable way to provide knowledge for the community.

2.7.2 The research concern the Buddhism concept and the regulation on the environment

Sangthong, S., Phra (1998) has studied the concept of the environmental management in the line of Buddhism. From the study, he found that the Buddhist has a concept about the environmental management that everything has an inter-dependence and linkage with each other. Human beings and the environment cannot be separated. So, facilitating human beings to understand the environmental management, the environmental awareness, and to have the right environmental behavior, will also lead to

the right environmental management. Because Buddhism believes that, by nature, human beings and the environment will naturally balance themselves against each other.

Mulkaew, U., Phra Maha (1998, abstract) has studied the environmental management in the line of the Vinaya Pitakka. From the study, he found that most of the Vinaya involve and relate to the management of human beings and environment in one case or another.

- 1) The Vinaya regulates the basic material elements for living
- 2) The Vinaya regulates the land conservation
- 3) The Vinaya regulates the water conservation
- 4) The Vinaya regulates the pollution control in the community
- 5) The Vinaya regulates the living with the nature
- 6) Other Vinaya regulations

The Vinaya has benefited the environment management and kept the environment well in balance.

Kethom, V. (1996), who studied the idea of the monk about the environmental conservation, found that most of the monks, share their ideas that every Buddhism principle supports and encourage the environmental conservation. The main cause that tempts the monk to get involved is the Buddhist principles and the behavioral pattern of the monk. Moreover, the monk also takes the Buddhist principles and applies them in the environmental promotion activities by combining the dhamma teaching and

environmental conservation teaching together. It is the ways that enhances the conservation awareness and behavior of the public.

2.7.3 Documents and research studies related to the role on environment of the temple and monks

Charoenkit, S., Phra Maha (1997) has studied the topic : “The temple in the Buddhism that is desirable : comparative study the characteristic and activity between the temple in the Buddhism that is desirable and the fact circumstance of the temple in the present Thai society.” He found that the characteristic of the desirable Buddhism temple that is in the attitude of the monk and the religious academics can be divided into 3 phases : the characteristics of the temple, the activities of the monk society in the temple, and the relationships with the villagers or the community. The results of the study illustrated that the characteristics of the desirable Buddhism temple should be quiet, shady, and in the forms of forest or garden. The temple ground should be organized in such a way that facilitates proper harmony and divisibility, as well as favors the organizing of activities relating to the society and the environment. To organize activities related to the villagers or the community, the monk should perform as a good leading role. Temple’s activities should aim at reducing the gap between monks and lay follower, providing education in accordance with the Three Sikkha to bare the way for the enhancement of spiritual quality within human beings. The activity should be organized on the auspicious day by handling the activity in the manner that provides the Buddhism knowledge and promotes Thai

cultures. It should also induce villagers to learn how to keep and inherit valuable traditions.

Chaiteeranuwatsiri, M., et.al. has studied "The roles of Buddhist monks in a globalized society : the art in ethical teaching of monks in the north-eastern region of Thailand" (1997) and "The roles of the Buddhist monks in a globalized society : A study in the middle and eastern regions of Thailand" (1998). They studied the attitudes of the monks, to whom the Buddhists pay a faithful respect. The outcomes of research revealed that the role that monks should increase was the role in natural resource and environmental development. The monk in the past has done such a role by looking after the trees in the temple ground, improving peaceful and shady environment, and keeping the natural circumstance suitable to accommodate various animals. At present , however, natural resources and environment are violated extensively. The monk should have a leading role in the use of natural resources and environment in the society such as forest conservation, water conservation whenever the chance allows. Furthermore, the monks in the sampling group also suggested that the development of the temple grounds such as construction, consumer utilities, maintenance of neatness and cleanliness should be used as a sample for observers to carry out further development. How monks look after the temple as a self development can be adopted as a model by people. This is regarded as self development for the development of others.

Saychan, P. (1999) studied "Thai monks and forest conservation : case study of Phrakru Pitaknuntakun (Sa-nguan Jaruwanno), Wat Arunyavas, Naivieng Country, City of Nan". His study found Phrakru Pitaknuntakun apply tradition, culture, and the

belief of the villagers as a tool to serve his environmental conservation project with impressive success. His operational approaches are as follow :

1) Introduce the linkage between a cultural dimension and social process and ecological system.

(1) Ordain the forest : It is an application of the ritual on forest resource conservation. Ordaining the forest is an adaptation of the belief of ordain in Buddhism to solve deforestation problems by using the yellow robe as one of the symbol of the triple gems. The Buddhist has to pay respect to the yellow robe by regarding it as a sacred and high value thing to worship.

(2) The succession of the river fate : This ceremony is done in the northern region of the Kingdom of Thailand. Its purpose is to expel threats or drive spell off the village. The succession of a person fate ceremony can also be done with the aim to prolong the person's life. It also conveys that person to prosperity, happiness, and progressiveness.

(3) Offering of plant lineage : It is another ceremony to conserve the forest resources by applying the Buddhism ritual and relying on the belief and faith of the villagers. When the plant lineage is to be offered, the village will regard that the plant's origin belongs to the monk. When it is taken to plant, no one can cut or damage the tree.

(4) The shrine of the household god : This practice brings people's belief in god into use by extending that into forest conservation. The main purpose is to create the thought of the tree being occupied by ghosts in people's mind, and as a result they will not cut down the trees.

2) The working process applied through the establishment of organization : Monks, the public, non-government organization (NGO) having common demand they join together and this will help create self-reliance on a person in the long run. The community may be upgraded resources, environment, and culture may be revived through a campaign. Some examples are “Love Muang Nan” Foundation and the Coordination Center for Phra Dhamma Thayat.

3) Participation by giving material supports : Since some people may not be able to do all the work by oneselves or some works are not appropriate for monks, contributions in the material forms such as plants, food could also be done.

4) The tree growing : The plant lineage and the medicinal herb plant garden could be established by the leading monk, novices, and the followers both inside and outside the temple.

5) Providing the knowledge in a various occasion :

(1) Giving a sermon in a various ceremonies. When the monk is invited to give a sermon or give a teaching of the Buddha truth in a ceremony, he will take this opportunity to insert the content of the forest resource conservation by selecting the substance relating to the ceremony.

(2) Giving a lecture in a training, seminar, or meeting. As he works in several social development programs, he will be always invited to be a lecturer or a seminar participant. He will take this opportunity to mention the forest and environmental conservation to raise awareness among listeners. He also exchanges ideas with listeners.

Natesakhawat, T. (2000) studied "The roles of the abbot on environmental cultural heritage." His study noted that most abbots prefer to conserve artistic environment through one's particularly interest areas. However, they lack academic skill to conserve it. The biggest problems found from his study way the lack of budget and government support in conserving programs.

Krawanchid, D. (2000) studied "The role of the Buddhist monks in natural environment conservation in Nakorn Rachasima province." She found that the monk has the biggest role in the natural environment conservation through training the public. They have moderate role in conservation activities. Her proposal from this research is that the formal environmental organization should support the environmental conservation by providing the knowledge and giving cooperation in related activities.

In addition, Panpracha, P. (1998 : 135 – 137) has concluded that the following roles can be done by the monk in the natural and environmental conservation :

- 1) The good precedence behavior before the public in the society. This principle is always performed by most monks. It includes learning to understand the way Lord Buddha and the monks in Lord Buddha's period performed, which is considered to have close relations with the nature, and taking it to perform in accordance with the natural environment circumstance and society. Even though, it is rare to find a quiet and peaceful place at present, the temple and the monk's residence can also be made clean, natural, and shady. The monks can lead by setting example through the cleanliness, shadiness, and neatness of the temple. The space of the temple will be used to grow trees

or build constructions to enhance the closeness of people with the nature. Trees will draw birds and other animals, and all of them are integrated into natural completion. People who come to the temple will have a good feeling and foresee the value of the natural conservation. And in the long run, it can be imitated by other temples. Overall, it will make the nature and environment change into a better forms.

2) The implanting of the national and environmental conservation awareness to the public. Since the monk is a spiritual leader of the Thai society, the Thai people tend to believe and conform to the monk's teachings or suggestions. So, in the propagation of the ultimate truth of Lord Buddha, it will be more successful if it is performed by the monks.

3) The application of ritual to promote the natural and environment conservation. Even though the ritual is not the main point of Buddhism, it is useful to help promote education and dhamma practice. The ritual is just a peel that covers the real matter of the religion. The ritual can be applied to environmental conservation programs to make them look more sacred and valuable. For instance, ordaining trees is like ordaining people before entering monkhood. When people introduce this method to trees, it makes a person feel that the trees are sacred and no one will dare to destroy them for fear of sin.

4) Making the temple become a center of knowledge propagation, information, data, about the natural and environmental conservation. By providing cooperation with the concerned organizations both the government and private sectors, personnel and employees who come to practice dhamma or make merit at the temple will

have a chance to get the information. Moreover, the activities held on the auspicious day might be inserted with the content of natural and environmental conservation as well.

2.7.4 Documents and the related research papers involving the environmental education provided by the religion institute

As the temple and the monks are concrete representatives of religious institution, they then can be one of the social organizations to transform their knowledge and understanding of the environment to members of the society. There are many documents and research papers showing the role of the temple and monks in running the natural and environmental conservation. This is the key point to reveal the function of them not only to do a specific duty in promoting the moral, ethic or Buddhism learning, but also to perform as a media organization in taking Buddhism's right principles to teach the public both directly and indirectly through cultures, customs, traditions, rituals, and the community's believe. The works may appear in various forms to ensure the linkages and assimilation between physical and socio-cultural dimensions. The said documents and research papers on the environmental education provided by the temple are mentioned as follows :

The karen community is located in the territory of the Toong Yai Naresuan wild animal forest conservation. This karen community learn to live with in the ecological system by using natural resources and benefiting from them with good harmony. They can conserve many kinds of bio-species. The body of knowledge in the community's environmental management is a body of ecological knowledge that includes

the land use through agricultural system and the community's socio-economic system. Furthermore, the fore-mentioned body of knowledge is controlled by the social norm in the form of the regulations, believes, ritual activities, ceremonies, traditions, customs, and the modes of practice. The temple and monks form a part of these processes. Especially in the ritual ceremony stage, the monks always play a major role in the ceremony, i.e. the ceremony named Bophibeuyho (the ceremony of paying respect to the rice goddess, and earth goddess, for sending the spirit go back to the heaven after using the land for cultivation and giving protection until the products can be harvested). In such a ceremony, the monk is a co-leader to perform the ceremony with the spiritual leader.

Beside the common roles monks have to participate with other organizations, the monk institution has another direct role to play for the community. The institution serves as an educational institute and transforms the body of knowledge, particularly subjects that involve natural resources to the members of the community. Because the karen community in Toong Yai Narasuan Forest has its own pattern of education system in that most 12-year-old boys will be ordained into novicehood. During their stay in the temple, the senior monks will perform as karen language teachers. After children can read and write, more knowledge to increase their skill will be taught. This includes Lord Buddha biography, the religion's teaching, the body of knowledge in ecology, especially, the medicinal herb. The principle of teaching is the forest and wild animal story. Every kind of knowledge will be recorded in a long book made of pulp from trees or palm leaves in the language of karen or mon. It can be seen that the temple does its functions more than just provides education on Buddhism. The temple is a collecting place of the

body of knowledge in the ecology and other subjects. Under the context of the community, the temple transforms the body of knowledge to create the global perception for the karen teenagers generation after generation before they depart the monkhood to become elements of the community and serve the function of productive concepts normally performed by their ancestors. (Chookaew, A., n.d.: 97-106)

The environmental education provided by the monk can take on other forms such as, joining a group and setting up an organization, i.e. in the case of Phra Isara Pavatano who has initiated ideas to set up a circle of "Deg Ruk Nok" (A child who loves bird), Wat Pukhaotong, Ta Ma Phai Village, Kang Klo District, Chaiyaphum Province. From the starting point, he gathers a group of children in the elementary class of school and provides them with the moral knowledge that is adopted from television media. However, there are other purposes which are to provide the environmental subject by teaching them to foresee the value of the forest, which is a matter that is closest to children. There are activities for the children to join, for example, hiking the forest to study the plants of each species about how they benefit human beings. After the organization was set up in 1990, most activities such as, taking the child to see the forest and trees, writing poems, and drawing in accordance with his imagination have been repeated. Additional activities have been taking children to see birds in other places, making key rings bearing pictures of birds, painting, and making coat buttons and brooches. These crafts are sold with proceeds being allocated to the children foundation.

Some monks have used the nature as media for the conservation and dhamma explanation, for example, in the case of Phra Pajak, forest conservation monk of Thep Patana Village, Prakam District, Buriram Province. His tactic is to ordain the tree as a means to gather his followers, to further propagate the knowledge of the forest's significance. The latent function is to ordain the human being's mind. As a consequence, no one dares to cut ordained trees. Phra Banyat Anuttaro, the abbot of Wat Pa Thammada, Tambol Kuem Ma U, Bao Yai District, Nakorn Rachasima Province is another good example to practice this kind of teaching technique. He collects some rare stumps for younger generation to see and benefit from them. The stumps explain dhamma, i.e. to compare the unity of the human beings with the roots of the trees that are linking. (The seminar report on "The monk and conservation : case study of northeast region , 1994 : 11)

Phra Ang Panyataro applied the Buddhism principle and ceremony in the environmental conservation by always teaching the villagers that "merit is cleanness, sin is dirty". To make the house or community clean is a way of making merit. To make merit is not just to present the 4 materials to the monk. To show kindness to the poor is also a merit making. The best merit making is to make oneself useful for the public and the society. In addition, in some cases ceremonies and religious customs should be organized at the lowest cost. This is also important conservation awareness. Buddhist lent occasion can be raised to campaign against laypeople's misconducts. (Laptananont, P., 1986 : 133)

In some cases, the temple and its monks also cooperate with private organizations, i.e. the project that takes the youths to the green canal at Wat Pak Klong, Muaglak district, Saraburi province. The abbot and the monks offer the temple ground to be used as a camping sites. In the camp, participants would learn about the nature and the forest hiking activities, take a bath in the stream and learn from where the stream is originated, and participate in tree planting competition. Every camp will organize planting activities. The planting emphasizes the plant nourishment. So in the camping, there are youths coming from Bangkok to join the youths who live in the community near the temple. After the collective effort on tree planting, the youths who live in the area will look after those trees under close guidance of the temple. (Sophonpanich, K., 1994 : 89 in the seminar report "The monk and conservation: case study of northeast region)

2.8 Conceptual Framework

To study the environmental education form of the temple aimed at synthesizing related elements into a proper framework for temples located in the provinces adjacent to Bangkok, there are some basic concepts that are derived from the related data as follows :

- 1) The general concept and principle of environmental education provision, the education which is provided by the temple, the concept of effective education provision in the line with the education reform that concentrates on the merit by emphasizing the education provision in the form of Thai way of life for the consistency to the context of the Thai society.

- 2) The circumstance of environmental education provision, which is run by the temple at present. The environmental education provided by the temple is regarded as

one of the whole system. So such a system comprises the resources, process, and output, which contains issues to be considered as follows :

(1) The resource means the elements of the environmental education that is provided by the temple, composed of the major factors in administration : personnel, management, equipment, and budget.

(2) The process : For this study, the process means the educational procedure that analyzes the character of the body of knowledge and its substance, method, activities, media, and evaluation.

(3) The output : For this study, it would consider from the learning condition that happens to the concerned person or a person who has been through the process of the temple, or has a chance come to the temple, including the problems which obstruct the efficiency of the learning process of a concerned person, or the improvement and suggestions of the concerned person so that other learners could learn efficiently.

3) As an organization that has correlations with outside environment, the environmental education of the temple is an open system. It also has other related factors involving the environmental education provision of the temple. In this research study, the researcher will study supportive factors that related to the environmental education of the temple.

The configuration of the proper environmental education comes from the collection of the above basic concepts. Then the concepts are synthesized to form the environmental education framework of the temple an evaluated by authorities to obtain proper model so that other temples can make use of it later.

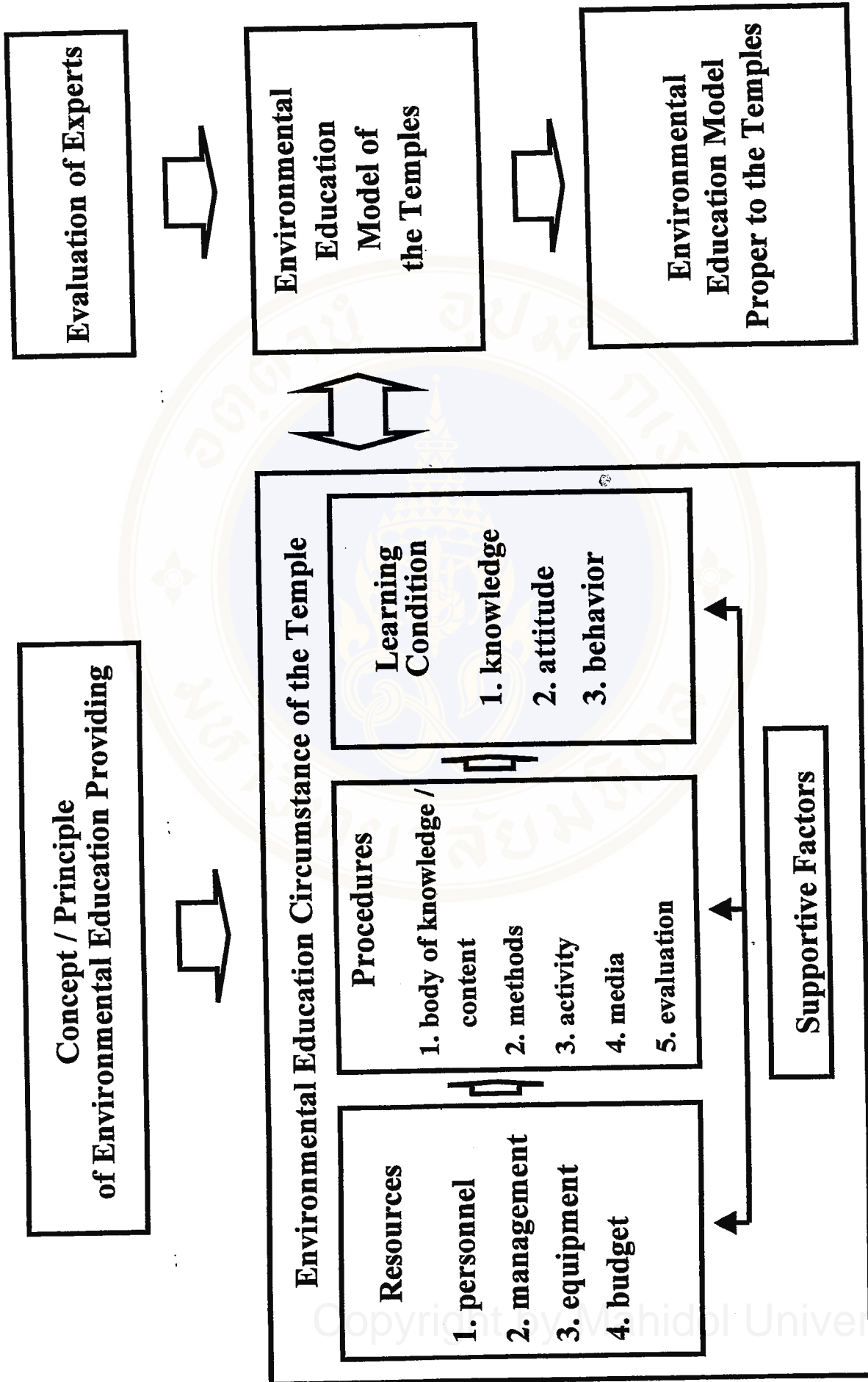


Figure 4 Conceptual Framework

CHAPTER III

RESEARCH METHODOLOGY

Due to the fact that environmental education organized by each temple were dissimilar, this research therefore focussed its methodology on information and data obtained from a case-by-case in-depth study on the selected sample. The details of the adopted methodology are outlined as follows

- 3.1 types of research
- 3.2 areas under investigation
- 3.3 sample selection
- 3.4 population and sampling techniques
- 3.5 unit of analysis
- 3.6 data collection
- 3.7 research instrument
- 3.8 instrument construction
- 3.9 data assessment and analysis
- 3.10 model building

3.1 Types of Research

The researcher integrated both qualitative and quantitative approaches to this study. Main focus is on qualitative technique whereas additional and supporting explanations are performed through quantitative approach.

3.2 Areas Under Investigation

The research selected samples from inside the Bangkok Metropolitan Surrounding Provinces (BMA) which included Pathum Thani, Nonthaburi, Nakhon Pathom, Samutprakarn, and Samutsakorn with the following reasons in mind.

1) BMA have experienced more severe environmental problems than their counterparts in other areas. The problems can be categorized into 3 main types

(1) specific problems BMA receive certain effects from the expansion of the BMA as a capital city of the country and centers of various development and growth. These areas are characterized by more populated and denser nature than those of other provinces. In 1998, national population density was 60-230 persons per square km. However, the denser nature of population in these areas are illustrated in the following table.

Table 1 : sizes of areas, population, and population density of BMA, 1998

Province	Area (km ²)	Population	Population density / km ²
1. Nonthaburi	622.30	826,464	1,328.08
2. Pathum Thani	1,525.86	616,636	404.12
3. Nakhon Pathom	2,168.33	765,425	353.00
4. Samutprakarn	1,004.09	969,321	965.37
5. Samutsakorn	872.35	416,393	477.32

Source: Department of Religious Affairs, 2000: 79,82

As a result of the expansion in various aspects, as well as big population sizes, these provinces sustain some unique problems resulting from urban-life cultures such as consuming habits which eventually lead to environmental problems including garbages and wastes. These phenomena are common facts of urban and industrial life (Veeravatnanond, V. 1998: 154) and reflected through the reports of Department of Pollution Control. The reports revealed that in 1997, daily garbage production from BMASP (Nonthaburi , Pathum Thani , Nakhon Pathom , Samutprakarn , and Samutsakorn) totalled 3,020 tons, accounted to 8% of daily national garbage amount, and increased by 4% from the previous year. (Department of Pollution Control, 1999: 6-3, 6-4)

(2) environmental pollution big pollution in BMASP created various forms of environmental crises. The cabinet therefore named Nonthaburi, Pathum Thani, Nakhon Pathom, Samutprakarn, and Samutsakorn a “pollution control zone” which signified pollution’s crisis level of these areas.

Considering geographical location of these provinces they are situated in the central plain of the country run through by two major rivers, the Chao Phraya and the Thachin (illustrated in annexed map). The Chao Phraya is formed in Nakorn Sawan and runs through Uthai Thani, Chainat, Singhaburi, Lopburi, Angthong, Pranakorn Sri Ayuthaya and Bangkok. Some BMASP through which this river runs are Pathum, Nonthaburi, and Samut Prakarn (also the location of the mouth of this river). With regard to the Thachin, it branches off the Chao Praya at Ban Klong Makhamthao, Wat Singha District, Chainat and runs through Supanburi, Nakhon Pathom, and Samutsakorn (where the river runs into the Gulf of Siam at Muang District).

Population rises and development activities have subjected these water basins to various forms of water utilization and wastewater treatment system to pollution resulting from both agricultural and industrial works. As a consequence, pollution cases in one type or another have occurred in the areas for instance the year 2000 water pollution crisis of the Thachin that inflicted damages to people who lived nearby the river as well as those who made use of water from the river.

(3) resource deterioration as mentioned above, being the areas absorbing BMA expansion has exploited local resources to respond to the people's needs and consumption. Resource determination in the areas could be seen through the lack of green areas and recreation areas of the community, which was the result of the transfer of land for industrial and living purposes (Office of Environmental Policy and Planning, n.d. : 14-1) as well as the land sink, which was the result of lowering underground water level. Seashore provinces such as Samutprakarn and Samutsakorn have continued to lose their mangrove forest. Recent investigation on Samutprakarn's mangrove forest in 1993 revealed that it totalled only 46.75 rais, a significant decrease from 4718.75 rais in 1987 (Teppitaksak, S., 1997: 1).

2) higher potential utilization of temple

Temple in the BMA surrounding area have utilized their potentials more than those in the rest of the country. To illustrate this fact, the ratio of population to a temple in 1998 in the kingdom is 2003.13 the number is considerably smaller to those obtained from the BMA surrounding area.

Table 2 : number of temples and ratio of population to a temple in the BMA surrounding area (1998)

Province	Number of temples	Population/temple ratio
Nontaburi	185	4467.37
Pathum Thani	172	3585.09
Nakhon Pathom	192	3986.59
Samutprakarn	122	7945.25
Samutsakorn	100	4163.93

Source : Derived from statistics on religion in 1998 (Department of Religious Affairs, 2000)

From the above-mentioned data, higher population/temple ratio in the BMASP provided higher opportunity for the temples in supporting the communities nearby. If the temples can utilize their potentials to the fullest, utility in terms of social services will be more worthwhile.

3.3 Sample Selection for a Case Study

The researcher adopted a purposive sampling technique in this case study. Some criteria had been set before the selection process was performed.

1) located in the BMASP

2) have been holding environmental education related activities in some

forms as follows



- Have organized physical and social environment such as regulations, procedures, rites that facilitated environmental education and thus led to eventually appropriate awareness and behaviors on the temple-goers.

- Have organized training or distributing activities on environmental awareness to the common public. The activities may be in non-formal education or informal education.

- Have effectively preserved environmental or ecological conditions that would facilitate ecological studies well.

- Have coordinated environmental-related activities within the community or the society in the form of environmental conservation support.

- 1) activities have been held continuously
- 2) permissions to conduct a research were obtained from abbots
- 3) could be reached through convenient and safe transportation networks

Due to the fact that no data regarding environmental related activities performed by temples had been systematically organized up to the time the research commenced, the researcher therefore organized the data collection process as follows :

- 1) documentary research which included provincial introductory document, Tourist Authority of Thailand's documents, printed books and documents on religious matters and monks with resource and environmental conservations

- 2) personnel research which included public and private officials responsible for religious-related activities

(1) central government organizations

- Department of Religious Affairs
- Department of Environmental Quality Promotion
- Religion Section, Office of the National Education Commission
- Regional Community Forestry Training Center (RECOFTC),
Kasetsart University

(2) regional government organization

- Provincial Education Office
- District Education Office

(3) private organizations that coordinate or support religious-related activities

- Wildlife Fund Thailand Under the Royal Patronage of H.M. the Queen
- Thai Inter-Religious Commission for Development
- Thai Environment and Community Development Association
- The Royal Forestation Project Office, PTT Public Company Limited

(4) monks who play active roles in conservation projects such as monks involved in Dhamma Heirs of Wat Chonpratanrangsarit.

3) reports of temple's activities by the mass media.

4) empirical evidence by the researcher's personal participation in the temple's activities

From data collection and empirical evidence obtained from field study, the researcher selected 3 temples from 3 provinces that conducted concrete environmental education related activities

- 1) Wat Panyanantaram, Pathum Thani Province
- 2) Wat Klang Ku Wieng, Nakhon Pathom Province
- 3) Wat Asokaram, Samutprakarn Province

3.4 Population and Sampling Techniques

3.4.1 population

This study designated several groups of informants as population so that information can be collected to fulfill the research objectives. The following groups are chosen as research population.

- 1) informants on temples' environmental organizing study consisting of resources, process, and supportive factors on temple's environmental education such as abbot, deputy abbot, monks, nuns, temple committee

- 2) informants on knowledge obtained from the temples such as those who underwent environmental education process organized by the temple. These groups comprised informal temple-goers such as those underwent training from the temple, those using a temple as an ecology study site, as well as informal temple-goers such as those who visit the temples for merit-making, touring purposes but at the same time have an opportunity to obtain knowledge concerning environmental awareness from the temples' organized programs.

- 3) experts that evaluate environmental education model of the temples.

3.4.2 samples

Various sample selection techniques were used according to specific characters of the population as follows

1) informants on temples' environmental education. The researcher adopted purposive sampling, snowball, in-depth interview, and focus group discussion techniques. Number of sample can be illustrated in the following table.

Table 3 : Number of sample groups of informants about information on the temples' environmental education

Key Informants	Wat Panyanantaram	Wat Asokaram	Wat Klang Ku Wieng
1. Providers			
1.1 Insiders			
1) Abbot	1	1	1
2) Assistant Abbot	1	-	1
3) Lecturer Monks	2	1	-
1.2 Outsiders	1	1	1
2. Supportive Providers			
2.1 Nuns	1	1	-
2.2 Librarians	1	1	-
2.3 Caretakers of Medicinal Herbal Garden	1	-	1
2.4 Public Relations Staff	-	-	1
Total	8	5	5

2) informants on knowledge obtained from temple’s programs. The researcher adopted and accidental sampling technique to obtain and appropriate proportion by age because of the ability to know the exact number of population. Population status in also various according to sex, age, career, location, reason to visit the temple, and uncertain in number in different time. In this research, the researcher designated 60 respondents from each temple, therefore 180 people altogether. The researcher has selected this number because statistics has identified that the appropriate sample number should be at least 25-30, together with the limitation of time and budget. The proportion of sample can be illustrated in the following table.

Table 4 : The proportion of sample

Temple Age group*	Wat Panyanantaram	Wat Klang Ku Weing	Wat Asokaram	Total
< 25 years old	20	20	20	60
26-50 years old	20	20	20	60
> 51 years old	20	20	20	60
Total	60	60	60	180

* catagorization of the sample’s age interval, compare with Techakaisaya’s age interval catagorization into three groups (Techakaisaya, C., 2001:73) :

- early age < 25 years old
- middle age 25–50 years old
- elderly > 50 years old

In addition, the researcher noted fundamental characteristics of the sample that would later provide information about that they had learnt from the temple. In case of formal temple-goers, they had had to stay in the temple for a certain period of time for instance 3-5 days according to the duration of the temple-organized course. In case of informal temple-goers, they had had to make more than 3 visits of the temple so that they could be able to express their opinions concerning their study experiences obtained from the temple.

3) experts that evaluate environmental education model of the temples. The researcher adopted a selective sampling technique in relation to the experts' qualification and came up with 10 informants. The experts had expertise and experiences in either environmental studies or religious studies or both areas. Their characteristics might be in accordance with one or more of the following criteria

(1) completed a doctoral degree

(2) worked in a position responsible for related areas

(3) had knowledge or experiences in related areas

(4) had done some contributions in academic areas, researches, and were held at high regards among academics in the same areas

3.5 Unit of Analysis

The unit of analysis for this research is a temple.

3.6 Data Collection

There were 3 methods adopted in data collection processes

3.6.1 documentary research including data collection from academic papers, journals and newspapers, researches and dissertations, seminar papers, National Education Act. These data concerned environmental problems resulting from national development environmental problems at national and regional levels, concepts on how to organize environmental education, concepts on how to organize effective learning process, Buddhism and environment, knowledge about temples, roles of temples towards community, roles of temples and monks in enhancing concrete environmental conservation.

Data were obtained from the following sources: libraries of academic institutions, libraries of governmental, private, and NGOs offices such as Department of Environmental Quality Promotion, Office of Environmental Policy and Planning, Office of National Research Council of Thailand etc.

3.6.2 observation

1) participant observation. The researcher participated in environmental-related activities with informants and had an opportunity to question some unclear issues emerged from sole observation. The information was then recorded.

2) non-participant observation. The researcher just observed but did not participate in the activities performed by informants.

3.6.3 interview

1) formal interview. The researcher had constructed structured questionnaires to be used in the interview. This method was adopted in order to collect specific information.

2) informal interview. The questions were broad and the interviewees felt free to express their opinions. In case the interview reached a specifically interesting point, in-depth interview would then be adopted for instance the issue concerning the temple's data collection process from key performance. This technique was used in parallel with participant observation method.

3.6.4 examining of the temple-goers' knowledge, attitudes, and behavior on environmental conservation (60 persons per temple)

3.7 Research Instrument

The researcher adopted the following research instrument in her research

1) recording form on observation, organizations of physical and social environment of the temples, and organizations of environmental education of the temples

2) interview guide that contained questions as a guideline for the interview and recording processes

3) knowledge test, attitude and behavior measurements on environmental conservation, as well as opinions on the organization of environmental education, collected from temple-goers. The questionnaire patterns were close-ended, value-estimation, and open-ended formats.

4) environmental education evaluation form of which investigations comprised validity, correlation, appropriateness, and pragmatic.

