

**POLICY AND MANAGEMENT STRATEGIES OF THUNG YAI  
NARESUAN AND HUAI KHA KHAENG WILDLIFE SANCTUARIES  
AS A WORLD NATURAL HERITAGE SITE**

**Klairoong Poonpon**

**A Dissertation Submitted in Partial  
Fulfillment of the Requirements for the Degree of  
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## **ABSTRACT**

<b>Title of Dissertation</b>	Policy and Management Strategies of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as a World Natural Heritage Site
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The study of policy and management strategies of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as a World Natural Heritage site was conducted with the following aims: 1) to study the historic background of Thung Yai Naresuan and Huai Kha Khaeng Sanctuaries world natural heritage; 2) to study and analyze the current status, situations, and problems regarding the management of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries; 3) to propose strategic management measures based on technical points of view on the world natural heritage management, and 4) to propose management policy for the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries with respect to appropriate guidelines for achieving the full potential of the World Natural Heritage for the sustainable interests of the nation. Qualitative research methods were employed to investigate the historic background of the inscription of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as a World Natural Heritage site, the benefit of being listed as a world heritage site, the current status of management and situation, and government policy related to management of this world natural heritage site. Data was collected from document sources, non-participant observations, participant observations, focus group discussions and in-depth interviews.

The research findings indicate that the inscription of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as a World Natural Heritage site in 1991 was supported by public intention to strengthen the protection of the site and to prevent external threats such as a major infrastructure development projects. The management

and protection of the World Natural Heritage site is carried out by the Department of National Parks, Wildlife and Plant Conservation which administers and enforces the Wild Animals Reservation and Protection Act 1992 (B.E. 2535). Policy and management frameworks comprise of legislation, knowledge-based management, boundary protection, buffer zone management, and public awareness. The research findings indicate that world heritage listing does not bring any sound policy for management of this World Natural Heritage site. The following strategies were recommended for sustainable management: strengthening the site protection, scientific knowledge-based management, buffer zone management, enhancing public participation, and public awareness building. Supporting policy and management plans can protect the World Natural Heritage site from inappropriate exploitation and misuse.

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background and Significance of the Study**

#### **1.1.1 Significance of World Natural Heritage**

The term “heritage” generally means the things descended from ancestors or the old days to posterity, e.g. Thai heritage, literary heritage, etc. This implies that a heritage is an invaluable property from the past gained by the present generation and it should be carefully maintained in order to be passed on to the next generation.

“World Heritage”, a term used by UNESCO-the United Nations Educational, Scientific and Cultural Organization in the Convention Concerning Protection of World Cultural and Natural Heritage, also means invaluable properties or things, descended from ancestors to the present generation, that should be preserved and maintained in complete condition in order to be passed on to posterity. It is not merely invaluable property or things owned by an individual person but it belongs to all people in the world.

Natural areas are geographical areas having a physical and cultural individuality developed through natural growth rather than design or planning. Natural sites around the world contain beautiful landscapes and invaluable natural resources such as forest-covered areas that play important roles in maintaining the environmental balance. Healthy forests are fundamental to many of their environmental functions, including the protection of water resources, soil protection, conservation of the natural habitat and biological diversity, and recreational and other social functions. Some natural sites include other values such as historic value, representing the uniqueness of its community, and being a source of scientific, geographical, and archeological knowledge. Some natural places are recognized as sacred natural sites where religions or belief systems interact with nature. All of these are invaluable to be reserved for the generation to come. It is important for all states to formulate appropriate policy to respond to the needs of the public.

Thailand has for a long time enacted laws and public policy to protect and preserve the forest areas and outstanding natural sites for the public. A number of natural sites around the country are designated as important biodiversity conservation areas, such as protected areas categorized as national park, wildlife sanctuaries, non-hunting areas, and other purpose areas. According to article 6 of the National Park Act B.E.2504 (1981), the government shall have the power to designate outstanding scenic forest areas to be national parks for recreational and educational use by the public. Moreover, article 33 of the Wild Animal Reservation and Protection Act B.E.2535 (1992) states the following: “When it is deemed appropriate to determine any area for the protection and maintenance of which of living on, to render safety for wildlife, the Cabinet shall have the power to prescribe by a Royal Decree, such area to be wildlife reserved area. A map showing the boundary lines of the determined area shall be annexed to such Royal Decree. The determined area shall be called a "Wildlife Sanctuary".

National parks and wildlife sanctuaries can deliver environmental protection and conservation. Those function include the protection of water resources, soil protection, influences on the local climate and the reduction of gas emission impacts, the conservation of the natural habitats and biological diversity, and recreational and other social functions. These functions have been linked to human well-being and national economic and social development. Nowadays, Thailand has designated 127 national parks and 60 wildlife sanctuaries, which occupy 104,890 square kilometers in total, estimated at 20.44 percent of the whole country’s area (Table 1.1).

**Table 1.1** Categories, Number, and Area Size of Protected Areas in Thailand

Categories	Number of sites	Area		Percent
		Rai	Square kilometers	
National parks	127	38,874,2875	62,198.9	12.12
Forest parks	119	909,887.5	1,455.6	0.28
Wildlife sanctuaries	60	23,080,8563	36,929.4	7.20
Non-hunting areas	56	2,691,606.3	4,306.6	0.84
Total	364	65,556,6375	104,890.6	20.44

**Sources:** Department of National Parks, Wildlife and Plant Conservation, 2015.

At the global level, a number of protected areas categorized as national parks, wildlife sanctuaries, non-hunting areas, and other purpose areas have been granted Natural World Heritage status by UNESCO (1991). Each natural World Heritage site is unique and therefore irreplaceable. Some examples include the iconic landscape such as Yosemite National Park in the United States, and important biodiversity conservation area such as Serengeti National Park in Tanzania, Tropical Rainforest of Sumatra in Indonesia or Galapagos Island in Ecuador.

### **1.1.2 The Convention Concerning the Protection of the World Cultural and Natural Heritage and the World Heritage Site**

The Convention Concerning the Protection of The World Cultural and Natural Heritage, also known as the World Heritage Convention, is an intergovernmental multilateral agreement that aims at the identification, protection, conservation, and presentation and transmission to future generations' cultural and natural heritage of outstanding universal value. It has generated attention to each World Heritage site with specific Outstanding Universal Value (OUV) and exceptional character, but also for conservation challenges at large. The Convention has defined the term "world heritage" into two categories: cultural world heritage and natural world heritage. It is one of the most successful UNESCO Conventions with 189 State Parties and it was the first international instrument to encompass both natural and cultural heritage.

Since its entry into force on 17 December 1972, up to 2016 there were 1,073 properties from 167 countries included on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage list (UNESCO, 2016), as shown in Table 1-2. These areas include many of the planet's most outstanding attractions and grandest monuments of the past. Among all 1,073 world heritage sites, 206 are World Natural Heritage sites, which are thus inscribed because of their superlative value related to scenery and other superb natural phenomena, geology, ecosystems and/or biodiversity. The World Heritage Convention can be deemed the most successful means of protection of forest areas, which are essential resources of the world. The convention has been accepted by all countries so that they can protect the world's wilderness at more than 10 percent of the whole world land area, while there are a number of outstanding invaluable wilderness areas waiting for world heritage registration (UNESCO, 2016).

**Table 1.2** Number of World Heritage Properties by Region

Regions	Categories			Total	Percent	States Parties with Inscribed Properties
	Cultural	Natural	Mixed			
Africa	51	37	5	93	9	35
Arab States	74	5	3	82	8	18
Asia and the Pacific	177	64	12	253	24	36
Europe and North America	434	62	10	506	47	50
Latin America and the Caribbean	96	38	5	139	13	28
Total	832	206	35	1073	100	167

**Sources:** UNESCO, 2016.

Southeast Asia is known as a hotspot of global biodiversity. Ten countries in Southeast Asia have ratified as state parties by the World Heritage Convention. UNESCO has designated 38 World Heritage Sites in the region (UNESCO, 2016) with some of the world's most famous sites, such as Angkor Wat in Cambodia or Ha Long Bay in Vietnam. The number of the World Heritage sites is detailed in Table 1.3.

**Table 1.3** Inventory of the World Heritage Sites in Southeast Asia Region

State Parties	Year of ratification	Number of World Heritage sites			
		Cultural	Natural	Mixed	Total
Brunei	2011	0	0	0	0
Cambodia	1991	3	0	0	3
Indonesia	1989	4	4	0	8
Lao PDR	1987	2	0	0	2
Malaysia	1988	2	2	0	4
Myanmar	1994	1	0	0	1
The Philippines	1985	3	3	0	6

**Table 1.3** (Continued)

State Parties	Year of ratification	Number of World Heritage sites			
		Cultural	Natural	Mixed	Total
Singapore	2012	1	0	0	1
Thailand	1987	3	2	0	5
Vietnam	1987	5	2	1	8
Total		24	13	1	38

**Sources:** UNESCO, 2016.

Among all 38 World Heritage sites in Southeast Asia, 13 are Natural World Heritage sites. Tables 1.4 demonstrate that Thailand was among the first batch of Southeast Asian countries that nominated the World Natural Heritage site for inscription, and Thungyai-Huai Kha Khaeng was the largest area of all the Natural World Heritage sites inscribed in the same year.

**Table 1.4** World Natural Heritage Sites in Southeast Asia

No.	Name of site	Location	Year of inscription	Criteria	Area (Km <sup>2</sup> )
1.	Ujung Kulon National Park	Indonesia	1991	xii, x	785.25
2.	Komodo National Park	Indonesia	1991	xii, x	2193.22
3.	Thungyai-Huai Kha Khaeng Wildlife Sanctuaries	Thailand	1991	xii, ix, x	6,222.00
4.	Tubbataha Reefs National Park	The Philippines	1993	xii, ix, x	1,300.28
5.	Ha Long Bay	Vietnam	1994	xii, xiii	1,500.00

**Table 1.4** (Continued)

No.	Name of site	Location	Year of inscription	Criteria	Area (Km <sup>2</sup> )
6.	Puerto-Princesa Subterranean River National Park	The Philippines	1999	xiii, x	575.30
7.	Lorentz National Parks	Indonesia	1999	xii, ix, x	23,500.00
8.	Gunung Mulu National Park	Malaysia	2000	xii, xiii, ix, x	528.64
9.	Kinabalu National Park	Malaysia	2000	iv, v	753.70
10.	Phong Nha-Ke Bang National Park	Vietnam	2003	xiii	1,233.26
11.	Tropical Rainforest Heritage of Sumatra	Indonesia	2004	xii, ix, x	25,000.00
12.	Dong Phrayayen – Khaoyai Forest Complex	Thailand	2005	x	6,155.00
13.	Mount Hamiguitan Range Wildlife Sanctuary	The Philippines	2014	x	169.23

**Sources:** UNESCO, 2016.

Thailand, by proposal of the Ministry of Education and by cabinet resolution approval on 16 June 1987, has been a member state under the World Cultural and Natural Heritage Protection Convention since 1987. Later, in the same year, the Ministry of Foreign Affairs submitted an accession to the convention, and finally Thailand ratified the convention on 17 September 1987. Currently, Thailand has five registered world heritage sites-both cultural and natural as follows.

1) Historic Sukhothai and Associated Historic Towns. The towns comprise Sukhothai Historical Park in Mueang Sukhothai District of Sukhothai

Province; Sisatchanalai Historical Park in Sisatchanalai District of Sukhothai Province; and Kamphaeng Phet Historical Park in Mueang Kamphaeng Phet District of Kamphaeng Phet Province. These towns are more or less the same age and are situated in the neighborhood. Sukhothai historic town has traces of a glorious civilization in the past, reflecting the Sukhothai Empire as “the Dawn of Happiness” and “the Rise of Siamese (Thai) History” at the beginning of urbanization as an independent state and later it became the hub of Southeast Asia during 18th and 19th centuries for over 200 years. Based on the spectacular beauty of their architecture, which represents early Siam’s works of art and the nationalization of Siam, Historic Sukhothai and Associated Historic Towns were therefore registered as World Heritage sites at the 15th general conference of the World Heritage Committee in 1991 in Carthage or present Tunis, Tunisia.

2) Historic City of Ayutthaya. The historic park is located in Mueang Ile, Phra Nakhon Sri Ayutthaya District, Phra Nakhon Sri Ayutthaya Province—a province in the lower basin of the central part of Thailand. The city was the capital of Siam for 417 years of civilization after the Sukhothai Epoch. Even after the destruction of the latest Burma-Siam war (about 250 years ago), its ancient remains and antiques are evidence of the prosperity and wisdom of the old Ayutthaya citizens. It was therefore registered as a World Heritage property at the 15th general conference of the World Heritage Committee on 13 December 1991 at Carthage, Tunisia. Its qualification meets world heritage criterion 3, i.e. the affirmation of lost or existing cultural or civilized evidence.

3) Baan Chiang Archeological Site. The site is located in the Nong Han District of Udon Thani Province. It is an archeological site that indicates the existence of prehistoric people over 4,300 years ago. By that time, the Baan Chiang civilization included its own culture and various fields of development, especially regarding the wisdom of living. Additionally, its civilization influenced more than 100 archeological sites in the northeast where humans tightly lived together for a thousand years. The UNESCO therefore announced it in 1992 as a World Heritage property at the 16th general conference of the World Heritage Committee in Santa Fe, New Mexico, USA. Its qualification is the affirmation of lost or existing cultural or civilized evidence.

4) Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries. These sanctuaries cover three wildernesses: the west side and east side of Thung Yai Naresuan Wildlife Sanctuary, and Huai Khakhaeng Wildlife Sanctuary, which covers an area of more than 6,222 km<sup>2</sup> or 3,888,750 rai in Uthai Thani, Tak, and Kanchanburi provinces. They were registered as World Heritage property in 1991-the pilot natural site of Thailand and Southeast Asia. Their qualification is the outstanding specimens of significant geological changing processes, biological evolution, and existing interactions of humans with the natural environment. Further, it is the site that was generated from natural phenomena with rare identity and splendid beauty; habitats of rare/in-danger wildlife and plant breeding that still are able to survive, including an ecosystem that is of interest worldwide for its fertility of plants and animals.

5) Dong Phrayayen-Khao Yai Forest Complex. The forest complex here is composed of Khao Yai National Park, Tab Larn National Park, Pang Sida National Park, Ta Phraya National Park, and Dong Yai Wildlife Sanctuary, covering areas in six provinces: Nakhon Ratchasima, Saraburi, Nakhon Nayok, Prachinburi, Sa Kaeo, and Buriram, altogether almost 4,000,000 rai or about 6,200 km<sup>2</sup> of forest area. It was registered as a World Heritage site at the 29th Meeting of the World Heritage Committee in 2005 in Durban, South Africa. Its qualifications meet the criteria of rare or in-danger wildlife and plant breeding that still are able to survive, and its ecosystem is of interest worldwide for its fertility of plants and animals.

World Heritage listings provide the highest level of recognition of heritage significance that can be associated with an area. World Heritage status brings about many potential benefits as well as related requirements and associated costs. The potential benefits include the following:

- 1) The boost in national pride and prestige which comes from having one of the world's iconic sites.

- 2) Strengthened protection and long-term conservation as a result of the national commitment represented by World Heritage nomination and international support for conservation that is the central purpose of the World Heritage Convention.

- 3) Opportunities for interchange of knowledge, experience, and sometimes also staff exchange as part of a global network of World Natural Heritage.

4) Opportunities for additional funding, both from governments and from other sources such as the private sector, non-government organizations (NGOs) and specific World Heritage funds, due to the high profile created by World Heritage status and the additional confidence that donors are likely to experience due to the control provided by the Convention.

5) Greater level of domestic and international scrutiny, which can stimulate improved levels of protection, for example, inclusion on the List of World Heritage in Danger if the site's outstanding universal value is seen as being severely threatened. Such a move can result in additional international attention and resources.

6) Added value of World Heritage can be maximized to attract tourism, resulting in increased national income

The World Heritage Convention also has result in many conservation successes. It has been a powerful catalyst in saving important global natural heritage, improving the conservation and management of properties, and building better capacity and bringing countries together to promote the values of conservation.

As the owner of the world heritage sites, the State Party shall comply with the world heritage forest complex protection, prevention, maintenance, and management measures according to the obligations specified in Article 5 of the Convention, which stated the following:

“To assure protection and conservation of cultural and natural heritages under state sovereignty power and proposal of continual effective measures, the state party shall try its best to perform the following matters:

1) Designate general policy. The purposes are to maintain the cultural and natural world heritage for common interest of people in their way of living, and to restore and protect the cultural and natural world heritage pursuant to the description in the state action plan.

2) Under sovereign power, in case there is no any government agency/organization in charge, the host country shall organize at least one or more agency/organization to run the protection, prevention and conservation policy pursuant to the cultural and natural world heritage proposal by assigned officers. Practical procedures shall be appropriate in order to accomplish their performances.

3) Developing the study/research on scientific processes and techniques in order to apply to its performances and upgrade its potential for preparedness in solving problems of threatening perils to cultural and natural world heritages.

4) Designating appropriate measures in respect of necessary laws, scientific processes, management techniques, and finance in order to classify the details of protection, prevention, conservation, presentation and maintenance of cultural and natural heritages.

5) Supporting establishment/development of international or regional training centers for protection, prevention, conservation, presentation and maintenance of cultural and natural heritages, and funding studies/researches for such operations.”

As a signatory party to the convention, Thailand shall designate protection and surveillance measures for the value preservation of the world heritage of all mankind, not only Thai citizens. Such value shall last long up until the time of posterity and the World Heritage will not be downgraded to world heritage in danger.

### **1.1.3 Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary, World Natural Heritage site of Thailand**

#### **1.1.3.1 Significance of the Site**

Thung Yai-Huai Kha Khaeng Wildlife Sanctuaries World Heritage site is the first World Natural Heritage property of Thailand. The property combines two contiguous wildlife sanctuaries, Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary, separately designated as wildlife sanctuary in 1972 and 1974 respectively. It encompasses 6,222 square kilometers (622,200 hectares), covers two important river system. It is considered a very large conservation forest area in mainland Southeast Asia and is one of the least accessible and least disturbed forest area in Thailand (Sueb Nakhasathien, & Stewart-Cox, 1990).

Sueb Nakhasathien and Stewart Cox (1990) pointed out that the sanctuary's importance as a conservation area lies in the heterogeneity and integrity of its habitats, the diversity of its fauna and flora, and the complexity of its ecosystem. The fauna and flora of the two sanctuaries found nowhere else, with many species of exclusively Sino-Himalayan, Sundaic, Indo-Burmese, and Indo-Chinese affinities, intermingling within the area. Many of these are rare, endangered or endemic. In

addition, the property contains natural beauty with steep sided valleys and impressive mountain peaks interspersed with small lowland plains. The scenic beauty is enhanced by the sight of a host of tributary streams and waterfalls, the unique mosaic of forest types and the sweeping spectacles of variations of color, form, and foliage

The decision to make Thung Yai-Huai Kha Khaeng Wildlife Sanctuaries World Natural Heritage property was made by the World Heritage Committee at its fifteenth session on 12 December 1991, in Carthage, Tunisia (UNESCO, 1991). The justification of inclusion of the site on the World Heritage list was its significance and uniqueness that met the three criteria for natural World Heritage sites. The three criterion are follows,

Criterion 2: outstanding examples representing significant ongoing geological processes, biological evolution, and man's interaction with his environment.

Thung Yai-Huai Kha Khaeng represents an outstanding unique biome in mainland Southeast Asia, combining Sino-Himalayan, Sundaic, Indo-Burmese, and Indo-Chinese biogeography elements, with the flora and fauna characteristics of all four zones. The area is also sufficient to sustain viable population of flora and fauna. The savanna forest of Thung Yai is the most complete and secure example of Southeast Asia's dry tropical forest.

Criterion 3: containing unique, rare or superlative natural phenomena, formations of features of exception natural beauty.

The Thung Yai-Huai Kha Khaeng contains biophysical features of outstanding natural beauty and of great scientific value, including two major watersheds and other natural features.

Criterion 4): the most important and significant habitats where threatened species of plants and animals of outstanding universal value from the point of view of science and conservation still survive.

Thung Yai-Huai Kha Khaeng supports exceptional biological diversity, with many species reaching the limits of their distributions in the sanctuary. In addition to many regional endemic species and some 28 internationally threatened species, at least one-third of all Mainland Southeast Asia's known mammals are present.

The World Heritage Committee at its 15<sup>th</sup> Meeting encouraged Thailand to accelerate its effort to implement the management plans for the two sanctuaries and

to proceed with projects in buffer zones. The Committee also complemented Thailand for resisting the proposal to construct the Nam Choan Dam and expressed concern over any associated infra-structure developments that might affect the integrity of the site.

#### 1.1.3.2 Overview of Management and Protection

Right after the Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries were registered as natural world heritage, the past management plans were carried out as follows: (Royal Forest Department, 2002; Department of National Parks, Wildlife and Plant Conservation, 2015)

1) Increasing world heritage site protection measures by supplementing forest surveillance units in Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries, i.e. within 15 years (from 1992 to 2011), eight world heritage surveillance units were added (see Table 1.1).

