



**CONSERVATION AND SUSTAINABLE TOURISM IN SAP CHAM PA
ARCHAEOLOGICAL SITE AND CHAM PI SIRINDHORN FOREST**

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

By

Ilada Sarttatat

**A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree
DOCTOR OF PHILOSOPHY
Program of Architectural Heritage Management and Tourism
(International Program)
Graduate School
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The Graduate School, Silpakorn University has approved and accredited the Thesis title of “Conservation and Sustainable Tourism in Sap Cham Pa Archaeological Site and Cham Pi Sirindhorn Forest ” submitted by Mrs.Ilada Sarttatat as a partial fulfillment of the requirements for the degree of Doctor of Philosophy in Architectural Heritage Management and Tourism

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The study focused on sustainable tourism management as well as on the conservation of a cultural heritage site - Sap Cham Pa Archaeological Site (SCAS) - and a natural heritage site - Cham Pi Sirindhorn Forest (CPSF). These sites are geographically adjacent to each other. This is the first research so far that determined the significance of heritage assets of the study area in the context of heritage conservation and sustainable tourism and from the perspectives of relevant stakeholders. The research was conducted from June, 2007 to November, 2009. The specific objectives of the study were to determine the cultural and natural features of the study sites, to determine the perceived values of the community with respect to conservation and tourism development, and to assess the potential and actual risks of and benefits from tourism. Management recommendations for each site were also provided. The research methods used include a combination of qualitative and quantitative methods: field observation, questionnaire survey, face-to-face interview, focus group discussion, and literature review. The data were analyzed using SPSS program Version 10.1. The Likert scale was used to rank the local perceptions on various aspects of tourism development and conservation. Using the Recreational Opportunity Spectrum (ROS) matrix, the recreational settings of SCAS and CPSF were identified Class 2 (semi-remote) and Class 4 (semi-developed), respectively. The Review of Environmental Factors (REF) yielded 12 major threats for SCAS, and 7 major threats for SPCF. Based on the results of the REF analysis, the threats needing immediate management attention were prioritized using the Recreation Threat Analysis (RTA). Management recommendations were given for each of the prioritized threats. A SWOT analysis was also conducted. Both sites have significant heritage values and are not only interesting tourist destinations but also important venues for research, learning, and education. The local perspectives about the values of the two sites are generally positive. The economic value was consistently ranked much higher than the cultural and educational values. The majority of respondents were interested in participating in all aspects of planning and management. However, they expressed the need to be trained in running tourism-related projects. The social conflicts among the stakeholders (i.e. between local farmers and the government) were mostly about land ownership and management directions.

The main theme of the proposed management strategies is anchored on developing an integrated management approach, incorporating the heritage values of the two sites to achieve sustainable tourism and heritage conservation. The two sites, due to their geographic proximity, have to be planned and managed in an integrated manner. All stages and aspects of planning and management should involve the local community and other relevant stakeholders to ensure collective action for sustainability.

Program of Architectural Heritage Management and Tourism Graduate School, Silpakorn University Academic Year 2010

Student's signature

Thesis Advisor's signature

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Chapter One

Introduction

1. Significance of the study

Archaeological sites and the artifacts found therein are important elements of a society's past culture and histories (Renfrew, 2000). Archaeology, which studies ancient culture and civilization, provides valuable scientific information about cultural history (Grant, Gorin & Fleming, 2005) and the social and political lifestyles of the people of ancient times (Estrada-González, 2005). Due to varied and widely accessible media, many archaeological sites worldwide have been the focus of academic studies of historical past. Increasingly, archaeological sites are becoming part of mainstream educational initiatives and tourism (Schadla-Hall, 2006). Today, many archaeological sites serve as public educational centers as well as tourist attractions, where both domestic and international tourists can visit, learn, and enjoy. Consequently, various kinds of damages, both positive and negative, have affected the sites due to tourism and other man-made and natural factors.

Archeological sites inscribed in the UNESCO World Heritage Site List are being promoted by the tourism industry as cultural tourist destinations. UNESCO (1972) suggests, however, that these sites should be developed not only for economic reasons but also for education and conservation. Tourism and education can help support the conservation of these sites (Hall & Piggin, 2003). Revenue from tourism can be used to alleviate poverty, promote local economy and infrastructure development, and improve the quality of life of the local people. More importantly, cultural heritage tourism can be a vehicle in providing funds to support heritage conservation (Binns & Nel, 2002; United Nations, 2003; Chirikure & Pwiti, 2008). Several authors (Shackel, 2005; Mckercher & du Cros, 2002) agree that tourism enhances better understanding of the importance of heritage culture through tourist interpretation, hence increasing their cultural values and potential for cultural exchange between tourists and host communities. Understanding

the value of heritage sites can broaden tourist appreciation of the need to conserve these sites and ancient traditions.

Many countries in the world are promoting cultural heritage areas such as archaeological sites as tourist attractions. These cultural tourist attractions are popular among tourists. Revenues from tourism can help develop and preserve the cultural heritage sites in many parts of the world (Leslie, 2005b). Thus, tourism plays an important role in enhancing the economic, educational, cultural and social benefits for communities at the local, regional, and national levels.

Nevertheless, tourism can adversely affect the integrity of heritage sites, both directly and indirectly. McKercher and du Cros (2002) state that there is a range of negative impacts resulting from tourism in many heritage sites. For example, physical deterioration and erosion of heritage properties have occurred due to tourists' unregulated behavior. The deterioration of the natural/ancient landscape has been attributed to unplanned tourism infrastructure development and increasing human population. Because of unsustainable tourism practices, the environment suffers due to unregulated number of visitors, excessive traffic jam, and man-made assaults on the physical features of the sites. There can be social impacts on the daily lives of host communities due to excessive tourist numbers (crowding) and uncontrolled tourist behaviors (Ho & McKercher, 2008; Chakravarty, 2008). Some local communities may have had lost self-reliance due to increased dependence on tourist revenue. The other negative impacts associated with tourism that were reported in many archaeological sites around the world include the misappropriation of heritage sites, illegal trade of antiquities, looting of artifacts by local people, and vandalism of the historic structure (Feidem & Jokilehto, 1998; Lerner, 1991 cited in McManamon & Hatton, 2000; Neil, 2006).

Many countries in Southeast Asia such as Burma, Thailand, Vietnam, Cambodia, Malaysia, and Indonesia have numerous archaeological sites showing evidence of the existence of prehistoric civilization, ancient human settlement, and sophisticated political systems (Higham, 2002; O'Reilly, 2007; Nathaphinthu, 2007;

Indrawooth,2008). However, these valuable cultural heritage sites and what they represent have been neglected and spoiled leading to the 'loss of the story' of the sites and of the ancestors who lived there (Chapman, 2003).

Grant, Gorin and Fleming (2005) state that archaeological heritage sites can be degraded over time through natural phenomenon such as exposure to variable and extreme weather conditions and disasters. But the more severe forms of destruction come from human activities, such as the conversion of these sites for agriculture, forest production, and human settlement. Costin (1991) adds that the key threats to these irreplaceable cultural assets from human activities include theft, illegal export, lack of maintenance, demand of modernization and industrialization, and rural land modifications. Palumbo (2002) concurs that the main man-made threats are pollution, looting, tourism, social unrest, inappropriate intervention, and lack of administration and legal frameworks. Gado (2001) agrees that ignorance is one of the main causes of destruction of heritage sites. The author also claims that some damages reported in archaeological excavation are caused by untrained researchers and 'diggers'.

As mentioned above, the major cause of damage on archaeological heritage sites is exploitative human activities. There are many examples of damage on archaeological sites that had been destroyed because of man-made activities including tourism. For example, *Stonehenge*, a world archaeological heritage site in UK, was damaged and its historic landscape de-faced by the unwise development of tourist facilities (Grant, Gorin & Fleming, 2005). Excessive visitor use has been one of the serious factors that cause physical impacts, environmental problems, and social conflicts within a heritage site. The environmental values of different stakeholders differ, and this puts stress on this site (Baxter & Chippindale, 2005). A similar situation is occurring at the Historic City of Thailand - Ayutthaya. Thailand's World Heritage Site (UNESCO 2010) - where excessive visitor number has been unregulated.

Tourists who do not have the sensitivity and respect for the conservation of cultural heritage have been one of the major issues in heritage protection and conservation. Palumbo (2002) highlights an example claiming that tourists climbed the

walls at *Volubilis* in Morocco in order to take close-up pictures of the mosaic floors. Some tourists even collected pottery fragments from the heritage site as souvenirs. In Asia, Chapman (2003) found that tourists activities such as walking, touching, and leaning on artifacts have trampled and caused major physical deterioration on archaeological sites. Other examples include those found in 'Borobudur' in Indonesia and 'Angkor Wat' in Cambodia where reliefs show surface erosion and now look 'polished' due to constant touching by tourists.

Shuzhong (2001) indicates that illicit excavation has destroyed many archaeological sites in China. Although many Chinese people respect their archaeological sites as they are considered the 'soul of ancestors', there are still some economic-driven nationals who have low regard for these sites leading to the loss of cultural identity and basis for historical / scientific knowledge. The '*Ancient tombs site at Reshui*' in Qinhai province, part of the Tibetan Tubo culture of the Tang Dynasty (A.D.618-907), is a good example of where illicit excavation by the local people has occurred. The unscrupulous merchants, who have no regard for the loss of national heritage, sell the excavated objects to tourists and antique collectors. Shuzhong (2001) reports that many cities in China were found trading antiques at tourist destinations and some tour operators are even offering basic course on illicit excavation to tourists.

In Southeast Asia Region, Thorasat (2001) identifies that the main threats of archaeological sites in Thailand and Cambodia are linked to farming (rice cultivation) and construction work. Looting by local people who are poor and uneducated was also identified. This illegal activity indicates the low appreciation of the local people for their cultural heritage simply because of poverty. The author reports that some local villagers had dug an entire archaeological site in search for beads or small objects that can be sold to the public including tourists.

Some national / local governments in the developing countries have considered archaeological sites as an economic resource. Consequently, they create policies aimed at 'rebuilding' or 'renovating' archaeological sites in order to promote tourism and provide more convenient amenities to tourists even at remote areas. Unfortunately,

the sporadic 'rebuilding' of sites has been handled by numerous unskilled workers who are unaware of the cultural value of the sites. As a result, the authentic and culturally significant values of the sites are diminished, if not completely obliterated. There is also a permanent loss of the site's historical information and cultural integrity. For example, the renovation of '*Ancient Pagan; the land of Golden Pagodas*' in Burma demonstrates the effects of a government restoration project that was implemented without regard to the tangible and intangible values of the heritage site. In this case, the government commissioned the restoration of many old pagodas aimed at promoting cultural tourism, which has led to the destruction of the authenticity and cultural landscape of the old city (Kerdsiri,n.d.;2008). Plong(2004) reports that the Beng Mealea Temple in Cambodia was destroyed when a road was constructed over the site, which obliterated part of the ancient road system.

In Thailand, archaeological sites and artifacts are legally protected (i.e. Act on Ancient Monuments, Antiques, Objects of Arts and National Museums, B.E.2504 (1961), revised in 1992). The law provides for the protection and conservation of archeological sites and artifacts for the present and future generations. In spite of this legislation, many archaeological sites have been vandalized by devious people who defaced the sites and the valuable artifacts and objects found therein for economic gain. The despoiled sites are then left at the mercy of nature and human activities. The 2004-2007 report (Summary of Statistics from the Office of Archaeology, Fine Arts Department) documented illegal intrusions into historic places, old city walls, moats, and historic canals in some 1,020 locations in the northeastern part of Thailand (Manager online August 25,2008 cited in ICOMOS Thailand, 2008). The causes of the damages and disturbances, which are aggravated by natural calamities and typhoons, include infrastructure development such as road and building constructions. In the process ancient moats of ancient cities were filled up to level the construction site. Allegedly, some of these activities were sanctioned by the Thai government, who was probably misinformed of the real situation on site. For example, the Department of Lands during that time may not be cognizant of the cultural significance of the sites. Due to the

absence of scientific benchmark data about these sites and the ignorance of the general public of their priceless significance to the country and the local communities, certain portions of the sites including adjacent areas were opened as freehold for private ownership.

Other archaeological sites in central and southern parts of Thailand that have also been destroyed due to man-made and natural disturbances include the *Pongtuk* archaeological site in the central region and the *Klong Thom* archaeological site in the southern region. Both sites had been deserted and remained unmanaged due to lack of government human and financial resources. The local communities living near the sites are mostly poor and uneducated and showed indifference because they do not directly and immediately benefit from protecting them.



Figure.1: Threats and deterioration of the archaeological sites from natural phenomenon and human actions. Photos taken by I.Sarttatat on December 15, 2010

In summary, archaeological heritage sites all over the world have great cultural value and yet many countries have allowed these sites to be destroyed one way or the other. As Plong (2004) states there is a need to preserve historical and cultural heritage areas to promote national identity and authenticity. Given that intangible values of heritage sites such as historic knowledge are irreplaceable, there is an urgent need to conserve them for short-term and long-term benefits. Heritage sites should be promoted not only as profitable tourist attractions but also as resource for public education. As such they can offer economic benefits, raise public awareness, and support conservation and sustainability.

2. Significance of the study area

This research was conducted in two adjoining sites - the Sap Champa Archaeological Site (SCAS) and the Cham Pi Sirindhorn Forest (CPSF) (Figure.4). Both sites have been identified by the Office of Archeology and the Department of Forestry as important cultural-natural heritage sites that need utmost protection (Office of Environment Policy & Planning and Natural & Cultural Environment Conservation of Lop Buri Province, 2009). The two sites are located in central part of Thailand, within the sub-district of Sap Champa in Lop Buri province. The archaeological evidence unearthed from Sap Champa Archaeological site indicates the existence of an ancient city dating back to the prehistoric period from the Neolithic Age (Maleipan, 1973) or, perhaps, even from the Bronze Age (Lertrit, 2003a). Apparently, these two sites by the nature of their geographical juxtaposition may be closely intertwined during the prehistoric period in terms of their cultural and natural significance.

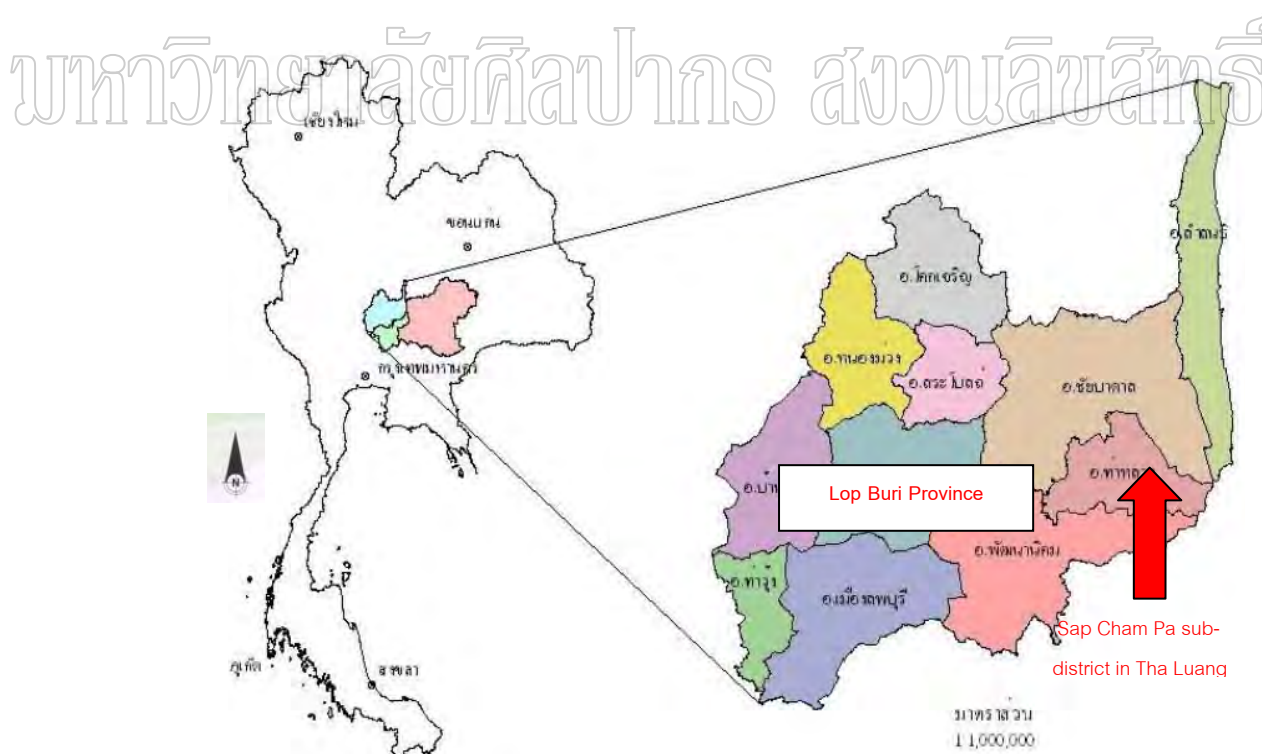


Figure.2: Location of Sap Champa Archaeological site and the Cham Pi Sirindhorn Forest. Source: Department of Groundwater Resources, 2007

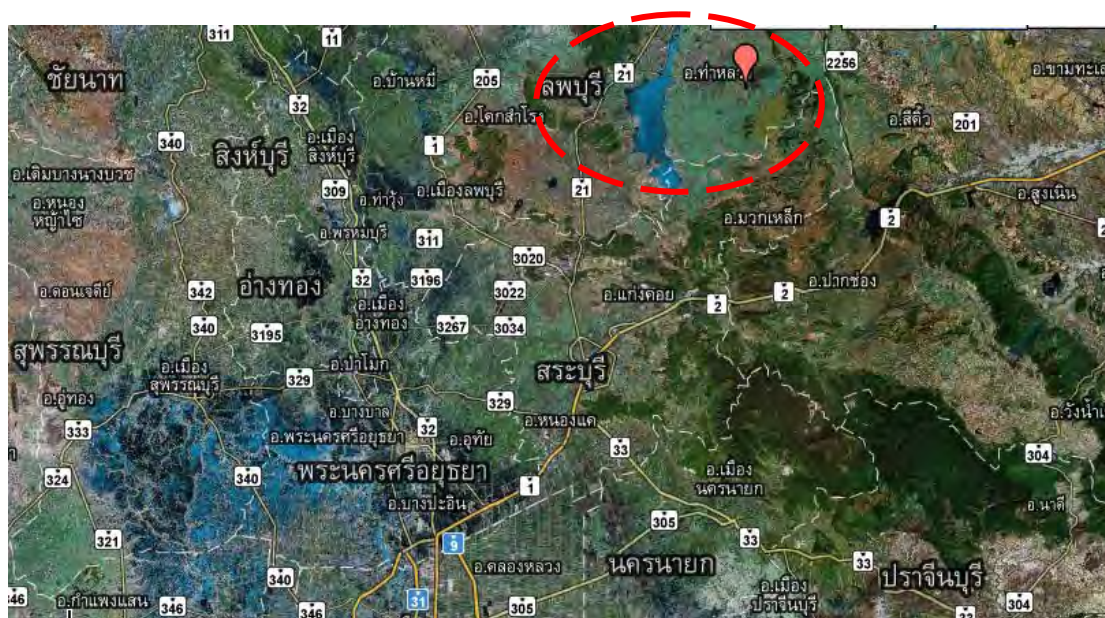


Figure.3: Location of the sites within Tha Luang District.

Source: Thai Google earth, 2011

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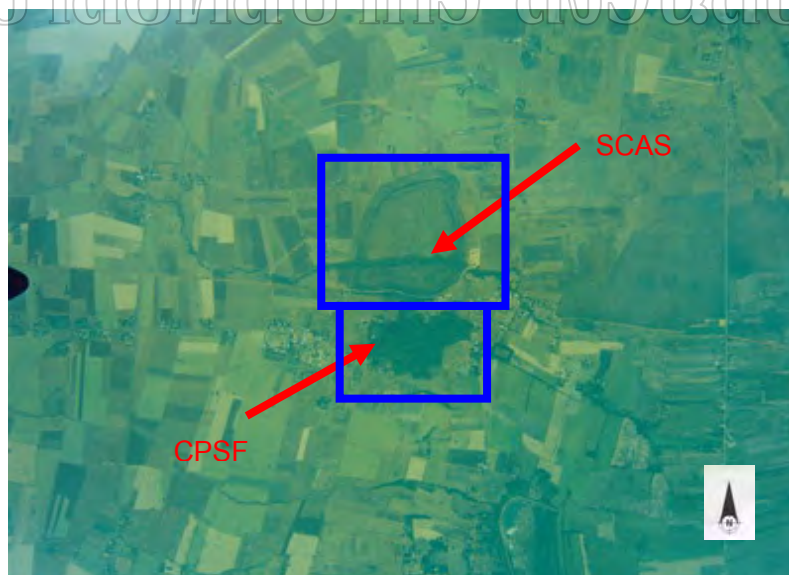


Figure.4. Aerial photo of Sap Champa Archaeological Site and the Cham Pi Sirindhorn Forest .Source: The Royal Thai Survey Department, Sap Champa sub-district, 2003 (Scale 1:25000)

The adjoining Cham Pi Sirindhorn Forest is important because it contains native species, many of which have medicinal value. The protection of the forest as a tourist destination and as a forest reserve will benefit the host community, in particular, and the whole country, in general. The added heritage value of the forest study area is attributed to the discovery in 1998(B.E.2542) of a plant, scientifically referred to as *Magnolia sirindhorn* (Noot & Chalermglin), within the adjoining forest of Cham Pi Sirindhorn, where a community forest covering an area of 25.33 hectares (or 590 *rais*) (Chalermglin, 2004) is located. This discovery is scientifically significant, as this plant is very rare and endemic. The plant was discovered from its last remaining habitat within the Chai Badan National Forest. The rarity and endemism of this plant species is a major draw card in nature-based tourism. However, this species has very little genetic diversity and might become extinct in the near future (Jaengsuwan & Chalermglin, 2008). Thus, the Plant Genetic Conservation Project under the Royal Initiative of H.R.H. Princess Maha Chakri Sirindhorn spearheaded its preservation since 2005. Furthermore, the plant has a symbolic value because it was named after H.R.H. Princess Maha Chakri Sirindhorn, a member of the Thai Royal Family who is highly regarded by the Thai people.

The forest area has other significant biological assets. There are various wood species and vegetation, which also support the livelihoods of the local communities. The economically important species include *Horsfieldia irya* (Gaertn.) Warb (in Thai 'ต้นกรวย'), *Dipterocarpus alatus* Roxb. Ex G. Don (in Thai 'ต้นยางนา'), *Donax grandis* (Miq Ridl in Thai 'ต้นคู้ม'). The numerous medicinal plants found in the forest are beneficial to the local people as well as to biotechnological researchers. Examples of these medicinal plants are *Beaumontia murtonii* Craib (in Thai 'กำดั่งข้างสาร'), *Carallia brachiata* (Lour.) Merr. (in Thai 'เหียงพ้านางแอ'). Thus, the various kinds of flora including fauna (i.e. forest birds) present in this forest can attract many visitors, students and researchers who come to the sites for sightseeing and outdoor learning in forest biology or ecology. The biodiversity value of this forest can serve as a 'bridge' between human and nature through ecotourism. Ecotourism can be the means for providing

financial support for biodiversity conservation of the forest (Catibog-Sinha & Heaney, 2006, p.317)

The combined attractiveness of the archeological site and the ancient forest (many hundred years old) with its rare and endemic *Magnolia sirindhorn* can provide a rare opportunity to integrate nature-based tourism with cultural tourism and education. The opportunity for the local community to benefit from the tourism, cultural and ecological values of these sites through proper use and sustainable management cannot be underestimated.

The proper management of the sites for sustainable tourism, while ensuring that their values properly conserved for the present and future generations, will benefit not only the province of Lop Buri but also for the entire country of Thailand and even the whole world. Sustainable tourism management should integrate all elements as part of the whole pictures rather than treat each one as an independent unit (Catibog-Sinha & Heaney, 2006).

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3. Goals and Objectives

This research was the first attempt made so far to study the significance of cultural and natural heritage within the study area. The research was done in the context of conservation and sustainable tourism management, which takes into account the views and perspectives of the stakeholders for their proper use and conservation. This research focused on the triple-bottom line approach to sustainable tourism management.

Because of the importance of the connectivity between the archeological site and the forest, this study determined the relevant environmental, economic, and socio-cultural aspects of Sap Champa Archaeological Site and the Cham Pi Sirindhorn Forest sites for conservation and tourism. The study looked into the features of the archaeological site and remnant forest. This study attempted to explore the theory on the existence of the intricate inter-relationships between human society and the natural environment. The study examined the importance of archeological sites and to

determine if sites such as Sap Champa Archaeological Site can provide the public a better understanding of their cultural heritage value as well as source of tourist revenue. It is expected that the conservation and management of these sites can be supported by sustainable tourism at the local and national levels.

This study emphasized the perspectives of various stakeholders, in particular the host community with regard to conservation and tourism. The study therefore assessed the different views of various stakeholders on how they think the sites should be managed as tourist destination. It is presumed that measures to manage archeological and natural sites are effective if built on the views of the local communities that are directly affected by tourism development. Previous studies have shown that community-based initiatives to support the conservation of cultural heritage sites are effective means of raising public awareness and sense of cultural pride for the present and future generations (Shankar, 2001). Some authors recommend that conservation plans for heritage sites should take into account the voice of different stakeholders (Mason & Avarani, 2002) and that to achieve sustainable tourism, managers should aim to balance environmental protection and the needs of the local community (Palumbo, 2002; Estrada-González, 2005).

The study identified various opportunities and challenges for the conservation of these sites including the surrounding natural landscapes while ensuring the promotion of cultural authenticity, national identity and local economic development through sustainable tourism management.

This study determined the various tourist activities in natural destinations that are consistent with the Thailand government policy on sustainable tourism development (Wilson, 2009). This study can serve as the foundation for sustainable heritage tourism management in Thailand and their possible application to similar sites in other countries within Southeast Asia.

In summary, the objectives of the study are as follows;

3.1. To describe the general (historical, cultural, economic, social, natural, and scientific) features of the study area

3.2. To determine the perceived values of the community regarding the natural and cultural heritage of the study area

3.3. To assess the potential and actual risks and benefits of tourism in these sites.

3.4. To provide some key points and guideline for management recommendations based on sustainable tourism principles.

4. Process of study

The process of the study followed the steps below:

4.1. Research documentation

4.1.1. Conducted a thorough search of relevant documents from both primary and secondary sources

4.2. Fieldwork

4.2.1. Actual field visits in many occasions.

4.2.2. Attendance to various events such as the annual ceremonies at archaeological sites, seminars, formal and informal meetings with relevant stakeholders in the locality.

4.2.3. Participation in relevant local programs and events. One such event was the public rally held on 9 November 2009, on the controversial issues pertaining to the management of CPSF

4.3. Quantitative Research

4.3.1. Conducted structured questionnaire survey for three months (December 2007-March 2008; 217 respondents)

4.3.2. Statistical analysis of data using the Likert Scale and Statistical Package for the Social Sciences (SPSS) program Version 10.1

4.4. Qualitative Research

4.4.1. Held focus group discussions with students from the local school located close to the study area

4.4.2. In-depth interviews with relevant stakeholders such as members of the local community, representatives from the government sector, and the community organizations (third party)

4.4.3. Assessment of data using various academic planning tools, such as ROS, REF Matrix, and SWOT

4.5. Recommendations

4.5.1. Proposed some key points and guideline for management actions and priorities using the RTA method

5. Scope and limits of the study

The study focused on two sites: Sap Champa Archaeological Site and Cham Pi Sirindhorn Forest and their immediate environs during the period (June, 2007 – November, 2009). The interviews were limited to members of the community and relevant stakeholders who were willing to be interviewed.

6. Synopsis of Chapters

The dissertation is divided into 6 chapters. The topics discussed in each chapter are listed below.

6.1. Chapter 1: Introduction

6.1.1. Significance of cultural heritage particularly archaeological sites

6.1.2. Roles of tourism in the conservation of cultural heritage site (archaeological) and that of natural heritage site (forest)

6.1.3. Impacts of tourism on heritage sites

6.1.4. Role of the local community and relevant stakeholders with respect to issues pertaining to conservation and tourism development of the heritage sites

6.1.5. Significance of the study and study area

6.1.6. Brief introduction of the objectives and - research methods used

6.2. Chapter 2: Literature Review

6.2.1. Concepts and theories about conservation and heritage, type of cultural/natural heritage and its significant values, and the relationships between cultural/natural heritage and conservation.

6.2.2. Concepts and theories about sustainable tourism, role of Sustainable tourism in heritage protection, role of relevant communities and stakeholders

6.2.3. Conceptual framework of community participation and community- based tourism

6.2.4. Review of several case studies on sustainable tourism management in selected archaeological heritage sites and natural forest sites in Thailand and other countries using the community-based tourism model

6.2.5. Review of relevant studies conducted in Sap Champa Archaeological Site and Cham Pi Sirindhorn Forest.

6.3. Chapter 3: The study areas

6.3.1. Background information about the study area: chronology, topography, climate condition, plantation, population, occupation, infrastructure, government service, and land use types.

6.4. Chapter 4: Research Methodology

6.4.1. Introduction of the research design, objectives and methods used

6.4.2. Structure of the questionnaire survey, interviews and focus group discussions

6.4.3. Introduction of assessment tools used, namely Recreational Opportunity Spectrum (ROS) (assessment of recreational opportunities), Review of Environmental Factors (REF), (assessment of the positive and negative impacts of tourism on natural destinations), and SWOT (Strength, Weakness, Opportunity, and Threat) analysis of the sites.

6.5. Chapter 5: Results and Discussion

This chapter is divided into four sections. The results of the study have addressed the objectives set in this research.

6.5.1: Main features of the two study sites -- SCAS and CPSF

6.5.2: Perspectives of the members of the local communities and other stakeholders who were interviewed about their opinion about the value of the cultural and natural heritage features found in the study area

6.5.3: Results of analysis using Recreational Opportunity Spectrum (ROS), Review of Environmental Factors (REF) and SWOT analysis

6.5.4: List of management recommendations

6.6. Chapter 6: Conclusion and Recommendations

6.6.1. Conclusion of the study

6.6.2. Site specific recommendations for sustainable tourism in both sites including research trends in the future.

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Chapter 2

Literature Review

This chapter reviews the basic concepts of conservation as it applies to the management and protection of cultural and natural heritage and the associated tangible and intangible values. It also explores the concept of sustainable tourism focusing on community-based management and using case studies from Thailand and overseas. Finally, this chapter discusses relevant studies about the two study sites-- Sap Champa Archaeological Site (SCAS) and Cham Pi Sirindhorn Forest (CPSF). The chapter is divided into four main parts, namely (a) Conservation and heritage, (b) Sustainable tourism and heritage, (c) Community participation, and (d) Relevant studies about the two study sites.

1. Conservation and Heritage

This section discusses the various definitions of conservation and heritage. The significance/values of both cultural and natural heritage are also discussed as well as the linkages between nature and culture.

1.1. Definitions of Conservation

The term 'conservation' is defined in various ways. The Longman Corpus reference book (1997, p.161) defines conservation as 'the protection of natural things such as wild animals, forests, or beaches from being harmed or destroyed'. The Webster Dictionary (1999, p.310) states that conservation is the act of managing natural resources and their preservation including reconditioning and restoring works of art. The Cobuild Encyclopedia (Cobuild,2001, p.319) writes that conservation is saving and protecting the environment or historical objects or works of art for perpetuity. The Cambridge Dictionary (2003, p.258) defines conservation as the protection of both natural resources and significant monuments from any damage due to human activities. Conservation involves the careful utilization of limited natural resources in order to prolong their use. The Oxford River Books (2004, p.200) specifies that conservation

means preservation and wise utilization. The American College Heritage Dictionary (2004, p.305) notes that conservation is the protection, preservation, management and restoration of natural resources including the maintenance of their quantity and quality.

Some authors explained that conservation applies to the broader aspects of historic preservation whereas preservation means the 'maintenance of the artifact in the same physical condition as when it was received by the curatorial agency' (Fitch,1995). From the natural heritage perspective, conservation involves human interventions to protect and manage natural assets, whereas preservation means maintaining the integrity of living forms without any human or external interventions.

From above literature, the meaning of conservation can be divided into two aspects. First, conservation pertains to all protection processes such as preservation, restoration, and management as well as technical interventions to preserve the integrity and authenticity of historical monuments including works of art from any physical deterioration. Second, conservation means effective management to safeguard limited natural resources and the environment while allowing wise utilization in order to secure humankind's quality of life for as long as possible.

The definitions of conservation are best understood in conjunction with the articulation of the basic principles of sustainability. There are several explanations in the literature about these principles. Some have identified 'conservation' in the context of preserving tangible expressions of heritage culture such as historic places, artifacts, and monuments. These are: *The Venice Charter* (1964), *Nara Document of Authenticity* (1994), *The Burra Charter* (2000), *Principle for the conservation of Heritage site in China* (2002) etc. A brief description is briefly presented below:

The *Venice Charter* (1964) uses the notion of conservation with reference to all scientific and technical procedures to investigate and safeguard architectural heritage.

The *Nara Document on Authenticity* (1994) relates conservation to efforts designed to understand cultural heritage, its history and meaning and to ensure its material safeguard and, as required, its presentation, restoration, and enhancement'.

The *Burra Charter of Australia ICOMOS* (2000) states that conservation involves the processes of 'looking after a place so as to retain its cultural significance which include its maintenance, preservation, restoration, reconstruction, adaptation, and interpretation.'

The *Principle for the Conservation of Heritage Site in China* (2002) explains that conservation refers to measures carried out to preserve the physical remains of the sites and their authenticity. The conservation process consists of protection, maintenance, technical interventions and management in order to preserve historic places and settings with the most authentic historical heritage values.

The *Indian National Trust for Art and Cultural Heritage or INTACH* (2004, Article 2) asserts that conservation is to maintain the significance of the architectural heritage or site which constitutes both tangible and intangible forms.

The *Hoi An Protocols of Vietnam* (UNESCO, 2003) points out that 'conservation refers to processes or activities needed to preserve the cultural significance, historic value, and extend physical life of heritage.

In summary, conservation of the tangible components of heritage such as historical places and monuments includes the protection and restoration of these objects; it also includes research, interpretation and presentation of these objects, which are designed to preserve their significant values - both physical and non-physical forms. In this study, the term 'conservation' refers to all procedures and processes aimed at preserving the 'heritage value' and 'original features' of heritage, with a focus on the conservation processes undertaken at the archaeological sites.

Another perspective of conservation that was applied in this study relates to the protection and management of natural resources in a living or natural environment. In general, conservation is the maintenance of the harmony between humankind and nature as well as the efficient use of natural resources without causing short-and long-term harm to the components and ecological processes of the natural environment.

Kotchaseeni (2009) states that conservation of the natural environment needs a set of well-managed procedures to protect the natural environment from any degradation, waste, or extinction. The conservation procedures may include, if appropriate, restoration, rehabilitation, and to a certain extent replacement of damaged or degraded ecosystems.

Jafari (2000, p.103) states that conservation is the management of various aspects of the environment such as air, water, soil, minerals and biological resources (i.e. plants and animals) to achieve the highest sustainable quality of life. The notion of conservation in the context of tourism is a dynamic process, subject to a wide range of interpretations, legislative frameworks, and public policies aimed at protecting the limited natural resources on Earth.

In summary, conservation with respect to the protection of the natural environment refers to the sustainable management of the physical and natural features of the environment. In nature-based tourism, conservation includes interpretation, restoration, and rehabilitation. Conservation approaches are best built on relevant laws and public policies.

1.2. Definitions of Heritage

There are several definitions of 'heritage'. They are gleaned from encyclopedias, experts' viewpoints, and international organizations' charters. Some of these definitions are summarized as follows: Collins Cobuild Encyclopedia (2001, p.734) specifies that heritage means 'all the qualities, traditions, or features of life that have continued over many years and have been passed on from one generation to another'. The Longman Corpus network book (1997, p.373) states that 'heritage means the traditional beliefs, values, customs of family or of the country'. The Cambridge Advanced Learners Dictionary (2003, p.588) states that 'heritage refers to the features belonging to the culture of a particular society as traditions, languages or buildings which still exist from the past and which have a historic importance'. The American Heritage Dictionary (2004, p.305) notes that 'heritage is property that is or can be inherited; heritage is something passed on from preceding generations. The Webster Dictionary (1999, p.667) describes

heritage as 'something handed down from one's ancestor or the past as a characteristic, a culture, tradition, etc. and it mostly means the property passed on to a later generation'.

As presented above, the encyclopedia/dictionaries generally define 'heritage' as properties with cultural and historic significance; they have values which may be passed down from one generation to another. Examples of these heritage expressions are tradition, culture, language, and ways of life.

From more technical perspectives such as the experts' points of view, the meaning of heritage can be understood from three different angles. The first set of theories points out that heritage is comprised of both tangible and intangible forms of natural and cultural features. Heritage represents the memory or identity of a place, which is passed down from one generation to the next. The experts' view focuses on the 'historical significance' of heritage properties (Ascherson 1994 cited in Burnett, 2001; Jaemison, 2006b; Ghosh, 2007). The second set of theories is espoused by those who argue that heritage should be valued both for its historical significance or importance for its current use values (Bella, 2000). The third set of theories pertains to the notion that heritage is comprised of both cultural and natural features and can be promoted through tourism in order to perpetuate values among visitors whose tourist experience can also be enhanced in the process (Bacheiner & Zins, 1999 cited in Burnett, 2001; Burnett, 2001; Prentice, 1993 cited in Sigala & Leslie, 2005; Timothy, 1997 cited in Fyall & Rakic, 2006; Fyall & Rakic, 2006).

International documents such as the *Burra Charter* (2000, p.4) say that 'heritage are cultural and natural environment in both physical object and non-physical object. Physical objects encompass landscapes, historical places, sites and built environments, including biodiversity. Non-physical objects refer to past and continuing cultural practices, knowledge and living experience. Both of them express long processes of historical development, forming the essence of diverse national, regional, indigenous and local identities and an integral part of modern life. It is considered a dynamic reference point and positive instrument for growth and change. The particular heritage

and collective memory of each locality or community is irreplaceable and an important foundation for development, both now and into the future’.

In conclusion, ‘heritage’ may be perceived as cultural and natural resources with significant values, and may represent the identity of a place. The significant values attached to heritage can be passed on from generation to generation through various mechanisms such as through cultural tourism or nature-based tourism.

1.3. Types of Heritage

There are two general types of heritage: cultural and natural. This section explains the differences between the two and the major elements that comprise each one.

1.3.1. Cultural Heritage

1.3.1.1. Concepts and Types of Cultural Heritage

Cultural heritage is generally defined in the context of ancient remains, cultural property, cultural asset, cultural resource, movable and immovable objects, and cultural environment. Various organizations at the national and international levels have expounded the meaning of cultural heritage. They are as follows:

The *Venice Charter* (1964) notes that ‘cultural heritage consists of the architectural work and its setting, which provides evidence of the existence of a particular civilization and significant developments or an historic event. This applies not only to great works of art but also to more modest works of the past, which have acquired cultural significance with the passing of time.

The *UNESCO Convention on World Heritage* (1972) states that ‘cultural heritage is not limited to material manifestations; it also encompasses living expressions and the traditions that countless groups and communities worldwide have inherited from their ancestors and transmit to their descendants, in most cases orally’.

The *New Zealand Conversation of Cultural Property* (1983 cited in Pearson, 1991) defines that ‘movable and immovable cultural properties are physical items or

the remains of items which provide evidence of human thoughts, activities and history’.

The *Nara Document on Authenticity* (1994) identifies that cultural heritage values exist in time and space, which demands respect for other cultures and all aspects of their belief systems. All cultures and societies are rooted in particular forms and means of tangible and intangible expressions. Conservation of cultural heritage in all its forms and historical periods is rooted in the values attributed to the heritage. Knowledge and understanding of these sources of information, in relation to original and subsequent characteristics of the cultural heritage and their meanings, is a requisite basis for assessing all aspects of authenticity.

The *Burra Charter* (2000) explains that ‘cultural heritage connotes a sense of place which has its own cultural significance values’.

The *Association of Southeast Asia Nations (ASEAN) Declaration on Cultural Heritage* (2000) declares that cultural heritage encompasses the significant values of structures and artifacts, sites and human habitats, oral or folk heritage, written heritage and popular cultural heritage’.

Some scholars wrote that ‘cultural heritage means an inheritance from the past which contains events, places and people (Taylor cited in Kovatthanakul, 2006). Cultural heritage is comprised of products of culture such as antiquities, artworks, ethnographic materials, monuments, sites, heritage buildings and historical urban areas which have their own values. They are irreplaceable, non-renewable, irreversible, rare and fragile (Costin, 1991; Lertrit, 2004a; Lertcharnit, 2008).

In essence, ‘cultural heritage’ means all cultural products comprised of both physical and non-physical objects, produced by humans living in the past and in the present. These products have significant values, rarity, and authenticity. They signify the identity of a place and are expressions of the relationships between human and nature.

Cultural heritage is comprised of both tangible and intangible expressions of culture. The *Convention Concerning the Protection of the World Cultural and*

Natural Heritage (UNESCO, 1972, Article 1) separates its discussions of culture into these two main categories. Brief presentations of these discussions are as follows:

Tangible heritage is comprised of physical objects which consist of monuments, groups of buildings, and sites.

-*Monuments* are architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science.

-*Groups of buildings* are the buildings, both separate and connected which because of their architecture, their homogeneity, or their place in the landscape, are of outstanding universal value from the point of view of history.

-*Sites* are works of man or the combined works of nature and man and areas including archaeological sites that have outstanding universal value from a historical, aesthetic, ethnological or anthropological point of view.

Intangible heritage has non-physical characteristics including the norms and behavior of a society which reflect the culture of particular groups of people in terms of artistic [expression](#), languages, spiritual and philosophical beliefs, social customs, and other aspects of human activity, knowledge and skills.

Likewise, the *Association of Southeast Asia Nations (ASEAN) Declaration on Cultural Heritage of (2000)* separates cultural heritage into six categories, namely (a) Significant cultural values and concepts; (b) Structures and artifacts: dwellings, buildings for worship, utility structures, works of visual arts, tools and implements that are of a historical, aesthetic, or scientific significance; and (c) Sites and human habitats: human creations or combined human creations and mature, archaeological sites and sites of living human communities that are of outstanding value from a historical, aesthetic, anthropological or ecological viewpoint, or, because of its natural features, of considerable importance as habitat for the cultural survival and identity of particular living traditions; (d) Oral or folk heritage: folkways, folklore, languages and literature, traditional arts and crafts, architecture, and the performing arts, games, indigenous

knowledge systems and practices, myths, customs and beliefs, rituals and other living traditions; (e) Written heritage; and (f) Popular cultural heritage: popular creativity in mass cultures (i.e. industrial or commercial cultures), popular forms of expression of outstanding aesthetic, anthropological and sociological values, including the music, dance, graphic arts, fashion, games and sports, industrial design, cinema, television, music video, video arts and cyber art in technologically-oriented urbanized communities.

On the other hand, the *Indian National Trust for Art and Cultural Heritage* (2004) supports the notion that heritage is both tangible and intangible. Accordingly, tangible heritage pertains to 'historic buildings of all periods, their setting in the historic precincts of the cities and their relationship to the natural environment'. It also includes culturally significant modern buildings and towns. On the other hand, intangible heritage includes the 'extant culture of traditional building skill and knowledge, rite and rituals, social life and lifestyles of the inhabitants, which together with the tangible heritage constitutes the living heritage' (INTACH, 2004, Article 2,p.4).

The *Hoi Protocols* (2005) divides 'cultural heritage' into five categories, namely: Cultural landscape; archaeological sites; historic urban sites and heritage groups; monuments, building and structures; and underwater cultural heritage

Some academic literature reports different categories of cultural heritage as a resource base. For example, King (2000 cited in Phaicharnchit, 2007, p.12) divides cultural resources into two types: (a) Physical environment: this relates to culture such as cultural landscape, built environment, historic properties, artifacts, documents/achieves. (b) Non-physical environment: this relates to ways of life, norms, values, beliefs, religious, pattern of social interaction, standard of practices or organization.

Phaicharnchit (2007), a Thai expert on cultural resources management, divides cultural heritage into three general categories. These are (a) archaeological resources; (b) indigenous wisdom; and (c) expressive culture such as arts, literature, music, plays, performances, myths, tales, customs, tradition, beliefs, and rites. The main concepts of the types of heritage are illustrated in Figure.5.