3.8 Instrument Construction

Research instruments comprised questionnaires that tested population knowledge obtained from the sampled temples' organized programs. The construction processes were as follows

1) data obtained from literature reviews were initially used as a preliminary framework in instrument construction

2) constructed instruments had been forwarded to thesis advisors for language and validity evaluations before necessary adjustments were made

3) the result had been submitted to 3 experts for content appropriateness and coverage evaluation before additional adjustments were made

4) tried out knowledge test, attitude test, and behavioral measurement forms with 40 temple-goers who were not future population of this research

5) rechecked on the quality of environmental knowledge test form aimed at finding difficulty levels and discriminating power using a 25% technique (Kijpreedaborisut, B., 1999: 112) and select questions with difficulty indices between 0.2-0.8 and discriminating power no less than 0.2. As a consequence, the researcher obtained the final 20 questions (out of 25 questions initially) which had reliability value of 0.72, tested by Kuder-Richardson 20.

6) calculated reliability values of attitude and behavioral measurement forms using Cronbach Alpha Coefficient. The researcher obtained 15 and 17 questions with reliability coefficients of 0.75 and 0.82 respectively

7) applied the questionnaire to the selected samples

3.9 Data Assessment and Analysis

3.9.1 qualitative data assessment

Before data analysis process, the researcher had conducted a validity testing on the data using triangulation method (Denzin, 1970 cited by Chantavanich, S., 1997: 129-130)

1) data triangulation by investigating if the data were valid. The method was to investigate the source of the data as follows

- (1) timing : if data collections at different timings yielded different results
- (2) place : if data collections from different locations yielded different results
- (3) personnel : if data collections from different informants yielded different results

2) methodological triangulation by collecting of the same issue from different sources such as observation, interview, and documentary research.

3.9.2 data analysis

data analysis were of two methods : qualitative and quantitative

3.9.2.1 qualitative data

After data cleaning, the researcher analysed the data by conducting and analytic induction and a constant comparison by following 4 analytical steps (Chantavanich, S., 1997: 137-142)

1) comparison of different categories of incidents obtained from field survey

2) integration of similar data categories and properties together

3) expansion of comparison process and selection of key events

4) summary

3.9.2.2 quantitative data

Quantitative data that required statistical analysis were the results of the test on the learning of informants undergone environmental education organized by the temples. The variables to be analyzed were as follows

1) a questionnaire on knowledge concerning environment comprised 20 questions. Correct answers received 1 point each and wrong answers received nil. Full mark was 20.

2) a questionnaire on attitude concerning environmental conservation comprised 15 questions in Likert rating scale format. Each question rated attitude in 3 levels: agree, uncertain, and disagree

(1) positive items

reply	agree	3	points
	uncertain	2	points
	disagree	1	point

(2) negative items

reply	agree	1	point
	uncertain	2	points
	disagree	3	points

3) a questionnaire on behavior concerning environmental conservation comprised 17 questions. The respondent were allowed to select the answers relating to their behavioral frequencies and given points as follows

(1) positive items

reply	frequent	3	points
	sometimes	2	points
	never	1	point

(2) negative items

reply	frequent	1	point
	sometimes	2	points
	never	3	points

The meanings of points are as follows

3 points meant desired behavior

2 points meant moderately desired behavior

1 point meant undesired behavior

4) a questionnaire evaluating pattern appropriateness comprised a five-point scale with points allocated as follows

5 points meant most appropriate

4 points meant very appropriate

3 point meant moderately appropriate

2 points meant less appropriate

1 points meant least appropriate

Points allocated from the evaluation were calculated to get average value. The interpretation of average value were according to the following criteria

4.50 and moreover	meant most appropriate
3.6-4.5	meant very appropriate
2.6-3.5	meant moderately appropriate
1.6-2.5	meant less appropriate
lest than 1.5	meant least appropriate

3.10 Model Building

A model for environmental education of the temple was constructed according to the following steps

- 1) documentary reviews on information, concepts, theories, principles relating to environmental education of the temple
- 2) field observation on environmental education of the sample temples in terms of factors and processes of the implementation, major factors in the implementation, learning condition and attitude of people having undergone environmental study organized by temples.
- 3) synthesis and integration of information obtained from documents, experiences, field observation aimed at constructing a model of environmental education of the temple.
- 4) model inspection by dissertation advisors for initial adjustment before presenting to experts for further comment.
- 5) presentation of a model to experts for inspection and evaluation. The acceptability level of each item had to be above average.

CHAPTER IV

RESULTS

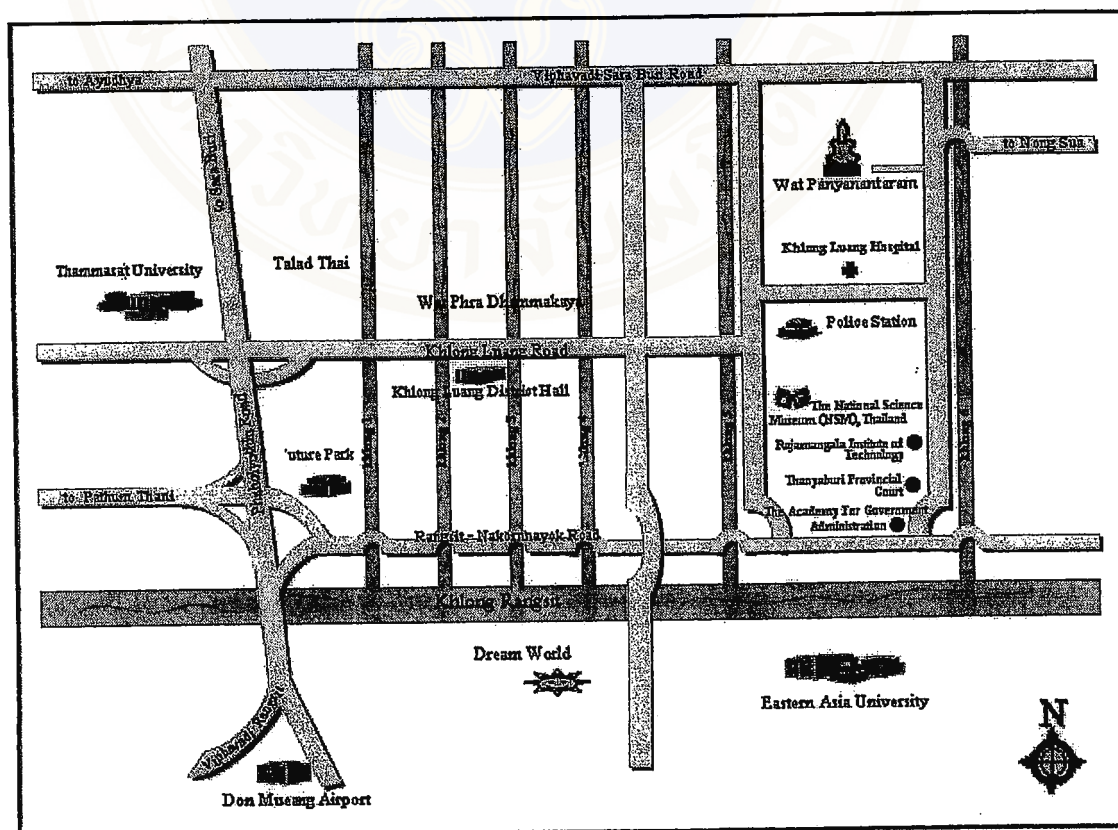
The researcher, in this research, shall projections the following scenarios.

1. The temple's background, general circumstance, and environmental education's condition
2. People's learning
3. Evaluation of the appropriateness of the environmental education model performed by experts

4.1 The temple's background, general circumstance, and environmental education's condition.

4.1.1 Wat Panyanantaram

4.1.1.1 Background



Source: the brochure of Wat Panyanantaram

Figure 5 : Location of Wat Panyanantaram

Wat Panyanantaram, Mahanikay, locates at address 1, Moo 10, Tambol Klong Hok, Klong Luang district, Pathum-Thani Province. The present abbot of the temple is Phrakrupalad Silawat (Sa-Nga Suparo)

For the temple's history, the Klong Hok's indignity couple, Mr. Phichit Thongsrimuang and Mrs. Chamrus Thongsrimuang, who is very faithful in the Buddhism, initiated it. They, in the year of 1985, made a common agreement to do something for their own good for the present and next life. The best thing to do in the Buddhist's concept is to build a temple. So do they. They then donated the land of 6 rai (more than 2 acres: 2.5 rai = acre) to be the religious domain.

This domain originally was not a temple, but a place of monk (Samnagsangka) entitled "Samnagsangka Sonthao". When the place of monk was established, the villager in Klong Hok's community and its vicinity has a great pleasure. Because they are conveniently perform their Buddhist's way of life.

Seven years later, on December 29, 1992, the villager had a consensus to invite the prestigious well-performed on the law of Buddhism to patronage this place of monk "Samnagsangka Sonthao". That monk is "Phrathepvisuthmethi" or commonly known Laungpo Panyanantha. Since the place of monk a subject to him, become well knows among the merit-doing people and favors his preaching.

On January 31, 1995, the place of monk "Samnagsangka Sonthao" was upgraded to be a temple named "Wat Panyanantaram". With the Laungpo Panyanantha's prestigious and well-performed on the Buddhism's mean, the Buddhist "group of disciplines" put their faith into this temple by purchasing

additional land to escalate the temple's area. Up to the present, the temple's area becomes 38 rai 19 Sq.wa. (about 16 acres). The domain of the temple, now, is 4 times larger than former. The number of monks and disciplines are also increasing. There are 34 monks, 11 novices, 5 nuns, and 10 disciplines reside in the temple.

The temple's objective is, Laungpo Panyanantha has said, a mean of creating the respectability monk, a mean of producing people, juvenile, the Buddhist, for not too much under the material's subject, to have a medium mean of living as the Lord Buddha's taught.

1) The temple's concept

The Dhamma's training place creation is a hard job to do. It is harder that if the Dhamma's training place were intentional created in the purpose of taking one's easy, serving the religious conducting, natural shady as the Lord Buddha's period. The concept of the temple creation is then to serve the environmental conservation and natural creation for every being can keep in touch with the nature, trees, stones, soil, sands, and different kinds of animal. The philosophy of temple creation is to earn the building that wills serves the religious conducting conveniently.

There are simultaneously two purposes in the temple creation, (Phrakrupalad Silawat (Sa-Nga Suparo), interview) they are:

1.1) Material purpose: the concept of the temple creation is base on the three latent function, that are:

Firstly, Utility purpose means serving the purpose, namely it can be explained that how could the things is made up to serve any useful purpose and its worthwhile.

Second, Economy: From the long-run outcome standpoint, it could reduce the natural resource advantage. Consequently, it could save the expenditure of the Buddhist who patronizes the temple.

Third, Art implication: the temple is beautiful in form of a typical Thai architecture, which is not only to persuade people attain to the temple, but also hinting the Dhamma's philosophy.

1.2) Mind purpose: The concept is to develop the youths and people's mind. The ladder of development begins from the person being to be human being, and from human being to be a good Buddhist.

Since the Laungpo Panyanantabhikkhu's objective in creating the temple of Panyanantaram as a center of training. Owing to the Luangpo Panyanantabhikkhu's objective in creating the temple as a center of knowledge-seeker training, religious practicing and disseminating. The temple planning must be prepared to respond the present and future activities, as well as the benefit and right on the Buddhism's purpose. He classify temple ground into 2 parts :

(1) The religious material domain: This area is a natural area in its nature. And there is an element of the Buddhism temple that is a natural monastery. It has no other building but the Buddha's image, trees, and ground. This natural

monastery is created to pay a remembrance respect to the Lord Buddha that birthing on the soil, enlightening on the soil, preaching on the soil, and Nipara on the soil.

(2) The faithful religion domain: This area is an habitation of the one who is closed to the triple gems divided it into 4 phases that are: the habitation of Monk, of nun, of layman, and of laywoman. It is an idea of strengthening the Buddhism and making the temple belong to the Buddhist of four have a chance to study and practice of dhamma conveniently.

2) Condition of Economy, Community society in the temple area

Wat Panyanantaram locates on the territory of the Klong Hok Tambol Administration. This Tambol composes of 14 villages that are under its governance. The geography of this area is the basin of a canal. On the plains the peasants grow paddy and gardeners plant the fruits garden. It is proud of saying that this area is farming Tambol. Formerly, this Tambol was a landlocked area because there was not other way of communication but canal. At present, the Government expands her modernization to the adjacent boundary. There are two streets have made for them to alternate their communication. One is a main street: the Klong Laung-Nongsua Street. The other one is a sub-main street: Rangsit Nakornnayok – hugged Klong Hok (off to Wang Noi).

The Khlong Hok Subdistrict Administration Organization population totally is 9,028 persons. The population density is average 230 persons per kilometres (Statistic on September 30, 2000). The large majority of population occupation are peasant (growing paddy); gardener (fruit gardening of banana, orange, coconut) ; and the manufacturer's worker. The escalation of manufacturer now is an aggressive

expansion in this area. Anyhow, the tendency of this area is forecasted to be industrial estate area resulting the incoming earning, job opportunity, and better economy.

4.1.1.2 The temple's circumstance

The physical character of the temple is rather different to other temple that is, there is no architectonic temple's style in the sense of the public. The majority of the people who come to visit this temple complained that it is unlikely the Buddhism temple. To rectify the sense of the people in the line of the temple's philosophy, Phrakrupalad Silawat (Sa-Nga Suparo) explains that:

"If the symbolic of "temple" mean the collective place of Bot (a monastery), Wihan (an edifice housing a large image of Buddha), Pagoda's ground, the keeping place of ashes of a cremated dead, the crematorium, this place cannot be called "the temple". But if the temple means the collective place of the peace, merit-doing, Dhamma's audience, meditation, practicing oneself to be out of the circle of reincarnation. The Temple of Panyanantaram is a perfect temple in the form of Buddhism temple. And this temple can be called "Arama" because it means the place of natural shady and peaceful mind are available."

Phradhamma Kosajarn (alias Panyanantabhikkhu) gives further explanation to the latent meaning and philosophy of this temple.

"The temple of Panyanantaram means the place of philosophy intellectual. Everyone who attains to this temple must seeking

intellectual. This temple is a place for the one who prefers peace minded, learn to understand each of every people life, and to comprehend the justify life. There are too many temples of death body burning, this temple is made to burn the alive person.....to burn the passion in the person's mind."

4.1.1.3 The temple's environmental management

1) The temple ground.

The take care of the flower plant garden, the trees around of the temple are taken-care by the caretaker. The domain of the temple is separated into two parts. Larger of the domain is the medicine herb and the remaining of the domain is a part of others favor purpose.

In additional, the routine work in the domain, including the religious activities of the trainees, are proceeded in an orderly fashion by monk and novice.

2) Pollution management.

2.1) Garbage elimination.

As the temple arranges pupil, student, and personnel from the sectors of Government and private participating the training program in form of religious practicing camp. They are the Buddhist camping, the merit camping, etc. Furthermore, there are a large number of people come to do merit, religious practice at the temple as well as temple's touring all year long. All this activity invokes the garbage. The temple, thus, tries to solve such a garbage problem in a following way:

(1) The determination of garbage's cause. There is a regulation for the trainee to conduct in the temple domain viz., the crushing desert will be forbidden.

(2) The determination of garbage's incident. The temple will provide garbage tanks for its separated kind of the following garbage:

- Leftovers of food.
- Leavings of organic liked fruit and its peel, fresh vegetable, and banana leaves, etc.
- Remnants of inorganic liked paper, glass, and plastics.

The approach of scrap elimination is emphatically the natural retrocession. Practically, there are four orientation in eliminating the scraps.:

(1) Easy to digest garbage such as, the leavings of leaves, leftover. The mean of elimination this kind of scraps is a natural retrocession by putting it in the potted plant as fertilizer, not burning it. The reason of not burning it because of severely severs the natural circle, air pollution, and environment's damage.

(2) The hard-digest garbage such as, plastic bags. The way of eliminating is burning.

(3) The garbage hazards to human being and environment for example, a fragment of ceramic, porcelain, cement, or nail, remnants of matters, invaluable bottle likes the brown color bottle. The way of eliminating is to cover it up in the below ground. Such elimination must do in summer season.

(4) A valuable garbage, for example the plastic bottle. This sort of garbage will be classified and contribute it to the garbage-keeper to sell. The income from the garbage belongs to the garbage-keeper, not to the temple.

2.2) The water pollution management

There are many source of water in the temple domain. The residents in the temple depend on this source of water by pumping it from the canal behind the temple. In the neap tide condition effecting the water become rotten. The non-symmetry of the nature hazards the existing-being in that area. For doing the natural symmetry favor, the temple then adopt a water turbine and mountain adjusted-water installation to refine water.

2.3) The toilet management.

(1) For the toilet site in the resident area of the religious trainee and practice, the residents must share their intendance by regarding it as a civic service in the morning.

(2) For the toilet site in the building is a public toilet, the caretaker of the temple take it care.

4.1.1.4 The way of life in the temple

The activities procedure of the temple begin a 4 o'clock, a very early in the morning, the residents will be awaken by the bell. The voice of the bell is a sign of warming everyone to start his or her personal duty. Ending the bell voice or during his or her personal duty, the temple will domestic on-air the preaching of Luangpo Buddhata or Luangpo Panyanantabhikkhu from the tape-recorder. Everyone has to gather himself or herself at the Chalermprakriat building after they finish their duty for morning prayer. It will begin at 04.30 A.M. After that they will

do meditation. For the one who is unfamiliar wake up in a very early morning would like to question for reason why the awakening time should be at 4 A.M. ? The answer is that:

“...Because the time of the monk is the time that free from the a vice person, i.e. a gang of drinking whisky will give their group up at about three A.M. or so, thus, 4 A.M. is a waking time of monk to mornig prayer. The Lord Buddha also success his Enlightenment in an early morning. The cock to crow at the early morning time since..... as well.”

After completing their morning chanting, it depends on individual to perform his or her “affair.” The monk and novice have a division of labor. Some of them work in the temple, some of them goes out with a bowl for receiving food on the given route. The nun and merit-doer will carry their duty out as assigned such as, preparing the dining place at the grounds of “Lan Hin Kong,” making the temple grounds cleared from scraps, making the training room; canteen; and toilet cleaned.

When the monk comes back from “save mankind from sin” receiving food, his food will be taken to put together in the big bowl for distinguishing food from fruit and deserts. These foods are being prepared for the monk to take it. The monk and novice will take the signal of the bell’s sound as a time of taking food, the bell’s sound shall voice at 07.00 A.M. The monk line-up ranking from the senior monk to take food from the big bowl and come to take it at the dining place “Lan Hin Kong.” After the monks have taken their food, the nun and lay followers can then do so for themselves. Before having food, the monk will scrutinize the taken-food in Pali verse

as mind awareness in taking food. A part of Pali verse in scrutinize the taken-food when the monk take food is:

"... ..food is received, I have taken it, not for pleasure, not for physical might, not for showing, not for eating but for alive of this body, for self-sufficient, for the physical demand ending, for doing a good turn of discipline. For such a mind awareness, we can give up from former suffer, which is hungriness, and the new suffer is not bring about. Thus, having such an easy self-sufficient is a non-suffer seeker and has a happy life will belong to us, like this."

After having food, each of them has to take his or her responsibility for cleaning stuff and keep it in a neatness way. So does the lunch. In the evening time, they are chanting and do meditation. These activities start from 06.00 P.M. After that, they are free to have a conscious relax.

Buddhism Cooperative Society : maneuver controlled resource consumption

The present of environmental problem consequence the pattern of the way of life in consuming society that pay own response attention even though those demand is not necessary to their quality of life. In the Buddhism discipline then has regulated the self-sufficient demand of consumption of monk by limit them to have only a necessity element materials.

Wat Panyanantaram approaches in controlling the resources consumption by distinguish the foodstuffs from the consumer goods that received from faith Buddhists donation. If it were foodstuffs, it would take to the kitchen for cooking. For the

consumer goods, it will be taken to keep in a place called “Buddhism Cooperative Society”. Whenever it is needed to utilize, it can be drawn from the account controller. The main reason is the temple realize that the donation of the merit-doer wish their stuffs favor the temple as a whole, not specify to a particular monk. In addition, there is a discipline forbidden the monk not to keep personnel property more than self-sufficient, which serve their mind free from selfishness. This is the birthplace of idea of the Buddhism Cooperative Society’s establishment.

4.1.1.5 The environmental education condition of the temple.

The environmental education condition of the temples has revealed that each temple has his own pattern of management. For this research study, the researcher would like to present it by considering the factors, which is an element in the system of each temple’s environmental education management. There are :

- 1) resources
- 2) environmental education procedure
- 3) supportive factor related to the environmental education is scheduled by the temple

As the former have said, Wat Panyanantaram is a temple that emphasis the quiet and natural circumstance for the Buddhism discipline practicer can close to the nature as touch. The temple does not care for the permanent building. So, the temple’s environmental education condition is unique as follows:

1) resources

The major elements of resources of the environment education formulation of the Wat Panyanantaram composes of personnel, budget, material and equipment, and management which has its details as follows:

1.1) Personnel : In the environmental education formulation (management) of Wat Panyanantaram, there are two sections of personnel that is divided:

1.1.1) Section of learning provision. It composes of :

(1) The Temple's Personnel can be divided into 2 parts :

(1.1) The direct learning Manager i.e. The Monk lecturer. A part of monk lecture is reside at the temple. Another part is a monk, who is studying at Mahachulalongkornrajavidyalaya Buddhist University, to have the experience after their coursework at the temple. In addition, there are monks in the project of the right principles heir training to be a joint-lecturer for example, in the project of the youth "Buddhist Camp" the monk lecturers have a major role in continuous training the trainee. There are 7 monks to be standing lecturer. These monk lecturer has experience in lecturing because they have ever been trained on the right principles propagation in the project of right principles heir. Even the monk student of the Mahachulalongkornrajavidyalaya Buddhist University who is being trained also have experience in lecturing because they have even been a lecturer of the Project. All the monk lecturer is under the supervision of the abbot or assistant abbot.

(1.2) A person who play his role in supporting the learning management to be more perfect. This part of personnel comprises of monk, novice, and layman who have ever been a temple's volunteer. They will support the

temple by in charge of the auricular laboratory, library, computer room, ready for publications, medicinal herb plant garden.

(2) Personnel from outside the temple can be divided into two groups.:

(2.1) A person who has academic experience group. There are monks from the other temple and layman. This group of person is in the academic association. They will perform their function as a lecturer and provide convenience for the visitor who is interested in environment activity and others.

(2.2) A local knowledgeable person. They are a native inhabitance near the temple. They have experience, specialization, or approach of way of life that favor the environment such as, doing an agriculture in accordance to the new theory, preserving the local plants breeding. The temple relies on their knowledge and experience as precedence in the environment course.

1.1.2) A trainee group : They compose of youths who are pupils and students, civil servants, the private company's workers, and people in general.

1.2) Environmental education management

The environmental education procedure or other activities of the temple must have an effective approach to handle it. Wat Panyanantaram has her own approach to implement it as follows:

1.2.1) Planning : as Wat Panyanantaram concentrates on the environmental education training and religious way of practice where the youths and people attain to be trained. Anyhow, the temple also has other civic service where the people are available. The temple, thus, has planed its ground to equally serve everyone who demands it. Since the temple administration is a centralization form, all the

programming project of the temple is directed by the senior monk, especially the abbot and abbot's assistance. The role of junior monks just plays on the assignment of the senior monk, no participation of idea. After the program is planned, the junior monk must carry it out as scheduled. If that job were needs the participant, there would call for a co-operation by informal requesting. In the case of camping program, the senior monk will provide a topic and its substantial as guide line for the trainees in each group, the detail of curriculum depends on skillful of each scholar monk to set it up.

1.2.2) The personnel preparation : Wat Panyanantaram has a duty to provide service on the environmental education and others for general people. While the temple has a little number of personnel compare to the demand of services, the duty of the temple's personnel is rather heavy burden. Usually, the temple's personnel like monk, novice, nun, and lay followers have his or her standing duty or responsible job. For the training course, the temple will prepare 2 groups of monks to perform his duty on alternate day. If any day there were more than one camp of training, both groups of monk have to perform their duty.

1.2.3) The temple's personnel meeting. On the Buddhism holy's day, the senior monk, mostly the abbot, will have a message about environment matters or other subject to the monk and novice after completed the monk function. If there were some issue that should let the nun and lay followers know it, it would be informed after the daily chanting. As one of the practicers tole the researcher that, once a day after chanting, the senior monk make an awareness of the person, who live in the temple, try to save the temple's cost of water pipe and electricity. He or she hints to reason that the temple try to imbue the economy personality. The message is :

‘He said that he does not take a pity of water and electronic expenditure, but taking a pity of one’s extravagant habit.’

In the case of urgent to share their consideration, the concerned persons meeting will be held in each occasion.

1.2.4) Commandment: some activity the monk and novice have to work together and effect the public. Such an activity will be planed its schedule and under the commandment or assignment of the abbot or acting in duty of abbot such as, to go out with bowl for receiving food in the morning, take turns to keep something clean of the novice.

1.2.5) Coordination : the center of the coordination office is located at proper area, not far sighted. It is easy to find it out. Any information inquiry is available to this office. The office has a furnished office automation i.e., telephone, Fax, to communicate with the outsider. For the internal temple communication, there are inter-phone within each small house of the monk and the training office for their communication.

1.2.6) Public relation : the temple herself has a publications for propagation. The public relation of the temple is made through the documentary and magazine that is run by the temple. One of the magazines is quarterly named “Panyasan” (Bulletin of Intellectual). The others is a book of right principles and precept named “Prakay haeng Panya” (Intellectual sparking) that collected written articles and speech by the abbot Phrakrupalad Silawat. The temple also introduce and prevail the information through her own homepage on computer internet.

1.3) Material and accessory

Materials and equipment that serve the facility of the environmental education activity and others of the Wat Panyanantaram can be classified as follows:

- (1) Visual aids : Amplifier, Projector, VDO.
- (2) Media equipment : Telephone, FAX, ICOM.
- (3) Photography equipment : Camera, VDO camera, Digital camera.
- (4) The public relation equipment : Exhibition board.
- (5) The office automation : Computer.

1.4) Budget

For the budget of activity implementation and environmental education, the temple does not gain any support from the government. That expenditure budget comes from donation of the Buddhists called temple's revenue. The temple earns their living as self-reliance. In addition, the temple looks like a family organization. So, the budget administration goes on its natural way. The source of fund is like a power of merit that the Buddhists come together to donate to the temple without any yield. It is different to the private business. The fund raising in form of money will be allocated to the following activities:

(1) The Buddhists donation to the temple depends on the individual pleasure.

(2) The donation as please of the institute of education, government and private organizations, which rely on the temple as a conference and seminar place, and its personnel, who come to have an environment education at the temple. The temple has no regulation of fee. It depends on the faith and financial potential of each organization. For example, the large school, government and private organizations,



that have large sum of budget, might allocate their budget for their training program more than the small one, that have a little sum of budget or do not have it. Some organization that has no budget, the temple does not demand it. The temple regards it as a temple's duty to serve the social. Anyhow, the temple provides an equal convenience to everyone without discrimination and prejudice in accommodations because the temple know how to allocate the fund.

2) Environmental education process

The process of implementation on environment at the Wat Panyanantaram that have 5 substantial issues to be considered, that are contents, methodology, activities, media, and evaluation. Each of them has a following detail.

2.1) Contents

There are two parts of the environmental education in the content that provided by the temple :

2.1.1) Theoretical contents

As the Wat Panyanantaram has a concept of the temple's establishment for the people can come to study the right principles of Buddhism and in the right way of Buddhism education and practice that is accepted that "*the closer to the nature, the more progressive in Buddhism study*". There are no other equipment and education aid that are more suitable than the pure nature. So, it can be said that the content of environmental education is a part of merging in those knowledge, for example.

Dhamma means nature. Teaching on dhamma is to make understand the nature, where the human being must depend on it without exploitation with one

another. To live with the nature, non exploitation to one another is one of the dhamma principles. From the above-mentioned is shown that the dhamma principle is human environmental science in the contents of environmental education.

2.1.2) The practical contents

The contents that the participants must take action and brings about the direct skill and experience, the participants must perform to the regulation law given by the temple. The regulation law and the stage of activities are interdependent and benefit the environmental conservation. For example, to make the accommodations and the temple's area cleaned, to go to bed under the umbrella in a house with a palm leave roof that have no any beyond necessary facility utensils. To limit in taking the necessary utensils to the temple, to have a dish for having food and clean it with own self as the temple regulation law for the neatness and economy, to have plain dressing, communication media is forbidden, the chewing desert is forbidden.

2.2) Methodology

The environmental education that is carried out by the temple is non-formal education. The way of content transfer to the target group is:

2.2.1) Participation pattern.

(1) To merge the environmental matter with the lecture of dhamma or other topic to the trainees such as, when lecture the dhamma principle on the piety, the example of follow the dhamma principle can be raised that not only the human being can do, but also do the natural resources. The utensil material value the human being, namely, it must used with care and keep it a good condition. On the other hand, in his description of goodness doing, he try to imbue the matter that:

"Undo it because of regarding it as a tiny goodness, Do it because of regarding it a tiny evil."

In the meanwhile, he will link it to the environmental substantial by giving more example that :

".....Whenever the garbage on the ground is seen, it should be taken to keep in its place, or if the light or water pipe turned it on for nothing is seen, it should be turn off by the seer."

(2) To study in the natural classroom. There are classroom of training both in and out of building, where is a natural shady. Besides the knowledge can be received by the lecture, the trainee can talk or inquire other interesting issue whether the Dhamma principle, or the temple's environmental condition, or other things that exist in the temple.

(3) Learning by heart or verbal repeated itself many times. For example, before having food every time, they must scrutinize food carefully for realizes its value and hardship in having it by saying together that :

"Every seed of rice, every kind of food, do not waste it, it is a worth thing. There is many people work it with painstakingly. Pay a pity to the poor people.

There are many people in this world is poor, hardship, needy, poverty-stricken. Do not left food over. Take a pity to other people who have no food to take."

Such an above-mentioned is to habitualize the trainee to aware of their taking food, in addition, there is a regulation of having food that :

"Not to make a loud noise, not to make a spill, and not to left it over."

2.2.2) The non-participation

In addition to the environmental education in course of participation, which is specifically prepare for the trainee, the temple also open the chance for the Buddhist has an autonomous self-study by schedule the knowledge propagation system for the interested person can access to the source of information as :

- (1) Self-studying area in the temple.
- (2) Exhibition board.
- (3) Lecturing.
- (4) Banner in the temple.
- (5) Talking trees.
- (6) Public relation's document.
- (7) On air.
- (8) Library.

2.3) Activity :

The environmental education activity is run and supported by Wat Panyanantaram can be divided into two characters :

2.3.1) The temples' inside and outside activity can classify that held by the temple.

2.3.2) The activity related to the environmental education, which the Education Institute do deduce the being done by the temple.

2.3.3) Support the other kind of environmental activity.

The detail of the activity in each kind :

2.3.1) Activity held by temple

Wat Panyanantaram has her own activity as the project has been implementing in religious material and heir, and the Thai cultural heritage succession, altogether 19 projects. In detail of these activities project have merged with the environment substantial for implants the participants awareness. In this study will present the detail in accordance with its activities:

(1) The activity make up in the temple

Wat Panyanantaram was established for opening chance to the Buddhist to study the Buddhism right principle for the human being perfection in the practical mean that the Lord Buddha has regulated it. The practical mean of the Lord Buddha has an easy literary style that : *“easy live, easy eat, acted in accordance with their mind (idea), ended the problem”*. To study the Dhamma of the Lord Buddha by spend their life near the Lord Buddha will lead to have a better comprehend the Dhama. The accessible way to Dhamma that is done by the temple come from the environmental study through these process:

(1.1) Way of Life in the temple :

The life style of the practicer at Wat Panyanantaram take a part in bring about the environmental learning. The temple regard it as a way of practice that : *“to live for other, to exist as self-practice, to sleep in a state umbrella, to have a meal with its demand, to dress befitting his or her state, to be self-assistance and do not be a trouble maker”*, which is in accordance with the ideology is that :

“Have a modest life, have an esteem behave.”