**Table 1.5** Forest Surveillance Units in Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries During 1992 and 2016

Year	Number of Forest Surveillance Units		Total
	Thung Yai Naresuan Wildlife Sanctuary	Huai Khakhaeng Wildlife Sanctuary	
1992	19	17	36
1997	21	20	41
1998	22	20	42
2002	23	21	44
2007	25	21	46
2011	27	21	48
2014	28	22	50
2016	29	23	52

**Source:** Royal Forest Department, 2002; Department of National Parks, Wildlife and Plant Conservation, 2016.

2) The Royal Forest Department founded the World Heritage Center to take responsibility for management of the said world heritage complex and coordinate with agencies relevant to the World Heritage Convention. The center is located in Huai Kha Khaeng Wildlife Sanctuary, Uthaihani Province. Budgets have been allocated since 1997 as detailed in Table 1.6.

**Table 1.6** Allocation of Budgets for Management Cost of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries During 1997 and 2002

<b>Budgetary Year</b>	<b>Budget (THB)</b>	<b>Remark</b>
2540	36,541,500	
2541	64,864,000	Construction of the World Heritage Center Headquarters at the Huai Kha Khaeng Wildlife Sanctuary
2542	37,079,700	Construction of the World Heritage Center Headquarters at the Huai Kha Khaeng Wildlife Sanctuary (continued)
2543	31,930,600	
2544	32,420,200	
2545	37,788,500	Construction of the Huai Kha Khaeng Wildlife Conservation Development and Promotion Station

**Source:** Royal Forest Department, 2002.

3) In 1991, not so long after world heritage registration, the natives of three villages in Huai Kha Khaeng Wildlife Sanctuary were evacuated to new locations outside pursuant to the evacuation plan proposed in the application sheet for world heritage.

4) The Royal Forest Department, in cooperation of the government of Denmark, initiated the Western Forest Complex Ecosystem Management (WEFCOM) Programme during 1999 and 2003 to promote the integrated management of forest complex in Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries with contribution of natives, especially those who lived in neighborhood of the forest complex. A new approach using scientific concepts was applied to the management—not only the management of buffer strips among communities and the world heritage sites but also the wildernesses adjoining the world heritage complex. Holistic management or the management of all components existing in the same ecosystem was applied so as to keep the system sustainably.

5) In 2001, the Forest Department founded the Huai Khakhaeng Wildlife Conservation Development and Promotion Station in the Huai Khakhaeng Wildlife Sanctuary to promote, publicize, disseminate, and educate the natives on wildlife and natural world heritage sites conservation in Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries.

6) In view of legal enforcement, the Thung Yai Naresuan and Huai Khakhaeng Forest Complex—as a wildlife sanctuary, has been protected under the Wildlife Reservation and Protection Act B.E. 2535. The Act protects wildlife and resources in the sanctuary within its physical scope. Also, it prevents the threat of illegal human exploitation such as deforestation, wildlife hunting, and any action precarious to wildlife sanctuary threatening: the abandonment of pets or livestock to the forest, taking alien species of animals into wildlife sanctuaries, etc.

In compliance with the obligations of natural world heritage management, the host country of the world heritages shall provide the World Heritage Committee with periodic reports indicating the performances carried out pursuant to the world heritage management standards to show that its world heritage sites retain their outstanding universal value (OUV) without significant threats (Royal Forest Department, 2002) The said reports describe the details of its performance status indicating that the natural world heritage sites of Thung Yai Naresuan and Huai Khakhaeng Forest Complex still meet the OUV standards but it was a pity that no natural world heritage management pursuant to the obligations was found, neither obvious beneficial measures to Thailand and the world community based on the

potential of this natural world heritage. However, the second periodic report of world heritage (2011) indicates that no particular action plan of management of the Thung Yai Naresuan and Huai Khakhaeng Forest Complex was done, but all activities were included in each annual budgetary plan (UNESCO, 2016).

#### 1.1.4 Issues and Challenges

Inspecting with respect to the obligations under Article 5 of the Cultural and Natural world Heritage Convention, it is obvious that there are some important obligations that Thailand, as a state party, should comply with, especially the designation of general policy and appropriate measures as well as procedures for cultural and natural heritage protection, prevention, conservation, presentation, and maintenance (see details in Table 1.7).

**Table 1.7** Thailand's Outcomes Pursuant to the Natural World Heritage Site

Obligations of Thung Yai Naresuan and Huai Kha khaeng Forest Complex in 2011

<b>Obligations under Article 5 of the Convention</b>	<b>Outcomes</b>
1) Designation of general policy aiming at the usefulness of cultural and natural world heritage for people's way of living, and stating the integration of protection/prevention of cultural and natural world heritage in the government action plan	No designation of related policy.
2) Under sovereignty, if no there is responsible agency/organization for this matter, the host country shall organize at least one agency or organization to	The world heritage sites were under supervision of the Thung Yai Naresuan and Huai Khakhaeng wildlife Sanctuaries, Department of Royal

**Table 1.7** (Continued)

<b>Obligations under Article 5 of the Convention</b>	<b>Outcomes</b>
protect, prevent, conserve and present the cultural and natural world heritages, with officers to run appropriate performances so as to fulfill the assignments.	Forest, Ministry of Agriculture and Cooperatives. Later, in 2002, due to government agency reorganization, they were transposed to the Department of National Parks, Wildlife and Plant Conservation, Ministry of Natural Resources and Environment.
3) Development of scientific studies/researches and techniques to apply to performances, including enhancement of the national potential for readiness in troubleshooting regarding the threats to cultural and natural world heritages.	Some activities were partly done. Most of them were research at the Thung Yai Naresuan and Huai Khakhaeng wildlife Sanctuaries, regardless of potential development or enhancement of the world heritages.
4) Designation of appropriate measures by means of laws, scientific processes, management techniques, and funds as necessary to categorize in detail cultural and natural world heritage protection, prevention, conservation, and presentation.	<ol style="list-style-type: none"> <li>1) Legal enforcement of the Wildlife Conservation and Protection Act B.E. 2535</li> <li>2) An integral forest area concept was developed, e.g. a forest ecosystem approach was implemented.</li> <li>3) Enhancement of potential techniques that can increase the effectiveness of forest areas, e.g. a quality-based smart patrol was initiated</li> <li>4) Planning for natural world heritage management was not carried out.</li> </ol>

**Table 1.7** (Continued)

<b>Obligations under Article 5 of the Convention</b>	<b>Outcomes</b>
5) Establishment of an international/regional center for protection, prevention, conservation, and presentation of cultural and natural world heritages as well as the promotion of study/research to fulfill the said assignments.	No action yet.

Based on Table 1.7, it is obvious that Thailand still lacks clear-cut general government policy aiming at the public interest of people's way of living and government action plans to integrate the protection and prevention of cultural and natural world heritage pursuant to Article 5 a) of the Convention, as well as the development of scientific study/research and techniques for application to state operations, and the enhancement of the national potential for readiness in troubleshooting regarding threats to cultural and natural world heritages pursuant to Article 5 c) of the Convention: Establishment of an international/regional center for the protection, prevention, conservation, and presentation of cultural and natural world heritage as well as the promotion of study/research to fulfill the said assignments, including the promotion of study/research on performances pursuant to the mission under Article 5 e). Also, it lacks site action plans as per Article 5 d) for the betterment of performances.

As recommended by the World Heritage Center (Pedesen, 2002) the World Natural Heritage sites need to accomplish a dual purpose, which is to conserve, preserve and protect the site as well as to offer considerate access to as many visitors as possible. The first purpose is mostly in the hands of experts who are capable with all technically-related tasks, whereas the second purpose is mainly carried out by a site manager for these kinds of works. Policy and management strategy guideline are essential for all levels administration. The management guidelines for the World Natural Heritage site

can be the highest standard of protected area management that is helpful to site managers in achieving management goal.

The strategic plan for the management of Thung Yai Naresuan and Huai Kha Khaeng Forest Complex, as host country of the world heritage site, is therefore essential for world heritage with international significance. In addition, the said strategic plan is also in urgent necessity for troubleshooting the incurring threatening perils to the world heritage, both at present and in the future to respond to the following problems:

1) Threatening perils to resources in the eastern Thung Yai Naresuan and Huai Kha Khaeng Forest Complex such as wildlife hunting, especially tigers which are very important in terms of international illegal trade, while in the west of Thung Yai Naresuan Sanctuary Complex there is deforestation and illicit mining, and forest encroachment by the ethnic minority from neighboring countries. Such perils certainly have caused impacts to the outstanding universal value of this natural world heritage.

2) Lack of strategy and management plans according to the obligations under the Convention for practical guidelines of national and operations levels aiming at natural world heritage protection and surveillance.

3) There are risks that the natural world heritages could be exploited in economic development regardless of the environmental point of view, especially the improper use of tourist attractions. For example, the cabinet had a resolution at its meeting tour on 1 November 2005, Nakhon Sawan province, approving the “Development and Production of Various Existing Tourist Goods Taking the Prominence of the World heritage as Strength-Based Uniqueness” and lower northern provinces-Nakhon Sawan, Kamphaeng Phet, Uthai Thani, and Phichit-took part as a strategic target group in the development. Such resolution was vastly criticized as exploitation of natural national and world heritages (Huai Khakhaeng Wildlife Sanctuary in Uthai Thani Province), i.e. it was evaluated in terms of goods and money, which is a pure economic viewpoint regardless of social and environmental dimensions (Srisuwan Janya, 2005)

4) Lack of government policy for developing the natural heritage of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as prototypical World Natural Heritage management with respect to its area potential.

Thus, it is necessary to study the historic background and current status of the natural world heritage of Thung Yai Naresuan and Huai Khakhaeng Wildlife

Sanctuaries, the environmental situation and policy related to the management of this World Heritage site so as to realize the problems and needs, and to propose management guidelines and strategic management policy aiming at the interest of the host country and the world community pursuant to the obligations under the Convention.

## **1.2 Research Objectives**

1.2.1 To study the historic background of the World Natural Heritage at the Thung Yai Naresuan and Huai Khakhaeng Sanctuaries.

1.2.2 To study and analyze the current status, situations, and problems regarding the management of Thung Yai Naresuan and Huai Khakhaeng Sanctuaries.

1.2.3 To propose strategic management measures based on technical points of view on the world heritage management of Thung Yai Naresuan and Huai Khakhaeng Sanctuaries

1.2.4 To propose management policy for the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries with respect to appropriate guidelines for the full potential of the World Natural Heritage for the sustainable interests of the nation.

## **1.3 Research Questions**

1.3.1 From 1991, after the registration of the natural world heritage, how did Thailand designate measures or management plans for the Thung Yai Naresuan and Huai Khakhaeng world heritage sites? And did it comply with the obligations under the World Heritage Convention?

1.3.2 Did the management framework of the responsible units match their assignment and mission in the management, protection, and preservation of Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage sites? Should there be extra strategic units responsible for such a mission?

1.3.3 Was there any change before or after the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries became World Natural Heritages?

1.3.4 What were the benefits gained by Thailand after the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries became World Natural Heritages?

1.3.5 How can one designate management strategies for effective and sustainable management of this World Natural Heritages so as to comply with the obligations under the World Heritage Convention?

1.3.6 How should the Thai government designate policy in order to protect and preserve thesis World Natural Heritage sites for their sustainable value and benefits?

## **1.4 Scope of the Research**

This research aims to develop a model of management strategies of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries World Natural Heritage, and policy designation base on a case study of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary World Natural Heritage site. The scope of the research covers historic background, current status of management, environmental situation, problem analysis, legal framework, related policy and public participation.

The target population adopted in the research are stakeholders involve in policy and management of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries World Natural Heritage site. The target population are classified into 8 groups as follows:

- 1) Top management/policymakers and key personnel of the Ministry of Natural Resources and Environment are the target population: the Department of National Parks, Wildlife and Plant Conservation; the Offices of Wildlife Conservation under the Department of the Department of National Parks, Wildlife and Plant Conservation; the heads of the Western and Eastern Thung Yai Naresuan Wildlife Sanctuaries; the head of the Huai Khakhaeng Sanctuary; officers of the aforesaid three Huai Khakhaeng World Heritage Centers

- 2) Staff representatives of the Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries

- 3) Representatives of the ex-executive officers and ex-staff in the Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries

- 4) Representatives of related government agencies: Uthai Thani provinces, Uthai Thani Natural Resources and Environment Office, the Wilderness

Management Office 12 (in Nakhon Sawan Province), and the Office of Natural Resources and Environment Policy and Planning

5) Representatives of technocrats and knowledgeable people such as academicians and those that have outcomes regarding Thung Yai Naresuan and Huai Kha khaeng Wildlife Sanctuaries

6) Representatives of non-government development organizations, e.g. the chairperson and secretary of the Sueb Nakhasathian Foundation, representatives of the Wildlife Association (Thailand), etc.

7) Representatives of the communities in the eastern Thung Yai Naresuan Wildlife Sanctuary of Tak Province, representatives of the communities in western Thung Yai Naresuan Wildlife Sanctuary in Kanchanaburi Province, and representatives of the communities in buffer forest areas outside the Huai Kha khaeng Wildlife Sanctuary of Uthai Thani Province

8) Representatives of resort/hotel entrepreneurs and tourist service providers in Uthai Thani, Tak, and Kanchanaburi provinces

## **1.5 Units of Analysis**

The unit of analysis is Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries World Natural Heritage sites, which comprises the two contiguous wildlife sanctuaries, Thung Yai Naresuan and Huai Kha Khaeng, considered as a single site.

## **1.6 Advantages of the Research**

1.6.1 Visualization of the current data/information pertaining to the management of Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries as world heritages so as to reform future management planning

1.6.2 Acquisition of strategies and guidelines for the management of Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries as world heritages aiming at standardized management specified by specialists, and the accomplishment of natural world heritage value keeping

1.6.3 Gaining suggestions useful to the policy making of world heritage management, aiming at standards and sustainable national effectiveness

## **CHAPTER 2**

### **LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK**

In this study, “Policies and Management Strategies of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as a World Natural Heritage,” the researcher has reviewed the concepts, theories, and literature related to the research framework. This consists of concepts of public policy, concepts of strategic management and management strategy, policy related to forest and natural resource management, the role of the Convention Concerning Protection of World Cultural and Natural Heritage in protecting natural resources, and related research. Details are as follows.

#### **2.1 Concept of Public Policy**

##### **2.1.1 Concept and Definition**

Basically, public policy relates to political and social processes, as its foundation originates from various problems in society and people expect that their government be responsible for solving such problems. Thus, public policy has to involve with politics, which relates to the interactions of the public, political parties, congress, courts of justice, bureaucracy, executives, local authorities, etc. The most important things to be taken into consideration are what roles that the personnel of organizations have in participating in public policy making and how the outcomes of public policy affect the ways of living of the people in society.

Public administration scholars as well as thinkers have studied and suggested various public policy concepts from their points of view, as discussed below.

Dye (1984, p. 1) defined public policy as whatever governments choose to do or not to do. In terms of what governments choose to do, it covers all activities-both routine and occasional-such as high taxation of luxury products so as to restrain people from consumption of such products, or tax exemptions on some essential products so as to encourage people to consume more. In terms of governments choosing what not to do, Dye

(1984) also deems that it is the main point of public policy, such as the revocation of compulsive conscription for army service, making it voluntary so that the army will have only those that are really willing to serve their country in military affairs. This usually affects people any other ways, so it can be deemed an important part of public policy as well.

Sharkansky (1971, p. 1) defined public policy as the activities performed by governments that cover all official activities, including provisions and regulations that control and supervise individuals and juristic persons to perform certain activities, for example, the provision of public education and welfare, the supply of infrastructure, peace and security keeping, and product price inspection. In addition, public policy also includes state celebration ceremonies such as National Day, national historic memorial days, royal memorial days (if any), etc. Public policy in the view of Sharkansky also includes foreign affairs such as international trade, interaction with international organizations, alliances with international federations, and international relations.

Based on Sharkansky's point of view, it is obvious that he has attempted to express the meaning of public policy as an easily-understandable, concrete subject i.e. any activity-interior or international-performed by governments shall be deemed a kind of public policy. However, in this regard, it does not include the words stated by governments or the projects they intend to do or not do. He does not emphasize the goals of activities carried out by governments and he does not describe why they carry out certain activities or what their purposes are, or how the activities respond to the demands of people or social values.

Anderson (1994, pp. 5-6), an American public administrator, has stated that public policy is just a guideline for performance composed of various factors: performers or groups of performers to be responsible for solving problems of the society with clear aims as to what to accomplish-not only what the government intends or proposes to do. His prominent concept is a clear-cut contrast to the policy and decision-making of governments, which are significant issues of competitive alternatives, i.e. the decision-making of governments may express the intentions or proposals of governments to perform only, and as a matter of fact, such performances may never have been carried out, while public policy performances appear with clear-cut aims. Furthermore, Anderson indicated the roles of individuals and organizations related to the development of public policy,

directly and indirectly, including the classification of the major characteristics of the public policy as follows.

1) The definition of public policy shall correlate with targeted performances rather than the stipulation for possible occasion, i.e. public policy is set up so as to reach specific goals or clear outcomes although it may not always succeed.

2) Public policy normally consists of courses/patterns continuously performed by government agencies rather than individual application of specific decision-making. Public policy covers not only decision-making through laws or regulations in some cases but it inclusively means the sequences of decision-making aimed at enforcement pursuant to formulated rules and regulations.

3) Public policy is set up so as to respond to policy demands of people or those that indicate the things to be done or not to be done according to public issues proposed by non-governmental organizations, representatives of benefit groups, or government agencies to officials and/or government agencies that are responsible for related matters in order to activate their performances pursuant to their requests. Examples of proclamations of such policies are: acts, cabinet resolutions, emergency decrees, ministerial regulations, practical regulations, judges' opinion, announcements or speeches of national leader underlining the government's intensions, goals and what it would like to do concretely.

4) Public policy related to what the government should do concerns not only the actions it intends to take or not only the words it says what to do.

5) Public policy may be of positive or negative aspects.

6) Public policy in the positive aspect generally appears in terms of laws so as to force the people to comply.

However, Anderson (1994) does not define what the governments do. This is evidently different from Dye's (1984) concept.

Easton (1953, p. 129) defines public policy as the power of allocation of all social values and the authority to do so is the government. Additionally, what the government decides to do or not to do is a consequence of "social value allocations." Easton (1956, p. 212) also elaborated that the persons involved with the activities of the political system are those that have authority, such as political seniors, administrative personnel, the enactment sector, judges, executives, national supremacy consultants, and political leaders that are well-known and accepted as legal authorities.

Tossaporn Sirisamphan (1996, pp. 3-4) has studied the definitions of public policy of scholars and he summarized that it is policy formulated by governments—probably authorized organizations or persons that legally perform their duties under the political systems of the towns—provided the public policy covers what they will do or not to do depending on their decision-making regarding the allocation of resources and social values, including the really happened products and outcomes.

Mayuri Anumanrachathon (2010, p. 6) studied the definitions of public policy of scholars and she summarized that it is the activities or performances of governments and the resolutions of their decision-making alternatives formulated in advance so as to guide their activities/performances and to fulfill the formulated goals/purposes with respect to managerial project planning/process in order to attain any of the purposes through suitable procedures complying with authenticity and the demands of people or service users, as much as possible.

Based on the aforesaid definitions, we can conclude that public policy is comprised of the practical guidelines/activities that the state government formulates with its intension to do so as to solve the problems of the public through legal activities pursuant to the approved plans and projects so that the guidelines/activities can be carried out successfully. In this regard, the alternatives of performances are derived from analysis of the most appropriate alternative in political, economic, and social approaches, both interior and international. After all, what the government chooses to do or not to do may affect both positively or negatively, for instance, the public policy of Thailand.

## **2.1.2 Policy and Planning**

### **2.1.2.1 Importance of Policy**

Public policy is significant to policymakers and people as follows.

Importance to policymakers. Most personnel that are responsible for interior policy making belong to the government. If the policy making matches the demands of people in terms of social value and the quality of their living, the government will be more trusted by the people, especially if the government effectively and efficiently succeeds in applying its policy; then it will be highly trusted and admired by the people. This will increase its authority as well.

Importance to people. Since public policy is comprised of political outcomes for responding to the demands of people, the people can express their demands via political mechanisms, e.g. political parties, influence and benefit groups, bureaucracy, politicians, etc. Thus, the demands and support of the people will be brought into the political system and eventually will become public policy. Once the public policy is implemented it will then satisfy the people as per the goals of their better living. On the other hand, if the quality of policy implementation does not reach the people's desired goals it will worsen their way of living and deteriorate their confidence and faith in the government.

Good public policy should conform to social values and the demands of the people. Once it is effectively and efficiently implemented it will equally improve people's quality of life. On the other hand, if the public policy is unsuccessful it will cause trouble, poverty, educational disadvantages, and a low quality of life.

Public policy will be completely successful only if it is actually implemented.

Sombat Thamrongthanyawong (2011) divided the implementation of exact policy into two aspects.

First is the policy implemented by relevant government authorities. This can be performed immediately without planning, for example, the proclamations of excise tax reduction policy on nine luxury and polluting products at the Thai Cabinet meeting held on 21 May 1997. This was a measure for increasing income to cope with annual budget allocation. Such policy could be executed by the Excise Department, notifying manufacturers and distributors to implement it immediately without any supporting planning.

Second is the policy implemented by relevant government authorities with supporting planning-probably in the long run-such as the five-year-long national economic and social development plan. Such plans are usually forwarded to relevant government authorities-ministries, departments, and official organizations-to be converted to yearly operations plans in terms of programs, work or projects, as necessary and appropriate.