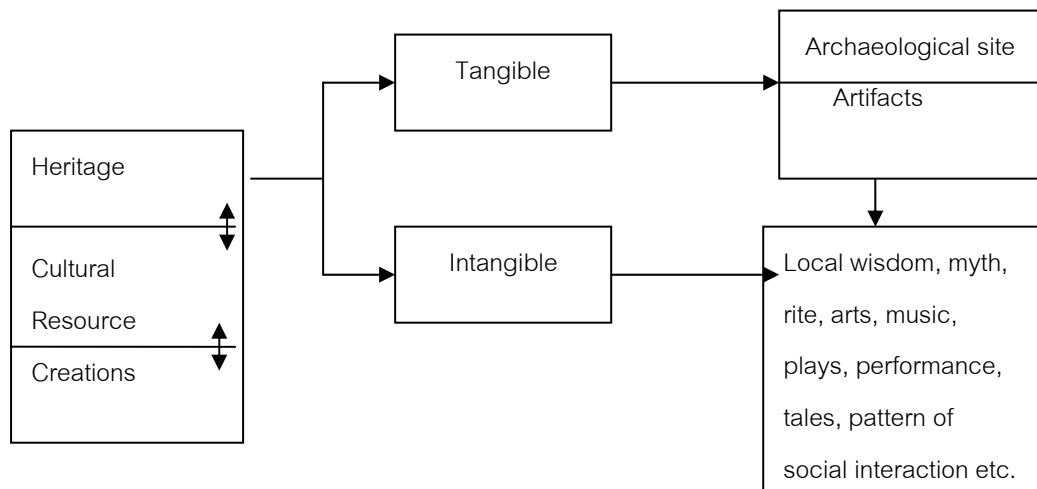


Figure 5: Types of Cultural Heritage

Source: Phaicharnchit, 2007, p. 18

Lertcharnrit (2008), an archaeologist, affirms that cultural heritage may be divided into several criteria according to (a) discipline: this refers to any area of study which concerns architecture, archeology, ethnography; (b) level of management: it refers to local, indigenous, national and world cultures; (c) ownership: it divides the property into private or public; and (d) UNESCO's criteria: it distinguishes tangible from intangible heritage.

Other authors divide cultural heritage into two types: material and immaterial forms. Material forms include artefacts, monuments, historical remains, buildings, and architecture. Immaterial forms include philosophy, traditions, celebrations, historic events, and distinctive ways of life, literature, folklore or education (Nuryanti, 1996 cited in Wechtunyagul, 2008, p.11)

In summary, cultural heritage is defined in terms of its two main categories: tangible and intangible (or by another name, 'physical forms' and 'non-physical forms' or 'material and immaterial'). Tangible heritage encompasses architectural works (a group of buildings or separately built), archaeology (monument and sites), landscape (setting) and other physical objects. Intangible heritage encompasses the ideas, myths, indigenous wisdom, rituals, rites, music, language and philosophy, including religious

beliefs. All of them provide significant values at local, regional, national, and international levels; and they can enhance cultural pride and identity.

1.3.1.2. Significant Values of Cultural Heritage

The significance and values of cultural heritage have been discussed by a few international organizations. They are as follow:

The *Nara Document on Authenticity* (1994) states that cultural heritage are valuable if they have integrity and authenticity. Heritage should also have cultural, social, and informational importance regardless of whether they are tangible or intangible.

The *Burra Charter* (2000) refers to culturally significant values as those wherein heritage, such as a place, is aesthetic and historic. The place should have scientific and social significance and, more importantly, should be able to convey a 'sense of place'. *The Burra Charter* expresses four generic values: historical, aesthetic, scientific, and social values.

The *NSW Heritage Office* (2001) of Australia's New South Wales State notes that all cultural and natural heritage places should demonstrate heritage significance both at the state and local levels. And the criteria of significant values should be based on those notions.

The *Principle for the Conservation of Heritage site in China* (2002) affirms that cultural heritage should have historical, artistic and scientific significance.

The *Hoi An Protocols* (UNESCO,2003,Article.1.2) states that the significant aspects of cultural heritage based on their authenticity and originality hold aesthetic, historic, scientific, social, or spiritual value for past, present and future generations.

The *ICOMOS Thailand Charter* (cited in Vajvisut, 2006) states that culturally significant heritage is of different types namely, social, associated, indicative, spiritual, historical, innovation, scientific, authentic, interpretative, aesthetic , and economic. Most, if not all, of these values are priceless.

Pungsoontorn et al. (2006) also agree that the values associated to cultural heritage may be grouped into several categories, namely, aesthetic, rarity and

uniqueness, spiritual, historic, scientific, social, economic, contemporary functional, and educational.

The *Silpakorn Charter* (cited in Kovathanakul, 2006) agrees that heritage convey aesthetic, historical, scientific, and social significance, which are expressed or interpretative in Thai context and authenticity.

In conclusion, significance values are social constructs which individuals and organizations place on cultural properties and natural features. They can have tangible and intangible values. These values are based on authenticity, integrity, and a sense of place. They also represent the relationships between human and nature in the past and in the present. It is essential to enhance the significant values of cultural heritage and to ensure that original conditions and authenticity of tangible and non-tangible assets are maintained for as long as possible for the present and future generations.

1.3.1.3. Significant Values of Archaeological Sites

As this study focuses on an archaeological site (Sap Champa Archaeological Site) that has significant cultural heritage value, a literature review on the significance of archaeological sites, in general, is presented here.

Lipe (1984) wrote that the values of an archaeological site may be considered an associative/symbolic value. It has also informative, aesthetic, and economic value. Costin (1991) elaborates that the symbolic value of archaeological site provides public awareness and cultural pride and identity. The author also says that an archaeological site has historic value because it tells stories of past civilizations; that it has valuable information about ancient cultures, which can be used to educate the public and enhance scholarly research; and that it has aesthetic value because it offers viewers a pleasant and emotional experience leading to personal enhancement and development. Finally, Costin (1991) states that archaeological site has economic value because it can help generate, through tourism, local, national, and international employments and revenues.

Mason & Avarani (2002) agree that the heritage values of archaeological sites as being historic and artistic, social or civic, spiritual or religious, and symbolic. It has also research, natural, and economic values.

Lertcharnrit (2008) explains that archaeological value has many dimensions, such as symbolic, informative, aesthetic, economic, and spiritual. The other sets of values are categorized as market value, community value, political value, archaeological value, minority value. All these values should be maintained and enhanced for the present and future generations.

In conclusion, the significant values of archaeological sites can be grouped into various categories, such as historical, research, uniqueness, symbolic, economic, and commercial. These values can be translated into monetary and non-monetary benefits. The values attached to heritage enhance the pride and identity of a particular community at a given place; promote local economy, and increase public awareness on conservation. Through cultural tourism, archeological sites can offer numerous benefits to humanity for a long period of time but only for as long as they are properly preserved, conserved, and managed.

1.3.1.4. Archaeological Heritage and Conservation

As mentioned above, recognition of the significant values of cultural heritage is necessary for long-term conservation. The significant values of archaeological sites can be sustained through protection, restoration, interpretation, and appropriate presentations. Conservation is not limited to preservation; it also includes the use of historical information, for instance, to meet the educational and research needs of the present generation. Cultural tourism, as tool to help conserve archeological sites, should be done in a holistic and adaptive fashion.

There is another point of view about the manner of conserving archaeological sites.

Lertcharnrit (2008) explains that conservation and management of archaeological resources should take into account the following factors: (a) protection of cultural heritage for long term use and for the future generations; (b) reducing or

minimizing the causes of deterioration of cultural heritage; (c) involvement of the local communities in conservation efforts; and (e) formation of global alliances or partnerships with relevant stakeholders who share common conservation goals.

As this study attempts to contribute to a better understanding of the significant values of archaeological site, the perceived values of the study site by the local community are articulated in a separate chapter.

1.3.2. Natural Heritage

1.3.2.1. Concepts and Types of Natural Heritage

Natural heritage has a range of meanings. In general, it refers to natural or living resources and the physical environment that supports their existence. The discussions below provide a brief explanation.

According to the *Convention Concerning the Protection of the World Cultural and Natural Heritage* (UNESCO, 1972, Article 2), natural heritage consists of biological features, including geological and physiographical formations. For the purpose of conserving and managing natural resources, UNESCO (1972, Article 2) divides natural resources in three groups or types. These are: (a) Natural features: this grouping consists of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; (b) Geological and physiographical formations: this grouping consists of precisely delineated areas which constitute the habitats of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; (c) Natural sites: these are precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

The *Australian Heritage Commission and the Department of Industry* (2001) notes that 'natural heritage consists of ecosystems, biodiversity and geodiversity considered significant for their existence value for present and future generations in terms of their scientific, social, aesthetic and life support value'

ICOMOS (2000 cited in Suravanichakit, 2009,p.51) reiterated the above definitions by stating that natural heritage 'consists of ecosystems, biodiversity, and

geodiversity, which is considered for the existing value of present and future generations in terms of their scientific, social, aesthetic, and life support values.

The *Australia Natural Heritage Charter* (2003, as cited in Wechtunyagul, 2008, p. 20) also re-affirms the above definition by stating that natural heritage includes natural ecosystems and landscapes considered worthy of conservation. The information about their existence value or their importance in sustaining life and culture is transmitted to the present and future generations.

The *Department of Conservation and Recreation's Division of Natural Heritage* (DCR, 2010), which is responsible for Virginia's (located in the United States of America) natural heritage resources, states that natural heritage resources are comprised of habitats of plant and animal species including rare and endemic ones as well as the ecologically significant communities and geologic features found in an area.

The academic literature on natural heritage has a range of definitions of natural heritage. For example, Collins (1999 as cited in Wechtunyagul, 2008, p. 20) notes that natural heritage includes animals, plants, and other things in the world that are not made by people. It is composed of biological entities and processes that are not man-made.

Nuryanti (1996, cited in Wechtunyagul, 2008, p.11) states that natural heritage includes landscapes, gardens, parks, wilderness, mountains, rivers, islands, flora, and fauna.

Mill, Gale, & Brown (2000) point out that a natural resource is the environment surrounding human beings. It consists of renewable and non-renewable materials such as timber, fishes, water, wildlife, and minerals. These natural resources have numerous benefits for human beings, notably recreational, economic, historical, aesthetic, and scientific values.

Fennell (2003, p.40) indicates that natural resources in the context of management are subjective. This means that the differentiation of natural resources is a social construct, which is usually based on their perceived physical appearances and functions. Hence, natural resources can be separated into seven categories:

geographic location, climate and weather, water, vegetable, topography and landforms, surface materials, and fauna.

Mason (2005) notes that natural environment includes landscape, rivers, rock outcrops, beaches, plants and animals.

To summarize, natural heritage refers to all aspects of the natural environment such as water, rocks, landscape, climate, biology, ecosystems, geo diversity, flower and fauna, which are occurring naturally. The different features of nature interact with each other to form a unified whole, often referred to as 'ecosystem' or 'ecological system' (i.e. rainforest, wetlands, and deserts). For management purposes, natural heritage are grouped into natural sites, natural features, geological and physiographical formations. All of which offer a range of significant values for aesthetic, recreational, educational, and scientific purposes.

1.3.2.2. Significant Values of Natural heritage

Because of the significance of natural resources to humans as life support as well as for scientific, aesthetic, social, and cultural purposes, it is necessary to conserve and manage them. According to Catibog Sinha and Heaney (2006), the perceived values of natural heritage influence the way humans treat nature and how they are utilized and for what purpose, as shown in Table.1.

Table.1. Basic values of nature

Types of basic values	Explanation	Examples
Utilitarian	Obtaining material benefits from nature to fulfill human Needs and desire.	Food, water, clothing, medicines, tools, implements, and other products.
Naturalistic	Obtaining pleasure and satisfaction from direct experience of nature and wildlife	Nature-based recreation, visiting zoos and parks, etc.
Ecologistic Scientific	Gaining knowledge about biological and physical components and nature/biodiversity along with their functions and processes; usually focused on wildlife (plants and animals) and their ecological roles in nature	Research, nature exploration, systematic studies in the field and laboratory, and learning about natural history
Aesthetic	Obtaining a feeling of pleasure, awe, and harmony from the beauty of nature, life, and diversity	Viewing landscapes, seascapes, and open panorama; appreciation of wildlife usually large, colorful, mobile, and diurnal animals as well as large, colorful, and aromatic plants
Symbolic	Using nature to express or communicate one's ideas, thoughts, emotional, and aspirations	Language, stories, myths, fairy tails, poems, marketing, and educational interpretations; Anthropomorphism (humans disguised as animals) in children's stories

Table.1. Basic values of nature (continue)

Type of basic values	Explanation	Examples
Dominionistic	Control, mastery, and over-exploitation of nature and natural resources.	Wildlife exploitation; fishing, hunting, and gathering; destruction of predators; reliance on modern technology to harness natural resource and solve problems
Humanistic	Developing bonding, intimacy, and companionship with individual animals or single species; can improve human capacity to care, love, bond, and cooperate with other human beings.	Domesticated pets and companion animals
Moralistic	Finding spirituality in nature and using it as a guide to human conduct; associated with the ethical treatment of animals and non-human life.	Tribal beliefs of the ethical reciprocity between human action and nature; traditional linkage between people and nature; holistic view of nature; connectivity of life
Negativistic	Avoiding or disliking elements in nature that are life-threatening or those perceived as being ugly, dangerous, or scary.	Storms, dangerous sharks and snakes, crocodiles, insect pets, swamps, dark caves

Sources: Kellert 1996 cited in Catibog-Sinha & Heaney, 2006, p.305

As shown in Table 2.1, nature has numerous values which influence human beings in either the positive or negative way. Recognizing the values of nature is essential to appreciate the fact that the protection and proper management of nature are essential for all life forms on Earth including human lives. However, natural resources are not inexhaustible and, therefore, over-consumption and unsustainable use of resources can lead to the extinction of many species and degradation of natural ecosystems.

1.3.2.3. Significance of Forests and Their Biodiversity

In relation to the study of Cham Pi Sirindhorn Forest (CPSF) in this research, the significance of forests and forest diversity is elaborated below.

In general, biodiversity refers to the variety of living organisms at the genetic, species, and ecosystem levels. It pertains to the diversity of life found on the surface of the Earth and those under the seas and deep oceans. Healthy biodiversity is essential for human well-being, sustainable development, and poverty reduction (Audesirk, Audesirk & Byers, 2009; DCR, 2007; IUCN, 2010; Convention on Biodiversity Diversity (CBD), Article 2 cited in TEEB, 2009).

Ehrlich and Ehrlich (1992 cited in Fennell, 2002, p.36) state that biodiversity, including those found in forests, has values, which can be divided into four categories: (a) ethic value: this pertains to man's responsibility to be custodians or stewards of the land; (b) aesthetic value: this pertains to the beauty of nature, which supports the tourism industry and one's connectivity with nature; (c) direct economic value: this means that nature provides plants foods, medicines, and other marketable resources; (d) indirect economic value: this pertains to the ability of nature to provide benefits to humans even though it does not have immediate or direct economic worth. According to Mader (2009), biodiversity values offer both direct value (i.e. medicinal value, agricultural value, consumptive value) and indirect value (i.e. waste disposal, provision of fresh water, soil erosion prevention, climate regulation, and recreation).

Brennan and Withgott (2005) re-affirm the many benefits of forest biodiversity in addition to providing valuable ecosystem services, enhancing food security, and

providing traditional medicines. Biodiversity also provides economic benefits through recreation and tourism as many tourists find the diversity of nature interesting and worth admiring. As such biodiversity creates an incentive for the tourism industry to conserve forests and reduce tourism impacts at natural destinations. More specifically, biodiversity guarantees humanity's security, health, social relationships, resiliency, and freedom of choices and actions (MEA, 2005a).

According to the *Millennium Ecosystem Assessment* or *MEA Report of the United Nations* (2005), forests are important natural heritage; they are the home of numerous plants and animals. The tropical rainforest is considered the richest ecosystem on Earth, containing the most diverse types of biota (Lovejoy, 1997).

In brief, the biodiversity of the forest has benefits for human beings; it has direct and indirect values which benefit human beings, their livelihoods and quality of life. Also, biodiversity brings revenue at the local, national and international levels through recreation to support conservation activities and livelihoods. Maintaining the healthy biodiversity of the forest for the long run is, therefore, necessary.

The tropical forest ecosystem is a component of biodiversity. Ecosystem is defined as being a dynamic complex of living communities of plants, animals, and micro-organisms interacting with the non-living environment (or 'abiotic' components) such as soil, water, air (Catibog-Sinha & Heaney 2006; DCR, 2007; CBD, Article 2 cited in TEEB, 2009). Ecosystems, both terrestrial and aquatic, produce the essential goods and services essential for life on this earth. Ecosystem goods are the products of the ecosystem such as food, fiber, air, fuel, and medicines, while ecosystem services refer to all ecological processes that serve as the engine of life on Earth.

The numerous ecosystem goods and services provided by different types of ecosystems are shown in Figure.6. These goods and services are provided by the biodiversity components of mountains, forests, inland waterways, dry land, the marine environment etc.

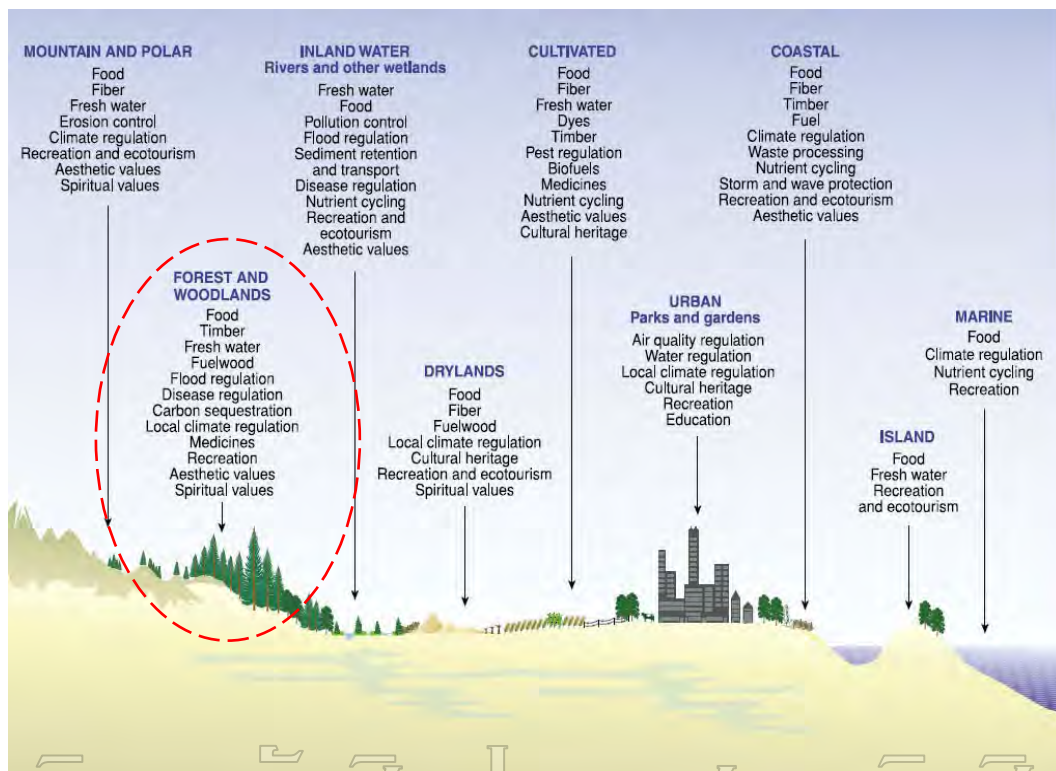


Figure.6. Ecosystem services of forest. Source: MEA, 2005b,p.6

The forests, as shown in Figure.6, provide goods such as food, fuel, wood, and medicine as well as the resource base for tourism and recreation. The services offered by forest ecosystem include flood regulation, carbon sequestration, and recreation. Table.2 enumerates the key *ecosystem goods and services* from forests.

Table.2. Example of ecosystem goods and services from forests.

Ecosystem goods	Ecosystem service
-Food source	- Production Food
-Water for drinking ,irrigation, and industry	-Maintaining the ground water recharge and the hydrological cycle, preventing floods and droughts
-Medicinal materials	-Regulating climate
-Fuel and energy	-Maintaining the gaseous components of the atmosphere
-Minerals	-Cleaning water and air
-Construction materials	-Pollinating crops and other plants
-Clothing and shelter	-Sustaining soil productivity and fertility
-Fresh air	-Storing and cycling of essential nutrients
-Companion animal and plants	-Decomposition of organic waste
-Genetic resources.	-Providing site for education, recreation, tourism, and research,

Source: Catibog-Sinha & Heaney, 2006, p.308

Furthermore, MEA (2005a cited in TEEB, 2009; SCBD, 2009) notes that the functions of the forest can be divided into four elements. These are: (a) provision of goods (i.e. food, fuel, freshwater, genetic resources); (b) regulation of ecological services (i.e. local climate regulation, flood regulation, disease regulation, water regulation, pollination, pest regulation, erosion regulation, water purification; (c) cultural service (i.e. recreation, aesthetic enjoyment, tourism, cultural heritage, knowledge system, education, spiritual and religious values); and (d) supporting service (i.e. soil formation, nutrient cycling, photosynthesis, carbon sequestration, primary production).

Audesirk, Audesirk and Byers (2009) also gave very good examples of the ecosystem goods and services from forests. The ecosystem goods include wood for housing and furniture materials; plants for food and traditional medicine; and animals for

food and farm help. The ecosystem services from forests include soil formation, flood control, climate regulation, genetic resources, and recreation. These ecosystem services are essential to people's quality of life.

The inter-relationships among biodiversity, ecosystems and human well-beings are summarized in Figure.7.

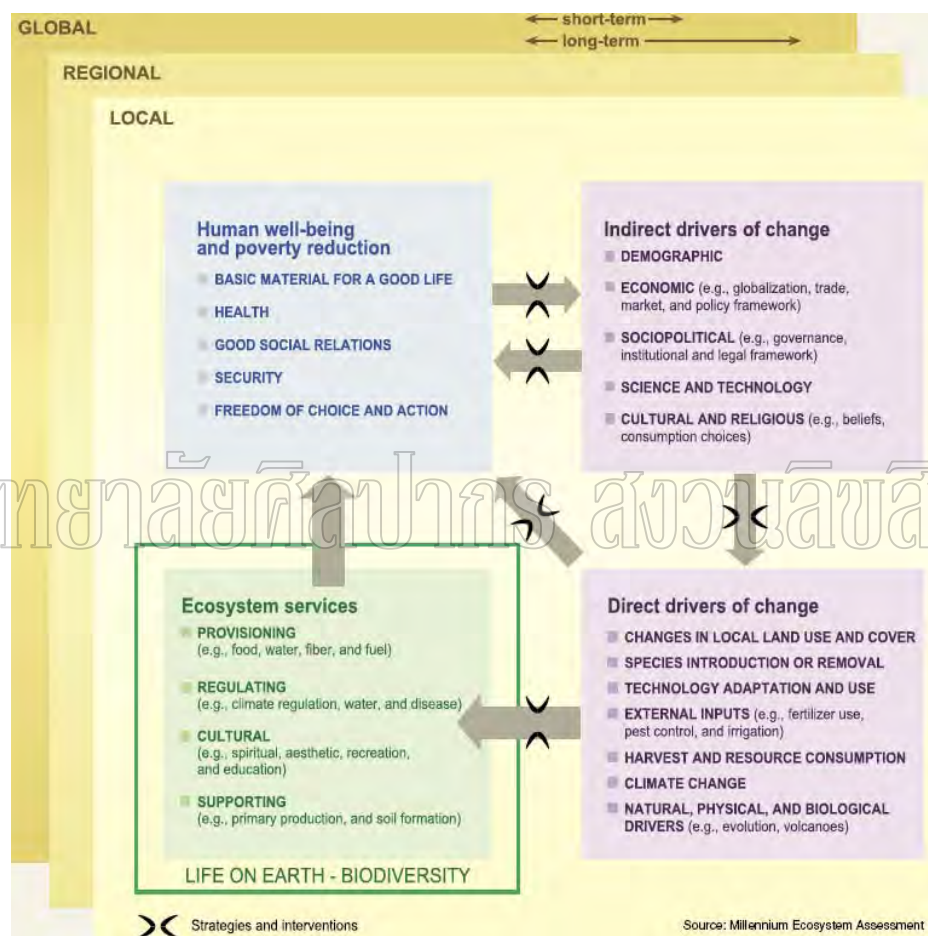


Figure.7: The pathway from ecosystem to human well-being. Source: MEA, 2005a, p.5

As mentioned above, forest resources offer humans direct and indirect benefits, one of which is providing the resource base for nature tourism. Unfortunately, all types of forests have been destroyed, one way or the other and to a certain extent, at various phases of human civilization. As shown in Figure.7, the drivers of change can be both direct and indirect. Examples of direct drivers of change that affect the integrity of forests are habitat destruction, land conversion for agriculture and development, illegal

settlement, illegal hunting, pollution, introduction of diseases, spread of invasive species, population growth, overexploitation, global warming, (MEA, 2005; Brennan & Withgott, 2005; Catibog-Sinha & Heaney, 2006; Mader, 2009; Audesirk, Audesirk & Byers, 2009; SCBD, 2009; IUCN, 2010). The indirect drivers of change that can cause havoc to forests are increasing human population, absence of appropriate policies and regulations needed to protect and sustainably managed forest resources, as well as the introduction of modern technologies that utilize forest resources carelessly to the point that forests are no longer able to regenerate and replenish themselves.

1.3.2.4. Conservation of Forest Biodiversity and Ecosystem

As mentioned above, human beings gain many benefits from the forest biodiversity components including its various ecosystem types, particularly forests. Thus, preservation of healthy biodiversity is essential in maintaining ecosystem services and production of ecosystem goods so that the option values of biodiversity can also be enjoyed by the future generations (MEA, 2005a). However, deforestation is the main cause of biodiversity loss, wherein 40% of the Earth's total land area has already been degraded in the last fifty years, and the rate of species loss is expected to get worse as the climate changes (TEEB, 2009).

It is necessary to conserve biodiversity, in particular tropical rainforest, which contains the highest diversity of land life, to secure the entire life support systems including human beings. Countries all over the world, including Thailand, are urged to implement conservation programs as well as enforce regulations to conserve biodiversity. Conservation of forest biodiversity should be a prerequisite to long-term solution and maintaining ecosystems services while making them more accessible to human beings (SCBD, 2009).

1.4. Linkage between Cultural and Natural Heritage

Culture and nature are inter-related. Many traditional or indigenous communities worldwide have close connections with nature. They depend on forest resources not only for economic subsistence but also to practice their customs and

traditions. Many of the religious and cultural rituals of local peoples depend on forest resources. Weaver and Lawton (2007, p. 1170) state “that centuries of co-existence between indigenous people and their surroundings have profoundly blurred the boundaries between the natural environment and culture”. However, this inter-dependence can be broken if the forest is destroyed. Subsequently, heritage culture can disappear as well.

Human culture, in general, is influenced by the environment. In contemporary world, culture is being developed rapidly and it continues to evolve depending on the nature of the surroundings. The natural assets and the way they are used directly and indirectly affect people’s culture. Likewise, human activities affect, directly and indirectly, the surrounding natural environment. Human activities can cause both positive and negative impacts on nature. Archeological evidence shows the connectivity between nature and culture since time memorial. Ancient civilization had survived well and for a long period of time when their forests are intact. The degradation of the forests has caused the collapse of many ancient civilizations.

It can be concluded that natural heritage influences cultural heritage; they are closely linked and inseparable (Nuryanti, 1996 cited in Wechtunyagul, 2008, p.11). In the context of this study, the relationships between the ancient forest and the ancient city, as exhibited by the archaeological site studied in this research, are consistent with the notion that culture and nature are inter-related. The conservation of the archeological site and the adjacent nearby forest (a remnant of the original forest, which is perhaps similar or the same as the ancient forest) serves as a reminder of the connectivity of nature and culture. From the tourism and archeological point of view, conservation should take into account the integrations of the economic, socio-cultural, environmental, as well as political factors. This holistic approach to conservation and management is proven to be useful in the sustainability of human development (see Figure.8).

The integration of the environmental, economic, and socio-cultural factors is significant in regards to the enhancement of livelihoods for people and in maintaining the cultural values which people hold (Brown,Durst,&Enters,2005).

Likewise, the conservation of any archaeological site should not only consider the physical artifacts, but also consider other natural aspects and their tangible and intangible values.

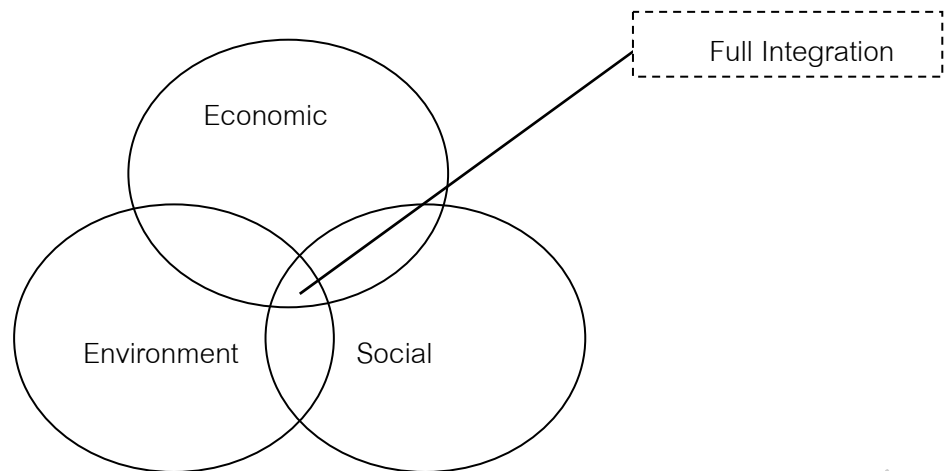


Figure.8. Merging factors for conservation and sustainable use of the heritage sites

Source: Catibog-Sinha & Heaney, 2006, p.21

2. Sustainable Tourism and Heritage

This section discusses the concept of sustainable tourism, a form of sustainable development. Some of the key approaches used to meet the objectives of sustainable tourism management are presented.

2.1. Concepts of Sustainable Tourism

The notion of 'sustainable tourism' had its roots at the World Commission on Environment and Development (WCED, 1987) when governments around the world were debating on the notion of sustainable development. The notion of sustainable tourism was endorsed only during the World Summit on Sustainable Development held in Johannesburg (WSSD, 2002). During the Summit, nations agreed that tourism is a form of development, which should be managed sustainably for the present and future generations.

The WCED reiterates that sustainable development is a tool to reduce human impacts on natural resources and to halt ecosystem deterioration, including global warming. It also emphasizes the preservation of environmental resources and the equitable sharing of the benefits arising from their uses. The definition of sustainable development was published in *Our Common Future Report* also known as *the Brundtland Report* (WCED,1987). The Report emphasizes the effects of rapid economic growth and acceleration of human disturbances on the natural environment to the detriment of human society. Sustainable development is seen as an effective tool in maintaining biodiversity, enhancing community participation in the management of the environment, promoting economic and social equity, and creating international support and alliances for conservation and development (Swarbrooke,1999). Church and McHary (2000) support the idea that sustainable development should aim to protect and improve environmental resources, to ensure economic security for everyone, and to create an equitable society.

Tourism is a form of development that utilizes natural resources. The tourism industry needs various kinds of natural and cultural resources to become economically viable. However, unregulated tourism practices in particular those exhibited by mass tourists can cause irreparable damage to natural and cultural destinations. To promote sustainability, the concept of sustainable tourism was introduced as an alternative way to mass tourism and for the tourism industry to find better ways to minimize the negative impacts of tourism (Cole, 2006). A popular way to promote sustainable tourism as an alternative way of doing business is reflected in the slogan 'traveling more friendly with the natural resources'. It is expected that the tourism industry would be more environmentally responsible by ensuring that the very resources that the industry is dependent upon are maintained and protected.

To fully appreciate the notion and implications of sustainable tourism, this section presents the various ways this concept has been defined in the literature.

The term of 'sustainable tourism' is also referred to as 'green tourism', 'soft tourism', 'eco-tourism', 'bio-tourism', 'nature-based tourism', and 'alternative

tourism' (Weaver, 2001). All these terms connote the idea of sustainability and better treatment of the environment at the destinations. Examples of the definitions and points of view of sustainable tourism are as follows:

The *World Tourism Organization* (cited in UN, 2003, p.12) defines sustainable tourism as 'meeting the needs of the present tourists and host regions while protecting and enhancing opportunities for the future'. This means that tourism management should be able to meet the economic, social and aesthetic needs of relevant stakeholders (both tourists and host residents) while ensuring that the cultural integrity, essential ecological processes, biodiversity, and life support systems at the destinations are maintained.

Font and Carey (2005) wrote that sustainable tourism means to use the resources in an environmentally responsible, socially fair and economically viable way. It should be able to meet the needs of the present generations without compromising the ability of the future generations to meet their own needs. They further wrote that there should be a balance between local expectations and best practice in environment management and modern living.

Moreover, some studies note that sustainable tourism also refers to the management of the environmental, economic, political, and socio-cultural aspects of development. These dimensions should be balanced and compliment each other in order to achieve long-term sustainability. Furthermore, sustainable tourism requires the participation of relevant stakeholders as well as maintaining tourist satisfaction while raising the visitors' awareness of sustainability issues (Charoenwongsa, 2004).

Some studies have recommended that sustainable tourism should focus on community-based, economic, and cultural sustainability as well as the participation and education of major stakeholders (Aronsson, 2000; Murphy & Price, 2005). It was further emphasized that sustainable tourism, as an effective tool in improving the standard of living of the local community, should ensure local participation, equitable sharing of community benefits, protection of local cultural identity, and the preservation of the natural environment (Taotong, 2004, p.5).

2.1.1. Sustainable tourism management

Sustainable tourism management is perceived in various ways. Charoenwongsa (2004) states that sustainable tourism management is anchored on three main factors, namely protection of the heritage site, conservation of items of cultural significance, and wise use of man-made and natural resources. To minimize visitor impacts, tourism management should regulate the volume of tourists using the area and ensure that visitation does not exceed the carrying capacity of the destination (Weaver & Oppermann, 2000). Carrying capacity also refers to the tolerance level of host residents and the visitors themselves in relation to tourism impacts

Chaiyakhot (2004, p.105) notes that the sound use and wise consumption of resources by the tourism industry should be the top priority in achieving sustainability. Leslie (2005) suggests that sustainable tourism management should be sensitive to the conditions of the destination not only as a natural heritage destination but also as a cultural heritage destination.

Zimmermann (2006) states that nurturing the positive attitudes of residents are key factors in achieving sustainable tourism management. Effective management also requires spatial planning, community participation, monitoring and evaluation, and impact reduction by creating strategic actions with clear goals and objectives (Coccossis, 2005). Sustainable management of both natural and cultural heritage sites should aim to educate local communities and tourists in order to prevent exploitation of natural resources and the deterioration of the local uniqueness of tourist attractions. Relevant stakeholders must take extra care to preserve indigenous cultures and fragile environments because heritage is not replaceable (Buranasomphop, 2006). Table.3 gives a summary of the principles of sustainable tourism management gleaned from the literature.

Table.3: Principles of sustainable tourism management.

Management aspect	General principles
Participation of stakeholders	Stakeholders, particularly local communities, should fully participate and work together in all aspects of tourism development in order to avoid conflicts and to bring benefits to all involved.
Tourism planning and management	Tourism planning and management should be established at all levels based on international standards; they should be able to address and manage the negative impacts of visitors on the natural, social, and cultural resources of the destinations, and to ensure inter- and intra- generational equity. Activities and uses should be planned and managed with the goal of maintaining high-quality tourism, conservation and sustainability. Impact assessment is essential to ensure that any proposed tourism development project does not harm the destinations; it should be an integral part of any tourism development planning. Research should be undertaken at all stages of tourism development for monitoring purposes and to adapt ways for improvement
Local ownership and network of business	Tourism should support a wide range of best tourism practices such as the use of local products, empowerment of local people so that they can own and run their own tourism business, and provision of better employment opportunities. A network of local businesses and tourism stakeholders should be created to improve partnerships and to ensure that the revenue from tourism is distributed equitably

Table.3: Principles of sustainable tourism management. (continue.)

Management aspect	General principles
Education and Training	Education should be provided to relevant stakeholders to raise their awareness of the value of natural and cultural resource and their proper management Training programs should be provided to enhance the tourism industry and the professional skills of staff.
Behavioral change	All relevant stakeholders should develop personal attitudes that show respect for the environment and culture of the destination area and the local residents.

Source: Modified from United Nations, 2003; Sharpley, 2005; Jamieson, 2006a

2.1.2. Approaches to Sustainable Tourism Management

There are various ways to implement sustainable tourism management. They are discussed below.

William and Shaw (1992 cited in Laws, 2001) claim that there two ways of promoting sustainable tourism management. One is through tourism marketing, which involves the development of tourism attractions and facilities at a particular destination. The second is through societal marketing approach, which focuses on promotion of tourism as a money-generating activity but exhibiting respect and protection of culture and the environment and in consultation with the host community.

Murphy (cited in Murphy & Price, 2005) introduces an ecological approach, which takes into consideration the ecological functions of destinations in conjunction with the dependence of the local community on natural resources and ecological processes for survival and livelihoods. Saarinen (cited in Holden, 2008, p.161) suggests three approaches to sustainable tourism management. The first approach is resource-based by focusing on the protection of nature and culture; it is based on the notion of carrying capacity in tourism impact assessment. The second approach is activity-based, which aims to sustain capital investment in the tourism industry

by managing tourism activities. The third approach is community-based, which focuses on the participation of relevant stakeholders, especially the host community.

To summarize, the concept of sustainable tourism is generally based on the concept of sustainable development, which was formulated by World Commission on Environmental Development. The notion of sustainable tourism aims to reduce the negative impacts of tourism on natural and cultural resources. It is regarded as an alternative way to running the tourism industry, which is expected to be more responsible and sensitive to the natural, social and cultural elements of destinations. Sustainable tourism management can contribute to better tourist satisfaction and experiences while at the same time raising their awareness about the conservation of natural and cultural resources. Sustainable tourism management ensures that the cultural and natural resources are protected from mass tourism. Sustainable tourism can be achieved with the full participation of the local communities and other stakeholders in planning and management of tourism and the preservation of heritage resources. Sustainable tourism management should consider an holistic and sustainable way, requiring the participation of all relevant stakeholders, particularly the local community, in decision-making and tourism planning.

2.1.3. Sustainable Tourism and relevant stakeholders

Tourism is a complex industry that encompasses a range of stakeholders who have each his/her own objectives and interests. These objectives and interests are not necessarily consistent among stakeholders because individuals have each different ways of looking at things. As a result, social conflicts arise. In the context of sustainable tourism development, it is important to emphasize the needs and perspectives of relevant stakeholders to balance their interests with those of the tourism industry.

The relevant stakeholders in tourism include the private and public sectors. More specifically, stakeholders belong to various levels of government, international aid agencies, and non-government organizations, and the media. The stakeholders also include individuals and groups from the volunteer sector and the host communities (Swarbrooke, 1999; UN, 2003). The major stakeholders, who have direct stake in tourism,

are the local communities and tourists themselves because they are immediately affected by tourism activities. Many of them are seriously concerned with the conservation of the heritage sites (Millar, 2006).

Relevant stakeholders should fully participate in tourism development, strategic planning, and implementation that are guided by the integrating principles of sustainable tourism wherein environmental, economic, and socio-cultural aspects of tourism development are taken into account to prevent irreversible impacts (Wall, 2006). Sustainable tourism can also help improve the quality of life and economy of the local community by providing them education and training opportunities so as to improve their abilities to participate in tourism management and to raise their awareness about the value of conserving the natural and cultural assets of tourist destinations.

3. Community Participation in Sustainable Tourism

This section focuses on the importance of community participation and involvement in sustaining tourism in any destination site. Several case studies depicting the success of tourism at some archaeological and forest sites in Thailand and overseas are presented. The genuine and wholesome participation of the community and the cooperation of relevant stakeholders at all stages of tourism development are essential in sustainable tourism. However, community participation in tourism is not the solution of all community problems.

3.1. Community Participation

The importance of public participation was emphasized during the United Nation Conferences on the Environment and Development at Rio de Janeiro in 1992, stating that 'sustainable development needs active collaboration between governments, private sector, and the public' (Zimmermann, 2006, p.115). Public participation aims to build the capacity of local communities and improve their ability to manage and influence the outcome of development. It also aims to reconcile economic development with the broader interests of the host community and the potential effects of tourism on the community's environment. Stakeholders should be consulted on matters affecting

them (Zimmermann, 2006). Given that tourism directly affects local communities, it makes sense to involve them in all aspects of the planning process as well as in the implementation of tourism management plan.

3.2. Community-based Tourism

Community-based tourism involves the full participation of the members of the community in planning and decision-making to ensure that they too can benefit from tourism (Suansri, 2003). The benefits of tourism can support the economic, socio-cultural, and environmental needs and aspirations of the local community. The primary economic reason for community participation in tourism is usually to provide local employments so as to improve their economic situation. The socio-cultural reasons may pertain to the sharing of cultural experiences between the host community and tourists, whereas the environmental purposes refer to the preservation of heritage resources (Empan, 2007). Community-based tourism is considered a tool to reduce the poverty in many developing countries (UNEP, 2003; Pro-poor Tourism Partnerships, 2009) and to bring about the conservation and the sustainable use of the local heritage (Piadaeng,2006).

3.2.1. Case Studies of Community-Based Tourism at Archaeological Sites in Thailand and Other Countries

This section discusses some of the case studies on community-based tourism at several destinations in Thailand and overseas, with emphasis on their archaeological attributes.

3.2.1.1. Klong Khwang Archaeological Site(คลองขวง), Thailand

The tourism development at Klong Khwang community, located in Nakorn Ratchasima province in northeastern Thailand, was explored by Sunalai (2006). It is a good example of promoting community-based tourism in the Asia Pacific (UNEP, 2003). This project was managed by the host community with financial and technical assistance from the Canadian Universities Consortium Urban Environment Management (CUCUEM) working in collaboration with the Asian Institutes of Technology (AIT). It used

two techniques in managing tourism: public consultation and celebration of a 'mock' tourism day' (Jamieson & Sunalai,2002;UNEP, 2003). In public consultation, the main tourist attractions in the village were selected. Those selected were the ancient archaeological site (Muang Sema) and the ancient reclining Buddha located in the Thammachal Semaram Temple (Figure.9). These places generally attract small groups of Thai visitors who come to pay respect to the reclining Buddha and to visit an ancient archaeological site of the Dvaravati Period (around 6-12 A.D.) The two sites are close to each other and so tourism visit is generally completed in one hour. The specific tourism management objectives for these two sites were anchored on enhancing local economy and conserving cultural properties. The real and potential impacts of tourism, both positive and negative, on their community were also determined.



Figure.9.Reclining Buddha in Klong Khwang Archaeological Site

Source: Baan Maha, 2011

Upon completion of the participatory phase, the community held a 'mock tourism day'. It is a 'one-day trip/visit', where tourists including forty foreigners were invited to see and enjoy the sites. The community had a local tour guide who could speak English. A traditional village lunch was served. During the day, the Visitor Information Center and signage were prepared. Printed materials such as posters depicting different village scenes were also prepared. Local crafts (i.e. key holders, banana chips), made by the local people who organized themselves according to artistic craftsmanship, were exhibited for sale.

Upon the project's completion, the local community was able to raise money from the tourist donations and from the sales of tourist souvenirs and local delicacies.

The donations were used to preserve the reclining Buddha and the archaeological site. The income from selling local products was shared equally among the members of the cooperative.

In conclusion, Klong Khwang is a good example of a successful tourism development, with strong community participation from the early stage to the last stage. It has a forward-looking plan aimed at conserving the integrity of the destinations and in enhancing local economy. The intangible benefits of this project include increased community pride and better public awareness about the value of cultural heritage. A well-planned management with an objective of harnessing community leadership and participation is the key reason why this project was a success. However, it is recognized that the community would likely encounter several problems in the future, when the project is terminated. With increased tourism number, problems such as sewage management, lack of water-supply for tourism activities, and socio-cultural conflicts are anticipated.

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3.2.1.2. Pong Manao prehistoric archaeological site (โป่งมะนาว),

Thailand

Pong Manao project is an example of a successful community-based tourism in the Central Thailand. Pongsathaporn (2001; 2008) explored the development of Pong Manao archaeological site as a tourist destination. This prehistoric archaeological site is in Huay Khun Ram sub-district in Lop Buri Province, about 14 kilometers south of Sap Champa sub-district.

The community's conservation effort has been motivated by the desire of the local people to halt looting, which had been occurring since 2000, as well as the illegal exploitation of antiquities from local areas, including Pong Manao Temple. The ongoing looting activities by outsiders have led the community to protect and prevent their significant cultural properties. As a result, the villagers established the *Cultural Heritage and Natural Environment Preservation Group of Huay Khun Ram sub-district* in 2001. The members of this group are mostly local villagers.

This group managed the site through various activities. For example, they patrolled the archaeological site daily and provided support to the police when making arrests. In order to accurately document the artifacts found in the site, the community leader asked experts from the school of Archaeology at Silpakorn University for assistance. They also consulted experts on the establishment of a local museum in the temple. The local museum in Pong Manao Temple stores and exhibits some of the artifacts and antiquities during the excavation project of Silpakorn University. This project has also increased public awareness on the importance of preserving cultural site. Since then, the museum has been known as an archaeological public educational center and has become a new tourist destination at Huay Khun Ram sub-district. Presently, an average 2,000-3,000 domestic and international tourists visit the sites every month. Because of the popularity of the local museum and archaeological site, they were included as main tourist destinations in the local government's five year development plan (2002-2006).

The local museum and archaeological site gained much popularity with the visit of H.R.H Princess Maha Chakri Sirindhorn during its grand-opening ceremony. The promotion of the site was also enhanced through the use of various types of media including radio, newspapers, and television. One particular activity that made this local museum well-known is the training program given to local young people. The program, known as 'Yu wa Makkutet Training Program' trained 15 young local tour guides with age ranging from 8 to 15 years old. This program since its initiation in 2002 has trained around 220 children in tour guiding. The children are mostly the children of local residents and are attending the community's primary school and Tha Luang Wittayakhom secondary school. Some of the tour guides were able to explain the story of the archaeological site in both Thai and foreign languages such as English and Japanese. Each guide may earn as much as 2,000-3,000 Thai bath per month (70-100 US dollars), mostly from the visitor's donations. The young guides are not only happy with their income but also proud of their cultural heritage and their ability to earn

money and financially help their families (S.Somsuk, personal communication on September 15,2009) (Figure.10).