Have a modest life : there are 4 ways of behave benefit the environmental learning, that are :

A. Having food with cat dish : It implies that : *"Using the minimum of utensils, Maximum benefit it."* For example, the temple has utensils called "standard dish" (in having food). The reason in calling of standard dish because the size of dish can keep an adequate food as the need of food demand and easy to carry it. A person here will use a single dish because of regarding the stomach of a person do not separate the eaten food. Such a conducting will educate the way to spend the resources with economy but highest benefit. It is a part of environmental education.

B. Taking bath in ditch : Compare to the present understanding, it hints that water resource usage should be economy and value it. The reason is that before it would become the drinking water, its process waste a lot of budget.

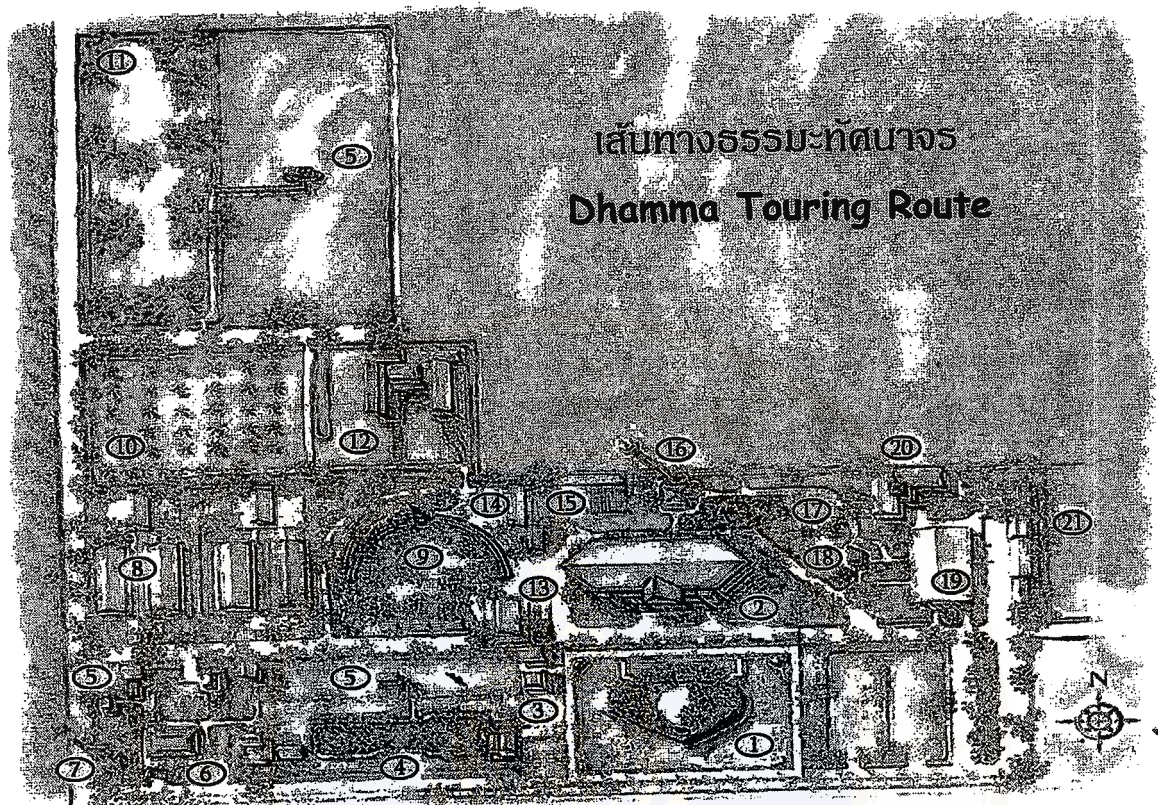
C. Living in pigsty small house : The place of resident of the practicer stay together called Anakariga Dhammasom. It means that the practicer's resident is not involve with the household but it would be called by the visitor that "pigsy" because the house style is raised high from the ground, pave with a polish mat, roof made by palm leave, there is a rope (for tie the state umbrella) tie along with the crossbeam through the house. When going to sleep, they pave a mat and stretch the state umbrella out in a lining up manner. It is a lifestyle with plain and economy. Some person might not used to sleep on the mat, not on the ground. To sleep with mosquito net is state umbrella, or sleep together with a group of person. Such a conducting is regarded it a mean of a person who come to dhamma practice at Wat Panyanantaram, and have a chance to adapt themselves and self-admire in having a plain life.

D. Listening to the mosquito singing : It means to have a life of living in touch with every parts of nature.

In the part of higher ideology to perform means self practice to maintain the precept of the Lord Buddha has taught.

(1.2) The activity of dhamma touring :

The activity of dhamma touring is done by the temple for the practicing. Its also for the general people, who come to the temple gain knowledge, understand everything around the temple profoundly. The temple does by link between the dhamma principle and natural environment and temple's make up environment together for easy to remember, understanding, and keep it a way of life. The above activity "The way of life of Wat Panyanantaram's people." is a part of education under the project of "Buddhist Camp," and "Merit Camp." The Merit Camp is a project of quality of life creation introduced by the monk lecturer. In additon, in the case of visitors comes to the temple, the monk at the public relation office will take them to tour around the temple and explain the implied meaning of the banner.



ที่มา : วัดปัญญาบันฑิตาราม, ม.ป.ป. : แผ่นพับ
 Source : Wat Panyanantaram, n.d. : Brochure

- | | |
|---|---|
| 1. อุโบสถธรรมชาติ | 1. Natural Ubosot |
| 2. อาคารเฉลิมพระเกียรติ | 2. Chalermprakiat Building |
| 3. สำนักงาน | 3. Information Office |
| 4. สวนป่าสาละ
สมเด็จพระเทพรัตนราชสุดา | 4. Her Royal Highness Princess
Maha Chakri Sirindhorn
Sala Botanical Garden |
| 5. ธรรมนาวา | 5. Dhamma Boat |
| 6. สุนัขยูดา-ลานธรรม | 6. Dhamma Practicing Ground |
| 7. กังหันสูบน้ำ | 7. Waterwheel |
| 8. อาศรมอุบาสิก-อุบาสิกา | 8. Lay Follower Hermitage |
| 9. ลานหินโค้ง, ศาลาบาตร
สวนป่ากาญจนภิเษก,
ทอระฆัง | 9. Arched Stone Ground,
His Majesty the King
Golden Jubilee Botanical Garden,
Ho Rakang (the bell tower) |
| 10. สวนกล้วยนาบานาพันธุ์ | 10. Banana Garden |
| 11. เขตมอกข์ธรรม | 11. Mokka Dhamma Zone |
| 12. กุฏิพระ | 12. Kurties (The Monk's Resident) |
| 13. ศาลาเรือนไทย | 13. Thai Traditional Pavilion |
| 14. ห้องพยาบาล | 14. Nurse Room |
| 15. เรือนเพาะชำต้นไม้ | 15. Nursery |
| 16. ระบบประปา | 16. Water Supply System |
| 17. สวนสมุนไพร | 17. Herbal Garden |
| 18. ศาลาพักผ่อน | 18. Relaxation Pavilion |
| 19. ศาลาการเปรียญ (ทองอิน) | 19. Sala Kanparien |
| 20. อาคารพักแม่ชี | 20. The Nun's Resident |
| 21. โรงครัว | 21. Kitchen |

Figure 6 Dhamma Touring Route, Wat Panyanantaram

(1.3) The activity of the temple development

To set the activity of the temple development up for the practitioner learns the principle of Buddhism discipline related to the learning on environment and its absorption by realize the outside temple's way of life that there is division of function. The society will be peaceful when everybody carry his or her proper duty out. When come to stay at the temple, he or she has to serve his or her function to the temples' society. It is same to the attitude of Phra Buddhadasa that performing his or her function is one of practicing. Anyone who do his or her duty is named "The practitioner."

(1.4) The ceremony for children of Buddha : A plain ceremony but conceal with worth of value.

The ceremony, even if it were not the element matter of the Buddhism, is a necessary existing because we need the religious ritual as a mean to induce the people and social come into the truth (Kiangmuangnan, K., 1989 : 53). There is a knowledgeable person implies the ceremony or religious ritual as a peel of tree, which cover the core element of religious. Wood is the core element of religious. These two parts are inter-dependent but the present ceremony of the Buddhist is in the transitional point. There are some Buddhist regard the ceremony is the core elements of Buddhism (Department of religious affairs, 2000 : 1). Wat Panyanantaram does not support the people who are superstitious in charms or the nonsense ceremony such as, sprinkled holy water on the head, to get rid of the bad luck ceremony. The temple's ritual ceremony is emphatic the plain and economy, do not over use the offering to the god material. The temple regards that some offering to the god material like joss sticks is not only an overhead expense, but also cause the air pollution and the burning

scar become a cleaning burden. As Phra Dhamma Kosacharn (Panyanantabhikkhu) campaign to give up the joss sticks as an offering to god materials.

The activity in accordance with Buddhist Camp project , there is a significant ceremony that makes it up in the second days of camping for the participants is the ceremony of becoming the son of the Lord Buddha. The eminent ceremony is the candle, which is permitted to use it. The candle, weight one baht, is used in the ceremony must be yellow color because it is good quality. The time of melting itself meet the time of ceremony. In the meantime, candle is introduced to perform a function that wish to transmit to the person who join the ceremony.

The source of using candle as a symbolic of pay respect because the candle is a taken thing by bring about the emotion i.e., happiness, upset, which is different to pay respect by sacrifice the alive animal has been done in the past. The other reason is that Buddhism is religious that praise the wisdom because the wisdom is a thing can destroy the darkness and ignorance. The wisdom will be originated must rely on the dhamma of the Lord Buddha, which is brighten as the light.

In the ceremony of becoming the Lord Buddha son, the abbot himself goes forward the ceremony with a smart manner, and his sound full of kindness voices impressed the ceremony's participants with their remembrance. The said ceremony is a heart of Buddhist Camp's activity because the ceremony participants is implanted to be a perfect Buddhist. They process their life by rely on the Buddhism principles favored the nature and environmental existence. Conducting in accordance with the tradition, custom, and culture, is a way goes forward the perfect Buddhist. It is also a way of fundamental construction in the qualified environmental conservation. As Phra

Bhuddhathasbhikkhu (1990 cited by Osatanont, S., 1992 : 4) sum it up that : The Buddhist can preserve the nature by to be a right Buddhist. Because of the right Buddhist is not a selfish person. Without selfishness, there is not natural environment deterioration.

(2) The activity that held outside the temple : It is an activity that benefit the learning of environment. The temple arranges this kind of activity whenever the chance presented itself to the temple. The activities are comprises of :

(2.1) The natural study.

Taking the trainee to have a close natural study near the temple area by walking meditation in the morning. Taking the youth participate Buddhist Camp to see the rice field. Such an activity impressed the trainee very much. As a monk lecture has said that :

“Many children feel exciting, they are in having chance to see, to have a close touch will the rice produce its seed, which they eat it everyday, that how it look like.....”

This activity makes the youths have a chance to touch and learn the nature closely.

(2.2) The study of the folk-way

The lecturer monks who take the responsibility for the above activity will separate the trainees in group with equal number of the route that the monk will go out with bowl for receiving food. These person has to follow the monk who go out with bowl for receiving food in the morning. (This activity has not done at the present because it is not convenient to control the trainees.)

(2.3) Learning from the local experience persons

By taking the trainee to learn the way of life of the local experience person i.e., to interview and visit the self-sufficient agricultural system. Such a program makes the participants have a chance to exchange idea and gain a real scene experience. The trainees can take the knowledge or concept as a mean of self-development, community development, and a better quality of life development. They can live in the social with understanding and assimilate with the nature and environment.

(2.4) Teaching the fundamental merit on environmental conservation

The youth of male has to come along with the monk whom to go out the temple with a bowl for receiving food in the morning. In some occasion, the school come to camp at the temple will schedule the youth of male, who is a badly-behaved boys, go out along with the monk for receiving food in the morning. Before going out, the monk trains how to behave a good manner to him. For example, Be good behave, or in receiving food from the person, who give food to the bowl, with a respected manner because they are regarded as an obliged person. Such an activity is a result of aggressive lessen, and a submissive kind of person, which is a fundamental of environmental learning.

2.3.2) The activity that relates to the environmental education which the Institute of Education go along with the temple activity

(1) Asking the youth to have personal notebook for jot down whatever he or she has an impression in visiting the temple.

(2) Recording the precept, proverb and aphorism, or statement from the banner. Some school try to inspire their student to note it down as much as possible, and send it to the teacher as homework. Some school regards it as an English course by ask their student translate all the banner in the temple into English.

(3) To make the mind mapping up has shown one's emotion after the temple's dismissing.

2.3.3) To support the other kind of the environmental education

(1) Give permission to the Institutes of Education to use the temple as a place of physical environmental study. For example, to study the nature and behavior of the animal and urban vegetation, to study the nature of soil and water.

(2) Give permission and convenience to the formal and non-formal organizations use the temple as a place of conference, seminar, workshop, and training, which the participants have chance to live with the natural environment in the temple.

2.4) Media

For the media that serve the environmental education of Wat Panyanantaram can divided it into two forms.

(1) Natural media : To benefit the natural environment in and around the temple as a media of learning.

(2) The media of Dhamma : Documentary and publication, book, brochure, VDO, tape, picture, build and place arrangement, the person with his routine work, chanting chapter, precept, proverb, aphorism, tale or story, law and regulation, rule of forbidden and formulation.

2.5) Evaluation

The mean of the environmental education of the temple evaluation is that :

(1) Opinion receipting box : The temple has an opinion receipting box for freely criticize the temples' activities.

(2) Observing the participant's behavior.

(3) In the closing day of training, every trainees have to write an article involves his or her impressive emotion in the morning period. Some article will be selected and to be read by the author to his or her classmate listen it instead of telling his or her feeling about training course experience. The below writing is excerpted from the article written by the secondary school, student of grade 4, shown his or her impressive emotion in participate the Buddhist Camp that :

"Once knowing from the friend that I have to take part of Buddhist Camp at Wat Panyanantaram, I feel very up set. I think that to participate the camp at the temple is not so funny as the camp of boy-scout participation..... When coming to the temple, I think this is not the temple because there is not church, funeral home and mortuary, there is only the large Buddha Image. When take of the bus, the monks come to welcome and take us to accommodations. On foot along way to the accommodations, I feel this place is quite, shady, fresh, and clean. There is plenty of tree, bird sing voice..... I begin to have a new idea that the temple is not a bore place as thought. The temple has many thing for us to learn it. "

“There is one things that impressed me in camping is the lecture of the Phra Archan because he always insert an interesting story in his lecture. It does not make me weary it.”

“ The event that imbued me with a sense of respect him is his patience and sacrifice to get wet and cold by go through the rain for taking water pipe for me to drink.”

“ Along the time of 3 days and 2 nights might be a short time but it a worth time of me. I feel sorry for my friends that do not come to participate in this time because they miss their best chance in their life. I will keep every scene that I see in my remembrance forever. If the chance presented itself to me, I would certainly come to Wat Panyanantaram again.”

(4) The returning of pupils, students, or the one who has ever been a trainees. For example, the pupils who has ever been a trainee will gather their close friend together and request their parents to see them off at the temple for helping the temple development.

(5) Transmit one emotion through the art and verbal on the broad of public relation that made by the temple.

(6) Imitate the precedence that has seen from the temple to conduct in daily life i.e., the economy matter, the body self-sufficient consume, repair the damage stuffs or transform its purpose to other use such as, replace the unused plastic tank, which unable to keep water, to be garbage tank, or a cover to protect a small tree from

strong sunshine, to be a flowerpot. Growing tree at home for shady like the temple atmosphere where have ever visited.

3) Factor related the environmental education is scheduled by the temple

The related factors of the environmental education arranged by the temple.

For this study, the author will divide it into two major parts : Internal factors and external factors. The case study of Wat Panyanantaram has its detail of each factor in follows:

3.1) Internal Factors :

3.1.1) The physical environment circumstance of the temple

(1) The temple planing is well and systematic made every area of the temple is useful.

(2) The location of the temple is far away from the town, where the trainers have to participate the course activities closed.

(3) There is no commercial shop in the temple area that control the trainee's consuming behavior not to spend lavishly, and over consuming.

3.1.2) The concept of the Abbot

The abbot, who persists to success the ideal of the Luang Po Panyanantabikhu, emphasizes the temple area to be a natural atmosphere for the Buddhism practicer close to the nature as touch it as much as possible, and develop one's mind to be a complete human mind, which is consistent to the concept of environmental education.

3.1.3) The attitude of the monk who reside in the temple

The monk of the temple demand himself to be an altruistic person, they then devote their physical energy to work without regarding the tired and

any reward. In stead of concerning the work hard is a burden, they has a positive viewpoint as the banner, for bearing in mind, writes on that:

“Reside at the Wat Panyanantaram always keep working, no time to make oneself upset.”

Or other proverbs also write it out from the mind and encourage in working (Phrakrupalad Silawat (Sa-Nga Suparo), speech).

3.2) The external factors

The external factors effected the environmental education of the temple.

3.2.1) The Government policy.

The every level of the Government policy supports the temple development to be a center of community academy. Since the 8th National Economic and Social Development Plan adapted the concept of planning that emphasize the one sided economic growth to be the concept that emphasize human resource as a last target of development. The National Plan also has a framework of environment development that benefits the human mind development by supporting the temple and religious place to be clean. Their atmosphere serve to be a doctrine study and disciple practice as well as the place of keeps one’s mind peace, including benefits the religious person and place as a source of training, a center of communities’ activity, and a place of giving people mind aid.

3.2.2) Supported from the outside organizations

The supporting from the outside Department or organizations is not a clear form of support, but in a sort of favor one another. For example, there is some government organization provide an assistance in doing flower plant garden, temples' area development, doing a banner of proverb and trees' name, in the mean time, the government organization benefits the temple by sending her personnel to be trained vice versa.

In the training period, there are a large number of habitants in the temple, and the location of the temple is far distance away from the town that made the police often come to inspect it. As a result, the activities can be reached to its target.

3.2.3) The participation of people and community

The community on the entranceway to the temple is a great helper in charge of and control the youths that come to be trained, for example, they will telephone to inform the temple know that there is a youth run away from the training room.

The community participation by supporting food, vegetable, fruit. In the local, when there is temple fair like Katin, the popular local food is invited for the participants. Banana, which is local fruit, is hanged on the trees as inviting the participants to have it or take it home. This make the participants are self-witness of merit-doing and offering the charity. It socializes the human being to have merit which is the habitual basic of environmental conservation.

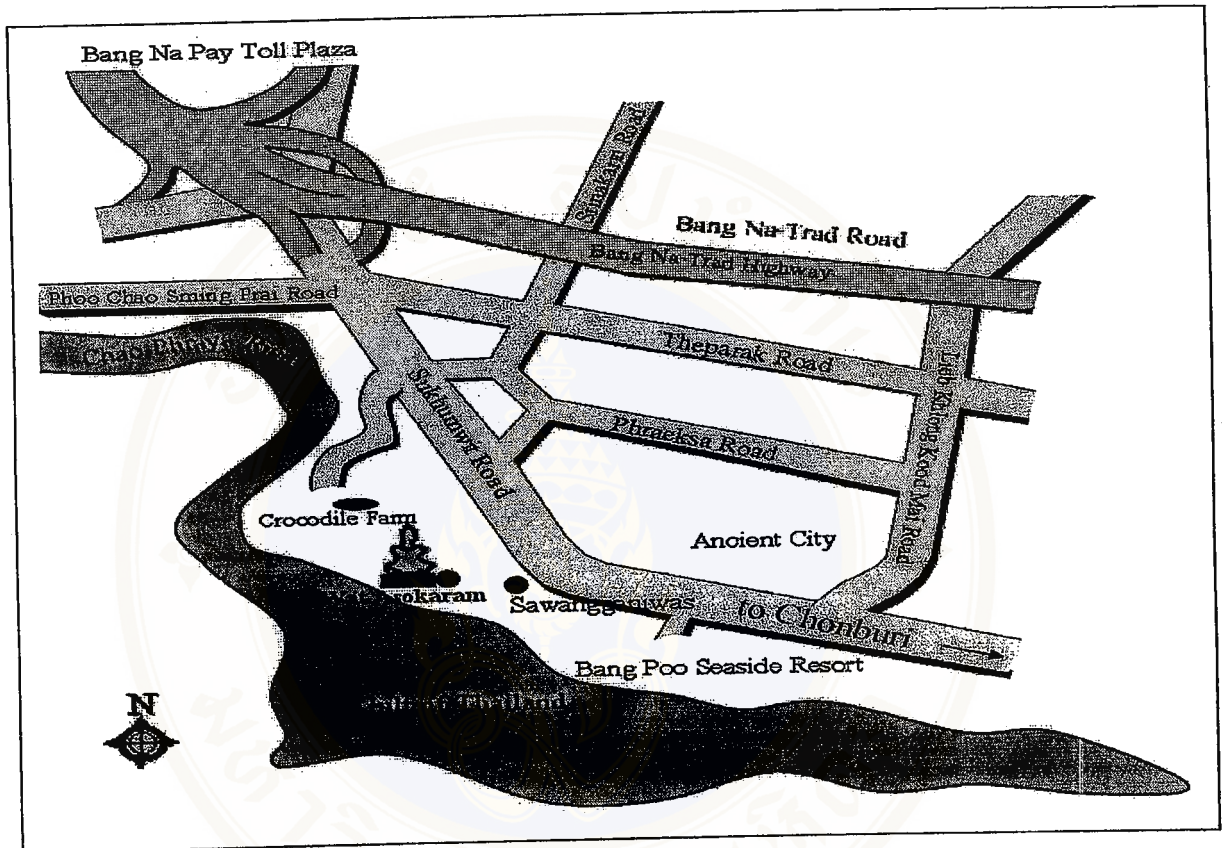
Summary

Wat Panyanantaram is a temple that concentrates on the natural shady (calm), does not care for the permanent material and building because of serving the being that concern the temple have a chance close to the nature as much as it possible. The temple demand it as a training place of the dhamma education seeker, merit-doer, and propagation. The temple separate the environmental conservation into 2 major parts: the circumstance of natural environment and elimination of pollution. For the former circumstance of natural environment such as, keeping the status quo of the forest and prepare the temple area to recover the environment condition, for example, look after the tree; clumpy-flower garden; Medical herb garden. For the pollution management, they eliminate it by classify the garbage systematically for benefit it and for destroy it. There is natural method to restore the water pollution is to increase oxygen in the water by windmill. Furthermore, there is a hygiene toilet in respect of clinical hygiene.

Wat Panyanantaram trains the Buddhist to have a merit mind, value the worth of the nature and environment. The temple teaches the human being to live as a part of environment "named human environment sciences," by linking the dhamma with relation of human being and nature. It is one of dimensions of the temple's role to exert its potential to provide the environmental education for the social.

4.1.2 Wat Asokaram

4.1.2.1 Background



Source: Adopted from <http://www.eta.or.th/tra/tra4.htm>

Figure 7 : Location of Wat Asokaram.

Wat Asokaram located on 136, Moo 2, Kilometre 31, Sukumvit Road (old route) Tambol Tayban, Muang Sumutprakarn District, Sumutprakarn Province. The temple is a sect of Thammayuth. The abbot of the temple is Prayanvisit (Thong Jantasiri).

Before this area became the site of Wat Asokaram's location, it had named "Na Mae Kao" belong to the family name Kraikarn who have a good faith in Buddhism, they are Mrs. Kimhong and Mr. Sumeth Kraikarn. They have presented their real estate ownership about 53 rai or about 21 acre. (an acre = 2.5 rai) to an esteemed monk titled Phra Suttithamrangsrihampeeramaethajarn (Phra Archan Lee Dhammataro).

Phra Archan Lee developed the presented real estate to be the monastery place in the year of 1955 and the Ministry of Education declared the place to obtain a legal monasterial status on October 16, 1956. (Department of religious affairs, 1983 : 848-849) Up to the present, the real estate of the temple enlarge its area to be 88 rai 2 Ngan 74 square wa (about 35.5 acre). The temple have 180 monks, 3 novices and 240 nuns in the rainy season of 2001.

The temple of Asokaram is a quite and silence place. This temple is highly respected by the Thai people and it is an important centre for meditation. The extensive grounds and quiet location by the sea are ideal for pleasant walks. There are many interesting things within the temple, for example, Wihan Sutti Thamrangsri and Thutangka Chedi. The latter built by Phra Archan Lee is made up of thirteen chedi for symbolilising the thirteen regulations for pilgrimage (Available Protocol : <http://www.paknam.com/asokaram.html>). Furthermore, the temple of Asokaram is now being supported to be the center of mangrove forest eco-system education.

1) The temple's infrastructure administration

The governing administration of the temple is divided into 3 departments under the supervision of Chief of Department. These departments compose of :

- (1) Northern department
- (2) Central department
- (3) The sea-side department

There are a vice abbot and 4 assistance of abbot, take the responsibility of following sections

- 1) Section of government
 - 2) Section of propagation
 - 3) Section of education
 - 4) Section of public utility
- 2) The Socio-economic condition of the community in the temple area.

Wat Asokaram is located in the territory of Bangpoo district municipality. The terrain of district is a lower plain, flooded whenever the current of sea is high, the salted-soil area can not be cultivated. Before the modernization was invaded, this area had been woods of mangrove and firewood. In the present time, this area become the industrial estate community because of the Sukhumvit highways and irrigation canal hugged the Sukhumvit highways facilitated the raw materials are supplied to the manufacturer from land and water transportation. And the manufacturer can easily let of the modified stream to the sea.

Bangpoo district municipality in the past was the plain that favored off fertile soils. Such an area is demanded by the agriculturist because of its lowland. Meanwhile, it is the advantaged source of canal transportation together with the Eastern Seaboard Project favored the swift expansion of industrial and residential sections. As a result, the land exploitation pattern was transformed from the

agriculture to be industry and residential section affected the high price of land. Some agriculturist neglected their agricultural profession by sell the land. The agricultural areas have a decreasing tendency. A large majority of population swing themselves to be a labor-force of the manufacturer because of the certain income and security of social welfare. Agricultural becomes their second or supplementary profession.

4.1.2.2 The physical environment of the temple

Owning to Wat Asokaram is a meditation temple, demand for quiet and on the temple own. The character of the physical circumstance is stereo type of the temple jargon Wat Pa. There are small houses (kutis) for the monks. Such a small house is arranged in a row with an adequate distance. The temple then needs a large piece of land to meet the number of monk. In the year of 2001, Wat Asokaram have 168 of small houses for monk. There are 115 out of 168 of small houses located on the area of mangrove forest. For the architectural style of the small house for the monk, there are no strict regulation of the style of architecture and it size. Only the small house for the monk is located on shore must be Thai architecture style.

Since the practical monk holds the forest is an element their own, the temple then pay their great attention to the forest environment's preservation. . In addition, the location of the temple is on the seashore plain, where is abundant of mangrove forest. The temple then tries to conserve the abundance of mangrove forest for the benefit of the practical monk's residence area. The abundance of mangrove forest is also an academic source of the mangrove forest eco-system education for the students and common people.

4.1.2.3 The environment administration in the temple domain

1) The temple ground management

The monk and novice implement it because of making the small house of the monk cleans is the monk's discipline. And there are a number of workers take care of the area that favors the public service. For a special case of the temple fair, The Royal Thai Navy will recruit their soldier to help the temple cleared the ground.

2) The pollution management

2.1) The garbage elimination

The garbage of each small house for the monk will be brought to keep together in the temple's big garbage tank where the town municipality can easily to carry it out. Some kind of garbage is burned, the monk will take to burn together with the dry leave.

2.2) The water pollution management

Water pollution within the temple mostly derive from the consume goods, like, bathing washing, and some cooking fat. For the cooking fat that is not a serious problem because monk take one meal a day and together. At the present, there is no efficient ways to prevent the seashore from the dirty water of consume goods. So, some dirty water of consume-goods, its fat, let go to the sea.

2.3) The toilet management

The toilet for publics who come to pay a visit the temple will be divided into two parts. One part is for the monk and novice, the other part is for the layman. The toilet hygiene is under charge of the temple's caretaker.

4.1.2.4 The way of life in the temple

The routine work of the one who live in the temple is starting at 06.00 a.m. The monk and novice goes out with a bowl in for receiving food. When they come back from receiving food, they will take those food together at the ground-floor of wihan.

The monk and novice take one meal a day. They have no course of meal and having food from the bowl. The mode of having food, they pass the bowl with food from one to one hierarchies ranking from the senior monk. The nun can not perform as the monk does but they can cook and take it in their nunnery. The people who come to the temple for dhamma performance can require the temple to prepare food for them.

After having food, (I do not say breakfast because they have one meal a day. So there are no breakfast, lunch, and dinner), they go back to their kuti (the monk's resident) to do their personal affair as well as cleaning their kuti area. Up to 09.00 a.m. there is a drum sound signals the time of morning prayer, every monk have to stay together for prayer at the floor 3 of Wihan Sutti Thamrangsri (meeting hall). After complete the morning prayer, they will keep the time for themselves. Until 4 p.m., they have to do the same thing in the morning entitled evening prayer. Prayer is also a duty of nun and the dhamma performer but conduct separately. The nun and female is distinguished from monk and male. The temple prepares a building for nun and women. Besides the Buddhist holy day, they can chant prayers together with monk at the Wihan.

4.1.2.5 The circumstance of the environmental education of the temple

Background of the temple's environmental education

The location of Wat Asokarm is an area of mangrove forest, where is rather abundance perfect. In the year of 1985, The Samutprakarn Provincial Office of Public Works was carried out the project of the upper gulf of Thailand area's flood prevention by making a road skirting along the seashore from the coast of Ban Bangmaekkhao to Ban Tamrhu's water gate lengthen about 9 kilometers. It cut through the mangrove forest area of Wat Asokaram lengthen 800 metre. The officials made a road without regard to its consequence. As a result, the water is confined and has smell in the raining season because of shut up by the road. The abound soil of that area become dry and so dry that it cracks in summer season. A number of plants in mangrove forest are dry up. The various kind of animal is this area gained a great negative impact many of them could not survive and die for the flood prevention road. The temple then had a petition to the provincial hall exposed the damage of the road making result. The officials then solve the water-confining problem by making the pipe main to drain it.

From the apparent deterioration of mangrove forest invoked the temple and other organizations of government and private sector join hand in hand in restoring Wat Asokaram's mangrove forest. They are successful in recover it in a mean of holding the open program and activities that the participants have a chance to study it in the same time. The environmental education of Wat Asokaram's case regarding as a sort of education that is supported and implemented by the institute of religious. By the outstanding point is the natural location favor the temple site. The environmental

education's condition is different to the others as the detail factor in the following presentation :

1) Resources

1.1) Personnel

In the management of environmental education of Wat Asokaram, there are two concerned parties that are :

1.1.1) The section of education provider's, comprised of :

(1) The internal person section, can be divided into two parts :

(1.1) The direct education provider : A lecturer monk who come from the temple of his own.

(1.2) The person who participate it as an educational supporter : The other monk in the temple pay his attention to the program but do not support it continuously. They will participate it as a volunteer.

(2) The external people section.

The organization or institute of education themselves prepare the person by invite the sophisticated lecturer or the subject-constant lecturer to be a lecturer.

1.1.2) The learner section.

This section composes of the pupils, students, and the interested people. In the part of student, mostly is group come along the institute of education. In the part of people in general, they come here in a mean of relax or the consequence of merit-doing.

1.2) The environmental education management

The environmental education management of Wat Asokaram is comprised of :

(1) Co-operation : The temple's office is the center of co-operation. The institute of education that would like to take their student for a tour-study of the mangrove forest eco-system must anticipated inform the abbot. After the informed paper has received, the abbot will direct it or assign the lecturer-monk to direct it. The anticipated inform help to lessen the overlap program of the institutes of education and also lessen the burden of the temple service because of only a lecturer monk in charge it. Furthermore, the anticipated inform benefit temple to set a proper time of date and day for the learners in even because the path through the mangrove forest is a narrow bridge. If there were too many people, it a problem of congestion.

(2) The meeting of the temple's personnel. There has a meeting on the code of monk's precepts after the monk complete their performance. There is no specific topic to discuss but general talking or reviewing the former matter. If there were an urgently matter to be considered as a special case, the senior monk, like, the vice abbot, assistance of abbot, or secretary of the abbot, would be invited to participate the meeting.

(3) The conducted regulation for the conservative leading such as, do not allow to arrest or catch animal, the plants or vegetation is forbidden in the temple area.