However, it takes time to achieve the goals of important policies, and supporting planning is needed in order to be certain that the implementation of such

policies will effectively and efficiently succeed as desired. We may say that the plan is the concrete object of policies composed of measures and activities that lead to real implementation. In other words, the plan is the product of planning when it is actually implemented. The operators should inspect whether the specified measures and activities are appropriate or if they cause any problem or obstacle during implementation, and whether such problems or obstacles can be revised. The evaluation of implementation provides important data for improving the plan, or perhaps the improvement of policies for appropriateness in implementation so as to reach the desired goals and purposes.

#### 2.1.2.2 Planning

Planning is necessary for policy implementations or activities so as to reach the desired goals efficiently. All visional executives—national leaders or organization leaders-visualize the values and importance of planning that leads the nation or their organizations to the desired goals. Scholars that signify the planning give their visions of planning with similar or different points of view.

Robbin and Coulter (1996: pp. 228-229) see that planning means the specifications as well as strategies of goals or objectives of the organizations in order to reach the goals of such objectives, including respectively comprehensive developments of planning aiming at integrity and synchronization of related activities. Based on Robbin and Coulter's (1996) viewpoint, the planning correlates goals and means. They point out five factors of planning.

- 1) The goals and objectives of planning should be clear, feasible, and conform to authenticity. The specification of goals and objectives should pass systematic analysis to assure that they meet the demands of the people and respond to the organization's objectives occurring in the future.

- 2) The planning should comprise strategies to reach the desired goals and objectives as specified. The strategy of a plan is just like a vehicle that leads the organization to the specified goals or objectives. Thus, strategy analysis, and the determination of strategy for implementation, are vital to planning. Since the plan of each organization may be composed of many goals and objectives, the specification of strategies should comprise strategies suitable for each objective, but all of them should be appropriate for reaching the organization's objectives.

3) Planning should yield respective development of comprehensive planning in order to assure that all parts of the organization will grow or expand proportionally, i.e. once the implementation of the plan succeeds there will be no part of it left behind or that will become a problem for the organization.

4) The integrity and synchronization of related activities should rely on good planning that provides harmonious coordination of implementation under the plan, emphasizing that the operators should highlight the value of teamwork to create potential and impulse aiming at autonomous goal achievement.

5) Planning is the transition between means and ends. Good planning should cover the specification of all means leading to effective successful implementation. In case the means is not appropriate or does not conform to the goals or objectives of the organization, the probability of successful implementation is unlikely.

Some scholars have expressed their vision of planning as follows.

Terry (1960, p. 123) had defined planning as the selection and creation of a relationship between the factors that really appear, including the specification and application of assumptions based on the things that will happen in the future and the stipulation of proposals related to possible activities that are believed to be able to reach the desired outcomes. Terry's (1960) concept emphasizes the evaluation of what will happen in the future by applying the relationship between the desired outcomes and the assumption of the desired guidelines.

Irving (1970) proposed concepts of planning comprising two aspects.

1) Planning is a formal process for developing the objectives of the organization or the organization's portions. The purpose of strategy setting is to determine the alternatives for reaching the goals and implementation of such strategy in background comparison with that of systematic assessment based on the advantages and disadvantages-internal and external-of the organization, and the change of environmental conditions.

2) Planning is a transforming process from strategy to operations plan, and it induces implementation pursuant to the plan.

Lyden and Miller (1970, pp. 99-100) described their vision of planning as the determination of means that lead to implementation, aiming at ultimate

achievement. Thus, planning relates to the process of a set of decision-making preparations for implementation in the future, aiming at ultimate implementable outcomes.

The abovementioned visions and concepts are not so very different and most of them emphasize the process aspects in the determination of goals and means so as to effectively reach the goals in the future. According to such visions, Sombat Thamrongthanyawong (2011) concluded that there are sixteen main factors and aspects:

- 1) Clear goals and objectives;
- 2) Composition of strategies or means that meet the objectives;
- 3) Process with systematic analysis;
- 4) Continuous or non-stop implementation;
- 5) Decision-making prior to implementation of the plan;
- 6) By means of a set of mutual decisions;
- 7) Comprehension of all parts of the organization;
- 8) Composition of activity coordination aiming at integrity and implementation in the same direction;
- 9) Continuity of the current situation and that of the desired future;
- 10) Means and desired goals are interlinked;
- 11) Clear indication of conditions: what to do, when to do it, how to do it, and who will do it;
- 12) Applying accurate and reliable data in forecasting;
- 13) Being intent on reaching the desired objectives;
- 14) Availability of responsible organizations to achieve the action plan;
- 15) Being a design of the desired objectives in the future; and
- 16) Conformance to feasibility in the future.

Sombat Thamrongthanyawong (2011) classified planning with respect to the outstanding characteristics apparent in general: informal planning and formal planning.

- 1) Classification Based on Plan Use Frequency:
  - (1) Single-use planning. This is the planning used only once up to the end of mission;

(2) Standing planning. This is the planning related to long continuous activities, i.e. outcome evaluation should be formulated and the plan revised from time to time in order to assure that the plan can be effectively implemented, such as planning for expanding the educational opportunities of the Ministry of Education, aiming at the opportunity of youth to be educated continuously for twelve years.

2) Classification Based on Management Levels:

- (1) Strategic planning;
- (2) Managerial planning; and
- (3) Operational planning.

This classification is for organization management, which is usually classified into levels (Sombat Thamrongthanyawong (2011):

The board of directors of an organization has its duties and roles to direct the organization's mission.

The roles of top management are to implement the mission formulated by the board of directors and to convert it into a strategic plan, and then take it as a special tool for the organization's management to reach the goals formulated by the board of directors.

Mid-level management has the role of interlinking top management and first-level management by converting strategic plans to managerial plans for clearer concrete characteristics so that the first-level management can convert them to operational plans conforming to the goals and objectives of the managerial and strategic plans.

First-level management has the role of converting managerial plans to operational plans so that all work units of the organization can properly implement and match the goals and objectives of the managerial and strategic plans.

Strategic planning is the duty and role of top management in terms of clarifying the mission specified by the board of directors and highlighting the goals and objectives. Strategic planning is good for long-term plans—five years or more. It is like a compass that indicates the organization's direction for the future, indicating what the organization would be like when the time comes.

Strategic planning means the planning of activities that will occur in the future by using data derived from the judgment of events and appropriately specifying a set of activities to do in order to keep the organization in the best situation, attaining readiness and efficient performance in response to changes in the future.

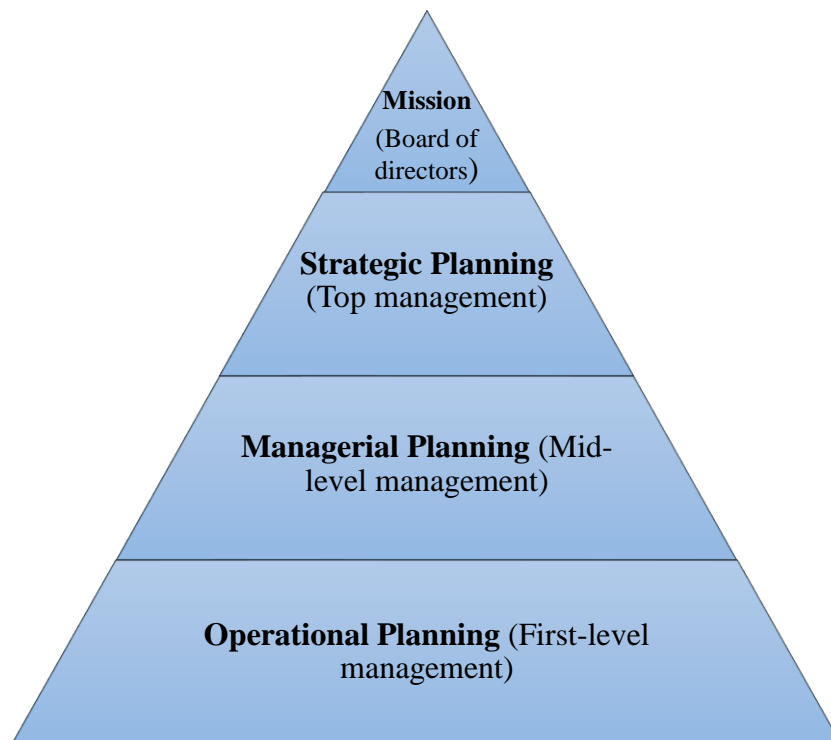
Fundamental principles to be taken into account for strategic planning are:

- 1) Setting goals and objectives;
- 2) Setting assumptions if there will be any change in the future;
- 3) Anticipation of technological changes in the future;
- 4) Selecting appropriate strategies.

Managerial planning means the application of strategic plans to objectives and practical guidelines aiming at clear-cut concrete aspects, i.e. checking what objectives shall be added year after year and how the practical guidelines or performance work. The given objectives should be able to measure the levels of success, covering the budget to spend in performance of the plan as well as coordination among related work units, aiming at the organization's goals that each work unit should reach simultaneously.

The operational plan is the role and duty of first-level management, converting strategic and managerial plans to operational plans so that each work unit will be able to understand its responsibility and try its best to reach the objectives of the managerial and strategic plans. In general, they may be quarterly/monthly/weekly short-run plans, and the outcomes of each step can be obviously evaluated or measured. In setting up the operational plans, the objectives of the organization and each work unit should be formulated, together with clear details of resource utilization and all practical steps.

Considering the management levels in managerial plans we find the sequence of relations in planning-hierarchy of planning-as shown in Figure 2.1.



**Figure 2.1** Hierarchical Diagram of the Organization's Management Planning

Apart from this, planning can also be classified by area. Area planning can be divided into national planning, part planning, and provincial planning. The first one covers all development activities of the country, while the second one is particular and conforms more to the area; and the last one emphasizes the objectives of development conforming to the needs of the province.

From the abovementioned meanings and concepts, it can be seen that public policy and planning are essential to each other. Public policy cannot be well implemented without good planning, while effective planning cannot be formulated with clear public policy. Both public policy and planning are essential to a country's management since it is formulated by the government in order to solve problems and to develop the country. It is a tool that the policy implementer should use so as to formulate procedures and strategies that will lead the policies to goals.

## 2.2 Concepts of Strategic Management

### 2.2.1 Meanings and Concepts of Strategy

The term “strategy” originated from “strategos” in Greek (Quinn, 1980, p. 3, as cited in, Mintzberg, 1994, p. 4; Piriya Pholphirul, 2009, p. 2; Watthana Wongkiattirat et al., 2005, p. 16), which originated from the term “stratos,” meaning “army” when combined with the term “agein,” meaning “lead” (Piriya Pholphirul, 2009, p. 2; Watthana Wongkiattirat et al., 2005, p. 16). Formerly, “strategos” was cited in the meaning of the role and duty of the army leader and later its meaning was slightly distorted to become “the art of the general,” which means the psychological and behavioral skill pursuant to the army leader’s role and duty.

Strategy began to be interesting; it described the performances in proactive business. Bracker (1980) indicated that after World War II there were changes in the environment, structural modification, social values, variation in the economic system, intrusion of foreign trade competition, and political activities.

Nowadays “strategy” is extensively used in different ways (Pasu Decharin, 2003, pp. 49-50). In terms of business, it has various meanings, as can be seen in the following.

Natthaphan Khejornantha (2009, p. 16) suggested the meaning of business strategy, stating that it is a pattern or plan intended to gain advantages in competition with rivals by means of uniqueness, together with the designed achievement plan.

Rewat Chatrivisit et al. (2009, p. 12) pointed out that strategy is a guideline that leads the organization to achievement and provides advantages in competition, i.e. it gives answers to the organization regarding where to compete and how to compete, which will make all members of the organization understand easily.

Steiner (1971, as cited in Pasu Decharin, 2003, p. 50) views strategy as what one has to do in order to push back or respond to rivals’ adaptation. He gives no exact definition for business strategy, but only mentions that strategy should be composed of the following components: 1) strategy is what the top management signifies to the organization; 2) strategy must point out the decisions related to the direction of the organization; 3) strategy must comprise what the organization should do in order to reach its goals; 4) strategy must answer the question “What is the thing that the

organization should do?;" and 5) strategy must answer the question "What is the final result that the organization should work out and how can such a result be achieved?"

On the other hand, Mintzberg (1994) defined strategy in a more flexible way, viewing that strategy has four aspects: 1) it is the plan or guideline to achieve goals; 2) it is the pattern of activity that the organization should engage in routinely; 3) it is the status or position of an organization in the business or industrial sector; and 4) it is the perspective or vision and direction of the organization..

In the viewpoint of Bryson (1995), the author of *Strategic Planning for Public and Nonprofit Organizations*, strategy is "a pattern of purposes, policies, programs, actions, decisions, or resource allocation that describe what an organization is, what it does, and why it does it."

According to the different meanings above, it is obvious that there is no particular definition of strategy; it depends on the context of use and it is up to the writer's definition or total meaning. In other words, strategy refers to a general plan of action for achieving one's goals and objectives. It may be set up in order to achieve the general or long-term goals and objectives of an organization, or to respond a general or long-run particular goals and objectives of a business unit or a specific duty of government authority. It is the connection between ends and means, which leads to such goals. It is also a pattern, plan or guideline that passes analysis and relates to resource allocation or activities in order to arrange the changing environment and leads an organization to achievement pursuant to the planned goals. Strategy therefore relates to plans and decisions regarding means under the constraints of resources and changing environs in order to lead an organization to targeted achievement.

### **2.2.2 Meanings and Concepts of Strategic Management**

Bhalla, Lampel, Henderson, and Watkins (2009) have stated concerning strategic management that it is a sort of hybrid science, influenced by both sociology and economics. It may have evolved from theories of the organization. It was of interest in educational and business circles in the 1950s, seeing that its management is derived from the concept of enterprise policy. This concept describes the organization as a system in which economic resources are utilized effectively with a company's functional activities in order to make a profit for the enterprise. Once it occurs, strategic

management expands rapidly and generates theoretical and practical models, and many were derived from marketing analysis in the 1960s, such as BGC Matrix, the SWOT Model, the Experience Curve, and Portfolio Analysis, including economic analyses on structure, behavior and outcomes, special expertise, skill, and the so-called strategic planning system. Currently, strategic management is a prominent branch of the management field as it can create management guidelines so that an organization can be autonomous under a changing environment in line with development and bring success and fulfillment to an organization.

Ansoff and McDonnell (1990) stated that strategic management has provided systematic guidelines for change management, which comprise organizational positioning, strategy and planning, strategic responses to problem management, and systematic management for directing strategic implementation.

On the other hand, Joshi, Kathuria, and Porth (2003) believes that strategic management can be defined as a cross process of formulation, implementation, and evaluation of decisions that help organizations define their obligations and ultimately enable the creation of value.

Later, Stead and Stead (2008) defined strategic management as a process concerning the strategic manager's attempt to adjust his or her organization to the existing environment as well as advantage development. Competitive advantage helps an organization take a chance with least environmental threats. More generally speaking, strategic management is a broad term that includes determination of mission and objective of the organization in the context of its internal and external existing environments.

Wright and McMahan (1992, p. 15) as cited in Watthana Wongkiattirat et al. (2005, p. 17), stating that strategic management is a continuous process in determining the mission and goals of an organization in the context of its external environments through appropriate means, operations according to formulated strategy, and power exercise in strategy control to assure that such strategies applied by an organization can lead it to success pursuant to the formulated objectives.

Sutheera Athawongsa (2008, pp. 6-7) defined strategic management as a process of allotment aiming at long-run performance related to the determination of vision, mission, goals, and objectives and strategies. It is composed of the organization's

management planning, inducement, and control, which can be considered in parallel with environmental relations affecting the business affairs of an organization. This is an important factor that leads an enterprise to achievement pursuant to the built-up goals of the strategy.

Natthaphan Khajennantha (2009, pp. 17-18) has stated that strategic management means a process consisting of environmental and significant business data analyses applied in determining the performance direction and directing the strategic mission of an organization in order to make sure that the organization will be able to run its business conforming to the existing environment and situation, and so that it can be developed and effectively compete in the industrial sector. There are two main goals in strategic management:

- 1) Creation and sustention of competitive capacity;
- 2) Value creation for the entrepreneur or shareholders, and creation of satisfaction for the stakeholders of an enterprise, such as raw material salespersons and customers.

Phiriya Phonphiroon (2009, p. 3) has indicated that strategic management is an organization's management process highlighting long-term vision—emphasizing or throwing all resources into any matter so as to lead an organization to built-up achievement or goals.

David (2011, p. 6) defined strategic management as both the science and art of formulating, implementing, and evaluating cross-functional decisions that enable the organization to achieve its objectives.

According to the aforesaid definitions of strategic management, we thus conclude that the concept concerns the following issues:

- 1) Long-term organizational administration or management;
- 2) Total achievement of all organs of an organization aiming at competitive advantage;
- 3) Underlining the outcomes of performance with control and coordination of resource management in the same direction in order to be able to comply with strategies and to achieve desired objectives;

4) Underlining the change management of an overall organization so as to conform to and support its strategy, and to be able to lead the organization to formulated goals;

5) Underlining the future-aimed, management-checking organization image, systematically formulating the vision, mission, and objectives of the organization by predicting trends of change and then adjusting the direction of the mission to attain clear goals, and

6) Underlining the internal and external stakeholders of the organization

Strategic management can be deemed an important tool of executives or entrepreneurs so that they can have more opportunity for success. It concerns the long-terms analysis and evaluation of an organization. It is both the science and art of performance which can be evaluated and adjusted at each stage to attain suitability to the internal and external environment at all times.

Nowadays, the environment is changing rapidly; it is more complicated and uncertain. The internal and external surrounding factors of an organization play greater roles in the performance of all sorts of organizations. Businesses and organizational management have to face more difficulties, so administrators at present must face more difficulties than they did before. The business sector therefore has tried its best to acquire expertise and competitive advantages while the government sector has tried to improve its performance by increasing efficiency so as to respond its targeted service users and participants as much as possible. Thus, administrators, as leaders of organizations, should have enough correct data and understand the occurring dynamics and be able to evaluate impacts in order to formulate goals and efficiently lead their organizations to desired destinations. Strategic management therefore has a role not only in the business sector but also in the government sector.

Strategic management in the government sector seriously appeared in the 1950s, i.e. The World Bank and the USAID proposed their concepts of long-terms planning for national economic and social development in order to continuously monitor plans with exact directions. Such plans were developed in the 1960s, aiming at a connection between long-term plans and yearly plans because the exact short-time action plans in the previous decade did not coincide with the built-up, long-term plans. The 1970s was the period of operation management, aiming at planned achievement.

In the 21<sup>st</sup> century, strategic management has played more important roles in all sorts of organizational management-in the government or business sector, or in nonprofit organizations. Amidst frequent changes, traditional management usually neglects the environment, especially the one out of the organization will not be able to survive.

Warangkana Pholprasert (2010) stated that strategic management is important to an organization's actions as follows:

- 1) It helps an organization have a clear framework and direction through systematically determining its vision, mission, and objectives. This provides a means to conduct organizational resources.

- 2) It helps executives systematically think with respect to internal and external environmental factors, making executives adapt themselves to changes in the environment and realize such changes. It also helps executives determine objectives and directions in concrete conformance to changing situations.

- 3) It helps to create readiness in the organization through formulating means or guidelines for implementation of activities. An organization should analyze and evaluate its internal and external factors so as to choose the most appropriate pattern of implementation amidst various changing factors and deal with them through preparedness, understanding reviews and personnel development, including preparedness for coping with the changes caused by the environment and its rivals.

- 4) It helps to enhance the organization's competitive caliber by means of competitive advantage, such as the presentation of good-quality products and services matching their reasonable prices. Strategic management therefore is the attempt of an organization to win business rivals or other organizations with its own potentials, aiming at service users or participants' interests and reliance. This is what executives should pay attention to and they should never forget to energize their administrative capability frequently.

- 5) It helps to create synchronization of organizational performances due to the clear formulation, application, and inspection of strategies, i.e. personnel unanimously understand the same objectives and cooperate well. Additionally, it effectively helps resource allocation conformance to formulated organizational management. In addition, it helps the concerned persons in an organization understand

integral perspectives, especially the goals of implementation, so as to classify the priority of urgency in performance.

6) It helps an organization attain an overall perspective with respect to stakeholders. Strategic management therefore involves an administration that relies on internal and external factors as well as the stakeholders of an organization, such as government authorities, service users, and business competitors. All of them expect to get something from an organization in different ways, and if it can respond to them they will support or cooperate in doing something for the organization; otherwise, they might make a move that has a negative impact on the organization such as a litigation or strike.

7) It helps enhance the competitive efficiency of an organization.

### **2.2.3 Strategic-Management Process**

The strategic-management process is an infinite process composed of three steps: strategy formulation, strategy implementation, and strategy evaluation (David, 2009, p. 37).

2.2.3.1 Strategy formulation. This is the first step that includes vision and mission development; distinguishing the opportunity and external obstacles of an organization; searching for interior weaknesses and strengths; determination of long-term objectives; and formulation of alternative strategies and the selection of strategies particularly for proceedings.