Figure.10: Pong Manao local museum and young local tour guide

Photos taken by I.Sarttatat on October 25,2009

Tourism revenue came in the form of tourist donations and sales of souvenir items. The tourists are asked to place their donations in a donation box located at the local museum. The donations are used to support various conservation activities including the reproduction of information leaflets and subsidy for tour guiding. The provincial and local governments contribute to the improvement of the sites through the construction of concrete car-parks, improvement of buildings, and conservation/refurbishment of the buildings. Souvenirs (i.e. straw-handbags) made by several groups of women and other local residents provide tourism income too. The items are designed locally and produced from agricultural products. Selling souvenirs is a source of supplementary and additional income for the locals.

Eventually, the local museum received the 6th Thailand Tourism Awards in 2006 in the category of 'best promotion and development of tourist attraction projects' because of their exemplary contribution to environmental conservation and sustainable tourism. It also received the 7th Thailand Tourism Award in the category of "best cultural heritage tourist attraction in the central region of Thailand" in 2008.

In brief, tourism brings economic, educational, and socio-cultural benefits to the community. Tourism increases the villager's sense of cultural pride and their awareness of the significance of the cultural attractions, which they believe should be

conserved. Nonetheless, there could be some management issues in sustaining tourism that were determined in the study. For example, the preservation of the local museum and the archeological site is expensive. Also, permanent staff is needed. Conflicts could arise between site managers and the villagers if community participation is not sustained through transparent communications and interactions.

3.2.1.3. Maeka Archaeological Site (แม่กา), Thailand.

The study of Wongsksam (2009) looked into the possibility of promoting the archaeological site found in Maeka sub-district, Payao province in northern Thailand. The cultural heritage resources are the ancient moats (400 m x 800 m and 400 x 600 m), covering eight villages. It has also an ancient kiln (Figure.11)



Figure.11: Maeka ancient kiln

Source: The Thai Research Fund, 2009

To initiate the process, the researcher consulted with the villagers and discussed with them the possible directions of tourism development and promotion in the area, aimed at developing the archaeological sites as a new tourist attraction in Payao province. The community decided to establish a local museum, prepare local tour guides, and produce local souvenirs. The community also held a 'demo-tourism program' by inviting tourists and relevant stakeholders to visit the archaeological site and the local museum. However, Wongsksam (2009) reported that the local community had some limitations regarding the preparation of the tourism facilities. The general sense of awareness was also lacking. This study therefore proposed that establishing a local learning center would be more suitable than promoting the site as cultural tourism destinations.

3.2.1.4. Mae Nam Noi Ancient Klin (เตาเผาแม่น้ำน้อย)

Udomkul, Sarttatat and Thepta (2007) explored the possible promotion of Mae Nam Noi ancient klin as a cultural tourism destination. This archaeological site is located at Pra Prang Temple, Singburi Province, in Central Thailand. This archaeological site was first excavated by Mr.Sayan Phaicharnchit with the assistance of the local community in 1987. They found a huge ancient kiln, which was used to dry earthen wares during the Ayutthaya period (16th -17th A.D.). The cultural site is important because it shows evidence of the flourishing intra- and inter-trade during the Ayutthaya Period around 400 years ago. This site consists of three large ancient kilns. The earthen wares were used to store goods for sale at both domestic and foreign markets. The artistic design of the earthen wares was unique and famous during that time. Nowadays, numerous fragments of these earthen wares had been discovered not only in many parts of Thailand and but also in foreign countries, indicating the role of trade in spreading cultural works and arts worldwide.

This project was designed through the cooperation of many stakeholders including academic experts, students, and members of the local communities. The proposal was to develop a community museum to store the excavated antiquities (Figure. 12). The proposal was supported by the priests/monks of the local community who take pride on having valuable cultural heritage in their locality.



Figure.12: Mae Nam Noi Ancient Klin local museum

Photos taken by I.Sarttatat on September 8,2007

And so the Fine Arts Department together with the Singburi provincial government came to develop the site as a cultural tourist attraction. Without actually consulting the local community, these authorities built basic infrastructure such as a visitor center, toilets, and concrete car-park. A permanent concrete roof was also built to cover the ancient kilns from natural elements. Signage, small kiln models, brochures were also set up. There was only one staff assigned to the site. The site was promoted widely using various media outlets including newspaper, television, etc. As a result, both domestic tourist and international tourists came to visit this cultural site.

Despite the seeming success of the site in cultural tourism, there were some social problems because the local communities were not fully consulted or informed of the project. According to Phaicharnchit (2007), there were issues regarding property rights or ownerships as well as the sharing of management responsibilities between the local communities and government authorities. Other issues were related to the absence of a permanent staff on site, lack of research and development budgets, limited tourist activities, and the distance from the main tourist route. Eventually, the site became less popular. This project learns that genuine participation of the local community is necessary to sustain the viability of the tourism industry.

3.2.2. Case Studies on Sustainable Tourism and Forest Management in Thailand

3.2.2.1. The Sakaerat Environmental Research Station (SERS)

According to Sakaerat Environmental Research Station (SERS)(n.d.), it is located in southern Nakorn Ratchasima province. It was established in 1967 by the Thai government as a forest reserve for scientific purposes and it was administered by the Thai Institute of Scientific and Technological Research (TISTR). Because of its unique dry-evergreen forest, it was established as UNESCO's Biosphere Reserve under the Man and Biosphere (MAB) Programme in 1977. The Thai government provides funding to support management operations and research include reforestation to replant

extensive disturbed areas and grasslands. As part of the reforestation program (1982-1992), the settlers and their families living within the boundaries of the Reserve were resettled somewhere in 1982 and 1983, leading to a decline in illegal logging and over-harvesting of forest resources.

In addition, two community-based projects were set up in 2003, aimed at reducing the illegal harvesting of mushrooms and other edible plants from the forests. The farmers are supplied with seedlings of some edible plants (i.e. *Parkia* sp.) that have high commercial value, with an understanding they be propagated as an alternative to forest resource utilization. The farmers are encouraged to start their own mushroom farms or to set up a community farm. Spores were supplied by SERS. The farmers can sell the mushroom to augment their income. Demonstration mushroom farms are located at the station and at a local school.

SERS is a well know research station which conducts a range of research projects implemented by Thai and foreign researchers. The station is also a popular place for university students from many places in Thailand (i.e. Khorat, Bangkok, Khon Khaen and Songkla) wherein they are exposed to and have on-field training in biological and ecological studies.

Recently, SERS has expanded its role by creating ecotourism opportunities in conjunction with environmental education (Figure.13). Several of these activities are developing science camps for school groups, conducting conferences, and providing meeting facilities. Training on team-building is centered on the forest. SERS also offers scholarships and camp facilities to underprivileged children from the locality.



Figure.13: Eco-tourism in the Sakaerat Environmental Research Station

Photos taken by I.Sarttatat on September 2,2010

It has developed a small-scale ecotourism venture to help sustain the management of the Reserve, although the local businesses are already helping by providing funding through donations of food and cash. The ability of SERS and its staff to maintain a strong focus on conservation of the forest was recognized by the Tourism Authority of Thailand when SERS was awarded for its 'Outstanding Performance for a Tourist Attraction in the Eco-Tourism section' in 2006.

As mentioned above, SERS is well-known among Thai people as one of the most successful examples of forest management in Thailand because it is being managed in conjunction with ecotourism development, Mr.Sewakonburi Samai, the chief of educational program of SERS (personal communication, September 2, 2010), says that although the main purposes of SERS are to preserve the forest, conduct scientific research, and promote the environmental education, SERS found out that ecotourism is an effective tool in generating additional revenue needed to implement various conservation projects at the site. In order to avoid the negative impacts of tourism, SERS implements visitor impact management strategies by regulating the number of tourists through a tourist permit system. Besides, SERS management tries to ask for the cooperation of the community and encourage them to participate in all tourism activities, such as serving as local tour guides, preparing food for tourists, and offering massage services to tourists.

According to Mr. Sewakonburi Samai, the tourism revenue is used by SERS to develop recreational facilities and implement their projects. The children of community members living at the boundary of the Reserve are recipients of the environmental educational program. This educational program focuses on environmental and scientific education to increase the student's awareness about forest conservation. Many students join this camp site every year, and Mr. Sewakonburi Samai thinks that tourism should be maintained sustainably.

3.2.2.2. The Khiriwong Community in Nakorn Sri Thammarat (คีรีวง)

Piadaeng Niramom studied in 2006 locally-based tourism in a community located south of Thailand. Her study concludes that the experience of the Khiriwong community offers a good example of a community-based approach to natural heritage conservation and livelihood improvement.

The Khiriwong community is located in Nakorn Sri Thammarat province. It is an ancient community near the foothill of Khao Luang National Park. It has ancient style of Buddhist monasteries. The main occupation of the residents there is to grow different kinds of fruits; their alternative income comes from producing and selling local products such as handicraft and herb products. The Khiriwong community was flooded in 1988 because of deforestation and extensive conversion of the forest land to orchards. In order to solve this environmental problem, capacity building program on nature and environmental conservation were introduced to the community residents. In 1994, local commercial groups were established to improve the local economy and reduce the dependence of farmers on the fruit trees grown on the mountain slopes. After reconstruction, the Khiriwong community has become a popular tourist destination especially among travelers heading for the Khao Luang Mountain (Figure.14).



Figure.14: The Khiriwong community based-tourism

Source: Nakonsidotcom, n.d.

Due to the absence of a comprehensive management plan, several problems arose, such as the destruction of vegetation, erosion of hiking trails, accumulation of rubbish, and conflicts between the Forest Department of the government and the Khiriwong community. The community leader asked the community members to set up tourism rules/policies as part of community development. The Khiriwong Community Ecotourism Club (KCEC) was, therefore, established by the community with the help of NGOs and academic institutions. Through the Club, the community was able to participate in various ways such as serving as local guides, providing home stays, and preparing food.

KCEC also asked several organizations for help in training local residents on tour guiding at Khao Luang National Park. The Rajabhat University trained them basic English, while TAT promoted tourism. Two years after the establishment of KCEC, Khiriwong received in 1998 from TAT the National Tourism Award for best practice. It was later chosen as a model village in the “Tourism-Industrial Village” project, funded by Japan Bank for International Cooperation. KCEC played a very important role as a coordinator in developing the tourism master plan and in cooperating with various stakeholders particularly the local residents, the staff of Khao Luang National Park, staff of TAT, private sector and tour operators. The Khiriwong Community Tourism Mater Plan, to be implemented over 5 years, was finalized in 2003.

To conclude, the success of Khiriwong community-based tourism is attributed to the genuine participation of the stakeholders in tourism and community development, while ensuring that the benefits from tourism are equitably shared among the community members. Moreover, tourism was found to contribute to the promotion of heritage conservation and forest management. The government should continue to provide support to the communities, undertake consultation and capacity building programs on the management of community tourism (Piadaeng, 2006).

3.2.3. Case Studies from Other Countries

A few good examples of sustainable community-based tourism are briefly discussed below.

3.2.3.1. Anapura Conservation Area in Nepal

The study of Sofield Trevoe in 2000 reveals that protected areas in Nepal were established with twin objectives, namely to safeguard biodiversity and to maximize tourism benefits. Since 1993, the control and management of numerous and small forests have been transferred to the communities. Because these small patches of forests are managed by the local communities, they are referred to as community forests. Anapura Conservation Area is known for having the world's highest and most beautiful peak in the world. It encompasses two distinct climatic regions in the north and the south. Such variations in climate and geography support a wide range of habitats with significant biodiversity. It began in 1986 as a pilot project of King Mahendra Trust for Nature Conservation with the creation of the Ghandruk Village Development Committee. The project was designed to demonstrate that an integrated conservation-oriented program, which focuses on conserving the natural resources of the area, could bring sustainable, social and economic development to the local people along side with the development of tourism with minimal negative environmental impacts (Gurung, 1995 cited in Sofield, 2000, p.237). The project aims to promote community development program to conserve the cultural and natural environments and promote the area for tourism with emphasis on local community participation. Because the local community has genuinely been involved in the process of tourism development such as in planning,

decision-making and implementation, the community forest management including tourism development in Anapurna Conservation Area has been successful in terms of both conservation and recreation.



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Figure.15: Anapurna conservation area in Nepal

Source: *Anapurna Circuit*, 2011

3.2.3.2. Dzongu Village - the Lepcha Reserve, India

According to Bhatt and Liyakhat (2008), there are several successful case studies of ecotourism management in India. Many of these success stories are attributed to strong community involvement and participation and wherein the economic benefits from tourism directly favor the local communities. One such example is the case of Dzongu, a village located in northwest Sikkim of India. It is known for its beautiful natural and cultural heritage, and has been declared as part of the Khangchendzonga Biosphere Reserve. Dzongu is also the home of the Lepchas, the indigenous people of Sikkim who have strong Buddhist belief and culture. The main occupations of the local people are agriculture and the cultivation of cardamom within the forests.

The local government initiated in 2000 the development of Dzongu as a new tourism destination. The Lepchas were interested in the program because they knew

that ecotourism in their region would provide additional/alternative income and local livelihoods. From 2002-2004, Dzongu received several supports from the Department of Tourism and the Ecotourism and Conservation Society of Sikkim (ECOSS). The members of the local community organized themselves and formed the Mutanchi Lom Ai Shezum (MLAS); they worked with the government sector and played an important role in organizing community-based tourism using a planning strategy called the 4-D cycle in short for 'Discovery, Dream, Design, and Delivery' . The program begins with a 'Discovery exercise', participated in by all relevant stakeholders of the Dzongu village. They determined the attractive assets of Dzongu, such as colorful festivals, cardamom forest, beautiful mountains scenery, and Buddhist caves. In the next stage, the participants were asked to state their dreams and visions of tourism for Dzongu. The participants mentioned homes stay program, creation of local ecotourism committees to manage tourism activities, better income from local employment, and propagation of cardamom. The next stage was designing the ecotourism development plan, which includes the use of ecotourism resource map and establishment of the Dzongu Ecotourism Committee. The plan was built on the database about the attractive sites and local stories. An awareness program on tourism and environment, training of services providers, increasing awareness of the local school children, and development of a permit system were also considered in the planning stage. The last stage was the actual implementation of the plan.



Figure.16: Dzongu Lepchas community in India

Source: Rural tourism network enterprises, 2010

Part of the plan was training and increasing public awareness. Training courses for guides, home stay owners, and cooking program including safety and security, sanitation, environmental related conservation issues were conducted. After the creation of the Dzongu Ecotourism Committee, whose members are from villages in Dzongu region, several tourism activities including taking responsibility for managing all conflicts issues related to tourism in the village began. A familiarization trip was also organized by the Committee so that visitors can observe the way of life of the villagers such as cultivation of cardamom, collection of wild edibles from the forest, and harvesting grains from paddy fields. They hope to promote these activities as part of cultural and farm tourism.

While tourism had been relatively successful during the lifespan of the project, the researcher noted that there could be problems that the local communities have to address. Many problems arose because of unclear tourism policies, lack of sense of ownership among some other members of the community, inadequate funds to implement all aspects of the plans, lack of promotion of ecotourism, and lack of skill and knowledge about tourism among other members of the community.

3.2.3.4. Dugli-Jawarra Sal Forests, India

Dr.Phukan(2005a), an expert at the Indian Institute of Forest Management, proposed the conservation of forest ecosystem and biodiversity through a joint forest management project between the local community and the Forest Department. The joint forest management project aims to develop local responsibilities in protecting and managing public forests. The study was conducted at the Dugli-Jawarra Sal Forests, which are located near Raipur, the state capital of Chhattisgarh State, India. Phukan survey, revealed the presence of 'Sal' and 'Teak' wood trees, considered the most important tree species in the forests.

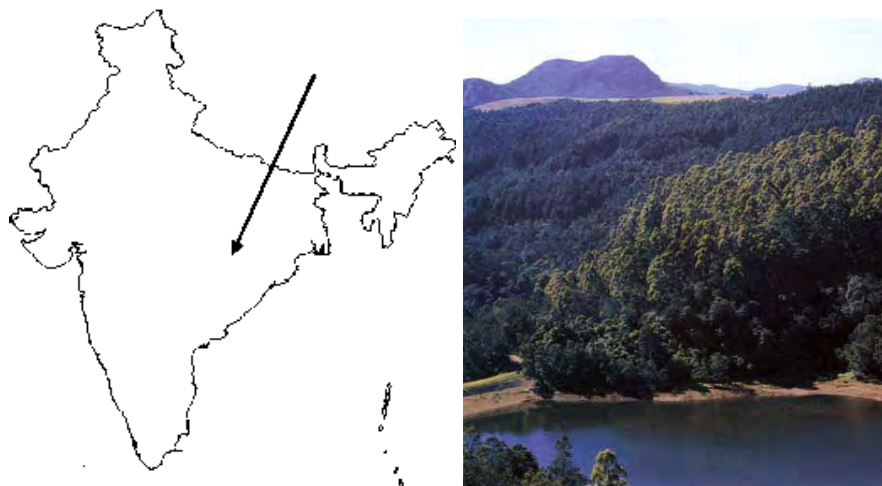


Figure.17: Dugli-Jawarra Sal Forests

Source: Phukan, 2005b

In 2001, the People's Protected Areas (PPAs) achieved sustainable livelihoods using an holistic ecosystem management approach. Under the facilitation of the state's forest department, the villagers and forest department worked together. The empowerment of the local community was made possible through various means, such as lectures on biodiversity conservation, income generation, skill development, awareness campaign, promotion of non-destructive harvesting, equitable sharing of benefits from the managed forest, and engagement in various village developmental activities. As a result, positive changes in people's behavior and attitudes towards were observed; they shared responsibilities in forest management such as in controlling forest fires and reducing illegal activities. However, there were some problems that occurred despite the generally positive outcome. For example, there were claims of some overlaps or unclear ownership rights of lands. This issue arose because the forest is supposed to be owned by the state, but the villagers living in and around the forest may harvest only non-timber forest products. But some villagers continued to cut trees. It was suggested that the local people should be given more incentive not to destroy the forest. The central government can empower the local people so that they can appreciate the value of the forests. Table.4 summarizes the ways to manage the forests at the community level.

Table.4: Some forest management strategies to conserve the forest

Forest Management	Biodiversity conservation
-Identify medicinal plants and economic value	- <i>in situ</i> and <i>ex situ</i> conservation to protect species from becoming extinct
-Help from knowledgeable local people in preparing a list of medicinal plants and in managing them.	-Soil and water conservation
-Participatory mapping and resources	-Tending of medicinal plants
-Control forest fires	

Source: Modified from Phukan,2005a

4. Relevant Literature about the Study Sites- SCAS and CPSF

This section is a brief literature review about the two sites studied for this research. The current dissertation provides a more in-depth study of these two sites. The details of the results are presented in the Results and Discussion chapter in this dissertation report.

4.1. SCAS

Kaewpaluek (1972) excavated prehistoric earthen wares in SCAS. The earthen wares are classified into two groups based on the approximate age of the artifacts or the periods when they were made. The first period was from the Neolithic period and the second period was from Bronze Age.

Lertrit, Jumprom and Klinploklab (2001) found that historic human settlements at SCAS may be divided into 3 phases. These are: Phase 1 – Prehistoric Period – Bronze Age (semi-permanent settlement); Phase 2–Iron Age, around 1700 B.C, (semi-permanent settlements) which were later deserted for 500 years; and Phase 3–Dvaravati Culture, around 6th -10th A.D. (permanent settlements)

Lertcharnit (2005) excavated SCAS again in 2005, and he concluded that the settlement in this area was actually permanent and uninterrupted for several

generations. He argued that the longest occupation occurred in the eastern highland of Lop Buri province. There were some human occupations within this area because of its proximity to natural resources (i.e. various kinds of stones for craft production, natural source of freshwater, wild animals, etc.). It was also a good location for intra- and inter-products exchange (trade) between the people of the lowlands in the central region and those from the Korat Plateau in the northeastern region.

4.2. CPSF

There is no published information available about the ancient use of CPSF. However, recent biological studies have been conducted. The community study on forest management is also discussed.

Boonyanant (1999) studied the participation of Sap Champa community in the conservation of the forest. The main factor for conserving the forest is the presence of natural spring as source of freshwater for domestic and agricultural purposes. The forest has an important watershed value which should be conserved. The watershed value of forests is attributed to the presence of trees that trap and store rainfall as groundwater (Panayotou, 1995). The water flows out even during the dry season to supply freshwater for domestic, agricultural and industry purposes. The massive removal of trees results in storm runoff, landslide, and flooding during the wet season and drought during the dry season (Catibog-Sinha & Heaney, 2006). Because of the community knows the watershed value of the forest, they have created a conservation committee to collectively protect CPSF.

Chalermglin (2004), a botanist from the Thailand Institute of Scientific and Technological Research, discovered a native plant scientifically called *Magnolia sirindhorniae* (Noot & Chalermglin), which is endemic to Thailand. This species is found nowhere else in the world; it is a valuable species for conservation and genetic research (Jaengsuwan & Chalermglin, 2008). The most dominant species of forest was *Horsfieldia Irya* (Gaerty) Warb (Chanchum *et al.*, 2008)

Phetsena (2008) tested, using the x-ray fluorescence microscope technique, the nutrient and mineral contents of the soil of the forest. He detected large amount of calcium (Ca), but the soil is generally low in organic nutrients.

Sarttatat and Wiromrat (2008) surveyed the perspectives of the community regarding tourism activities in the remaining forest. It was found that the local community would like to promote CPSF along side with Sap Champa archaeological site as a new tourist destination at Lop Buri province. Tourism is envisioned to focus on the natural and cultural assets of the place.

As a result, the Office of Natural Resources and Environmental Policy and Planning in Lop Buri office (NCECD, 2009) studied the potential of both archaeological site and the forest as resource base for cultural and heritage tourism. This study showed that although these sites would make good tourism attractions, some problems and issues have to be addressed first. For example, the lack of government funds has to be addressed to hire permanent staff and surveillance team to guard and protect the sites from illegal extraction and trampling of valuable natural and cultural assets. There is no clear demarcation of boundaries on the ground resulting in social conflicts on land ownerships.

This dissertation research further explores the issues and problems of the two sites in the Chapter on Results and Discussions.

Chapter 3 Study Area Description

This chapter describes the general features of the study area consisting of two sites -Sap Champa Archaeological Site (SCAS) and the Cham Pi Sirindhorn Forest (CPSF).

1. Location

SCAS and CPSF are both located at Sap Champa sub-district, east of Tha Luang district, which is about 80 kilometers from Lop Buri Province (Figure.18). Sap Champa sub-district covers an area of about 58.2 square kilometers or 42,775 rais. The study area is situated between the highland of the central region and the western side of the northeastern region, also known as the Korat Plateau of Thailand.

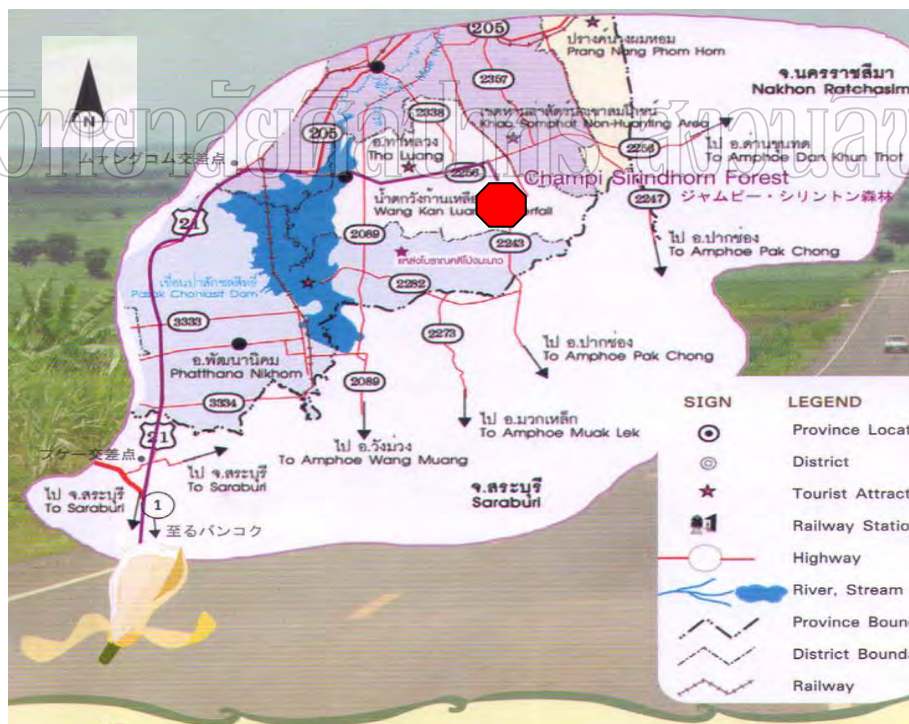


Figure.18: Map of the sites' location in Tha Luang district, Lop Buri province.

Source: Thepsatri Rajabhat University, 2007

The Sap Champa sub-district is bordered in the north by the Nong Pak Waen sub-district and in the south by the Huay Khun Ram sub-district. In the east, it is adjacent to the Hua Lam sub-district; in the west, it is bordered by the Tha Lae Wang Wat sub-district, Tha Luang sub-district, and Huay Nam Sud sub-district (Figure.19).

Some 90% of the entire area was formerly part of Chai Ba Dan National Forest. However, after the implementation of the government policy on the agricultural expansion in Lop Buri province, the pristine forest in the area had been converted to agricultural plantation. A large portion of the Sap Champa sub-district has become an important agricultural area in the Lop Buri province, and only a small fragment of the original forest- the CPSF has remained.



Figure.19: Location map of the study sites, SCAS and CPSF.

Source: The Royal Thai Survey Department, Amphoe Chai Badan, 1997

(Scale 1:50,000)

2. Topography

The Sap Champa sub-district is located in the east on a low terrain surrounded by mountains with rich limestone deposit. It has an altitude of about 60-200 meters above sea level. The soil in this area is very fertile and suitable for agricultural production. Many spots with groundwater seepages (also referred to as 'natural springs') are found within and around this area (Figure.20). The groundwater is tapped by the community for domestic consumption and agricultural purposes. The main topographic features Sap Champa sub-district is summarized in Table.5.

Table.5: Topography of Sap Champa sub-district

Items	Characteristics
Altitude (asl)	60-200 m
Surrounding Area	limestone mountain
Soil	grumusol soil, marl with free calcium carbonate, clay with high fertility
Natural water	seepages and groundwater producing about 10-20 cubic meters per hour, groundwater quality TDS (Total Dissolved Solid) < 500 mg per liters
Land use	farm crops and national forest protected area.

Source: Modified from Jitjamnong, Intachom & Prajansri,2000

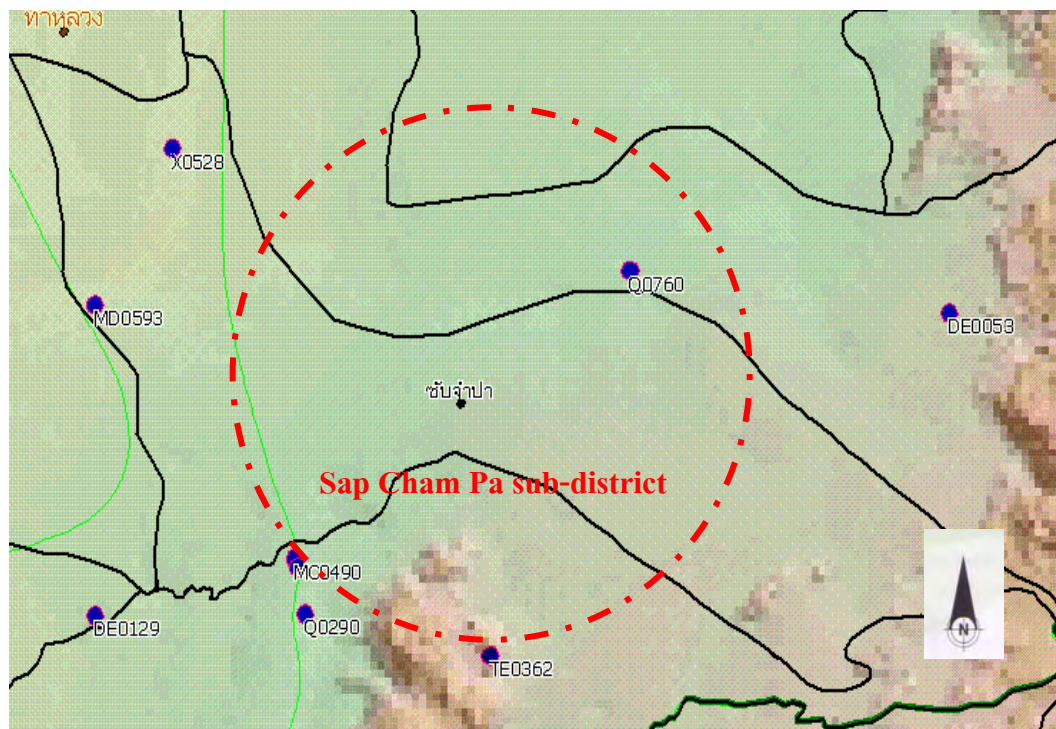


Figure.20: Location of the ground water (water springs) in Sap Champa sub-district area.

Source: Department of Ground Resources, 2007

3. Climate

The climate of Sap Champa sub-district is under the influence of the southeast monsoon during the rainy season and the northwest monsoon during summer and dry seasons. There are three distinct seasons in this area within a year: summer, rainy season and dry season. Summer occurs from February to April, while the rainy season occurs from May to October. The months of August and September are characterized by heavy rainfall. The average quantity of rain in this area is approximately 1,200 millimeters per year. Dry season begins from November and ends in January. The average yearly temperature area is nearly 27.8 °C, but it can reach up to 42 °C in summer (Department of Meteorology, 2006 cited in Department of Groundwater Resources, 2007).

4. Waterways

Not far from Sap Champa sub-district is the Pa Sak River, located about 18 kilometers to the west. A water dam, Pa Sak Chola Sit Dam, was constructed to supply water to the central region of the province. It has a water holding capacity of about 960 millions cubic meters (Kasemsan,1999).The surrounding area of this dam, which includes the Sap Champa sub-district is well-known for its beautiful sceneries and have the potential to be a popular tourist destination not only in the Lop Buri province but also within the central region of Thailand.

There are also many other natural waterways and tributaries originating from the Pa Sak River. One of these rivers is Huay Pong Tai, which traverses the Sap Champa sub-district. It is actually a water reservoir, covering an area of 100 rais and has a water holding capacity of 428,000 cubic meters; it was constructed by the government to supply the nearby communities with freshwater during the summer and dry seasons (Jitjamnong, Intachom,& Prajansri,2000).Two small dams (*faiy* or ฝ่ายย) were also built for irrigation purposes. However, as a result of the increasing population in the region and the concomitant destruction of the forest and the expansion of agricultural land and human settlements as well as by the government's ill-planned infrastructure projects (i.e. many roads were built across the Pa Sak River and its tributaries), the depletion and availability of freshwater for the local community has become a major concern.

5. Population

The sub district of Sap Champa consists of 7 villages (*Moo* in Thai), with a population of about 4,360 residents and 1,304 households. The male: female ratio is even (Sap Champa Sub-district Local Government Authority, 2009) (Table.6).

Table.6: Population and residents in Sap Champa sub-district

Village No. (<i>Moo</i>)	Name	Population			Household
		Male	Female	Total	
1	Ban Sap Champa	546	533	1,079	328
2	Ban Sap Chareon	292	330	622	171
3	Ban Pong Sawong Sriwichai	291	309	600	163
4	Ban Sap Lam Yai	280	279	559	166
5	Ban Sap Rue	201	225	426	132
6	Ban Pong Tai	228	233	461	146
7	Ban Khu Mueang	308	305	613	198
Total		2,167	2,214	4,360	1,304

Source: Sap Champa sub-district Local Government Authority, 2006.

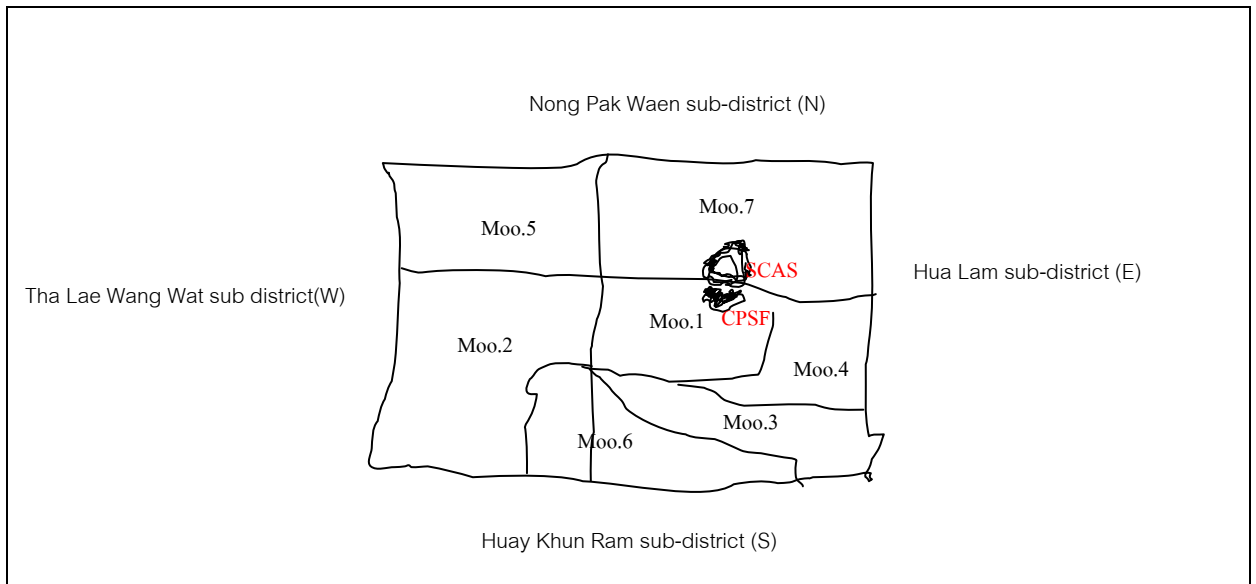


Figure.21: Map showing the boundaries of each village in Sap Champa sub-district.

Modified from Sap Champa sub-district Local Government Authority, 2009

The density of the human population in the sub-district is about 74.91 per square kilometer. Figure.21 shows the boundary locations of the seven villages. All the seven villages are under the administration of the Sap Champa sub-district local government authority (*Aor Bor Tor Sap Champa*). The other villages are in close proximity to both SCAS and CPSF

The two sites are separated from each other by some 500 meters of unsealed roads. The immediate area of the study sites, although surrounded by agricultural land, is relatively free from permanent human settlements. Since 1986, the area has been under the protection and management of the Royal Forest Department, which maintains a field office located at Lop Buri province (Sap Champa Sub-district Local Government Authority, 2009).

6. Occupation

The main livelihood of the local people in the Sap Champa sub-district is farming/agriculture. Some farmers own dairy farms, while others serve as farm helpers. Some residents also work in Tha Luang district, which is only 18 kilometers away, to

work in agriculture-based manufacturing industries, such as sugar-cane factory, cassava factory, and animal food processing factory.



Figure.22: Sap Champa sub-district farm crops scenery.

Photos were taken by I.Sarttatat on October 25,2009

7. Agricultural products

The main agricultural products in Sap Champa are corn, cassava, sugar cane, pigeon pea, and chili (see Figure.23). The yearly rotation of crops in this area is shown in Table.7. As can be observed from this cropping season, there are months (especially during the dry and summer periods) when farming is at stand still, and farmers are not busy or earning much. Thus, tourism could fit well as an alternative livelihood during the lull farming period.



Figure.23: Agricultural products of Sap Champa sub-district.

Photos were taken by I.Sarttatat on October 25,2009.

Table.7: Yearly crop rotation period.

Plantation Type	Month											
	Dry		Summer			Rainy					Dry	
	1	2	3	4	5	6	7	8	9	10	11	12
Cassava				→	→	→	→	→	→	→	→	→
Chili				→	→	→	→	→	→	→	→	→
Corn				→	→	→	→	→	→	→	→	→
Pigeon pea	→	→	→	→	→	→	→	→	→	→	→	→
Sugar cane												

Source: Modified from Jitjamnong, Intachom,& Prajansri,2000;

Mr.Phirayos,Prasert (personal communication, September 3, 2009)

→ Duration of plantation, after plantation no-job, - - - - - Duration of harvest

8. Accessibility

Both study sites are about 197 kilometers from Bangkok. There are two ways to access the sites- by car and by train. It takes about three hours to drive to the sites from Bangkok via Highway no.1 (Phaholyothin Road) within Saraburi province, and Highway no.21 from Saraburi at Phukae intersection to the north for about 60 kilometers. After turning right at Muang-Khom intersection to Tha Luang District, the local roads no.205 and no.2256 are traversed. It is about 27 kilometers from Muang-Khom intersection to Sap Champa sub-district.

There is another shorter route from Saraburi province to Sap Champa. This route passes the main tourist attraction of Saraburi province such as Muak Lek water falls, Jet Sao Noi water falls, and Pong Manoa archaeological site of Lop Buri province. It takes about two hours to drive to the sites from Bangkok via Highway no.1 (Phaholyothin Road) and Highway no.2 (Mitrphap Road) to the east and pass through Saraburi province and drive to the north of this province for about 40 kilometers. Then, it will reach Baan Pong Sawong which is located at the south of Sap Champa sub-district.

From Hualampong Railway station in Bangkok, a train runs northeast. From Suranarai Station, a public bus (Lop Buri to Khao Noi line) goes to Sap Champa sub-district. The railway trip takes about four hours.

9. Infrastructure

The infrastructure development facilities in the Sap Champa sub-district provide electricity, tap water supply, communications and roads (Table.8, Figure.24). The availability and accessibility of these public facilities are important 'pull' factors in tourism development to enable tourists (both domestic and foreign) to access and enjoy the destination sites with some degree of basic comfort and efficiency. Pull factors are destination-based attributes that attract tourists to visit a particular place or attraction (Weaver & Oppermann, 2000).

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

Table.8: Infrastructure of Sap Champa sub-district

Items	Ready prepared	Remarks
Electricity Water Supply	Almost 97% of all 7 villages 4 reservoir and small dams for irrigation purposes 8 shallow wells 22 sites with community tap-water supply	Not all villages have water supply system; natural underground water is tapped. The community uses earthen jars to collect rain water during the rainy season for consumption during the dry season.
Public Telephone Box	12 places	Majority of the residents use personal mobile phones and Telephone Organization of Thailand network.
T.V. Network	Almost all 7 villages have television sets.	Majority of the villagers have installed satellite system which enables them to watch numerous Thai and international programs.
Road	2 WD sealed road 20 lines	

Source: Modified from Sap Champa sub-district Local Government Authority, 2006



Community -Tap Water supply and steel-pipe



Main Seal road used in between villages



Old seal road in each village



Private satellite for T.V network
which is popular for villagers



Dirt road used between each village



Telephone Athena

Figure.24: Infrastructure in Sap Champa sub-district.

Photos were taken by I.Sarttatat on October 22, 2009








10. Government Services

The government services that are available in Sap Champa sub-district are shown in Table.9. The availability of government services for both the community and tourists is essential in the promotion and sustainability of tourism in the study area.

Table.9: Government service in Sap Champa sub-district

Government service	Amount	Name	Figure	Location
Local Government Authority office	1 place	Sap Champa sub-district local authority office		Located in Ban Khu Mueang (Moo 7),beside main local road no.2056
Government Nursery Center	1 place	Nursery Center		Located in the area of Sap Champa sub-district local authority office, Ban Khu Mueang (Moo 7)
Primary School	3 places	<p>1.Baan Sap Champa School</p> <p>2. Baan Sap Charoen School</p> <p>3. Baan Pong Swong Kiriwan School</p>	  	<p>Located near Sap Champa Temple, in Ban Sap Champa Village (Moo 1)</p> <p>Located in Ban Sap Chareon (Moo 2)</p> <p>Located in Ban Pong Sawong Kiriwan (Moo 3)</p>

Table.9: Government service in Sap Champa sub-district (continue)

Government service	Amount	Name	Figure	Location
Secondary School	1 place	Tha Luang Wittaya khom School (Grade 7-Grade 12)		Located beside main road no.2256 in Ban Khu Muang (Moo 7)
Buddhist Temple	4 places	1.Sap Champa Temple 2.Sap Charoen Temple 3.Pong Sawong Kiriwan Temple 4.Sap Lam Yai Samakkeedharm Temple	   	Located in the opposite of CPSF in Ban Sap Champa Village (Moo 1) Located in Ban Sap Chareon (Moo 2) Located in Ban Pong Sawong Kiriwan(Moo 3) Located in Ban Sap Lam Yai (Moo 4)
Public Health	1 place	Sap Champa Public Health		Located in Ban Sap Lam Yai (Moo 4)
Police box	1 place	Police box		Located beside main road no.2256, next to Tha Luang Wittaya khom School

Source: Modified from Sap Champa sub-district Local Government Authority,2009 ;Photos were taken by I. Sarttatat on October 25,2009

11. Land Use

Land use area in Sap Champa sub-district can be divided into 3 zones (Figure 25 and Table.10).

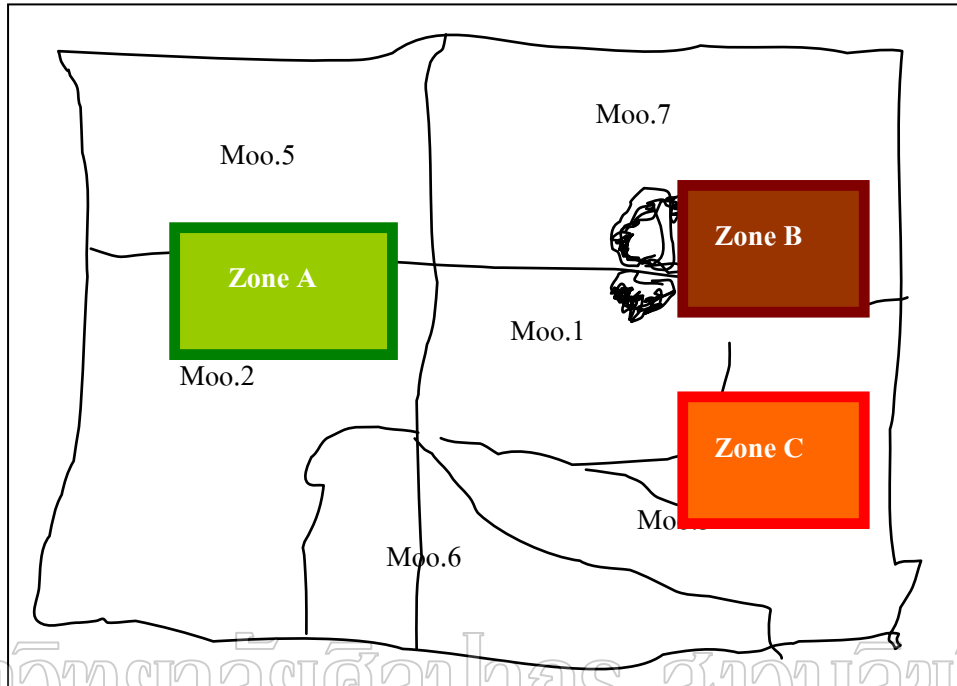


Figure.25: Land use in Sap Champa sub-district. Draw by I.Sarttatat on October 25,2009

Table.10: Land use zones in Sap Champa sub-district

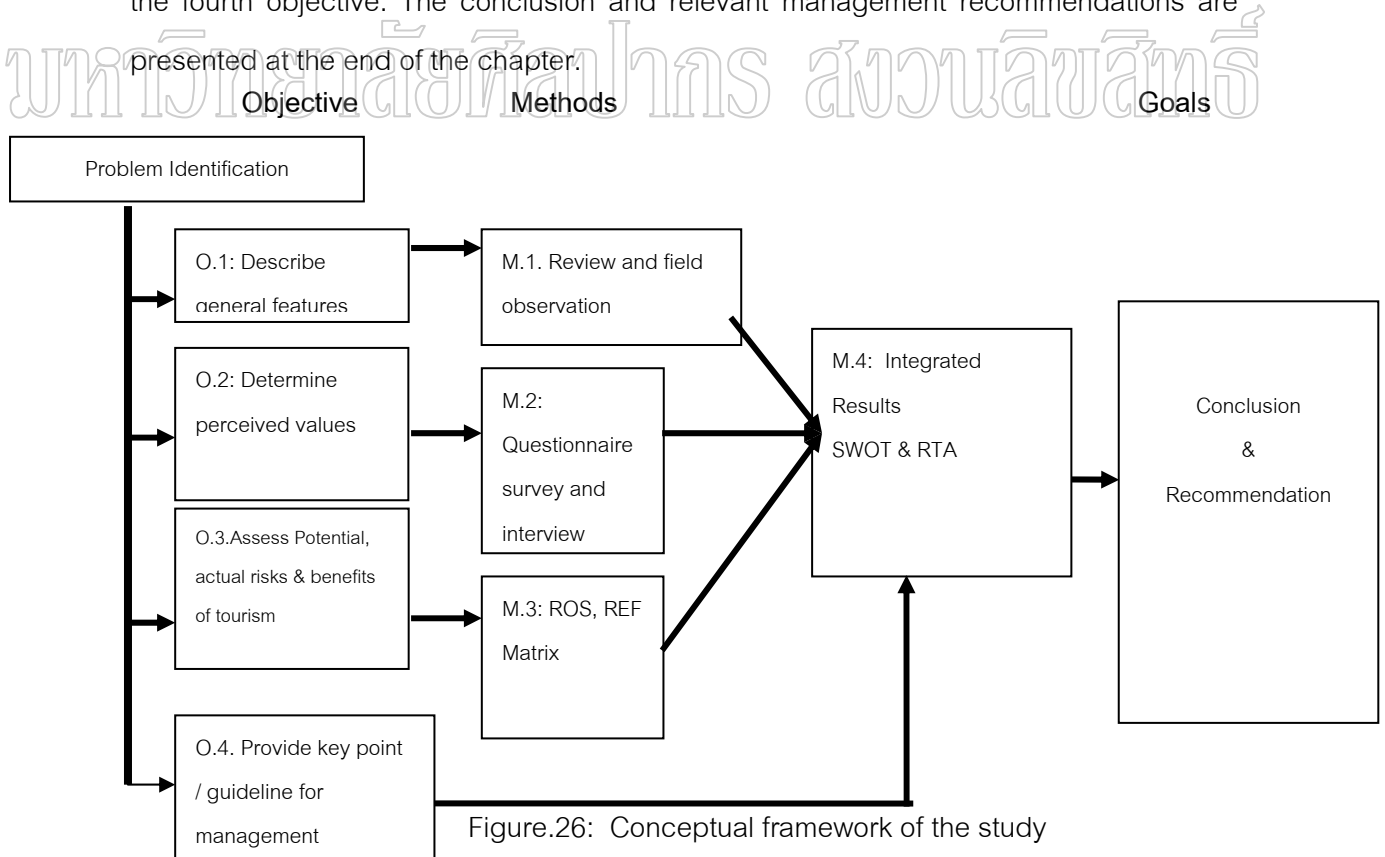
Land use zone	Brief descriptions
Zone A : Agricultural Zone	It covers about 80% of Sap Champa sub-district area. The main area of this zone is in Moo or Village 1, 2, 5, and 6.
Zone B: Heritage Zone	It is located in village/Moo 1 and 7 where the study sites, SCAS and CPSF, are found.
Zone C: Residential Zone	Residential areas are located along the road in village/moo 1,2,3,and 4

Chapter 4 Research Methods

This chapter describes the research methods used in this study. Both quantitative and qualitative research methods were conducted in the study area.