(4) Propagation : The temple has no their own homepage but the temple is an interesting place of the province. There are some school of Samutprakarn Province provides its detail in homepage of an interesting temple of the province.

1.3) Material and equipment

Material and equipment is a stuff that facilitated the activities implementation, there are :

- (1) Visual aid : Amplifier, Loud-speaking.
- (2) Media aid : Telephone, Fax.
- (3) Photography aid : Camera.
- (4) Office automation : Computer, Photo-copy machine.
- (5) Public relation aid : Board.

1.4) Budget

The temple has no budget allocation for the direct activity of the environmental education. Whenever there is necessary expenditure concerned the activity of environmental education, for example, lunch invitation for the students who come to develop or plant the mangrove forest. The lecturer-monk will ask the abbot to approve the expenditure budget in each case.

However, sometimes the Institute of Education takes their student come to listen the lecture will present the materials element to the temple as well.

2) The environmental education procedure

2.1) Body of knowledge

In the substance of the environmental education on mangrove forest, the lecture-monk will present its outline of contents in two parts:

2.1.1) Theory section

It is a lecture program for learning and understanding in the following contents :

- (1) The significance of the environmental conservation.
- (2) The knowledge of the mangrove forest : By explaining its substance of the mangrove forest problem, especially, the case study of Wat Asokaram, the plants and animal species.
- (3) Advising the regulation of the mangrove forest touring.

The lecture place will benefits the natural ground, like, under the big tree growth on the entranceway to mangrove forest or the seashore. It depends on the suitability. But if it were not convenient, the hall (for sermons in a monastery) is a beneficial place. In lecturing, the lecture monk is illustrative picture or model to supplement the lecture. The picture or model is self-made by the lecture monk.

The substantial presentation on the mangrove forest comes from the lecturer monk's self-study in text book, document, the conference and participation observer. Since he has ever lived in its area, and when he become a monk, his kuti near the mangrove forest coupled with his personal interest in the nature of vegetation and animal made him has a chance to observe and learn the mangrove forest's vegetation and animals character. His comprehension of the vegetation and animal's behavior mostly come from his observation and self-taught. In addition, he know how to take some doctrine insert in the lecture on environmental system, for example, the interdependent of one another, the living together in peace, non-exploitation with each other.

2.1.2) Practical section

Taking a sight tour around the mangrove forest area together with description the plants and animal are seen. Moreover, the description

will insert the knowledge of indigenous intellectual know how to take advantage over some plants in the mangrove forest. In the case of the school would to train their student know how to do public service, the student will be taken to the mangrove forest area showing their spirit to clear the garbage off. Mangrove pod is cultivated in the black bag or take the mangrove's pod to cultivate in the empty soil.

2.2) Method

The method of preparing the environmental education of Wat Asokaram can be classified by the learner's participation.

2.2.1) Participation : Lecture by the chance presented itself for discussion, inquiry, and learning from the real situation.

2.2.2) Non-participation : The people who come to the temple are self taught from the following sources of data :

- (1) The exhibition board
- (2) The talking electrical post
- (3) Banner for conserving mangrove forest
- (4) Banner of the tree's name
- (5) Library

2.3) Activities

The characteristic of the environmental activities are found in Wat Asokaram can be classified its character into :

2.3.1) The activities held by the temple itself

2.3.2) The activities held by the outsider

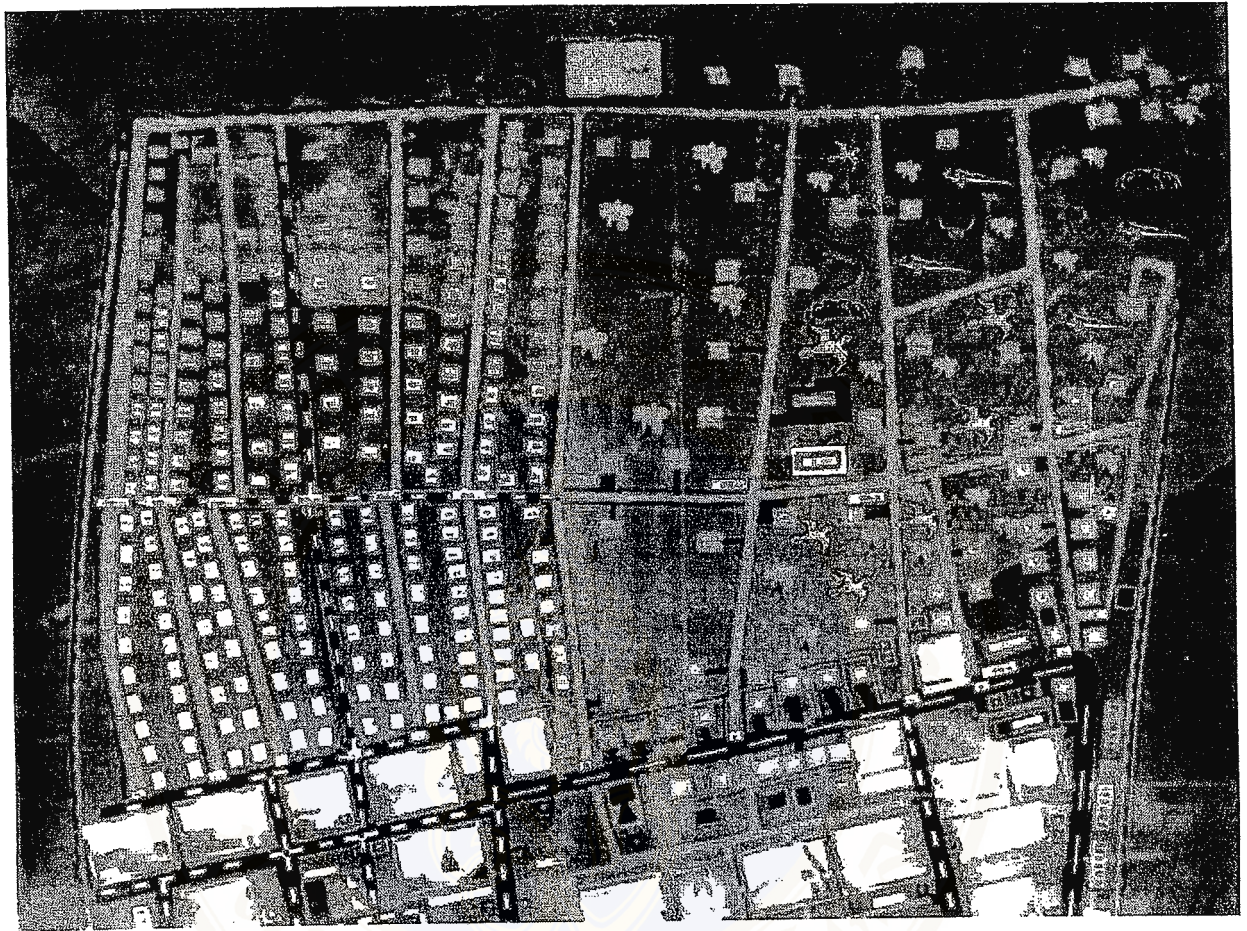
The detail of each activities :

2.3.1) The activities held by the temple itself






(1) The activities held in the temple


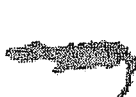



(1.1) The study of mangrove forest environmental system

As Wat Asokaram location is sited on the coast that is abound of mangrove forest. Formerly, the area of mangrove forest is the location of the monk's kuti linked by the small concrete bridge as a footpath to the shore in the time of higher tide. In the present, it is not only the way of the monk go round kuti, but also the way to study the mangrove forest eco-system and observe the plant and animal's nature. The institute of education in the every level depend on this area to study tour, which is a part of the environmental science subject, taken by the lecturer monk to tour around with explanation the seen plant and animal for the students to comprehend its natural living.



ที่มา : ปรับปรุงจากแผนผังบริเวณวัดโศการาม
 Source : Adopted from the map of Wat Asokaram domain

-  บริเวณน้ำทะเลท่วมถึง
The area that seawater can be flooded
-  พื้นดิน
Ground
-  บริเวณที่สามารถพบพันธุ์ไม้ป่าชายเลน
The area of mangrove forest's plants can be found
-  กุฏิพระสงฆ์
The Monk's resident (kuti)
-  กุฏิแม่ชี
The Nun's resident

-      บริเวณที่สามารถพบสัตว์ป่าชายเลน
The area of mangrove forest's animal can be found

ภาพที่ 8 เส้นทางศึกษาระบบนิเวศป่าชายเลนวัดโศการาม
 Figure 8 The route of mangrove forest eco-system's education, Wat Asokaram

(1.2) The restoration of mangrove forest

Keep the seashore clear from the garbage that comes with the high tide of seawater and stay behind at the low tide of seawater. The garbage, which comes with the seawater at the high tide, is an inorganic matter. It is a hard digest matters, for example, plastic bag, plastic bottle, or can. Such a kind of garbage has a negative impact to the environment, namely, the tree can not be growth by its nature because its roots can not go through the soil from the plastic bag. It also a trouble-shooter of the existent of the mangrove forests animals.

(1.3) The mangrove forest plantation

The cooperation between the institute of education and the temple base on the principal objective in making sense of consciousness to the youths by taking them keep direct in touch with the plant and animal mangrove forest for realizing the significance and worth it. For the quantity of the tree survival is the second priority objective. As the lecturer monk mentioned to the purpose of activities in mangrove forest plantation that :

“Tree cultivation should be bred in the children’s mind for falling in love with tree in the future, thus, the large piece of area for plantation is not necessary.”

Furthermore, the lecturer monk is also expected the youths take advantage over the participation in the activities of restoration and plantation of mangrove forest in the temple area. The advantage that the youths will be taken :

- Youths attains to the temple
- Closing to the nature

- Know of alliance, keep an co-operation
- Assist to stay far away from drug, have a creative idea

(1.4) Planting the mangrove forest's plants

By collecting a pod of mangrove to cultivate it in the bag. When its roots growth, it will be moved from the bag to plants in the target-area. This kind of plants method make the plant can alive more than its natural self growth and the participants are proud of their taking part in forestation.

(1.5) The supplement activities of the Institute of Education that come to conduct merit doing

Owning to Wat Asokaram arranged the meditation affair, but there are some institute of education take their students to be trained merit and ethic requested the temple appendices the mangrove forest eco-system as a supplementary training to those students. The lecturer monk will do it as request.

(2) The temple's outside activity.

The outside the temple activity is in a mean of taking the knowledge to the Institute of Education. There are some institute of education will invite the lecturer monk to provide environmental knowledge about mangrove forest ecology for their students. The lecturer monks would provide the theory of knowledge for the students before their school taking them to participant observation.

2.3.2) The activities held by the outsider.

(1) The Institute of Education takes advantage the temple area to be a place of study mangrove forest as supplement subject of environmental sciences. Some institute takes it as a science laboratory room, the institute will take their student

come to get the sample of soil and water to examine its condition of acid or alkaline, the environment temperature measurement.

(2) Some university take it as a study place of geographic information system (GIS)

(3) The environmental conservation group takes it as a place of recreation. There are some business group, which is pay a great attention to the environmental conservation, also takes advantage the circumstance of the temple as a part of their recreational activities, for example, schedule the temple area as a parked point of the motor-car rally route. During their park and the parking point, the driver has to do some activity as a part of the rally competition, like, the garbage classification, sand-pagoda making. This part of activities make them enjoy with fun and knowledge taken.

(4) The mass media benefits it as a environment feature production.

2.4) Media

The composition of learning media can be classified into two types

2.4.1) The concrete media

(1) The nature being media. There are the natural being exploitation, for example, plant and animal as a channel of knowledge transfer, particularly the monk lecturer try to make his student realized the worth of plant and animal by raise the concrete example.

(2) The make-up media. The example of the make-up media, the portray of animal, diagram of food chain, the stage of consuming in the environment system, transparent, slide, banner of the tree's name, wood-carving in form of mangrove forest animal such as, mud scipper.

2.4.2) The abstract media :

- Proverb
- Doctrine
- Amphora
- Precept
- Forbidden regulation

2.5) Evaluation

(1) Having opinion-box for receiving the comment of the people who come to visit the temple.

(2) Observing from the participant's behavior.

(3) The attention of the learners after the monk-lecturer has finished his lecture. Some institute arranges the continual-project by taking the pupil, student come to have a practical study at the temple, follows activity as field work, for example, to clear the garbage in mangrove forest area, mangrove forest planting.

3) The Related-factor in the Environmental Education provided by the Temple

3.1) Internal factors

(1) The geography circumstance favors the temple's location, it helps to make an easy description of the environmental education.

(2) The concept of the abbot, who is in the line of practical sect, pay a great attention to the forest. He regards that the temple must have forest for the monk's practice a good turn (favor). As he raises the example of the taught of the Lord Buddha that :

"Clear the forest but do not cut the trees."

Clear the forest means clearing the passion, greedy, temperament, and selfish from one's mind.

Do not cut the trees means do not deteriorate the nature. Whoever has an idea to deteriorate the nature is equivalent to destroy not only himself but also other human being and animals. The monk in the practical sect held on this proverb to their principle. As Phra Suttithamrangsriksampeeramaethajarn (Phra Archarn Lee Dhammataro) the former abbot said that sitting remain still in the forest can take it advantage. From his direct experience of living in the forest, there are many idea erupted in his mind (Maneerat, D., recorder, 1996 : 150 – 153) :

A. It is the tradition of the Lord Buddha because he was born in the forest, enlightened in the forest, Nipana in the forest. But why he could take the goodness to bury in the town.

B. Scrutinized that avoiding better than fighting because of not wizard-like. Whenever the extent of one's patient to the external negatives affect, that one should go to live in the community. As the amphora has said : "knowing to avoid is wing, knowing to sidestep is a tail."

"Knowing to avoid is wing" means the chicken that was born from its egg would not die or has a chance to be full-fledge if it knows how to avoid from any dangerous:

"Knowing to sidestep is a tail" means, for example, the rudder of a boat. If the one who control the rudder know-how to handle the boat to sidestep to run aground or strand the boat.

C. Scrutinized from the Natural Principle. Forest is a place of silence and quite, it inspired the plant and animal's nature observation. Some kind of wild animal is different to the pet animal like, the behavior of wild chicken that has a sharp eyes, strong wing, its fledge is short, run very fast, fly over farther than the raising chicken, despite of the same spicity. Because the wild chicken live in the forest where is full of danger, so it must on alert all the time.

D. Reminding to the taught of the Lord Buddha when instruction to the one who audience into monkshood that have 4 essences :

- Taking bowl for receiving food every morning. Show oneself as a beg person, not show oneself as a poor person. The offering, more or less, should be pleased.
- The Lord Buddha taught to live in a quiet place, named "Rukhamoon-Senasana" If it was a non-sense matter, he would not taught.
- The Lord Buddha taught to take the cloth from the dead body as an utensils and clothing. Because the cloth of the dead body is a used articles that no one demand it and non-harm articles. It should be comprehensive that the Lord Buddha taught those do not have prejudice mind to the reward articles.
- The Lord Buddha taught that the medicine should be taken from the easy way of treatment such as, taking the urine fermentation.

(3) The determination of conservative work of the lecture monk. Because of the temple has no budget for conservative implementation. Whenever the lecturer monk need supplementary media for lecture, he has to sacrifice



his own financial to provide it. Generally, it is known that the monk has no other way of income.

3.2) External factor :

The external factor that affect the environmental education procedure :

(1) The people's faith toward the Buddhist temple and monk is shown by financial donation. Some part of this fund will be allocated to the temple's uphold and environmental conservation such as, repairing the state of the concrete footpath's decay, providing a food to treat the students who participate in the development of mangrove forest.

(2) The existence of mangrove forest is derived from the handle environment of the educational institute. The temple by herself has no capacity to uphold the whole area of mangrove forest. But the educational institution relies on the temple's area as participant learning course in forestation, develop mangrove forest. Such a course of study helps to keep a better environmental condition.

(3) Gaining the co-operation from the government organization : The Royal of Thai Navy will recruit its soldier to clear the ground of the temple in the season of temple's fair, like, the Katin offering, the annual temple fair.

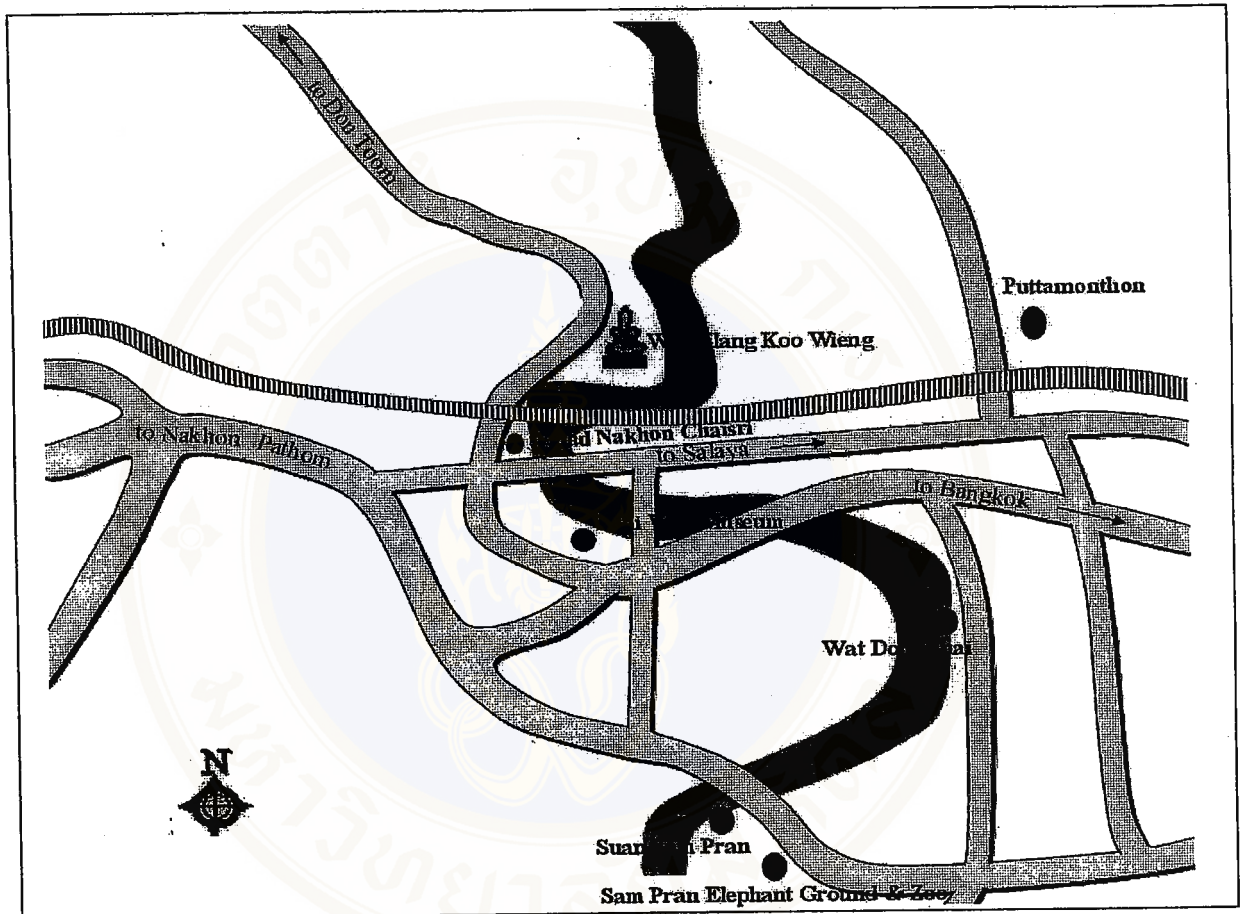
(4) Formulating the temple domain as a beg off zone. The kind-minded people who believe in merit will be convinced that the animal is freed in the temple area of mangrove forest is safety. It is a mean of aquatic animals breeding.

Summary

Wat Asokaram is sited on the location of mangrove forest plain, which are the importance national resources, aquarium cultivation and conservation's source. Anyhow, the mangrove forest is deforested. The temple exerts her potential to coordinate and requests a co-operation from various organizations of the government and private sectors to restore mangrove forest eco-system besides the temple's publicity to persuade the sense of mangrove forest conservation to the publics. The temple also make herself open for the outsider benefits the temple area in the activities of education, mangrove forest's development, and other positive recreation. All this is due to the youths and people have a chance to keep in close touch with the nature of mangrove forest. It is an alternative approach to induce the people's realize the worth of mangrove forest. Such an orientation approach is a unique of environmental education.

4.1.3 Wat Klang Ku Wieng

4.1.3.1 Background



Source: Adapted from Office of Nonthaburi, 2001:98

Figure 10 Location of Wat Klang Ku Wieng

Wat Klang Ku Wieng locates on the bank of Nakhornchaisri river (formerly Thachin river) , Tambol Sampatuan, Nakhon Chaisri District, Nakhon Pathom Province. This temple is Maha Nikai and Phrakru Sophonsatukarn (Chern Gosalo) is the present abbot of the temple.

1) History

The history of the temple can not be traced to the year of Buddhist era of founding. From the standpoint of the predecessor's narrative, the chronicle story was told that The King of Muangsai with his wife, M.R. Sophi, controlled a number of royal labor-forces to build or restore, either one will do, Wat Klang Lao (now is Klang Ku Muang) in the reign of Rama 2 of Ratanakosin period His Majesty King Prabuddhaleudlanapalai. Because the Kingdom of Siam (Thai-Siam) at that time conquered the Vientiane, (The Laos country at present), and swept her people come along the River of Tachin to Monthon Nakhon Chaisri boundary and resettle them at the village of Sampatuan.

The predecessor told that When the King of Muangsai has already built or restored the temple, he invited Phrakru Boonchuto to be the first abbot in charge of the temple. (year is not available)

The second abbot is Archan Pli (Year is not available)

The next abbot from Archan Pli, the second abbot, cannot be told.

According to the predecessor's narrative, This temple has ever been deserted 2 or 3 times. No one can tell that how long the temple was deserted in each time, and how many abbots have been successive no one can tell either. It is a missing link.

The teller starts the second phase of story without mention the year of B.E. He said he just only know that there was an unknown monk named Archan Noi came to stay at this temple and restored it. Archan Noi automatically becomes the abbot and

in charge of this temple since then. Up to the present, there are 9 abbots that success from Archan Noi.

The temple, in the ancient time, was named by the people that “Wat Klang or Wat Klang Laos” Because the temple located in the middle of the village of Loas Vientiane. This name has been recognized until the P.M. Marshal P. Pibulsongkram favored “Wat Klang Ku Wieng” for the cultural rectification and proper name to the location. However, the temple had Phrakru Boonchuto also had the first abbot after this temple had been absent abbot since the King of Muangsay period. The present familiar name of “Wat Klang Ku Wieng” is reserved to be renamed by these reasons. (Wat Klang Ku Wieng , n.d. : Brochure)

2) The Socio-economic Circumstance of the community in the Temple's area

Wat Klang Ku Wieng locates in the area of Sampatuan Subdistrict Administration, where the northern of Nakhon Chaisri District and on the basin of Nakhon Chaisri River (River of Tachin), which is the main river of this region. The geographical condition generally is a flooded area. Then, there are non of hill, mountain, and forest. There is only one provincial high-way: the route of Nakhon Chaisri – Huayplu , and a local high-way: the route of Sampatuan-wat samrong. There are 6 villages, where the total population is 3,662, subject to this Tambol. (Data from the Tambol Development Plan, 2001). The majority of 70 percentage of the population is working in the manufacturer, second is the household agriculture and self-employment. The manufacturer in the local is the scented water powder factory. For their plantation are : pamelo, rose apple, coconut, guava, grape as well as Orchid. The standard of living of the people compared to the town is rather well. A large majority of the people pay their attention to the group working, i.e. The Association of

the Housewife Volunteer; The Association of Housewife, The Association of Professional group; The group of cremation oblige fund.

The river of Tachin as blood of the people of Nakhon Pathom Province. The Agriculturer here relies on the river to earn their living. But the expansion of the manufacturer in the last decade harms the river affecting to the local people's way of live. The manufacturer has caused so great of water pollution as the concerned organizations, which is the Government and private sector, share their cooperation to survive the River. In this activity, Wat Klang Ku Wieng play her significant role in comserving the River.

4.1.3.2 The environmental management within the temple

1) The temple's area management

Phrakru Sponsatukarn, the present abbot of the Temple, is a monk of development. He exert his knowledge, capacity, constructive idea, and experience to create, develop, innovate the temple circumstance and handle its environment as a whole in respect of the culture, tradition and custom conservation. Anything is good and favor will be conserved. His idea of the floating market as a tourist area then is restored by the supporting of the people along the River, The Tambol Administration, Group of Housewife, and We Love Thachin River Society (Nakhon Pathom). The slongan of the market is "Floating market, Fish conservation in front of the wat, and Big boiling pot of medicinal herb."

1.1) Wat Klang Ku Wieng floating market

The floating market was established in the year of 2000 consequence the economic depression. The people who live in the community around the temple have no place, which is a market, to sell their surplus commodity, food and

beverage, and desert as a supplementary income. The temple then set the market up named Talad Chuen Boon (Market of Please in Merit) but its jargon is Talad Bok (Land Market). The initiate idea of the temple is very successful because there are many vendors exploit the market so much as it looks parochial. The temple then make another market up the dam's rim and outer the Thachin River. Its name is "Talad Nam Wat Klang Ku Wieng." But the person names it as its location that "Talad Nam" (Floating market) as same as named Talad Bok. It is the first floating market of Nakhorn Chaisri district. This floating market has been opening for the vendors to sell since November 11, 1999. The floating market opens on the weekend and annual holiday. The floating market has its purpose and objective as follows

- (1) For restoration the river and its perspective after a long petered out.
- (2) For the people's supplementary income, there is a place as a market for selling and buying in a low price of the agricultural products, local fresh food, and new made desert.
- (3) For tempting the people come to the temple and have a Buddhism's discipline.
- (4) For the people has one more place to sigh-seeing, relax, recreation, and learning and studying.
- (5) For advertise the reputation and prestige of the Temple, Tambol, Amphor, Province to public; and to restore the Nakhon Chaisri District's slogan that : "The land of sweet pomeloes, white fragrant rice, beautiful daughters, good quality of black cloth"

(6) To promote and encourage the fish and aquarium animal increasing by breeding it and save its bread, along with the inducing the people, children, and people in general have a kind-minded to the aquarium animal.

(7) To encourage the Thai indigenous intellectual and a source of learning and studying.

1.2) Fish conservation in front of the wat

On August 12, 2000, Wat Klang Ku Wieng built a raft of typical Thai architect on the Thachin River near the temple's dam, its purpose is to serve the conference or meeting of the community, groups or associations, Tambol Administration Office and other Government offices, and temple herself.

On August 14, 2000, Wat Klang Ku Wieng built more raft of typical Thai architect extension length along the dam in front the temple as the following purposes:

(1) To serve and support the activities of We Love Thachin River Society.

(2) As a haven of refuge and habitation of fish and aquarium animal.

(3) To mobilize the people, pupils, students, and people in general to aware of the Tachin River and keep the river cleaned and limpid, not waste and non-pollution.

(4) To promote and encourage the fish and aquarium animal increasing by breeding it and save its bread, along with the inducing the people, children, and people in general have a kind-minded to the aquarium animal.

(5) For the recreation place of the people.

(6) For a multi-purpose of the general people benefit it, for example, the place of conference and meeting, seminar, and training.

(7) For a birthplace of learning and studying.

(8) As the floating market's side market of the local people to sell their agricultural product, food and dessert as supplementary income.

1.3) Big pot of herbal medicine (Mor Ya Yai)

The big pot of herbal medicine, jargon Mor Ya Yai, is a symbolic of the Wat Klang Ku Wieng. The pot is an earthen made. It uses to boil medicinal herb to cure sick-men. This temple uses the medicinal herb for curing the sick-men. The reputation of the medicinal herb of this temple comes from the former abbot, the abbot 8 of the temple.

Luang Po Chuen Khemachari became an abbot in the year of 1932. He was a knowledgeable and expert in medicinal herb. He treated the sick-men with herb of medicine with free of charge and without discrimination of economic status. He, thus, was the beloved of everyone who knows him. He was pass away on April 21, 1971.

Phrakru Soponsatukarn (Chern Gosalo) becomes the ninth abbot of the temple next to him. The present abbot is also an expert in medicine of herb because he learnt both theory and practice of curing with medicinal herb from him. He follows the way of the former abbot's doing by treating the sick-men with free of charge and without discrimination of economic status as well. The temple opens everyday without call a day off for the sick-men.

Prakru Sponsatukarn pays a significant attention to the medicinal herb because it is very helpful to a lot of sick-men. He then tries to conserve the herb of medicine not to vanish by erecting a big earthen pot stand prominently on the bank of the river. Anyone who see it would remember to Luang Po Chuen Khemajari, the authority of the medicinal herb. In addition, the temple allocates two pieces of land in the temple to plant herb. One is for compound the medicine, other is for observing study.

2) The pollution management

2.1) The garbage elimination

Wat Klang Ku Wieng will classify the garbage into two sorts. For the sort that can be recycled, which the temple named it as “millionaire garbage,” will sell it to the garbage purchaser store. For the sort of unable to recycle, the Tambol Administration Organization will be responsible for it.

2.2) The toilet management

Wat Klang Ku Wieng provides about 20 toilets for serving the person who come to practice at the temple or public demand toilet. Even though the temple has care-taker to look after it, the temple also demand the person or public give a cooperation to keep it clean after exploit it.

2.3) The easy digest garbage favored the ritual affairs

On the suspicious tradition day i.e., Loy Krathong Day, they needs material like foam and paper, which is inorganic, and hard digest material, or trunk of a banana tree, which is organic, and easy digest material, to make Kathong. Both foam and trunk of banana tree cause the water pollution and harm the aquarium animal. The temple then tries to public relation with the people to use the material that

is not harm to the aquarium animal and cause no water pollution. Moreover, the temple try to prevent the river from pollution by making a Krathong for selling to float it. Krathong of the temple is make up by bread as precedence for persons who come to Krathong floating. Bread is an organic and easy digest material, which becomes food of aquarium animal in the mean time.

4.1.3.4 The environmental education circumstance of the temple.

Wat Klang Ku Wieng is a religious organization, which is one of interest temples, that has a major role in environmental education. This activity is come from the abbot as a prime mover because he is a conservation concept. He has been implementing the environmental conservation and awareness project since he became an abbot. He could handle the development area of the temple and extent to the outside of the temple by the principle of "Bovon." It means the linking relation between "village, temple, and school; and linking their relation to the Government and private organizations that focus on the environmental conservation. With their strong cooperation bring about the concrete the environmental conservation project. For this research study, the author will present the detail of the environmental education which is being handle by the temple as follows:

1) resources

1.1) Personnel : The person who concerns with the environmental education of the temple can be divided into 2 groups:

1.1.1) The manager of learning section. It comprises with:

(1) The persons belong to the temple.

- The abbot, as well as monks, including novice of the temple pay their attention to prevail the awareness of environment in a various

maneuver to the people. The monk and novice of the temple are assigned to take the responsibility for environmental education by making media or equipment of learning up such as, the drawing, banner, tank for garbage, and keeping the temple area to be a proper education place.

- The public relation officer to the temple.

Besides his routine function to announce the information through the tower amplifier, they has a vital role in prevailing the environment information to the other area by boat cruising along the Thachin River.

(2) The person comes from outside of the temple.

- The teacher of the Wat Klang Ku Wieng school will give their cooperation with the temple in providing the environmental education for their pupil regularly such as, held a motto or slogan contest, inviting the monk to teach the religious subject to the pupils by use the raft hall as a classroom.

- The official from other department: The Office of District Education play her role as coordinator and help to carry the conference held by temple out like to arrange the dialogue on the topic of "Monk and the River Awareness, along with the canal.

(2) The learners group: pupils, students, publics, as well as the study-tour group of monks from the other provinces.

1.2) The environmental education management

For having an proficiency of environmental education. The temple of Klang Ku Wieng has her own way of management:

(1) Public relation : The temple continuous campaign on the environmental awareness (conservation) through the information tower since 05.00

A.M. everyday. Its information and data presentation of the temple base on the Thailand Radio Broadcasting. If it would has the information of the Thachin River, the temple would extent this information to the people by this tower amplifier. More than the above-mentioned, the temple also public relation it by the boat cruising on the Thachin River through the Nakhon Pathom province at least one a month. In the case of emergency, such as the water pollution in the source of river, the temple will advance public relation for coping with the crisis situation.