Vision is an expression indicating the requirements of an organization regarding something it would like to be. Wattana Wongkiattirat et al. (2005, pp. 72-73) have stated that the vision is the image or position of competition of an organization five years ahead. It is an image of the future of an organization originated from attitudes and viewpoints, as well as the concepts of executives. Its feature is like a wide goal with non-specific details and no clear formulation of means. The determination of a vision should be easily and clearly understood, and no interpretation should be required. It inspires and entuses organization personnel. Aniwat Kaewjamnong (2008, pp. 21-22) has indicated that in general, one of the following terms often interrupts the expression: best, excellent, highest, extreme, and ultimate. These terms can answer internal and external persons of an organization of what and where their organization to be, and when it will achieve its desired goals.

Piriya Pholphirul (2009, p. 9) has stated that a good vision should be composed of the following components:

- 1) Product. This is the thing we present to market with a clear, concrete, and easy understanding but not too many specific details.
- 2) Market. This is a type of market where we will present products, depending on geography or population, or both.
- 3) Aspiration. This means the positive expectation and ambition of an organization, expressing the goals of achievement or the positions/standpoints that it wants to reach, such as being an innovative institution.

Bryson (1995, pp. 161-164) indicated that an organization should show only its good visions as follows:

- 1) Highlighting its prosperous future rather than its past and current existence.
- 2) Offering hope, encouragement, and ambition to all stakeholders.
- 3) Passing on the background of an organization as well as its values in the past as necessary in the future.
- 4) Clarifying the newly-adjusted objectives and direction of an organization through mutual overview of stakeholders.
- 5) Indicating the outcomes an organization requires.
- 6) Highlighting the unity of involved persons.
- 7) Using words or figures of speech so that readers can imagine or visualize.
- 8) Being able to communicate so as to generate faith or arouse/support commitment and devotion.

After all, the expression/content of a vision statement should contain details not exceeding ten pages.

A mission is a statement that indicates the main activity/performance or direction describing the current aspect of an organization and what it wants to achieve. The mission describes the scope of the business, its identity, characteristics, and the means of the organization's development, which is basic information making all of its

personnel understand the main concept of work in the same direction. David (2011, p. 43) stated that a mission can pertinently answer the question “What is our business?”

Further, the mission determination can indicate which type of business an organization is, and if there is a factor to be taken into account in determining the mission, i.e. the mission should cover and cope with changes well and long enough, including clearly passing on it in concrete so as to indicate the internal aims, and help to transmit clearly its executives’ ideas, determine standard criteria for the allocation of resources of an organization and mostly for the determination of objectives and goals of an organization, creating convenience in the interpretation of the meanings of the objectives of the operational structure, designing the work system, determining the responsibility of an organization, and helping with the decision-making and performance of low-level personnel in the same direction (Wattana Wongkiattirat et al., 2005, p. 75).

An objective is the indication of the results that an organization expects would happen due to determined main activities. The objective should be a thing that challenges capability that can be measurable whether it matches with, reasonable, and clear (David, 2011, p. 44). In the government sector, it is usually called objective as goal. Watthana Wongkiattirat et al. (2005, p. 71) stated that the good characteristics of objectives or goals are as follows:

- 1) They indicate the acceptable/desirable level of effort, knowledge and competency of existing personnel in an organization by mutual acceptance of key personnel;
- 2) They are flexible in the adaptation of achievement indicators if there is any change in the internal or external environment of an organization;
- 3) Its concrete characteristics are measurable by determining quantitative and qualitative indicators;
- 4) They can activate the teamwork of all personnel through motivating goals;
- 5) They provide short-term (1-2 years) and long-term (3-5 years) suitability and correspondence through determining quantitative and qualitative interests;

6) They are understandable or specific in terms of the interests receivable from the quantitative and qualitative performances within the due time. This should be communicated well for the common understanding of all personnel in an organization; and

7) They provide reachable achievement if an organization can acquire the available resources.

#### Distinguishing opportunities and external obstacles of an organization

This is the result of the external environment analysis of an organization with respect to the political environment (P), the economic environment (E), the sociological environment (S), and the technological environment (T), called in short “PEST” (Rewat Chatrivisit et al., 2010, p. 31), which is composed of various factors out of control of an organization, and the changes of such factors can cause “obstacles” to an organization/industry and/or, in the meantime, they provide “opportunity” to another organization/industry (Natthaphan Khejornantha (2009, p. 69).

#### Searching for the internal strengths and weaknesses of an organization

It is the analysis of the environment of an organization by considering the internal factors: marketing, finance, accounting, information technology, etc. used in management (David, 2011: p. 136). These factors affect or influence the performance and activities of an organization but it can control them anyway Aniwat Kaewjamnong (2008, p. 5) indicated that analysis of the external environment of an organization in order to separate opportunities and obstacles and the analysis of internal to search for internal strengths and weaknesses can be done by means of a technique called “SWOT analysis,” where S stands for strength, meaning that the internal performance an organization can do well; W stands for weakness, meaning that the internal performance an organization cannot do well and such weakness causes obstacles to achievement; O stands for opportunity, meaning that the external environment is useful to the performance of an organization. It should, from time to time, predict changes in the external environment in order to take advantage of such changes; and T stands for threat, meaning that the external environment that threatens the performances of an organization.

### 2.2.3.2 Strategy Implementation

Strategy implementation is a step that imposes an organization to build up annual objectives so as to inspire its personnel, allocate resources to implement the planned strategy, and develop culture that supports such strategy through effective organizational restructuring, attempts to change new marketing directions, preparation of a development budget, and utilization of information technology. David (2009, p. 37) has pointed out that the combination of staff revenue with company turnover at this stage is the most difficult strategic management because discipline, promise, and personal devotion are needed and rely on art rather than science in motivation.

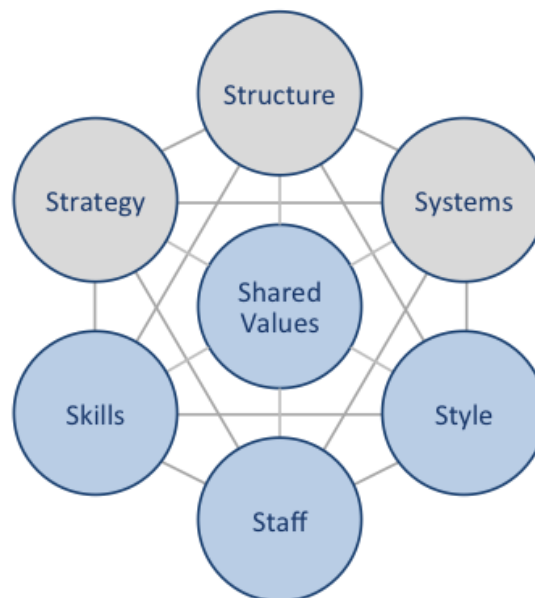
The McKinsey Consulting Company developed the 7-S framework (as cited in, Natthaphan Khajeranatha, 2009, pp. 251-253). That is, there are seven correlated key factors in running an organization. A firm that can establish an equilibrium of these seven factors will be able to run its business smoothly and have opportunity to achieve in the future.

The said framework is composed of the following:

- 1) Strategy, which refers to the manner of practice of an organization responding to change in the environment
- 2) Structure, which refers to the components showing relationship of position, authority, function, responsibility, scope of conduction, and power centralization or decentralization in the decision-making of an organization
- 3) Systems, which refer to the regulations, procedures, processes, and steps in the formal and informal practices of an organization. It points out the efficiency of the organization's performance and internal coordination, which should be coincident and support strategy and structure.
- 4) Style, which refers to the pattern of management of executives such as communication, decision-making, and leadership. Aspects of organizational performance, for instance, progress, conservatism, aim of profit making, etc., are outcomes of the interaction and culture of each organization.
- 5) Staff, which refers to the resource operations of an organization, especially in putting the right people in the right jobs and building working motive for the staff. This helps the organization appropriately arrange its staff matching the organization's factors.

6) Skills, which refer to the ability or specific skill of an organization such as management and financial control or innovation. Nowadays, as business is moving toward a knowledge society, besides maintaining its own main skill, an organization should also develop its skill in other fields necessary for competition in the future.

7) Shared values, which refer to the extreme goal, which is the philosophy or basic belief of all members of an organization. It is the foundation or origin of each system-developed, transferred, and inculcated in members, showing its identity, philosophy, and future direction.



**Figure 2.2** McKinsey 7-S Framework

At the stage of strategy implementation, so as to gain the outcomes according to the planned objectives although with how good the analysis or the strategic formulation is. However, if it is not feasible it is not any use to an organization. Thus, notification and communication of the organization's strategy are necessary because they can make all executives and operators understand the strategy more clearly, realizing what they have to do for their organization pursuant to the planned strategy. This can be done by converting the prepared strategy into a strategy map-the diagram

showing cause-and-effect relationships such as the principle of the equilibrium scorecard, which formulates the relationship of the desired outcomes of an organization with respect to four perspectives: finance, customer, internal process, and learning and growth. This will lead to the desired outcomes (Pasu Decharin et al., 2005, p. 43).

#### 2.2.3.3 Strategy Evaluation

Strategy evaluation is the final step of the strategic management process. In-time evaluation helps solve problems in management before the situation becomes critical. There are three basic activities in strategy evaluation: 1) review of internal and external factors which are the basis of the current strategy; 2) the organization's performance evaluation; and 3) the performance revision (David, 2011, p. 3, pp. 334-336).

### 2.3 Policy Related to Forest and Natural Resources Management

Forest area protection is a measure of state policy on land, natural resources, and the environment that the government should undertake. Section 85(1) of the Constitution Act of the Kingdom of Thailand B.E. 2550 stipulates a policy on forest area protection and rehabilitation: criteria on the utilization of land all over the country with respect to the compliance with the natural environment of the land, water, the ways of living of local communities, and the effective preservation of natural resources through the formulation of sustainable land utilization with no or least little impact on the natives under their joint decision making.

In 1961, the total forest area in Thailand was 273,629 km<sup>2</sup> or about 53.33% of the country's area. This figure reduced to 198,417 km<sup>2</sup> or about 38.67% in 2015 and has kept on reducing thereafter.

The protection and rehabilitation policy of principal forest areas rely on the following measures:

#### 2.3.1 National Economic and Social Development Plan

The national economic and social development plan deems the core plan for developing the country. It concerns natural resource and environment management. The inaugural one in this matter was National Economic and Social Development Plan 4

(1977-1981). The reason for the promulgation of this plan was based on the country's past development, which aiming at economic growth and caused the destruction of a great deal of lots of the natural resources of the country and caused natural resource and environmental deterioration. Thus, it is necessary to rehabilitate them so as to upgrade development efficiency to the next stage. One of the objectives of National Economic and Social Development Plan 4 was to urge the restoration and to improve past main resources and environmental management, especially the development and rehabilitation of forest areas, water resources, and mineral resource allocation management for ultimate economic benefit and the prevention of the deterioration that will cause hazards to environmental conditions and the country's development in the future. This includes the development of natural resource utilization with respect for the public interest of the majority of the people in the country. In addition, the main objective of this policy is to maintain the remaining forest area of 37% and to accelerate forestation in deteriorated areas.

Next, National Economic and Social Development Plan 6 (1987-1991) mainly aimed at the enhancement and furtherance of the country's development. It also highlighted the troubleshooting of natural resource and environment deterioration, aiming at fairness in reinforcement and the thorough life-quality betterment of the people. This natural resource and environmental development plan was then formulated and put into a development efficiency enhancement framework. Most of the plans under this framework concerned the efficiency enhancement of the tools and mechanisms existing in the development process, such as human quality enhancement, the applications of science and technology, and the efficiency enhancement of public administration in the government sector and state enterprises based on the following main activities:

- 1) Supplying the tools according to the master plan and maps for the sake of natural resource and environment planning, such as land mapping with the same standard so that government authorities can jointly utilize the master plan preparation for the national parks and wildlife sanctuaries, master plan preparation for the economic utilization of coastal natural resources, and studies on pollutant troubleshooting.

- 2) Overall improvement of the natural resource and environment management system using the same standard by supporting local organizations in the

vicinity of the natural resources to increasingly participate in natural resource and environmental care.

The country's development at the beginning of National Economic and Social Development Plan 7 (1992-1998) emphasized the equilibrium of quantitative and qualitative development as well as justice in society which would lead to sustainable quality development. Thus, three main objectives were set up in the plan:

- 1) Keeping economic growth at a suitable level so that it can continuously and stably grow
- 2) More spreading out of income and development to provinces over the country
- 3) Accelerating human resource development, life quality, and environmental and natural resources

Besides the aforesaid objectives, National Economic and Social Development Plan 7 also signified natural resource and environmental development, especially the conservation of forest areas over 25% of the land, the acceleration of land reform implementation, land ownership distribution, the conservation of coral resources at the fertile stage, a decrease of aquatic pollution, control of noise, and the limitation of hazardous substance disposal caused by commercial energy utilization. In the meantime, it highlighted human resource development so that people could "stand on their feet steadily," including life-quality betterment, and protection of the environment and natural resources from deterioration.

The national economic and social development plans at a later stage aimed at forest reservation and rehabilitative acceleration for its fertility and sustainable utilization, including the increase of forest areas. National Economic and Social Development Plan 8 (1997-2001) stated that the reservation and management of natural resources and the environment should be carried out appropriately and efficiently as a basis of sustainable development for the descendants of the country. National Economic and Social Development Plan 9 (2002-2006) is a man-centered plan for development, specifying public administration with respect to the sufficiency economy philosophy, containing forest policy related to the increase of integral management efficiency, the participation of local people and stakeholders, the increase of enforcement efficiency, the formulation of conservation forest areas and the preparation of databases for proper

management which is the basis of forest area protection at later stages aiming at integral management, appropriate utilization suited to the land potential by means of applied technology, and land troubleshooting in forest areas to remove incurring conflicts in order to continue with appropriate forest area preservation and management.

### **2.3.2 National Forestry Policy**

The first national forestry policy was approved on 3 December 1985 by resolution of the Cabinet. Regarding forest area determination, it stated that the forest areas all over Thailand should represent at least 40% of the total area, divided into two types as follows.

Conservation forests. The objective of conservation forest formulation is to conserve the environment, soil, water, rare forest produce, and to prevent natural disasters due to flood and soil erosion, as well as for the sake of research and public recreation by maintaining such areas at 25% of the whole country's area.

Economy forests. The objective of economy forest formulation is to produce timber and forest-originated produce for economic purposes by maintaining such areas at 15% of the entire country's area.

The first national forest policy formulated by the National Forest Policy Committee in 1985 was revoked on 27 February 2007 (Daily News, 2015). Later, the Natural Resources and Environment Commission proposed to reappoint the National Forest Policy Committee, with approval of the National Legislative Assembly at its meeting held on 8 September 2015. However, the target figure for forest areas was the same, i.e. 40% of the whole country's area and the responsibility was passed to the Ministry of Natural Resources and Environment. Measures were formulated to achieve the target figure of forest land at 40% of the whole country's area (Ministry of Natural Resources and Environment, 2016.)

### **2.3.3 Formulation of Conservation Forest Area**

The state forest area under special control regulations for some objectives and total public interest or the so-called "Protected Area," while "Conservation Area" refers to the area under intelligent management for utilization. To manage such areas, there must be rules or regulations to control the utilization with respect for social demand ( Uthit Kutintara & Naris Bhumipakphan, 2016, p. 7) . At present, the term

“Conservation Forest Area” is used to mean protected areas as well as conservation areas—state forest areas under specific protection law and specific goal management for the sake of society. For instance, national parks are fertile forest areas mainly aiming at public recreation, including preserved areas under the protection of National Park Act B.E. 2504, while the term “Wildlife Sanctuary” refers to the forest areas preserved as safe habitats for wildlife pursuant to Wildlife Preservation and Protection Act B.E. 2535.

Thus, the meaning of preserved areas of Thailand is equivalent to protected areas in international terminology. For example, in Article 2 of the Biological Diversity Convention, the term “Protected Area” means areas designated by geographic boundary that are indicated or regulated to management with respect to the special objective of conservation.

While the International Union for Conservation of Nature (IUCN) given that protected area means “the area on land or in the sea with special significance to biological diversity protection and preservation, and to natural resources and culture managed through legal means or any efficient procedures. The said definition was accepted at the 4<sup>th</sup> World Park Congress in 1992, and by the World Resources Institute (WRI), which defined the protected areas as inland or offshore areas legally established based on the ownership of public or private enterprises and regulated and managed to achieve the special goal of conservation.

The background of global protected or conservation areas was passed down for quite a long time so it was difficult to find out the origin (Uthit Kutintara & Naris Bhumipakphan, 2016, p. 9). Nevertheless, it was assumed that the formally-protected areas for natural conservation were inaugurated over 100 years ago in the United States, beginning in the State of California, which permitted the establishment of the Yosemite Grant in 1864. The said protected area was located in the mountainous area of the Sierra Range composed of Yosemite Valley and the Mariposa Grove of Big Trees—the state area designated for people’s recreation. As the Federal Government of the USA at that time had no exact areas for national park under conservation policy, it therefore transferred the area to California state to establish the first state park. Later, in 1872, the US National Assembly expropriated Yellowstone County from the citizens who occupied the areas, and not so long after that President Ulysses S. Grant established

Yellowstone National Park, while the State of California returned the Yosemite Grant to the Federal Government and it was eventually established as Yosemite National Park in 1906. In order to enlarge the area, some neighboring areas were appended to it (Sharp et al., 1983, as cited in Uthit Kutintara & Naris Bhumipakphan, 2016, p. 10). The outcome of the first US national park establishment attracted many people from around the world to accept such an idea and use it as a model for modifying protected areas into national parks.

As for wildlife protected areas, this was inaugurated by President Theodore Roosevelt, conservationist. He announced the establishment of Pelican Island as a wildlife sanctuary in 1903. Furthermore, he also established a national forest (Bolen & Robinson, 1999, as cited in Uthit Kutintara & Naris Bhumipakphan, 2016, p. 10).

Owing to US initiation, the said protected areas for natural resource conservation became a prototypical model and a policy of many countries worldwide in establishing national protected areas. Such a model has been extensively accepted and taken as a world-class key issue. For instance, Australia announced the establishment of its first national park in 1879-the Royal National Park.

In Thailand, the concept of ecosystem and biological diversity conservation was concretely implemented in 1958 by Field Marshal Sarit Thanarat, the Prime Minister. He commanded his Minister of Agriculture and Cooperatives and the Minister of Interior to establish national parks as conserved areas through legislation so as to support his command. Later, in 1959, the Cabinet appointed the National Wildlife Protection and Reservation Committee. With technical support from the International Union for Conservation of Nature (IUCN) and the US National Park Services, 14 areas were selected for further national park establishment. In 1960, legislation on the Wildlife Reservation and Protection Act was carried out and then followed by the National Park Act in 1961. Later, in 1962, Khao Yai National Park was announced as the first national park of Thailand (Uthit Kutintara. & Naris Bhumipakphan, 2016, pp. 10-11).

Generally, in Thailand, the definition of protected area refers to conserved forest areas (Uthid Kud-in & Narid Phumipharkphan, 2014, p. 23), only for legally-conserved forest areas, e.g. national parks, wildlife protected areas, reserved areas for recreation

utilization, or those under protection laws related to the enforcement of original ecosystem reservation as discussed below.

1) National parks. This is the land that includes general areas, hills and mountains, swamps, canals and marshes, streams, lakes, isles/islands, and coastal areas designated as national park areas according to the National Park Act B.E. 2504. Practically, national parks are areas conserved for the protection and preservation of natural resources, especially forest and wildlife, as well as attractive natural scenery, in order to maintain their original natural condition for the pleasure and study of future generations. Their outstanding aspects are: being sites of natural attraction; 2) no one legally owns the area; and 3) they cover the area of 10 km<sup>2</sup> or more. At present, 127 forest areas have been announced as national parks covering the total area of 38,874,287.5 rai in Thailand (Department of National Parks, Wildlife and Plant Conservation, 2015).

2) Forest parks. These are the areas containing beautiful natural scenery of the locality, arranged as recreation sites and tourist attractions for people. The locations are well modified and decorated so as to help visitors. They are established as forest park by virtue of the National Reserved Forest Act B.E. 2507 based on the following general principles 1) availability of attractive scenery 2) being part of a reserved national park 3) covering the area of about 500 to 5,000 rai 4) located not far from neighboring communities; and 5) being a well-known site of natives.

3) Wildlife sanctuaries. These are areas designated as safe habitats for wildlife so that they can naturally and increasingly reproduce. Wildlife sanctuaries are established pursuant to the Reserved and Protected Wildlife Act B.E. 2535. The pioneering wildlife sanctuary of Thailand is the Salakphra Wildlife Sanctuary of Kanchanaburi Province. Up until now there are 60 wildlife sanctuaries covering the total area of 23,080,856.3 rai (36,929.4 km<sup>2</sup>) or 7.20% of the country's area (Department of National Parks, Wildlife and Plant Conservation, 2015).

4) Wildlife non-hunting areas. These areas or boundaries are designated as particular wildlife habitats, especially for rare or threatened species so that they can safely live and produce their offspring. Until now, 56 announced wildlife non-hunting areas have been announced.

The conserved forests announced by government agencies as national parks, wildlife sanctuaries, and wildlife non-hunting areas mostly aim at people's enforcement

by virtue of the National Parks Act B.E. 2504 and the Wildlife Reservation and Protection Act B.E. 2535, which are legal measures that can naturally and permanently maintain the conservation of forest areas. Until now, the total area of conservation forests is 65,556,637.5 rai (104,890.6 km<sup>2</sup>) or 20.44% of the country's area (Table 2.1).