1. Research Design

The conceptual research framework is illustrated in Figure.26. The research problem was determined after the preliminary phase of the study on July 20, 2007 had been completed. The research problem focuses on the development of rural-based tourism built on the principles of sustainable tourism with strong emphasis on the conservation of cultural and natural heritage as tourist attractions. Three specific research objectives were identified and appropriate methods were determined to address these objectives. The findings of the first three objectives were integrated into the fourth objective. The conclusion and relevant management recommendations are presented at the end of the chapter.



2. Objectives and Methods

Objective 1: To describe the general (historical, cultural, economic, social, natural, and scientific) features of the study area.

Literature search and field observation were used to address Objective 1. The researcher was sometimes accompanied by community leader and research assistants during field visits to facilitate field data gathering. Photos of significant and relevant places were taken to document events and features of the study area. A journal was kept to record observations and information collected during the field trips.

Objective 2: To determine the perceived values of the community regarding the natural and cultural heritage of the study area

The perspectives of the members of the local community and relevant stakeholders about the importance of the natural and cultural heritage of the study area were determined through structured questionnaires survey. The questionnaire survey instrument was written both in Thai and English. The Thai version (Appendix A) was used during the field survey; the English version (Appendix B) was intended to be a supporting document for this dissertation.

A follow-up interview was also conducted to validate previously collected data, especially from representatives of the Sap Champa local government authority, FAD.4, Som Dej Pra Na Rai National Museum of Lop Buri province and other experts.

The questionnaires survey was conducted in Sap Champa sub-district (from village 1 to village 7) in December 2007 - March 2008. A total number of 217 residents out of 600 individuals from the seven villages were approached. These respondents provided adequate information suitable for inclusion in this research (Table.11). Only adult residents (18 years old and above) who were available and willing to participate in this study were considered in this study.

Table.11. Number of respondents in the study area

Moo/village Name	Number of respondents
Moo 1 :Ban Sap Champa	14
Moo 2 :Ban Sap Chareon	12
Moo 3: Ban Pong Sawong Kiriwan	6
Moo 4: Ban Sap Lam Yai	24
Moo 5: Ban Sap Rue	107
Moo 6: Ban Pong Tai	6
Moo 7: Ban Khu Mueang	48
Total number of respondents	217

The questionnaire survey was divided into 4 parts, namely (a) general information about the respondents, (b) personal opinions of the respondents regarding the conservation of SCAS and CPSF and the development of the sites for tourism, (c) tourism management issues, and (d) open-ended questions for additional comments.

The results of the survey were analyzed using SPSS version 10.1. The statistical data were presented as percentages, mean, and standard deviations, either in tabular or graphical forms.

The questionnaire survey on the resident's opinion about conservation and tourism development of the study area was divided into two aspects. Firstly, the respondents were asked to rate their level of agreement to a particular issue by using a 5-point Likert scale. The specific topics that were rated are regarding the (i) preservation of heritage for the future generations, (ii) promotion of heritage as new tourist attraction, and (iii) co-existence of conservation and tourism. The values from the Likert scale were averaged and presented by mean values and corresponding standard deviations. Secondly, the perceived benefits of the respondents about the sites as a proposed major tourist attraction were obtained. The benefit statements in the questionnaire survey are divided into four groups, namely economic values (4 item statements), cultural value (2 item statements), education value (1 item statement), and social and

other values (2 item statement). The statistical analysis used was the same as in the first aspect of part two of the questionnaire survey.

The questionnaire survey looked into tourism activities that are occurring and those could possibly occur in the study area. The study determined if the local residents are interested in participating in the management of tourism in the localities. The study also conducted a focus group discussion in March 2009, involving students (Grade 5-6) and a teacher from Ban Sap Champa Primary School to assess their perceptions about the value of natural and cultural heritage of the study area. The focus group consisted of eight students, ranging from 11 to 12 years of age, and one supervising teacher. The reasons for choosing this age group are as follows: (a) they are residing within the study area, many of whom live near the study sites, (b) they have first-hand information about the sites, (c) they are the immediate stakeholders and beneficiaries of the conservation and tourism development of the sites; and (d) they can be made more aware of the conservation and tourism value of the sites and can be tapped as future volunteers for the conservation and sustainable use of the sites as tourist destination.

The results of the focus group discussion were assessed using a content analysis technique. A follow-up interview of the participants of the focus group was also conducted to clarify certain elements that were previously discussed.

Objective 3: To assess the potential and actual risks and benefits of tourism in these sites.

Field visits and observation were conducted. The results were presented and organized using a planning framework called, *Recreational Opportunity Spectrum* (ROS) , developed by the National Parks and Wildlife Service of New South Wales, Australia in the assessment of recreational opportunities in national parks and other tourism destinations in natural areas. Appendix C shows the template format used for ROS analysis.

The actual and potential impacts of tourism in the study were listed in a tabular form, called *Review of Environmental Factors* (REF) developed by Dr. Corazon Catibog-Sinha for her course in Environment Management and Sustainable Tourism (Course Code: 265414) at Silpakorn University to assess the positive and negative impacts of tourism on natural destinations. Appendix D shows the template used for REF. The data gathered for the REF matrix were validated by consulting relevant experts as well as knowledgeable local residents.

Objective.4. To provide some tourism management recommendations based on sustainable tourism principles.

The results from data collected, both primary and secondary sources, are assessed to formulate tourism management recommendations in the context of UNESCO's natural and cultural heritage values. The recommendations are built on the results of the Strength Weaknesses Opportunities and Threat (SWOT) analysis.

Recreational Threat Analysis (RTA) method was used to prioritize management actions. Appendix E presents the procedures used for RTA

3. Research Procedures

The general study procedures followed are discussed below.

3.1. Research documentation

Research data from primary sources such as field data including photos, oral stories, personal memo from local community leaders and related stakeholders were collected, recorded and assessed. Secondary sources came from brochures, journal, books, maps from various sources such as the national library, university libraries, SPAFA's Library (SEAMEO Regional Centre for Archaeology and Fine Arts: SPAFA), Princess Maha Chakri Sirindhorn Anthropology Centre, Asian Institute of Technology (AIT), The Royal Thai Survey Department, and internet/electronics sources.

3.2. Site observation

Site or field data collection involved actual field visits in many occasions. Site visits included not only field data gathering but also attending seminars and formal

and informal meetings with related stakeholders in the local community, such as Sap Champa sub-district local government authority and community leaders etc. The researcher participated in related programs happening on the site during the research period; these programs include the commemorative ceremony at SCAS and the rehabilitation project (planting Vetiver grass or *Vetiveria zizanioides* Nash) around CPSF. The researcher also observed the public rally held on 9 November 2009, on the controversial issues pertaining to the management of CPSF.

3.3. Quantitative Research

The researcher conducted structured questionnaires survey for three months during December 2007- March 2008. The questionnaire survey was initially pre-trialed using 30 respondents. The results of the pre-trial were used to improve the questionnaire survey instrument which was eventually used to survey 217 respondents. The collected data from 217 respondents were statistically analyzed using the SPSS program version 10.1.

3.4. Qualitative Research

Qualitative data were collected from a focus group discussion with students from the local school located close to the study area. Additionally, in-depth interviews were conducted with relevant stakeholders such as members of the local community, representatives from the government sector, and the community organizations (third party). The qualitative data were assessed using various academic planning tools, such as ROS, REF Matrix, and SWOT to determine the implications of tourism development on the environmental and cultural integrity of the two study sites.

3.5. Recommendations

The recommended management actions were assessed and prioritized using the RTA method.

4. Time frame of the project

This study was conducted during the period June, 2007 – November, 2009.

Table.12 shows the time table:

Chapter 5

Results and Discussion

This chapter is divided into 4 main sections, namely (a): features of SCAS and CPSF (Section.1); (b) perspectives of the local community and other stakeholders on the values of the cultural and natural features (questionnaire survey, interviews and focus group) (Section.2); (c) assessment of the potential and actual risks and benefits of tourism (ROS, REF Matrix, SWOT Analysis) (Section.3); and (d) management recommendations (Section.4).

1. Main features of two study sites -- SCAS and CPSF

The data on the natural and cultural heritage features of the study area- SCAS and CPSF- are based on both literature review and face-to-face interviews with the former director of Tha Luang Wittaya Khom School, community leader of Sap Champa sub-district, leader from the Sap Champa Local Government Authority, director of Somdet Pranarai National Museum, leader of the Fourth Regional office of Fine Arts [FAD 4], and manager of the Pong Manao Archaeological site.

(A) Sap Champa Archaeological Site (SCAS)

1.1. General Features of SCAS

The SCAS is an archeological site of an ancient city. It is about 350 rai or 140 acres in area. It is situated on a limestone hill, about 160 meters above sea level in the village of Ban Khu Mueang (Moo 7). Viewed from the air, the site assumes the shape of an inverted heart (Lertrit, 2003a). It has a north-south perimeter of about 834 meters and an east-west perimeter of about 704 meters.



Figure.27: The aerial photo of Sap Cham Pa(SCAS)

Source: Thaioldbead, 2009

Surrounding the ancient city are two horizontal layers of moat structures, each is 16 meters wide and 10 meters deep. The moats are 20 meters apart (Figure.28 and Figure.29). The moats may have been built as physical barriers to protect the city from enemies and intruders. Within the ancient site, three graves/small monuments, which are believed to have been used for religious ceremonies, are being protected and considered sacred by the local community.

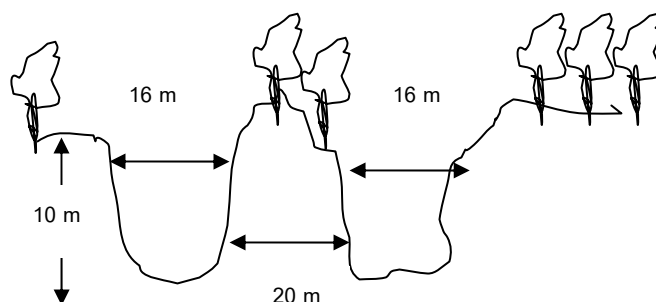


Figure.28: Cross Section of the moats in SCAS. (Not to Scale)

Draw by I. Sarttatat on August 28, 2009

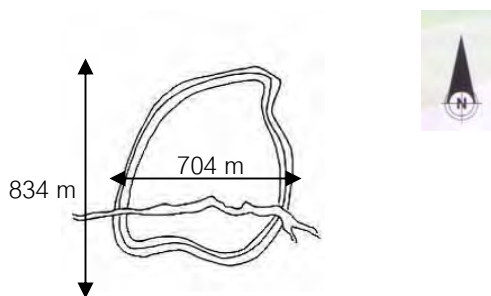


Figure.29: Perspective of the moats enclosing the SCAS.

Source: Modified from Openbase, 2008



Figure.30: Religious graves/ monuments in SCAS

Photos was taken by I. Sarttatat on January 18, 2007

1.2. Historical Features of SCAS

According to Maleipan(1973), the archaeological site was discovered accidentally in 1971 during the government's campaign to eradicate an agricultural pest, *Patanca* grasshopper. Later, the First Regional Office of Fine Arts in Lop Buri (or FAD.1 ,at that time) and Silpakorn University collaborated in a scientific excavation of the site from which they recovered many important and ancient relics, such as grinding stone, fragments of lime stone, Buddha image red stone, crouching deer and terra-cotta

pottery. An ancient bead and south Indian inscription (*Pallava* script) with the 'Ye *dhamma*' formula on a free-standing stone (octagon), which dates back from the early Dvaravati period were also recovered (Maleipan, 1973).

Maleipan (1973) states that there are archaeological evidences indicating the chronological age of this ancient moat city. Accordingly, the four periods that occurred during that time are the Neolithic Age (4,000-3,000 B.C), Bronze Age (3,000-2,000 B.C.), Iron Age (467 B.C.), and Dvaravati period (700 A.D.). These chronological data were verified later by Bhumadhorn (1979). On the other hand, Lertrit (2003a) argues that this ancient city's chronology may only be divided into 3 periods, starting from Bronze Age (3,000-2,000 B.C.), Iron Age (467 B.C.), and Dvaravati period (600-700 A.D.). However, the latest excavation conducted by the Fine Art Department in Lop Buri (2006) revealed that the chronology of this ancient city could be divided in four periods, starting from Bronze Age, Iron Age, Dvaravati period, and present period (1900s A.D.).

According to Teekakul (2004), the main factors that must have led to the settlement of this ancient city are the presence of rich natural resources during that time and its strategic trading location for the ancient people of central and northeastern region of Korat Plateau. It was further reported that the ancient city had been influenced by Indian culture through the business transactions with Indian merchants and/or contact with the religious clergy.

Based on some archeological evidences, Sap Champa was believed to be an important city during the Dvaravati period (during 600-700 A.D.) because it was an important trading center between major regions- the central region and northeastern region (Teekakul, 2004). The settlement of the people in this city continued until the end of the Dvaravati period, but the city was eventually deserted probably due to war or epidemic (Bhumadhorn, 1979; FAD 4, 2006). Over many decades, the abandoned city was overgrown with forest vegetation, and it ultimately became part of the Dong Pha Ya Yen Forest. At present, the site is under the protection of the Royal Forest Department, which has the official mandate to protect the site from theft and degradation. The area is now being reforested by planting teak and Neem trees.

From the evidence of archeological excavation in SCAS, many archeologists had divided the historical settlement of Sap Champa site into four phases as follow:

a. Phase 1: Early period (prehistoric and proto-historic period (2000 B.C. to ca.A.D.500)

Lertcharnrit (2005) explained that Sap Champa was occupied 2,600-1,500 B.P. (B.P -Before Present of 1950 A.D.). The settlement in Sap Champa was seemingly permanent and uninterrupted with the longest occupation in the eastern highland of Lop Buri Province. The pattern of settlement in Sap Champa was determined by the availability of natural resources and the presence of various kinds of stone ornaments such as limestone, marble sandstone, etc. for craft and utensil production. Although the site is located in the highland area and not directly accessible to Pa Sak River, there were a number of water resources such as natural springs that supply the domestic and agricultural needs of the people who lived in these areas. The ancient inhabitants practiced farming to supplement their diets. Moreover, the analysis of faunal remains and isotope analysis of human and animal bones showed that the people in Sap Champa primarily hunted wild terrestrial animals for subsistence (Lertcharnrit, 2006).

The social organization in prehistoric period of Sap Champa was comprised of a small community, which was basically non-centralized and fragmented (i.e. scattered, small, no leadership). Later, because of increasing population, the social organization became more complex and centralized.

The exotic artifacts from other regions of Thailand such as glass, beads, stone, sea shell, copper ingot, and slag (oxide of metal) that were found at the site indicate that the ancient people of SCAS practiced both inter-regional and intra-regional trade. Craft production was a key economic activity of the community as evidenced by the presence of fragments of stone and shell crafts. The strategic location of SCAS made it the main trade exchange route between the central region and the northeastern of Thailand during that time (Bhumadhorn, 1979; Lertrit,2001; Lertcharnrit,2006)

b. Phase 2: Dvaravati period (6th -10th A.D.)

The presence of moats surrounding the ancient city of SCAS indicates that it was built during the Dvaravati period where several human settlements spread across the central region and Northeastern region of Thailand. The ancient culture during the Dvaravati period was influenced by the Mon people who have the knowledge and skill in designing and building moats and in creating other artistic objects. The Mon culture is influenced by Buddhism (Indrawooth, 2005). The moat was primarily used as defense from incoming enemies (Vallibhotama, 2005).

The excavated artifacts, such as spindle whorls (or 'wae' in Thai), earthen ware, Indian bead accessories, Buddhist votive tablet, image of Buddha, the inscription of 'Ye Dhamma' stanza and the 'Dhammajakka' (The Wheel of Law) stone, proved the existence of the Dvaravati culture/civilization. These wares indicate that the settlers of SCAS traded with Indian merchants (Maleipan, 1973; Bhumadhorn, 1979; Lertcharnrit, 2006)

c. Phase 3: Deserted (10th - 19th A.D.)

The third phase began after the Khmer invasion. According to Bhumadhorn (1979), the ancient SCAS was deserted either because of wars or epidemic diseases. So after 1,000 years of settlement on the site, the abandoned area reverted to a secondary forest.

This ancient city was later re-discovered during the time of King Rama V, and it was named 'Mueang Pra Temi'. Prince Damrong Rachanuphap, the brother of King Rama V wrote (Fine Arts Department, 2007, p.255)...*'There is another ancient city which was found in Sap Champa, Dong praya Klang, of Chai Badan Town. This ancient city located in the south of 'Mueang Srithep' but it was quiet far from here to the east around 500 sen (20 Kilometres) where can walk for 2 days. Someone told me that they found the stone wall there. I also found some parts of stone stupa which was carried from there to Chai Badan temple. So I believed that this ancient city also can find the stone stupa .However, we do not know the exactly name of this ancient city. Someone told me that it was called 'Mueang Pra Temi' which came from the name of the first incarnation of the last ten incarnation of the Buddha'*

Further literature search by the author re-affirmed that the existence of ‘*Muang Pra Temi*’ (Figure.31) is recorded on a survey map of Nation Archives dated 1920, which is now deposited at the Department of Fine Arts in Bangkok. The archives further reveal that around 1920 A.D., SCAS was once called ‘*Muang Pra Temi*’ a ‘city’ in the middle of a thick forest (also called *Dong Praya Klang*, a part of *Dong Phaya ‘Yen’* or *Dong Pha Ya Len* during the time of King Rama V) within the administrative boundaries of Chai Badan in Petchaboon province (Wiparkpotjanakit ,2003) (Figure.31)



Figure.31: Map showing the location of Muang Pra Temi

Source: Nation Archives, 1920 (scale 1: 65000)

During this period, King Rama V built a railway from Saraburi province to Korat Plateau in the northeast region. The railway workers were scared of the bad connotation of *Dong Phaya 'Fai' jungle* ('Fai' means fire) or *Dong Phaya Pai* (ดงพญาภัย means the dangerous jungle) - the name of the forest surrounding SCAS. This may be so because the forest was the home of dangerous animals such as tiger, bison, elephant, and deer. Because of the bad connotation of 'Fai' and 'Pai', and the presence of dangerous wild animals, malaria-carrying mosquitoes as well as attacks from bandits, the name of the forest was changed to be *Dong Phaya 'Yen'* (ดงพญาเย็น) or *Dong Phaya 'Len'* ('Yen' means feel good, happy) (Wiparkpotjanakit,2003). Figure.32 shows the old map of the forest and the approximate locations of SCAS and CPSF. This story is a good interpretative material informing tourists of the interesting story and historic development of the study area. Sap Champa sub-district where SCAS is located was a center of trade because of the presence of a road running from the highland Korat plateau to central region in Lop Buri and Saraburi province. This road passed through the forest of *Dong Phaya Klang* which was a part of *Dong Phaya 'Yen'* or *Dong Phaya 'Len.'* This indicates that SCAS was a very busy 'city' indeed.

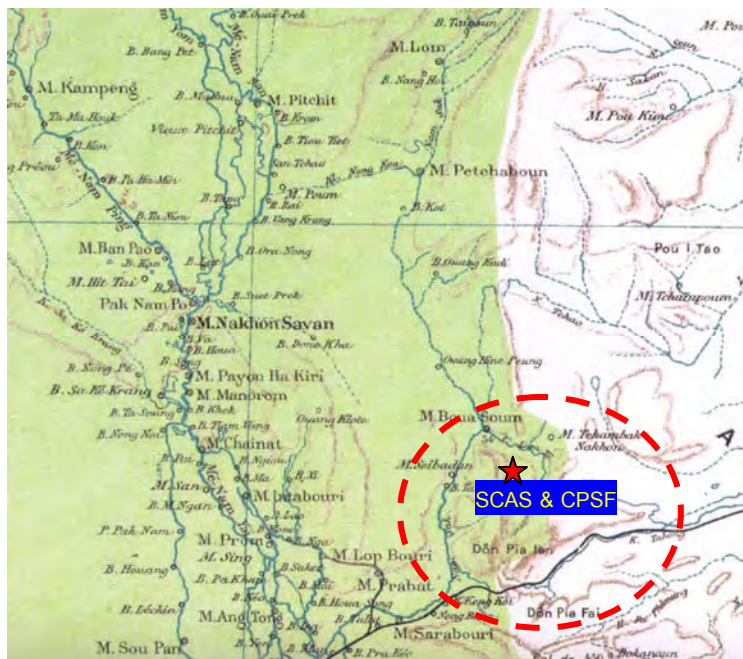


Figure.32: 'Dong Pha ya Pai' showing the locations of SCAS & CPSF.

Source: Auguste, 1999, pp.140-141

d. Phase 4: Present period (19th -20th A.D)

Prior to World War II, Marshal Pibunsongkram, the former Prime Minister of Thailand, ordered the establishment of a military town in Lop Buri province and the transfer of the capital of Thailand from Bangkok to Petchaboon province for national security. As a result, non-Thai residents (i.e. Chinese) in Lop Buri were ordered to move to the east where they cleared portions of the Dong Phaya Yen forest and settled there. Consequently, new settlements were formed around SCAS. The impoverished residents from adjoining provinces (such as Lop Buri, Ayutthaya, Chainat, Singburi province) and northeastern region (Nakorn Ratchasima province) were also encouraged to move to this area with a promise of free hold of the land where they will settle. The new settlers then expanded their settlements by clearing further the forest and converting to it agricultural land (Pibulsongkram,1997; Sujchaya, 1999).

In the 1950s, the descendants of the original settlers, while clearing the forest of Dong Phaya Yen, discovered the remains of the ancient city of 'Muang Pra Temi' now called SCAS. Because the area was rich in freshwater spring, which indicates the presence of ground water, they called the forest and the surrounding area "Sap Champa". This was found to be a suitable place for settlement and farming, and subsequently the forest receded. They occupied the area for 20 years until the Royal Forest Department promulgated the National Forest Act in 1964 and declared Dong Phaya Yen National Forest as a national protected area. Chai Badan was also declared as a protected zone under the Chai Badan National Forest Act in 1969 because SCAS and CPSF are within the Chai Badan Forest, they are considered protected zones (Unyuang, 2000). Figure.33 shows the map of Chai Badan Forest.

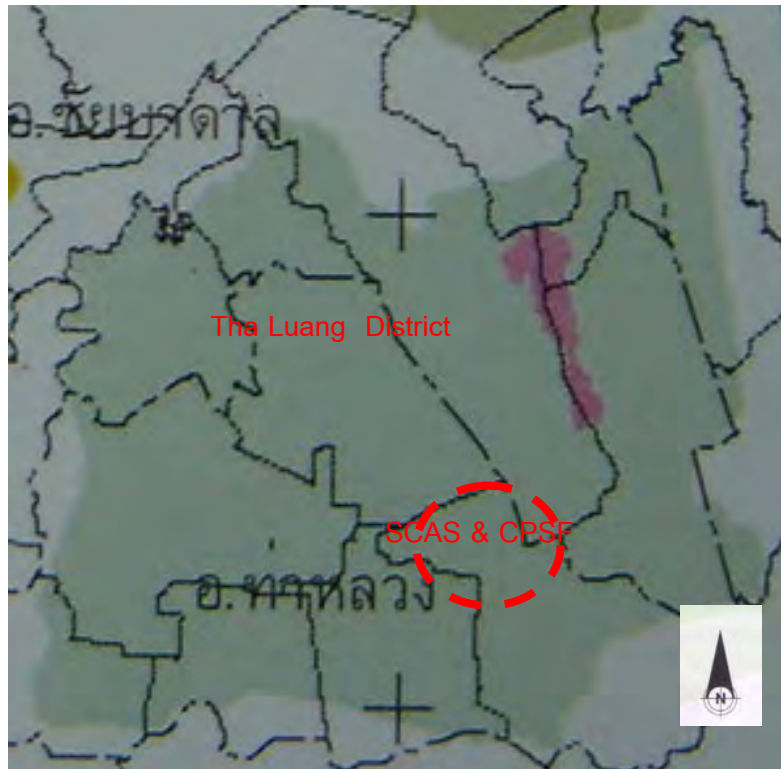


Figure.33: Boundary of Chai Badan National Forest (Green Color).

Source: Department of Environmental Quality Promotion, 2004

Despite the enactment of the laws on the protection of the forest, the local farmers and residents insisted on expanding their farms and claiming land ownership thereafter (Boonyanant,1999). As this is not possible under the law, the Royal Forest Department under the Ministry of Agriculture and Cooperative compromised by allowing farmers in 1974 to open up some portions of the land inside the Chaibadan National Forest for cultivation under a 50-year lease agreement (Lertrit, 2003a;2003b).Under the lease agreement, no private ownership is allowed and farmers have to take care of the remaining forest and protect the soil from further degradation. Table.13 summarizes the history of the land use of Sap Champa.

Table.13. History of land use of Sap Champa sub-district.

Year	Land use type	Administrative jurisdiction	Land management
1920-1963	Dong Phaya Yen Jungle Include Dong Phya Klang	-	-
1964	Chai Badan National Forest	Chai Badan District Authority, Petchaboon province	RFD
1974	Farmland under lease agreement(below 50 Rai per household)	Chai Badan District Authority (at that time),Lop Buri province	CLTC and CPD
1989	Farmland under lease agreement	Tha Luang District, Lop Buri province	CLTC and CPD
1997~now	Farmland under lease agreement	Sap Champa sub-district Local Government Authority, Lop Buri province	CLTC and CPD

RFD = Royal Forestry Department, CLTC = Chaibadan Land and Tenant Cooperative Ltd.

CPD = The cooperative Promotion Department, Ministry of Agriculture and Cooperative.

As mentioned earlier, the farmers while clearing portions of Chai Badan National Forest for cultivation, discovered in 1973 the existence of the archeological site (SCAS). Under the good leadership of Bhumadhorn (1994) (who used to be the head of Som Dej Pra Na Rai National Museum in Lop Buri province), Princess Maha Chakri Sirindhorn was invited to visit SCAS on October 15, 1986(Contrast to K.Panthong, personal communication, September 3,2009,(October 29,1986).In preparation for her Highness' visit, the provincial government constructed an access road to SCAS. This road cuts through the farms of the local residents who were, nevertheless, happy to set aside parts of their farm for the road. *Eucalyptus* plants were planted along the road as well as the boundary of the archeological site. The rows of planted trees also serve as the boundary line of SCAS indicating the delineation of the area that is being protected from encroachment. After her Majesty's visit to SCAS, a few conservation and

archaeological research projects funded by the national cultural heritage offices were set up in 1992. The RFD continued to reforest SCAS with teak and Neems trees (*Meliaciae*) to further protect it from illegal entry especially from thieves stealing antiquities for trade (Bhumadhorn,1994).



Figure.34: The visit of Princess Maha Chakri Sirindhorn to SCAS on October 29, 1986

Source: Photos from Ban Sap Champa primary School; Tha Luang Wittayakhom School (n.d.);K.Phanthong(n.d.).

1.3. Cultural Features of SCAS

The cultural heritage objects discovered in SCAS are summarized in Table.14. All these objects are now being kept at Som Dej Pra Narai National Museums, ICSC, and SCAS Cultural Center. There are objects also in private collections both within and outside Thailand. Appendix F shows the photos of these valuable objects, and tourists may be directed to look at them in national and local museums.

Table.14: The location of SCAS' antiquities collection

Located place	Items
The Som Dej Pra Na Rai National Museum, Muang District, Lop Buri Province	1.Sap Champa octagon Inscription No.1 (south Indian inscription –The <i>Pallawa</i> script with the 'ye <i>dhamma</i> ' stanzas on a free-standing stone) 2.Sap Champa Inscription No.2
Muang Sap Champa Local Museum, Tha Luang Wittayakhom School, Tha Luang District, Lop Buri Province.	1. Portable small image of Buddha (or votive tablet) including photos of last excavation's evidences in 2006. 2. Fragments of earthen wares.
Information Center of Sub Champa Historical Site and Champi Sirindhorn Forest (ICSC), Tha Luang Wittayakom School, Tha Luang District, Lop Buri Province.	1. Stone implements. 2.Fragments of earthen ware, terracotta wares 3.Portable small image of Buddha (or votive tablet), 4.Bronze image of Buddha, 5.Grinding stone 6.Ancient bead
Sap Champa Temple, Tha Luang District, Lop Buri Province.	1.Sap Champa Inscription No.2 (<i>Pallawa</i> inscription)
SCAS Cultural Center (the former Forest Dept Field Office), Tha Luang District, Lop Buri Province.	1. Stone implements. 2.Fragments of earthen ware, terracotta wares
<u>Private collection</u> Sap Champa Sub-District, 1.Mr. Champadip Plian 2.Mr. Boonrot Pai	1.Stone Bell in Davaravati period, red stone of Budhha' s right hand. 2. Sap Champa Inscription No.4.
<u>Other</u> 1.Faculty of Archaeology, Silpakorn University, Bangkok	1.The wheel of Laws(red sand-stone)
<u>Foreign country</u> 1.Rockey Fellow Foundation, USA	1. Crouching deer, Buddha image red stone.

Source: Modified from Bhumadhorn, 1979; P.Champadip (personal communication, September 9, 2009); Photos taken by I. Sarttatat at Som Dej Pra Na Rai National Museum on September10, 2009.

1.4. Social Features of SCAS

The main social features that indicate the importance of SCAS as a cultural heritage site is evident with the formation of a network of conservationists and concerned local residents and institutions. The former Director of Tha Luang Wittayakom School, Ms. Warankarasm Wilaiwan (personal communication, September 3, 2009), initiated the formation of the Sap Champa and Cham Pi Sirindhorn Forest Conservation Club (‘SCCPSCC’ or in Thai ‘*Chom Rom Rak Mueang Boran Sap Champa lea Pa Cham Pi Sirindhorn*’ (ชมรมรักษ์เมืองโบราณซำป่าและป่าจำปีสิรินธร) in 2004. At present, this organization is comprised of 1,200 members (N.Khamruengboon, personal communication, September 3, 2009).

The various activities of the Organization include the celebration of annual commemorative ceremony at the site itself, where local people ask their ancient spirits for favor. Figure.35 shows the first commemorative ceremony held on April 1, 2005. This annual ceremony attracts members of various sectors such as local community, academics, NGOs, and government. The celebration of this ceremony has been so popular that it has been continued up to the present. Since the ceremony is held both using Buddhism style and Brahmanism style, diverse groups of people join in. This social gathering has been a source of local pride, enhancing people’s respect for their cultural heritage. Cultural tourism can consider this an annual attraction. Table.15 shows the dates of commemorate ceremony.

Table.15: The date of annual commemorate ceremony

	Date of annual commemorate ceremony of SCAS	Brahmanism ceremony	Buddhist ceremony
1	April 2005	April 1	April 1
2	March 2006	March 21	March 22
3	April 2007	April 12	April 13
4	January 2008	January 26	January 27
5	March 2009	March 20	March 21
6	March 2010	March 14	March 15
7	March 2011	March 4	March 5

This Organization (SCCPSCC) is also concerned with the protection of the rare and endemic species of *Magnolia* and its habitat. Since SCAS is not far from CPSF, tourism development of both areas should be done simultaneously. Both areas are considered a valuable investment for tourism and conservation. With the support of Mr. Srihwan Wichai, the former Governor of Lop Buri province, some 31 millions baht were allocated for the development of infrastructure and tourist facilities in both areas. The old access road was improved and sealed. Furthermore, a learning center, known as the Information Center of Sub Champa Historical Site and Champi Sirindhorn Forest [ICSC], was established in Tha Luang Wittayakom School to promote the importance of these areas for teaching and learning purposes. The public are encouraged to visit the Center, which is known for promoting better appreciation of local heritage culture.



Figur.35: The first SCAS commemorative ceremony or '*Tam Bun Mueang*' by local community. Source: Photos from N.Khamruengboon , April, 2005

1.5. Relevant Stakeholders of SCAS

The stakeholders of SCAS are from the local, regional, national levels (Table .16 and Table 17; Figure.36).The close collaboration of relevant stakeholders is essential in cultural heritage conservation and management. They are also involved in the development of the site as a cultural heritage attraction (Appendix.H)

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

Table.16: Relevant Stakeholders of SCAS

Level	Organizations	Scope of Responsibility
National Level	1.CPD , CLTC, Ministry of Agriculture and Cooperatives 2.RFD , NCECD, Ministry of Natural Resources and the Environments 3.FAD, Ministry of Culture	Supervise Farmland leasing Policy Regulate Protects Forest Areas Policy (RFD), Preservation of the Natural and Cultural Heritage Environment [NCECD]. Regulate national ancient remains
Provincial/Regional Level	1.CLTC, Ministry of Agriculture and Cooperatives 2.RFD (Field office, Lop Buri province),Ministry of Natural Resources and the Environments 3.FAD4 (Regional Office of Fine Arts in Lop Buri Province), Ministry of Culture	Control all leased farmland in Sap Champa sub-district Protect SCAS(Forest in the site) Protect SCAS (Monuments, sites, and antiquities) and the nearby archaeological site
Local Level	1.Sap Champa Local Government Authority, Ministry of Interior 2.SCCPSCC with the patronage of S.C.A.E.L 3.LocalCommunity	Administrative and directly manage local budget for conservation and development in SCAS Supervise and protect for SCAS and CPSF Supervise and protect for SCAS and CPSF
Other (Third Party)	Related Educational Institute(Thepsatri Rajabhat University[TRU], Silapakorn University [SU] etc.) Researcher, Tourist, Provincial NGOs(i.e. Society for Conservation of Antiques, Ancient Monuments and Environment of Lop Buri [S.C.A.E.L.]	specific training, field study and research (i.e. TRU,SU), Travelling, Observation, Preservation Activities and Monitoring[S.C.A.E.L.]

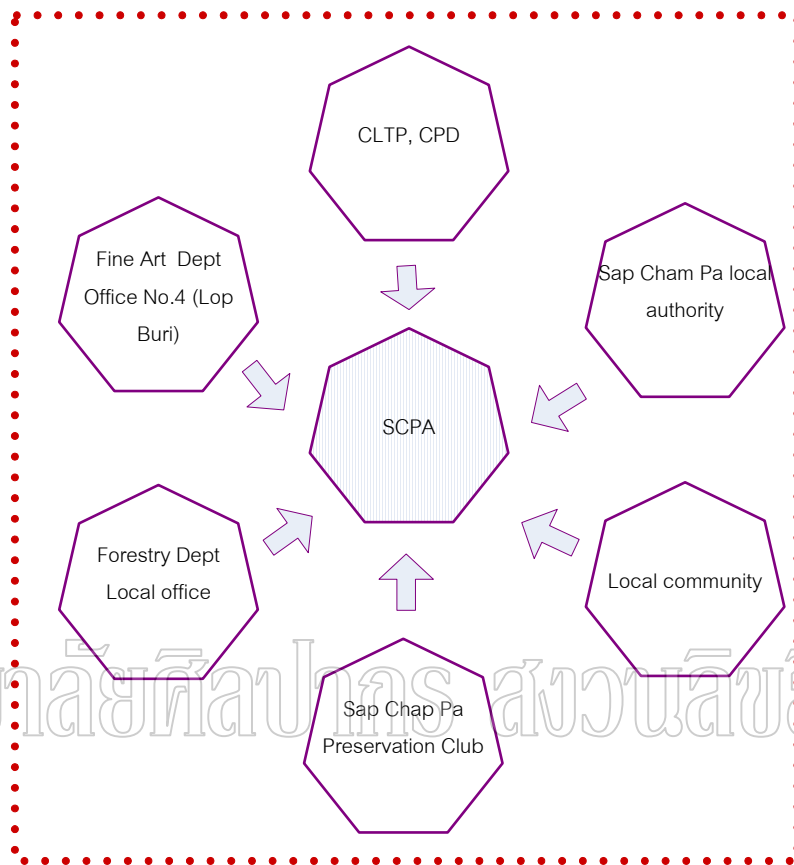


Figure.36: The main stakeholders concerned to SCAS.

Draw by I. Sarttatat on August 28, 2009

Table.17: Relevant Key Stakeholders of SCAS

Responsible Organization	Key Positions/offices to be contacted for information
Fine Arts Department[FAD.4]	Head of Academic section
Forestry Department local office[RFD]	Chief of local officer
Sap Champa Local Government Authority	President of Sap Champa Local Government Authority
Sap Champa preservation Club (Local NGO)	Head of SCCPSCC
Local community	Community leader
S.C.A.E.L(Provincial NGO)	Head of S.C.A.E.L
[NCECD], Ministry of Natural Resources and the Environments(Regional Office)	Head of NCECD(Regional Office)
CLTC	Chief of CLTC

1.6. Tourism development in SCAS

The tourism activities related to SCAS can be described below:

1.6.1. Heritage tourist attractions

The main heritage attractions in Sap Champa sub-district, specifically those depicting SCAS, are as follows; (a) Muang Sap Champa Local Museum, (b) Information Center of Sub Champa Historical Site and Champi Sirindhorn Forest [ICSC], (c) 'Luang Por Boon Mee' image of Buddha statue, and Sap Champa Archaeological site(SCAS). The locations of these attractions are shown in the community map (Figure.37).

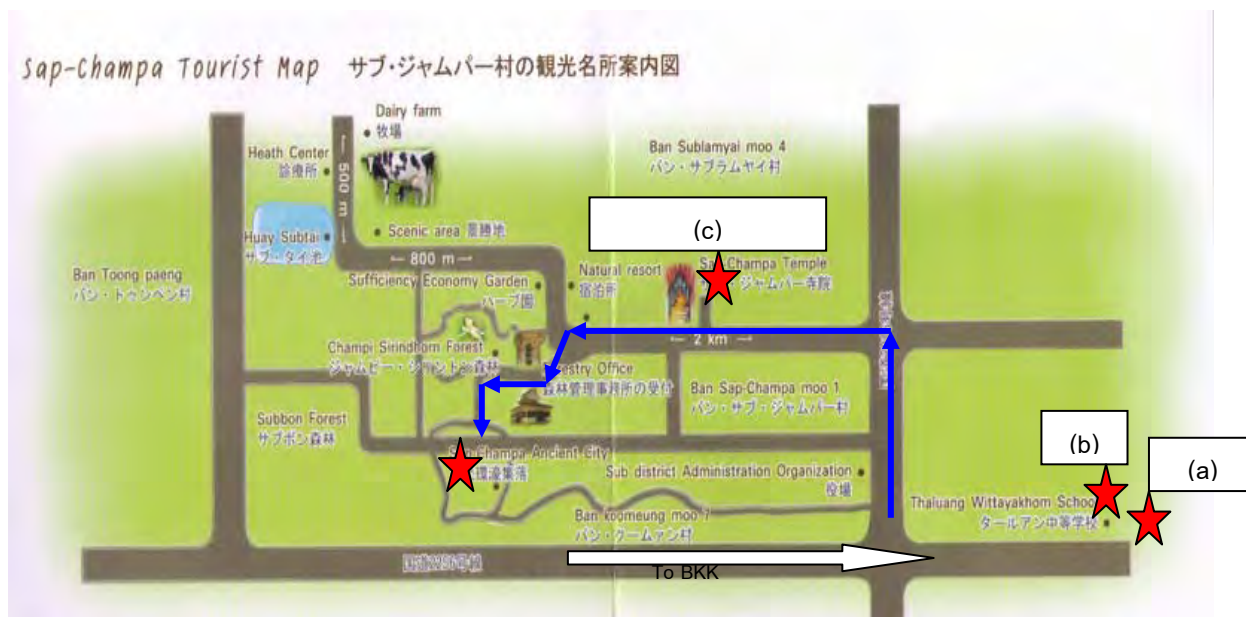


Figure.37: SCAS community map in tourism brochure.

Source: Thepsatri Rajabhat University, 2007

มหาวิทยาลัยศิลปากร ส่วนศิลปกรรม
 1.6.1.1. Muang Sap Champa Local Museum--(a)



Figure.38: Muang Sap Champa Local Museum.

Photos taken by I. Sarttatat on August 21,2008

Muang Sap Champa Local Museum is located in Tha Luang Wittayakhom School along local road no. 2256. It was built in 1999 in the occasion of King Rama IX's 72nd birthday. The budget for this museum came from Sap Champa Local Government Authority with the cooperation of the local community. The exhibition in this museum is about the story of SCAS and history of Sap Champa sub-district. The archaeological artifacts exhibited include some earthen wares and votive tablets. There are also photos documenting the excavations in 2006. Although Muang Sap Champa Local Museum belongs to Sap Champa Local Government Authority, it is under the direct supervision of Tha Luang Wittayakhom School. As part of the local curriculum, it is also used as the learning center for the students of Tha Luang Wittayakhom School in order to enhance their sense of conservation for their cultural heritage.

1.6.1.2. Information Center of Sub Champa Historical Site and Champi Sirindhorn Forest (ICSC) --(b)

The Information Center of Sub Champa Historical Site and Champi Sirindhorn Forest (or ICSC) is situated in Tha Luang Wittayakom School. It was built in 2004. In addition to serving as a learning center for students and the local community, ICSC also serves a tourist destination. The study of the ancient history of Sap Champa sub-district is part of the school curriculum, and students are required to visit the Center as part of their academic requirements as well as to instill the conservation ethos of the natural environment in them.

ICSC is being supported by various stakeholders, such as local community, government agencies (architecture and forestry sectors), and academic and scientific institutions. Some artifacts owned by certain private individuals were donated to the Center so that the public can appreciate the ancient materials and tools used during the ancient times. Mrs. Warankarasmee Wilaiwan, the former Director of Tha Luang Wittaya Khom School, started the ICSC project in Tha Luang School; she revealed that the Lop Buri Provincial Authority financed the establishment of the Centre by providing 20,000 Baht. The interpretation design of the Center was done under the expert advice and

supervision of Mr. Bhumadhorn Bhudhorn, a well-known Thai archaeologist who was responsible for the initial discovery of the archeological site at SCAS.