(2) Coordination : Wat Klang Ku Wieng have a coordination with the other organizations of government and private for Thachin River conservation implementation, for example, coordinating with We Love Thachin River Society, school, and the concerned environmental organizations.

(3) Formulate the measurement for the conservation : For example, the floating market prevent the garbage from throwing it into the river by providing garbage tank for every shops. The on Land Market's shop must give their cooperation by look after the tree in his shop boundary. If a tree were die, the shop owner would be fined.

1.3) Material and equipment

Materials and equipment of the temple that the persons are available for environmental education can be classified into:

- (1) Visual aids: Amplifier, Broadcasting hall, Tape
- (2) Vehicles: Public relation boat, boat of inspection
- (3) Public relation equipment: Broad

1.4) Budget

For the environmental education budget, allocated from the temple's revenue as follows:

(1) Merit-doing for one's own good such as, covering the image of Buddha with gold leaves and round stones (buried in the ground to mark the sacred limits a temple); offerings to the monks in general, not as individuals; favorable element of charm; Krathong selling on a full-moon day in November (it is a annual festival).

(2) The donation of the in good faith of the Buddhist.

(3) The endowment of the persons who take medicinal herb from the temple.

(4) Rent fees of the vendor in the ground of the floating market.

(5) Revenue from the annual temple fair.

(6) Income from the food of the fish. It is very amazing that there are a lot of fish in Tachin River gathering in front of the temple area. It will not swim beyond the area of temple. The temple then implement the project of fish reservation by selling instant-food packed in plastic bag and bread along the way to the river in front of the temple. Anyhow the temple cannot make profit by selling it because it is not the way of monk. So the food and bread have no price banner but donation-box standing near the food for raisers pay it with one's willingness.

2) The process of environmental education process

2.1) Contents

In providing for the environmental education of the Wat Klang Ku Wieng, the temple try to implant and make clear with the people in many ways. For its substantial that the temple pay her attention are :

2.1.1) Section of Theory

(1) The river awareness (conservation). As a part of We Love Thachin River Society, the temple play it's direct and indirect role in campaigning the river awareness. Its substance mostly emphasis the knowledge providing for the river conservation. For the direct knowledge providing, the temple will educate the people whenever the opportunity presented i.e., the preaching in the ritual ceremony, the preacher will insert the substance of environment with the Buddhism ethics and discipline, and implant the audience to value the worth of water source and its significance. In the mean time, the preacher will induce the audience to take part in river conservation project. The temple also give her cooperation with the association of We Love Thachin River Society to do tape, which record the content of river conservation campaigning, to disseminate to the education institute. There are other form of activities is done but it must involve or cover to the sense of river conservation consciousness construction, such as to give food to the fish in front of the temple, to establish the floating market, education tour the way of life of the people on both side of the river and view its perspective by boat cruising, to support the conference and workshop seminar through the raft hall, and to support the environmental education by allowing the raft hall as a classroom.

(2) Medicinal Herb Plant: In addition to give a sick person treatment service, the temple also demonstrate the medicinal herb for the people have a close study by preparing the garden of medicinal herb plant. It can be precedence for the visitor, who come to study it, to grows it for fundamental treatment.

2.1.2) Practical section

The substantial theory section will turn it on the two sorts of practice, that are the direct practice and indirect practice.

(1) The direct practice: The contents on the river conservation is to prepare the visitor trainee to sight-seeing the way of life of the people on both sides of the river and view its perspective for the trainee has a direct learning from the nature. The raft-hall in the river, which is made up by the monk, is used as a classroom of ethic science.

(2) The indirect practice : The contents on the environmental conservation and eliminating the pollution. In the section of environmental conservation, the temple held an activity for the visitor can imitate, learn, and self understood i.e., the people who take part in giving food to the fish not only to yield the merit, but also implant the kindness, non affliction, and non ruin the balance of environment system in the giver's personality.

Beside the cleaning matter, the abbot pay his attention to the environment that it should be also keep clean as well as the source of water. The temple also provide other kind of media for the people can learn it, a guideline of concrete practice. For example, the monk who has ability in drawing will be requested to draw a picture of cleaning campaign to put on the public place. The equipment is also provided i.e., the tank of trash will be laid around the temple as offering facility to the people. The

garbage classification tanks are also provided as a good sample to decrease the garbage problem to the people.

2.2) Methodology

The method of propagation on the environmental knowledge to the target group of Wat Klang Ku Wieng can be divided as:

2.2.1) Participation

Wat Klang Ku Wieng has her own approach in providing knowledge for the people in term of participation by:

(1) Conference : Wat Klang Ku Wieng held a meeting with the villagers who are the committee of the temple for request their cooperation to the temple in the occasion of the temple has her main activities: Katin, temple annual fair. In the course of meeting, they will talk the detail of the temple's activity. But if there are events or information about environment, the temple will inform the participants to propagate to his close neighbour know. By this way, it makes the people has a chance to receipt the information of environment.

(2) Giving permission to the outsider benefits the area of the temple, that as a member of the We Love Thachin River Society, to held a conference and other activities. The temple also supports the activity of the society such as, giving permission the association to arrange conference and other its activities at the riverside conference hall, especially the conference on the environmental topic. By this mean, it makes the participants of the conference to have a broad of knowledge and have a close touch to the calm of the tide calling their affiliate and realize to the river's significance.

(3) Give support the environmental activity of the communal school i.e., The student's contest of the proverb or slogan on the Thachin River awareness.

(4) Arrange the garden of flower-plant and medicinal herb by collecting the rare plants for the one who come to the temple know or study it. Moreover, the temple also allow the people take part in growing tree in the temple for sharing knowledge and inducing them to love tree.

2.2.2) Non-participation

To disseminate the information to general without a formal target group, but the interested person has an equal chance to access the information in a variety way as follows:

(1) Preaching : Whenever the abbot is invited to preach in the auspicious ceremony like entering a priesthood ceremony, a dead body ceremony, or preach the doctrine, he will insert the environmental matter in his preaching by socialize the audiences to aware of water as well as economy usage. Such a habitual is a basic personality of environmental conservation.

(2) Information disseminated by tape: On behalf of We Love Thachin River Society, they make tape entitled "thread the mind of awareness, protect the Thachin River" recorded by the voice of the abbot and disseminate to the institutes of education in Nakhon Pathom Province to on-air in their campus for invoking the environmental awareness of the pupils and teachers. The temple herself also on-air on Saturday-Sunday, on holiday, for the people who come to the floating market listen it. For the working day, the temple on-airs for the person

who comes to ask for the medicinal herb listen. The propagation of environmental awareness also does it through the boat cruising by loud-speaker or amplifier.

(3) Announce through the tower: As Wat Klang Ku Wieng is in the mid of the communities, the temple then play a vital role as focal point of information for the communities. The temple will make a periodical public relation about the situation of the Thachin River to the people know it and also campaign to persuade the people to regularly take part in preserving the quality of water.

(4) Boat cruising propagation: In addition to the information focal point, the temple also try to make a public relation to other communities by boat cruising along the Thachin River through the Nakhon Pathom province to provoke the communities on the both side of the river understand the situation of river at last one a month. The substantial information mostly covers the environment story on its crisis and general information. In the case of emergency i.e. the tide of the river become abnormal, the temple will rushes out to inform the people know immediately.

2.3) Activity

The activity of the environmental education of the temple has two kinds of consideration.

2.3.1) The activity held by the temple. There are the following major activities:

(1) Conserving the fish in front of the temple: The fish raising in front of the temple is a less investment but have a high yield. Moreover, the fish in front of the temple not only make income for the temple that sell fish food, but also a better indicator of the water qualification than the human

apparatus (Chan-in-ngarm, P., 2000 : 36). The indirect result makes the people, who give food to the fish, has a kind-minded to animal, has a soft-minded, not a hard man. Such a personality is in favor of the environmental conservation.

(2) The boat cruising to see the Thachin River's perspective. The boat cruising is an activity of the temple arranged for the temple-study group to see the restoration of the Thachin River after it has been neglected because of the water communication was changed to the land communication. The activity as said not only to view the folkway of the Nakhon Pathom province's people, but also has an indirect effect to the feeling of the participants that have a chance to touch the nature and the calm of the river's tide, which breed the personality of human being to love nature and environment.

(3) Flower plants garden is a place of a various kind of flower plants collection particularly, the rare plants i.e. a various kind of plant for the one who come to the temple can learn its nature and its useful. Besides, the temple also a policy to hold the plants contest in the future.

2.3.2) The activity that joint-held by the temple and other organizations.

(1) The activity of slogan contest. Wat Klang Ku Wieng itself support the school of Wat Klang Ku Wieng to held the slogan contest among the pupil for campaigning the Thachin River conservation. As a supporter, the temple will provide money or material as reward for the contest winner.

(2) The drawing on the boat cruising. It is an activity of the "We Love Tachin River Society" to ideology the youths to preserve the environment. Wat Klang Ku Wieng has a role in on supporting that activity. The

activity promotes the art introduction as a mean of making consciousness and an appreciative in cooperation of natural environmental conservation.

(3) Lunch supporting to the poor pupils. The pupil who demand the lunch supporting must make an agreement to do something useful to the temple or school, for example, clear the garbage off; keep the dishes to washer; make the food table at the canteen cleaned; make the area of the temple or school clear and clean; or do some useful thing in accordance to his or her ability. The given agreement is not exchange condition but demand the pupils realize that “although there have no money but doing something good will gain the kindness from the adult.” The activity as said not only to habituates the pupil to have the merit of piety, but also to make them have a sense of cleaning and neatness, which is the basic of qualified environmental conservation.

2.4) Media

The supplement media of environmental education of the temple can be divided into 2 kinds as follows:

(1) The concrete media

- Natural media.
- Makeup media: picture, document, brochure, tape, and banner, medicinal herb garden flower plant garden

(2) The abstract media:

- Doctrine (way of preaching)
- Precept
- Proverb

2.5) Evaluation

- (1) Observing the behavior of the participants.
- (2) Requesting the service from the temple.
- (3) The related-factor in environment education formulated

by the temple

3) The related-factor in environmental education formulation in case of Wat Klang Ku Wieng has for following details:

3.1) Internal factor

- (1) The physical environment of the temple

The geography favors the temple location together with the environmental deterioration is more aggressive made it easy to explain the environment substantial for preventing it.

- (2) The abbot's concept

He has a vision that human being need to rely on the nature. So we must implant the character of natural belonging in the people. To be the concrete model, the temple has precedence for copying by balancing the temple area. Whenever the people come to pay a visit, their sense will get the natural shady and feel easy free without any alert to anyone in the temple.

- (3) The active and care in working of the persons, monks and layman, in the temple can be recognized by the telling of the temple's public relation :

“Whenever the river pollution is informed, boat-cruising to publicize the residents on both side of the river to be sensible regardless how late at night it is...”

3.2) External factor.

(1) The government policy permits the temple on the river side to take part in the river conservation.

(2) The provincial senior monks particularly the provincial house-master (a monk who has charge of the monks in a portion of province) pay a serious attention it and give support to every temple in his charge to play role in the environmental conservation.

(3) The people earn medicinal herb service from the temple convinced the temple to develop her medicinal herb and expand the herb plant area.

(4) The people's faith toward the abbot made he easy ask the people to share their co-operation in the temple affairs.

Summary

Wat Klang Ku Wieng is a historical temple that is significant to the mind of the Thai and Laos people since early Bangkok period. The Laos people have a close relation to this temple because the Kingdom of Laos defeated to Thai army and her people were swept to resettle in Bangkok at that time. For having a community's center, the Thai people and Laos people pay their co-operation to build this temple on the bank of Thachin River.

In the past decade, the pollution of Thachin River has been becoming so deteriorate as the concerned government and private sectors, and the temple locates along the river side joint- organized the “We Love Thachin River Society ” to recover it. The preserved consciousness and sense of belonging to the Thachin River are persuaded. The program of the natural resource is scheduled for example, supporting the float market, fish’s central market, etc. For the program of pollution elimination is determined by the garbage classification named “millionaire’s garbage”; having a hygiene toilet or bath-room ; encouraging the easy digest materials application in favor of ritual affairs. In addition, there are a propagate campaigning on environment viz., disseminating tape-recording to the teachers and student in up-country; boat-cruising to announce the up-date message on environment to the residents on both side of the river supported by temple’s broadcasting tower; water conservation proverb contest held by temple and school; flower and herbal garden decoration as educational place; regulating the monk’s affairs in the responsible-area as precedence for copying; and providing seminar and conference raft-hall in the river-area of the temple for the organizations.

The above-mentioned programs, they are persons from the communities to take part in every process of its activity considering the innumerable benefactions to the Thai environment, concurrent the environmental education is provided to the people. In other words, it is a permanence environmental education formulation.

4.2 People's Learning

To analyze the results of people's learning from those who have undergone environmental Education program in Wat Panyanantaram, Wat Asokaram, and Wat Klang Ku Wieng, 4 factors have been considered

- 1) general characteristics of participants to the wat's activities
- 2) knowledge and understanding about wat-goers
- 3) attitudes
- 4) people's suggestions and recommendations on the wat's environmental Education

The research revealed that

- 1) **general characteristics of participants to the wat's activities**

Regarding participation to the wat's activities, female participants outnumbered male participants. Most participants were business people (38.9%) with public servants, school pupils, university students, and housewives constituted lower percentages respectively. With reference to levels of education, most participants were high school graduates (37.8%) with primary education, bachelor's degree, and diploma schooling constituted lower percentages respectively. As for marital status, unmarried participants constituted 45% of the whole group with single participant made 41.1%. Regarding the accommodation, 40.6% in the provinces the wats are located, and 13.9% in other provinces. 51.1% of the participants came to the wats to make merit and 27.8% for meditation practice. Reasons for selection of the wats revealed that most participants focussed on travel conveniences over faith towards the monks (30.6%) and fond of environmental management (28.3%). Regarding

attendance frequency, 32.2% came on religious days, 21.1% for relaxation, and 20.6% as frequent visitors. Most participants preferred to have direct conversation with the monks (27.8%), with broadcasting, billboards, and documents constituted lower percentage respectively (22.8, 21.7, and 14.4%).

Interesting points on the finding revealed that married business women constituted larger proportion of the wat-goers which meant wat-goers were those who had successful families and careers. Nearby people and those who stayed in the same province, as the location of the wat would be frequent visitors due to travel convenience. They came to the wats to make merit, meditate, and talked to the monks they revered. The above-mentioned results showed that the monk's roles had significant influences on people's choice on the wats. (illustrated in Table 5).

Table 5 General characteristics of participants to the wat's activities

general characteristics	Number	Percentage
Gender		
Male	75	41.7
Female	105	58.30
Career		
Pupils and students	32	17.8
Public servants	33	18.3
Business people	70	38.9
Housewives	26	14.4
Others	19	10.6

general characteristics	Number	Percentage
Level of education		
Primary	41	22.8
High school	68	37.8
Diploma	22	12.2
Undergraduate	34	18.9
Graduate	11	6.1
Others	4	2.2
Marital status		
Single	74	41.1
Married	81	45.0
Divorced or separated	22	12.2
Monkshood	3	1.7
Accommodation		
Nearby a wat	82	45.6
Within the same province as the wat	73	40.6
In other provinces	25	13.9
Wat-goers' intention		
Merit making	92	51.1
Meditation	50	27.8
Recreation	25	13.9
Others	13	7.2

general characteristics	Number	Percentage
Reasons for wat selection		
Travel convenience	62	34.4
Fond of environmental management	51	28.3
Faith in monks	55	30.6
	12	6.7
Attendance frequency		
Frequent	37	20.6
Only on religious days	58	32.2
Relaxation	38	21.1
Only when assigned by office	32	17.8
Others	15	8.3
Interest on teaching mediums		
Documents	26	14.4
Billboards	39	21.7
Direct conversation with monks	50	27.8
Broadcast	41	22.8
Others	24	13.3

2) knowledge and understanding about wat-goers

This study categorized knowledge content into 5 groups as follows

- (1) knowledge about environment
- (2) knowledge and understanding about resource and environmental management
- (3) understanding about basic principles of environment
- (4) understanding about the application of dhamma on environmental conservation
- (5) understanding about the application of rites on environmental conservation

The study revealed that people who visited Wat Panyanantaram had better general knowledge about environment, knowledge and understanding about resource and environmental management, understanding about the application of dhamma on environmental conservation, understanding about the application of rites on environmental conservation than people who visited Wat Asokaram and Wat Klang Ku Wieng by scoring as high as 74.76, 63.67, 67.78, and 66.67 on each knowledge category. Visitors to Wat Klang Ku Wieng had the best understanding about basic principles of environment with the score of 64.17% whereas those to Wat Panyanantaram scored a lower percentage at 63.33 (Table 6).

As for the results, most visitors to Wat Panyanantaram had satisfactory levels of knowledge and understanding about environment in 5 areas due to the fact that the Wat had focussed its efforts on environmental management contributing to dhamma studies. The Wat had well preserved internal environment, been immaterialized, and

followed the Buddha's concept of wat (ah-ram) which meant to be the place that provided mental calmness. It agreed with the definition of dhamma which literally meant nature. The Wat strictly adopted this nature-related concept to various factors comprising the thinking, ways of life, projects and activities organized within it. People who visited the Wat therefore would have opportunities to learn about environment continuously and apply the knowledge to enhance environmental quality.

Wat Asokaram focussed its environmental education on natural resource conservation. The mangrove forest was a unique character of this wat. The Wat focussed less on ritual patterns. Wat-goers revealed that they had an average level of knowledge and understanding on environment.

Visitors to Wat Klang Ku Wieng had relatively good general knowledge on environment, understanding about basic principles of environment and understanding about the application of dhamma on environmental conservation. This was due to the fact that the Wat had tried to supplement environmental knowledge in various activities (Table 6).

Table 6 knowledge and understanding about environment

Knowledge and understanding	Percentage		
	Wat Panyanantaram	Wat Asokaram	Wat Klang Ku Wieng
Knowledge about environment	74.76	56.9	71.9
Knowledge and understanding about resource and environmental management	63.67	55.0	50.67
Understanding about basic principles of environment	63.33	39.17	64.17
Understanding about the application of dhamma on environmental conservation	67.78	54.33	62.22
Understanding about the application of rites on environmental conservation	66.67	51.89	40.56

However, overall picture about knowledge and understanding on resource and environmental management obtained from responds having less right answers than wrong ones revealed that misunderstanding still occurred in basic principles on the alleviation of environmental problems. When asked to identify what people could do to easily alleviate environmental problems, only 33.9% of respondents selected to spend less. The rest selected some other choices such as reporting to a responsible organization upon identifying pollution makers, the study of environmental law and applying for the membership of environmental conservation club, all of which focussed more on remote measures rather than self-reliance. This was corresponding to the answer on the cheapest way to reduce garbage by shaping daily eating and using habits, which accounted to as high as 45.6%. The lower choices were the building of incinerator, the making of fertilizer from garbage, the recycle of the garbage. This indicated that people still paid more attention to cure rather than prevention.

Regarding the understanding about application of dhamma on environmental conservation, most respondents could not analyze behavior or action of people under the dhamma principle on gratitude or apply them to human being and other beings alike that were useful to humans. Correct responds to this issue totaled to 32.2%.

With reference to the understanding about application of rites on environmental conservation, wat-goers identified planting trees in public places as the most beneficial merit making activity (30%). Other 70% of respondents chose other approaches including contributing dry food to monks, building a garbage incinerator in the community, and donating belonging and clothes.

3) attitudes

This study categorized people's attitude about environment into 2 groups

- (1) attitude of people towards environment in general
- (2) attitude of people towards environment in the Wat's context

The study revealed the following results

(1) attitude of people towards environment in general

According to Table 7, wat-goers did not agree that Thailand did not have environmental problem, human beings not to improve environmental condition, unlimited use of resources, and public organizations being tasked with more responsibilities than people. They also thought that they played an important part in the improvement of environmental condition.

It is interesting to note that most wat-goers to Wat Panyanantaram and Wat Asokaram agreed to provide verbal warnings to strongers whereas improper conducts on environment were committed. However, those visiting Wat Asokaram responded with controversial results (40.0% undecided and 43.3% agreed). More visitors to Wat Klang Ku Wieng, however, were uncertain as to whether they should provide the warning (46.7%) as compared to those agreed to do so (41.7%). Their main reasons of the uncertainties and the disagreements were offending other people (kreng-jai) and not being their cousins.

As for the attitude of having utilities and home furniture made from animals' organs and littering uneasily decomposed garbage on earth or in the rivers, wat-goers to all 3 wats had similar attitude of disagreement that went as high as 70% or more.

To summarize, wat-goers had general attitudes about environment in the same direction especially indicating high correlation in some areas such as their country was having environmental problems, human beings were important factors in improving environmental condition, they were against the use of animals' organs as home utilities and furniture, they disagreed with careless public littering. It showed that people had positive attitude towards environmental issues, hence all 3 wats had played important roles in planting correct attitudes and awareness about environment on people.

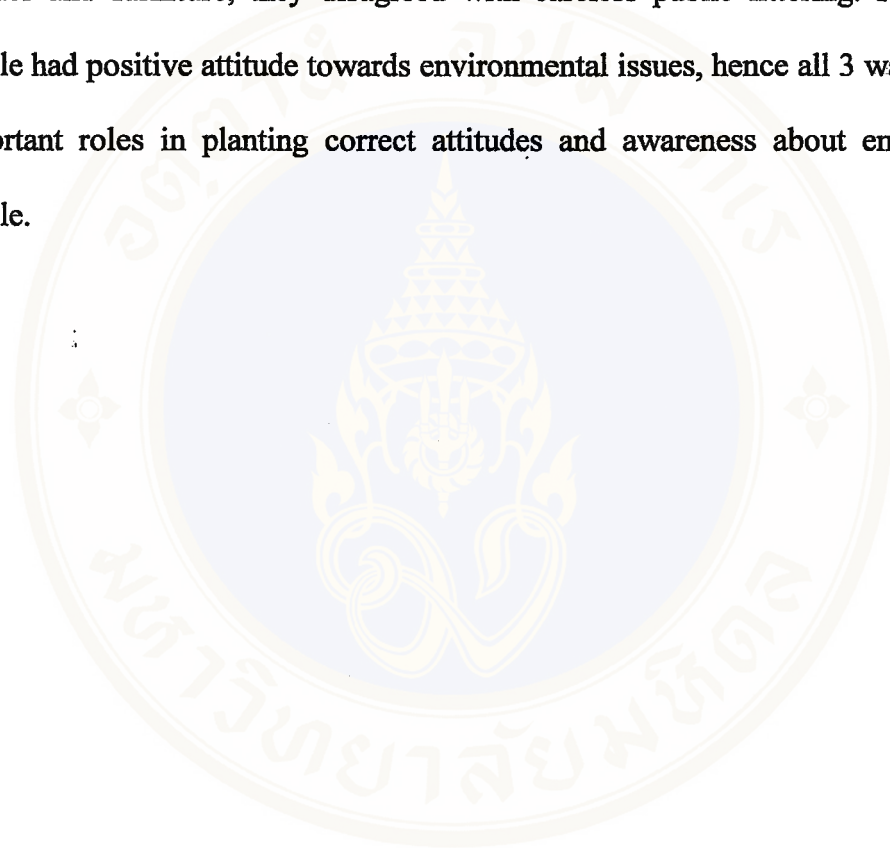


Table 7 people's attitude towards environment in general

Attitude	Wat Panyanantaram			Wat Asokaram			Wat Klang Ku Wieng		
	Agree	Undecided	disagree	Agree	Undecided	disagree	Agree	Undecided	disagree
	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)
1. Thailand has no environmental problems	10 (16.7)	9 (15.0)	41 (68.3)	8 (13.3)	11 (18.3)	41 (68.3)	17 (28.3)	3 (5.0)	40 (66.7)
2. it is not necessary for men to protect environment since nature will take care of itself.	5 (8.3)	9 (15.0)	46 (76.7)	17 (28.3)	14 (23.3)	29 (48.3)	10 (16.7)	18 (30.0)	32 (53.3)
3. resources are unlimited and luxurious use can be done.	7 (11.7)	8 (13.3)	45 (75.0)	13 (21.7)	15 (25.0)	32 (53.3)	15 (25.0)	14 (23.3)	31 (51.7)
4. it is more the responsibility of governmental offices than of people to look after environment.	11.7 (7)	11.7 (7)	76.7 (46)	16.7 (10)	35.0 (21)	48.3 (29)	6.7 (4)	5.0 (3)	88.3 (53)
5. you feel you are an important factor in protecting the environment.	61.7 (37)	36.7 (22)	1.7 (1)	78.3 (47)	16.7 (10)	5.0 (3)	60.0 (36)	38.3 (23)	1.7 (1)
6. you think you should give correct warning to those wrongdoers on environmental issues.	30 (50.0)	17 (28.3)	13 (21.7)	26 (43.3)	24 (40.0)	10 (16.7)	25 (41.7)	28 (46.7)	7 (11.7)
7. it is all right to have home utilities and furniture made of animals' parts since raising animals for commercial purposes are now prevalent.	2 (3.3)	9 (15.0)	49 (81.7)	5 (8.3)	9 (15.0)	46 (76.7)	6 (10.0)	11 (18.3)	43 (71.7)
8. littering uneasily decomposed garbage on earth or in the rivers is all right since it is not a major threat to the environment.	5 (8.3)	3 (5.0)	52 (86.7)	5 (8.3)	12 (20.0)	43 (71.7)	2 (3.3)	11 (18.3)	47 (78.3)
	N = 60			N = 60			N = 60		

(2) attitude of people towards environment in the Wat's context

Table 8 illustrates attitude of people towards environment in the wat's context. The findings revealed that Wat Panyanantaram's visitors (51.7%) did not agree that buying a package of sangathan from the shop would fully get what the monks really need. Sangathan should therefore be self-prepared. In the case of Wat Asokaram, proportion of people who disagreed, were undecided, and agreed was relatively no different (35.0%, 33.3%, and 31.7% respectively). In the case of Wat Klang Ku Wieng, most people were undecided (43.3%), with 31.7% in agreement and 25.0% in disagreement.

The results of the study were in accordance with the data collected from participation. They clearly indicated that Wat Panyanantaram had put much effort in correcting people's understanding relating to merit making by outlining the facts that buying packaged sangathans might not render monks with optimum usefulness. The Wat provided some facts as an example: rice grains or drinking water with the smell of detergent, expired canned food, syrup being artificially processed to yield nice taste, smell and color, bathing cloth which was too small to wear. Some wats had to transfer those materials for other uses such as cleaning cloth. Merit making by offering sangathan might not be strictly limited to come in a yellow bin. One could offers sangathan by donating a broom or a bucket of rice. Donating locally-produced vegetables to the monks would also indicate that the community was self-sufficient and prosperous. Therefore, one should not ignore the Buddhist wisdom by offering a binned-sangathan because sangathan could come in any form aimed at contributing to a group of monks, not an individual.

In the case of Wat Asokaram and Wat Klang Ku Wieng, most visitors were industrial workers who had little opportunity to prepare sangathan by themselves. Purchasing a packaged sangathan was therefore a convenient way out for them to make merit.

Regarding attitude towards roles of the wat, 80% of visitors to Wat Panyanantaram and Wat Asokaram agreed that apart from seeing the wat as mental development institution it could additionally perform the role of environmental development concurrently. Providing knowledge on environmental issues to people would help lessen environmental problems and people could put forward the knowledge in everyday life. Cleaning the wat's area and looking after the wat's trees would also be counted as merit making. Following the Buddha's teaching also helped preserve the environment. In the case of Wat Klang Ku Wieng, visitors who favored the roles outnumbered those who were undecided although the proportion was almost dissimilar. The exceptions were the merit making concerning cleaning the wat's area and looking after the wat's trees that those favored them clearly outnumbered those who were undecided.

Attitude concerning the cause of environmental destruction originated from greed, anger, and hate; visitors to Wat Panyanantaram and Wat Asokaram agreed with that with similar proportion (75.0% and 73.3%), undecided with the percentage of 20.0% and 21.7% respectively, and disagreed with the same proportion (5.0%). In the case of Wat Klang Ku Wieng, most of the visitors (40.0%) disagreed with the above-mentioned causes of environmental destruction. Those who agreed totaled 31.7% and were undecided 28.3%.

To summarize, visitors to the 3 wats had similar attitudes towards environment especially the roles of the wat in providing knowledge to decrease environment problems to people and the bringing of knowledge to be used in everyday life. Cleaning the wat's area was regarded as one way of merit making. Following the Buddha's teaching would enhance environmental conservation. It could therefore be concluded that activities organized by the wat played important part in shaping people's attitude about environmental issues.

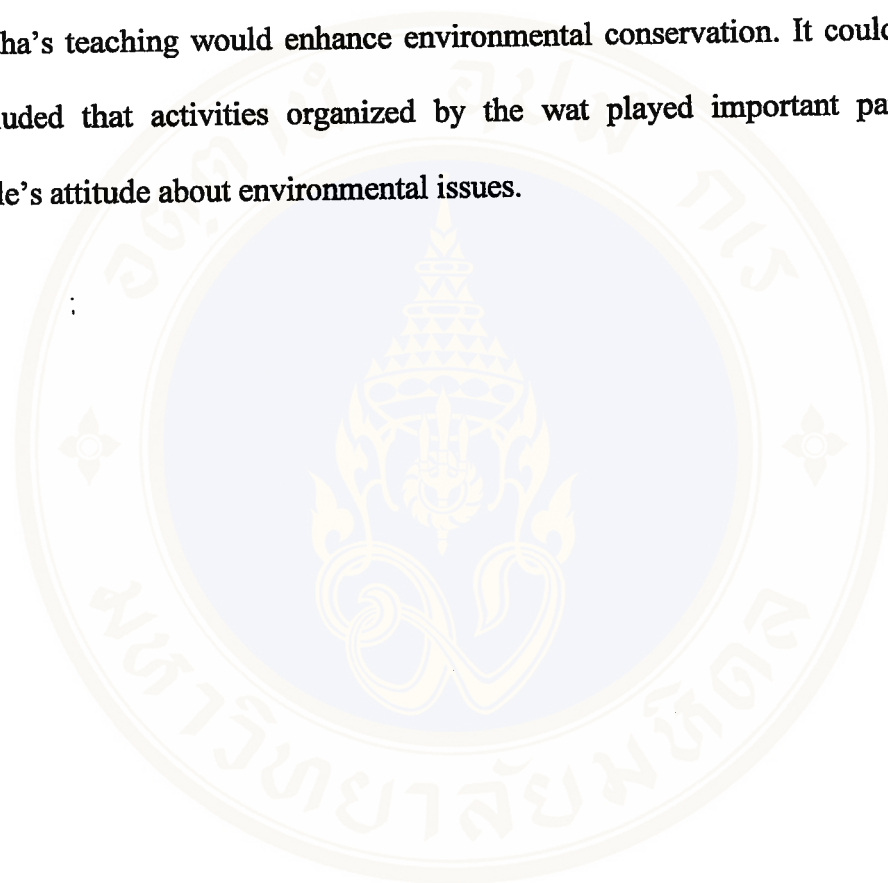


Table 8 Attitude of people towards environment in the wat's context

Attitude	Wat Panyanantaram			Wat Asokaram			Wat Klang Ku Wieng		
	Agree	Undecided	disagree	Agree	Undecided	disagree	Agree	Undecided	disagree
	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)
1. you feel that purchasing a packaged sangathan will render more usefulness to the monks than if it is prepared by yourself.	13 (21.7)	16 (26.7)	31 (51.7)	19 (31.7)	20 (33.3)	21 (35.0)	19 (31.7)	26 (43.3)	15 (25.0)
2. in addition to mental development, a wat can have an additional role as environmental development.	51 (85.0)	8 (13.3)	1 (1.7)	48 (80.0)	8 (13.3)	4 (6.7)	29 (48.3)	26 (43.3)	5 (8.3)
3. providing knowledge on environment to people by a wat will help decrease environmental problems.	55 (91.7)	5 (8.3)	0 (0)	52 (86.7)	6 (10.0)	2 (3.3)	38 (63.3)	18 (30.0)	4 (6.7)
4. you can make use of knowledge about environment from this wat for everyday life.	57 (95.0)	2 (3.3)	1 (1.7)	55 (91.7)	5 (8.3)	0 (0)	28 (46.7)	26 (43.3)	6 (10.0)
5. cleaning a wat's area and looking after the wat's trees are regarded as merit making.	56 (93.3)	4 (6.7)	0 (0)	49 (81.7)	11 (18.3)	0 (0)	35 (58.3)	22 (36.7)	3 (5.0)
6. you think greed, hate, and anger are causes of environmental destruction.	45 (75.0)	12 (20.0)	3 (5.0)	44 (73.3)	13 (21.7)	3 (5.0)	19 (31.7)	17 (28.3)	24 (40.0)
7. you think following the Buddha's teaching will enhance environmental conservation.	55 (91.7)	4 (6.7)	1 (1.7)	50 (83.3)	6 (10.0)	4 (6.7)	25 (41.7)	22 (36.7)	13 (21.7)
	N=60			N=60			N=60		

4) people's behavior about environment

The study categorized people's behavior about environment into 2 groups

- (1) behavior of people towards environment in general
- (2) behavior of people towards environment in the wat's context

The findings of the study were as follows

(1) behavior of people towards environment in general

Visitors to the 3 wats received information about environment from the mass media and conversation with friends. 50% of the visitors occasionally had the above-mentioned behavior.