**Table 2.1** Type, Number, and Area of Conserved Forests in Thailand

Description	Sites	Area		%
		Rai	km <sup>2</sup>	
National parks	127	38,874,287.5	62,198.9	12.12
Forest parks	119	909,887.5	1,455.6	0.28
Wildlife sanctuaries	60	23,080,856.3	36,929.4	7.20
Wildlife non-hunting areas	56	2,691,606.3	4,306.6	0.84
Total	364	65,556,637.5	104,890.6	20.44

**Source:** Department of National Parks, Wildlife and Plant Conservation, 2015.

#### 2.3.4 Protected Areas Pursuant to International Agreements

In the middle of the 20<sup>th</sup> century, the world society paid high attention to protected areas. Obvious reflections of this attention were international conventions and agreements that stipulated the member countries to have their own protected areas, as can be seen in the following:

1) The Convention Concerning the Protection of the World Cultural and Natural Heritage. Establishment of the said convention was formulated in 1972, stipulating all State Parties to provide their own natural heritages with vigorous and strict protection (World Heritage Center, 2012).

2) The Convention on Wetland of International Importance, Especially as Water Fowl Habitat. This stipulates that member countries are to own at least one wetland of international importance under good protection (Chumjate Kanchakesorn, 1996).

3) The Convention on Biological Diversity. This aims at the conservation of world biological diversity for sustainable good living of humans,

stipulating that member countries comply with the Programme of Work on Protected Area, activating them to announce more protected areas for biological diversity conservation.

4) The Man and Biosphere Programme (MAB). This is an international agreement aiming at the study of the importance of living things and human existence, i.e. the member countries should designate their biosphere reserve sites as protected areas for particular natural study/research (Choomjet Karnjanakesorn, 1996).

5) ASEAN Heritage Parks. These are national park areas of each member country of the Association of South East Asian Nations (ASEAN) selected pursuant to the criteria under the ASEAN Declaration on Heritage Parks, and cosigned by all ASEAN Senior Officials on the Environment on 18 December 2003.

The determination of internationally-protected areas is in line with the obligation and implementation of member countries but is not under any provision of law. However, having internationally-protected areas is just a kind of confidence building that such areas will be protected at a higher priority. e.g. declaration in the Ministry of Natural Resources and Environment, dated 24 April 2012, on Environmental Impact Assessment (EIA) to be performed for projects in the future: all sorts of mining project, projects in wetlands of international importance, and projects in the areas close to world heritage site according to international convention.

Examples of protected areas in Thailand are the natural world heritage sites according to the World Heritage Convention, ASEAN heritage parks pursuant to the ASEAN Declaration on Heritage Parks, wetlands of international importance pursuant to the Convention on Wetlands of International Importance and the Convention on Biological Diversity Reserved Areas, as shown in Table 2.2.

**Table 2.2** Some Protected Areas in Thailand According to International Agreements

<b>International agreement</b>	<b>Type of area</b>	<b>Name of protected area</b>
World Heritage Convention	Natural Heritage	1) Thung Yai Naresuan and Huai KhaKhaeng
Convention on Wetlands	Convention on Wetlands of International Importance (Ramsar site)	2) Dong Phrayayen (Khao Yai) Forest 1) Khuan Khe Sian Swamp Forest in non-hunting area of Thalay Noi Forest in Phatthalung Province 2) Khong Long Swamp in Nong Khai Province 3) Bong Khai Marsh in Chiangrai Province 4) Toh Daeng Swamp Forest in Narathiwat Province 5) Sarmroi Yord Field in Sarmroi Yord National Park of Prachuab Khirikhan Province 6) Thing Wadi in Bueng Karn Province
Man and Biosphere Program	Biosphere reserve	1) Sakaeraj Biosphere Reserve and Sakaeraj Environmental Research Station in Nakhon Rachasima Province 2) Mae Sa and Khork Ma Biosphere Reserve In Chiangmai Province 3) Huai Thark Teak Plantation of biosphere reserve in Lampang Province 4) Mangrove Biosphere Reserve in Ranong Province
ASEAN Declaration on Heritage Parks	ASEAN heritage park	1) Kaeng Krajarn National Park 2) Khao Yai national Park 3) Tarutao National Park 4) Ao Phang-nga National Park 5) Phi Phi - Similan Islands National Park

Protected areas are important for total environmental preservation, especially the conservation of biological diversity, which is the security of ecosystem equilibrium maintenance and natural fertility according to the Convention on Biological Diversity, which has indicated that conservation forest areas play an important role in protecting and conserving ecosystem equilibrium. The Convention on Biodiversity therefore has formulated action plans according to Aichi Target 11, i.e. each member country should protect its own inland forest areas of at least 17% and mangrove forest areas of at least 10% of the total forest areas within 2020 (Convention on Biological Diversity, 2010). In addition, such determined conservation forest areas should be representatives of global ecosystems depending on their biogeographic region. It is obvious that all primary criteria on the determination of conservation forest areas, including national parks and wildlife sanctuaries, signify that forest areas should be fertile and vast enough to maintain their fertility, and there should be sufficient supporting legal measures for protection. For instance, the IUCN has stated that national parks should be large and comply with the following aspects.

- 1) comprise various ecosystems without human occupation or disturbance, where wildlife species, rare plants, and morphological characteristics exist and can take them as habitats, and significance in terms of special technical studies, and recreation, or comprising excellent attractive scenery

- 2) be an important site under strict protection measures by eliminating exploitation as much as possible in order to maintain morphological characteristics and excellent beauty

- 3) be a site that people are allowed to visit under special conditions to build up their spirits of value keeping, natural conservation, cultural studies, and recreation

Later, in 1981, some more conditions were formulated:

- 1) Contain an area of at least 1,000 hectares (10 km<sup>2</sup>)
- 2) Enact area protection laws
- 3) Allocate sufficient budget and manpower for area protection
- 4) Have no exploitation of natural resources therein, even dam construction

In this regard, Thailand has applied these criteria in formulating national park areas pursuant to the National Parks Act B.E. 2504.

As for wildlife sanctuary and non-hunting area, they are the areas designated as safe habitats of wildlife so that they can naturally reproduce and breed more, and they will have chances to roam about the vicinity so as to increase wildlife population in security (Department of National Parks, Wildlife and Plant Conservation, 2015). This is a measure signifying the following issues (Uthit Kutintara & Naris Bhumipakphan, 2016, p. 84):

- 1) Be an appropriate habitats for wildlife, especially reserved and protected wildlife under the law
- 2) Cover various ecosystems and wildlife habitats for natural equilibrium. Also, sufficient supporting factors should be available for survival of wildlife, especially food, water, nestling, and egg laying/infant delivery sites, and infant feeding sites
- 3) Have the area large enough to generate a variety of populations for genetic security in terms of species and society
- 4) Be safe from human activities, i.e. a buffer zone all around the area may be required in order to prevent willing and unwilling impacts from neighboring people
- 5) Be areas under government security, i.e. the government should utilize such areas for wildlife conservation rather than any other purpose, and the government should undertake the sustainable existence of the area.

Conservation forest areas therefore play extremely important roles in maintaining environmental conditions and natural equilibria. In addition, owing to the area characteristics-arsity and diversity-they make the conservation forest play other roles such as being sources of water and streams, sites of science and natural science studies, disaster prevention, and natural tourism. The status of conservation areas is therefore an indicator of the achievement of forest area protection for various interests.

## **2.4 The Convention Concerning the Protection of World Cultural and Natural Heritage**

### **2.4.1 Objective of the Convention**

The Convention concerning the Protection of World Cultural and Natural Heritage, called in short “The World Heritage Convention,” was an agreement made by and among State Parties in order to accept and cooperate in the performance of the convention, aiming at the protection and conservation of the world cultural and natural heritage sites existing in their countries and other countries as the eternal heritage of all mankind.

The principle of the convention highlights the protection and conservation of prominent invaluable cultural and natural heritages-manmade or natural-to pass on such heritages to new generations.

Its main objective is to promote international cooperation in the protection and conservation of prominent cultural and natural heritages from now on through the cooperation of member countries and by formulating appropriate measures in setting master plans and policies for the conservation and management of such heritages by means of efficient legal, scientific, technological applications, management, and budgetary support.

The convention was certified by the State Parties of the United Nations Educational, Scientific and Cultural Organization (UNESCO) at the 17<sup>th</sup> general meeting held in Paris, France, on 16 November 1972 and it came into force in 1975. Later, in 1976, the UNESCO established the World Heritage Committee to take care of prominent world cultural and natural heritage sites and to set up the World Heritage Fund to mobilize sources of funds for the registered heritages.

An important aspect of the Convention is the Operational Guidelines, which aim to facilitate the implementation of the Convention. The Operational Guidelines give a definition of World Heritage and explain, amongst other things, the process for the inscription of properties on the World Heritage List and the process for monitoring the state of conservation of the sites. The Operational Guidelines can be changed by a decision of the World Heritage Committee, whereas changes to the Convention would need the agreement of all the States Parties.

## 2.4.2 Definition of World Heritage

The Conservation concerning Protection of the World Cultural and Natural Heritage divided heritages into two categories: world cultural heritage and world natural heritage.

### 2.4.2.1 Cultural Heritage

Article 1 of the convention defines the terms concerning cultural heritage as follows:

1) Monument refers to architectural, sculptural or mural artifacts, or part of natural archeological structures, epigraphs, dwelling-in caves, and combined states of the foresaid evidence which possess internationally-prominent values in historical, art or technological dimensions.

2) Building Block refers to a group of architectural and homogeneous buildings, in modular or split type, or the site of internationally-prominent scenery in the historical or technological dimension.

3) Source refers to artifacts or natural and manmade combination in its boundary, including archeological sites of internationally-prominent scenery in historical, aesthetic, ethnological or anthropological dimensions.

### 2.4.2.2 Natural Heritage

According to Article 2 of the convention, “Natural Heritage” refers to a natural condition that is composed of physical and biological configurations, or a combination of the said configurations, which contains internationally-prominent value in terms of aesthetic or technological viewpoints, as well as geological or geomorphologic components, including the areas explicitly proven as habitats of threatened rare wildlife or plant species which are of internationally-prominent valuable in the technological dimension, or the conservation of natural site areas or zones explicitly proven to be of internationally-prominent valuable in vtechnological dimension, containing natural beauty.

### 2.4.2.3 Mixed Heritage

According to the suggestions concerning the application for funds pursuant to the World Heritage Convention, a State Party may propose a mixed cultural and natural heritage corresponding to a statement in the convention, “the property may be considered as mixed cultural and natural heritage,” if it matches the standard of all

definitions of cultural and natural heritage stipulated in Articles 1 and 2 of the convention.

### **2.4.3 The Various Bodies of the Convention**

The Convention has five major players: the States Parties, the World Heritage Committee, the Advisory Bodies, the World Heritage Centre, and the General Assembly of States Parties to the World Heritage Convention. The relationship and balance between the various players are dynamic: many internal and outside forces influence the effectiveness and outcomes of World Heritage policies.

#### **2.4.3.1 The States Parties**

When States Parties adhere to the World Heritage Convention, they ‘agree to identify and nominate properties on their national territory to be considered for inscription.

Paragraph 15 of the Operational Guidelines stipulates the responsibilities of the States Parties. These include ensuring the identification, nomination, protection, conservation, presentation, and transmission to future generations of the cultural and natural heritage found within their territory, to assist other States Parties, provide appropriate legal protection, not harming their or others’ heritage, drafting a Tentative List, and giving assistance to international fundraising campaigns for the World Heritage Fund.

#### **2.4.3.2 The World Heritage Committee**

The World Heritage Committee is the governing body of the Convention as it takes decisions in matters relating to the Convention, including World Heritage nominations. It consists of 21 States Parties to the Convention and is set up as a body of experts. The Convention stipulates that the Committee shall be comprised of “persons qualified in the field of cultural or natural heritage” (Article 9.3). A Committee Member is elected for a period of six years, though the current agreement is to stay for only four years.

#### **2.4.3.3 Advisory Bodies**

The Committee is assisted in its work by independent Advisory Bodies. It works with the International Council of Monuments and Sites (ICOMOS) for cultural sites; the IUCN for natural sites; and the International Centre for the Study of the

Preservation and Restoration of Cultural Property (ICCROM) for training in the context of cultural sites. ICOMOS is a Non-Governmental Organization (NGO), and the IUCN has both governmental and non-governmental members, whereas the ICCROM is an Intergovernmental Organization (IGO). There are varieties of levels of staff members and financial resources and in the workload between the Advisory Bodies: there are, for example, more cultural than natural sites and nominations.

The Advisory Bodies are involved with the evaluation of nominations but also with the state of conservation of World Heritage sites. Their roles are defined in paragraph 31 of the Operational Guidelines:

“A: advise on the implementation of the World Heritage Convention in the field of their expertise;

B: assist the Secretariat, in the preparation of the Committee’s documentation, the agenda of its meetings and the implementation of the Committee’s decisions;

C: assist with the development and implementation of the Global Strategy for a Representative, Balanced and Credible World Heritage List, the Global Training Strategy, Periodic Reporting, and the strengthening of the effective use of the World Heritage Fund;

D: monitor the state of conservation of World Heritage properties and review requests for International Assistance;

E: in the case of ICOMOS and IUCN evaluate properties nominated for inscription on the World Heritage List and present evaluation reports to the Committee; and

F: attend meetings of the World Heritage Committee and the Bureau in an advisory capacity.”

#### 2.4.3.4 The World Heritage Centre

The Committee is assisted in its work by a Secretariat, the World Heritage Centre, which is based at the UNESCO Headquarters in Paris and was established in 1992. The World Heritage Centre ensures, amongst other things, the day-to-day management of the Convention, organizes the annual sessions of the World Heritage Committee, provides advice to States’ Parties, and informs the public. The Centre is structured according to the regions of UNESCO, with units for Africa, Asia

and the Pacific, the Arab States, Europe and North America, and Latin America and the Caribbean. Other sections are the Special Projects Unit, a Policy and Statutory Meetings Section, and a Communication, Education, and Partnership Unit.

#### 2.4.3.5 The General Assembly of State Parties

The General Assembly has two main functions: to determine the uniform percentage of financial contributions to the World Heritage Fund applicable to all State Parties, and to elect the Members to the World Heritage Committee. The GA meets during the sessions of the General Conference of UNESCO, which is every other year. Other than during Committee meetings, each State Party can take the floor and has a vote at the GA. The role of the GA with respect to policy development has gotten more important in recent years. This is partly in response to the increasing difficulty of getting on the World Heritage Committee, as well as to the desire of State Parties to have more input into the operation of the Convention. This will be discussed below, since it also regards the role of the Netherlands in the GA.

### **2.4.4 Steps and Procedures for World Heritage Registration**

#### 2.4.4.1 Procedures for Application for a World Heritage Site

Application for being a world cultural and natural heritage site in order to be put onto the World Heritage List should be carried out by the government of the State Party-the member that has absolute sovereignty over the culture and natural heritage of the site.

First of all, the State Party should prepare a list of all domestic culturally and naturally significant sites, called the "Tentative List." Then, the State Party should select the sites on the tentative list to prepare a Nomination File according to the advice and help of the World Heritage Center.

The said file will be inspected and scrutinized by consulting organizations: The International Council on Monuments and Sites (ICOMOS) and the International Centre for the Study of the Preservation and Restoration of the Cultural Property (ICCROM) for cultural heritage, and the International Union for Conservation of Nature (IUCN) for natural heritage.

Scrutinizing the evaluation data of the consulting bodies, the World Heritage Bureau will present its resolution as a suggestion to the World Heritage Committee for finalization.

In general, the World Heritage Committee organizes its annual ordinary conference to determine which proposed site deserves to be registered as a World Heritage.

#### 2.4.4.2 Criteria of World Heritage Inscription

The Convention Concerning the World Heritage Protection sets up the criteria composed of three characteristics for evaluating the prominent properties on the Tentative List as follows.

1) Outstanding universal value. This refers to cultural and/or natural significance which is absolutely accepted that it is more important than national importance at present and in the future for future generations. Sustainable protection of such heritage is therefore the most important thing for international society so that the World Heritage Committee agrees to inscribe such property as a world heritage.

The World Heritage Committee scrutinizes and estimates whether the proposed property meets one or more requirements of outstanding universal value. If it is qualified according to one or more requirements regarding the criteria for assessment of outstanding universal value, the said proposed property should:

(1) Be representative of excellent construction work derived from human genius

(2) Be an indicator of value change importance for humans according to the time or any culture of the world in architectural or technological development, monument art, city or landscape design

(3) Be exclusive or at least shown acceptable evidence that it is a cultural, customary/traditional way of practice or existing/lost modernism

(4) Be outstanding as a specimen of architectural or technological building type from a general perspective or landscape indicating one or more important steps in human history

(5) Be outstanding as a specimen of practice in the settlement of human, land or sea utilization as a specimen of one or more cultures, or human interaction with the environment, especially when such a thing is not sustainable under change impact

(6) Have a direct or obvious relationship with events, ways of living and concepts or beliefs, and artwork or writing with outstanding universal importance

(7) Be composed of great natural phenomena or acceptable natural beauty, and exquisite importance

(8) Be an excellent exemplar of key steps of world history, including the trace of life records, the importance of the geological movement process of land formation, or the importance of geological or geophysical conditions

(9) Be outstanding as a specimen showing its importance as a representative of ecological process and evolution, inland fresh-water resources and coastal/off-shore ecosystem development, including plant and animal societies

(10) Contain a natural habitat with importance and significance in the conservation of biological diversity in the habitat, including severely-threatened species that have outstanding universal value in terms of technical concepts or conservation

2) Authenticity and integrity. The purpose here is to make sure that the proposed property has outstanding universal value. Besides such property value, its characteristics should also match with authenticity and integrity.

Authenticity. The proposed property under requirements (1) to (6) or the property to be proposed as a cultural heritage should contain qualifications of authenticity pursuant to the criteria mentioned in the Nara Document on Authenticity, established in 1993 (World Heritage Center, 2007). The document provides an appropriate basis for considering the authenticity of a property and summarizes as follows.

The value which is determined that it is a heritage depending on the reliability level of the source of information of value, i.e. it should be believable and authentic. Knowledge and understanding of the source of information normally relate to the origin and sequence of changes in the aspect of a cultural heritage. It is the basic requirement in assessing all respects of authenticity.

Determination of the value of a cultural heritage site and the reliability of the related source of information may differ in each culture or even the same culture. Thus, it is impossible to set a basis of value and authenticity determination

under fixed regulations. On the other hand, to pay respect to a culture, it is necessary that such property should be determined within the existing context. Thus, it is most important and urgent to comply with each culture. Acceptance should conform to the specific nature of value of such heritage, including the trust and fidelity of the related source of information.

Determination of authenticity may link with the reliability of various sources of information, depending on the nature of the cultural heritage site, the cultural context, and the evolution of the origins. This may include the design of materials and substances, utilization and function, and customs/tradition, location and accessories, including feelings and spirit.

In terms of authenticity, additional newly-constructed structures of architectural remainders or historical buildings/districts will be taken into consideration only in case of exemption. However, newly-constructed structures will be accepted only if done on the basis of the integrity or the recorded details, and if there is no exaggeration.

Integrity. All properties to be applied for be inscribed on the world heritage list should comply with integrity conditions.

Integrity is a measure for all-in-one gathering and persistence of the integrity of the natural and/or cultural heritage and its accessories, considered based on the integrity. However, the coverture of the property should be evaluated too.

Integrity should:

- (1) Comprise all necessary components so as to show the outstanding universal value of the property;
- (2) Have sufficient size so that its integrity can represent the shapes and processes that make the property significant;
- (3) Be durable against violent impact from development and/or ignorance, and this should be shown in the statement of integrity.

As for the property to be presented under requirements (1) to (6), its outstanding significant components must be in good condition and the impacts from the ecosystem destructor should be controlled. A significant proportion of the necessary components indicating the integrity of the attractive value of the property should be appended. The relationship and dynamic function that appear in a natural culture,

historic town or the living properties' important to aspects different from other things should be maintained as well.

All properties presented under requirements (7) to (10), including physical processes and formation of land should not be destroyed or disturbed. However, it is accepted that no area is free from untouched ancientness. All natural areas change all the time and they relate to humans more or less. Human activities as well as the customs and traditions of human society and local communities usually take place in natural areas. Such activities should be certain and secure corresponding to its outstanding universal value and ecological sustainability.

The property presented under requirement (7) should have outstanding universal value, including important areas for the maintenance of property beauty, for instance, the property with landscape value of a cascade should meet the integrity standard. This can be deemed a homogeneous natural beauty of the property if a neighboring water basin and downstream areas are appended.

The property presented under requirement (7) should consist of all interesting key components related to natural relationships, e.g. the glacial period. The area should comply with the integrity condition, if a snow field and the glacier itself, fault configuration, deposition and conglomeration are included-the inauguration of plant society in compensation, etc. In the case of a volcano, the layers of overlaid glaciers should be perfect, and all or most of the effluent lava and type of eruption should be apparent.