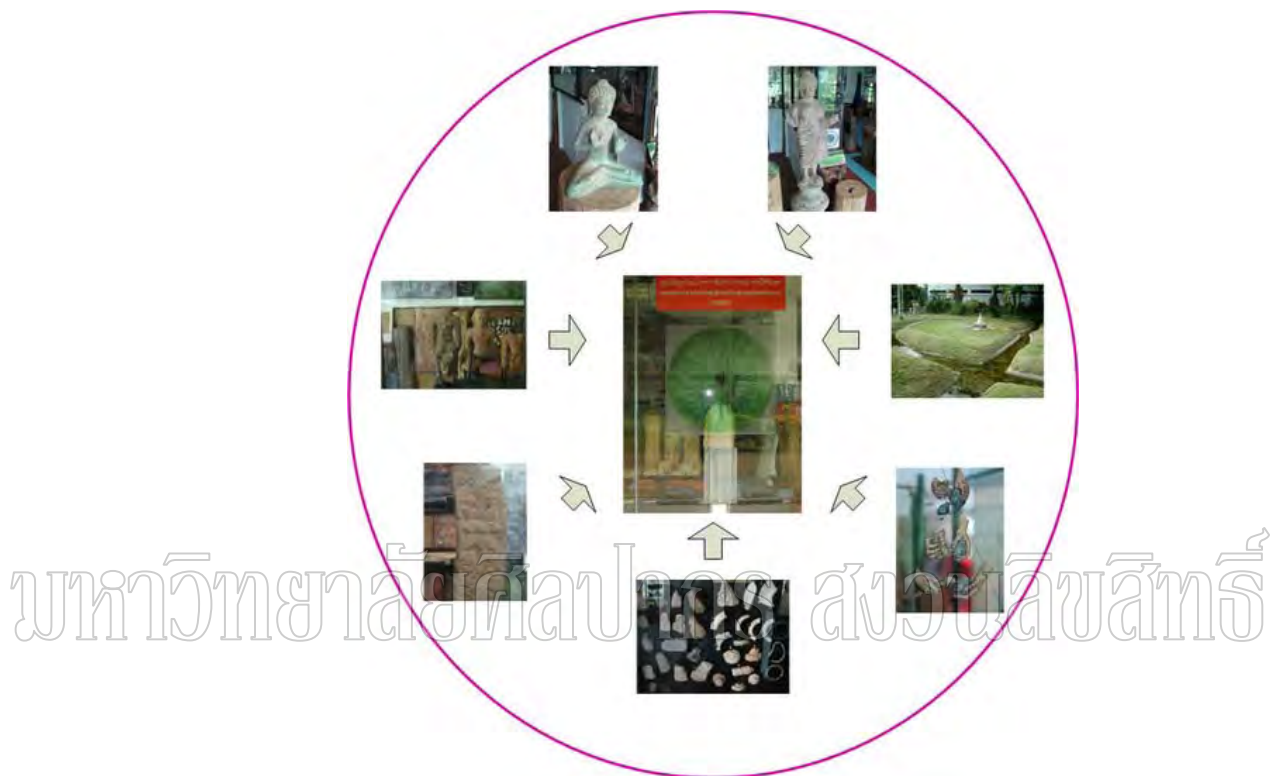


Figure.39: Information Center of Sub Champa Historical Site and Champi Sirindhorn Forest [ICSC]. Photos taken by I. Sarttatat on January 18, 2007

The set of information displayed at ICSC is divided into five parts or sections, each with a specific theme. The first part shows a miniature replica of SCAS (Mini Sap Champa). This section is located in a small garden patch in front of ICSC. The inverted heart-shaped archaeological site is the focus of the replica. It serves to create an image of what the ancient city looked like.

The second part of ICSC focuses on the religious beliefs of the ancient residents of SCAS, in particular on events that had occurred during 6th- 7th A.D. A prominent feature of the exhibit is a replica of *Pallawa*, an Indian inscription. This model depicts the influence of Hinayana Buddhism on the ancient religion during

that time. Many other kinds of artifacts including the ancient tools used during the prehistoric period are also on exhibit. Figure.39 shows the different artifacts on display, such as stone implements, fragments of earthen ware, portable small image of Buddha (or votive tablet), bronze image of Buddha, terracotta wares. Many of these artifacts are donated by private individuals who happened to have had accessed these objects of antiquity during the early phase of the excavation and survey of the SCAS.

The third part section of ICSC exhibit focuses on the lifestyle of Sap Champa's ancestors, in particular those pertaining to early human settlement and trade. The model shows the strategic location of the ancient city as a trade center within the central region as well as its accessibility to the neighboring regions of ancient Thailand. The display illustrates the international trade-route taken by Sap Champa and the Indian merchants. The physical appearance of the moats built around the ancient city is also depicted in the display. It focuses on the story about the construction of a defense structure (i.e. two-layer moats surrounding the entire city) employed to protect the city from their enemies during ancient wars.

The fourth part of the exhibit focuses on the environment and natural resources in Sap Champa sub-district. The description of the adjacent Champi Sirindhorn Forest including the forest species found thereat are exhibited by displaying bits of wood specimens from various common plants found in the CPSF, such a those species belonging tor the Dipterocarpaceae and Leguminosea families. An authentic specimen of *Magnolia* is also exhibited.

The last part of the exhibit is about the contemporary story of the Sap Champa people. This part presents the story of the settlement of Sap Champa people some 50-60 years ago. The various cultural events and festivals are also depicted as part of the traditional lifestyle of the people of the sub-district. These festivals include New Year's Day, Songkran, and Loi Kra Tong, etc. The local agricultural products and tools currently used by the local community are also presented.

The majority of the visitors to both ICSC and Muang Sap Champa Local Museum are the official guests of Tha Luang Wittayakhom School; they are from various

sectors- academics, research, and educational and cultural groups and organizations. More recently, the visitors were comprised of various groups, such as foreign students, experts from various field, famous TV personalities, high ranking governmental officials, news reporters, and local politicians. Selected bright students of Tha Luang Wittayakom School serve as tour guides after receiving some training on basic interpretation. They have learned to interpret the display in Thai, English and Japanese languages. The Sap Champa Local Government Authority also participates in promoting the study sites as a culturally significant tourist attraction at the local and national levels.

The importance of the study area is highlighted in various academic events and gatherings. One such event is the symposium sponsored by the Princess Maha Chakri Sirindhorn Anthropology Centre (SAC) held on June 28-29, 2008 at Thepsatri Rajabhat University (TRU). Since the theme of the symposium was on the national and local cultural experiences from Lop Buri, the significance of ICSC and SCAS was discussed and made known to a broader audience. The general information about SCAS including the 'Muang Sap Champa Local Museum are published in the local and national museum database/archives (National Discovery Museum Institute, 2009). Likewise, the description of the ancient inscription (*Jareuk Sap Champa*), one of the artifacts excavated from the SCAS, also appears in the List of Inscriptions of Thailand database of Princess Maha Chakri Sirindhorn Anthropology Centre (SAC, 2009).

On September 18-21, 2009, the National Discovery Museum Institute, SAC, and the Arts and Cultural Center of Thepsatri Rajabhat University collaborated in sponsoring another event, called the Lop Buri Local Museum Festival, where participants presented various case studies from Lop Buri. Again, the undertakings and significance of ICSC and Muang Sap Champa Museum were highlighted.

1.6.1.3. Luang Por Boon Mee image of Buddha Statue--(c)

The various artifacts form SCAS are in themselves tourist attractions. One such example is the figure or statue of Boon Mee Buddha (Figure.40), which is on display at *vihara* of Sap Champa temple near CPSF in Sap Champa village 1. It is known locally as the Luang Phor Boon Mee (meaning virtuous statue); the lower part of the figure of

Buddha was excavated from SCAS. Later, the upper part (head of image of Buddha) was added, using plaster replica, to the original lower part to form a complete figure of the Buddha. It was assumed the Buddha figure was crafted during the Dvaravati period at around 6th - 7th A.D.



Figure.40: The image of Buddha, namely 'Luang Phor Boon Mee'.

Photo taken by I. Sarttatat on August 21,2007

The local community venerates the Luang Phor Boon Mee and believes in its miraculous power. People from various ways of life and places go the temple to pay respect to the image and pray for personal success or good luck. A red-colored soda soft drink known as 'Fanta' is offered by the visitors to the Buddha statue of '*Luang Phor Boon Mee* (หลวงพ่อบุญมี)' as a gesture of respect.

Based on interviews of the local residents, this researcher found that the local residents would like to promote Luang Phor Boon Mee as a one of the sacred places in the Sap Champa sub-district. In fact, the story of Luang Phor Boon Mee is presented in the tourist brochure of Sap Champa sub-district. The story of the Buddha and its sacred representation are few of the main topics presented by the tour guides to the visitors of SCAS.

The local community also recognizes the religious value of the Buddha and believe that it could also be an interesting tourist attraction. As an tourist destination, some revenues from tourism are generated for the socio-economic benefits of the local community (UNEP, 2003). The main sources of revenues are usually from selling flowers, joss sticks, and candles, which visitors normally purchase when they pray at the temple.

As mentioned above, the significance of SCAS can be divided in two aspects; one as a tourist destination, and the other as a research site.

SCAS - as a tourist destination

SCAS is currently promoted as a tourist destination using various methods such as through radio broadcasting and written forms of media releases and tourist brochures as well as through word-of-mouth. The message of the promotional materials is about the history of the ancient city, which was discovered in 1973 and the excavation of the site, which is now known as SCAS. The ancient city's main attraction is the outer and inner moats that surround it. These features are emphasized in Sap Champa sub-district's promotional materials that say, *"An ancient city, the mound with surrounding moats, Known for seepages with multifarious values , Community Forest and its countless values of Magnolia Champi Sirindhorn"* (translated in Thai as "เมืองโบราณ เนินดินฐานคูเมือง เลื่อนน้ำซบ คุณค่านับอนันต์ ไม้พันธุ์ป่าชุมชน ค่ามากล้น จำปีสิรินธร") (Sap Champa Local Government Authority, 2006).

SCAS- as a research site

In addition to being a tourist attraction, SCAS is also an important research and learning site in Lop Buri province. For instance, students from the Faculty of Archaeology, Silpakorn University frequently visit SCAS as part of their academic field work. The students from Tha Luang Wittayakom School and the nearby local school also study and visit this site as part of their academic curriculum.

In 2006, the Fourth Regional Office of Fine Arts in Lop Buri's had an excavation project at SCAS. The students from the Faculty of Archaeology, Silpakorn University also had an excavation project as part of their field work in January, 2010.

Currently, the trenches are apparent in the place and may be used as objects of interpretation in cultural tourism. SCAS also is used as a field trip destination for students from other academic institutions.

Tourism in SCAS is under the administration of the Sap Champa Local Government Authority in collaboration with organizations such as Sap Champa and Cham Pi Sirindhorn Conservation Club (SCCPSCC), which provides assistance in tour guiding and other related activities aimed at maintaining SCAS as an important cultural place.

The members of SCCPSCC help in tour guiding and food services. The visitors while on an open-truck are taken through the dirt-road into the main archeological site where they can have a closer view the famous moats that used to protect the ancient city. The tour guide tells the story of the ancient city based on the excavated evidences and discusses the significance of the moats and other archeological features during ancient time. The beautiful scenery and landscape of SCAS is another attraction in this visit.

มหาวิทยาลัยศิลปากร ส่วนเวฬุวนาราม

1.7. Visitors of SCAS

The visitors of SCAS consist of both foreign and domestic tourists. Majority are domestic visitors. They come to learn about the place and/or experience how it is like to be in the remains of an ancient city. The group size of visitors ranges from one as large as a class of school students who come for an academic field trip to another consisting of a small group of 2-5 people who come just for sightseeing (Figure.41). The foreign tourists are mostly those who have archeological research projects and academic programs about the site.

At this stage, SCAS does not have adequate tourism facilities and services. For instance, there is no interpretation signage installed on site and much less car parks, souvenir shop, accommodations, food outlets, and roofing shelter. However, if properly developed, SCAS has the potential of becoming a famous tourist attraction for cultural heritage in the central region of Thailand.



มหาวิทยาลัยศิลปากร ส่วนศิลปวัฒนธรรม

Figure.41:Various groups of visitor to SCAS. Photos taken by I. Sarttatat on January 18, 2007; Photos from Sap Champa Local Government Authority, 2009;2010

In conclusion, SCAS has cultural significance because of the historical values of the pre-historic settlement and research values. It has the basic elements necessary in promoting cultural tourism, but only if it has a community-driven tourism development plan.

(B) Cham Pi Sirindhorn Forest (CPSF)

1.8. General Features of CPSF

CPSF is located about 500 meters to the south of SCAS. It is found in Ban Sap Champa village Moo 1 of the Sap Champa sub-district. It is 180 meters above sea level. This forest was once part of Chai Badan National Forest, a remnant of the old growth forest with rich deposits of natural springs (also called water seepage) (Wang Kha Nai Groups, 1999). It is highly diverse with numerous plants, Thai herbs, and small animals. The soil ph-value in this forest is about 8.1 (i.e. basic rather than acidic).



Figure.42: Aerial photo of CPSF. Source: Thaioldbead, 2009

1.9. Historical Features of CPSF



Figure.43: The groundwater level of CPSF in the past.

Source: Wang Kha Nai Groups, 1999, p.63

According to Mr. Champadip Plian the community leader of Sap Champa community who was a member of the second group of people who migrated from Lop Buri province to settle and farm in the area in 1964, said that 50 years ago, the forest used to be very extensive and blessed with numerous natural springs (personal communication, September 9, 2009). All the villages were part of the Sap Champa Forest (now CPSF). The natural springs during that time would overflow through limestone rocks from the forest up to where the Sap Champa temple was located. At that time, the local community used the fresh water from natural springs for their domestic consumption. As for the forest and the surrounding areas, there were extensive woods, composed of various types of species such as *Horsfieldia irya* (Gaertn.) Warb. (กรวย), *Donax grandis* Ridl (คู้ม), *Caryota mitis* Lour (เต่าร้าง), *Michellia champaca* Linn (จำปา) (at that time), *Livistona saribus* (Lour.) Merr. ex Chev (รีดค) etc. Furthermore, Mr. Champadip Plian said that there were many kinds of wildlife such as deer and wild pigs in area, etc. Unfortunately, there were bandits who used to antagonize and scare the

community, making the area a 'danger zone'. Later, when the local population increased, deforestation also increased. Likewise, the amount of freshwater from the natural springs diminished because of over-consumption for domestic and agricultural purposes. As a result forested areas declined significantly and, consequently, the natural springs dried up. The loss of forest cover and drying up of natural springs have caused much concern among the local community in regard to the depletion of water-supply in the future. They have realized the watershed value of the forest, which traps rainfall and stores it underground for future release onto the surface of the Earth. And so, they set up an informal community committee to monitor the use of freshwater from the natural spring as well as the use of other forest resources. The committee tried to stop illegal trespassing and farm expansion. They also tried to regulate the use of forest-products by setting up the forest policies to control deforestation, especially in the surrounding area of CPSF. They also made a small water dam near the forest to store the water flowing from natural springs. According to P. Champadip (personal communication, September 9, 2009), the forest committee requested some private land owners to donate some portions of their land for the construction of a dirt-road surrounding CPSF; this road marks the boundaries of the community forested areas.

As a consequence of wanton human activities, the extent of CPSF forest was reduced to only about 96 rai (25.33 hectares), which is now designated as a 'community forest'. Within this forest, the local community set up their own regulations to manage the use of forest products and to conserve the remaining forest resources for the future generations (Booyanant, 1999).

In 1998, Dr. Chalermglin Piya, a botanist from TISTR (Thailand Institute of Scientific and Technological Research), went to CPSF to study the dominant plant life in CPSF. He did this under the Plant Genetic Conservation Project of the Royal Initiative of H.R.H. Princess Maha Chakri Sirindhorn.

From his research, he found that there were various kinds of plants in CPSF, but over the years, the common or local names of these plants have been changed by the locals. Some plants were erroneously identified. He pointed out, for example, is the

incorrect identification of the tree 'Cham Pa tree (*Michellia champaca* Linn.), which is actually 'Cham Pi tree (*Magnolia*)'. The error was attributed to the color of the flowers while still on the tree and when fallen on the ground.

From this research, a new species of *Magnolia* was identified; it is considered the newest species of *Magnolia* discovered in the world (Chalermglin, 2004). This plant is endemic to Thailand and is now known as *Magnolia sirindhorniae* (Noot & Chalermglin), named after the H.R.H. Princess Maha Chakri Sirindhorn.

M. sirindhorniae is found not only in the CPSF of Lop Buri province but also in two other places in the country (see Figure.44). Later, *M. sirindhorniae* was also found in the forests of Loei and Chaiyaphum provinces; both places are located in the northeastern region. In the case of Loei province, there are only 30 *M.sirindhorniae* trees. In CPSF of Lop Buri province, there are 530 trees, which have been incorporated in forest management.

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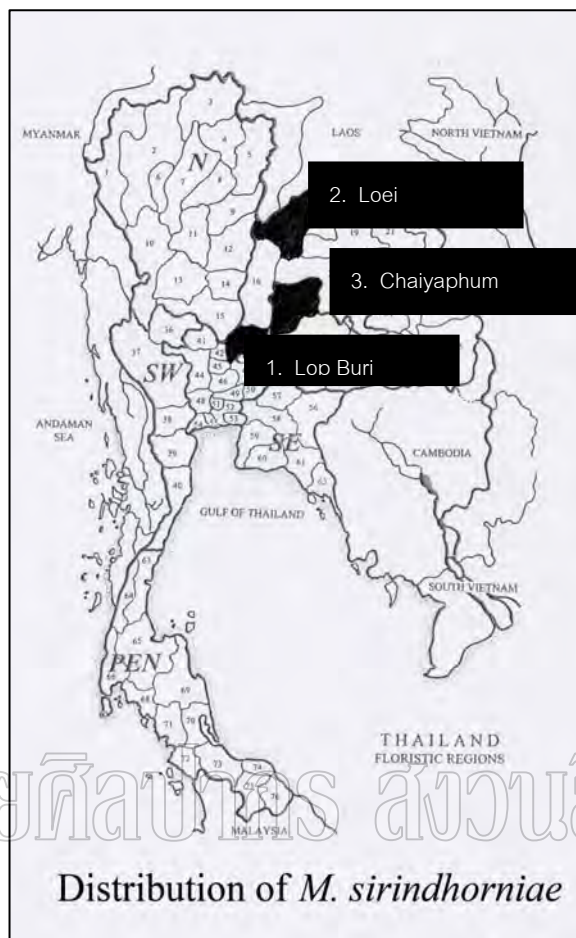


Figure.44: The distribution of *Magnolia sirindhorniae* in Thailand.

Source: P.Chalermglin,2009

After discovering this new species, H.R.H. Princess Maha Chakri Sirindhorn, who lectures at Chulachomklao Royal Military Academy, donated some saplings of *M. sirindhorniae* for re-planting in the cadet school grounds. This plant has then become the official emblem of the Cadets School (Chulachomklao Royal Military Academy, 2007) (Figure.45).



Figure.45: *Magnolia sirindhorniae* which was planted by Princess Maha Chakri Sirindhorn at Chulachomklao Royal Military Academy on August 5, 2004.

Source: Photos from the lecture of P.Chalermglin on September 25,2009

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 In addition, when H.R.H. Princess Maha Chakri Sirindhorn travelled abroad (i.e.China, Venezuela), she planted *M. sirindhorniae* at these places to commemorate her official visits (Figure.46). As a result, it has become well-known around the world.



Kwangjo Garden, China

Venezuela

Figure.46: *Magnolia sirindhorniae* planted by Princess Maha Chakri Sirindhorn in foreign countries. Source: Photos from the lecture of P.Chalermglin on September 25,2009

This endemic Magnolia species is much more well-known among Thai people because they believe that it represents H.R.H. Princess Maha Chakri Sirindhorn. Planting the tree, even in small backyard, is therefore a show of the community's loyalty to the Princess.

1.9. Natural Features of CPSF

Because *Magnolia sirindhorniae* is a significant scientific discovery and an interesting natural attraction in CPSF, this section will endeavour to discuss its biology as part of the interpretation material for tourists.

M. sirindhorniae is about 20-30 meters high; its diameter is about 1 meter for a large tree and 40-100 centimeters for a small/young tree. The flowers, which appear June and July, are white in color. This tree is considered a primitive species and reproduces only under suitable conditions. It grows well in lowland rainforest, where the ground water is abundant (Chalermglin, 2004).

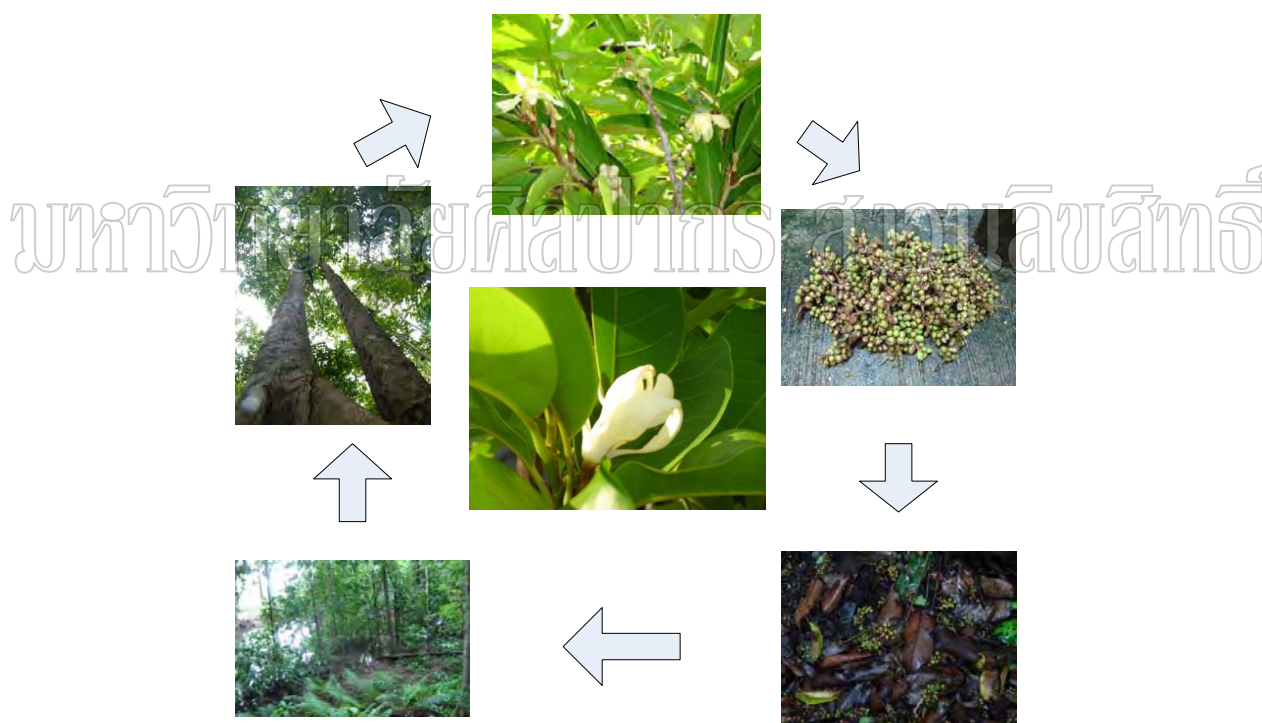


Figure.47: Life Cycle of *Magnolia sirindhorniae*

Photos taken by I.Sarttatat on September 3, 2009

Because the species is dependent on adequate ground water, it would become extinct if the forest dries up. As a protected species in Thailand, it was a priority research focus of the Plant Genetic Conservation Project under the Royal Initiative of

H.R.H. Princess Maha Chakri Sirindhorn. Researches are underway on how to protect the species and preserve the seeds under *ex-situ* conditions (Plant Genetic Conservation Project Office, 2009). The Royal Forestry Department participated in this project by setting up a research station within the CPSF. In 2006, it started implementing the Lop Buri's Plant Genetic Conservation project, aimed specifically to preserve the remaining natural stand of *M. sirindhorniae*.

This RFD field office has one forester administrator and ten assistants. They have been tasked to undertake research activities under the Plant Genetic Conservation Project. The field forest management is responsible for the maintenance of a forest nursery of *M. sirindhorniae*, provision of information about the project to the general public, and increasing public appreciation of the forests and all the plants within CPSF.

1.10. Scientific Features of CPSF

The forest is valuable for scientific research and as habitats of flora and fauna. CPSF has about 570 endemic trees. CPSF is the home of the largest natural collection of *M. sirindhorniae* in Thailand and in the world. There are also more than 100 species of traditional medicinal plants in this forest. Appendix G shows the list of plant species including traditional medicinal plants found in CPSF.

According to Mr. Khamruengboon Netnarin (personal communication, September 9, 2009), there are more than 10 species of medicinal plants in this forest which have high scientific value. CPSF can be promoted as a traditional herb center because of the presence of valuable herbs used in Thai massage. The traditional medicinal plants are also important in the use of alternative medicines for various ailments. More research is needed to highlight the values of these plants in medical science.

CPSF is also the genetic source of locally cultivated plants such as mushrooms. The study of Chayawat (2008) found that there are 101 samples of mushrooms which are edible and non-edible (i.e. toadstool) in this forest.

The scientific value of CPSF can stimulate the local economy not only through nature-based tourism but also a center for vocational courses in traditional medicines.

However, there is a need to develop and implement a forest management plan for the propagation of medicinal plants including their conservation in the wild.



Figure.48: Examples of the medical plants present in CPSF.

Photos taken by I. Sarttatat on September 14,2006

1.11. Economic Features of CPSF

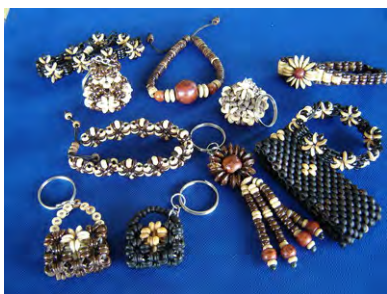
CPSF is being promoted as a small scale nature-based tourism in Lop Buri province. There are many groups of visitors, such as school students (primary and secondary schools), undergraduate students, private groups of tourists (5-6 persons) who come to this natural heritage site for their field trips and sightseeing.

The Lop Buri Provincial Authority has plans to designate this forest as a new eco-tourism destination in the province by incorporating its management within the 4-year provincial development plan.

According to the 2008-2011 plan of Lop Buri provincial government authority (Poladech, 2008), CPSF should be strongly promoted as a new ecotourism destination in Lop Buri province. The Tourism Authority of Thailand (TAT.7 at Lop Buri regional office) aims to support this provincial policy by developing a tourism marketing plan to promote CPSF as a nature-based tourist destination and promoting it via their website. These activities would entice various groups of visitors to see the site and, thus, would stimulate the local economy through a range of services such as food-production, local tour guiding, and the selling of local products as souvenirs (i.e. Thai traditional dessert, accessories, local products) (Figure.49).

Moreover, the RFD field office also provides seeds and sampling of *Magnolia* in souvenir bags, allowing tourists to re-plant the plants when they return home. The visitors are encouraged to donate some money (i.e.20-30 Baht per sampling) for conservation. The revenue can be used to purchase nursery supplies. However, it is

important that some of the revenues are shared with the local community to help in the protection of the forests and plants therein.



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Figure.49: Local products and souvenirs concerning to CPSF.

Photos taken by I. Sarttatat on September 14,2006

CPSF is also a venue of choice for research, seminars and lectures. These activities contribute to the revenue earned by CPSF and provide supplementary income to the community through food services and sell of local products. For example, local women prepare and produce these products which are sold to visitors and guests. Thus, these activities at CPSF bring revenue to the local community and increase their family income. Tourist facilities such as sealed-roads, on-site signage and small scale car-parks have to be improved to increase the economic value of CPSF. The provincial government authority encourages the establishment and/or improvement of the facilities.

However, the high economic potential of CPSF has triggered some social conflicts between the government and the local community. The issues are not only related to who will benefit from the revenue but also on the ownership and supervision

of the forest. This issue was aired during a public controversy held on November 9, 2009, when the local community put forward their land ownership claim to the RFD officials present in the forum. (Figure.50). This issue, whilst complex and controversial, should be addressed and incorporated in the tourism management plan for this site.



Figure.50. Public controversy held on November 9, 2009.

Photos taken by I. Sarttatat on November 9, 2009

1.12. Relevant Stakeholders of CPSF

The relevant stakeholders of CPSF come from the local, regional and national levels (Table.18).

Table.18: Relevant stakeholders of CPSF

Level	Organization	Scope of Responsibility
National Level	1.CLTC and CPD, Ministry of Agriculture and Cooperatives	Supervise Farmland leasing Policy (Land Owner)
	2.RFD,NCECED, Ministry of Natural Resource and Environments	Regulate and Protects Forest Areas Policy
	3.Department of Local Administration[DOLA], Ministry of Interior	Supervise
	4.TAT,Ministry of Tourism and Sports	Regulate tourism Policy
Provincial Level	1.Lop Buri Provincial Government Authority	Supervise Policy and Support Budget for CPSF
	2.RFD (Field office, Lop Buri province)	Supervise CPSF and support plantation project
	3. Department of Ground Water Resources.	Control Ground water surrounding CPSF
	4. TAT.7 Regional Office (Lop Buri)	Promote CPSF as a tourist attraction
Local Level	1. Sap Champa Local Government Authority	Administrate and manage local budget for development in Sap Champa sub-district area including CPSF.
	2.SCCPSCC	Supervise and protect SCAS and CPSF by the local community.
	3.Local Community	Supervise and protect SCAS and CPSF
Other (Third Party)	Related Educational Institute, Researcher, Tourist, NGOs	Travelling, observation and ,research projects

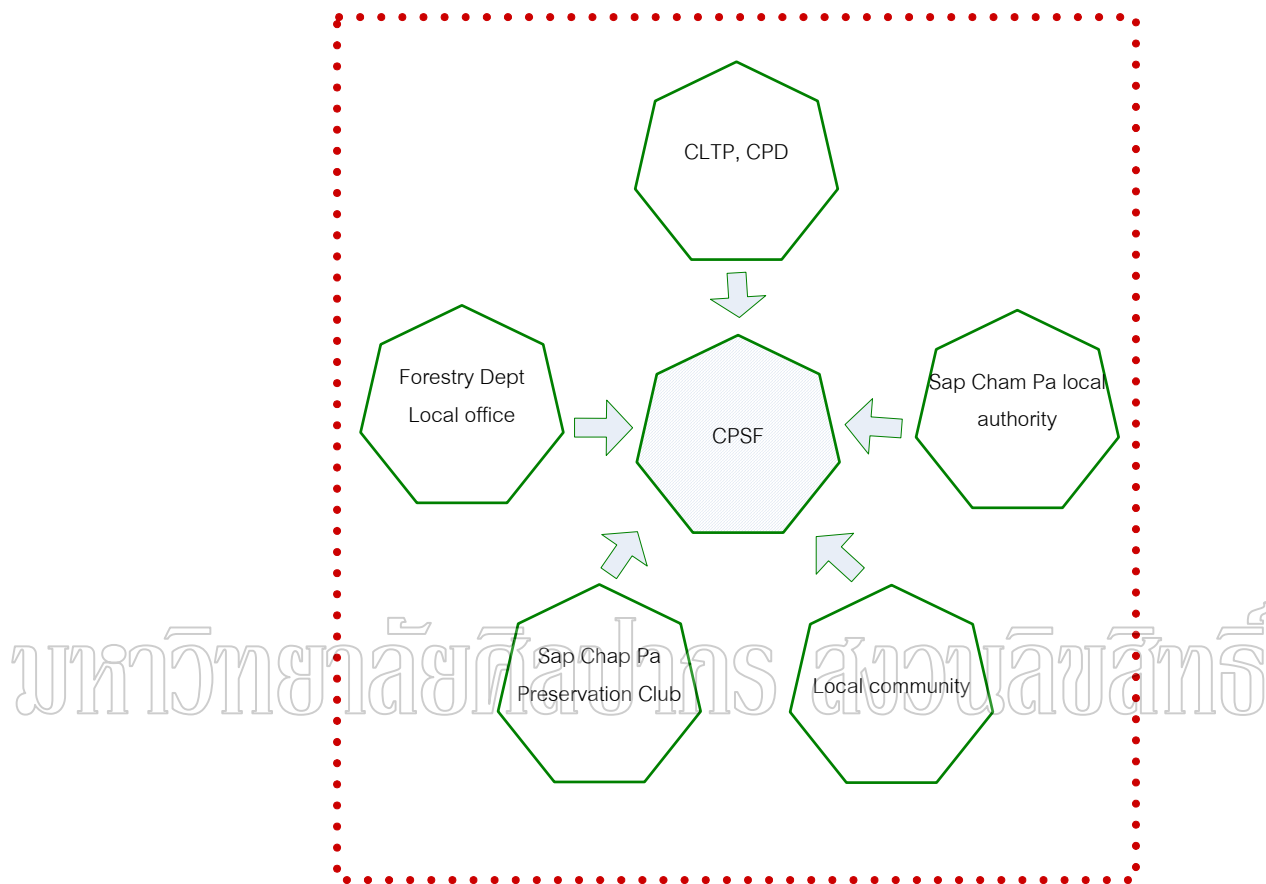


Figure.51: The relationships of the main stakeholders of CPSF.

Drawn by I.Sarttatat on August 28, 2009

Table.19: Relevant Key Stakeholders of CPSF

Responsible Organization	Key Contacted according to official information
Forestry Department local office	Chief of local officer
Sap Champa Local government Authority	President of Sap Cham Pa local government Authority
Sap Cham Pa preservation Club	Head of SCCPSCC
Local community	Community leader
NCECD, Ministry of Natural Resources and the Environments(Regional Office)	Head of NCECD(Regional Office)
CLTC, Ministry of Agriculture and Cooperatives	Chief of CLTC
Department of Ground Water Resources (Lop Buri)	Head of Ground water Resources

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Table.20: A 3-year fiscal plan for Sap Champa Local Government Authority for Conservation and Tourism Development in CPSF

Type of Feature	Project	Budget(Baht)		
		2008	2009	2010
Natural & Scientific	1. Make plants signage in CPSF	30,000-	-	-
	2. Plantation "Magnolia" in CPSF	60,000-	60,000-	60,000-
	3.Conservation project for local plantation	-	200,000-	-
	4.Public relations about conservation of natural resource	-	-	-
	5.Preparation of equipment for protecting wildfire in community	-	50,000-	-
Economic	1.Building tourist accommodation	1,600,000	-	-
		-		
Educational	1. Learning Center Building	150,000-		
	2.Training for preserving natural resources	20,000-	-	20,000-
	3. Training for protecting wildfire in the community			20,000-
Social	1.Public relations for local cooperation about natural resource conservation	15,000-	15,000-	-

Source: Sap Champa sub-district Local Government Authority, 2006

1.13. Tourism development in CPSF

After discovering the new species of *Magnolia sirindhorniae*, many people and organizations started expressing their concern for the protection of CPSF. These concerns come from the local community members, Sap Champa Local Governmental Authority, RFD forest bureau, Lop Buri Provincial government Authority as well as military people, researchers, and the general public.

As part of the tourism development of CPSF, the government has allocated some budget for infrastructures, such as the concrete-boardwalk, toilets, on-site signage, directional signage, and RFD field office. More specifically it was the Sap Champa Local Governmental Authority who financed the construction of the RFD field office, toilets, and signage (Figure 52).



Figure.52: Infrastructures supported by the budget from the Sap Champa Local Government Authority. Source: Modified from Lopburi,2006;Photos taken by I. Sarttatat on January 18,2007

The Sap Champa Local Government Authority received a budget in the amount of 31,300,000 baht from the Lop Buri Provincial Government Authority for the construction of the basic infrastructures within SCAS and CPSF in 2005-2006. A wooden bridge was replaced by a 1-km elevated concrete boardwalk bisecting the forest. Five resting sheds along the boardwalk were also built (Figure.53). This budget was also used to build a 2WD seal road in front of CPSF and those near the village (Walankarasm,2009).

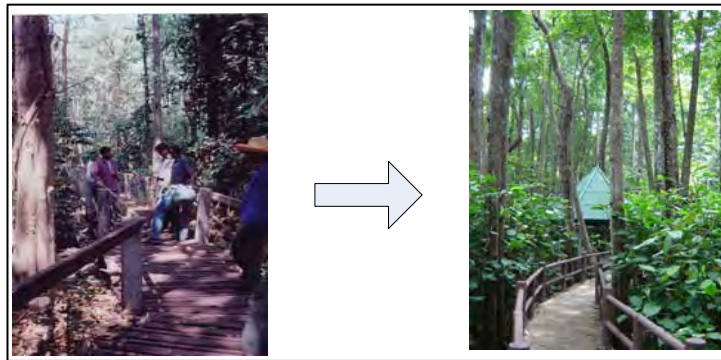


Figure.53: The ex-wooden board walk and new permanent concrete-board walk with resting shed. Source: Photos taken by N.Khamruengboon, 2004 (*left*) and photo taken by I.Sarttatat on August 18, 2007 (*right*)

CPSF also received a budget from the Ministry of Natural Resources and the Environment to build the Local Information Learning Center near the site (Figure.54).

This infrastructure consists of 2 cemented buildings with a Thai-style roof, air conditioning, a restroom (but with no-water supply), a car-park, and metal fence. At present, these buildings are under the supervision of Sap Champa Local Governmental Authority. These facilities are to be used as a local community museum, containing the elements and features of both the SCAS and CPSF.



Figure.54: The building of Local Information Learning Centre.

Photo taken by I.Sarttatat on September, 2009



Figure.55: The model of Local Information Learning Centre

Photo taken by I.Sarttatat on September 3, 2009

The Sap Champa Local Governmental Authority has yet to furnish the building and populate it with museum collections; however, the budget is not yet forthcoming. Currently, the buildings are used as venues for workshops, training sessions, and seminars.

The other projects relevant to CPSF development are listed in Table.21..

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Table.21: Periodical Related projects in CPSF

Year	Project Name	Responsibility*	Type of projects**			
			R	T	S	D
1978	(1) Dirt-Road surrounding CPSF(protecting wildfire and expressing limitation of community forest area) (2) Reservoir for community water-supply	Local community				✓ ✓
n.d.	Wooden Bridge in CPSF	Local community				✓
1998	Surveying for Plant Genetic Conservation Project under the Royal Initiative of H.R.H. Princess Maha Chakri-Sirindhorn in CPSF	Dr. Chalermglin Piya, TISTR	✓			
2006	(1) Concrete Board Walk and Resting Sheds in CPSF (2) 2WD Road in front of CPFS and between Villages (3) Concrete Car park, Direction Signage	LPA, SCCPSCC				✓ ✓ ✓
2006	Local cultural and natural environment survey	NCECD (Lop Buri),TRU			✓	
2007	Plantation of <i>Vetiver grass</i> surrounding CPSF	TRU,RFD, Local Community, SCCPSCC				✓

Remark: *TRU = Thepsatri Rajabhat University, RFD = Royal Forestry Department field office, LPA = Lop Buri Provincial Government Authority, SCCPSCC = Sap Champa Archeological Site and Cham Pi Sirindhorn Conservation Club, NCECD = Natural and Cultural Environment conservation Department (Lop Buri office), TISTR= Thailand Institute of Scientific and Technological Research,**R= research T=training S= seminar D=developing or conservation project

Table.21: Periodical Related projects in CPSF (continue)

Year	Project Name	Responsibility*	Type of projects**			
			R	T	S	D
2007	Diversity and Structure of Plant Community in CPSF	TRU, RFD	✓			
2007	Some morphological and Genetic relationship of <i>Magnolia sirindhorniae</i> in Thailand	TRU	✓			
2007	Seeding Development and Dormancy Breaking of <i>Magnolia sirindhorniae</i>	TRU	✓			
2007	Diversity of Mushroom in CPSF	TRU	✓			
2007	Analysis of quality and quantity of Soil Nutrients of CPSF by X-ray fluorescence microscope technique	TRU	✓			
2007	The Foreign Languages Texts for Ecotourism in Champi Sirindhorne Fresh Water Swamp	TRU, Local Community, Tha Luang Wittayakom School, SCCPSCC	✓			
2007	Master Plan of CPSF	TRU, RFD , Local Community	✓			

Remark: *TRU = Thepsatri Rajabhat University, RFD = Royal Forestry Department field office, SCCPSCC = Sap Champa Archeological Site and Cham Pi Sirindhorn Conservation Club, **R= research, T=training S= seminar D=developing or conservation project

Table.21: Periodical Related projects in CPSF (continue)

Year	Project Name	Responsibility*	Type of projects**			
			R	T	S	D
2007	Diversity and Structure of Plant Community in CPSF	TRU, RFD	✓			
2008	3D Animation of <i>Magnolia sirindhorniae</i>	TRU	✓			
2009	Local cultural and natural environment survey for protected areas declaration	NCECD(Lop Buri) ,TRU	✓			

Remark: *TRU = Thepsatri Rajabhat University, RFD = Royal Forestry Department field office, NCECD = Natural and Cultural Environment conservation Department (Lop Buri office) or another name as Environmental Conservation of Natural and Cultural Heritage Division **R= research T=training S= seminar D=developing or conservation project

There are groups of researchers, such as those from Thepsatri Rajabhat University, Lop Buri province, who conducted some research about CPSF'S biodiversity; these groups provided some funds to promote CPSF as a new tourist attraction. There were 7 projects concerning CPSF such as local tour guide training, experiments on soil quality, and plantation studies. These projects were done with the cooperation of the local community and related government sectors. These projects have provided positive promotions about CPSF. Examples of materials produces are the tourism brochures written in Thai, English, and Japanese. There were also local travel guides written in English, Japanese and Thai. Certain private enterprises also sponsored the construction of twelve on-site signage along the board walk.

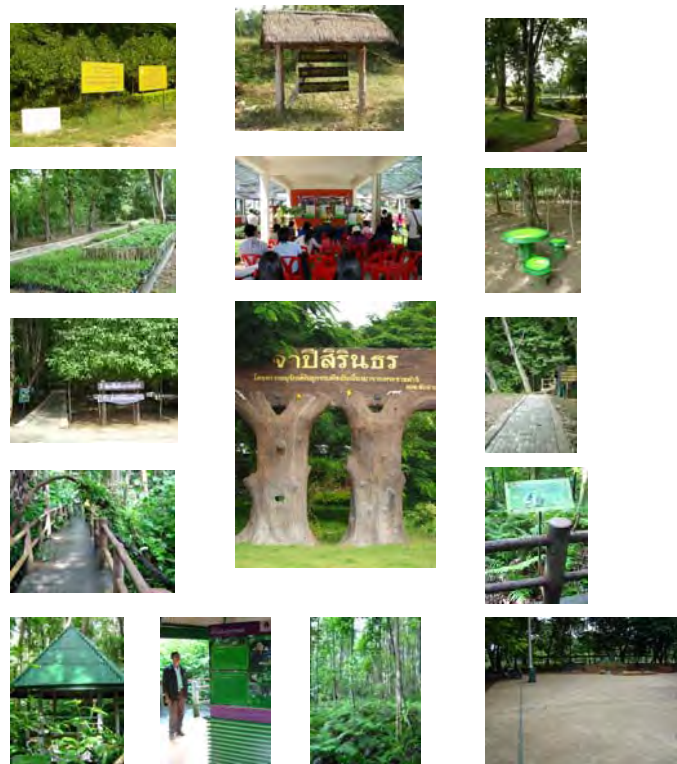


Figure.56: Tourist facilities at CPSF.

Photos taken by I. Sarttatat on September 15, 2009

Recently, the TAT.7 Regional office joined in the promotion of CPSF as a new tourist attraction in Lop Buri province. TAT undertook the task of including CPSF as a tourist destination within the travel-routes at the upper central region (Lop Buri, Sara Buri, Sing Buri and Chainat Province) under the marketing brand 'Travelling in Thailand, near Bangkok' or in Thai "เที่ยวเมืองไทย ใกล้กรุงเทพ". One of the 13 travel routes (Route No. 2) goes to Lop Buri's natural route passing through CPSF, where tourists can spend leisure time for a half-day trip, (Tourism Authority of Thailand, Lop Buri Office, 2008). In promoting this travel route, TAT brought in tourist agents including media reporters and tour operators to CPSF.

Moreover, there is also a project supported by the Commission on Higher Education and the Ministry of Education; the projects created 3D an animation about CPSF, focusing on the forest and the famous *Magnolia sirindhornia*.

Through coordinated and collaborated efforts of various stakeholders, CPSF has now become a well-known tourist destination.

1.14. Visitors to CPSF

The on-site RFD Forest Bureau recorded 3,861 domestic visitors in 2006, and 1,582 visitors in the first half of 2007 (from January to May). Several small to large groups of visitors have come to visit the site everyday. Visitors in groups are comprised of families (5-6 persons), school excursions (60-120 persons), and media reporters (10-20 persons).

The majority of the visitors declared that they learned about CPSF from various kinds of media avenues such as special T.V. programs, internet, and newspapers. Their main purpose for visiting CPSF was to see '*Magnolia sirindhorniae*'.

Visitors usually make prior arrangements with either the Sap Champa Local government Authority or SCCPSCC if they need tour guides. The majority come as independent tourists and does not need tour guides. Tour guides from the RFD Forest Bureau include the forest administrator.

Some of the former visitors of CPSF are well-known celebrities such as T.V. personalities who are very effective in promoting CPSF in their TV shows. Majority of the visitors are Thai. Some visitors are foreigners who are accompanied by their Thai-friends.

There is no entrance fee to CPSF. However, visitors are encouraged to give donations for conservation and offer monetary tips to tour guides. Some visitors, who purchase the saplings of *M. sirindhorniae* grown in the forest nursery, pay 20-30 baht each.