Regarding their behavior on wearing dresses made from synthetic materials and eating fast meals, the visitors had similar habit in that only a small number of them did that.

With reference to their littering behavior, most of them did not litter places where they were not dumping areas. Only a few people did that occasionally still.

Visitors to all 3 wats occasionally gave warning to strangers regarding environmental conservation. The percentage of visitors to each war who performed as such was as follows: Wat Panyanantaram, 66.7%; Wat Asokaram, 45.0%; and Wat Klang Ku Wieng, 50.0%. However, there were 41.7% of those visiting Wat Asokaram and 36.7% of visitors to Wat Klang Ku Wieng who did not perform such behavior. This corresponded to the people's attitude indicating that such behavior was proper however people felt uneasy to disturb other people therefore that behavior appeared only occasionally.

As for behavior of having utilities and furniture made of animals' parts most visitors to all 3 wats did not have such behavior. The percentage of visitors to each wat who disagreed with such behavior was as follows: Wat Panyanantaram, 93.3%; Wat Asokaram, 80.0%; and Wat Klang Ku Wieng, 86.7%. This corresponded to attitude of most people who did not agree with the ideas of having home utilities and furniture made of animals' parts.

As for participation in environmental conservation activities comprising joining environmental awareness campaigns and participating as members of environmental conservation clubs, most visitors to Wat Panyanantaram, and Wat Klang Ku Wieng sometimes participated in both activities which was corresponded to attitude of people indicating that environmental conservation should not be left alone to governmental organization.

The results provided some explanations on behavior of people concerning environmental issues in general. Only a small number of people still had undesirable behavior on environmental issues such as dressing habit, consuming unhealthy food, littering public places. The most important finding was that most people did not favor having home utilities and furniture made of animals' parts which showed that people tended to be kind to animals (first teaching of the five precepts). This behavior was the basic virtue relating to environment. In addition, most people occasionally participated in environmental activities. The final words could be that activities and roles of the wat had significant influences on people's behavior (Table 9).

Table 9 people's behavior about environment

Behavior	Wat Panyanantaram			Wat Asokaram			Wat Klang Ku Wieng		
	Frequent	Sometime	Never	Frequent	Sometime	Never	Frequent	Sometime	Never
	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)	Number (Percentage)
1. you read newspaper, listen to the radio, watch TV about environmental program.	13 (21.7)	45 (75.0)	2 (3.3)	20 (33.3)	31 (51.7)	9 (15.0)	20 (33.3)	34 (56.7)	21 (10.0)
2. you talk about environmental problems with your friends and other people you know.	13 (21.7)	40 (66.7)	7 (11.7)	13 (21.7)	36 (60.0)	11 (18.3)	16 (26.7)	31 (51.7)	13 (21.7)
3. you dress in cloth made of synthetic materials.	10 (16.7)	38 (63.3)	12 (20.0)	5 (8.3)	29 (48.3)	26 (43.3)	19 (31.7)	21 (35.0)	20 (33.3)
4. you eat fast food dishes such as pizza, Kentucky Fried Chicken.	2 (33.3)	36 (60.0)	22 (36.7)	8 (13.3)	30 (50.0)	22 (36.7)	8 (13.3)	25 (41.7)	27 (45.0)
5. you litter the floor if there is no garbage bins around.	0 (0)	21 (35.0)	39 (65.0)	4 (6.7)	16 (25.6)	40 (66.7)	4 (6.7)	26 (43.3)	30 (50.0)
6. if you spot an unknown person littering the floor, you will give that person a warning.	9 (15.0)	40 (66.7)	11 (18.3)	8 (13.3)	27 (45.0)	25 (41.7)	8 (13.3)	30 (50.0)	22 (36.7)
7. you have home utilities and furniture made of animals' parts such as skin, horn, tusks.	- (0)	40 (6.7)	56 (93.3)	3 (5.0)	9 (15.0)	48 (80.0)	0 (0)	8 (13.3)	52 (86.7)
8. you participate in the campaign on environmental conservation such as cleaning, planting, attending environment's day.	13 (21.7)	35 (58.3)	12 (20.0)	9 (15.0)	24 (40.0)	27 (45.0)	13 (21.7)	33 (55.0)	14 (23.3)
9. you participate as a member of the club that organizes environmental conservation activities.	3 (5.0)	32 (53.3)	25 (41.7)	5 (8.3)	17 (28.3)	38 (63.3)	11 (18.3)	27 (45.0)	22 (36.7)
	N=60			N=60			N=60		

(2) behavior of people towards environment in the wat's context

The result of the study on behavior of people towards the environment in the wat's context is shown in Table 10. Behavior being observed through Loy Krathong Festival revealed that visitors to the 3 wats did not use synthetic and paper krathongs which corresponded to attitude of most people in that they did not favor litter the place with uneasily decomposed or insoluble garbage. Regarding behavior on buying a packaged sangathan for the monks, most visitors to the 3 wats occasionally did it.

Regarding behavior concerning knowledge seeking from the wat by exchange of conversation with the monks and wat-dwellers about what was going on the wat, the result revealed that most visitors to the 3 wats occasionally did that. To seek knowledge by reading from the billboards, 58.3% of visitors to Wat Panyanantaram sought to do that but 51.7% of those to Wat Asokaram and 60.0% of those to Wat Klang Ku Wieng did that sometimes. With reference to the seeking of knowledge on herbs, people who visited Wat Panyanantaram and Wat Klang Ku Wieng did that sometime at the percentages of 56.7 and 63.3 respectively. However, 60% of those who visited Wat Asokaram did not use the Wat as a learning place. Regarding tree growing and cleaning behavior, most visitors to the 3 wats had that behavior.

Examining eating behavior, 60% of visitors to Wat Panyanantaram and Wat Asokaram took meals just enough for themselves to eat. However, 48.3% of those visiting Wat Klang Ku Wieng took much meal for themselves and could not finish them.

As for behavior concerning bringing of the Wat's teaching to practice in everyday life, 56.7% of visitors to Wat Panyanantaram and 53.3 of those to Wat Asokaram frequently teaching into practice as compared to 61.7 of visitors to Wat Klang Ku Wieng occasionally did so.

The findings revealed some interesting result worthy brought under consideration. Most people possessed behavior that helped reduce pollution resulting from krathong made of synthesized and paper materials. Billboards were good means in providing knowledge to wat-goers especially those visiting Wat Panyanantaram. Therefore, this means should be developed for better use . In addition, most people exchange conversation with monks occasionally which was corresponded to reasons of visitors given for their wat-going (believed in monks, 30.6% and made merit, 51.1%) as shown in Table 5. Regarding food-taking behavior, most people took just enough meal to eat especially those attending Wat Panyanantaram and Wat Asokaram, which adopted a good conduct on this behavior as a normal practice of the wat. Most visitors applied the Wats' teaching to their daily practice which was in agreement with people's attitude in that following the Buddha's teaching helped preserve the environment (in Table 8). To summarize, activities organized by a wat had significant influences on people's behavior about environment under the wat's context.

Table 10 behavior of people about environment under the wat's context

Behavior	Wat Panyanantaram			Wat Asokaram			Wat Klang Ku Wieng		
	Frequent	Sometime	Never	Frequent	Sometime	Never	Frequent	Sometime	Never
	Number	Number	Number	Number	Number	Number	Number	Number	Number
	(Percentage)	(Percentage)	(Percentage)	(Percentage)	(Percentage)	(Percentage)	(Percentage)	(Percentage)	(Percentage)
1. you use a krathong made of synthetic materials and paper.	1 (1.7)	6 (10.0)	53 (88.3)	6 (10.0)	13 (21.7)	41 (68.3)	2 (3.3)	11 (18.3)	47 (78.3)
2. you buy a packaged sangathan from the shop and donate it to the monk.	8 (13.3)	32 (53.3)	20 (33.3)	14 (23.3)	32 (53.3)	14 (23.3)	22 (36.7)	31 (51.7)	7 (11.6)
3. you exchange knowledge on things within the wat with monks and wat-dwellers.	6 (10.0)	42 (70.0)	12 (20.0)	8 (13.3)	27 (45.0)	25 (41.7)	4 (6.7)	37 (61.7)	19 (31.6)
4. you read signs posted in the wat.	35 (58.3)	23 (38.3)	2 (3.3)	15 (25.0)	31 (51.7)	14 (23.3)	18 (30.0)	36 (60.0)	6 (10.0)
5. you use the wat as a study place to seek knowledge about herb.	12 (20.0)	34 (56.7)	14 (23.3)	7 (11.7)	7 (28.3)	36 (60.0)	5 (8.3)	38 (63.3)	17 (28.3)
6. you help look after trees and clean the wat's area.	11 (81.3)	42 (70.0)	7 (11.7)	7 (11.7)	29 (48.3)	24 (40.0)	9 (15.0)	33 (55.0)	18 (30.0)
7. when you have an opportunity to serve food for yourself, you normally cannot eat it up.	4 (6.7)	20 (33.3)	36 (60.0)	4 (6.7)	20 (33.3)	36 (60.0)	5 (8.3)	29 (48.3)	26 (43.3)
8. you put knowledge obtained from the wat into practice in your daily life.	34 (56.7)	26 (43.3)	0 (0)	32 (53.3)	25 (41.7)	3 (5.0)	11 (18.3)	37 (61.7)	12 (20.0)
	N=60			N=60			N=60		

5) people's suggestions and recommendations on the wat's environmental education.

5.1) knowledge that can be put to practice in daily life

(1) environmental conservation especially tree cutting because people felt that trees brought coolness to the area. Plants were good sources of food and herbal plants could be a means to cure an early stage illness.

(2) kindness and no harm to others

(3) benevolence

(4) knowing moderation in consumption

(5) leading one's life according to and in harmony with nature

(6) refrain from using uneasily decomposed materials

(7) cleanliness

(8) bringing the Buddha's teaching from the wat to the family members and friends as the way to lead one's life

5.2) things that have to be known about the wat

(1) history and importance of the wat by demonstrating at a convenient place to study

(2) incomes and expenditures of the wat

(3) timetable of dhamma teaching and dhamma practices of the wat

5.3) things requested to the wat to provide

(1) provide a recreation area in the wat

(2) sings identifying types and usefulness of plants grown in the wat

especially herbs..

(3) organization of places for animals

The findings revealed that wat-goers had knowledge about environment in accordance with the way the Wats provided to the people. In addition, the wats had significant role in building correct attitude and self-consciousness on environment to people leading to behavior which helped protect the environment. Specific characteristics of relevant factor in the organization of environmental education of each wat are illustrated in Table 11.

Table 11 summary of specific characteristics of relevant factors in the organization of environmental education

Factors	Specific characteristics		
	Wat Panyanantaram	Wat Asokaram	Wat Klang Ku Wieng
1. resource			
1.1 personnel	Personnel capable of giving knowledge, personnel giving support to learning process, local teachers participating in giving local wisdom relating to community's way of life.	Main personnel being one monk but due to the fact that he had been in such and environment and was interested in mangrove environment, he was able to give knowledge from his firsthand experience.	The abbot being the leader in distributing knowledge using various tactics, as well as having the wat's personal relations offices and public servants providing necessary help.
1.2 organization of environmental education	The process included planning, staffing, meeting, directing, and coordinating.	The process included coordinating, meeting, and laying out plans to preserve environment.	The process included public relations, coordination, and laying out plans to preserve environment.
1.3 equipment	Facilities to utilize studies such as video and audio machine, communication equipment, office equipment, and public relations equipment.	Facilities to support knowledge distribution such as video and audio machine, communication equipment, cameras, office equipment and public relations equipment.	Because it was located in the community area, it was the information center of environment using broadcasting tower as a means to distribute knowledge. In addition, the wat had public relations boat to announce messages to the people living nearby the canals

Factors	Specific characteristics		
	Wat Panyanantaram	Wat Asokaram	Wat Klang Ku Wieng
1.4 budget	No special allocation for environmental studies because activities were designed within projects and activities.	No special allocation for environmental studies but must ask for approval on a case by case basis. The money was funded by wat-goers.	No special provisions were allocated for environmental studies. However, when budget was needed for some activities such as vehicle procurement, support on school's activities, allocations wee made from the wat's incomes such as donating money, merit-making money, incomes from organized activities
2. environmental education process 2.1 content/major body of knowledge	Inserted content on environment within dhamma teaching.	Provided knowledge about mangrove forest ecological system.	Organized environmental education on river conservation
2.2 method 2.2.1 participation	<ul style="list-style-type: none"> - insertion of content about environment in dhamma teaching - study n natural classroom - memorizing or repeating 	<ul style="list-style-type: none"> - lecture, seminar, question and answer - study from the real situation 	<ul style="list-style-type: none"> - meeting, seminar - permission to outsiders to use the facilities for seminal purposes encourage schools in proposing mottoes to campaign on river conservation

Factors	Specific characteristics		
	Wat Panyanantaram	Wat Asokaram	Wat Klang Ku Wieng
2.2.2 non-participation	<ul style="list-style-type: none"> - organization of the wat's surrounding to encourage self-learning - demonstration board - dhamma teaching - speaking tees - radios - public relations documents - study from the library - exchange of conversation with monks and wat-goers 	<ul style="list-style-type: none"> - demonstration boards - campaigning signs to preserve plants and animals - signs bearing plants' names - speaking electric poles - study from the library - exchange of conversation with monks 	<ul style="list-style-type: none"> - demonstration boards - dhamma teaching - signs bearing campaign mottoes - painting - video tape entitled "Roi Jai Rug Pitak Lam Nam Thachin" - public relations through broadcasting tower - public relations boats
2.3 activities	<p>1. self-organized activities</p> <p>1) within the wat</p> <p>(1) way of life in the wat</p> <p>(2) dhamma tour</p> <p>(3) wat development</p> <p>(4) ceremony for children of Buddha</p> <p>2) outside the wat</p> <p>(1) natural studies</p> <p>(2) local way of life study</p> <p>(3) learning from local people who had experiences</p> <p>(4) training on basic</p>	<p>1. Self-organized activities</p> <p>1) within the wat</p> <p>(1) mangrove ecological study</p> <p>(2) mangrove forest development</p> <p>(3) mangrove reforestation</p> <p>(4) mangrove plants growing</p> <p>(5) supporting activities for educational establishments that join the wat's activities</p> <p>2) schools could invite</p>	<p>1. self-organized activities</p> <p>(1) fish conservation in front of the wat</p> <p>(2) cruising to view the scenery along the river</p> <p>(3) the making of a kratong from natural materials for rituals</p> <p>(4) floating market</p> <p>(5) botanic garden for herbs</p> <p>2. activities organized with other organizations</p> <p>(1) motto competition for river conservation</p> <p>(2) cruising for painting</p>

Factors	Specific characteristics		
	Wat Panyanantaram	Wat Asokaram	Wat Klang Ku Wieng
	<p>virtue in environmental conservation</p> <p>2. activities that educational institutions organized following those organized by the wat</p> <p>(1) organizing a pocketbook recording experiences obtained from the wat</p> <p>(2) recording proverbs, sayings , and sentences before translating them into English</p> <p>(3) build a thinking tree from knowledge obtained from the wat</p> <p>3. supporting activities to environmental studies</p> <p>(1) permission of educational establishments to use the wat as natural environmental studies</p> <p>(2) permission of outsiders to use the wat for meeting and seminal purposes</p>	<p>monks to teach dhamma about mangrove forest ecological system to the establishments</p> <p>(1) permission of educational establishment to use the wat as a place for ecological studies and practice in science about mangrove, GIS</p> <p>(2) environmental conservation club could use the wat as a recreation place</p> <p>(3) mass media could use the wat to shoot the environmental films</p>	<p>(3) creating virtue and training for students on basic behavior to preserve environment</p>

Factors	Specific characteristics		
	Wat Panyanantaram	Wat Asokaram	Wat Klang Ku Wieng
2.4 media			
2.4.1 concrete media	1) natural environment 2) man-made media such as documents, books, videos, cassettes, paintings, residential organization, manners of monks	1) natural environment 2) man-made media such as painting of mangrove animals, painting of food-chain transparency, slides, mangrove animal crafts	1) natural environment 2) man-made media such as painting, documents, leaflets, cassettes, campaign signs, herb garden, botanic garden
2.4.2 abstract media	- prayers - dhamma teachings - proverbs - sayings - poems - stories rules, rules, regulations, prohibitions	- dhamma teachings - proverbs - sayings - poems - rules, regulations, prohibitions	- dhamma teachings - teachings - mottoes - rules, regulations, prohibitions
2.5 evaluation	1. observe behavior of participants 2. compose of composition of impression on the final day of the course 3. the return of participants to the wat 4. the transfer of feeling through arts works 5. the application of the wat's sample such as tree-growing within the house area of coolness	1. petition box 2. observe behaviors of participants 3. continuous projects of the educational establishments such as after a dhamma lecture session given by a monk, the school took students for a workshop on mangrove development and reforestation projects	1. observe behaviors of participants 2. the application of the wat's sample such as keeping the rivers, canals, houses, and communities cleaned; growing of herbal plants inside the house area for elementary illness treatment

Factors	Specific characteristics		
	Wat Panyanantaram	Wat Asokaram	Wat Klang Ku Wieng
2. supportive factors 2.1 internal factors	1. physical characteristics of the wat 2. the abbot's vision 3. the attitudes of the wat's officials	1. geographical location 2. the abbot's vision 3. the determination of the monk lecturers	1. geographical location 2. the abbot's vision 3. the zeal of the wat's officials such as public relations officers
2.2 external factors	1. policies of governmental organizations 2. support from external agencies 3. participation by local people and communities 4. faith of people towards ideas and teachings of the wat	1. faith of people towards ideas and teachings of the wat 2. support from educational establishments 3. cooperation from governmental agencies 4. people's believe	1. pollicies of governmental organizations 2. supports from high-ranking monks in the province 3. popularity of herbal medicine among people 4. faith of people towards the monks

4.3 Evaluation of the Appropriateness of the Environmental Education Model Performed by Experts

The results of the evaluation of the appropriateness of the environmental education model performed by 10 experts revealed that the environmental education model were highly appropriate with the average value of 4.32 the most useful patterns were those towards environmental education areas with the average value of 4.7. Those patterns considered useful for religious areas and the appropriateness of the wat's roles towards environmental education scored at an average value of 4.6. The correlation between the objectives and the methods of environmental education had an average value of 4.5. (Table 12).

Table 12 Results of an evaluation of the appropriateness of the environmental education patterns performed by experts

Evaluation items	Average score	Level of appropriateness
1. rightness of concepts in the wat's environmental education	4.4	high
2. correlation of objectives of the wat's environmental education	4.5	highest
3. appropriateness of the wat's roles in environmental education	4.6	highest
4. appropriateness in introducing factors relating to environmental education		
4.1 resource		
(1) personnel	4.4	high
(2) management	4.2	high
(3) equipment	4.2	high
(4) budget	4.0	high
4.2 environmental education process		
(1) body of knowledge	4.4	high
(2) methods	4.5	highest
(3) activities	4.2	high
(4) media	4.1	high
(5) evaluation	4.2	high
4.3 supporting factors		
(1) internal factors	4.3	high
(2) external factors	4.2	high
5. possibility of application	4.2	high
6. simplicity in implementation	4.1	high
7. usefulness to religious sector	4.6	highest
8. usefulness to environmental education areas	4.7	highest
9. usefulness to the society	4.4	high
Average	4.32	high

Recommendations of experts to upgrade patterns of environmental education in the wats located within the surrounding provinces of the BMA were as follows

- 1) adjustment of ideas and wording by applying more of those from religious or dhamma concepts to the study patterns
- 2) organization of the pattern should be in such a way that it stayed close to the principles of learning center or community study center of the external study system which was stipulated in the National Education Act BE 2542
- 3) evaluation method should be multi-dimensionally performed using various tools and methods, also in accordance with ideas stipulated in the National Education Act BE 2542
- 4) considerations should also cover the following areas
 - (1) cultures of the communities nearby the wat
 - (2) other religious in the communities
 - (3) other wisdom from within such as women the community and groups, elderly group should be integrated.

CHAPTER V

DISCUSSION

The basic objective of this study is to propose a model that facilitates an effective organization of environmental education of the temple. The study has 3 specific objectives namely 1) to study an organization of the temple's environmental education in resource, procedures, and supporting factors of the temple's environmental education 2) to study the learning process of people that have undergone through the temple's environmental education programmes, and 3) to synthesize an appropriate model of the temple's environmental education. The researcher selects 3 temples, located in the vicinity of Bangkok Metropolis and have organized the environmental education programmes, as samples for this case - study research. Qualitative techniques have been adopted as a main research methodology whereas qualitative data are used in various parts to support qualitative analyses.

This chapter discusses the following issues in detail

5.1 analysis of results

5.2 presentation of the temple's environmental education model

5.1 Analysis of Results

The findings of this research provide details for the following discussion

5.1.1 an organization of the temple's environmental education in resource, procedures, and supporting factors

The findings reveal the physical and social differences in history and environment of the temples. This contributes to different organizing patterns of different temples. The three temples selected have history of environmental study organizations that can be categorized into 2 groups as follows

1) temples located in proper geographical environment of which their issues concerning environment can be used to form main bodies of knowledge for the temple's environmental education. These temples are Wat Asokaram, Samutprakarn province and Wat Klang Ku Wieng, Nakhon Pathom province.

2) temple being established with the purpose of being a place to provide dhamma for people in the community. The temple also formulates a plan to organize the temple's environment that facilitates the learning process of people according to the Buddha's teaching on staying among the nature. The people having the above – mentioned characteristics is Wat Panyanantaram, Pathum Thani province.

Considering the roles of the temple on the organization of environmental education, They are not narrowly confined to providing knowledge for the temple goers. The temple can also act as supporter in terms of location, equipment, and other means to the community, as well as support other organizations in implementing environmental conservation programs within its capability. (Wasi, P., 1997 : 80) In addition, the temple can still commit to pro – active roles by introducing knowledge to people within and nearby the community such as Wat Klang Ku Wieng. The monks residing in the temple may not have to commit themselves as direct implementors, instead they can act as program administrators by utilizing the temple's resources.

Regarding resources, the temple normally has resources including personnel, equipment, and budget capable of being used as inputs in educational and only

requires effective management to achieve maximum results. Wasi, P. (1997: 80) highlighted the temple as valuable resource certaining lands, buildings, equipment, personnel, money, faith. Mere proper management of available resources will create immeasurable utilities to the community according to Buddhism.

With reference to environmental education procedures, the temple, perceived as major institution of the Thai society, is the center of a community, a school for people, and an information collecting center for a community. The organization of the temple's environmental education is therefore the procesures of knowledge management on community environment and society (non – formal environmental education). Chunkaew, K. and others (1998:103-104) points out needed potentials of an organization with the roles in non – formal environmental education that religious groups are the most effective implementors that can convey environmental education to people's minds because people initially have faith in them. Basic components of environmental education procedures comprise bodies of knowledge or content, teaching methods, activities, media, and evaluation, and they must be well – synchronized. Chunkaew, K. (1993:78) notes that environmental education is a life – long process and intends to restore good quality on the environment forever. Therefore, the learning contents and methods should be suitable for the target – groups in terms of ages, qualifications, economic status, social status, and experiences.

From the study on supporting factors to environmental education, the success of environmental education programs can be achieved by paying attention to 2 groups of factors namely internal and external.

(1) internal factors comprise geographical environment of the temples, concepts of the abbots, and attitudes of the staff involved. Although the selected temples have dissimilar environments, the 3 temples have tried to present their unique characteristics as basic contents on learning process. As for Wat Panyanantaram, it intends to utilize internal environments so that they are appropriate for dhamma teaching and practicing, hence as natural as possible. Internal construction will concern necessity utilization, and be in line with the Buddhism's disciplines. The temple can therefore be a place to study dhamma and to learn about nature concurrently. Wat Asokaram and Wat Klang Ku Wieng, on the other hand, have brought the uniqueness of their natural environments in the presentation of environmental content.

Regarding the concepts of the abbots, all 3 of them have pro-preservative minds, which is an essential and basic factor that supports the continuation of environmental education programs.

With reference to the attitudes of the temples' managing staff, Wat Panyanantaram and Wat Asokaram have monks as important resources in the task of knowledge distribution. In addition to the abbot, Wat Klang Ku Wieng also has laymen working as public relations personnel for the temple's activities. Monks will support and supervise those activities such as decoration of the place, management of media so that the organized programs run smoothly.

(2) external factors are composed of public policies, supports from outside agencies, participation of people and community, and faith of people towards monks and temples.

Regarding public policies, they are at all levels supporting the idea that temples are centers of the community learning process. The temples should be clean and cool, as well as encourage the use of personnel and religious locations as learning materials. The policies also supplement the development of temples' potentials so that they are useful assets of the community. The existence of the temple is based largely on the support of people and a community and together with that, people's faith plays a crucial part in this reality. Faith in the temple as a place that can provide people with peaceful, cool, and safe atmosphere; faith in monks that can relieve people from most kinds of suffering such as illnesses, problems in life; as well as faith in the monks' teachings and practices that can be adopted in everyday life are basic factors adding to the importance of the temple to people.

5.1.2 people's learning through the temple's environmental education procedure

Most temple-goers are found to have no problems in their families and earnings. Also most of them stay near the temples or in the same provinces as the temples since this facilitates their trips to the places. They visit the temples on religious days to make merit. Regarding the most favorite temple media, conversation with the monks tops the list. Therefore, it can be noted that monks have important roles in the contribution of environmental knowledge to people. The findings also reveal that the best occasion for the temple to contribute knowledge on environmental issues to the maximum target groups would be during religious occasions.

On testing of the temple-goers' knowledge about environment, most people still misunderstood of basic principles in the decreasing of environmental problems. Reduction of the amount of garbage focused on related issues rather than emphasized



on individual initiatives. Priority also was put on finding solutions rather than prevention. A great number of people could not integrate personal behavior or action with dhamma teaching such as the issue on Katanyu-Katavethi. The temple therefore should instruct people with this knowledge and create correct understanding about this issue on them.

Investigation on people's attitudes towards environment reveal that the attitude of the sample group follow the same direction in that the roles of the temple in contributing environmental knowledge to people help reduce environment-related problems. Environmental knowledge from the temple can also be used in everyday life. Following Buddhism teaching also helps preserve the environment. Therefore, the temple's activities play an important part on people's attitudes towards environment.

In addition, the findings about people's behaviors reveal better people's interests in obtaining knowledge from signs and conversation with monks. Therefore, signs should be properly designed in both content and appearance in order to attract the temple-goers' attention.

5.2 Presentation of the Temple's Environmental Education Model.

5.2.1 concepts

Problems relating to environmental degradation and imbalance, as well as pollution are the results of human misdeed. Western concepts have led people to believe that happy life involves living under abundant and luxurious materialism. These concepts were significantly responsible for the formulation of a basis of industrial development, converting scientific knowledge to technologies, and finally applying technologies in industrial development. Industrialized concepts, hence in one

way or the other, separate human being from the nature. Human beings have tried to control the nature and brought nature to serve their demand. Improper relationship between human beings and the nature therefore results in the form of one taking advantage from the other. This whole process is originated from the first point of human being's misperception.

Placing too much importance on materialism deviates human lives and living from simple physical wants. Together with this concept, social environments such as cultures, morals, traditions, and values have also played important parts in controlling human behaviors and activities that make human lives significantly different from other living beings'. As a consequence, human beings exploit natural resources, imbalance nature, denigrate natural resources, and pollute the environment.

In Buddhism teaching, awareness on environmental problems is not new. Two thousand years ago, Lord Buddha noted this issue in his teaching. Literally, he is said to be the first person among human beings who was aware of the importance of environmental problems and suggested approaches to deal with this issue. Since the basic concept of Buddhism relies heavily on environment, the core of the Buddha's teaching therefore encourages people to live a balanced life and refrain from taking excessive advantage of the nature. The content of this principle appears in various Buddhist practices such as kindness, gratefulness, moderation in consumption and utilization, and no exploitation of resources. In addition, Buddhism practices such as meditation also supplement harmonious existence between human beings and the nature.

Resolution of environmental problems is possible if human beings are developed through education to the extent that they can see what is essential to their

lives. That way, human beings will treat themselves and the environment correctly and appropriately. To solve or to prevent environmental problems successfully, human beings must search for the root cause of these problems originated in them. One possible long-term measures to solve environmental problems is to educate people on environmental awareness. Environmental education is a process that will enhance knowledge, proper attitudes, and correct behaviors on environmental awareness in people.

At present, various organizations have participated in environmental education activities but the overall picture of environmental problems is still under serious crisis. Thailand is now facing environmental degradation and natural resources depletion, hence it is the duty of every part of the society to take responsibility and cooperate at their best capability under their routine functions. It is also imperative for the principle organizations of the society such as the temple to actively participate in coping with this crisis.

Temples and monks have long been concrete representatives of religious institution and the center of Thai minds in the country history. Temples used to be schools and monks acted as managers of educational issues. Dhamma and religious contents were therefore integrated within educational system. After the society accepted main stream development approach, educational management has been used to serve the concept of materialism. Buddhadas Bhikkhu once expressed his opinion that, present education aims to instill career-related content but ignores the inculcation of students to become the right human beings. Learners are thought to be smart according to their gains of knowledge from study contents that emphasize more production to achieve higher profits.

National Education Act, 2542 B.E. has brought the temple back as one of the main study centers of the nation. As a consequence, temples became schools and centers of learning process. According to the Act, temples can manage educational issues in 3 ways namely formal education, informal education, and non-formal education. Temples can integrate their educational management with continuous monastic roles as center of the community and resource pool. With monks as their valuable resources and highly revered by people, temples can be one of principle organizations of the community that can exercise leadership and roles in preventing and solving environmental crisis of the community.

5.2.2 objectives

Objectives of the temple's environmental education are as follows

- 1) temples can maximize various potentials for the society to manage course to prevent and solve environmental problems
- 2) people can learn about environment through the temple's environmental education management
- 3) temple as a distribution center of information related to environmental issues
- 4) temple as a leader to inculcate sense of awareness through dhamma
- 5) temple as a center to stimulate people's participation in learning and conservation process of natural resources and environment.

5.2.3 roles of the temple in environmental education

Roles of the temple in environmental education can be categorized into 3 groups

1) reactive role concerns roles of the temple as the center of learning and distribution of information to people so that the temple-goers receive knowledge and understanding that enhance attitudes and behaviors that preserve environment.

2) proactive role involves roles of the temple as supervisor and director that encourages people, organizations (public and private), educational institutions, as well as religious organizations to pay attention in preventing and solving environmental problems. The temple does this by presenting facts about environmental problems and pointing out the upcoming impacts by maximizing charismatic leadership in drawing external supports from outside the temple.

3) supportive role involves other forms of service the temple can offer such as the use of the temple space as a learning place, a seminar venue, and an eco-recreation place.

5.2.4 factors involved in the management of the temple's environmental education :

These factors can be categorized into 3 groups as follows

1) resources are composed of personnel, management, equipment, and budget

2) environmental education process involves content or body of knowledge, knowledge distribution techniques, activities, and teaching means that would contribute to effective and efficient management of environmental education

3) supportive factors comprise other external and internal factors contributing to successful environmental education of the temple

1) resources

1.1) personnel, comprising personnel residing inside and outside the temple.