The property presented under requirement (9) should be of sufficient size containing necessary components that demonstrate the key process of basic long-run ecosystem conservation as well as imbedded biological diversity. For example, the area of a tropical rainforest should comply with the integrity condition. If there is a variation in a certain time due to change of mean sea level altitude, change of geography and soil types, patterns, and natural reproduction pattern. In the same manner, a coral reef should be composed of seagrass, mangrove forest, or a continuous ecological system that controls the nutrients and deposition intruding into it.

The property presented under requirement (10) should be an extremely important property in the conservation of biological diversity, especially the property which has ultimate biological variation and/or it is a possible representative

under the requirement. The said property should be composed of a habitat that can maintain the diversity of animals and plants within the biographical boundary and the ecosystem under determination. For instance, the condition of a tropical savannah forest should comply with the diversity requirement. If it is composed of plants and animals that have mutual behavior evolution and in case such property is an island society comprising various species, then it should be large enough to include the critical habitat but it should be necessary and believable that population of all species can live there. As for the property containing species of immigrants, a place of seasonal reproduction and nestling as well as immigration, at any place should be sufficiently protected.

### 3) Good protection and management plan

The presented property should have sufficient protection and a management system so as to maintain its outstanding universal value and keep its true existence as well as integrity, aiming at safety and sustainability. Thus, to present any property for be inscribed on the world heritage list, the proposal should comprise good protection and a management plan. It would be more reliable if reference of enforcing laws were applied as a tool of protection and if prevention is also presented.

In practical, the Convention Concerning the World Heritage Protection (World Heritage Committee, 2015) formulates the details of protection and management as follows:

(1) Legislative, regulatory and contractual measures for the protection of property

The legislative, regulatory, and contractual measures for the protection of property point out that the legal and regulatory measures, both local and national, should be seriously enforceable in order to ensure the prevention of the property from economic and social pressures or any change that may impact its outstanding universal value, authenticity, and integrity.

(2) Boundaries for effective protection

The necessary details of boundaries should be attached to the application form for the world natural heritage registration of the property or site pursuant to criteria 7 to 10. The boundary of the property should cover habitats and species, indicating the phenomenal process of outstanding universal value. The boundary should be clear, showing the outstanding universal value of the property

safely prevented from external invasion, including humans. The boundary may be the same as that of the protected area such as a national park announced as world heritage.

### (3) Buffer Zone

In case of necessity regarding the protection of a world heritage property, determination of a sufficient buffer zone around the property may be required, as well as buffer zone management or protection law in order to support the World Heritage protection. In addition, clarification of how the buffer/leniency zone can support the world heritage site should be presented in applying for world heritage registration.

### (4) Management System

In each application for a world heritage site, the management plan should be annexed in order to clarify how its outstanding universal value will be protected, and also indicate how people will participate in management. The management should contain the following main points: 1) Joint perception of outstanding universal value of the world heritage site and the planning process, which comprise stakeholders' participation 2) The stages of the plan cycle ranging from planning, implementation, supervision, monitoring, and evaluation of outcomes according to the plan 3) Estimation of risk on how the property or the world heritage site will be affected by pressure and socio-economic change, and monitoring the impacts caused by social trends 4) Development of a participation or coordination mechanism in activities done by groups of stakeholders 5) Allocation of necessary resources 6) Enhancement of capability and 7) Clarification of how the management system can work

### (5) Sustainable Utilization

The property or world heritage site to be proposed should sustainably support ecological or cultural utilization; it should improve the life quality of the people living in vicinity of the site as well. The State Party and involved personnel should ensure that any kind of utilization will not cause any impact to the property/world heritage site to be proposed. In addition, the laws, policies or strategies protecting the outstanding universal value of the property or world heritage site should be cited in the proposal as they are special tools for world cultural and natural heritage conservation, as well as participations of community and stakeholders, which are

important conditions for the conservation, management, protection, and sustainable existence of the property or world heritage site.

In conclusion, the proposal of a property or site for inscription as a world heritage should highlight three pillars of outstanding universal value, which are: 1) world heritage criteria; 2) authenticity and integrity; and 3) a good management plan.



**Figure 2.3** Three Pillars of Outstanding Universal Value

**Source:** IUCN, 1991.

#### **2.4.5 Roles and Duties of the State Parties under the Convention Concerning the Protection of the World Cultural and Natural Heritage**

The provisions mentioned in two articles of the Convention Concerning the Protection of the World Cultural and Natural Heritage, which are obligations to be observed by all State Parties, are discussed below.

##### **2.4.5.1 Application for World Heritage Property or Site**

The State Party should present its appropriate property or natural site in its territory according to Article 4 of the World Heritage Convention: Each State Party

to this Convention recognizes that the duty of ensuring the identification, protection, conservation, presentation, and transmission to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to that State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation, in particular, financial, artistic, scientific and technical, which it may be able to obtain.”

#### 2.4.5.2 Management and Protection of Property or World Heritage Site

It is stated in the Article 5 of the Convention concerning the Protection of the World Cultural and Natural Heritage that “to ensure effective and active measures are taken for the protection, conservation, and presentation of the cultural and natural heritage situated in its territory, each State Party to the Convention shall endeavor, in so far as possible, and as appropriate for each country, to carry out the following:

- 1) To adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programs;
- 2) To set up within its territories, where such services do not exist, one or more services for the protection, conservation, and presentation of the cultural and natural heritage with an appropriate staff and possessing the means to discharge their functions;
- 3) To develop scientific and technical studies and research and to work out such operating methods as will make the State capable of counteracting the dangers that threaten its cultural or natural heritage;
- 4) To take the appropriate legal, scientific, technical, administrative, and financial measures necessary for the identification, protection, conservation, presentation, and rehabilitation of this heritage; and
- 5) To foster the establishment or development of national or regional centers for training in the protection, conservation, and presentation of the cultural and natural heritage and to encourage scientific research in this field.”

These guidelines are important for any state party to implement the convention.

#### **2.4.6 Monitoring the State of Conservation of World Heritage Properties**

The Office of the Convention Secretariat and the consulting body should report to the World Heritage Committee the monitoring of the world heritage site conservation state in order to learn whether any world heritage is confronting a threat. The State Parties should submit to the Committee, through the Office of Secretariat, their exclusive reports on impact studies within 1 February for each incurred disaster or the on-going work may cause impact to property conservation situation. The reaction of monitoring can be seen obviously in the references of the in-danger world heritage list. This should comply with Article 4 of the convention specifying that “Each State Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage referred to Articles 1 and 2 and situated on its territory, belongs primarily to that State.”

The World heritage Committee requests that the survey and inspection report of any world heritage property be composed of:

- 1) A threat severity indicator or significant improvement of property conservation as from the latest report submitted to the Committee.
- 2) Any monitoring according to past resolutions on the property conservation conditions of the Committee.
- 3) Information of any threat, force, or peril, or losses of outstanding universal value, integrity, and/or authenticity of the property inscribed in the world heritage list.

Once the Office of Secretariat receives the information regarding the deterioration of the inscribed property or the failure of necessary corrective measures within due time, as far as possible, proposed by other sources which are not concerning State Parties. Then, investigation of the cause and substances related to such information, through the request of clarification, should be investigated by the concerned State Parties.

##### **2.4.6.1 Resolutions of the World Heritage Committee**

The Office of Secretariat should request the related consulting body to analyze the received information and opinions of State Parties. After that, the consulting body should prepare a report on the conservation status of each property in order to

submit it to the World Heritage Committee. In this regard, one or more items hereunder may be adopted:

1) The consulting body may determine that the said property is trivially damaged and it needs no further action;

2) Once the Committee determines that the property is severely deteriorated, excluding impossible rehabilitation, it may decide remaining the property in the world heritage list, stipulating the concerned State Party to repair it within due time. The Committee may decide that technical cooperation is needed, through the World Heritage Fund, in order to work in parallel with rehabilitation, and the State Party can request aid from such a fund if the repair has not be done yet;

3) Once the demand and provision are stipulated, and it should be that way, the Committee may decide remaining such property on the in-danger world heritage list according to its specifications and procedures;

4) Once the indicator of deterioration increases to the point of irrevocability corresponding to characteristic classification on the world heritage list, the Committee may decide to revoke such property from the list. Prior to such a revocation, the Office of Secretariat should notice the concerning State Party for it may request the Committee to reconsider its clarification;

5) In case the details in the clarification, aforementioned in items 1) to 4), are not enough for resolution of the Committee, it may authorize the Office of Secretariat to find out the fact through discussion with related State Parties about the current situation of the in-danger property and report its restoration guideline to the Committee. In order to execute under this measure, the Office of Secretariat may send its fact finders or consultants/specialists to the site or to the sources of information. In case of necessity and urgency, the Committee may exercise its authority to approve payment from the World Heritage Fund for such urgent aid.

#### **2.4.7 In-danger World Heritage List**

According to Article 11, par. 4, of the world Heritage Convention, the Committee may put the troublesome world heritage onto the in-danger world heritage list if it meets the following criteria.

Natural property

1) The Property is Really Damaged or It Is Proven to be in Danger such as:

(1) A drastic decrease in the population of nearly-extinct species or species with outstanding universal value, and such property was formally established for the sake of protection and prevention in respect of natural factors, for instance, disease or man-made actions-wildlife hunting'

(2) The drastic deterioration of natural beauty or technical value such as human settlement, construction of dams, floods in some parts of important areas of the property, industrial and agricultural development, including uses of insecticide and fertilizer, actions of most citizens, mining, pollution, logging, firewood picking, etc.;

(3) Encroachment of people into water-source areas—a cause of invasion to security of such property;

2) Danger Possibility

The property has faced with what may deteriorate its implicit characteristics such as:

(1) Amendment of laws relating to the protection and prevention of the property;

(2) Planning for settlement or development in property area or at the location causing impact to the property;

(3) Being devastated or threatened due to armament use conflict;

(4) No management or insufficient management, or the management plan was not completely carried out.

The supplement is one or more factors that threaten the security of the property. It must be the corrigible under feasible laws. In the case of cultural property, the natural and man-made factors can be controlled. And in the case of natural property, most of the factors are of man-made actions while the minority is of a natural factor itself (e.g. disease form exterior) that threatens the security of the property. Some factors that threaten the security of the property can be corrigible through management or legislation such as the declination of huge public projects or regulation development.

In putting the inscription of a property onto the in-danger world heritage list the Committee should take as much as possible by discussing with the concerned State Parties corrective programs /measures.

To develop the said programs on corrective measures as per the previous paragraph, the Committee shall try its best to request the Office of the Secretariat to coordinate with the concerned State Parties in scrutinizing the property status and the peril to the property, and submit a primary report of corrective measures to the Committee for further judgment, whether it is necessary to send qualified observers from the consulting body or other organizations to assess the possibility of the menace and to present corrective measures. Their collected information/data and opinions shall be presented to the Committee through the Office of the Secretariat.

The Committee should scrutinize the available information/data and pass a resolution of property inscription in the in-danger world heritage list. Such resolution shall be of majority vote-two-thirds of the quorum at the Committee meeting. After that, the Committee should stipulate the operation and corrective programs and send them to the concerned State Parties for urgent implementation.

The concerned State Parties shall inform the Committee resolution and the public notice about the said resolution they have learnt, and bring them up to the Committee for reconsideration in conjunction with Article 11.4 of the World Heritage Convention.

The Committee should allocate a World Heritage Fund only for possible aid to an important part in order to preserve the property inscribed on the in-danger world heritage list.

The Committee should annually inspect the conditions of all in-danger properties on the world heritage list. The inspection should include the monitoring procedures and skillful operations which may be necessary. The Committee shall cooperate with the concerned State Parties to decide on:

- 1) Additional measures required for reservation of such properties;
- 2) Deleting some properties from the in-danger world heritage list if they are free from invasion;
- 3) Deleting some properties from the in-danger world heritage list and the world heritage list if they are deteriorated to the point that they have lost their characteristics of being specified world heritage properties.

#### 2.4.7.1 Periodic Reporting on the Implementation of the World Heritage Convention

The State Parties, through the World Heritage Committee, are requested to present their reports at the UNESCO general meeting regarding the formulated legislative and management resolutions and other performances carried out in implementing the Convention, including the conservation state of the world heritage property located in their territories so as to comply with Article 29 of the Convention on new troubleshooting procedures presented at the 11<sup>th</sup> meeting of the Central Committee of the Party Assembly (1997) and those presented at the 19<sup>th</sup> UNESCO general meeting.

The State Party may request its specialist to discuss with the consulting body and the Office of the Secretariat, or probably (by approval of concerning State Parties) the committee members that are authorized to give advice.

The periodic report should respond to the following main objectives:

- 1) To get ready for the evaluation of performances by State Parties according to the World Heritage Convention;
- 2) To get ready for the evaluation of the outstanding universal value of the property inscribed on the world heritage list as to whether its value remains unchanged;
- 3) To prepare updated information/data of its world heritage property in order to record the scope of change and the status of property conservation;
- 4) To reset mechanisms for regional coordination as well as the exchange of information and experience among the State Parties on the implementation under the convention concerning the World Heritage conservation.

The periodic report is vital for the long-run effective conservation of the inscribed property. In the same manner, it reinforces the reliance in implementation as per the Convention.

The aforesaid description relates to regional strategies, i.e. it reflects the particularities of each region and promotes cooperation and responses among the State Parties, especially in the case of the territory overlapping of the properties. The Office of the Secretariat should discuss with the State Parties aiming at the development and implementation of such regional strategies.

After the first six-year round of periodic report preparation, each region should be evaluated once again. After that there might be a break so as to inspect and adjust the mechanism of the periodic report prior to the beginning of the next six-year round.

The format of the periodic report of each State Party shall be composed of two parts:

Part 1 Referring to legal provisions, management, and other activities the State Party has worked out as per the Convention, including the details of experience derived from field operation, especially the general alternatives mentioned in each article of the Convention.

Part 2 Referring to the status of world heritage property conservation situated in the territory of the relevant State Party. This should be done perfectly for each world heritage property.

#### **2.4.8 Thailand and Its World Heritage Participation**

The Thai Cabinet passed a resolution approving Thailand to be a State Party under the Convention Concerning the Protection of the World Cultural and Natural Heritage pursuant to the proposal of the Ministry of Education on 16 June 1987. Later, in the same year, the Ministry of Foreign Affairs filed an accession for being a State Party under the said convention and finally it became a UNESCO member on 1 January 1987 (membership no. 49). Thailand ratified the Convention on 17 September 1987 and became a member of the World Heritage Committee from 2009 to 2013 (reference).

In January 1990, the Cabinet passed a resolution appointing the National Committee for the World Heritage Convention, whereas the Office of Environmental Policy and Planning, the Ministry of Science and Technology (at that time), was assigned to run the secretarial work, undertaking all matters in compliance with the obligations under the Convention, and functioning as a hub for coordinating with related agencies in implementing the updated world heritage management plan. According to the Bureaucratic Restructuring Act B.E. 2545, the Secretarial Sub-division was reformed as the Office of Natural Resources and Environmental Policy and Planning (ONEP), Ministry of Natural Resources and Environment. Until now there are five World Heritage sites in Thailand (Table 2.1).

**Table 2.3** World Heritage Sites in Thailand

<b>Item</b>	<b>Description</b>	<b>Year of registration</b>	<b>Type/ Criteria</b>
1.	Historic City of Sukhothai and satellite towns (Sukhothai - Srisatchanalai Historic Park)	1991	Cultural heritage/ Criterion 1
2.	Historic City of Phranakhon Sri Ayudthaya	1991	Cultural heritage/ Criterion 3
3.	Thung Yai Naresuan - Huai Kha Khaeng National Park	2534	Cultural heritage/ Criteria 7, 9 and 10
4.	Baan Chiang Archeological Site	1993	Cultural heritage/ Criterion 3
5.	Dong Phaya Yen - Khao Yai forest areas (Khao Yai, Tub Larn, Pangsida, Taphraya National Parks and Dong Yai Sanctuary)	2005	Cultural heritage/ Criterion 10

#### **2.4.9 Roles Under the World Heritage Convention on Conservation Forest Area Protection**

Currently, there are State Parties in 163 countries under the World Heritage convention and 1,031 cultural and natural world heritage sites have been announced: 802 world cultural heritage sites, 197 world natural heritage sites, and 32 world cultural and natural heritage sites (UNESCO, 2016). As previously mentioned, most world natural heritage sites are located in protected areas or conservation forests such as the Everglades National Park, Yosemite National Park, and Yellowstone National Park in the United States; Garamba National Park in the Congo; Kilimanjaro and Serengeti National Parks in Tanzania; the Rainforest of Atsinanana in Madagascar, etc. These world heritage sites already had their own protection laws. Their total area covers about 10% of the world's area. The Convention Concerning the Protection of the World Heritage also plays a role in some aspects as follows.

2.4.9.1 Preventing the World Cultural and Natural Heritage Sites from external threat (UNESCO, 2016), as Discussed Below.

1) The Pyramids of Giza in Egypt

In 1995 it confronted the risk of impact from a highway construction project near Cairo. This would have caused drastic value impacts to a lot of archeological sites. In this regard, the World Heritage Committee tried its best to negotiate with the Egyptian government. Eventually, other alternatives were found and the pyramids were safe.

2) The Chitawan National Park in Nepal

This is a world natural heritage site and the lone wildlife habitat of about 400 one-horned rhinoceroses in South Asia. In 1990, the World Heritage Committee inquired the Nepali government for an environmental impact assessment report under the Rapti River Development Project. The Nepali government and the Asian Development Bank therefore jointly reviewed the project; they found that such a project would cause a critical threat to the habitat of one-horned rhinoceroses in Chitawan National Park. Thus, the project was finally revoked and the wildlife habitat was safe under intensive care.

3) The Delphi Archaeological Site in Greece

While applying for world heritage registration in late 20<sup>th</sup> century, there was an application for the permit of a private enterprise to construct an aluminum plant. The Greek government therefore negotiated with the applicant and finally the project was judged to move to another place.

4) Whale Sanctuary of the El Vizcaino Biosphere Reserve in Mexico

In 1999, the world heritage community conducted a campaign protesting the area expansion for commercial salt production in San Ignacio Lagoon of the El Vizcaíno Biosphere Reserve, which was the last breeding site of Pacific grey whales. The World Heritage Committee then warned the Mexican government about the threat to the Pacific grey whales due to area expansion for commercial salt production. This made the Mexican government decline to issue the permit.

#### 2.4.9.2 Positive Outcome on Socio-economic Development

World Heritage sites have been considered as advantageous interventions for socio-economic development (Hall & Piggin, 2001, 2002; Jha, 2005) given their emphasis on resources of high international value, a number of WHSs have come about as a “celebration” designation, where the WH listing is a recognition or award for a heritage that was already well taken care of prior to WHS status. Some places have used the WHS status as a “Branding” exercise or a marketing move to attract visitors to historic places. These sites focus mostly on tourism development and few other options or activities are emphasized (Kim, Wong, & Cho, 2007)

#### 2.4.9.3 Enhancing International Cooperation and Partnerships

Some World Heritage sites have been successful in using World Heritage status as a tool for international partnership building. (Boyd & Timothy, 2006; Fyall & Rakic, 2006; Li, Wu, & Cai, 2008; Wager, 1995; Wiesmann, Liechti, & Rist, 2005). The World Heritage status also build cooperation in conservation, social capital and civic pride, learning, research and education as well as creating additional funding and investment. Much depends on geographical circumstance, alternative opportunities, and governance systems.

More than 40 years, since 1972, after the establishment of the Convention Concerning World Heritage Protection, it can be deemed the most successful and effective tool for pointing out natural sites with diversity excellence in terms of biological, ecological, and geological aspects, or natural phenomena. The Convention has been globally accepted, for it can conserve areas of more than 10% of the entire world’s area. However, a number of conservation areas with outstanding diversity are waiting for registration as a world heritage (UNESCO, 2016).

## 2.5 Related Research

In studying the policy and managerial strategy of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as A World Heritage Site, we reviewed some research related to world cultural and natural heritage site management as well as the factors and surroundings related to management, so the following can be concluded

Helen (2008) studied valuing world heritage areas at four national parks in the USA, including the Great Smoky Mountains, Grand Canyon, Hawaii's Volcanoes, and Yellowstone National Park, which have been registered as world heritages for 20-30 years. All of them are under the US National Parks Law and most Americans acknowledge their world heritage areas. However, some comments have been made, indicating that being world heritage sites does not increase the protection as used to be under the National Parks Law. Instead, it has caused worry about the scope of the area's importance and the management of how they are of national or international. Thus, management is an important issue in this matter.

Asanee Atsavakanjanakit (2013) studied the legislative measures in Thailand on the protection of the Dong Phrayayen-Khao Yai forest areas as a world heritage. The study found that the applicable legislative measure for managing the said forest areas relied on the National Parks Act B.E. 2504 and the National Wildlife Reservation and Protection Act B.E. 2535. Such a legislative measure complied with the obligations under the World Heritage Protection Convention designating the formulation of appropriate legislation measures for the protection, prevention, and conservation action and maintenance of natural heritages. It was a measure protesting any development and change that would negatively impact the universal value of these world heritage sites, but the legislative measures related to the threat to alien plants was not clear enough. The study therefore proposed to designate clear legislative measures to prevent threats from alien plants and to encourage the people to realize the value of the world heritage sites so as to embed in their conscious mind the protection and management of Dong Phrayayen-Khao Yai forest areas in order to continually maintain their universal value.