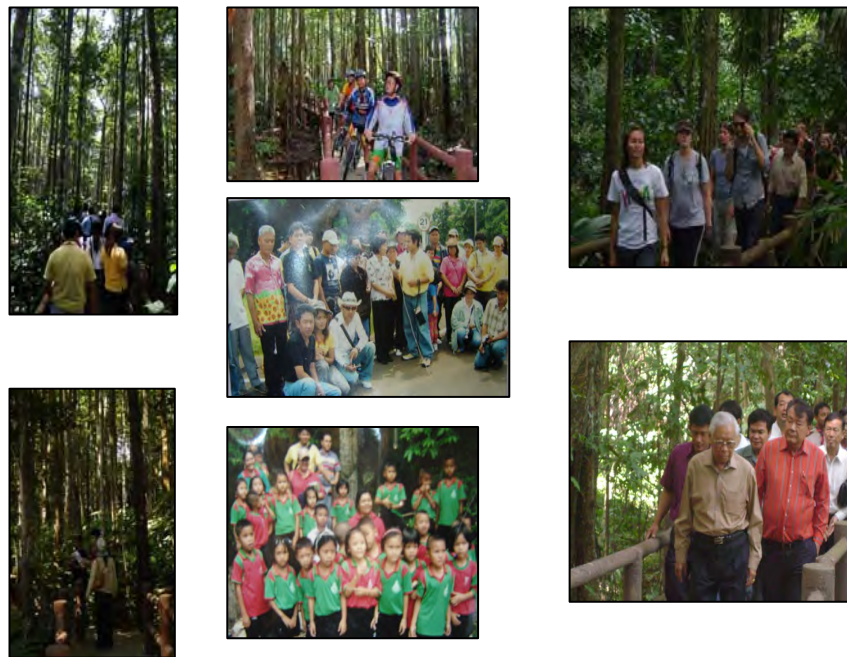


Figure.57: Various Groups of visitors of CPSF

Source: Modified from Sap Champa Local Government Authority, 2009; Lopburi, 2006; Photos taken by I.Sarttatat from the board exhibition at RFD Field Office, 2009

In summary, CPSF has scientific, natural, and economic values. It is a popular nature-based tourist destination in Lop Buri province. Even though CPSF is well-known to many tourists, the recreational activities are limited to merely walking along the boardwalk and viewing *Magnolia*. To encourage repeat visitation, some other benign forms of tourism activities should be developed but without causing irreversible harm to the forest. For example, demonstration plantation of traditional medicinal herbs can be developed, and their locations in the forest identified so that visitors can both enjoy and learn more about the richness and value of the forest.

2. Perspectives of the local community and other stakeholders about the value of cultural and natural features

The discussion on the perspectives of the local community and other stakeholders about the conservation and tourism development of the study area (SCAS and CPSF) in Sap Champa is based on a combination of sources: questionnaire survey, field observation, and literature review. Additional results were also obtained from focus group discussions with the students from Baan Sap Champa School and face-to-face interviews with relevant authorities and stakeholders, namely the community leader of Sap Champa sub-district as well as the administrative heads/staff of local offices from Sap Champa local government unit, Somdet Pra Narai National Museum in Lop Buri province, and the academic sections of the Fourth Regional office of Fine Arts in Lop Buri province and the Pong Manao Archaeological site (the nearest archaeological site from SCAS).

2.1. Results of the questionnaire survey/interviews

A total of 217 respondents from village No.1. to village No.7 participated in the questionnaire survey that was conducted during the period of December 2006-March 2007. The results of the survey are discussed below and presented into five parts: general information about the respondents (2.1.1), the local community's perspectives on conservation and tourism management (2.1.2), comparative analysis of community perspectives between the two sites – SCAS and CPSF (2.1.3), community participation (2.1.4), and recommendations (2.1.5).

2.1.1. General information about the respondents

As shown in Table.22, the majority of respondents (n=107 or 49.3%) were from village No.5, followed by 48 respondents (22.1 %) from village No. 7 (Ban Khu Muang). Some 14 respondents (6.5%) came from village No.1 (Ban Sap Champa).

Table.22: Respondents of the questionnaires survey.

Residents	Population Total	Respondents (n)	Percentage of Respondents to population per village (%)	Percentage of the respondents from n=217
Village No.1 (Moo.1)	1,079	14	1.3	6.5
Village No.2 (Moo.2)	622	12	1.9	5.5
Village No.3 (Moo.3)	600	6	1.0	2.8
Village No.4 (Moo.4)	559	24	4.3	11.1
Village No.5 (Moo.5)	426	107	25.1	49.3
Village No.6 (Moo.6)	461	6	1.3	2.8
Village No.7 (Moo.7)	613	48	7.8	22.1
Total	4,360	217	4.97	100.0

2.1.1.1. Gender Distribution

Figure.58 shows the distribution of male and female respondents. Out of 217 responders, 86 (40%) were males and 131 (60 %) were females. Females tend to be more cooperative or more outspoken on issues regarding the study sites. Some studies have shown that women's empowerment in rural context has been one of the results of modernization and increasing awareness of gender's role in food production and other environmental issues (Shortfall, 1999). According to Bock and Shortall (2006), cultural and ideological factors has strongly affected family and gender

in rural areas, wherein females are taking more dominant roles in the household and seem to be empowered in decision-making.

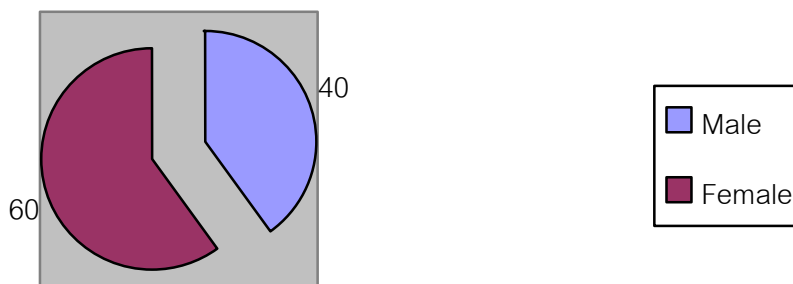


Figure 58: Gender of respondents

2.1.1.2. Age Distribution

The majority of the respondents belong to age group lower than 20 years (31 %), which were mostly high school students, followed by those belonging to 40-49 years of age (23%), 30-39 years of age (21%), and 20-29 years of age (19%) (Figure.59). The difference in age groups of the respondents did not seem to differ significantly from each other except for those belonging 50-59 years of age (6%) and 60 and above years of age (1%). The results indicate that the young generation of residents as well as the so called 'baby boomers' in the study area are concerned with issues about culture and environment in their locality. They also represent the typical profile of a growing community.

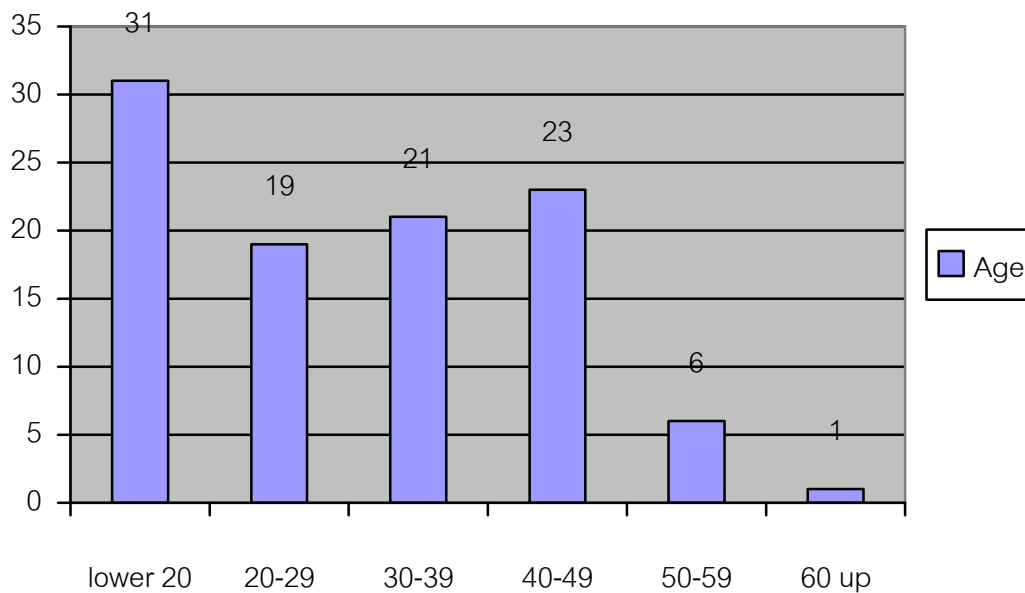


Figure.59: Age of respondents

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2.1.1.3. Educational background

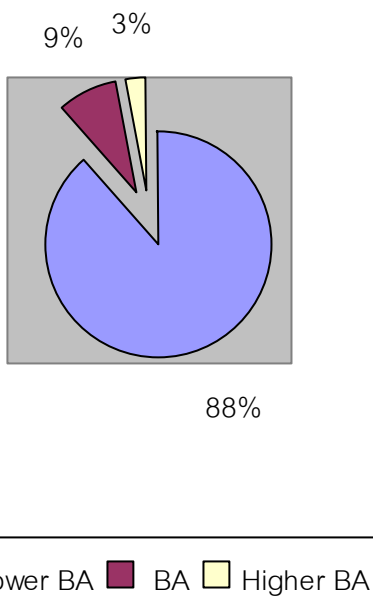


Figure.60: Education Level of respondents

As shown in Figure.60, the majority of the respondents (n= 192, 88 %) have no college education (lower than a bachelor's degree). Respondents (n=19, 9%) with a bachelor degree and with postgraduate degrees (n=6, 3 %) also participated in the study. None of the respondents was illiterate, and yet all of them were aware of the general situation in their locality.

2.1.1.4. Main occupation

Figure.61 shows that the majority of the respondents are farmers (n= 96, 45%), followed by the secondary school level students (Grade 8-10) which constituted 22% (n=47) of the surveyed population. The general service workers (n=44, 20%), who perform as farm help and run general errands, and government officials/employees (n= 20, 9%), who work as school teachers and government employees at Sap Champa Local Government Authority also participated in this study.

There were seven respondents (3 %) from private enterprise (i.e. grocery shop owners and keepers) and 3 respondents (1%) were from dairy farms. The occupational profile of the respondents surveyed in this study provides a reasonable representation of the sampled population.

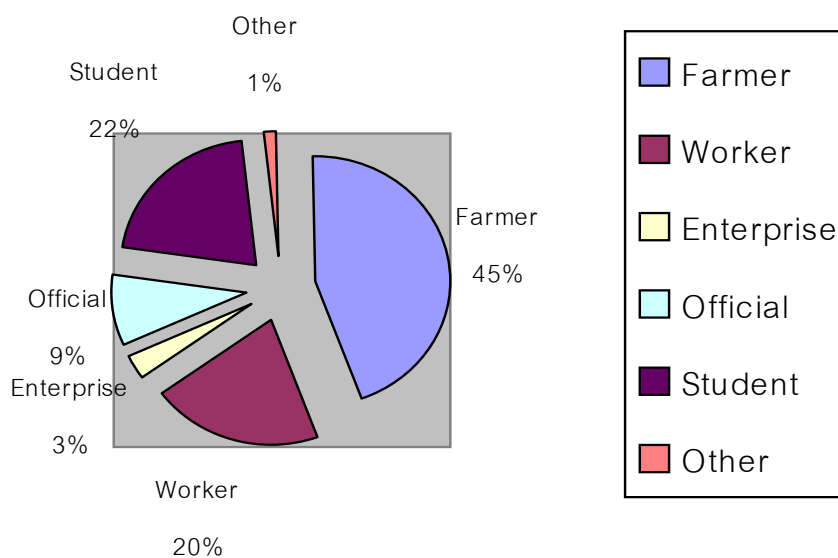


Figure.61: Main Occupation

2.1.1.5. Adjunct Occupation

Figure.62 shows that majority of the respondents (n= 198, 91%) have no adjunct or alternative occupation, indicating that the villagers are generally poor and with limited economic opportunities. Only 9% (n= 19) of the respondents have alternative occupations such as pig raising, dairy farming, and shop keeping/ shop assistance. The supplementary income of some of the employed respondents and full-time farmers are garland-making and handicraft-making, which they themselves sell to the public. Since tourism is not yet fully developed in the study area, it was necessary to determine if the respondents have adjunct occupations. Livelihoods in rural areas provide means to supplement the income of the rural people through tourism-related activities (Geoffrey, 2006). Those respondents (n= 19, 9%) who claimed to occupy adjunct occupations may also opt to get involved in tourism as additional source of revenue.

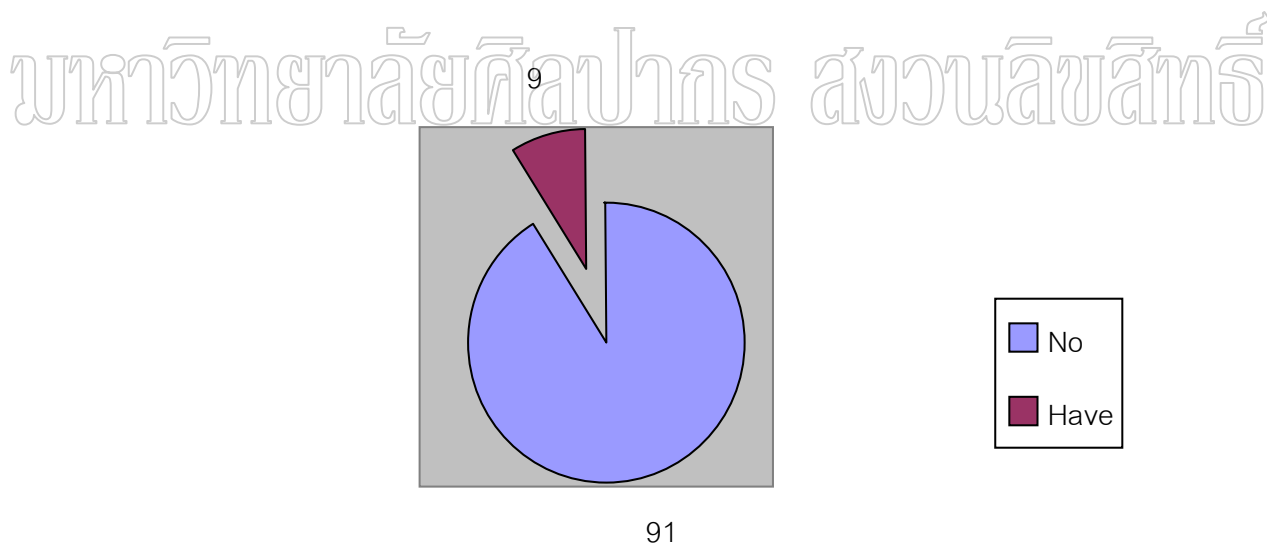


Figure.62: Adjunct Occupation

2.1.1.6. Family income

As shown in Table.23, the annual family income of the majority of the respondents (n= 60, 28%) is less than THB 10,000, followed by 50 respondents (23%) with a salary between THB 30,001 and THB 50,000. Only 15% (n=33) earn between THB 10, 001 and THB 20,000, and 12 %(n=27) earn between THB 50,001 and THB 100,000. Only 11% (n=24) earn between THB 20,001 and THB 30,000 (n=24,11%), followed by 23 respondents(11%) who earn more than THB 100,000 per year. The National Statistical Office of Thailand (2009) reports that the national average family income for 2007 was THB 223,920 per household per year. Thus, the annual income of the majority of the respondents from the study area is way below the national average family income. Geoffrey (2006) states that tourism in some destination areas can be a tool to augment household income and improve standard of living and quality of life.

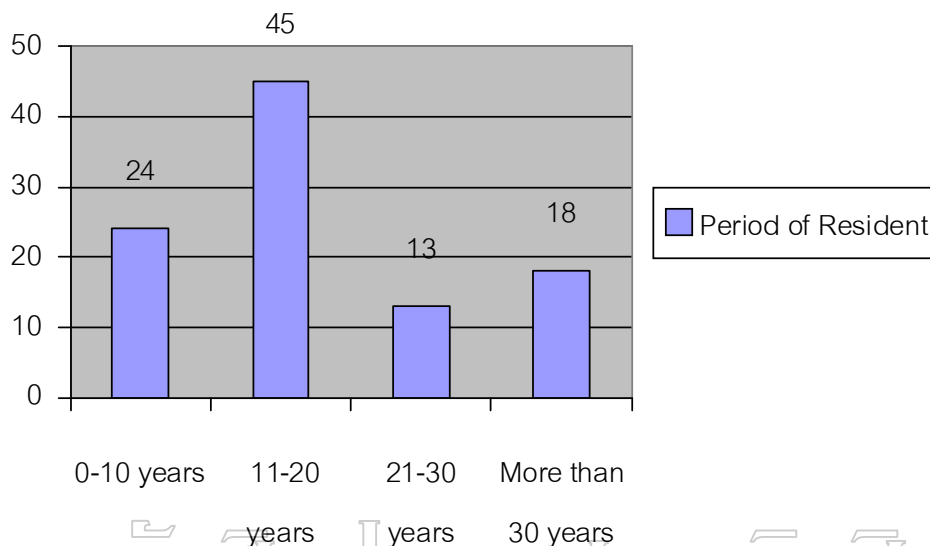
Table.23. Total income of family per year

Total income of family per year(Baht)	n	Percent
< 10,000	60	28
10,001-20,000	33	15
20,001-30,000	24	11
30,001-50,000	50	23
50,001 -100,000	27	12
> 100,000	23	11
Total	217	100

2.1.1.7. Length of residency

Figure.63 shows that the majority of the respondents (n= 97, 45%) have lived in Sap Champa sub-district between 11-20 years. Others (24% n=51) have lived in Sap Champa sub-district for less than 10 years. The results indicate that the study area is at the early stage of economic development, and it seems that the district is attracting a lot of new migrants from the city and other neighboring areas.

The recent provision of government support (i.e. construction of roads and other public services) is increasingly attracting new residents. The old residents (more than 30 years of residency) are represented by 40 respondents (18%). Those who have lived in the study area as their home for 21-30 years are represented by 29 respondents (13%).



มหาวิทยาลัยศิลปากร สวชนลิขสิทธ์

Figure.63: Period of residency in Sap Champa sub-district

In summary, the majority of the respondents are females, with age lower than 20 years and followed by age ranging from 40 to 49 years and with no college education (below bachelor degree). The main occupation of the respondents is farming, and the majority has no adjunct or supplementary income. The family income of the majority of the respondents is less than Baht 10,000 per year, which is quite below the national average family income. The majority of the residents who participated in this study have lived in Sap Champa sub-district for some 11-20 years. The social capital to put forward tourism development and conservation is a potential asset of the locality.

2.1.2. Perspectives on conservation and tourism development

This section covers a series of discussions of the community's perspectives. *Sub-section 1* (2.1.2.1.) dwells with conservation and tourism at SCAS and *Sub-section 2* (2.1.2.2.) focuses on perceived value or benefits from the development of the same site. *Sub-section 3* (2.1.2.3.) and *Sub-section 4* (2.1.2.4.) deals with the issues and concerns for CPSF. Sub-section 3 is about community perspectives regarding conservation and tourism and Sub-section 4 deals with their perceived values and benefits at CPSF.

2.1.2.1. Sub-section 1: SCAS Conservation and tourism

Table.24 summarizes the average Likert scores on the level of agreement and disagreement on specific issues about the study area. The majority of the respondents, who agreed (n=15) and strongly agreed (n=200) that SCAS should be conserved/preserved for the future generations, gave an average Likert score of 4.91 (S.D. \pm 0.35). Favorable average score of those who agreed to promote tourism in Lop Buri province (n= 26) and strongly agreed (n=188), gave an average score of 4.85 (S.D. \pm 0.42). An average score of 4.82 (S.D. \pm 0.38) was recorded from 217 respondents who were in favour of the co-existence of conservation and tourism. The results indicate that the local community, generally, has a positive attitude towards the conservation of SCAS and basically agree to integrate tourism development with its conservation. According to Phlong (2004), tourism is one way to bring developmental changes to the community, but caution is essential so as to maintain the heritage value and authenticity of the natural and cultural attractions through proper and sustained management.

Table.24. Summary of the Likert-scale rating on local community's perspectives about conservation and tourism in SCAS (n= number of respondents who agree and strongly agree)

Items	n	Mean	S.D.
1.Should preserve for the future generations	215	4.91	0.35
2.Should promote as new tourist attraction in Lop Buri province	214	4.85	0.42
3.Should co-exist between conservation and tourism	217	4.82	0.38

n=217, the rate of agreement were measure by 1= strongly disagree, 2 = disagree, 3= neutral, 4= agree, and 5 = Strongly agree by 5-point Likert Scale

Conservation/preservation of SCAS for the future generations

As shown in Table.25, the majority of the respondents (n= 200 strongly agree, and n=15 agree) expressed that SCAS should be preserved to halt further destruction of the archaeological site. Timothy and Boyd (2003) confirm that preservation of heritage sites is necessary to prevent their decay over time.

Table.25: Should SCAS preserve for the future generations?

Degree of Agreement	Quantity	Percent
Strongly disagree	-	-
Disagree	1	1
Neutral	1	1
Agree	15	7
Strongly agree	200	92
Total	217	100

Moreover, the respondents mentioned that SCAS has cultural heritage significance not only at the local level but also at the regional and national levels. Some respondents even said that the site should be preserved as a source of field-based knowledge wherein people, especially the future generations, can build on

to enhance their understanding of ancient history and civilizations and inspire them to undertake more in-depth archaeological research. Studies have shown that cultural heritage has the potential to provide information of great value in many areas of research (Pearson & Sullivan, 1995 cited in Timothy & Boyd, 2003).

Furthermore, SCAS has high cultural and social values for the local community. The respondents expressed that the mere existence of SCAS in their locality make them feel proud of their heritage. They further said that the proper management of SCAS will give them opportunity to participate in various conservation initiatives, which can further enhance public awareness about cultural heritage conservation as well the feeling of social unity. Such feeling of cohesiveness among individuals within a community enables people to be less individualistic and instead become more cooperative and closer together as a community (Singh, Timothy, & Dowling, 2003). Thus, SCAS can be instrumental in uniting the people of Sap Champa sub-district, where relevant stakeholders including researchers, experts, academicians, and government representatives can work together for a common good.

Only two (n=1 disagree; n=1 neutral) out of 217 respondents were not in favor of conservation/ preservation SCAS for the future generations. One of the respondents stated that SCAS is way isolated and obscured by forest vegetation and so no effort is needed to protect it at all. It seems from the answer of the respondent that he did not have enough or adequate understanding of the implication of the conservation of archeological sites. One of the respondents who had neutral opinion about the conservation of SCAS stated that the local community is not empowered to manage the site as it is under the direct management of Fine Arts Departments of the government (and the forest is under the supervision of Forest Department). Mrs.Yukongdee Pakpadee(personal communication, September 9, 2009), the Head of Academic Section of the Fourth Regional Office of Fine Arts in Lop Buri, stated that in accordance with the Thailand's Ancient Remains Acts (1961 and revised 1992), all management activities within national monument areas including the excavation of artifacts from registered and non-registered sites must be approved by the Director of Fine Arts

Department, otherwise, such activities will be deemed illegal. For this reason and, perhaps, without adequate understanding of the scope of the law and their rights as citizens, some of the respondents showed no interest in the conservation of the archaeological site.

Promoting SCAS as new tourist attraction

The main reason given by the majority respondents (n=188 strongly agree; n=26 = agree out of 217 respondents) why SCAS should be promoted as a new tourist attraction are the economic benefits that would arise from tourism (Table.26). However, they all suggest that government support is needed to develop the site as a tourist attraction. They also believe that cooperation among stakeholders (i.e. local people, government and non-government sectors, professionals and non-professionals) is necessary to make this idea a reality. Mr. Champadip Plian (personal communication, September 15, 2009), who has lived in Sap Champa sub-district for more than 50 years, said that such initiative will help improve the standard of living of the local residents.

Table.26: Should SCAS promote as new tourist attraction?

Degree of Agreement	Quantity	Percent
Strongly disagree	-	-
Disagree	1	0.5
Neutral	2	0.9
Agree	26	12.0
Strongly agree	188	86.6
Total	217	100.0

Only three (n=1 disagree; n=2 neutral out of 217 respondents) were either not in favor or passive with the idea of promoting SCAS as new tourist attraction. One respondent was not in favor of developing SCAS as a tourist attraction because of the perceived increased of pollution (i.e. noise and air from transportation) from incoming tourists. According to the respondent, tourism will eventually lead to social

conflicts in the community. The study of Phlong (2004) in Cambodia revealed that the social and economic inequities in tourist destination areas were attributed to the fact that the income from tourism was funneled only to certain groups of people there. Leslie(2005b) concurs that although tourism has positive impacts arising from the promotion, presentation, and interpretation of heritage, it can also bring problems, which are in conflict with the general interests of the local community.

Two other respondents believed that it would be better to keep SCAS the way it is to maintain its authenticity. They believed that tourism could alter the structural, historical and symbolic values of the site. To prevent this from happening, it would be better to take no action as was done in other cultural sites in the world (Ashworth & Tunbridge, 2000 cited in Timothy & Boyd, 2003). On the other hand, Mrs. Khuankhan Manita, the former Director of Somdet Pra Narai National Museum (personal communication, October 9, 2009), said that promoting SCAS as tourist destination is a good idea because the income from tourism can be used to preserve and/or restore the site and help in augmenting the household income of community members. However, she lamented that tourism may not be appropriate at this time because of the absence of suitable infrastructure facilities; these facilities (i.e. boardwalk, barriers) are needed to provide adequate tourism services as well as to ensure that physical impacts on the site by visitors are minimized. The site at its present condition does not have the 'pull factors' and convenience to attract domestic and foreign tourists. Mr. Nathaphinthu Surapol (personal communication, October 15, 2009) also agreed that SCAS has yet to present its stories and interpret its cultural value to tourists as new product for local tourism. According to him, if tourist facilities such as toilets, boardwalks, access roads, and interpretative signs are made available, then it is very likely that SCAS could be an important destination in the region. Fortunately, the current community leadership is very much driven in harnessing support and cooperation from other stakeholders, especially from the government sector, and he may be able to facilitate the approval of some ideas and proposals on the improvement of the site as a cultural tourist attraction.

Co-existence of conservation and tourism in SCAS

When respondents were asked if they believe that conservation and tourism can co-exist in SCAS, the majority of respondents (n=179 strongly agree; n=38 = agree out of 217 respondents) were in favor of the idea of integrating tourism and conservation in the management of SCAS (Table.27).

Table.27: Conservation and tourism should co-exist in SCAS?

Degree of Agreement	Quantity	Percent
Strongly disagree	-	-
Disagree	-	-
Neutral	-	-
Agree	38	17.5
Strongly agree	179	82.5
Total	217	100

The respondents stated that the co-existence of conservation and tourism serves as a tool to preserve the cultural heritage value of the site while at the same time creates job opportunities for the residents. According to Timothy and Boyd (2003), it makes good economic sense to market cultural heritage in sustainable tourism as a means to conserve it. Some studies also pointed out that tourism can be used as an economic justification for heritage preservation (Sigala & Leslie, 2005). However, some studies indicate that although tourism can provide some economic benefits to the community, especially in developing countries, it also can be the cause of environmental and cultural degradation, if not properly managed (Catibog-Sinha & Heaney, 2006).

2.1.2.2. The values of benefits from SCAS

As shown in Table.28 and Figure.64, the respondents had several expectations with regards to the benefits that might arise from developing SCAS as a tourist destination.

Table.28: Benefits of SCAS (archeological site) to the community (n=multiple responses)

	n	Percent
<u>Economic Values</u>		
More job opportunities	187	12.81
More government support for local community	182	12.46
Increased family income	180	12.33
More infrastructure development	172	11.78
<i>Sub-total</i>	721	49.38
<u>Cultural Values</u>		
Increased public appreciation of cultural heritage	201	13.77
Conservation of the cultural heritage site at the national level	191	13.08
<i>Sub-total</i>	392	26.85
<u>Education Values</u>		
Increased educational or learning opportunities	185	12.67
<i>Sub-total</i>	185	12.67
<u>Social Values</u>		
More cooperation among stakeholders	160	10.96
Other: increased motivation towards conservation would strengthen the relationships within the community	2	0.14
<i>Sub-total</i>	162	11.1
<i>Grand Total</i>	N=1,460	100.000

Based on multiple responses from 217 respondents

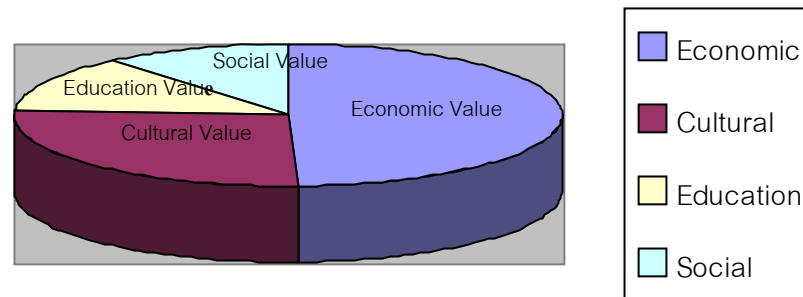


Figure.64: Benefits of SCAS to the community

On top of the list pertains to economic benefits (49.38%), which are comprised of more job opportunities (12.81%), more government support to the community in relation to tourism development (12.46%), and leading to higher family income (12.33%). Economic benefit was also expressed in terms of more infrastructure development (11.78%). The economic benefit from tourism has consistently been the agenda of many developing countries such as Thailand, which depend on the contribution of tourism revenue to regional and national economic growth and alleviation of poverty especially in rural areas (UNWTO, 2009).

The cultural value arising from the development of SCAS has generated some 26.85% of the total responses. The respondents believed that SCAS has the potential to increase public appreciation of the cultural attributes of the archeological site (13.77%), and subsequently, lead to national effort to conserve it (13.08%). According to Hall and Lew (1998), cultural heritage and tourism are inextricably linked, and cultural resources, such as those represented by ancient artifacts, constitute the foundation of heritage tourism and the identity of civilization.

The educational benefit of SCAS to the local community is already being realized through the local school programs of Ban Sap Champa School and other meetings and conferences happening in the community. About 13% of the total responses indicated that the educational values of SCAS are reflected on various opportunities made available by visiting the site for learning, education, and research (UNESCO, 2008).

The respondents indicated that social values from SCAS can also be realized (11.1%), although these were not ranked as high as the other categories such as economic and cultural values. The sense of motivation and incentive to conserve the site seem to be needed further stimulation to ensure that the community could truly appreciate the whole aspect of conserving SCAS both as a cultural heritage site and a tourist attraction.

2.1.2.3. CPSF Forest conservation and tourism development

Table.29 shows that the majority of the respondents (n= 211), who agree and strongly agree that CPSF should be both conserved and preserved for the future generations, gave an average Likert score of 4.87 (S.D. \pm 0.41). A favorable average score of 4.78 (S.D. 0.53) from 210 respondents who agree that co-existence of conservation and tourism was also obtained. The respondents (n= 210), who concurs the promotion of tourism in Lop Buri province, gave an average score of 4.77 (S.D. 0.60). The main reason given was to ensure that the future generations could benefit from the natural heritage, and thus any form of development including tourism should be managed harmoniously and sustainably.

Table.29: Local community's perspectives about conservation and tourism in CPSF
(n= number of respondents who agree and strongly agree)

Items	n	Mean	S.D.
1.Should preserve for the future generations	217	4.87	0.41
2.Should promote as new tourist attraction in Lop Buri province	217	4.77	0.60
3.Should co-exist between conservation and tourism	217	4.78	0.53

n= 217, the rate of agreement were measure by 1= strongly disagree, 2 = disagree, 3=neutral, 4= agree, and 5 = strongly agree by 5-point Likert Scale

Conservation/preservation of CPSF for the future generations

The majority of the respondents (n=194, 89.4%) strongly agree and the rest (n=17, 7.8%) agree that CPSF should be preserved due to the watershed value of the forest and the presence of many species of plants including various medicinal plants that are beneficial to the local community. They believe that leaving the forest in its present condition, such as a community forest, would be as good for the preservation of its biodiversity, and may continue to be served as a recreational area for the community. Six of the respondents (2.8%) did not have any opinion on the preservation of the forest.

Table.30: Should CPSF preserve for future generations?

Degree of Agreement	Quantity	Percent
Strongly disagree	-	-
Disagree	-	-
Neutral	6	2.8
Agree	17	7.8
Strongly agree	194	89.4
Total	217	100.0

The CPSF is considered as the only remaining remnant forest within the central region of Thailand, a large area of which has already been extensively transformed into agricultural land. The natural heritage values of the forest are worth preserving due to its biodiversity and as venue for many ecological studies (Catibog-Sinha & Heaney, 2006). Furthermore, the majority of the respondents claimed that they are very proud of the new species discovered, known scientifically as *Magnolia sirindhorne* (Noot & Chaerlemklin) which thrives well in CPSF. It is symbolically significant, especially among the local community, that this newly discovered plant was named after Princess Maha Chakri Sirindhorne. As such, the community believes that *Magnolia* is also part of the royal family's treasures and has high symbolic value to the aristocracy.

Kellert (1996 cited in Catibog-Sinha & Heaney, 2006, p.305) identified that the forest has numerous assets including its symbolic value, representing one's emotions or thoughts.

Finally, the main reason for supporting the preservation of this forest is based on the tremendous benefits of the forest's natural resources to the local community. These natural resources include the forest vegetation that enables natural springs to persist. These natural springs (called seepage) come from underground water, which is the main source of fresh, clean water that supports natural and human communities. Additionally, CPSF is seen as a recreational area for the local community. Costanza *et al* (1997) and Pimentel *et al.* (1997) computed that the average economic value of forest ecosystem services (i.e. watershed, shelter and habitats of wildlife) can be as high as several trillion dollars a year. About 90% of the world's poor (who earns less than US\$1 a day) depend on forests for a portion of their livelihood (FAO, 2003). Catibog-Sinha and Heaney (2006, p. 307) state that 'the intangible value of viewing a beautiful landscape, breathing clean and fresh air, experiencing boundless open space, or observing wildlife in nature is difficult to measure although we fully recognize that the disappearance of these benefits would be an irreplaceable loss'.

Promoting CPSF as new tourist attraction

As shown in Table.31, only six (n=6 disagree out of 217 respondents) were not in favor of promoting CPSF as a new tourist attraction. The respondents believed that tourism could lead to the destruction of the remnant forest. For example, tourism can disturb small animals (i.e. birds, birds, butterflies) and some valuable plants such as medicinal plants which can be stolen or disturbed by visitors who have easy access to the forest. The literature on tourism indicates that the adverse impacts of tourism on natural areas include soil erosion and compaction, vegetation trampling, accumulation of rubbish, introduction of invasive species, and wildlife disturbance (i.e. Harris, et al., 2002; Eagles & McCool, 2002). These disturbances are often associated with unregulated tourism activities and uncontrolled construction of tourism facilities.

Table.31: Should CPSF be promoted as a new tourist attraction?

Degree of Agreement	Quantity	Percent
Strongly disagree	-	-
Disagree	6	2.8
Neutral	1	0.5
Agree	30	13.8
Strongly agree	180	82.8
Total	217	100.0

However, the majority of respondents (n=180 Strongly agree, and n=30 agree) supported the idea of promoting CPSF as a new tourist attraction due to the fact that tourism could bring domestic as well as international tourists and interested groups (i.e. scientists and researchers) to CPSF. Consequently, tourism will create jobs, which would in turn improve their quality of life. In addition, CPSF could bring cooperation from related stakeholders. Thus, promoting CPSF as a new tourist attraction is seen as a tool to acquire economic and social benefits and to spread public appreciation of its natural heritage value on both the provincial and national levels. Henderson (2003) states the ability of tourism to support nation-building and promote national pride.

Co-existence of conservation and tourism in CPSF

As shown in Table.32, the majority of the respondents (96 .8%) was in favor of the concept of the co-existence between conservation and tourism development in CPSF. The reason being that conservation is seen as a mechanism to support tourism and that tourism has a role in supporting conservation.

Table.32: Conservation and tourism should co-exist in CPSF?

Degree of Agreement	Quantity	Percent
Strongly disagree	1	0.5
Disagree	-	-
Neutral	6	2.8
Agree	31	14.3
Strongly agree	179	82.5
Total	217	100.0

The symbiotic relationship between conservation and tourism was first proposed by Budowski (1976). In this relationship, mutual reliance is based on the principle that nature is the biological lifeline of tourism and that tourism can be a tool for conservation. Several organizations (IUCN/UNEP/WWF, 1991) and authors (i.e. McNeely, et al., 1992; Ceballos-Lascurain, 1996) have also supported this notion of co-existence between conservation and tourism.

The loss of the watershed value of CPSF, as in the drying up of natural water spring and subsequent loss of the natural seepage in the forest, is a serious issue in CPSF now and in the future. This issue will prevail if development including tourism is not properly regulated and managed. Thus, the preservation of the forest, which provides the natural water supply (seepage) to support the ecological integrity of whole forest ecosystem as well as the sustainability of nature-based tourism, is essential.

According to Mr. Kamruengboon Netnarin (personal communication, September 9, 2009) who works as the Head of Sap Champa Local Government Authority, the greatest problem at present for the local community is the availability of fresh water, which can be supplied from the underground water and watershed of CPSF. He believed that the drying up of CPSF would lead to the demise of the whole forest ecosystem including the extinction of the universally-valued endemic species of *Magnolia sirindhorne*. The local community would also suffer due to fresh water-shortage.

Dr. Chaerlemklin Piya also presented this problem in a seminar (Theme-The Conservation of Cultural and Natural Heritage in SCAS and CPSF) on September 25, 2009, which was sponsored by the Office of Policy and Planning on Natural Resources and Environment (*'Sam nak ngan nayobay lae plaen sap pa ya korn thanmachart lae sing wead lom'* in Thai language) and the Organization of Local Cultural and Natural Environments (*'Nuay anurak sing wead lom thang thamachat lae silapakam thong thin chang wat Lop Buri'* in Thai language) at Lop Buri province. He reiterated that if the seepage system in the forest continues to deteriorate and the water supply drained, it could lead to the possible extinction for the *Magnolia sirindhorne* within ten short years.

It was therefore recommended that the forest ecosystem of CPSF be urgently protected as a natural heritage site. Sustainable tourism is one mechanism to raise funds to finance the conservation of critical habitats and threatened plant species, such as *Magnolia sirindhorne* at CPSE (IUCN, 2000).

Six respondents out of 217 respondents had neutral opinion about the co-development of conservation and tourism. Nevertheless, they stated that conservation and tourism could have both benefits and negative impacts on the community. Thus, they cautioned that conservation and tourism development in tandem with each other should be carefully and properly enforced. Mr. Champadip Plian (personal communication, September 15, 2009), one of the community leaders, agreed that tourism can play an important role in generating income for the local community. However, he believed that the public infrastructure of CPSF should be improved first. Unfortunately, his idea of tourism development is not consistent with the general principles of sustainable tourism or ecotourism (Blamey, 2001) as he suggested that tourism development at CPSF should include building a large car-park, restaurants and service stations, and accommodations in order to attract tourists. The need to educate the local community especially local leaders about the sustainable tourism is indeed necessary in tourism planning and development (Diamantis & Ladkin, 1999).

2.1.2.4. The values and benefits from CFSF

As shown in Table.33 and Figure.65, the respondents had perception about the benefits that might arise from developing CPSF as a tourist destination.

Table.33: Benefits of CPSF to the community

	n	Percent
<u>Economic Values</u>		
More job opportunities	180	13.00
More government support for local community	178	12.85
Increased family income	172	12.42
More infrastructure development	161	11.62
<i>Sub-total</i>	691	49.89
<u>Natural Values</u>		
Increased public appreciation of natural heritage	185	13.36
Conservation of the natural heritage site at the national level	177	12.78
<i>Sub-total</i>	362	26.14
<u>Education Values</u>		
Increased educational or learning opportunity	181	13.07
<i>Sub-total</i>	181	13.07
<u>Social Values</u>		
More cooperation among stakeholders	150	10.83
Other : Preservation for the seepage, and make this forest more well-known	1	0.07
<i>Sub-total</i>	151	10.9
Total	n=1,385	100.000

n= Based on multiple responses from 217 respondents

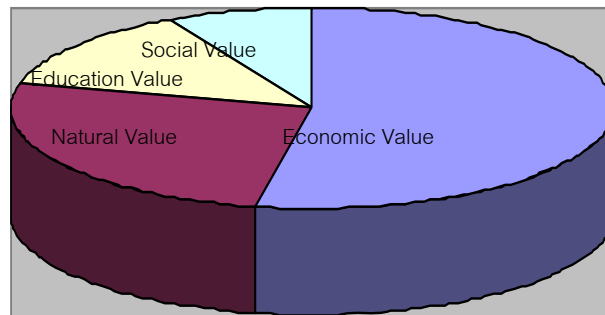


Figure.65: Beneficial values of CPSF to the community

The result shown that the greatest benefits of CPSF should be economic benefits (49.89%), which are comprised of more job opportunities(13%), more government support to the community in relation to tourism development (12.85%), and leading to higher family income (12.42%), follow by more infrastructure development (11.62%). The result indicates that economic benefit from tourism can play an important role for creating the greatest benefits for the local community if promote CPSF as the natural heritage site. As the nature attributes the resources for wealth creation and tourism have the significant role to play in economic growth in the wealth creation, especially in the developing countries (Holden, 2008).

The natural value arising from the development of CPSF has generated some 26.14% of the total responses. The respondents believed that CPSF has the potential to increase public appreciation of the natural attributes of forest (13.36%), and subsequently, lead to national effort to conserve it (12.78%)

The educational benefit of CPSF to the local community is already being realized through the local school programs of Tha Luang wittaya Khom secondary school and Ban Sap Champa School and other meetings and training course happening in the community. About 13.07% of the total responses indicated that the educational values of CPSF are reflected on various opportunities made available by visiting the site for learning, education, and research. (UNESCO, 2008)

The respondents indicated that social values from CPSF can also be realized (10.9%), although these were not ranked as high as the other categories such as economic and natural values. Cooperation among stakeholders, including private and public sectors, academics and NGOs, was also believed to bring about less benefits according to 150 of the respondents (10.83%).

In short, the results show that CPFS should be preserved for future generations as well as that it should be managed in a co-existence of conservation and tourism. The results show that the study area has a high potential for natural value which can create job opportunities and improve the quality of life for the local as the alternative income. Furthermore, this forest can increase the public appreciation for the natural and educational values although the local community gets less benefits from social values of CPSF.

2.1.3. Comparative analysis of the local community's perspectives between SCAS and CPSF

2.1.3.1. Conservation and tourism aspects

The comparison of the community's perspectives between the conservation and tourism development of SCAS and that of CPSF did not differ significantly Table.34 shows the results of the t-test at $\alpha = 0.05$. In other words, both sites are similarly ranked in importance at $\alpha = 0.05$ (SCAS ($\bar{x} = 4.91$) and CPSF ($\bar{x} = 4.87$)).

Table.34: Comparison of perspectives about conservation between SCAS and CPSF

Preserve for future generations		Paired Differences		t	Sig. (2-tailed)
SCAS (\bar{x})	CPSF(\bar{x})	\bar{x}	S.D.		
4.91	4.87	-.04	.03	1.344	.180

$\alpha = 0.05$

2.1.3.2. Promotion as tourist attractions

The comparison of the local community's opinions regarding the promotion of tourism did not differ significantly ($\alpha = 0.05$) between SCAS ($\bar{x} = 4.85$) and CPSF ($\bar{x} = 4.77$) (Table.35). This means that the local community has similar opinion regarding the promotion of both sites as tourist destinations.

Table.35: Comparison of perspectives about promoting SCAS and CPSF as tourist attractions

Promote as new tourist attraction		Paired Differences		t	Sig. (2-tailed)
SCAS(\bar{x})	CPSF(\bar{x})	\bar{x}	S.D.		
4.85	4.77	0.08	0.61	1.900	0.59

$\alpha = 0.05$

2.1.3.3. Co-existence between conservation and tourism

The comparison of the local community's opinions regarding the co-existence of tourism and conservation for both sites is shown in Table.36.

The comparison shows that the respondents did not differ significantly in their opinions between SCAS ($\bar{x} = 4.82$) and CPSF ($\bar{x} = 4.78$).

Table.36: Comparison of perspectives on how conservation and tourism can co-exist between SCAS and CPSF

Conservation and tourism should co-exist		Paired Differences		t	Sig. (2-tailed)
SCAS(\bar{x})	CPSF(\bar{x})	\bar{x}	S.D.		
4.82	4.78	0.04	0.46	1.315	0.190

* $\alpha = 0.05$

2.1.3.4. Values and benefits

Table.37 summarizes the comparison of the perceived benefits and values that could be derived from the development and conservation of SCAS and CPSF. Although economic values of both sites were considered by the respondents to be of the same level, it could be seen that the perceived economic value of CPSF was slightly higher than that of SCAS. On the other hand, the perceived cultural and social values of SCAS were a bit higher than those of CPSF, while the educational values of CPSF were much higher than SCAS.

Table.37: Comparison of perceived benefits between SCAS and CPSF

Benefit/ Values	SCAS (%)	CPSF (%)
Economic Values	49.38	49.89*
Cultural/Natural Values	26.85*	26.14
Education Values	12.67	13.07*
Social Values and others**	11.1*	10.9

**increasing motivation and conservative activities which strengthen the relationship among villagers, preservation for the seepages, and advertisement to make this forest more well-known.

Figure.66 shows that the economic value of both study sites was perceived by the majority of the respondents to be the most important ($x= 49.89\%$), followed by cultural value ($x= 26.85\%$) and educational value ($x=13.07\%$). The respondents considered the social value of the study sites to be the least important ($x= 11.1\%$).