1.1.1) Learning provider

(1) internal personnel comprise those who are directly responsible for knowledge distribution and those who are supportive to effective management of the environmental education. External distributors and supporters should have the following fundamental qualities.

- knowledge and understanding about environment and awareness of environmental problems especially those concerning community and local levels.

- possession of good understanding on dhamma
- capable of application of dhamma principles to explain environmental issues

- determination to preserve environment
- intention to distribute knowledge to people
- experience in giving lectures about dhamma or being a guest speaker

- behavior and way of life that are in line with environmental quality enhancement

With reference to supporters, they are those who perform other functions such as librarians, document producers, public relations officials, caretakers of the temple's facilities for instance herbal garden, botanic garden.

(2) external personnel comprise monks or laymen who have experiences and been invited to give lecture to learners, when the temple lacks qualified personnel. They are either guest speakers or group supervisors in the seminar that the temple intends to acquaint learners with information obtained from direct experience. The activities requiring the helps of external personnel may be explaining the application of dhamma teaching to new theory agriculture, self-dependent living. Guest lecturers may involve laymen and laywomen who are successful in applying dhamma teaching to their personal conducts and careers.

1.1.2) learners comprise

(1) formal learners such as students public servants, private workers, inmates who follow the course outline and activities specified by the temple. This group will take course in the form of dhamma camp to study the life of Buddhist company that has to follow Buddhism disciplines corresponding to natural and environmental conservation. In the case that the temple's geographical location can contribute physically to learning process, the sending organizations may use the temple as a learning place of their students for instance the temple with mangrove forest may be used to study mangrove ecological system.

(2) non-formal groups who are general temple-goers intending to make merits or tour the place. These group can conduct a self-study tour by observing various media the temple has provided.

1.2) environmental education management

Management system that efficiently helps the temple's environmental educational process comprises the following sub-systems

(1) planning and identification of activities. The temple needs to systematically identify activities to be organized in it in the form of modules that facilitate people who intend to participate. Good planning helps people to study about the environment in many aspects such as module facilitating self-study can be done by organizing particular spots for ecological study. This technique has been implemented by Wat Asokaram on mangrove forest and Wat Klang Ku Wieng on herbal garden. In addition, conservation of local genetics vegetation and organization of buildings can also relay dhamma interpretations and be useful in many ways for instance Wat Panyanantaram has organized simple information boards; signs of dhamma teachings, proverbs, and themes to contribute knowledge about environmental conservation.

Planning also covers project formulation and activities relating to the temple's environmental education which emphasize active participation of learners. In preparation, the temple must prepare well experienced and knowledgeable lecturers as guest speakers that can stimulate awareness and enhance proper behavior about environmental quality enhancement within learners.

(2) work delegation and division of labor. The temple must be perceived as a type of organization in that it is an aggregate of Buddhists. It has duties to perform for the well-being of the society. To perform various missions successfully, the temple must organize internal structure especially human resources responsible for various tasks. The study reveals the internal command structure of the big temple with a large number of monks to be organized into different faculties, each of which works under the heads of the faculties, and all of whom report directly to the abbot. Corresponding to that, the temple is also functionally-organized into different branches, each of which works under different deputies of the abbot, and all of whom

report directly to the abbot. A small temple is normally organized into several branches such as welfare branch, estate branch, herbal garden project branch, each of which is supervised by the head of the branch, and all of whom report directly to the abbot. Some temples divide their responsibilities according to geographical directions for instance northern area, southern area, so on and so forth.

(3) communication. To organize environmental education, the temple must have a communication center, which works as an information contributing point. It also needs communication equipment such as telephones, fax machines to serve people who stay in remote areas and are inconvenient to visit the temple. The equipment can be used to inform people of work schedules to facilitate timely preparation for those functions. Good communications between the temple and external organizations also facilitate active participation and support to the environmental education programs.

(4) sangkha meeting. Normally, monks and novices meet one another on the Patimok Day. High-ranking monks in the temple will take this opportunity to exchange opinions and supervise alternative options for subordinate to work. The monks also use this opportunity to keep temple-goers informed about related issues after daily prayers.

(5) information distribution. Information to be distributed may be in the forms of interesting environmental knowledge or environmental issues that would affect the well-being of people in the community so that they can prepare themselves for the upcoming situations. The distribution must take into consideration various factors of the target groups such as ages, careers, education, house locations so that the distributed information reaches the target groups. For instance, information for

children should be easily understood and in the form of pictures. Communities where people travel to work in other communities may have to design their distribution tactics in line with days, timings, and methods, for instance broadcasting by a community broadcasting tower may be appropriate in the early mornings (before working hours), at night (after working hours), or religious days when most people visit the temple. Illiterate or elderly people normally prefer to listen news from a broadcasting tower. Boats may be better for riverside communities because they can reach the target groups better. Monks may task supporters to do these jobs for them.

(6) formulation of regulations, rules, orders, enforcement, or directives for temple-dwellers. This will lead to environmental conservation and create negative inducement which sometime has to be organized for instance time to switch electricity on and off or turn tap water on and off to save energy, disintegration of garbage before being collected, limitation of the use of dishes to serve food, simple dresses, prohibition of animal hunting within the temple compound, keeping the temple clean, balancing ecological system, and orderliness within the group.

1.3) equipment. The temple utilizes the following equipment according to the opportunities available.

(1) equipment for public relations and distribution purposes involving audio-visual equipment, camera, public relations boards.

(2) equipment to facilitate convenience such as office equipment, communication equipment

(3) specific equipment such as vehicles.

1.4) budget. The temple is the Buddhists' properties and survived by the support of the community. The temple's budget on environmental education is not

formally allocated in the temple's accounts but rather administered informally. The income is the result of people's faith as follows

(1) merit making with the aim to sustain Buddhism

(2) donation from followers and organizations that send their personnel to participate in the temple's environment-related courses and other practices.

(3) activities of the temple annual fair

(4) incomes generated from people who make use of the temple's production such as herbal medicines.

(5) incomes generated from people's participation in the temple's activities such as giving food to the fish staying in the no-fishing area.

(6) incomes generated from people who receive benefits from the temple such as selling goods in the temple's floating market. Some portions of these incomes are allocated for environmental education expenditures such as meals for participants to environmental activities, equipment in the environmental programs, refurbishing of internal environment to enhance people's learning. The amount of money spent in each program varies. Some programs such as organization of the temple's areas, organization of herbal garden and rare plants need no expenditures at all. Less expenditure but more cooperation from people can accomplish some programs such as making campaign signs. Some activities such as preparation of fish pier in the "Fish in front of the Temple" program definitely need both budget and cooperation. Some programs such as the construction of walking-lanes in mangrove forest or the procurement of reconnaissance boats will need a large amount of money. One way to solve budget problems is by asking for cooperation from people.

2) environmental education process

2.1) content or body of knowledge

Content or body of knowledge in environmental education that the temple can organize may be grouped into 2 parts

2.1.1) theoretical part

This part conveys the content to learners by explaining or telling stories so that they understand environmental education content. There are 3 approaches to present this content to learners

(1) presentation of dhamma content in Buddhism

Buddhism is an approach to lead a basic life by enhancing good understanding on life itself. The basic foundation of life involves the study of laws and truths of the nature. In Buddhism, this is called the study of “dhamma” as this is noted by Buddhadas who clearly illustrated the relationship between dhamma and nature

“Dhamma and nature are the same terminology (Buddhadhas Indhapanyo, n.d. : 67). Dhamma itself has 4 meanings as follows (Buddhadhas, Phra : speech in Buddhasasana, 2001: 15)

- dhamma is nature
- dhamma are the laws of nature
- dhamma are duties human beings need to perform according to the laws of nature
- dhamma are effects resulting from the performing of duties according to the laws of nature

A person is said to have dhamma if he/she knows dhamma, practice dhamma, and receive the consequences of dhamma practice.

It is clear that the content of dhamma emphasizes on human beings and the results of their performance according to the laws of nature. Concurrently, both physical environment and human beings change according to the causes and factors of the laws of nature. As a consequence, human beings can live in the society peacefully if they understand environmental conditions and conditions about themselves, and live according to dhamma and the laws of nature. The practice will lead human beings to the highest target in life, which is absolute freedom or nirvana.

Buddha teachings contain two components namely dhamma and disciplines. This fact provides two approaches in the presentation of environmental knowledge

(1.1) application of dhamma that leads to environmental conservation in the teaching process. The dhamma adopted principles should be the most relevant ones and applicable to everyday life. They should also enhance the awareness in environmental conservation. Some examples of these principles are

- no encroachment (observing 5 precepts, 4 divine abidings, 2 protectors of the world)
- cleanliness (committing to 4 diligent efforts)
- moderate consumption and spending (qualities making for amicable association)
- satisfaction with one's conditions
- realization of the help and so reciprocation

(1.2) application of vinaya that relates to environment issues in the teaching process. The vinaya should lead people to environmental conservation such as basic facilities for the living, soil preservation, water-source preservation, pollution control in the community, harmonious existence with the nature.

(2) presentation on environmental context

This involves the presentation about significant environmental issues of the community or where the temple is located such as mangrove forests, rivers, jungles. The presentation normally points out the importance of resources and environment, persuading for resource and environmental conservations, as well as the impacts resulting from resource and environmental conservations.

(3) presentation by integration

This technique coordinates and integrates bodies of knowledge in physical environment and dhamma together by facilitating the unique nature of the temple's geographical environment. For instance the temple located near the river or mangrove forest may be the core in organizing and coordinating teaching contexts with environmental condition that highlight the importance of nature towards human beings. The nearby areas may be noted for their natural resource, energy originators, recreation spots. From there, the presentation can touch on environmental problems, impacts on overall ecological system, as well as applying dhamma principles in the lecture to enhance awareness within learners.

Contrary to that, the context of the presentation may focus on dhamma, whereas environmental context may be added or examples may be given when

opportunities allow. For instance, to complement the teaching about helps and reciprocities, it should be emphasized that this should be applied not only among human beings but also other things such as natural resources and environment that render benefits to people. Hence, we should expense productions of the nature in a useful and moderate way, which is one aspect of natural preservation.

2.1.2) workshop

Practice session should ensure that learners take a correct position towards nature. Phra Dhammapitaka (1996 : 188-191) noted how Buddhism views nature

(1) Buddhism views nature as peaceful as it is. Buddhists are taught to appreciate the beauty of the nature and be satisfy to stay with the nature.

(2) all beings in the nature are friends under the common rules of nature. They all have to face existence, ages, illness, and extinction. Therefore, they have to be kind and encourage warm friendship among one another.

(3) nature is an environment that facilitates self-development of human beings. These conditions may include silence (creation of concentrated mind) and original existence of other beings in the nature (enhancement of wisdom and seeing the truth of life and the world).

In order that correct and appropriate attitudes towards environment are created in learners, the latter should get first-hand experiences from the nature through the following approaches

(1) self-practice such as staying in the temple during dhamma practice period and following certain rules as well as participating in the organized activities that enhance environmental conservation.

(2) environmental education through commonsense such as observations over plants and animals in the nature aimed at through studies of physical appearances, growing conditions, behaviors and relationships among living beings. In addition, studies can be done on the relationships among human beings as producers and consumers, listening to animal voices, tasting of natural food from plants. Finally, local wisdom may be added on the utilization of herbal medicines and the facilitation for convenience.

2.2) methods

There are two methods currently being adopted to distributed environment-related knowledge to target groups

(1) participative method which involves giving lectures to interested people and provides enough opportunity for them to participate in the discussion, exchange opinions and question doubtful points.

(2) non-participative method which encourage learners to conduct a self-learning process from the facilities provided by the temple.

2.3) activities

Environmental education activities are of non-formal type and can be categorized into 3 groups

(1) non-formal activities supporting ethnic development project of educational establishments or social organization. Knowledge distribution is aimed at using dhamma to enhance morals and ethics, whereas dhamma learning will create harmonious existence within nature.

(2) non-formal activities supporting formal education. This can be achieved by utilizing the temple as a study place on natural ecology, supplementing

normal curricula or duplicating the temple's learning course to the normal curricula. Some activities may include copying dhamma proverbs or sayings from the signs and then translating them into English in a language class, creating mind mapping after joining the temple's programs, recording lessons learnt and impressive incidents from the temple in a personal notebook.

(3) non-formal activities supporting informal education, touring, and recreation. This can be achieved by preparing appropriate environments and facilities for people of different background to have various necessary services or acting as a prototype of environmental education for other temples. In addition, the temple located in suitable environment may receive outside people who visit it on a study trip and organize preservation-related activities. Rally campaign to preserve environment that encourages participants to play games will give people a chance to learn about environment concurrently.

2.4) media

Media complimenting the temple's environmental education can be categorized into 2 groups

2.4.1) concrete media

(1) natural media such as mangrove forest, herbal garden, fish in front of the temple.

(2) man-made media such as exhibition boards, proverb signs, voice of dhamma, distributed documents, behavior patterns of the temple-dwellers, paintings, crafts, slides, transparencies, tapes.

2.4.2) abstract media such as prayers, teaching context, dhamma proverbs, sayings, poems, stories, rules, and regulations.

2.5) evaluation

If the temple has to perform a self-evaluation exercise, a simple, convenient, and easily-performed approach should be adopted. Some examples that the temple can utilize are

(1) evaluate from the participants' behaviors. An evaluator can observe during program participation by focussing on participants' interests and their post-study behavior such as their return to participate in the temple's activities, the putting of their knowledge into practice, the adjustment of their behavior to harmonize with the nature.

(2) evaluation form the participants' opinions. An evaluator can ask participants to express their opinions towards the temple's activities or artwork such as contents in the temple's public relations boards.

3) supportive factors

Supportive factors in the temple's environmental education can be divided into 2 groups namely external factors and internal factors

(1) internal factors comprise an abbot's thoughts, attitudes of the temple's dwellers, physical environment such as geographical location, construction plans, and the organization of the temple space to facilitate environmental activities.

(2) external factors involve public policies that support related organizations in the society, religious institutions participating in the prevention and solution of environmental problems, and cooperation provided by organizations in complementary pattern with one another. Some examples are that outside organizations provide support to the development programs of the temple whereas the

temple also provides services on environmental education and others to personnel of the organizations. Beside this, the community is still an important factor that provides necessary supports to the temple especially in environmental development and preservation areas. One important factor that plays important roles in most periods and does not dissipate from people's minds is trust towards religious institution. This factor helps sustain the temple's status and facilitates the temple in carrying out its mission to sustain the existence of the community.

The study of environmental education programs of the 3 temples selected as case studies, using system approach as an analytical model, reveals relationships between various factors that form the conceptual framework of the temple's environmental education and can be illustrated by the following picture.

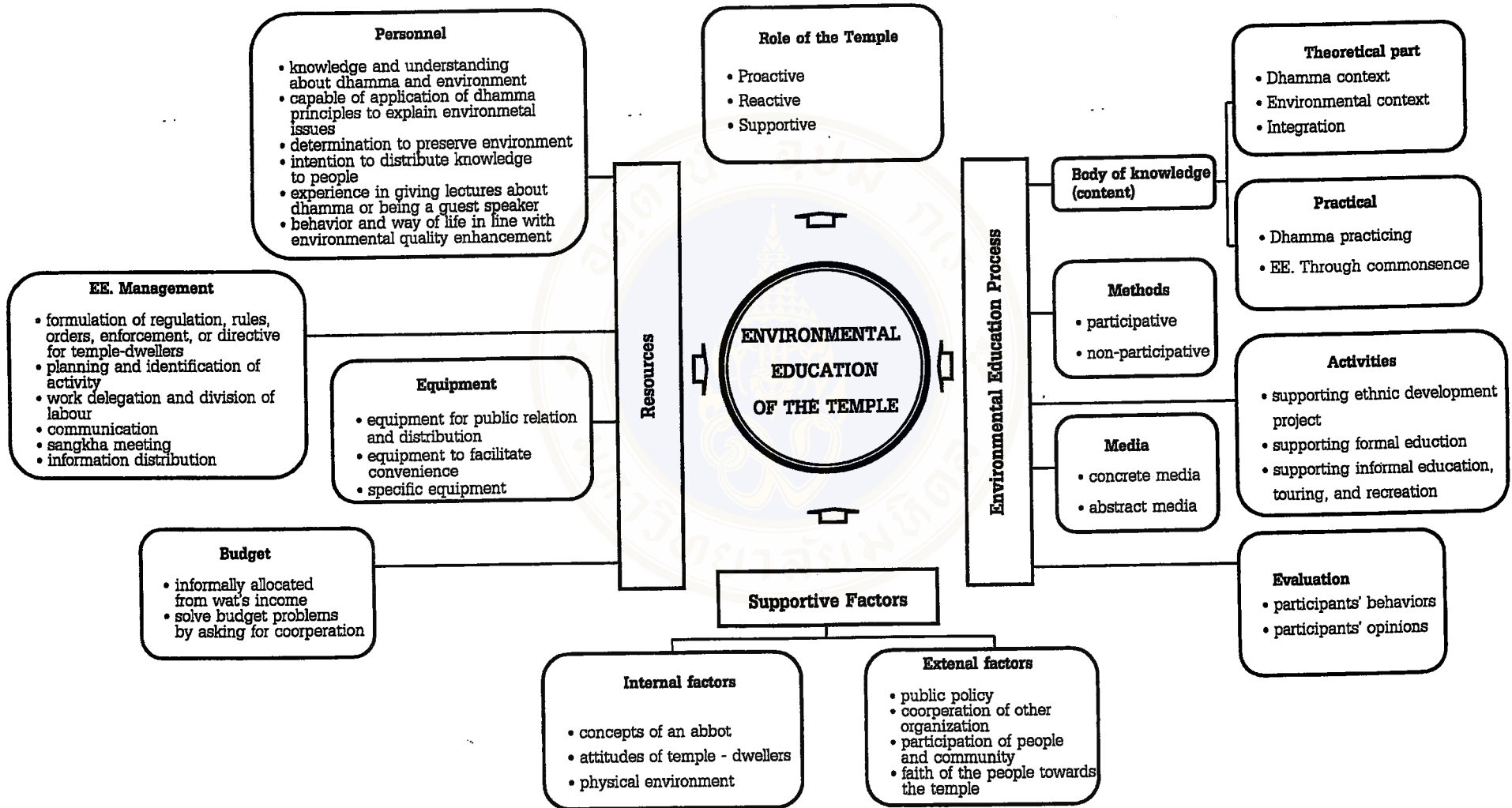


Figure 11 Environmental Education Model of the Temples

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The above conceptual framework highlights 4 components namely resources, process, supportive factors, and roles of environmental education, in environmental education pattern.

The components can be categorized into 2 main groups namely outputs and inputs. The temple can assume vital roles that help support environmental education provided that the temple receives resources, works according to the process, and obtains supportive factors as follows.

Resources normally comprise man, management, material, and money. Human resources cover two formal groups of personnel; the first group being education manager consisting of both the temple's inside and outside personnel, the second group being learners comprising students, pupils, personnel from public and private organizations, monks and novices from other temples. The formal group and common people constitute the non-formal group. Management, on the other hand, comprises planning and activity identification, directing and division of labor, communication, sangkha meeting, information distribution, and formulation of rules and regulations. Materials involve public relations and distributing activities, facilitating equipment, and specific equipment. Money is allocated from the temple's income generated from the Buddhists' faith.

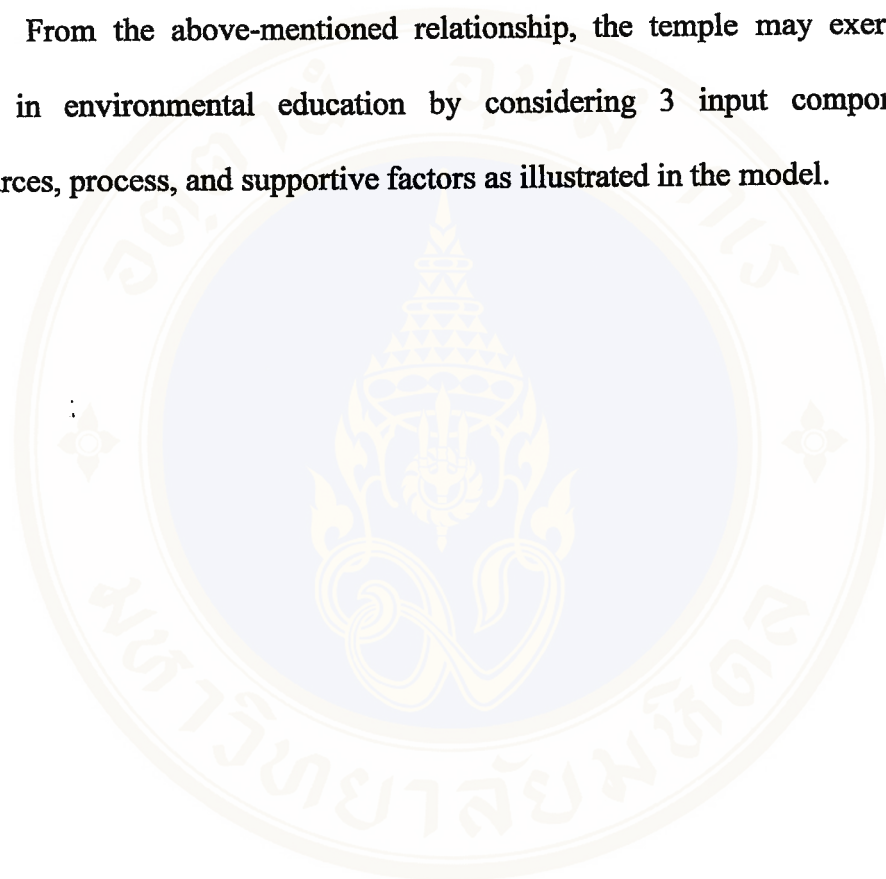
Environmental education process comprises 5 components namely knowledge (both in theoretical and practical aspects), methods of distribution, activities, media, and viable evaluation appropriate for each temple.

Supportive factors include internal factors and external factors. Internal factors are normally consisting of the geographical location of the temple, concepts and attitudes of the abbot and the temple-dwellers towards environment. External factors

involve public policies, supports from related organizations, cooperation from the community, and popular faith.

Roles of environmental education are of 3 types namely proactive, reactive, and supportive.

From the above-mentioned relationship, the temple may exercise effective roles in environmental education by considering 3 input components namely resources, process, and supportive factors as illustrated in the model.



CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

The major objective of this study is to propose a pattern of environmental education that the temple can effectively implement by considering significant factors relating to the management of the temple's environmental education. The writer selected 3 temples located within the vicinity of the Bangkok Metropolitan Area (BMA) surrounding provinces namely Wat Panyanantaram in Pathum Thani Province, Wat Asokaram in Samutprakarn Province, and Wat Klang Ku Wieng in Nakhon Pathom Province as samples for her case study. The study adopted a qualitative technique as its main research methodology and applied a quantitative technique as a supplementary approach to the main technique. The results of the findings were synthesized to produce a pattern of management of the temple's environmental education. The discovered pattern has been examined by experts of environmental field.

6.1 Conclusion

6.1.1 the findings

The major findings of this study have been integrated into a new body of knowledge concerning the pattern of environmental education management for the temples located in the vicinity of the BMA surrounding provinces. The pattern has been constructed from intensive investigation on environmental education management of the 3

temples. The writer intends to propose this pattern to temples and persons who are interested in applying this pattern of environmental education management in relation to the temples' particular environmental situation and potentials, taking into account the full impacts on the temple-goers. The pattern is aimed at providing the temple-goers, who have undergone through the temple's environmental education process, with maximum knowledge leading to the development of correct attitudes and manners towards the preservation of environmental quality.

The aforementioned pattern, suitable for further application by most temples, contains 4 major components namely resources, environmental educational process, supportive factors, and roles of the temple in environmental education. The findings reveal that the temple will be able to exercise these roles effectively when it integrates these components with environmental education process, taking into account the type of the target group, and utilizing supportive factors to the fullest.

1) with reference to resources, they comprise personnel with knowledge and understanding on the Buddha's teachings and environmental issues, capable of applying their knowledge in the explanations about environmental issues, having full determination to commit themselves to environmental preservation and distribution of their knowledge to people, having experiences as guest speakers on dhamma or lecturers, and possessing behaviors and ways of life that are in harmony and enhance environmental quality. With reference to management, the temple normally formulates rules, regulations, standard practices, and the like for the temple-dwellers according to the Vinaya of Buddhism that

facilitates environmental conservation. In addition, some other management measures such as planning or activities identification, directing or division of labor, communication, sangkha meeting, and information distribution can be supplemented so that the education process runs smoothly. Equipment may comprise public relations and distribution tools, facilitating equipment, and specific equipment in line with the necessity of the situation and the temple's potentials. Budgets are essentially derived from the temple's incomes generated from the Buddhists' faith. Budgeting problems can be resolved by collective cooperation among various parties.

2) regarding environmental management process, there are 5 components namely body of knowledge or content, distribution methods, activities, media, and evaluation. The body of knowledge may contain the Buddha's dhamma which leads to understanding about life and basic concepts of life. Upon that, learners will learn about the laws and truths of nature, physical environment surrounding local community and its people, as well as the integration of dhamma and the environment. Knowledge distribution can be of participative and non-participative forms, supplemented by non-formal education. Media can be categorized into 2 groups namely concrete and abstract. Evaluation should be in line with the real conditions of each temple. Normally, the evaluation will take the forms of observation on behaviors and expression of learners' opinions.

3) supportive factors to the temple's environmental education can be divided into 2 groups. Internal factors comprise the concepts of an abbot, the attitudes of temple-dwellers, and physical environment of the temple. External factors are composed of public

policies, cooperation of other organization of the community, participation of people and community, and faith of the people towards the temple.

6.1.2 considerations on the application of the pattern of environmental education

Although the proposed pattern has been examined by experts in environmental field on the possibility of success in future application, users must be aware of the fact that it is constructed from the works of the temples considered effective and successful. Other temples, however, may be characterized by different components. To begin with, therefore, it is necessary for each temple to investigate its components in order to determine its opportunities and limitations, as well as measures to overcome its disadvantages. The application of the pattern of the temple's environmental education program can be performed through 2 approaches

1) direct implementation. In the case that the temple has relatively similar basic components as those 3 sample temples, it can directly put the pattern into use. Some examples of this approach are the adoptions of the 5 precepts to control human behavior, the meditation principles to enhance people's correct attitudes towards the nature and environment, the wisdom principle to develop human beings into rational beings that see the true values of the environment.

2) application. The temple has to consider minor factors in each major component of the pattern and apply those accordingly to the temple's available resources. As for basic resources involving man, management, equipment, and budget, the temple must determine its true limitations, for example the quality required of the lecturer monks in environmental management. The more disadvantages the temple can overcome, the

more chance of its programs will become successful. For instance, different communities and localities will need different mixtures of bodies of knowledge about environment that each of them is closely related to suit their needs.

6.2 Recommendations

6.2.1 some recommendations from the study

1) policy-related recommendations

(1) regarding the media, one important finding from the study is that people are most interested in receiving information through direct conversation with the monks. As for the reason of the visit to the temple, faith in monks is the prime concern. It can be concluded that monks residing in the temple can perform as a main medium in environmental distribution activities. They can unleash their inner potentials as a community's mental leaders and form a basis to provide knowledge on environment to people. Public organizations can contribute necessary supports by supplementing additional knowledge to the monks, organizing field and study trips, and organizing study materials that contribute knowledge on environment to people. In this regard, proper application of dhamma to explain environmental-related issues is significant.

(2) schools should apply the temple's environmental education pattern to monitor the students' behaviors by instituting correct cultures relating to environmental preservation. This can be done through careful formulations of rules, regulations, and measures to preserve the quality of the environment.

2) implementation-related recommendations

(1) contribution of knowledge on environment should be done through various means so that maximum impacts on the target groups can be achieved.

(2) the findings reveal one important fact that most people always visit the temples on important religious days. Therefore, most temples can take a pre-ceremonial opportunity to educate people on environmental awareness through various media such as videos or cassette tapes of which the temples can produce for themselves or ask for voluntary supports from public or private organizations.

(3) formulation of measures aimed at preserving environment should be in the forms of inducement or accompanied by rewards. Buddhism's dhamma and vinaya are rational in nature and can be applied to encourage people's cooperation to preserve environment. One example is to highlight future merits (unforeseeable rewards) out of good conducts at present towards the environment.

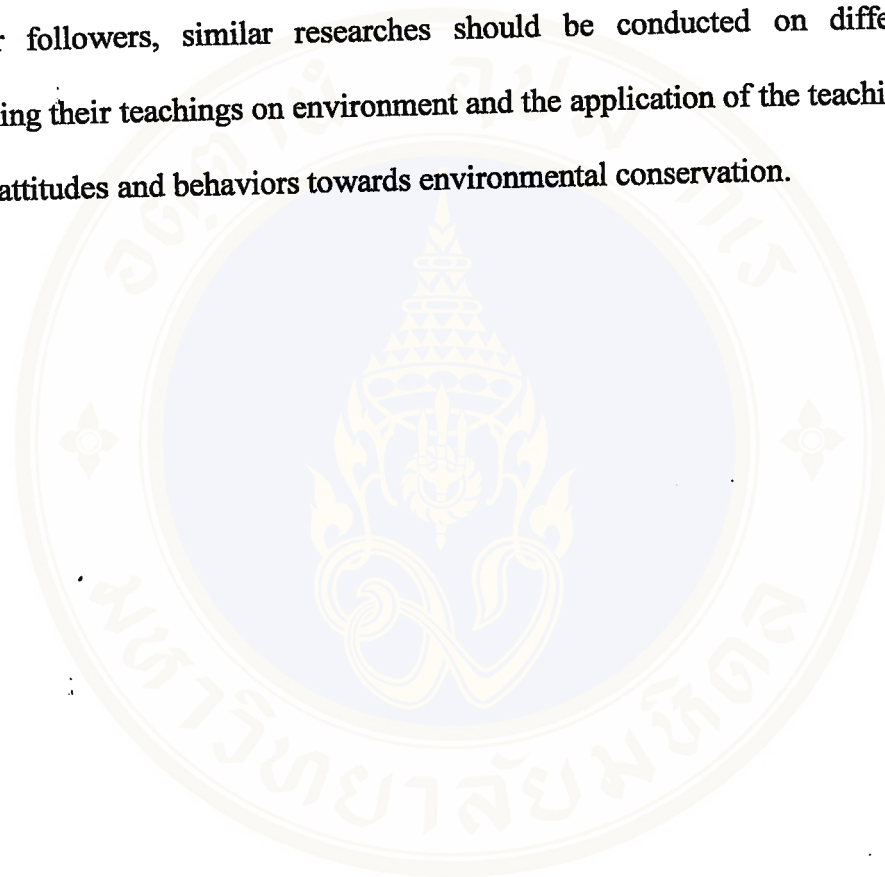
(4) another finding is that faith towards the monks is the main reason for temple visitors. Therefore, temples can increase the possibility of their success on environmental education programs by continuously advancing their personnel's capability on knowledge distribution which will also currently maintain the identity of the temples.

6.2.2 recommendations for future study

1) similar researches should be conducted in other parts of the country characterized by different geographical, social, and cultural factors. For instance, northern Thailand is characterized by mountain ranges, forests, and water resources; whereas southern Thailand is largely surrounded by sea.

2) researches focusing on problems arising from the implementation of environmental education pattern and factors affecting this implementation should also be conducted.

3) finally, due to the fact that all religions are the centers of minds and faith of their followers, similar researches should be conducted on different religions concerning their teachings on environment and the application of the teachings to enhance correct attitudes and behaviors towards environmental conservation.