The protection and management of world natural heritage sites mostly employ tools and resources similar to those for forest area management or conservation forest areas, currently paying more attention to the communities in the forest area. Formerly, it was deemed that the forest belonged to the state and the communities were separated from it. It is therefore a kind of cooperative management, i.e. the community participates in the management process and feels that it possesses the forest area and the wildlife therein. The target of the conceptual change is to create joint responsibility in order to reduce conflicts and to improve quality of life and resources (Raymond,

Fazey, Reed, Stringer, Robinson, & Evely, 2010). However, legislative enforcement for controlling hunting and illegal exploitation of forest-originated resources remains necessary and unavoidable although community-based management has been applied.

Being a world heritage site generates obligations in terms of sustaining its original value. Utilization therefore must comply with the conservation principle and sustainability, and underline the equilibrium of economic benefits and original-condition reservation, including appropriate development. The most important thing is the participation and requirements of stakeholders from all sectors.

Xu and Dai (2012) studied the dynamic pattern of the holistic systems in world heritage site management at an ancient village in China and analyzed the social, economic, and world heritage interactions there in order to study the policy that can lead to the goal of development and conservation. The outcome showed that only conservation is not enough-an attempt must be made to formulate policy that serves the requirements of the local community, including provision of economic opportunity. This can be a better alternative if the development plan is carefully carried out and effectively controlled in order to avoid resource overexploitation.

There are cases where the world heritage has to apply the same principle. Duval and Smith (2014) studied tourism in Rockart, a world heritage site that contains high-risk public interest, and there was only one method that could sustainably solve such trouble, i.e. the implementation with respect to the framework of effective management. In this study, a tourism survey on the management of the Ukalamba Drakensberge World Heritage Site in South Africa was carried out.

Orr (2011) studied the application of internal and external factors, using the so-called SWOT analysis, to determine the supporting measures for the business administration of private urban enterprises situated in Banff National Park, Canada, under park regulations aiming at sustainability. The outcomes showed that the SWOT analysis was also feasible for planning and decision-making in a high complex environment, and was not only suitable for business planning. In such a case, the government and private sectors should determine measures that assist private enterprises. In the meantime, it should comply with the rules and regulations of the park and run only environment-friendly businesses. Their strength is the location of the business-situated in a park-and a recreation design that matches nature.

Zhang, Zhou, Wu, Skitmore, and Deng (2015) examined the Hangzhou's West Lake Scenic Area, a World Heritage Landscape, located at the centre of Hangzhou city, China, in which several high-rental facilities have recently been closed down by local authorities due to charges of elitism and misuse of public funds by government officials. The results showed that the best solution is to lease a small space with high rent and leave the remainder of the site to the public. This solution is likely to be applicable only in cities with a strong economy. The study demonstrates that conflicts regarding the landscape space allocation of the World Heritage in developing countries are caused by economic factors that are intense for those located in cities due to their multi-roles and the considerable business opportunities offered. A game theoretic conflict analysis within a theoretical framework is used to identify the allocation approach to maximize the benefits involved.

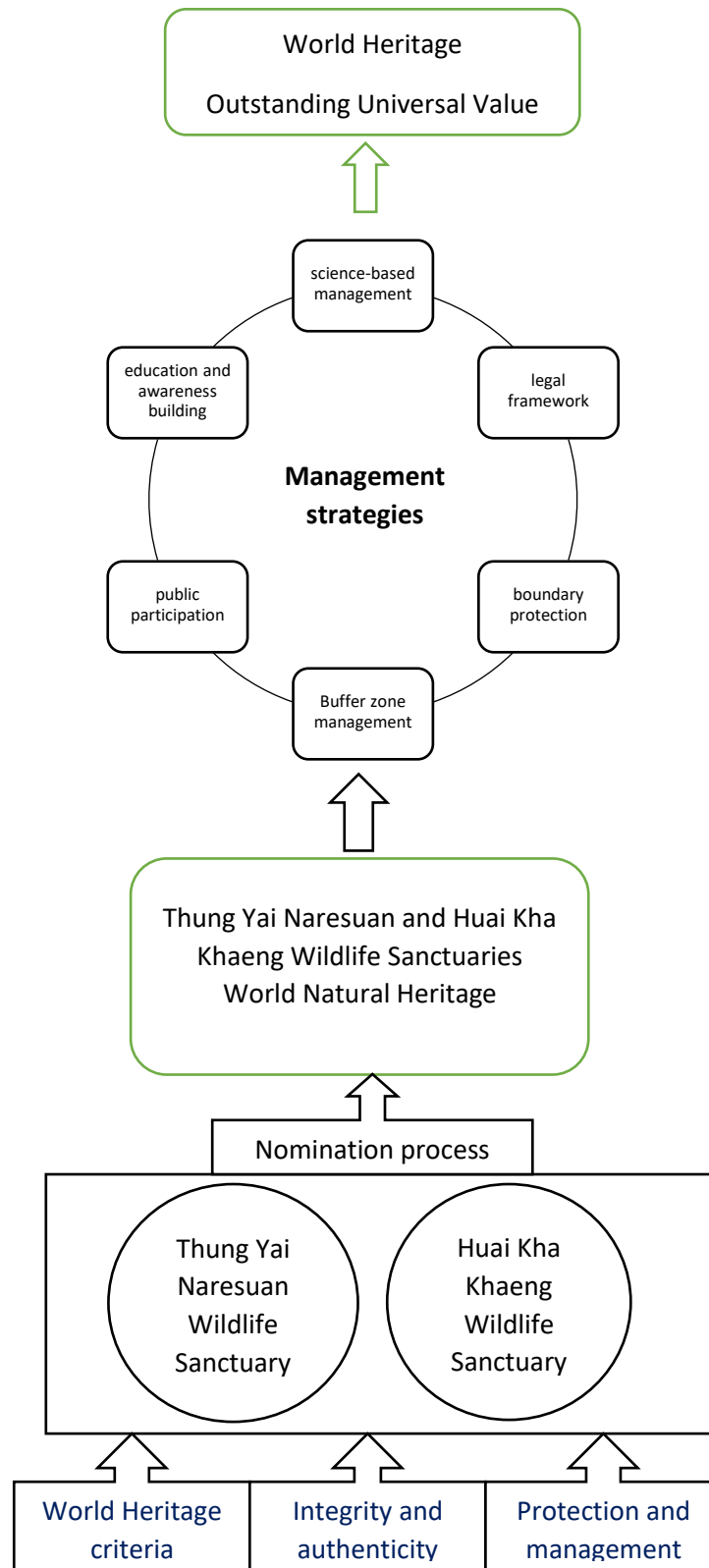
Kaltenborn, Thomassen, Wold, Linnell, and Skar (2013) conducted a research entitled "World Heritage status as a foundation for building local futures? A case study from Vega in Central Norway." The research, which conducted a survey among the island community of Vega in Norway that had received World Heritage Site (WHS) status in 2004, was motivated by a conservation alarm, tourism marketing, and place making. They examined the local population's views of the key aspects of future development and how this related to WHS status. The islanders placed high value on social and community conditions as well as on the heritage linked to cultural and natural resources. While a majority supported the tourism-based sustainable use of the heritage, they also felt that the WH listing should not limit development opportunities. There were differences between the younger people and adults. The WHS may be an effective agent for sustainable tourism development if its main goals and strategies are clearly understood and prioritized in the local community, leaving room and perhaps links to other development opportunities.

Yu-Wen and Hui-Lin (2014) examined the impact on inbound tourism caused by the presence of world heritage sites, using statistics derived from panel data for 66 countries for the period 2006-2009. The results indicated that there exists a positive relationship between having such heritage sites and tourist numbers, and the relationship is stronger for natural rather than for cultural heritage sites.

However, research also shows cases with quite the opposite effects (Pomeroy-Kellinger, 2011; Wall & Black, 2004) or where tourism development or economic impacts are limited (Aas, Ladkin, & Fletcher, 2005; Landorf, 2009a; Maikhuri, Nautiyal, Rao, & Saxena, 2001; Yuksel, Bramwell, & Yuksel, 1999). Getting stakeholders to realize their interdependence and fully utilizing the potential for collaborative work has also proven to be a challenge (Aas et al., 2005; McDavid, 2007; Nicholas, Thapa, & Ko, 2009). Most research linked to the local population of WHSs has focused on aspects such as stakeholder involvement (Keitumetse & Nthoi, 2009), WHS management (Nicholas et al., 2009a), tourism development or in many cases a combination of these (Landorf, 2009b; Ryan & Silvanto, 2010; Wager, 1995).

## **2.6 Conceptual Framework**

The researcher has put together studies on concept, ideas, theories and related research works in order to define a conceptual framework of the research as follow



**Figure 2.4** Conceptual framework of Management Strategies of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary World Natural Heritage

## **CHAPTER 3**

### **DESCRIPTION OF THE STUDY AREA**

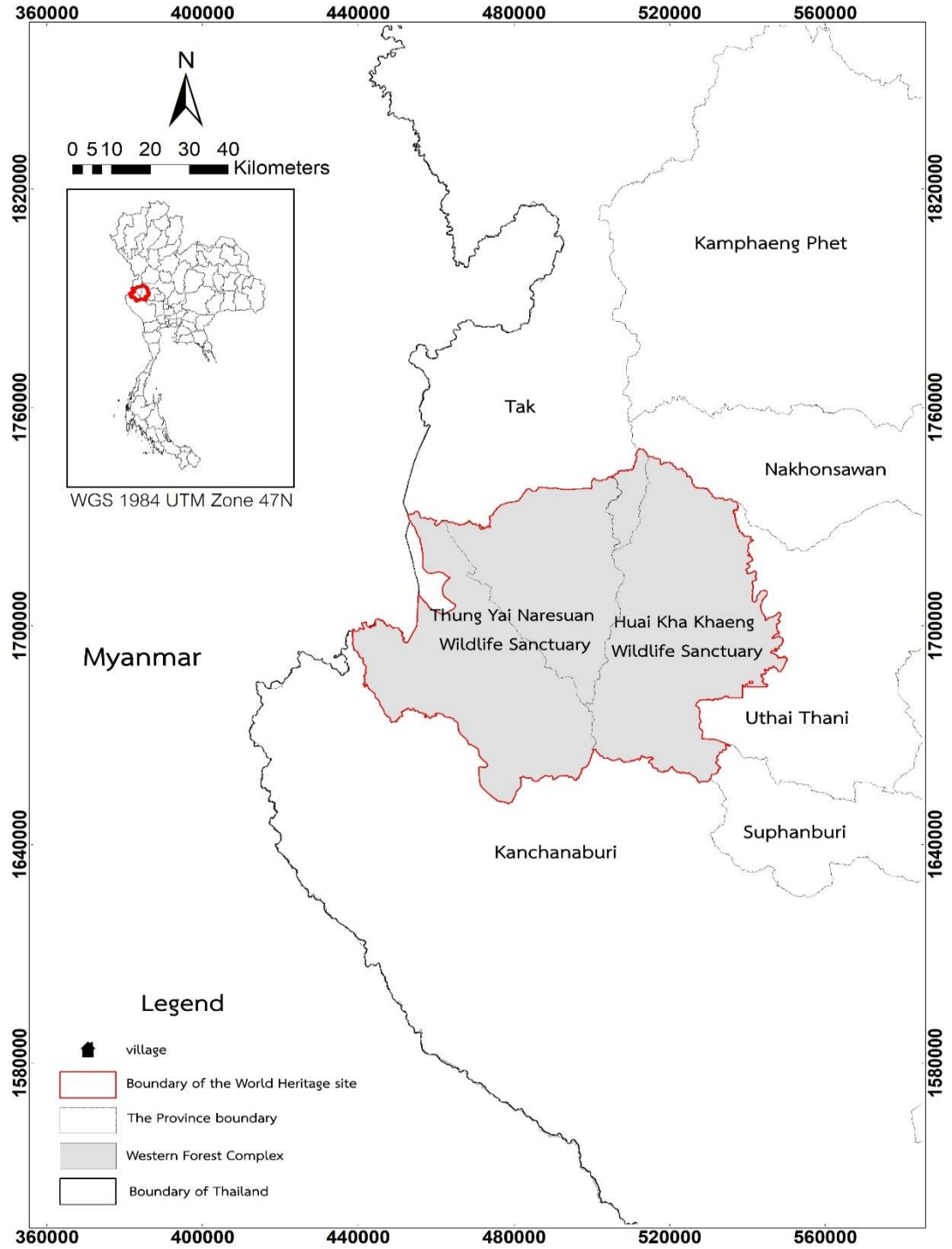
#### **3.1 General Description**

The Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries, World Natural Heritage site, lies in Uthai Thani, Tak, and Kanchanaburi provinces in the west of Thailand, along the border with Myanmar. The site combines two contiguous wildlife sanctuaries, Thung Yai Naresuan and Huai Kha Khang, separately established as sanctuaries in 1972 and 1974, respectively. The whole area covers 622,200 hectares or 6,222 square kilometers in the three provinces (Figure 3.1), making it the largest conservation forest of Thailand (Sueb Nakhasathien, & Stewart-Cox, 1990). This forest area is one of Thailand's least accessible and least disturbed forest areas.

The large area of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries represents important biological features and contains examples of almost all types of biological systems in Southeast Asia region. They are home to a very diverse array of animals, and characterize zoogeography in four regions: Sino-Himalayan, Indo-Burmese, Indo-Chinese, and Sundaic. The East plain of the Thung Yai Naresuan Wildlife Sanctuary is the most prominent area, representing a tropical forest ecology of Southeast Asia and one of the most abundant and safe habitats in the world (Sueb Nakhasathien, & Stewart-Cox, 1990). In addition, the sites are adjacent to other protected areas, combining all into large conservative forests called "The Western Forest Complex of Thailand" (Figure 3.2).

The Thung Yai Naresuan Wildlife Sanctuary and Huai Kha Khang Wildlife Sanctuary are protected forests under the provision of the Wild Animals Reservation and Protection Act, B.E.2535 (1992), which aims to protect wildlife and their habitats in order to maintain the fertility and roles of wildlife in the ecosystem. Meanwhile, the wildlife sanctuary also has the potential to be a learning source and recreation area for the public.

Thung Yai-Naresuan and Huai Kha Khang World Heritage Sites consists of two wildlife sanctuaries, which are described in brief as follows:



**Figure 3.1** The Boundary of Thung Yai Naresuan Wildlife Sanctuary and Huai Kha Khaeng Wildlife Sanctuary.

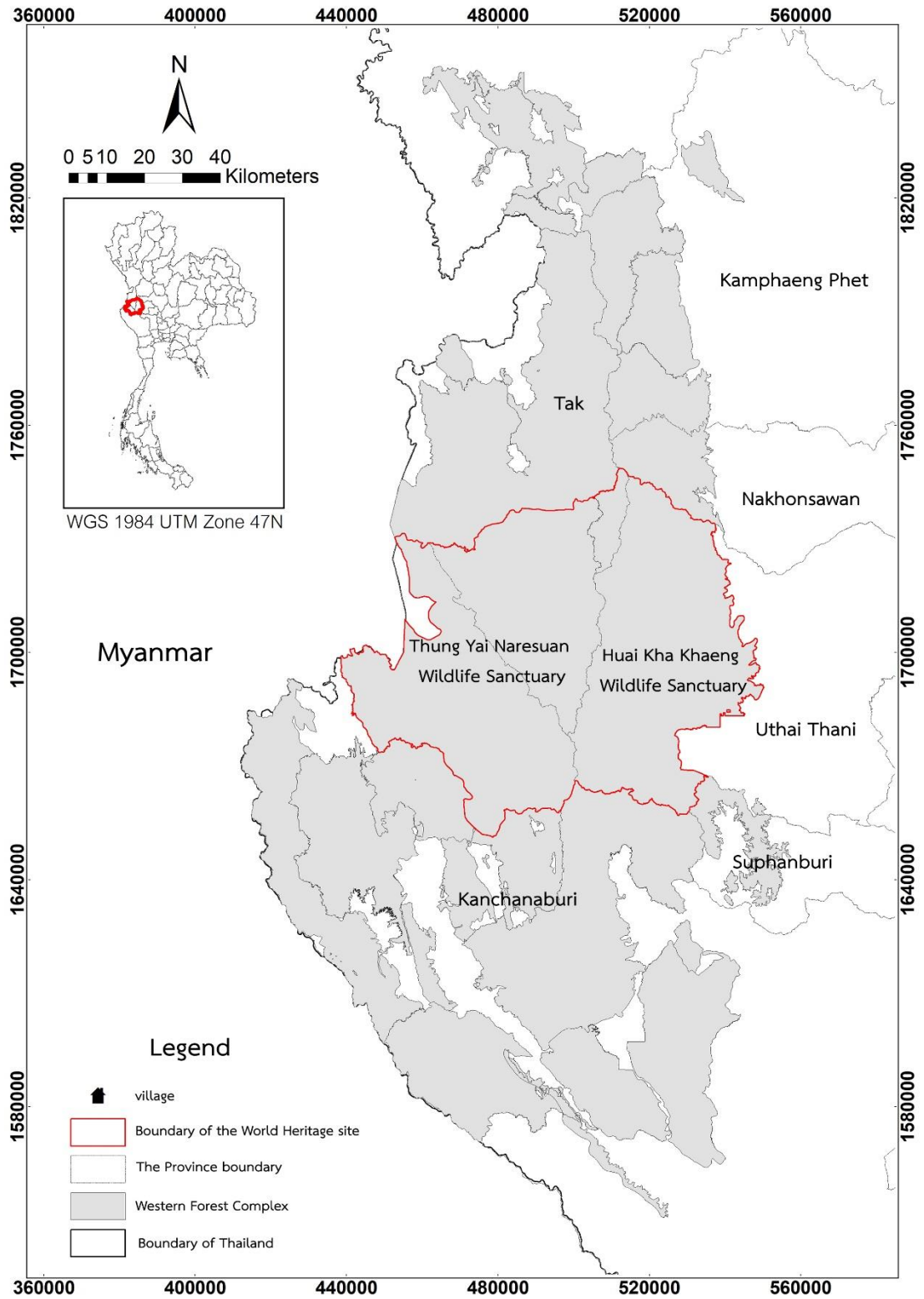


Figure 3.2 The Western Forest Complex of Thailand

### **3.1.1 Thung Yai Naresuan Wildlife Sanctuary**

#### **3.1.1.1 History and Establishment**

The Thung Yai Naresuan Wildlife Sanctuary was designated as a wildlife sanctuary the first time on 24 April 1974 with a total area of 2,000,000 rai or 3,200 square kilometers. It covers the forest area in Thong Pha Phum and Sangklaburi Districts in Kanchanaburi Province and Umphang District in Tak Province. The former legal status of the designated forest area before being wildlife sanctuary was the national reserved forest under provision of the National Reserved Forest B.E.2507 (1964). Subsequently, on August 12, 1991, there was the annexation of the Nam Jone national reserved forest in the Thong Pha Phum District of Kanchanaburi into a wildlife sanctuary.

After the annexation, the wildlife sanctuary became a vast area covering 2,279,500 rai or 3,647.2 square kilometers in the same year. The area management of the Thung Yai - Naresuan Wildlife Sanctuary was then divided into two segments according to provincial boundaries. The east part of the Thung Yai Naresuan Wildlife Sanctuary covers an area of 948,438 rai or 152 square kilometers of Tak province, while on the west side there are 1,331,062 rai (2,130 square kilometers) in Kanchanaburi Province.

Pong Leng-E (personal communication, December 16, 2015) gave some detail of historic background of Thung Yai Naresuan Wildlife Sanctuary as follows:

In mid-1960s, deforestation was increased considerably in all parts of the country. It was generally rather perceived as supporting national development and security than a problem. There was a strong commercial interest in Thung Yai Naresuan forest due to logging and mining interests in the area.

In 1965, due to increasing threats, Mr. Prasert Kongsamran, the Director of the Ban Pong, Ratchaburi Regional Forest Office, decided to submit a request to the Royal Forest Department to urgently consider the designation of the Thung Yai Naresuan forest to be a wildlife sanctuary under the provision of the Wildlife Reservation and Protection Act B.E.2503 (1960). It was believed that this law should be more effective in protecting the forest area due to its stronger penalty than the National Reserved Forest Act B.E.2507 (1964).

The Royal Forest Department responded well to this proposal assigned a wildlife management Officer to investigate the appropriateness of the forest area to be designated as a wildlife sanctuary. After the survey, it was considered that this forest

was very suitable to be set as a wildlife sanctuary and the process was accelerated. However, there were still many patents and permitted activities, and the area of this forest was quite immense, so the Royal Forest Department sent the letter of cooperation dated August 7, 1972 to Kanchanaburi and Tak provinces to suspend any permits that would affect the plan for a Wildlife Sanctuary establishment. The request was well received and the preparation team started working on its establishment beginning in January 1973.

Later, there was a helicopter crashed in Bang Len, Nakhon Pathom Province on April 29, 1973. The incident killed 6 people and bodies were mixed with the ruins of the helicopter. This became a connected issue when the media and students of the nature conservation cluster met a hunting group in the Thung Yai forest, making the case of Thung Yai appeared in the headline news and receiving public attention for a long time. The Thung Yai Naresuan Wildlife Sanctuary designation was announced in the Special Government Gazette, Chapter 91, Section 72, dated April 24, 1974. The name Thung Yai Naresuan was to honor the Great King Naresuan when his army sheltered on these plains during the battle with Myanmar.