The majority of the respondents had a positive view of the economic impacts from tourism activities at the site because they could help alleviate poverty within their community and bring about a higher quality of life for the residents. The global pro-poor tourism (PPT) approach aims to bring not only economic benefits but also social, cultural, and environmental benefits for the poor (Ashley et al., 2000). The idea that tourism can be a tool in alleviating poverty has been adopted by the United Nations World Tourism Organization (UNWTO, 2009b)

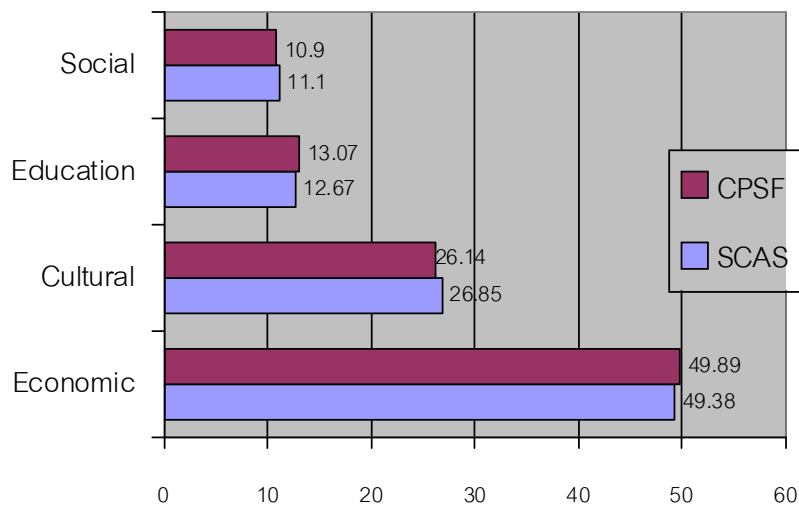


Figure.66: Comparison of beneficial values to the community between SCAS and CPSF

Currently, CPSF has existing tourism facilities such as boardwalk and on-site interpretation signage, and brochures. This is not in a case of SCAS, which is barely developed except for a dirt road and narrow pathway into the site. Thus from a pragmatic view, promoting CPSF as a tourist attraction at this point in time, can readily gain more economic benefits through tourism. Moreover, the results showed that respondents were anticipating an improvement of the local economy from tourism revenue from CPSF, i.e source of natural attractions including the production of tangible products/goods and intangible services. Catibog-Sinha & Heaney (2006, p.317) identified that the forest has numerous beneficial possibilities which stem from its biodiversity values such as providing supply goods, ecological services, even acting as an outstanding natural classroom. It can also provide economic and social benefits through recreation, leisure, and education which can further become the financial means to support biodiversity conservation, environmental education, research, and enhance the local culture and economy. Ecotourism has also been pursued to enhance the well-being of the local community (Ceballos-Lascurain, 1996).

The local perception of SCAS is focused on the cultural and social values. This may be attributed to the archeological findings and ancient stories that provide useful material tools for learning and research. The local community also continues to

hold annual commemorative ceremony at the site in order to pay their respects to their ancestors. This ceremony serves as a call for all villagers to join in and do activities together, which plays a significant role in strengthening the relationship among villagers and related stakeholders. Jamison (1999) indicates that tourism has the potential to unite different ethnic groups within a destination and for the community members to work together for a common goal.

Therefore, it could surmise that, although not statistically significant, the perceived benefits of CPSF are connected to the economic and educational aspects, while those of SCAS are connected to cultural and social aspects. The CPSF is currently visited by the local schools for class field trips, and thus its educational contribution as a tourist destination is obvious. The economic value of the forest is anchored on the numerous and diverse plants found therein. The cultural value of the SCAS is built on the archeological findings in the site, and tourism is better focused on ancient culture and history.

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2.1.4. Community's participation

The majority of respondents (n=203 or 93.5%), even those who are not proximally residing in SCAS and CPSF, expressed interest in participating in various aspects of planning and decision-making for the conservation and tourism development of the study area (Figure.5.41). They, however, expressed the need for them to be trained in tourism related services, public relations, marketing-planning, tourist facilities development, and financing. Leslie (2005) states that the local community should be at the heart of all aspects of tourism planning and management. Sunalai (2006) has suggested that tourism development of small communities needs to be actively planned, developed, and managed with a strong emphasis on community involvement. In the case of Sap Champa, the local communities are interested in getting involved but need to be empowered through technical and financial assistance from policy-making bodies and experts in the fields.

Figure.67 shows that only eight respondents (n=8, 3.7%) were not in favor of participating in any decision-making process or management of the study area.

They said that they were not interested at all and/or have no time to participate in such activities. Six respondents (n=6 not sure or 2.8%) expressed that they were not sure about participating in any decision-making activities as they do not have enough information or background education about the heritage sites, or they thought that the current circumstances of the site would be as they are.

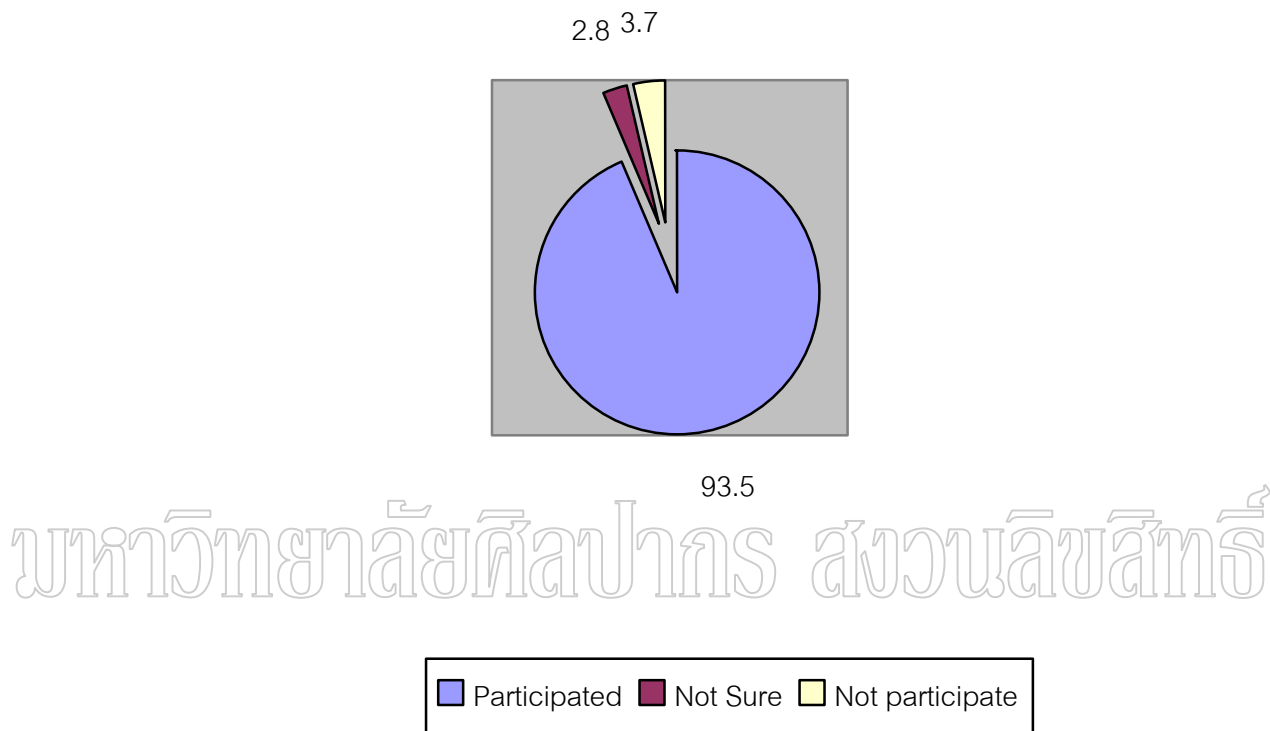


Figure.67: Community's participation in tourism management and decision-making.

When asked what tourist related-activities they would be interested in, the respondents mentioned several activities, such as those related to food and hospitality services, running souvenir shops, and serving as local guides. As shown in Table.38, these tourism activities include aspects related to tour guiding (14.01%), followed by conservation projects (13.24%), and food service (13.17%), and research projects (10.85%).

Table.38: Tourism activities which respondents are involved (n= multiple responses)

Activities	Quantity (person)	Percent
Tour guide (local tour guide)	199	14.01
Conservation project	188	13.24
Food service	187	13.17
Educational project	179	12.61
Tour operator	175	12.32
Government administrator	170	11.97
Accommodation	166	11.69
Research project	154	10.85
Other(should participate for all items)	2	0.14
	n=1,420	100.00

2.1.5. Recommendations from respondents

Salient points were suggested by the respondents (mostly from the government and local community leaders, students) with regards to tourism development in the study sites. These are:

(1) Support from the government sector is essential to promote the values of both SCAS and CPSF as venues for research and education in the field of natural and cultural studies, and to develop both sites as tourist attractions in Lop Buri province. They proposed for reasonable budget allocation for the improvement of the basic infrastructure and tourism facilities such as signage, roads, community souvenir shops, and tourist information centers. They hope that if tourists come to the sites, the socio-economic development of the community would improve, and this will translate into additional income and more livelihood opportunities for the local residents. Development of interesting tourism activities, availability of accommodations, training courses for conservation tour guiding is identified to be essential in tourism development. However, they expect that tourism should be developed in a sustainable manner.

(2) A survey study on the real and potential impacts of tourism, including both the positive and negative aspects, should be carried out. This requires technical know-how, good insights about the environment, and personal dedication to achieve one's goals. The development of the forest and the archeological sites need scientific assessment prior to tourism development so as not to cause irreversible damage to the sites and the ecological and cultural values they represent

(3) Experts or academics should be consulted for more informed heritage management and tourism planning. This should include developing guidance on the regulation of resource use and conservation of the cultural and natural environments.

(4) The local community should be included in any decision-making and management processes in order to avoid social conflicts. For instance, a regular forum can be held to publicly discuss any significant questions such as how the community, on a day-to-day basis, can preserve natural and heritage sites and to sustain such motivation even though the benefits may not be immediately realized.

Some respondents even suggested that any tourism development should be 'owned' by the local community. The community, however, needs external assistance such as from the Department of Forestry and other institutions and experts as majority of the community members lacks the relevant training, education and experience in tourism and conservation.

3. Assessment of recreation opportunities and management priorities

The conceptual framework used as basis for using different planning tools for tourism planning and management is shown on Figure 68. The results of the assessment of recreation opportunities and management priorities are discussed under two main headings.

The first heading presents the results of Recreational Opportunity Spectrum (ROS), a tool used in assessing recreational opportunities of the sites. The results of the Review of Environment Factors (REF), a simple tool in evaluating the potential risks factors on environment factors arising from tourism, are also discussed under the first heading. Both these tools are used during the early stages of tourism planning and management.

The second heading discusses the results of SWOT analysis and Recreational Threat Analysis (RTA) (based on certain criteria namely extent, intensity, and urgency), with regard to the identification of management priorities built on the most significant threats determined using REF. Both these tools are used in main tourism planning and management stages.

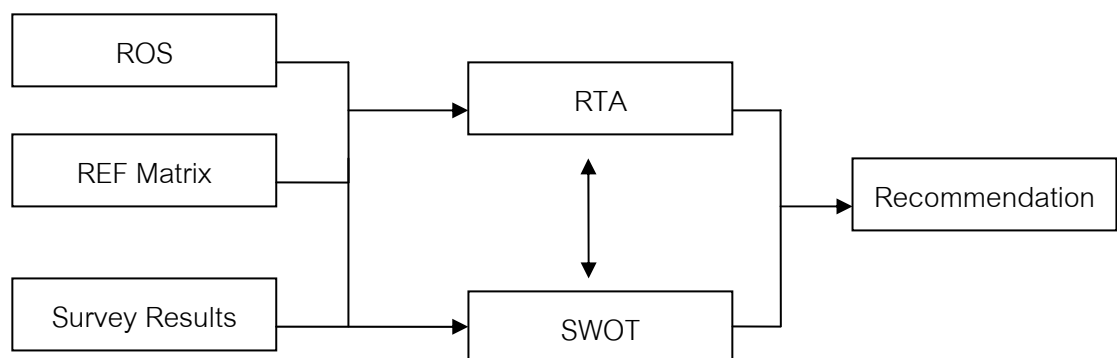


Figure 68: Conceptual framework of assessment recreational opportunities and management

3.1. Results of assessments

The results of the Recreational Opportunity Spectrum (ROS) analysis were based on data collected from field visits and observations. ROS is a planning framework developed by the National Parks and Wildlife Service of New South Wales, Australia to assess recreational opportunities in tourist destinations within natural areas. It shows the relationships between different recreational settings, natural attributes and features, tourist activities and experiences. It provides a conceptual basis on how to create diversity of recreation experiences (Clark & Stankey, 1979; Driver, 1989 cited in Hall & Page, 2006). Appendix C shows the template used for ROS analysis.

3.1.1. SCAS

3.1.1.1. Recreational Opportunity Spectrum (ROS) of SCAS

The Recreational Opportunity Spectrum analysis conducted for SCAS were conducted from field visits and observations of the site and interviews with archaeological experts, administrative heads/staff of local offices from Sap Champa local government unit, and the head of local academic institutions. The result of ROS done for SCAS is shown in Table.39.

Table.39: Recreational Opportunity Spectrum (ROS) Analysis of SCAS

	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5
General Description	Essentially unmodified environment of large size	Predominantly unmodified environment of moderate-large size	Predominantly natural environmental, generally small development areas	Modified environment in a natural Setting, compact development area	Substantially Modified environment, natural backdrop
Access	No roads or management tracks. Few or no formed walking tracks	No roads. Management tracks and walking tracks may be present	Dirt roads. Management tracks and walking tracks may be present	2WD roads (dirt and sealed). Good walking tracks.	Sealed roads. Walking tracks with sealed surfaces, steps, etc
Modifications and Facilities	Modifications generally unnoticeable. No facilities. unless essential for resource protection and made with local materials	Some modifications in isolated locations. Basic facilities may be provided to protect the resource (i.e. pit toilets and BBQs)	Some modifications But generally Small scale and scattered. Facilities primarily to protect the resource and public safety. o powered facilities.	Substantial Modifications noticeable. Facilities may be relatively substantial and provided for visitor convenience (i.e. amenities Blocks and caravans may be present at times	Substantial Modifications Which dominated the immediate landscape. Many facilities (often including roofed accommodation) designed for large numbers and for visitor convenience
Social Interaction	Small number of brief contacts (i.e. less than 5 a day) High probability of isolation from others. Few if any other groups present at campsites	Some contacts with others (i.e. up to 20 groups) but generally small groups. No more than 6 groups present at campsites	Moderate contact with others. Likely to have other groups presents at campsites. Families with young children may be present.	Large number of contacts likely. Variety of groups, protracted contact and sharing of facilities common. May have up to 50 sites.	Large number of People and contacts. Groups of all kinds and ages. Low likelihood of peace and quiet.
Visitor Regulation	No on-site regulation. Off-site control through information and permits may apply	Some subtle on-site regulation such as direction sign and formed tracks.	Controls noticeable but harmonies (i.e. information boards, parking bays)	On-site regulation clearly apparent (i.e. Signs, fences, barriers) but should blend with backdrop	Numerous and obvious signs of regulation. No attempt to blend in. Management personnel likely to be present

Class 1 : Remote	Class 2 : Semi-Remote	Class 3 : Roaded - Natural	Class 4 : Semi- Developed	Class 5 : Developed
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Source: NPWS Draft Nature Tourism and Recreation Strategy, 1997

As gleaned from Table.39, the analysis indicates the SCAS falls under Class 2: Semi-remote as the site is fairly inaccessible from the main public road (Figure 69 and Figure 70). Access is through a dirt road cutting across farm lots and with no public transport service available. It has unmodified natural environment - it is located on top of a small hill (180 meters from sea level) surrounding by the agricultural farm.



Figure 69: Access road to SCAS from the main road

Source: Modified Map from Sap Champa Local Government Authority, 2009.



Figure 70: Access to SCAS via dirt road and local village

Photos were taken by I.Sarttatat on March 15,2010

There are very little social interactions neither with the residents nor with other visitors. In fact, there are no tourist facilities on site. A temporary on-site signage was prepared during the last annual commemorative ceremony held thereof (Figure 71).



Figure 71: Temporary on-site interpretation signage

Photos were taken by I.Sarttatat on March 15, 2010

The Sap Champa local government authority has assigned one personnel to handle tourism matter (i.e. providing information and explain exhibits about the archaeological site and the forest) at an old field office of forest department (Figure 72).



Figure 72: Temporary tourist information center and cultural staff

Photos were taken by I.Sarttatat on March 15, 2010

Visitors to SCAS are comprised of local school students, university students, and few foreigners. There is only one local guide, Mr. Khamruengboon Netnarin, who is the head of Local Government Authority. When university students (i.e. Silpakorn University students) visit the site for field study, the professor in charge of the class serves as the tour guide (Figure 73). Visitors usually stay for one hour.

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Figure 73: Type of visitors. Source: Sap Champa Local Government Authority, 2009

SCAS is under the supervision various government organizations. For example, the Fourth Regional office of Fine Arts in Lop Buri province, Ministry of Culture with regards to the archeological objects and remains. The archaeological site is under the field administration of Sap Champa local government authority, Ministry of Interior, while the forest within the archaeological site is under the control of Royal Forestry Department of the Ministry of Agriculture and Cooperatives. The Ministry of Natural and Environment

Resources manages the whole area it being a protected area. The laws that govern SCAS include the Act on Ancient Monuments, Antiques, Objects of Arts and National Museums (B.E.2504/1961, revised in 1992), which prohibits any form of development without the approval of the Chairman of Fine Arts Department. Although SCAS is administered by several government organizations, there are no specific regulations on visitor use. There is a need for different governing bodies to coordinate in order to develop an integrated tourism management plan for SCAS (Office of Environment Policy & Planning and Natural & Cultural Environment Conservation of Lop Buri Province, 2009). By Setting up an ad-hoc committee comprising several authorized representatives of relevant stakeholders, then decisions could be made via one person (chairman).

3.1.1.2. Review of Environmental Factors (REF) of SCAS

SCAS as a tourist destination is subject to visitor impacts. The actual and potential impacts are determined and evaluated using an analytical framework called Review of Environmental Factors (REF), which was developed by Dr. Corazon Catibog-Sinha for her course in Environment Management and Sustainable Tourism (Course Code: 265 414) at Silpakorn University.

REF lists the tourism threats on the site. The environmental threats are categorized into physical, social, cultural, economic, and educational features. Based on primary data (i.e. field observations) and secondary data (i.e. literature review), each threat is assessed as to its level of threat, that is, low, moderate, or high. The REF also provides guidance on the over-all condition of the site so that immediate management action can be implemented. Appendix D shows the REF template.

The data gathered from the field for the REF analysis for SCAS (Table 40) were validated by consulting with relevant experts and local residents. In the case of SCAS, the majority of the threats were found to pose negative impacts, although, these negative effects provide opportunities for improvement and management action (Appendix I shows some photos of threats at SCAS).

Table.40: Review of Environmental Factors (REF) of SCAS

Threats on Environmental Features	Rank the threat		
	Low	Moderate	High
A. Physical Features			
a.1. over-all physical deterioration			✓
a.2.loss of water supply			✓
a.3.soil erosion			✓
a.4. accumulation of solid waste /garbage			✓
a.5. loss of opportunity for infrastructure development	✓		
a.6.lack of maintenance and management			✓
a.7.deforestation	✓		
a.8. noise pollution	✓		
a.9. erosion of archeological landscape and properties			✓
a.10.deterioration of the natural landscape		✓	
a.11.lack of on-site signage/interpretation			✓
a.12. lack of car-park			✓
B. Cultural Features			
b.1.degradation of cultural / archaeological properties			✓
b.2. vandalism of sacred sites			✓
b.3. lack of public/ local community awareness of the cultural value of the site		✓	
b.4. increased opportunity for illegal antiquity trade			✓
b.5.loss of the site authenticity		✓	
b.6.loss of outstanding values		✓	

Criteria: High =obvious high damage/ negative impact at site, Moderate= noticeable some damage/ negative impact at site, Low= few damage/ negative impact at site (see Appendix I for some photos of threats at SCAS).

Table.40: Review of Environmental Factors (REF) of SCAS (continue)

Environment Features	Rank The threat		
	Low	Moderate	High
C. Social Features			
c.1. disturbance of day-to-day activities of locals people		✓	
c.2. noise disturbance	✓		
c.3. crowding		✓	
c.4. loss of privacy among visitors		✓	
c.5. decline in social interactions among members of the local community	✓		
c.6. occurrence of crime		✓	
c.7. social conflicts among stakeholders in relation to benefit sharing and management			✓
D. Economic Features			
d.1. loss of traditional livelihoods		✓	
d.2. lack of budgetary allocation		✓	
d.3. loss of economic self-reliance among local communities		✓	
d.4. increase in property price		✓	
d.5. Undervaluation of natural and cultural assets		✓	
E. Educational Features			
e.1. lack of learning opportunities for local community	✓		
e.2. loss of research opportunities	✓		
e.3. loss heritage understanding/knowledge	✓		

As shown on Table.40, the highly threatening processes pertain to the physical and cultural deterioration of SCAS primarily due to the absence of effective site management and inherent vulnerability of the site to man-made and natural elements. In tourism management, these threatening factors must be given high priority. However, resources are always limited and measures are needed to priorities the management of these threats. One such measure in through the use of a simple technique known as Recreational Threat Analysis (RTA), which is discussed below.

3.1.1.3. Recreational Threat Analysis (RTA) of SCAS

The threats with high score from the REF Matrix were ranked according to the following criteria: extent, intensity, urgency of the impacts on the site. Table.41 shows the results.

Table.41: Recreational Threat Analysis (RTA) Analysis of SCAS

Threats (twelve items)	Area or extent of damage	Intensity of damage	Urgency (immediate action needed)	Total score	Rank
<u>High rate group</u>					
a.1.overall physical deterioration	7	7	8	22	5
a.2.loss of water supply	5	4	4	13	7
a.3.soil erosion	1	3	3	7	9
a.4. accumulation of solid waste /garbage	2	6	1	9	8
a.6.lack the site maintenance and management	12	1	12	25	4
a.9. erosion of archeological landscape/properties	8	8	9	25	4

1=highest priority rank, 12=lowest priority rank,* = Recreational threats with highest priority mark'

Table.41: Recreational Threat Analysis (RTA) Analysis of SCAS (continued)

Threats (twelve items)	Area or extent of damage	Intensity of damage	Urgency (immediate action needed)	Total score	Rank
<u>High rate group</u>					
a.11.lack of on-site signage	3	2	2	7	9
a.12. lack of standard car-park	4	5	5	14	6
b.1.degration of cultural sites / archaeological sites	9	9	11	29	1*
b.2.vandalism of sacred site	10	10	7	27	3
b.4.increasing opportunity for illegal antiquity trade	11	11	6	28	2*
c.7.increase conflict among related stakeholders and community	6	12	10	28	2*
Total amount	78	78	78	234	-

1=highest priority rank, 12=lowest priority rank,* = Recreational threats with highest priority mark'

As shown in Table.41, the three most threatening impacts (ranked from highest to lowest) are: the deterioration of the archaeological site, followed by increasing opportunity for illegal trade in antiquities, and finally increasing occurrence of social conflict among stakeholders in relation to benefit sharing and management directions for the archaeological site.

The threats listed reflect the absence of site- management and regulations, lack of understanding of the value of cultural heritage, and displacement of local communities who can be effective partners in the protection and management of the site.

3.1.1.4.SWOT Analysis of SCAS

A simple but useful technique in assessing the condition of SCAS is through SWOT analysis. The strengths, weaknesses, opportunities, and threats of SCAS in the context of tourism management are outlined in Table.42.

Table.42: SWOT Analysis of SCAS

SWOT analysis	
Strength	Relatively intact ancient moat Beautiful scenery Good site for archeological research at the national and international levels Unique representation of ancient culture/civilization Relatively large area for research and education
Weaknesses	Absence of public transportation Incomplete road infrastructure Dirt road (gets muddy during the rainy season) Isolated from main village Can be unsafe for visitors especially at night No tourist facilities include on-site signage
Opportunities	High concern of the local communities (village people and schools), researchers, and NGOs for its conservation Local pride as site was visited by Princess Maha Chakri Sirindhorn Adjacent to a famous archeological site—Pong Manao Archaeological site and a famous dam- Pa Sak Cholasit Dam Interests of local government and TAT to promote as a tourist destination
Threat	See Table.41

As shown in Table.42, the strength of the SCAS lies on its natural beauty and archeological value for research and education. However, the threats can only magnify the inherent weaknesses of the place, which have to be addressed by concerned stakeholders particularly by the government and the tourism industry.

3.1.2. CPSF

3.1.2.1. Recreational Opportunity Spectrum (ROS) of CPSF

As in SCAS, the study area at CPSF was subjected to an ROS analysis, which is shown in Table.43.

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Table.43: Recreational Opportunity Spectrum (ROS) Analysis of CPSF

	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5
General Description	Essentially unmodified environment of large size	Predominantly unmodified environment of moderate-large size	Predominantly natural environmental, generally small development areas	Modified environment in a natural Setting, compact development area	Substantially Modified environment, natural backdrop
Access	No roads or management tracks. Few or no formed walking tracks	No roads. Management tracks and walking tracks may be present	Dirt roads. Management tracks and walking tracks may be present	2WD roads (dirt and sealed). Good walking tracks.	Sealed roads. Walking tracks with sealed surfaces, steps, etc
Modifications and Facilities	Modifications generally unnoticeable. No facilities unless essential for resource protection and made with local materials	Some modifications in isolated locations. Basic facilities may be provided to protect the resource (i.e. pit toilets and BBQs)	Some modifications But generally Small scale and scattered. Facilities primarily to protect the resource and public safety. powered facilities.	Substantial Modifications noticeable. Facilities may be relatively substantial and provided for visitor convenience (i.e. amenities). Blocks and caravans may be present at times	Substantial Modifications Which dominated the immediate landscape. Many facilities (often including roofed accommodation) designed for large numbers and for visitor convenience.
Social Interaction	Small number of brief contacts (i.e. less than 5 a day) High probability of isolation from others. Few if any other groups present at campsites	Some contacts with others (i.e. up to 20 groups) but generally small groups. No more than 6 groups present at campsites	Moderate contact with others. Likely to have other groups presents at campsites. Families with young children may be present.	Large number of contacts likely. Variety of groups, protected contact and sharing of facilities common. May have up to 50 sites.	Large number of People and contacts. Groups of all kinds and ages. Low likelihood of peace and quiet.
Visitor Regulation	No on-site regulation. Off-site control through information and permits may apply	Some subtle on-site regulation such as direction sign and formed tracks.	Controls noticeable but harmonious (i.e. information boards, parking bays)	On-site regulation clearly apparent (i.e. signs, fences, barriers) but should blend with backdrop	Numerous and obvious signs of regulation. No attempt to blend in. Management personnel likely to be present

Class 1 : Remote	Class 2 : Semi- Remote	Class 3 : Roaded - Natural	Class 4 : Semi- developed	Class 5 : Developed
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Source: NPWS Draft Nature Tourism and Recreation Strategy, 1997

CPSF is classified Class 4. It is semi-developed and relatively accessible from the main public road. Because CPSF has received more public funding compared with SCAS, it has several facilities both for tourism, reforestation, and research purposes. Nevertheless, the access to the forest itself is made possible through the introduction of a 'hardened' environment, that is, cemented board walk to enable tourists to have a closer view of the forest and its natural beauty.

3.1.2.2. Review of Environmental Factors (REF) of CPSF

Because of the relative popularity of CPSF, it is expected that several threats have occurred in the area. Table.44 outlines the threats (actual and potential; tourism and non-tourism-related) determined in this study using the REF matrix (Appendix I shows some photos of threats at CPSF).

Table.44: Review of Environmental Factors (REF) of CPSF

Environmental Features	Rank The threat		
	Low	Moderate	High
<u>A. Natural and physical features.</u>			
a.1.loss of medicinal plants		✓	
a.2. lack of ground water supply (drying up of natural springs)			✓
a.3.soil erosion		✓	
a.4. accumulation of solid waste /garbage		✓	
a.5.loss of animal diversity		✓	
a.6. lack of over-all site maintenance and management		✓	
a.7. deterioration of on-site interpretation signage (acrylic signage.)			✓
a.8. damage on infrastructure due to fallen/growing trees			✓
a.9. inadequate on-site directional signs and maps			✓
a.10. increased forest degradation		✓	
a.11. noise and air pollution	✓		
a.12. incidence of forest fire	✓		
a.13. lack of standard tourist facility		✓	
a.14.loss of endemic plants			✓
a.15. alien species invasion (i.e. weeds)			✓

Criteria: High =obvious high damage/ negative impact at site, Moderate= noticeable some damage/ negative impact at site, Low= few damage/ negative impact at site (see Appendix I for some photos of threats at CPSF).

Table 44: Review of Environmental Factors (REF) of CPSF (continue)

Environment Features	Rank The threat		
	Low	Moderate	High
C. Socio-cultural features			
c.1.occurrence of crime		✓	
c.2.disturbance of day-to-day activities of locals people		✓	
c.3.noise disturbance		✓	
c.4.crowding		✓	
c.5.loss of privacy among visitors	✓		
c.6.low public awareness local community awareness about cultural heritage	✓		
c.7.reduced cooperation among stakeholders	✓		
c.8.decline in social interactions among community members	✓		
c.9.increased social conflicts among stakeholders in relation of economic benefits and management directions			✓
D. Economic Features			
d.1. displacement /loss of traditional livelihoods	✓		
d.2. lack of public budget allocation		✓	
d.3. increased property price		✓	

Criteria: High =obvious high damage/ negative impact at site, Moderate= noticeable some damage/ negative impact at site, Low= few damage/ negative impact at site (see Appendix I for some photos of threats at CPSF).

Table.44: Review of Environmental Factors (REF) of CPSF (continued)

Environment Features	Rank The threat		
	Low	Moderate	High
E. Educational Features			
e.1.reduced learning opportunity for local community	✓		
e.2. reduced research opportunities	✓		
e.3.decrease natural heritage appreciation in each level	✓		
e.4.reduces opportunity for natural outdoor room	✓		

The analysis of the threats on CPSF yielded seven major threats that were considered significant and therefore need immediate management action. These threats on the natural/ physical environments (i.e. lack of water supply, deterioration of on-site interpretation sign ages and cement walk board, inadequate on-site signage for interpretation, loss of endemic plants, and high invasion weeds). Under the social category of threat, the social conflict among stakeholder is a major threat.

As budget and other resources are limited, there is a need to prioritize these threats so that those that are ranked high be given immediate attention by management. The results of the priority analysis are shown below.

3.1.2.3.Recreational Threat Analysis (RTA) Analysis of CPSF

Table.45 shows the results of the prioritization made for CPSF. Out of the seven threats of high impacts, three threats were prioritized based on the extent, intensity, and urgency of their impacts on the site.

Table.45: Recreational Threat Analysis (RTA) Analysis of CPSF

Threats (seven items)	Area	Intensity	Urgency	Total	Rank
<i>High rate group</i>					
a.2.lack of ground water supply (drying up of natural springs)	7	6	7	20	1*
a.7. deterioration of on-site interpretation signage (acrylic signage)	4	2	3	9	5
a.8.damage on infrastructure due to fallen /growing trees	3	3	4	10	4
a.9. inadequate on-site directional signage and maps	2	1	2	5	6
a.14.loss of endemic plants	6	5	6	17	2*
a.15.invasion of alien species (i.e. weeds)	5	4	1	10	4
c.9. increased social conflicts among other stakeholders	1	7	5	13	3*
Total	28	28	28	84	

1=highest priority rank, 6=lowest priority rank,* = Recreational threats with highest priority mark

The threats with the highest priority scores are (from highest to lowest) are: lack of ground water supply due to the drying up of natural spring, loss of endemic plant species, and occurrence of social conflicts among local stakeholders.

The drying of natural springs indicates the inability of the soil to absorb and store water from rainfall due to loss of forest cover and vegetation (Catibog-Sinha & Heaney, 2006). The increasing human population and corresponding increase in the demand for freshwater is a major concern in this area. The impact of global warming is also responsible for long dry season and subsequent decline of freshwater needed for agriculture

The lack of water supply does not affect the livelihoods of the community members who are directly dependent on water but also the survival of native forest species that are sensitive to the absence of adequate water. One such plant is the endemic *Magnolia*; its loss is a loss to the world because it is found only in Thailand. The drying up of the forest especially during the dry season can cause wild fire.

The social-related threats and conflicts are associated with increasing claim of the local communities, especially farmers, for land ownership and expansion of their agricultural farms. This has caused disagreements between the local farmers and the government.

3.1.2.4.SWOT Analysis of CPSF

To guide forest managers as well as tourism managers in the management of CPSF, a SWOT analysis was conducted to determine the positive and negative assets of the area for tourism, research, and conservation purposes (Table.46).

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Table.46: SWOT Analysis of CPSF

SWOT analysis	
Strength	<p>Easy accessibility</p> <p>Established tourist infrastructures (i.e. cement board walk, concrete car parks, toilet, temporary on-site signage)</p> <p>Presence of endemic plants (i.e. <i>Magnolia</i>) and numerous medicinal plants</p> <p>Outstanding venue for research</p> <p>outdoor recreation and leisure, and public education and training</p>
Weaknesses	<p>Limited recreation activities</p> <p>Diminishing ground water supply</p> <p>Absence of permanent on-site signage and directional maps</p> <p>Lack of maintenance of recreational facilities</p> <p>Absence of user fee (no entrance fee) for maintenance and conservation</p> <p>Inability of management to adapt to changes</p>
Opportunities	<p>H.R.H Princess Maha Chakri Sirindhorn has a strong support for the conservation of <i>Magnolia</i> (named in honor of Her Majesty)</p> <p>Source of pride of the local community</p> <p>Have been promoted by the media (i.e. television, new papers, radio, internet)</p> <p>Incorporated in the Tourism-Destination Promotion Development Plan by the provincial government authority and TAT (Tourism Authority of Thailand).</p> <p>Sponsored by local schools and other groups as study area for learning</p>
Threat	See Table.45

In conclusion, the results of assessment of the two sites- SCAS and CPSF- indicate the need to develop strategic action plan to conserve the areas and develop them as sustainable tourism destinations.

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4. Tourism management recommendations based on sustainable tourism principles.

4.1. Strategic goals for Priority Threats of Tourism

4.1.1. SCAS

Table.47: Proposed Strategic goals for the identified priority threats at SCAS

Priority Threats	Proposed actions
<p>1. Degradation of cultural sites / archaeological sites</p>	<p><i>*Develop a community-driven management plan for the conservation and rehabilitation of SCAS</i></p> <ul style="list-style-type: none"> a. Public hearing involving the local people, government and NGOs, and researchers/experts (i.e. Fine Arts Department, academic Institute at the national, regional, and local levels) b. Establish a multi-disciplinary planning committee c. Deliberate on the long term and short term conservation /development goals including research, conservation and development d. Improve technical capacity of relevant government personnel (i.e. National Museum Institution, Department of National Museums, Ban Chiang national museum) e. Strengthen research collaboration at the local, national and international levels (i.e. museums can form a network of collaboration) f. Improve public awareness by establishing local museums or open-air museum on the site; this will also increase local employment opportunities g. Employ local residents in the maintenance and protection of the site from external forces

Table.47: Proposed Strategic goals for the identified priority threats at SCAS (continue)

Priority Threats	Proposed actions
2. <i>Illegal antiquity trade</i>	<p>* <i>Strict implementation of the Act on Ancient Monuments, Antiquities and Objects of Art and National Museums</i></p> <p>a. Provide adequate warning sign and surveillance on site with the assistance of the local people</p> <p>b. Amend the existing Law by imposing much stricter punishment and higher penalties to violators.</p> <p>c. Authorize selected members of the local community to apprehend violators.</p> <p>d. Conduct community seminars on the provisions of the law and penalties; lawyers can be invited to strengthen the message of the seminars</p> <p>e. Conservation groups to develop educational programs to increase public awareness on the cultural, scientific, and economic significance of the archaeological site</p>

Table.47: Proposed Strategic goals for the identified priority threats at SCAS (continue)

Priority Threats	Proposed actions
<p>3. <i>Conflict among stakeholders and community members</i></p>	<p><i>*Resolve conflicts on heritage ownership and administrative jurisdiction over the heritage</i></p> <p>a. Inform the public (all stakeholders) about the legal jurisdiction of the government by imposing the <i>Act on Ancient Monuments, Antiquities and Objects of Art and National Museums</i></p> <p>b. Each relevant government agency (i.e. Forestry Department, Fine Arts Department) must have clear mandates on how to manage the site in order to prevent over-lapping functions and responsibilities</p> <p>c. Find ways to provide benefits to local people who may claim for some ownership of heritage objects found on their land (i.e. tourism benefits)</p> <p>d. Provide clear government guidelines on ownership and benefit sharing</p>

Table.48: Proposed conservation management plan of SCAS.

Project	Specific Action plan	Responsible Organizations
<p><u>Conservation Management plan</u></p> <p>1.Guidelines and Code of Conducts on the proper use of the archaeological site</p>	<p>Development of Guidelines and Code of Conducts in consultation with the community and experts</p>	<p>FAD 4, Sap Champa Local Government Authority, RFD, SCCPSCC, community committee, academic experts</p>
<p>2.Master plan of SCAS designation project</p>	<p>Development of master plan of the site focusing on conservation, tourism development management, and tourist interpretation</p>	<p>FAD.4,Local governmental authority, SCCPSCC, community committee, and academic experts</p>
<p>3.Research and training</p>	<p>Offering Archaeological Technical Training courses for maintenance the archaeological site (i.e. public archaeology, local museum management, public education for the significant of cultural heritage site).And support for further Archaeological Research Projects.</p>	<p>FAD 4, academic institution (TRU, SU). experts, (i.e. archaeologist, architects), and NCECD</p>
<p>4.Monitoring Plan</p>	<p>Implementation of regular monitoring and assessment to mitigate impacts and optimize sustainable use</p>	<p>Community committee, FAD.4, third parties</p>

Table.49. Proposed sustainable tourism management plan of SCAS

Project	Specific Action plan	Responsible Organization
<p><u>Sustainable Tourism Management</u></p> <p>1. Tourism facilities and infrastructure development</p>	<p>1. Construction of access roads (i.e. sealed-road; providing basic infrastructure facilities (i.e. car parks, souvenirs shops)</p> <p>2. Establishment of the permanent local open-air museum on site</p>	<p>Provincial government authority,FAD.4,local governmental authority, academic institutions, experts.</p>
<p>2.Interpretation Improvement Project</p>	<p>1. Establishment of a Tourist Information Center including employment of permanent staff.</p> <p>2.Development of an effective interpretative signage and printed materials (i.e. brochures, websites)</p> <p>3. Running regular tourism training courses (i.e. food and accommodation services, local guide training course)</p>	<p>Sap Champa Local Government Authority,TAT.7, TRU</p>
<p>3.Tourism Marketing Projects</p>	<p>Improvement of the marketing and public relations initiatives to promote SCAS</p>	<p>TAT.7, Sap Champa Local Government Authority</p>

4.1.2. CPSF

Table.50: Proposed Strategic goals for the identified priority threats at CPSF

Priority Threats	Proposed actions
1. The lack of ground water supply	<p><i>*Improve the retention of ground water in the forest watershed</i></p> <ul style="list-style-type: none"> <li>a. Improve the reforestation and rehabilitation of degraded areas inside and outside the forest. <li>b. Involve the local people in the reforestation and rehabilitation program <li>c. Create a community-based committee who will decide on matters pertaining to the protection and maintenance of ground water supply. <li>d. Conduct public awareness campaign to minimize deforestation and vegetation degradation <li>e. Manage the utilization of fresh water by locals and tourists

Table.50: Proposed Strategic goals for the identified priority threats at CPSF (continue)

Priority Threats	Proposed actions
2. endemic plant extinction	<p><i>*Protection of Magnolia sirindhorn (Noot & Chalermglin)</i></p> <p>a. Create a national law on the protection of the species, and strong implementation of the law</p> <p>b. Develop a strong in-situ conservation programs (inside the forest) and ex-situ conservation programs (in botanical gardens, nursery, and seed banks)</p> <p>c. Protect the species from alien invasive species (i.e. weeds, vines that are not native to the forest) and diseases that may be carried by tourists and researchers</p> <p>d. Set up a demonstration site showing the live species of <i>Magnolia</i> and other interesting plants (i.e. medicinal) for tourists to see (rather than going inside the forest) and to learn about the biology and habitats of the plants.</p> <p>e. Promote the public awareness of the value of <i>Magnolia</i> in other parts of Thailand and overseas as symbol of the country's natural heritage and pride.</p> <p>f. Conduct research on the biology and ecology of <i>Magnolia</i> as well as methods of propagating them for future commercial use, reforestation</p> <p>g. Increase public awareness through the media to enhance public appreciation about the plant</p>

Table.50: Proposed Strategic goals for the identified priority threats at CPSF (continue)

Priority Threats	Proposed actions
3. Local community conflict	<p>* <i>Resolve conflicts on the use of forest resources</i></p> <p>a. Provide guidelines on the consumptive (i.e. gathering of medicinal plants) and non-consumptive uses (i.e. ecotourism) of forest resources</p> <p>b. Develop collaboration and partnerships among government, NGOs, and local community in planning and decision- making on matters pertaining to the use of forest resources</p> <p>c. Promote equitable sharing of benefits (i.e. from tourism revenue) among the members of the local community.</p>

Table.51. Proposed conservation management plan of CPSF

Project	Specific Action plan	Responsible Organization
<p><u>Conservation</u></p> <p>1.Guidelines and Code of Conduct on the sustainable use of forest reserve</p>	<p>Development of Guidelines and Code of Conduct on the sustainable use of forest resources and involvement of local communities in forest management</p>	<p>Sap Champa Local Governmental Authority,RFD, local community, SCCPSCC,NCECD</p>
<p>2. Master plan for the development and management of CPSF</p>	<p>Revised master plan for CPSF with emphasis on the integration of forest conservation and forest-based tourism</p>	<p>Local governmental authority,RFD, community committee, academic experts, SCCPSCC, NCECD</p>
<p>3.Research, education and training</p>	<p>1. Establishment of a botanic garden for native, endemic, rare and threatened species and economical important species (i.e. medicinal plants) found in CPSF and similar forested areas within the district</p> <p>2.Development of a public education program on forest conservation, reforestation and rehabilitation for local communities and local schools</p> <p>3. Provision of research funding on the study and propagation of medicinal plants</p>	<p>RFD, academic experts, community committee, local community</p>

Table.52. Proposed sustainable tourism management plan of CPSF

Project	Specific Action plan	Responsible Organization
<p><u>Sustainable Tourism Management</u></p> <p>1.Torism Facilities and infrastructures Development Project</p>	<p>1.Improvement of tourism facilities (establishment of permanent botanic garden, facilities, food shops, souvenirs shops)</p>	<p>Sap Champa Local Government Authority, community committee, RFD, academic experts,</p>
<p>2.Interpretation Improvement and Training Project</p>	<p>1. Employment of permanent staffs and local guide. 2.Improvement of interpretative signage and printed materials on site 3. Conducting training courses in tourism (i.e. food and accommodation service, local guide training course).</p>	<p>Sap Champa Local Government Authority, community committee, RFD, academic experts, local community and local school.</p>
<p>3.Tourism Marketing Projects</p>	<p>1.Developing tourism brochure and improving public relations to promote CPSF</p>	<p>TAT.7,academic experts, Sap Champa Local Government Authority.</p>

Table.52. Sustainable Tourism Management Plan of CPSF (continue)

Project	Specific Action plan	Responsible Organization
<p><u>Sustainable Tourism Management</u></p> <p>4. Interpretative program</p>	<p>Maintenance and improvement of on-site signage; development of more effective tourist interpretation.</p>	<p>Sap Champa Local Government Authority, RFD, academic experts,</p>

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In conclusion, this chapter pointed out that the sites have cultural and natural heritage significance and the local community residing near and around the sites had a positive attitude towards the conservation of the archeological site and the forest. Thus, they agreed that the integration of tourism development and conservation is essential for sustainability. If the sites were to be developed as cultural and natural heritage tourist destination, it is necessary that both short term and long term goals be addressed as mentioned above. The involvement of all relevant stakeholders is crucial in all aspects of tourism management.

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Chapter Six

Summary, Conclusions, and Recommendations

This research examined the physical, natural and cultural attributes of Sap Cham Pa Archaeological Site (SCAS) and Cham Pi Sirindhorn Forest (CPSF) as sites for tourism and heritage conservation. The over-all research objectives were to study the significance of cultural and natural heritage within the study area in the context of conservation and sustainable tourism management. The specific objectives of the study are as follows:

1. To describe the general features of the study area.
2. To determine the perceived values of the community.
3. To assess the potential and actual risks and benefits of tourism in these sites.
4. To provide some tourism management recommendations.

The research objectives were achieved using the following methods: numerous field visits, literature review, structured questionnaire survey of 217 residents (analysis of data using the Likert Scale and statistical Package for the Social Sciences (SPSS) program Version 10.1), focus group discussions with students from the local school, in-depth interviews with relevant stakeholders, and assessment of data using various tools such as ROS, REF, RTA Matrix, and SWOT. The study was conducted from June, 2007 to November, 2009. The brief results of the study are as follows:

1. Summary of results according to research objectives

1.1 Summary of description of the general features of the two study sites.

Sap Champa archaeological site (SCAS) has significant cultural and historical values.

It is an archeological site dating back from prehistoric to Dvaraviti periods. Cham Pi Sirindorn Forest (CPSF) is a remnant of tropical rain forest with significant natural value because it is the remaining habitat of numerous plants including the endemic and world-famous *Magnolia sirindhorne*. Both sites are not only interesting venues for research and education but also and, most importantly, as tourist

destinations. These two sites are geographical adjacent to each other (only about 500 meters apart).

and it was assumed that the ancient city was built within the original forest. At present these two sites have received much attention from the government and non-government sectors including local communities because of their potential to attract tourists, to provide valuable fields of study to students, and researchers. The local communities are starting to become more aware of the importance of these two sites. However, social conflicts have arisen with regard to land ownership and management directions. Their immediate economic needs have to be addressed in order to sustain the appreciation of these two sites as part of their cultural and natural heritage.