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APPENDIX A

AUTHORIZED EXPERTS' LIST

- | | |
|--|--|
| 1. Mr. Thamrong Amaro | Deputy Directors - General
Department of Religious Affairs
Ministry of Education |
| 2. Mr. Manas Pakpoom | Director of Ecclesiastical Education Division
Department of Religious Affairs
Ministry of Education |
| 3. Phrakrupalad Silawat
(Sa-Nga Suparo) | Abbot
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Pathum Thani Province |
| 4. Phra Maha Jerm Suvaco | General Director of Buddhist Research Institute
Mahachulalongkornrajavidyalaya
Buddhist University |
| 5. Dr.Charoon Yoothong | Lecturer, Department of Social Sciences
Mahamakut Buddhist University (Lanna Campas) |
| 6. Ms.Nongpa-Nga Suckavanich | Director of Planning and Technical Division
Department of Environmental Quality Promotion
Ministry of Science Technology and Environment |
| 7. Mr. Prasop Charn-In-Ngarm | Chairman of We Love Thachin River Society
(Nakhon Pathom) |
| 8. Dr. Songkoon Chantachon | Vice – Director for Academic Affairs
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Art and Culture
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| 9. Dr. Prarop Kaoses | Assistant Director of Banghua Sue
Boonjam Niemnil School
Samutprakarn Province |
| 10. Mr. Sam-Arng Sihapong | Education Officer
Educational Research Division
Department of Curriculum and Instruction
Instruction Development, Ministry of Education |

APPENDIX B

Observation Criteria

Criteria for observation and record

1. within the wat context

1.1 general information

- 1) name of the wat**
- 2) history of the wat**
- 3) number of monks, novices, nuns, and wat-dwellers**

1.2 physical environment of the wat

- 1) map of the wat, layout of buildings, constructions, building surroundings, and space**
- 2) types and patterns of buildings, types of materials, utilization of buildings and constructions, and maintenance of buildings**
- 3) space utilization of the wat for study purposes and for which type of the study**

1.3 social environment of the wat

- 1) formulation of regulation and operating guidelines for wat-dwellers and wat-goers**
- 2) life pattern in the wat**
- 3) ritual pattern**
- 4) believes**
- 5) dress**
- 6) consumption**
- 7) littering behavior**

1.4 organization of environmental education

- 1) how environmental education in the wat is organized, is it the core of the education or the support to the education?
- 2) who are the lecturers?
- 3) who are the attendants?
- 4) what are the contents or body of knowledge?
- 5) how is the knowledge communicated, what process has been adopted to do so?
- 6) which type of technology, materials, and media have been used to supplement the presentation of context?
- 7) has the context been categorized to suite different groups of attendants?

1.5 management of environment within the wat

- 1) maintenance of construction and others in the wat's areas
- 2) organization of natural resources within the wat
- 3) management of garbage problems
- 4) waste water management
- 5) toilet management
- 6) management of resource and energy
- 7) communications

1.6 how are wat-goers interested in and their attitudes towards what the wat has organized?

2. outside the wat context

2.1 community that the wat is located

1) population density

2) people's careers

3) economic, social, (culture and belief), and environmental condition of the community

2.2 external support

1) who provide support to the wat's activities?

2) which organizations have provided support to the wat's activities?

3) dependency and exchange of knowledge between outside people, organizations and the wat

2.3 relationship between communities and the wat

- how do communities make use of the wat's areas?

2.4 major characteristics of environmental education of the wat that are more outstanding than those of other wats chosen for a case study

**Questionnaire for Participants
of the Temple's Environmental Education**

Wat.....

Part 1 general information of a respondent

1. name-surname.....(monastic name).....
2. age.....(monastic term.....years)
3. education.....
4. time duration being in the wat or support to the wat.....years
5. original town.....
6. responsibility.....

Part 2 information about the wat's environmental education programs

Fundamental information

1. when was the wat's environmental education programs originated?
2. origins and situations of the problems leading to the wat's environmental education programs
3. philosophy and concepts leading to the wat's environmental education programs
4. current projects and tasks in the wat's environmental education programs
5. objectives and expected contribution of the wat's environmental programs

Information about the resources of the wat's environmental education programs

6. management of major factors in the program

6.1 human resource

(1) organizers or lecturers

- how is the qualification specified?
- from where are organizers or lecturers from, how many of them, and with

appropriate number?

- how is human resource development program organized?
- necessity and demand of the wat on human resource development

(2) attendants

- how have attendants and organizations utilize the wat's resources?
- how often is the utilization?

6.2 budget

from where does the budget of environmental education programs come, is it enough, what are criteria adopted to budget allocation?

6.3 equipment

how was the equipment used in the learning process like, where was it from?

6.4 management

- (1) how is the structure of the wat like, what are responsibilities of each party?
- (2) how many parties are there in the wat's committee, what are their responsibilities?
- (3) how often are the meetings organized to exchange views among planning parties?
- (4) Information about the process of the wat's environmental education programs

7. characteristics of the procedures in the environmental education programs

7.1 which criteria do the contents or bodies of knowledge emphasize?

7.2 what is the communication procedure?

7.3 what are communication media?

7.4 what are organized activities?

7.5 how does the wat monitor and evaluate the program?

Outputs of the program

8. how successful is the program?

9. what are the problems and difficulties?

10. are factors constituting inputs of the program such as man, money, material, and management appropriate? If the program is to be more efficient, how could it be done?

11. what are major factors contributing to the sustainability of the environmental education program of the wat?

Information about supportive factors

12. how has the wat been doing about setting regulations and guidelines for wat-dwellers and wat-goers? How have those regulations and guidelines contributed to environmental conservation?

13. to what degree do wat-dwellers give support and participate in the wat's activities?

14. how do economic, social and environmental situations of the wat support or discourage the wat's program?

15. how do external personnel and organizations support or participate in activities of the environmental education?

Questionnaire for Research
on
Environmental Education Organizing Model of the Temples
Located in the Vicinity of Bangkok Metropolis

Suggestion

1. The questionnaire is basically made up for the objective of the academic research. Your answer and expression essentially serve to the doctoral candidate thesis accomplishment.
2. You can outspokenly your answer and expression to the questionnaire. The researcher will keep it confidentially and its result will be presented as overview.
3. The questionnaires have 5 parts altogether:
 - Part 1. Personnel data
 - Part 2. Environmental knowledge and comprehensive
 - Part 3. The attitude concern environment.
 - Part 4. Behavior relates to environmental conservation.
 - Part 5. Public opinion on the temple environmental education

For Researcher only

- Temple () 1. Wat Panyanantaram
() 2. Wat Asokaram
() 3. Wat Klang Ku Wieng

ID No.

Date.....

Part 1. Personnel Data

Instruction : Please mark ✓ in braces () or truly fill in other (specific.....)

1. Sex: : () 1. Male () 2. Female
2. Age: () 1. Not over 25 years old.
 () 2. 26 – 50 years old.
 () 3. 51 years old and over.
3. Occupation: () 1. Pupil or Student
 () 2. Official or Public enterprise officer.
 () 3. Employee of Private enterprise or Department store
 () 4. Hire
 () 5. Agriculture
 () 6. Housewife
 () 7. Other (Please specify:)
4. Education: () 1. Primary school.
 () 2. Secondary school.
 () 3. Diploma or its equivalence
 () 4. Bachelor Degree.
 () 5. Higher bachelor degree
 () 6. Other (please specify.....)
5. Marital Status: () 1. Bachelor
 () 2. Mary
 () 3. Divorce, or single, or separate.
 () 4. Priest.
6. Domicile: () 1. Live in the community near temple.
 () 2. Live in the same province of the temple but not in the
 same community, Tambol, and District
 () 3. Other province (please specify.....)

7. What is your main purpose to come to this temple ?

- 1. Doing merit
- 2. Taken advise or audience the preach.
- 3. Religious practice.
- 4. Sight-seeing.
- 5. Natural study.
- 6. Other (please specify.....)

8. What is your decisive decision-making to come to this temple ?

- 1. Convenient journey.
- 2. Prefer the temple environment.
- 3. Faith to the monk.
- 4. Other (please specify.....)

9. How often do you come to this temple ?

- 1. Regularly.
- 2. On the religious day only.
- 3. Demand for relax.
- 4. Only taken by the school or office.
- 5. Other (please specify.....)

10. Which media of knowledgeable data and information of the temple that interests you ?

- 1. Document.
- 2. Tape-recorder.
- 3. Broad of public relation.
- 4. Banner in the temple.
- 5. Make a conversation with the monks.
- 6. On-air.
- 7. Other (please specify.....)

Part 2. Environmental knowledge and comprehensive

Instruction : Please mark ✓ in braces () in front of the item which is precisely pertinent to your comprehension.

1. What is your comprehension of environment ?

- 1. A living things that around human being, such as people, crops, animals
- 2. Non-living things that around human being, such as house, cars, utensils.
- 3. Only a spicity of human being.
- 4. Everything that around the human being.

2. To the best of your knowledge, where is the cause of the environmental problem in Thailand come from ?

- 1. Environmental pollution, such as water pollution, air pollution, garbage.
- 2. Natural resources problem, such as deforest, the decreasing of mineral and gasoline.
- 3. Right both (1) and (2).
- 4. Thailand has no problem of environmental pollution.

3. To your idea, what is the cause of the environmental problem ?

- 1. Self-occurring by nature.
- 2. Occurring by human being action.
- 3. Benefiting from the convenient utensils introduction.
- 4. There are manufacturers.

4. To your opinion, Which one should take care the public asset, such as keeping the street and canal cleaned, as well as tree conservation?

- 1. Government officials.
- 2. Municipality administration.
- 3. Owner of the manufacturer.
- 4. Every citizen.

5. Which answer is the easiest way that every people could do it for decreasing the environmental problem ?

- 1. Informing the responsible organization when find the one who make pollution.
- 2. Economically expenditure.
- 3. Studying law of environment.
- 4. Participating with the association of environment.

6. Which one is the economy way to lessen the garbage?

- 1. Fireplace of garbage.
- 2. Transforming garbage to be fertilizer.
- 3. Garbage recycle to be other utensils.
- 4. Having a necessary consume in a dairy life.

7. Which one the proper match to the being ?

- 1. An artificial coral and fish.
- 2. A cage and bird.
- 3. An air-condition room and white bear.
- 4. A carcasses and worms.

8. Which one that unhelpful to preserve the tree ?

- 1. A pupil use both side of a piece of paper.
- 2. The owner of the manufacturer use wood from the easy growth tree to make furniture.
- 3. House-wife take tissue to clean within the house in stead of cloth.
- 4. Carpenter take utensil-teak to be repaired.

9. To your opinion, which action that is the least harm to the nature.

- 1. Mr. Mueg takes fish in the season of egg birthing because of the season of plenty of fish.
- 2. Mr. Muang take mangrove wood to make charcoal because of higher heat than other woods.
- 3. Mr. Maen takes medicine herbs from the temple as medicine drugs to reduce the painful.
- 4. Mr. Ming makes clean the toilet by chemical liquid.

10. Do you know which way the is economy way and save the leftover for arranging the big party ?

- 1. Chinese buffet style: (A set of menu that gradually serve for the whole table)
- 2. One tray suffices for the whole table.
- 3. European buffet style. (Ready food and beverage on the table for individual to take.)
- 4. Do not know.

11. For the following people, do you think that who is the most proper consumable behavior ?

- 1. Kai take one meal a day as an economy mean.
- 2. Koy take hamburger as meal as time saving.
- 3. Kring gives up meat as food and take vegetable instead.
- 4. Kaew gives up catching fish in front of the temple and turn to buy canned-fish for food.

12. Which one is the human being habitual to keep this earth live on ?

- 1. A natural preference
- 2. Altruists.
- 3. Knowledgeable seeking.
- 4. Self-right protection.

13. Considering to the law of nature, which one is precisely right ?

- () 1. Human being can live along on the earth with any creatures.
- () 2. Nature might be unnecessary for human being in the future because human being can discover others to compensate it.
- () 3. Sects, Grasses, sands, is a necessary things that must be in this earth.
- () 4. There is water-pollution in one community has no negative impact to other communities.

14. Which Dhamma that preserve the natural environment ?

- () 1. Non-congestion.
- () 2. Kindness.
- () 3. Self-sufficient consuming.
- () 4. Right in every items.

15. Which one is the religious practice pertinent to the Dhamma of kindness ?

- () 1. Raising wild-animal in the cage.
- () 2. Taking a starving-elephant to beg its food in the town.
- () 3. Formulating forbidden ground for catching fish to consume.
- () 4. Keeping the nearly extinct animal as a pet in the house.

16. Thor tears a piece of paper from text book to make airoplane for fun with his friends, which rule of merit that he remiss it ?

- () 1. Honest.
- () 2. Piety.
- () 3. Kindness.
- () 4. Unknown.

17. Do you think in which rule of merit will give most benefit to the mass of people ?

- 1. Growing plant in public.
- 2. Giving alms to monk with dry food.
- 3. Building garbage heater in the community.
- 4. Contributing clothes and utensils.

18. What kind of stub is suitable presenting to the monk ?

- 1. The mired-forest preservation
- 2. The river and canal preservation.
- 3. Preaching to keep life style in consistent with the nature.
- 4. Do not know.

19. Which one do you think is the most suitable performance to do ?

- 1. Purchasing a ready offerings to the priests in general because of wholly.
- 2. Dispatching the fresh wreath for dedicating to the death man.
- 3. Harvesting crops, vegetable, fruits, in the local area to do merit.
- 4. Giving an alms to monk with colorfully and tastefully food.

20. The temple as, additionally, a place for doing merit and religious practice. Do you know how the temple also takes part in participating the environment protection ?

- 1. The mangrove forest conservation
- 2. The river and canal preservation.
- 3. Preaching to keep life style in consistent with the nature.
- 4. Do not know.

Part 3. Questionnaire the attitude toward environment.

Instruction : The questionnaire is freely opened for you to select the item that is conformable to your opinion, and please mark ✓ in the channel its channel.

Attitude	Agree	Undecided	Disagree
1. Thailand has no environmental problems.			
2. It is not necessary for men to protect environment since nature will take care of itself			
3. Resources are unlimited and luxurious use can be done.			
4. It is more the responsibility of government offices than of people to look after environment.			
5. You feel you are an important factor in protecting the environment.			
6. You think you should give correct warning to those wrongdoers on environmental issues.			
7. It is all right to have home utilities and furniture made of animals' parts since raising animals for commercial purposes are now prevalent.			
8. Littering uneasily decomposed garbage on earth or in the rivers is all right since it is not a major threat to the environment.			

Attitude	Agree	Undecided	Disagree
9. You feel that purchasing a packaged sangathan will render more usefulness to the monks than if it is prepared by yourself.			
10. In addition to mental development, a wat can have an additional role as environmental development.			
11. Providing knowledge on environment to people by a wat will help decrease environmental problems.			
12. You can make use of knowledge about environment from this wat for everyday life.			
13. Cleaning a wat's area and looking after the wat's trees are regarded as merit making.			
14. You think greed, hate, and anger are cause of environmental destruction.			
15. You think following the Buddha's teaching will enhance environmental conservation.			

Part 4. Behavior relates to environmental conservation.

Instruction : Please mark ✓ in the channel that is pertinent to your habitual, only a mark for a channel.

Behaviors	Level of behavior		
	Frequent	Sometime	Never
1. You read newspaper, listen to radio, watching television about environmental program.			
2. You talk about environmental problems with your friends and other people you know.			
3. You dress in cloth made of synthetic materials.			
4. You eat fast food dishes such as pizza, Kentucky Fried Chicken.			
5. You litter the floor if there is no garbage bins around.			
6. If you spot an unknown person littering the floor, you will give that person a warning.			
7. You have home utilities and furniture made of animals' parts such as skin, horn, tusks.			
8. You participate in the campaign on environmental conservation such as cleaning, planting, attending environment's day.			

Behaviors	Level of behavior		
	Frequent	Sometime	Never
9. You participate as a member of the club that organizes environmental conservation activities.			
10. You use a krathong made of synthetic materials and paper.			
11. You buy a packaged sangathan from the shop and donate it to the monk.			
12. You exchange knowledge on things within the wat with monks and wat-dwellers.			
13. You read signs posted in the wat.			
14. You use the wat as a study place to seek knowledge about herb.			
15. You help look after trees and clean the wat's area.			
16. When you have an opportunity to serve food for yourself, you normally cannot eat it up.			
17. You put knowledge obtained from the wat into practice in your daily life.			

Part 5.: Public opinion of the temple environmental education.

Instruction : Please completes the statement of your outspoken opinion to the following questions.

1. Could you take in any subject that you receive from the temple to serve your daily life and make no any environment affection.

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2. Do you have any demand of information to learn from the temple, but the chance does not present itself to you.

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3. Do you think that the temple should have any improvement for the benefiting of the visitors.

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Evaluation Form

Environmental Education Organizing Model of the Temples

Located in the Vicinity of Bangkok Metropolis

Evaluators : 10 environmental experts

Remarks : upon having finished examining the wat's environmental education attached to this form, please put a ✓ in appropriate boxes that are corresponding to your opinions and write suggestions for further adjustments.

Rating points for evaluation and their meanings

- 5 points = highest
- 4 points = high
- 3 points = moderate
- 2 points = low
- 1 point = lowest

information of evaluator

Name.....

Position.....

Office.....

Date of evaluation.....

Items for evaluation	rating point					Recomendation
	5	4	3	2	1	
1. correctness of concepts in the wat's environmental education management						
2. correspondence of objectives of the wat's environmental education						
3. appropriateness of the wat's roles in environmental education						
4. appropriateness of proposal about factors relating to environmental education						
4.1 resources						
(1) personnel						
(2) management						
(3) equipment						
(4) money						

Items for evaluation	rating point					Recomendation
	5	4	3	2	1	
4.2 environmental education process						
(1) body of knowledge						
(2) method						
(3) activity						
(4) media						
(5) evaluation						
4.3 supporting factors						
(1) internal factors						
(2) external factors						
5. possibility of application						
6. simplicity						
7. usefulness to religious sector						
8. usefulness to environmental education area						
9. usefulness to society						

Recommendations :

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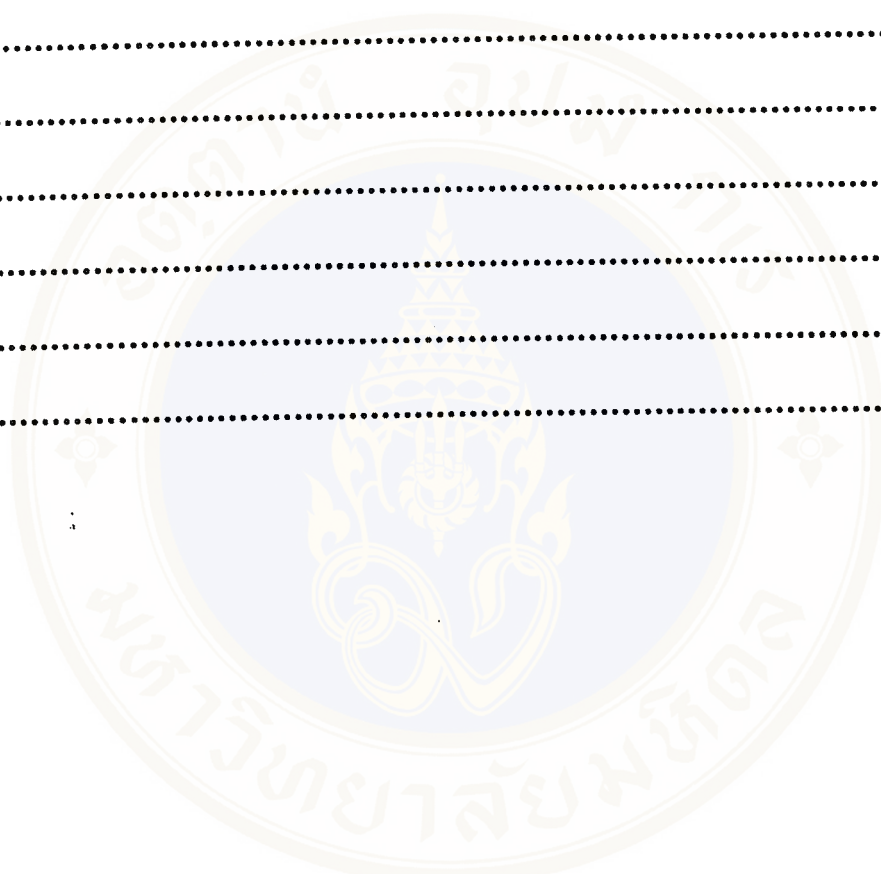
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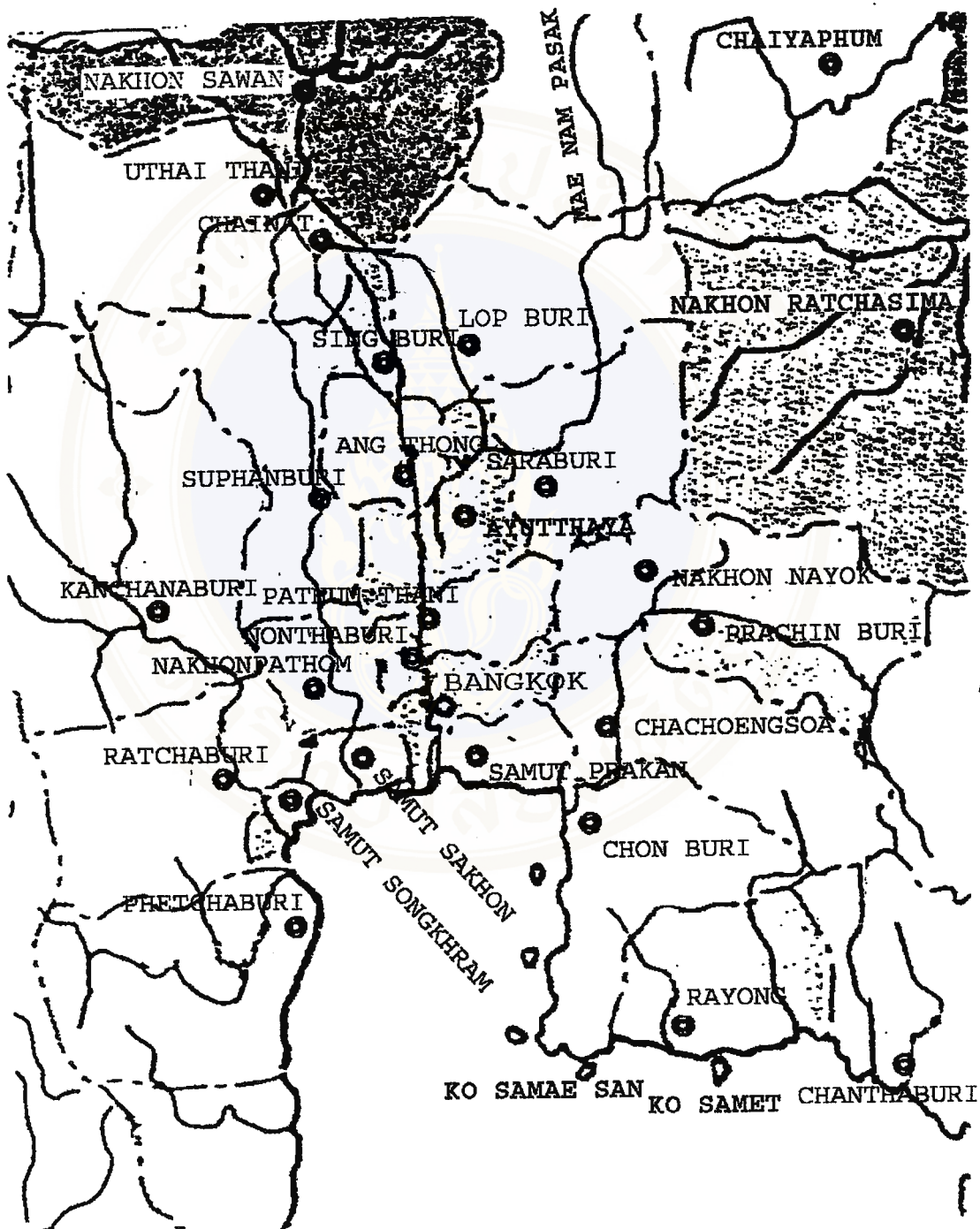
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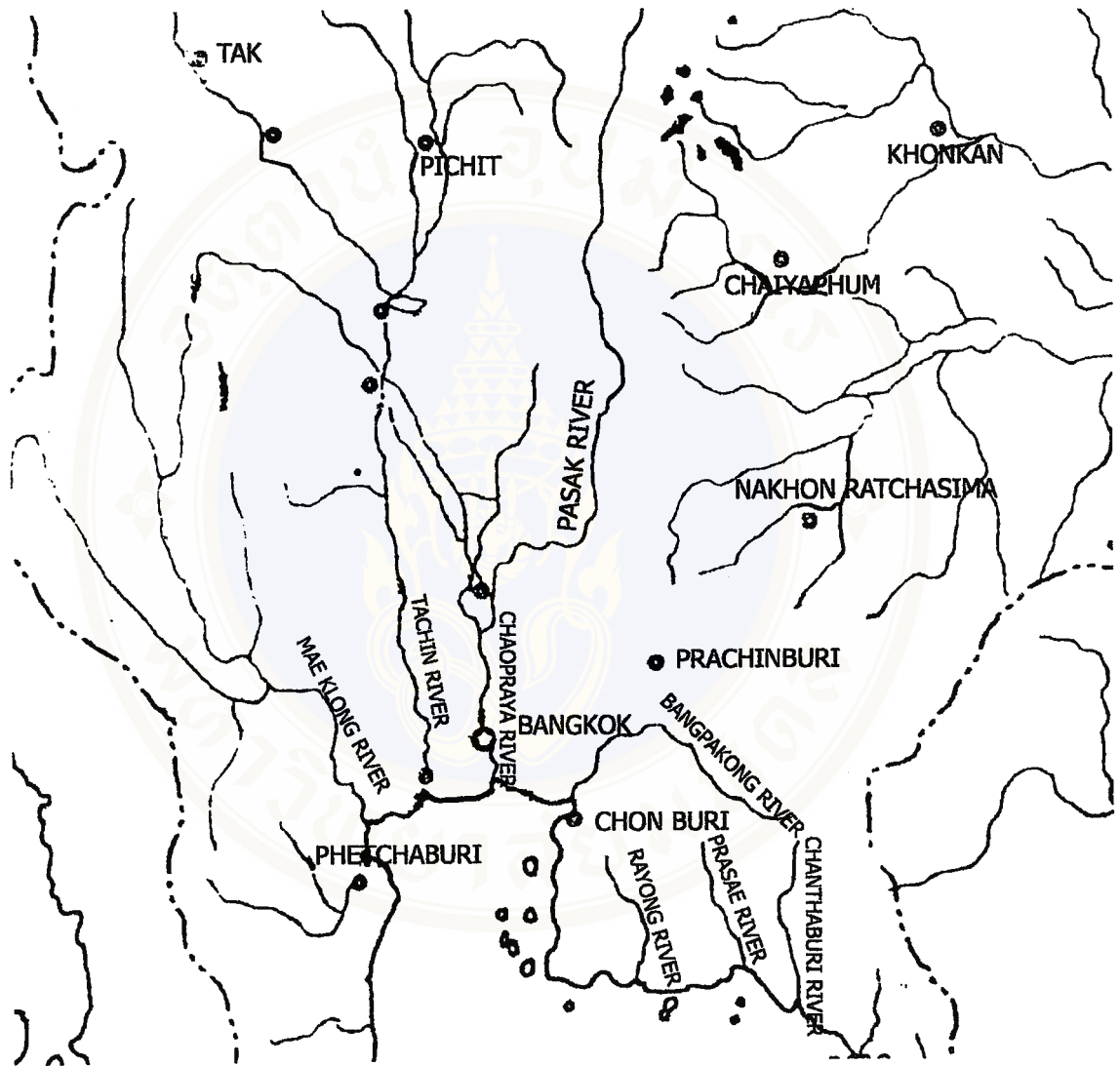
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APPENDIX C

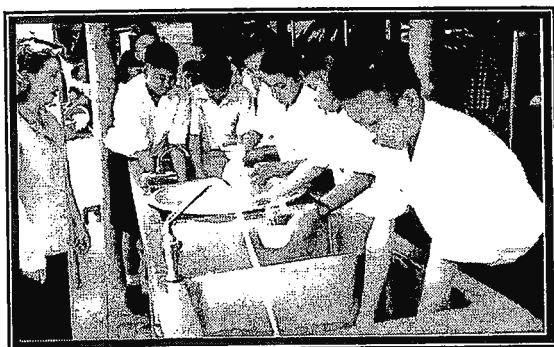
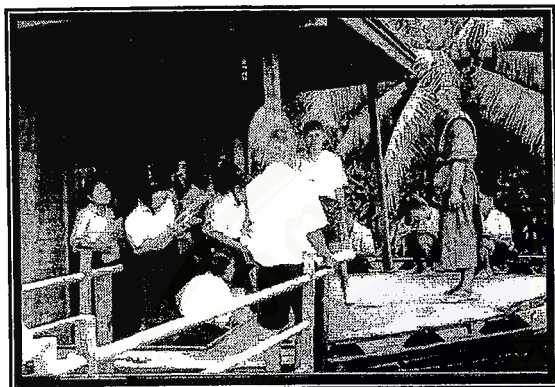


Map illustrated location of vicinity province of Bangkok Metropolis



Map illustrated geographic of vicinity province of Bangkok Metropolis

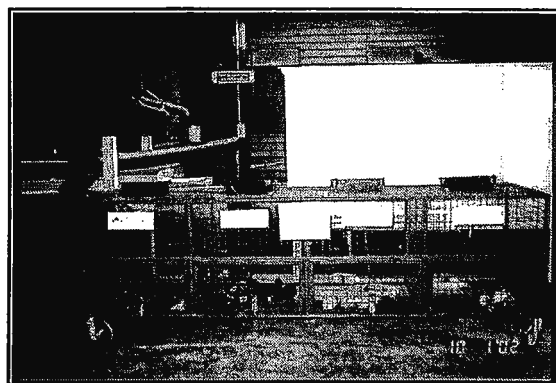
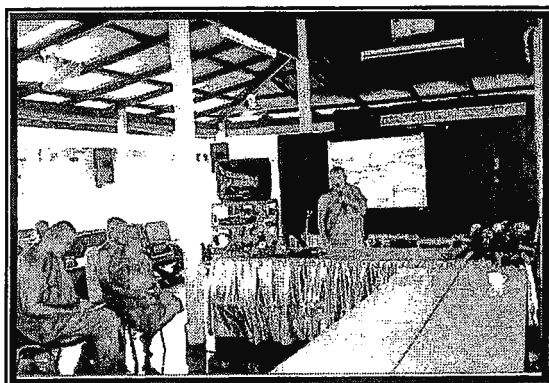
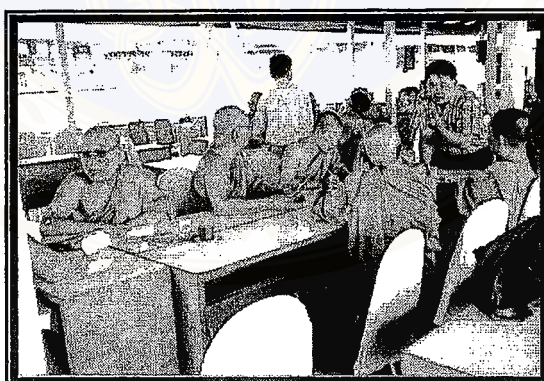
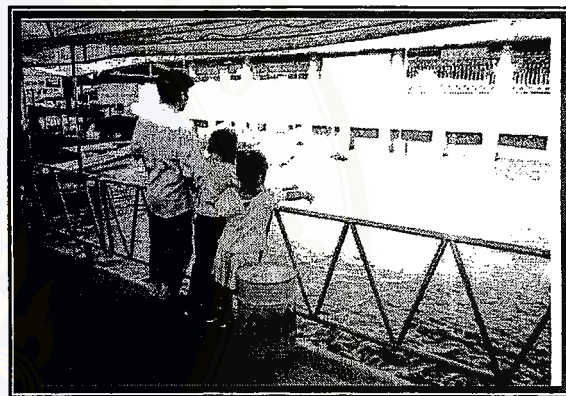
APPENDIX D
Environmental Education Activities
of Wat Panyanantaram



Environmental Education Activities of Wat Asokaram



Environmental Education Activities of Wat Klang Ku Wieng



BIOGRAPHY



NAME Miss Prapaporn Chulilung

DATE OF BIRTH 15 October 1964

PLACE OF BIRTH Chiang Rai Province, Thailand

INSTITUTION ATTENDED Ramkhamhaeng University, 1982-1985
Bachelor of Art (Political Science)
National Institute of Development Administration
(NIDA), 1986-1988
Master of Public Administration
Mahidol University, 1997-2002
Doctor of Education
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RESEARCH GRANT Department of Religious Affairs'
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POSITION & OFFICE 1992-Present, Policy and Planning Analyst
Technical Studies and Planning Division
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