1.2. Summary of Determination of the perceived values of the local community.

The perceived values of the local community were determined, and the discussions of the results of the survey (n=217) are divided into six sub-sections in this report.

1.2.1. Community perspective regarding conservation and tourism of SCAS

The majority of the respondents (n= 200) strongly agreed, with an average Likert score of 4.91(S.D. \pm 0.35), that SCAS should be conserved/preserved for future generations. This is followed by promotion of SCAS as a new tourism destination in the province, generating an average score of 4.85 (S.D. \pm 0.42). The respondents were also in favour of the idea of the co-existence between conservation and tourism, with an average score of 4.82 (S.D. \pm 0.38).

The survey, therefore, showed that the local community have a positive attitude towards the conservation of SCAS; they agree to the idea of integrating tourism development into the conservation of the site. The members of the community take pride in knowing of the existence of a significant archeological site within their midst. They expressed their interest in participating in various conservation initiatives not only to achieve social cohesion but also to demonstrate their cultural pride.

1.2.2. Summary of Perceived value or benefits from the development of SCAS.

The majority of the respondents (49.38%) believed that economic benefits are very important in the context of tourism development of SCAS. They expect that tourism can create job opportunities, increase family income, and improve their quality of life.

The cultural value of SCAS as a tourist destination was considered important by 26.85% of the respondents as the site has the potential to increase public awareness of the archeological site and generate more national support for conservation.

The educational and social benefits of SCAS, if developed, were ranked low (13%) by the respondents although several organizations and academic institutions have already initiated some educational and research activities at SCAS. It seems that the educational benefits of SCAS have not quite filtered through the majority of the respondents, probably because they are not actively involved in these academic activities. Providing opportunities to the local community to appreciate the value of SCAS should also be provided.

The social values of SCAS were also ranked low (11.1%), which indicates that the sense of motivation and incentives of the local community to conserve the archaeological site are currently lacking. They should be given better incentives to ensure that they can truly appreciate the value of conserving SCAS both as a cultural heritage site and as a tourist attraction.

1.2.3. Summary of Community perspectives regarding Conservation and Tourism of CPSF

The majority of the respondents (n= 211) strongly agreed that CPSF should be both conserved and sustainably managed for the future generations as indicated by an average Likert score of 4.87 (S.D. \pm 0.41). The co-existence of conservation and tourism followed closely behind with an average score of

4.78 (S.D. \pm 0.53), and the promotion of tourism in Lop Buri province was given an average score of 4.77 (S.D. \pm 0.60).

The main reason given for forest conservation was that the present and future generations would benefit from conserving this natural heritage as well as from sustainable tourism. Furthermore, the local communities are proud of the *Magnolia sirindhorne* (Noot & Chaerlemklin) as this plant has a symbolic significance to the Royal family, who the local respondents have high regard and respect for. The goods (i.e. medicinal plants, natural springs) and ecological services (i.e. shelter, watershed, recreational) of forest are essential for domestic and agricultural purposes.

The concept of the co-existence between forest conservation and tourism development was supported by the majority of the respondents who saw tourism as a tool for conservation and *vice versa*. Promoting CPSF as a new tourist attraction in the province was perceived as being crucial for economic growth and environmental and social well being at both the local and national levels.

However, the respondents claimed that unregulated tourism activities and uncontrolled construction of tourism facilities could lead to the destruction of the remaining forest and hence the unsustainability of tourism.

1.2.4. Summary of Perceived values and benefits of CPSF.

When the respondents were asked about the benefits they expect from conserving and managing CPSF, they said the receiving economic benefits (49.89%) is paramount. This result is similar to what they said about SCAS as it can create job opportunities, enlist government support in relation to tourism development, and provides higher family income and more infrastructure development.

The natural value of the forest is valued highly by 26.14% of respondents who believed that the forest has the potential to increase public appreciation of natural heritage, leading to a national effort to conserve it. For the educational values, it showed that 13.07% of the respondents think that there are various educational opportunities in which the local community could engage in, which include use of the site for outdoor

classroom, training, and seminars. However, the social values of CPSF were ranked much lower by 10.9% of the respondents. This result indicates the lack of cooperation among relevant stakeholders in the preservation of the forest and the natural springs and in making this forest more well-known. Thus, there is a need to stimulate local communities into genuine participation and to increase opportunities for them to work together for conservation and tourism management planning.

1.2.5. Summary of the Comparative analysis of both sites

A comparison of the two sites pertaining to three aspects: conservation and tourism, promotion of tourism, and the co-existence between conservation and tourism was conducted. The results showed that there was no statistically significant difference between the two sites with respect to the above-mentioned aspects.

The economic values of both sites were consistently regarded as very important in terms of alleviating poverty and improving quality of life. However, the perceived economic value of CPSF appeared to be higher than that of SCAS. This may be the case because CPSF already has existing tourism facilities as compared with SCAS. For them, the existence of tourism facilities translates to higher economic benefits from tourism. The educational values of CPSF were also much higher than SCAS as the former is already currently being used by local schools for class field trips, thus its educational contribution as a tourist destination is more obvious than in SCAS.

On the other hand, the perceived cultural and social values of SCAS with regards to the archeological findings and ancient stories were higher than those in CPSF. However, the linkage between the ancient city and the use of the forest as part of their ancient lifestyle can be emphasized in tourism interpretation and educational learning. Well regulated archeological research as well as the annual celebration of commemorative ceremony at SCAS can serve as a stimulus for the villagers to participate and be involved. These activities including well-managed tourism can play as significant role in strengthening social and cultural values among the stakeholders.

1.2.6. Summary of Community participation

The majority of respondents (n=203, 93.5%) expressed interest in participating in various aspects of planning and decision-making in the heritage conservation and tourism development of the two study sites. However, they expressed the need to be trained in tourism related programs such as hospitality services, public relations, marketing planning, development of tourism facilities, and financing. Only few respondents (6.5%) were not interested in participating in any of the programs because accordingly they did not have enough time or they did not have much information/knowledge about the heritage sites or they believe that the site should be left as it is.

For the tourist related-activities, the majority of the respondents mentioned that they would be interested in tour guiding (14.01%), followed by conservation projects (13.24%), food service (13.17%), and research projects (10.85%).

1.3. Summary of the Assessment of potential and actual risks and benefits of tourism in these sites.

1.3.1. Summary of Recreational Opportunity Spectrum (ROS) of SCAS

SCAS is categorized Class 2 or semi-remote because the site is relatively inaccessible due to the absence of public transportation and suitable road system. The site, although governed by many national laws and regulations and administered by different government organizations, is not managed in a coordinated manner. Therefore, plans to develop the area for sustainable have become difficult and complicated. At any rate, if tourism were to be developed, it is necessary that both short term and long term goals should be addressed. Short-term goals include the provision of job opportunities for the local communities who would be affected by development, and the long term goals will be the sustainability of tourism and the conservation of the cultural assets of the site. The involvement of all relevant stakeholders is crucial in all aspects of tourism management.

1.3.2. Summary of Review of Environmental Factors (REF) of SCAS

Majority of the threats (tourism and non-tourism related) that would affect the integrity of SCAS pertain to the disturbances or impacts of its physical features, which in turn affect the cultural value of the site. The over-all absence of on-site management was responsible for such threat.

1.3.3. Summary of Recreational Threat Analysis (RTA) of SCAS

The prioritization of management action was based on the identification of the three most significant threats on SCAS, based on the results of the REF analysis. These are the deterioration of the archaeological site, increased opportunity for criminals to illegally collect and trade the artifacts, and high social conflicts among stakeholders on matters relating to benefit sharing and the direction of management of the site. These major threats need to be urgently addressed by appropriate bodies or agencies. .

1.3.4. Summary of SWOT of SCAS

A guide to sustainable tourism management from the results of SWOT analysis is beneficial. For SCAS, the strength lies on its cultural and archeological values for research, education, and subsequently for tourism if given the opportunity to enhance these strengths. The weaknesses and threats of the SCAS have to be addressed as they can compromise the strengths of and opportunities for the site.

1.3.5. Summary of Recreational Opportunity Spectrum (ROS) of CPSF

CPSF is classified as Class 4 or semi-developed in the ROS spectrum. The forest is relatively accessible and some developmental improvements have already been introduced. The site has been allocated public funding for infrastructure development such as construction of a field office, boardwalk, nursery, and access road. Research funds have been provided to conserve the forest as well as the protection and propagation of the endemic *Magnolia*. CPSF is popular field study site for local schools, tertiary academic institutions, and research organizations. TAT has already initiated the promotion of CPSF as a new destination within the province.

1.3.6. Summary of Review of Environmental Factors (REF) of CPSF

In terms of threats, the highest threats (n=7) that could put CPSF at great risk are those that could damage its natural/physical features. The impacts may come from man-made disturbances including tourism as well as from natural disturbances. These impacts include the depletion of natural ground water and the drying up of the natural spring as result of over-consumption of fresh water for domestic and agricultural purposes. The loss of the watershed value of the forest could lead to increased species vulnerability and extinction of forest species and the incidence of wild fire. Long-term maintenance of the tourist facilities is necessary to ensure the long-term benefits of the forest as a tourist destination.

1.3.7. Summary of Recreational Threat Analysis (RTA) of CPSF

The three most important threats of CPSF that need immediate action are lack of ground water supply due to the drying up of natural spring, loss of endemic plant species, and occurrence of social conflicts among local stakeholders. Removing the root causes of these threats will be effective strategies in tourism management and forest conservation. For example, keeping the forest vegetation is intact will ensure the long-term availability of ground water or natural springs; however, inability to minimize or conserve water usage will compromise this effort. Over-consumption of water for agricultural purposes is a major cause of the environmental threat to the forest. For example, the government agricultural sector should help in providing assistance to farmers in terms of offering alternative agricultural products (i.e. arid resistant crops) or technologies. If the forest is protected, the native plants therein will also be protected. The local communities have to be involved in all stages of tourism development and should receive equitable benefits from tourism as well.

1.3.8. Summary of SWOT of CPSF

The strength of the CPSF is centered on its natural beauty and its easy accessibility for tourism, research and education. These assets should be maximized as well as sustained for long-term benefits of all stakeholders.

1.4. Conservation and Tourism Management Recommendations

The management recommendations for the two study sites are summarized in Table 53 to Table 55 (for SCAS) and Table 56 to Table 58 (for CPSF).

Table.53. Proposed strategic goals for the identified priority threats at SCAS

Priority threats	Primary goal
1. Degradation of cultural sites / archaeological sites	Develop a community-driven management plan for the conservation and rehabilitation of SCAS
2. Illegal antiquity trade	Strict implementation of the <i>Act on Ancient Monuments, Antiquities and Objects of Art and National Museums</i>
3. Conflict among stakeholders and community members	Resolve conflicts on heritage ownership and administrative jurisdiction over the heritage

Table.54: Conservation Management Plan of SCAS

Project	Specific Action plan	Responsible Organizations
<u>Conservation Management plan</u> 1.Guidelines and Code of Conducts on the proper use of the archaeological site	Development of Guidelines and Code of Conducts in consultation with the community and experts	FAD 4,Local governmental authority, RFD, SCCPSCC, community committee, academic experts
2.Master plan of SCAS designation project	Development of master plan of the site focusing on conservation, tourism development management, and tourist interpretation	FAD.4,Local governmental authority, SCCPSCC, community committee, and academic experts
3.Research and training	Offering Archaeological Technical Training courses for maintenance the archaeological site (i.e. public archaeology, local museum management, public education for the significant of cultural heritage site). Support for further Archaeological Research Projects.	FAD 4, academic institution (TRU, SU). experts, (i.e. archaeologist, architects), And NCECD
4.Monitoring Plan	Implementation of regular monitoring and assessment to mitigate impacts and optimize sustainable use	community committee,FAD.4,third parties

Table.55. Sustainable Tourism Management Plan of SCAS

Project	Specific Action plan	Responsible Organization
<p><u>Sustainable Tourism Management</u></p> <p>1. Tourism facilities and infrastructure development</p>	<p>1. Construction of access roads (i.e. sealed-road; providing basic infrastructure facilities (i.e. car parks, souvenirs shops)</p> <p>2. Establishment of the permanent local open-air museum on site</p>	<p>Provincial government authority, FAD.4, local governmental authority, academic institutions, experts.</p>
<p>2. Interpretation Improvement Project</p>	<p>1. Establishment of a Tourist Information Center including employment of permanent staff.</p> <p>2. Development of an effective interpretative signage and printed materials (i.e. brochures, websites)</p> <p>2. Running regular tourism training courses (i.e. food and accommodation services, local guide training course)</p>	<p>Local governmental authority, TAT.7, TRU</p>
<p>3. Tourism Marketing Projects</p>	<p>1. Improvement of the marketing and public relations initiatives to promote SCAS</p>	<p>TAT.7, local governmental authority</p>

Table.56. Proposed strategic goals for the identified priority threats at CPSF

Priority threats	Primary goal
1. Depletion of ground water supply	Improve the retention of ground water in the forest watershed
2. Loss of endemic plant species	Protect the forest for its watershed and conservation values
3. Local community conflict	Resolve conflicts on the use of forest resources

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Table.57. Conservation Management Plan of CPSF

Project	Specific Action plan	Responsible Organization
<p><u>Conservation</u></p> <p>1.Guidelines and Code of Conduct on the sustainable use of forest reserve</p>	<p>Development of Guidelines and Code of Conduct on the sustainable use of forest resources and involvement of local communities in forest management</p>	<p>Local governmental authority, RFD, local community, SCCPSCC,NCECD</p>
<p>2. Master plan for the development and management of CPSF</p>	<p>Revised master plan for CPSF with emphasis on the integration of forest conservation and forest-based tourism</p>	<p>Local governmental authority,RFD, community committee, academic experts, SCCPSCC, NCECD</p>
<p>3.Research,education and training</p>	<p>1. Establishment of a botanic garden for native, endemic, rare and threatened species and economical important species (i.e. medicinal plants) found in CPSF and similar forested areas within the district</p> <p>2.Development of a public education program on forest conservation, reforestation and rehabilitation for local communities and local schools</p> <p>3. Provision of research funding on the study and propagation of medicinal plants</p>	<p>RFD, academic experts, community committee, local community</p>

Table.58. Sustainable Tourism Management Plan of CPSF

Project	Specific Action plan	Responsible Organization
<p><u>Sustainable Tourism Management</u></p> <p>1.Torism Facilities and infrastructures Development Project</p>	<p>1.Improvement of tourism facilities (establishment of permanent botanic garden, facilities, food shops, souvenirs shops)</p>	<p>Local governmental authority, community committee, RFD, academic experts,</p>
<p>2.Interpretation Improvement and Training Project</p>	<p>1. Employment of permanent staffs and local guide. 2.Improvement of interpretative signage and printed materials on site 3.Conducting training courses in tourism (i.e. food and accommodation service, local guide training course).</p>	<p>Local governmental authority, community committee, RFD, academic experts, local community and local school.</p>
<p>3.Tourism Marketing Projects</p>	<p>1.Developing tourism brochure and improving public relations to promote CPSF</p>	<p>TAT.7,academic experts, local governmental authority</p>

Table.58. Sustainable Tourism Management Plan of CPSF (continue)

Project	Specific Action plan	Responsible Organization
<p><u>Sustainable Tourism Management</u></p> <p>4. Interpretative program</p>	<p>Maintenance and improvement of on-site signage; development of more effective tourist interpretation.</p>	<p>Local governmental authority, RFD, academic experts</p>

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Appendix A

Questionnaire Survey

(Thai Version)

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

แบบสอบถาม

แบบสอบถามนี้จัดทำขึ้นเพื่อเก็บรวบรวมข้อมูลแบบสอบถามสำหรับโครงการวิจัยเรื่อง "การอนุรักษ์และการจัดการท่องเที่ยวอย่างยั่งยืนในแหล่งโบราณคดีเมืองโบราณชัยจำปาและป่าจำปาสิรินคร" โดยงานวิจัยนี้เป็นส่วนหนึ่งของงานวิจัยในระดับปริญญาเอก

ของนางไอลดา ศราทททัต ซึ่งเป็นนักศึกษาในสาขาการจัดการมรดกทางสถาปัตยกรรมกับการท่องเที่ยว (หลักสูตรนานาชาติ) คณะสถาปัตยกรรมศาสตร์ มหาวิทยาลัยศิลปากร

ทั้งนี้ งานวิจัยนี้มีวัตถุประสงค์เพื่อสอบถามความคิดเห็นของประชาชนในตำบลชัยจำปาในเรื่องการอนุรักษ์และการจัดการท่องเที่ยวอย่างยั่งยืนในแหล่งโบราณคดีเมืองโบราณชัยจำปาและป่าจำปาสิรินคร ผู้วิจัยจึงใคร่ขอความกรุณาและขอความร่วมมือจากท่านในการกรอกแบบสอบถามและขอขอบพระคุณทุกท่านเป็นอย่างสูงที่กรุณาสละเวลาในการตอบแบบสอบถามในครั้งนี้

ส่วนที่ 1: ข้อมูลทั่วไปเกี่ยวกับผู้ตอบแบบสอบถาม

กรุณาเขียนเครื่องหมาย ✓ ลงในวงกลมที่ตรงตามความเป็นจริง

1. เพศ

- ① ชาย ② หญิง

2. อายุ

- ① ต่ำกว่า 20 ปี ② 20-29 ปี ③ 30-39 ปี
④ 40-49 ปี ⑤ 50-59 ปี ⑥ ตั้งแต่ 60 ปี เป็นต้นไป

3. ระดับการศึกษาสูงสุด

- ① ต่ำกว่าปริญญาตรี ② ปริญญาตรี ③ สูงกว่าปริญญาตรี

4. อาชีพหลัก

- ① เกษตรกร ② รับจ้าง ③ ค้าขาย ④ รับราชการ
⑤ อื่นๆ (โปรดระบุ).....

5. อาชีพรอง

- ① ไม่มี ② มี (โปรดระบุ).....

6. รายได้รวมของครอบครัวต่อปีโดยประมาณ

- ① ไม่เกิน 10,000 บาท ② 10,001-20,000 บาท
③ 20,001-30,000 บาท ④ 30,001-50,000 บาท
⑤ 50,001 -100,000 บาท ⑥ มากกว่า 100,000 บาท

7.ระยะเวลาที่ท่านพำนักอาศัยอยู่ที่ตำบลชั้นจำปามาเป็นเวลา.....ปี.....เดือน

8.ปัจจุบันท่านอาศัยอยู่ในตำบลชั้นจำปา หมู่ที่.....

ส่วนที่ 2: ข้อมูลด้านความคิดเห็นด้านการอนุรักษ์และการจัดการท่องเที่ยวอย่างยั่งยืนในแหล่งโบราณคดีเมืองโบราณชั้นจำปาและป่าจำปาลีสิรินธร

คำชี้แจง กรุณาอ่านข้อความแล้วโปรดพิจารณาว่าท่านมีความคิดเห็นอย่างไร การตอบให้เขียนเครื่องหมายวงกลมลงในช่องที่ตรงกับความคิดเห็นของท่านมากที่สุดโดยมีระดับความคิดเห็นดังนี้ 1=ไม่เห็นด้วยอย่างยิ่ง 2=ไม่เห็นด้วย 3=ปานกลาง 4=เห็นด้วย 5=เห็นด้วยอย่างยิ่ง และกรุณาระบุเหตุผลด้วย

ตอนที่ 1 แหล่งโบราณคดีเมืองโบราณชั้นจำปา

1.1.ท่านเห็นว่าควรอนุรักษ์แหล่งโบราณคดีเมืองโบราณชั้นจำปาไว้เพื่อคนรุ่นหลัง

ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ปานกลาง	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	2	3	4	5

กรุณาระบุเหตุผล

1.2.ท่านคิดว่าการอนุรักษ์แหล่งโบราณคดีเมืองโบราณชั้นจำปาจะมีประโยชน์ต่อท้องถิ่นของท่านอย่างไรบ้าง

1.....

2.....

3.....

1.3.ท่านต้องการส่งเสริมให้แหล่งโบราณคดีเมืองโบราณชั้นจำปาเป็นสถานที่ท่องเที่ยวในจังหวัดลพบุรี

ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ปานกลาง	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	2	3	4	5

กรุณาระบุเหตุผล

.....

1.4.ท่านคิดว่าชุมชนจะได้รับประโยชน์ใดบ้าง หากแหล่งโบราณคดีเมืองโบราณซำจำปา ได้รับการพัฒนาให้เป็นแหล่งท่องเที่ยว (กรุณาวงกลมล้อมรอบตัวเลขหน้าข้อ และตอบได้มากกว่า 1 ข้อ)

1. เพิ่มพูนรายได้ของครอบครัว
2. สาธารณูปโภคของชุมชนจะได้รับการพัฒนาเพิ่มมากขึ้น
3. ท้องถิ่นจะได้รับงบประมาณสนับสนุนจากภาครัฐมากยิ่งขึ้น
4. ชุมชนมีความภาคภูมิใจในแหล่งมรดกทางวัฒนธรรมของตนยิ่งขึ้น
5. เพิ่มพูนโอกาสในการเรียนรู้ในด้านต่างๆมากยิ่งขึ้น
6. สร้างงานให้กับชุมชน
7. สามารถอนุรักษ์แหล่งมรดกทางวัฒนธรรมของชาติไว้ได้
8. จะได้รับความร่วมมือจากหน่วยงานภาคเอกชนและหน่วยงานอิสระอื่นๆ (อาทิ เช่น นักวิชาการ ,NGO(องค์กรอิสระ)
9. อื่นๆ(โปรดระบุ).....
10. ไม่ได้รับประโยชน์อะไร เนื่องจาก(โปรดระบุ).....

มหาวิทยาลัยศิลปากร ส่วนวนวัฒนวิทยา

1.5.ท่านเห็นว่าการอนุรักษ์และการท่องเที่ยวในแหล่งโบราณคดีเมืองโบราณซำจำปา สามารถดำเนินไปพร้อมๆกันได้

ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ปานกลาง	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	2	3	4	5

ตอนที่ 2 ป่าจำปาสีรินทร

2.1ท่านเห็นว่าควรอนุรักษ์ป่าจำปาสีรินทรไว้เพื่อคนรุ่นหลัง

ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ปานกลาง	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	2	3	4	5

กรุณาระบุเหตุผล

.....

2.2. ท่านคิดว่าการอนุรักษ์ป่าจำปีสิรินธรจะมีประโยชน์ต่อท้องถิ่นของท่านอย่างไรบ้าง

- 1.....
- 2.....
- 3.....

2.3. ท่านต้องการส่งเสริมให้ป่าจำปีสิรินธรเป็นสถานที่ท่องเที่ยวในจังหวัดลพบุรี

ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ปานกลาง	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	2	3	4	5

กรุณาระบุเหตุผล

.....

2.4. ท่านคิดว่าชุมชนจะได้รับประโยชน์ใดบ้าง หากป่าจำปีสิรินธรได้รับการพัฒนาให้เป็นแหล่งท่องเที่ยว (กรณาวงกลมล้อมรอบตัวเลขหน้าข้อ และตอบได้มากกว่า 1 ข้อ)

1. เพิ่มพูนรายได้ของครอบครัว
2. สาธารณูปโภคของชุมชนจะได้รับการพัฒนาเพิ่มมากขึ้น
3. ท้องถิ่นจะได้รับงบประมาณสนับสนุนจากภาครัฐมากยิ่งขึ้น
4. ชุมชนมีความภาคภูมิใจในแหล่งมรดกทางวัฒนธรรมของตนยิ่งขึ้น
5. เพิ่มพูนโอกาสในการเรียนรู้ในด้านต่างๆมากยิ่งขึ้น
6. สร้างงานให้กับชุมชน
7. สามารถอนุรักษ์แหล่งมรดกทางวัฒนธรรมของชาติไว้ได้
8. จะได้รับความร่วมมือจากหน่วยงานภาคเอกชนและหน่วยงานอิสระอื่นๆ
(อาทิ นักวิชาการ, องค์กรอิสระ เป็นต้น)
9. อื่นๆ(โปรดระบุ).....
10. ไม่ได้รับประโยชน์อะไร เนื่องจาก(โปรดระบุ).....

2.5. ท่านเห็นว่าการอนุรักษ์และการท่องเที่ยวในป่าจำปีสิรินธรสามารถดำเนินไปพร้อมๆกันได้

ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ปานกลาง	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	2	3	4	5

ตอนที่ 3 ด้านการจัดการท่องเที่ยวในสถานที่ทั้ง 2 แห่ง

3.1. ท่านเห็นว่ากิจกรรมใด หรือ ผู้ใดที่ควรมีส่วนเกี่ยวข้องกับการจัดการท่องเที่ยวในสถานที่ทั้ง 2 แห่ง (ตอบได้มากกว่า 1 ข้อ)

1. ผู้ประกอบการด้านที่พัก
2. ผู้ประกอบการร้านค้าและอาหาร
3. บริษัททัวร์
4. หน่วยงานภาครัฐ
5. ภาครัฐ
6. โครงการอนุรักษ์
7. โครงการศึกษาอบรม
8. โครงการวิจัย
9. อื่นๆ(โปรดระบุ).....

3.2. ท่านต้องการมีส่วนร่วมในการตัดสินใจเพื่อพัฒนาแหล่งโบราณคดีเมืองโบราณห้า
จำปาและ ป่าจำปาสรินทรให้เป็นแหล่งท่องเที่ยวหรือไม่

- ① ต้องการ โดยท่านต้องการมีส่วนร่วมในด้าน.....
- ② ไม่ต้องการ เนื่องจาก.....

ส่วนที่ 3 ข้อเสนอนะเพิ่มเติม(ถ้ามี)

.....

.....

.....

.....

ขอขอบคุณเป็นอย่างยิ่งที่กรุณาให้ความร่วมมือตอบแบบสอบถาม

Appendix B

Questionnaire Survey

มหาวิทยาลัยศิลปากร ส่วนลิขสิทธิ์
(English Version)

This questionnaire is designed to collect data for a research project "Conservation and Sustainable Tourism in Sap Cham Pa Archaeological Site and Cham Pi Sirindhorn Forest" as part of the requirement for completion of a PhD program at Silpakorn University. The researcher would like to ask you to complete this questionnaire. Your help in answering the following questions is very much appreciated.

Section I : Personal Information

Please indicate your answers by putting in the appropriate box.

1. Gender

① Male

② Female

2. Age

① Under 20

③ 30-39

⑤ 50-59

② 20-29

④ 40-49

⑥ Over 60

3. Highest educational level

① Lower than bachelor's degree

② Bachelor's degree

③ Higher than bachelor's degree

4. Main Occupation

① Farmer

② General service worker

③ Private enterprise

④ Government official

⑤ Other (please specify.....)

5. Sub-Occupation

① Non

② Have (please specify.....)

6. Total income of your family per year

① Lower than 10,000 Baht

② 10,001-20,000 Baht

③ 20,001-30,000 Baht

④ 30,001-50,000 Baht

⑤ 50,001 -100,000 Baht

⑥ More than 100,000 Baht

7. Period of residency in Sap Cham Pa Sub-District

.....Year.....month.

8. Which village(Moo) do you live in Sap Cham Pa sub-district?.....

Section II Data about the opinion of Conservation and Tourism Management in Sap Cham Pa Archaeological site and Cham Pi Sirindhorn Forest

Instructions: Please put in the most appropriate box. Please rank your level of agreement (encircle one number only) to the following questions: 1= extremely to disagree, 5 = extremely agree and explain briefly. Use the space provided to explain your opinion.

Part I

A. Sap Cha Pa Archaeological site

A.1. Should Sap Cha Pa Archaeological site be preserved for the future generations?

rank your choice: 1 2 3 4 5

Explain why _____

A.2. What do you think are the benefits to your community if Sap Cha Pa Archaeological site was preserved?

A.3. Should Sap Cha Pa Archaeological site be promoted as a tourist attraction in Lop Buri province?

rank your choice: 1 2 3 4 5

Explain why _____

A.4. What do you think are the benefits to the community if Sap Cha Pa Archaeological site was developed for tourism? (Multiple response)

1. increased family income
2. more infrastructure development
3. more government support for local economy
4. increased public appreciation of cultural heritage
5. increased educational or learning opportunity
6. more job opportunities
7. preserved for national level of cultural heritage site
8. more cooperation from private parties and third parties (Academics, NGOs)
9. other. Specify: _____
10. No benefits. Why? _____

มหาวิทยาลัยศิลปากร ส่วนวิจัย

A.5. Do you think conservation and tourism could co-exist in Sap Cha Pa Archaeological site? yes, rank your choice: 1 2 3 4 5

Explain why _____

B. Cham Pi site Sirindhorn Forest

B. 1. Should Cham Pi Sirindhorn Forest be preserved for the future generations?

rank your choice: 1 2 3 4 5

Explain why _____

B.2. What do you think are the benefits to your community if Cham Pi Sirindhorn Forest was preserved?

B. 3. Should Cham Pi site Sirindhorn Forest be promoted as a tourist attraction in Lop Buri province? rank your choice: 1 2 3 4 5

Explain why _____

B.4.What do you think are the benefits to the community if Cham Pi site Sirindhorn Forest was developed for tourism? (Multiple response)

- 1.increased family income
- 2.more infrastructure development
- 3.more government support for local economy
- 4.increased public appreciation of cultural heritage
- 5.increased educational opportunity
- 6.more job opportunities
- 7.preserved its biodiversity for next generation more cooperation from private parties and third parties(Academics, NGOs)
- 8.more cooperation from private parties and third parties(Academics, NGOs)
- 9.other. Specify:_____
- 10.No benefits. Why?_____

B. 5. Do you think conservation and tourism could co-exist in Cham Pi Sirindhorn Forest? rank your choice: 1 2 3 4 5

Explain why _____

Section II- Tourism

1. What form of tourism activities do you like to get involved in these sites? (Multiple answer)

- | | |
|----------------------------|------------------------|
| 1.accommodation | 6.conservation project |
| 2.food service | 7.educational project |
| 3.tour operator | 8.research project |
| 4.government administrator | 9.other(Specify)..... |
| 5.tour guide | |

2. Do you like to participate in any decision-making regarding the development of these sites for tourism?

Yes In what way? _____

No Why? _____

Section III: Additional comments

.....
.....
.....
.....

Thank you very much for your cooperation

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

Appendix C

Recreational Opportunity Spectrum (ROS)

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

3. Recreation Opportunity Setting (ROS) (Clark and Stankey 1979) matrix developed for NPWS areas. (Ramsay 1997). Two interstate examples of the application of the ROS classes have been shown by way of comparison. (NB The setting classes are not directly comparable).

	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5
General Description	Essentially unmodified environment of large size.	Predominantly unmodified environment of moderate-large size.	Predominantly natural environment, generally small development areas.	Modified environment in a natural setting, compact development area.	Substantially modified environment, natural backdrop.
Access	No roads or management tracks. Few or no formed walking tracks.	No roads. Management tracks and formed walking tracks may be present.	Dirt roads. Management tracks and walking tracks may be present.	2WD roads (dirt and sealed). Good walking tracks.	Sealed roads. Walking tracks with sealed surfaces, steps, etc.
Modifications and facilities	Modifications generally unnoticeable. No facilities. No structures unless essential for resource protection and made with local materials.	Some modifications in isolated locations. Basic facilities may be provided to protect the resource (e.g. pit toilets and BBQs).	Some modifications but generally small scale and scattered. Facilities primarily to protect the resource and public safety. No powered facilities.	Substantial modifications noticeable. Facilities may be relatively substantial and provided for visitor convenience (e.g. amenities blocks) and caravans may be present at times.	Substantial modifications which dominate the immediate landscape. Many facilities (often including roofed accommodation) designed for large numbers and for visitor convenience.
Social interaction	Small number of brief contacts (e.g. less than 5 a day). High probability of isolation from others. Few if any other groups present at campsites.	Some contact with others (e.g. up to 20 groups), but generally small groups. No more than 6 groups present at campsites.	Moderate contact with others. Likely to have other groups present at campsites. Families with young children may be present.	Large number of contacts likely. Variety of groups, protracted contact and sharing of facilities common. May have up to 50 sites.	Large numbers of people and contacts. Groups of all kinds and ages. Low likelihood of peace and quiet.
Visitor Regulation	No on-site regulation. Off-site control through information and permits may apply.	Some subtle on-site regulation such as directional signs and formed tracks.	Controls noticeable but harmonise (e.g. information boards, parking bays).	On-site regulation clearly apparent (e.g. signs, fences, barriers) but should blend with bush backdrop.	Numerous and obvious signs of regulation. No attempt to blend in. Management personnel likely to be present.

Comparison No 1. Recreation Opportunity Setting classes used by the Victorian Department of Conservation and Environment (No date).

Class 1 Remote	Class 2. Semi- Remote.	Class 3. Roaded- Natural	Class 4. Semi-Developed.	Class 5. Developed
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Comparison No 2. Recreation Opportunity Setting classes used by the Queensland Department of Environment and Heritage, Great Sandy Region Management Plan (1994).

Class 1 Remote.	Class 2. Semi- Remote non- motorised	Class 3. Semi- Remote motorised.	Class 4. Natural.	Class 5 Intensive	Class 6 Urban.
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Appendix D

Review of Environmental Factors (REF)

มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์

Annex Review of Environmental Factors

List as many environmental features (natural, social, political, cultural) that are adversely affected (real and potential) by tourism in your study area. For each environmental feature, make a rough estimate of the level of tourism threat by ticking the appropriate column, i.e., low, moderate, or high level of threat. Also take note of the environmental features that may show benefits from tourism activities/ventures.

Example of an REF matrix (Fill free to modify or develop your own matrix but without diminishing the basic data required for this exercise.)

Environmental Features	Rank the threat			Other comments/explanations
	low	Moderate	High	
A. Natural and physical features				
a.1. trampling of vegetation				
a.2. loss of plant diversity				
a.3. loss of animal diversity				
a.4. increased pests (weeds and feral animals)				
a.5. soil erosion				
a.6. soil compaction				
a.7. water pollution				
a.8. accumulation of solid waste/garbage				
Others???				
B. Cultural features				
b.1. degradation of cultural sites				
b.2. erosion of cultural practices				
b.3. vandalism of sacred sites				
Others???				
C. Social features/issues				
c.1. increased petty crime				
c.2. disturbance of day-to-day activities of local people				
c.3. noise disturbance				
c.4. crowding				
c.5. loss of privacy				
c.6. loss of job opportunities for local people				

Appendix E

Recreational Threat Analysis (RTA)

มหาวิทยาลัยศิลปากร ส่วนลิขสิทธิ์

Table.59: Example of Recreational Threat Analysis (RTA)

Threats	Area	Intensity	Urgency	Total	Rank
<i>High rate group</i>					
a.2.lack of ground water supply	7	6	7	20	1
a.8. deterioration of on-site interpretation sign(acrylic signage)	4	2	3	9	5
a.9.the cement wallboard is collapsed by the trees	3	3	4	10	4
a.10. inadequate on-site signage such as direction map etc.	2	1	2	5	6
a.17.increase endemic plant extinction	6	5	6	17	2
a.18.increase alienate plants	5	4	1	10	4
c.12. increased local community conflict with other stakeholders	1	7	5	13	3

Appendix F

The artifacts items of SCAS present in

มหาวิทยาลัยศิลปากร ส่วนลิขสิทธิ์
Various places







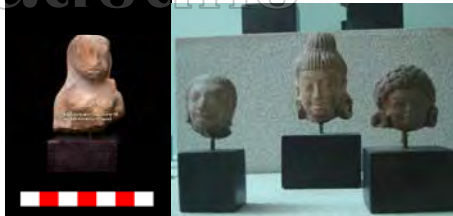


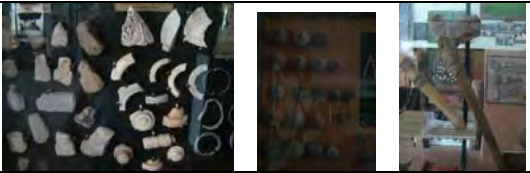




Locations	Items	Photos
The Som Dej Pra Narai National Museum, Muang District, Lop Buri Province	Sap Champa octagon Inscription No.1	
	Sap Champa Inscription No.2	
	Bronze/Iron implements	
	A part of the wheel of Laws(red sand-stone)	

Figure.74: The Artifacts items of SCAS present in various places.Source: Fine Arts Department, Som Dej Pra Na Rai National Musuem, 2009

Locations	Items	Photos
The Som Dej Pra Narai National Museum, Muang District, Lop Buri Province	Red stone of Buddha' s hand	
	Fragments of Earthen wares	
	Terra cotta Doll	
	Seal	

Source: Fine Arts Department, Som Dej Pra Na Rai National Musuem, 2009; Photos taken by I.Sarttat,2009 (Low; follow pages).

Locations	Items	Photos
Muang Sap Champa Local Museum, Tha Luang Wittayakhom School, Tha Luang District, Lop Buri Province.	Fragments of earthen wares.	
Information Center of Sub Champa Historical Site and Champi Sirindhorn Forest [ICSC]	Stone implements	
	Fragments of earthen ware, terracotta wares	
	Portable small image of Buddha, Bronze image of Buddha.	
	Part of Wheel of Law (red stone)	
	Stone Bell	

Locations	Items	Photos
Muang Sap Champa Cultural Center	Stone implements	
	Fragments of earthen ware, terracotta wares	
Private collection Mr. Champadip Plian	Stone Bell	
	red stone of Buddha's right hand.	
FAD.4	Fragments of earthen ware	
Rocky Fellow Foundation	Crouching deer, Buddha image red stone	
Faculty of Archaeology, Silpakorn University, Bangkok	The wheel of Laws(red sand-stone)	

Appendix G

มหาวิทยาลัยวลัยลักษณ์
The items of Plant Species in CPSF
สงวนลิขสิทธิ์

Table.60: Example of Plants Name in CPSF

Local Name/Thai Name	Scientific Name
จำปีสิรินธร	<i>Magnolia sirindhorniae</i> Noot.&Chalermglin
กรวย	<i>Horsfieldia irya</i> (Gaertn.) Warb.
หูกวาง	<i>Terminlia catapa</i> L.
มะเดื่อกวาง	<i>Ficus catapa</i> L.
ชะย่อมหลวง	<i>Rauvolfia cam</i>
ชুমแสงแดง	<i>Homalium grandiflorum</i> Benth
มะยมป่า	<i>Ailanthus Triphysa</i> (Dennst.)Alston
คิ้วม	<i>Donax grandis</i> (Miq) Ridl.
เต่าร้าง	<i>Caryota militis</i> Lour.
มะเฟืองช้าง	<i>Lepisanthes tetraphylla</i> (Vahl)Radlk.
ร้อยค	<i>Livistona saribus</i> 9Lour.)Merr.Ex Chev.
เดี่ยวฟอม	<i>Bauhinia viridescens</i> Desv.
พวงจระริตา	<i>Gouania leptachya</i> DC.
เฉียงพรัานางแ	<i>Carallia brachiata</i> (Luur.)Merr.
มะลิเสี่ยวผี	<i>Jasminum scandens</i> (Retz.) Vahl
เฟิร์นก้างปลา	<i>Nephrolepis biserrata</i> (Sw.)Schott ver.biserrata
พญาสัตบรรณ	<i>Alstonia scholaris</i> (L.) R.Br.
กะไคลิง	<i>Bauinia scandens</i> .L.
นมแมวช้อน	<i>Anomianthus dulcis</i> (Dunn) J.Sinclair.
มะเดื่อกวาง	<i>Ficus callosa</i> Willd.
กำลังช้างสาร	<i>Beaumontia murtonii</i> Craib
หมีเหม็น	<i>Litsea glutinosa</i> (Lour) C.B.Rob.
มะปวน	<i>Mitrephora tomentoasa</i> Hook.F & Thomson
มะเดื่ออุทุมพร	<i>Ficus racemosa</i> L.
เดียน	<i>Melia azedarach</i> L.
ตะเคียนทอง	<i>Hopea odorata</i> Roxb.

Source: Thepsatri Rajabhat University, n.d. [Booklet]

Appendix H

มหาวิทยาลัยศรีนครินทรวิโรฒ
List of names of key resource persons
interviewed and contacted
in the study

Table.61: Name list of key persons in depth-interviewed formal and informal

Name	Position	Organizations
2. Associate Professor Lertcharnrit Thanik	Archaeologist	Silpakorn University
2.Mr.Bhumadhon Bhudhorn	Archaeologist	Lop buri province
3. Associate Professor Nathupintu Suraphol	Archaeologist	Silpakorn University
4.Dr. Chalermklin Piya	Botanist	TISTR Pathumtani province
5. Mrs. Warankarasmī Wilaiwan	The former of Tha Luang Wittaya Khom School	Pathumtani province
6. Mr. Khamruengboon Netnarin	President of Sap Cham Pa local government Authority	Sap Cham Pa sub-district
7. Mr. Charuiwaret Chalerm	Community leader	Ban Sap Cham pa
8.Mr.Champadip Plian	Community leader	Ban Sap Cham pa
9.Mr.Rakmit Thieng	Community leader	Ban Sap Cham pa
10.Mr.Panthong Kham	Community leader	Ban Sap Cham pa
11.Mr.Peerayos Prosert	Community member	Ban Sap Cham pa
12.Groups of Ban Sap Champa Student,Grade 5-6	Community member	Ban Sap Cham pa
13.Ms.Yukongdee Pakkapadee	Academic Depat,FAD.4	Lop buri province
14.Ms.Khuankhan Manita	Som dej Phra narai national museum	Lop buri province
15.Mr.Somsuk Somsuan	Pong manao archaeological Site manager	Ban Pong Manao
16.Me.Sewakornburi Smai	Sakaerat Biosphere Re.	Nakorn Ratchasima

Appendix I

Photos showing the threats and disturbance on
the study area (CPSF and SCAS)

Figure.75: The photos of threats on Sap Cham Pa Archaeological site

Degradation of archeological sites and Increasing opportunity for illegal antiquity



Excavations and monuments in the areas



On-site regulation signage for protecting looting

Vandalism of scared site



Lack of site maintenance and management



Photos taken by I.Sarttatat,2007-2010

Figure.76: The photos of threats on Cham Pi Sirindhorn Forest



มหาวิทยาลัยศิลปากร สงวนลิขสิทธิ์
Appendix J
Abbreviation

Abbreviation

AIT	Asian Institutes of Technology
ASEAN	Association of Southeast Asia Nations
CBD	The Convention on Biological Diversity
CLTC	Chaibadan Land and Tenant Cooperative Ltd
CPD	The cooperative Promotion Department
CPSF	Cham Pi Sirindhorn Forest
CUCUEM	The Canadian Universities Consortium Urban Environment Management
DCR	The Virginia Department of Conservation and Recreation
DOLA	Department of Local Administration, Ministry of Interior
ECOSS	The Ecotourism and Conservation Society of Sikkim, India
FAD	Fine Arts Department
FAD.1	The First Regional Office of Fine Arts
FAD.4	The Forth Regional office of Fine Arts
ICOMOS	International Council On Monuments and Sites
ICSC	Information Center of Sub Champa Historical Site and Champi Sirindhorn Forest
IUCN	The International Union for Conservation of Nature
INTACH	The Indian Trust for Art and Cultural Heritage
KCEC	The Khiriwong Community Ecotourism Club
LPA	Lop Buri Provincial Government Authority
MAB	Man And Biosphere programme
MEA	Millennium Ecosystem Assessment
MLAS	The Mutanchi Lom Al Shezum, India

Abbreviation

NCECD	Natural and Cultural Environmental Conservation Division, Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment
PPAs	The People's Protected Areas in India
RFD	Royal Forestry Department
SAC	Princess Maha Chakri Sirindhorn Anthropology Centre
SCAS	Sap Champa Archaeological Site
SCBD	Secretariat of the Convention on Biological Diversity
SCCPSCC	Sap Champa and Cham Pi Sirindhorn Conservation Club
S.C.A.E.L	Society for Conservation of Antiques Ancient Monuments and Environment of Lop Buri
SERS	Sakaerat Environmental Research Station
SPAFA	SEAMEO Regional Centre for Archaeology and Fine Arts
SU	Silapakorn University
TAT	Tourism Authority of Thailand
TAT.7	Tourism Authority of Thailand, Lop Buri Office
TEEB	The Economics of Ecosystems and Biodiversity
TISTR	Thailand Institute of Scientific and Technological Research
TOT	Telephone Organization of Thailand network
TRU	Thepsatri Rajabhat University
WCED	World Commission on Environment and Development
WSSD	World Summit for Sustainable Development
WWF	The World Wide Fund for Nature
UN	The United Nations
UNEP	The United Nations Environment Programme
UNESCO	The United Nations Educational, Scientific and Cultural Organization

Autobiography

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Work Place Tourism Industries and Hotel,
Faculty of Social Science Management,
Thepsatri Rajabhat University, Lop Buri 15000,Thailand

Educational Background

- Master of Arts in Japanese Studies, Thammasat University
- Certificate in Japanese Teaching, Kyoto University of Education, Japan
- Bachelor of Arts in Japanese Language, Thammasat University

Special Training

- Japanese Teaching, Urawa Center, Japan Foundation, Japan
- Japanese Teaching and other related courses, Japan Foundation, Thailand

Books

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