The Thung Yai Naresuan Wildlife Sanctuary is distinguished by its unique geographic features. It is located on the biogeographic boundaries of the Sundaic, Indo-Burmese, Indo-Chinese and Sino-Himalayan areas, resulting in the Thung Yai Naresuan Wildlife Sanctuary as a source of the biodiversity of fauna and flora species. The savanna grassland in Thung Yai (Figure 3.3) is the greatest savanna and is the best sample of savanna forest in the tropical forest of Southeast Asia. (Sueb Nakhasathien & Stewart-Cox, 1991)

Some animals from the Sino-Himalayan that can be found in this area are the Phayre's langur, the Assam macaque, the crested kingfisher, and the pin-tailed green pigeon scattered in the northern part of the sanctuary. On the south side, peacocks represent a species from the Indo-Chinese region and animals from the Sundaic region found in the forest are tapirs, Silvered langurs, pied imperial pigeons, Pale-capped pigeons, and Malay Blue-banded kingfishers, etc.(Sueb Nakhasathien & Stewart-Cox, 1990)

Despite being sources of plant and animal diversity, the area is also a habitat for rare and endangered wildlife species. The forest of Thung Yai Naresuan is

also important as the source of the watershed of four main streams of the Kwai Yai River, the Kwai Noi River, the Kasat Yai River, and the Suriya River.



**Figure 3.3** The Savanna grassland in Thung Yai Naresuan Wildlife Sanctuary

#### 3.1.1.2 Problems and Threats

Current threats include the following:

- 1) Seven communities reside on the site, most of which are of the Karen ethnic group, who have lived there for more than 100 years and have a rather eco-friendly lifestyle. However, the development has had a cultural influence on these Karen communities. The communities' forest has been invaded and it has decreased. There are also external threat factors, such as hunters from other areas and tourists, including outsiders that lurk for illegal forestry actions.

- 2) Hunting along the border is another threat to the Thung Yai Naresuan Wildlife Sanctuary.

- 3) Mining operations in the south and the northwest of the Thung Yai Naresuan Wildlife Sanctuary are an additional threat due to the impact on the ecosystems and illegal wildlife hunting for trade.

### 3.1.1.3 Management

The vast area Thung Yai Naresuan Wildlife Sanctuary widens to 2,279,500 acres or 3,647.2 square kilometers, so it was divided into two separate wildlife sanctuaries. The Eastern Thung Yai Naresuan Wildlife Sanctuary is situated in the east; covering an area of 948,438 rai or 152 square kilometers in Tak Province. Thung Yai Naresuan Wildlife Sanctuary on the west side covers 1,331,062 rai (2,130 square kilometers) in Kanchanaburi Province. In 2016, Thung Yai-Naresuan Wildlife Sanctuary has 27 wildlife conservation units; 9 units in the eastern part and 18 units in the west. Thung Yai Naresuan Wildlife Sanctuary management zones are as follow:

1) The core wildlife conservation zone means a conservation area for wildlife habitat without any human disturbance. This reserved area is available for research activities. There are currently two undergoing projects in Thung Yai Naresuan Wildlife Sanctuary (2011).

(1) Tiger population study, the Expansion of Tiger Conservation Tracking project in The Western Thung Yai Naresuan Wildlife Sanctuary.

(2) The study of Prey population for tiger, Under the Expansion of Tiger Conservation Tracking project, operated by the Wildlife Conservation Society (WCS), Thailand.

2) The nature study zone is an natural education area, open for any people who are interested. The Thung Yai Naresuan Wildlife Sanctuary on the western side has three ecotourism and nature trails:

(1) The forest district office Route. The route is Tinuay-Tikong-the Great (Song Tai)

(2) The Sanae Pong-Koh Sading Route

(3) The Takian Thong-Chalawa Waterfall

On the waterways, all kind of tourist activities is forbidden as it is a major source of food and habitat for many wildlife. If tourism is allowed, it will impact the livelihoods of wildlife.

3) The problematic zone and the areas that need to take control, to limit the expansion, to prevent and suppress illegal wildlife hunting. This area is located in the western part of the park which consists of seven communities.

4) The buffer zone refers to the area of the national reserved forest and farmland along the border. This buffer area is considered within a 5-km radius from the wildlife sanctuary boundary. The management in this zone is to propose the government on directing and controlling land use in the buffer area, to comply with the policy of the wildlife sanctuary.

### **3.1.2 Huai Kha Khaeng Wildlife Sanctuary**

#### **3.1.2.1 History and Establishment**

The Huai Kha Khaeng Wildlife Sanctuary was first designated as a wildlife sanctuary on August 26, 1971, according to the 210<sup>th</sup> Announcement of the Revolutionary Committee, declared the Huai Kha Khaeng forest area of 1,019,375 rai or 1,631 square kilometers in Lan Sak and Ban Rai District of Uthai Thani Province, and Um Phang District, Tak Province to be the “Huai Kha Khaeng Wildlife Sanctuary.” Later, in 1986, an additional area of 1,737,587 rai or 2,870.14 square kilometers was added to the east and south of the wildlife sanctuary. An additional area was declared on December 3, 1992, and then Huai Kha Khaeng Wildlife Sanctuary became the second largest wildlife sanctuary in Thailand.

Originally, the Huai Kha Khaeng forest was a large forest area in the Kaen Ma Krood Sub-district, Ban Rai District, Uthai Thani Province. It is the source of the Kwai Yai watershed supply water to its tributary, Lum Nam Khang, which flows through the Mae Wong forest in Nakhon Sawan Province. The Mae Wong forest is a so-called “virgin forest” as it has never been touched with any deforestation nor forestry activities. Until 1955, this forest area was conceded as a forestry project for the Thai Plywood Company under the 84<sup>th</sup> Concession Agreement and the forest concession closed in 1963. Later, in the same year, the governor of Uthai Thani Province proposed the Royal Forest Department to proceed with the conservation of this forest. The Royal Forest Department agreed on the proposal as no invading was observed, and it was a very large forest territory (about 1,600 square kilometers) so it should be protected. Thereafter, the newspaper issue dated May 8, 1964 reported that during the local inspection in the Kaen Ma Krood sub-district in Ban Rai District, Uthai Thani Province, a deforestation area of 200 rai by the Karen ethnic group was spotted. The invaded land was within the E-Maad forest of the Huai Kha Khaeng, which was planned to be

included in the protected area project (total project area of 2,100 square kilometers). This information then was transmitted to the Royal Forestry Department, and subsequently the area was merged into the Thung Yai Naresuan Wildlife Sanctuary.

On August 29, 1965, Channel 4 broadcasted a documentary film exploring the wild buffalo. A journalist and staffs from Thai Plywood Company also joined the survey team. After broadcasting, the report was sent to the Royal Forestry Department. The report described that a large number of species and the amount of wildlife was observed in the Huai Kha Khang forest. Therefore, the establishment and operation of the Wildlife Sanctuary were actionable, as the Thai Plywood Company who owned the forest concession, agreed on canceling the concession.

On August 29, 1965, Channel 4 broadcasted a documentary film exploring the wild buffalo. A journalist and staff from the Thai Plywood Company also joined the survey team. After broadcasting, the report was sent to the Royal Forestry Department. The report described that a large number of species and a large number of wildlife were observed in the Huai Kha Khang forest. Therefore, the establishment and operation of the Wildlife Sanctuary were actionable, as the Thai Plywood Company, who owned the forest concession, agreed on canceling the concession.

On August 26, 1972, according to the Announcement of the Revolutionary Committee No. 210, the Huai Kha Khaeng forest, located in Lan Sak, Ban Rai District, Uthaitani Province, and Umphang District, Tak Province, covering an area of 1,019,375 rai or 1,631 square kilometers, was as designated as the "Huai Kha Khang Wildlife Sanctuary."

#### 3.1.2.2 Physical and Biological Characteristics

The topography of the Huai Kha Khaeng Wildlife Sanctuary is complex and mountainous. The highest peak is "Plai Huai Kha Khaeng peak" in the north of Tak Province at 1,687 meters above mean sea level. The west area is covered by dense forest. The altitude is between 200-1,687 m, and the mountain range aligns on the north and South with over 100 kilometers. It is a source of many tributaries including "Kha Khaeng creek," the most important creek in the protected area. The Kha Khaeng creek is 90 kilometers long, and drains across the middle of the sanctuary with constant flow throughout the year. In the eastern hemisphere, there are larger creeks, such as Huai Ai Yoh<sub>u</sub> which originates from Khao Nang Rum and Khao Kheow mountains; the Huai

Mae Dee sources from Nam Yen mountain then flow into the Kha Khaeng creek and Thap Sala creek. The stream flows from the mountains in Nakhon Sawan and it is a natural boundary of the Eastern Wildlife Sanctuary.

The Huai Kha Khaeng Wildlife Sanctuary has sufficient water sources; tributaries spread over the area, supplying water to wildlife throughout the year. During the dry season, although some parts of the tributaries might dry out, there are still sectional ponds that provide sufficient water to the area.

There are several saltlicks in the Huai Kha Khaeng Wildlife Sanctuary. The most important ones are the Pong Sub Kao and Pong Nai Soh, which are large water and soil saltlicks. Despite the large hooves for example of guar, banteng, sambar deer, barking deer, wild elephants, and wild boar that consume the saltlicks; predators such as tigers, leopards, clouded leopards, and Dholes are also found in the area. In the dry season, many species of birds are observed as well

Huai Kha Khaeng Wildlife Sanctuary surrounds diverse topography the elevation starting from 200 m. (MSL) the peak of more than 1,500 meters, the vegetation covers differ in each area:

Sueb Nakhasathien & Stewart-Cox (1991) summarized the unique characteristic of Huai Kha Khaeng Wildlife Sanctuary as follows:

- 1) Huai Kha Khaeng Wildlife Sanctuary contains the unique characteristic of Asia's biogeographic regions, including the Sino-Himalayan region, Indo-Burmese, Indo-Chinese, and Sundaic; thus, it is the centers of flora and fauna species. Additionally, the wildlife habitats and food sources are diverse, making Huai Kha Khaeng Wildlife Sanctuary an important gene bank for the tropical genus of at least 712 species.

- 2) At least 130 mammal species are listed. In this list there are 5 species of wildlife listed as the reserved animals in the Wild Animals Reservation and Protection Act, which are: wild water buffalo, serow, tapir, fea's muntjac and marbled cat.

- 3) There are 360 species of avian discovered on the site which is more than one-third of all bird species found in Thailand. Among all those, there are 11 endangered species listed in the Red Data Book of Thailand; which have been collected in the International Birds Areas (IBA) which are: Spot-billed pelican, Asian finfoot, white-rumped

falcon, Malaysian honeyguide, White-fronted scops owl, wreathed hornbill, rufous-necked hornbill, Brown-breasted flycatcher, Green peafowl and Old-world oriole.

4) Eighty one reptiles found in the sanctuary; including rare and endangered reptiles. There are also some species that have never been reported in Thailand such as; Burmese Leaf Turtle, geckos, Indian forest skink.

5) 37 Amphibian species discovered in the area.

6) There are 105 species of fish found; also, rare species in fresh water sources such as Grey Feather Back or Great White sheatfish.

### 3.1.2.3 Administrative Characteristics and Area Management

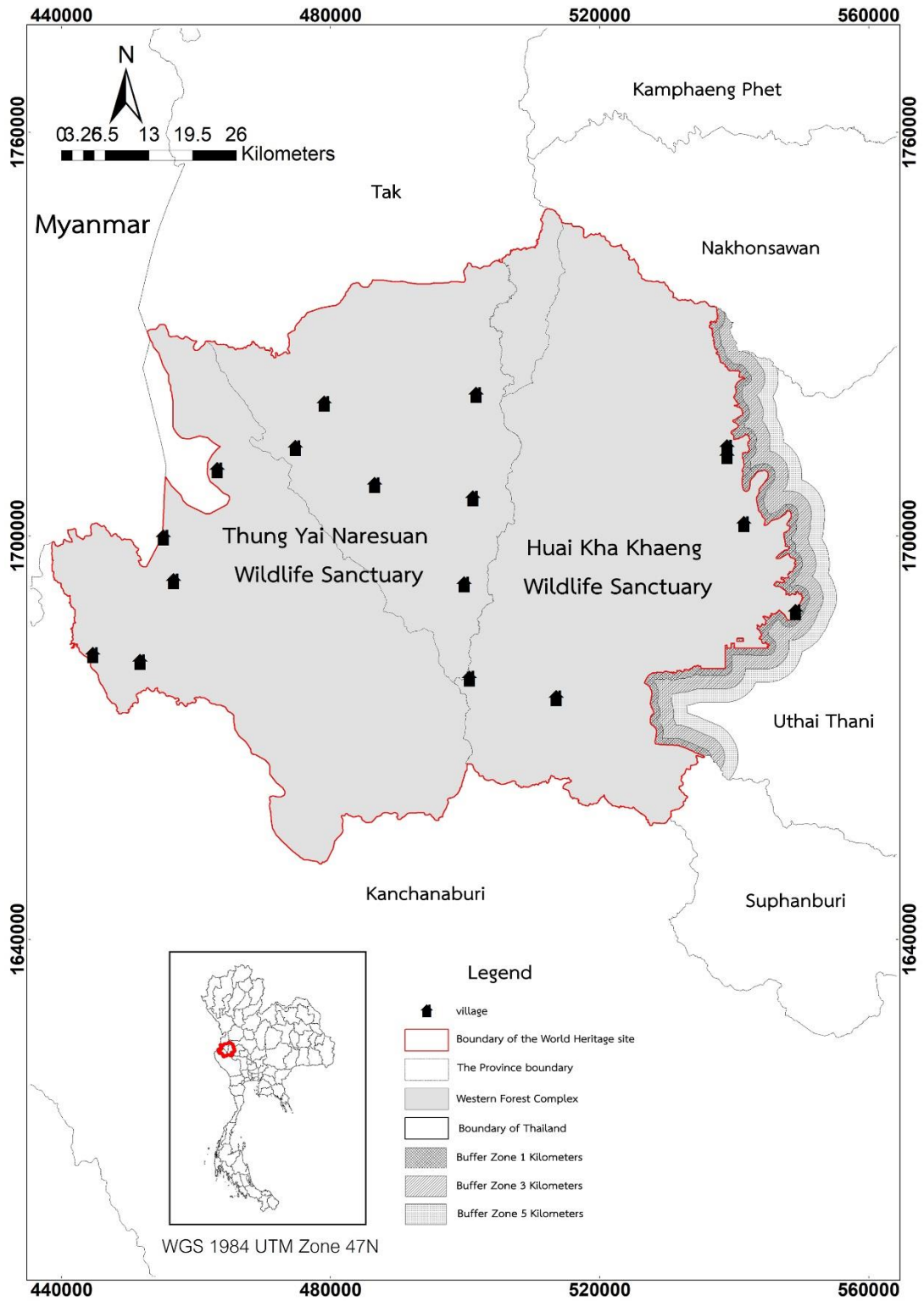
1) The Core Wildlife Conservation Zone is a conservation area for habitat and wildlife activities, such as nesting, breeding and baby feeding without any human disturbance. This area requires special protection and care; third parties can enter this zone only if necessary.

2) The Natural Resources Education Zone. This is an area that allows people to study nature, observe wildlife behavior, learn about tropical forests, and enjoy the natural scenery and other activities that are conducive to ecology and natural learning. Access to this zone must be approved by the Director of the Wildlife Conservation Division, and the number of visitors must not exceed the carrying capacity. The education zone is set at the top of Huai Kha Khaeng Wildlife Sanctuary, for example, around the Seub Nakhasathien Memorial, the Huai Mae Dee Environmental Education Center, and the Khao Hin Daeng Huai Nature Trail, which located close to the Huai Kha Khaeng head office. The trail is about 4.7 km near the eastern outer edge, and is open to people that are interested and with no permission needed.

3) The Wildlife Research Zone is a zone that allows researchers to conduct research for intensification of knowledge of the wildlife resources in the country. Construction is only allowed for long-term wildlife research, such as stables, ponds, artificial saltlicks, and wildlife observation towers. This area is located around the Khao Nang Rum Wildlife Research Station. This zone includes the Yang Dang valley, Huai Song Thang valley, Huai Chang Taii vally and Huai Luang valley; and the control area on the left side of Kha Kheang creek, from the Ai Yoh confluence. The research activities are supervised by the head of the Wildlife Research Station.

The Khao Nang Rum Wildlife Research Station is Thailand's first wildlife research station, located in the Nang Rum forest, about 16 kilometers to the south of the Huai Kha Khaeng Wildlife Sanctuary. The station is set up as a wildlife research facility for researchers from the National Park, Wildlife, and Plant Conservation Department, and researchers and external agencies as well as international researchers.

4) Buffer Zone; is the National Protected Forest and other areas around the eastern boundary of Huai Kha Khaeng Wildlife Sanctuary within a 5-kilometer radius (Figure 3.2). This area is to be preserved as forest yield and the recreation area. Agencies Responsible for areas are the Provincial forestry office, the Regional forestry office, the Royal Irrigation Department, Thai Plywood Company and the Department of Mineral Resources. The area must be managed without affecting the Huai Kha Khaeng Wildlife Sanctuary.



**Figure 3.4** Buffer Zone of Huai Kha Khaeng Wildlife Sanctuary

#### 3.1.2.4 Problems and Threats

The major problems that occur in Huai Kha Khaeng Wildlife Sanctuary are following:

1) Illegal logging and illegal harvesting. The illegal logging occurs in the part of the sanctuary that connect to community and accessible. There is also illegal harvesting of agar wood occurs in some area deeper in the forest. Most of illegal loggings are coordinated between villagers, and local influencers.

2) Poaching is considered the serious threats in Haui Kha Khaeng Wildlife Sanctuary due to losing of the important species of wildlife such as tiger and other endangered species.

3) Collecting the forest products, especially bamboo shoots and mushroom. Most of the villagers that live nearby the buffer zone are allowed to collect the forest product in agreed limited quantity for their household consumption. However, the problem occurs when the forest product become benefit and villagers want to sell them for their income. Other forest product collection than bamboo shoot and mushroom is not much seen because the income is not worth the risk of being arrested.

4) Forest fires. Prior to 1992, Huai Kha Khaeng Wildlife Sanctuary suffered a great deal from forest fires; more than 10 percent of the area was damaged. Thus, the Royal Forest Department established forest fire control station, preventing forest fires in Huai Kha Khaeng and the adjacent area.

## 3.2 Outstanding Universal Values

Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary has been declared as a UNESCO World Heritage Site since 1991. It is the first natural world heritage of Thailand; and the first of South East Asia. The site was justified for inclusion as World Natural Heritage in accordance with the natural property of outstanding universal value under section (2), (3) and (4) for the following description and reasons (Sueb Nakhasathien, & Stewart-Cox, 1990, pp. 47-49)

Selection Criteria (vii), be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological

processes in the development of landforms, or significant geomorphic or physiographic features;

Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries has stupendous natural beauty and enormous scientific values. It consists of many natural features and is the source of two major rivers. The area extends over the complex mountains between Shan State and Thailand. The ridges stretching from north to south with the highest peak of 1,500 meters (MSL). The lower tops level from 400 to 250 meters makes spectacular scenic. It is also the great habitat to numerous of wildlife.

Selection Criteria (iv), contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

Thung Yai Naresuan Wildlife Sanctuary and Huai Kha Khaeng Wildlife Sanctuary represent biological characteristics of the important of the mainland forests of Southeast Asia. Also, the variety sources of biogeography; Sino-Himalayan, Indo-Burmese, Indo-Chinese and Sundaic, and habitats of animals and plants from these 4 regions. This World Heritage Site combines a variety of important biological and ecological processes; such as Limestone karst ecology, mineral resource, wetland, sink-hole; and savanna grassland in Thung Yai Naresuan Wildlife Sanctuary is the greatest savanna in tropical forest of Southeast Asia.

Selection Criteria (v), contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries is home to numbers of fauna and flora. The biodiversity of this site includes; 120 mammals, 400 birds, 94 reptiles, 43 amphibians and 113 freshwater fishes. Further, there are also endemic species and 28 species of globally threatened species in this region. More than one-third of mammal species found in mainland of Southeast Asia can be found in this forest. That means this forest that can provide stability and safety for many species of wildlife in long-term.

### **3.3 Integrity**

Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries cover the very large area of 6,222 square kilometers. It is the source of two major rivers in the west part of Thailand. The size of this World Heritage is large enough to ensure the representation of habitat and ecological processes. This characteristic secures the area in maintaining biological diversity and reduce the impact from development project.

The World Heritage Site also contains the mainland virgin forested areas in Southeast Asia; that illustrates the dry evergreen forest ecosystems which rarely find on the equator. The development in the area make accessibility easier, hence more impact on wild hunting detected. This threat has currently been addressed by laws and management measures.

#### **3.3.1 The Area Size**

Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries is the very large forest land for inhabits for longstanding. It is also one of the few conservation forests in the region; that is large enough to be the safe inhabitants of wild animals including huge herbivores and predators in the dry evergreen ecosystem.

#### **3.3.2 Diversity and Integrity of Habitats**

1) Thung Yai Naresuan and Huai Kha Khaeng forests consist of almost all types of ecosystems that exist in Southeast Asia. Additionally, and there is a Savanna grassland or the Thung Yai, which is outstanding.

2) It is a combination of topography, altitude, rainfall, soil type and water environment with significant variation to create complex and fragile habitats and ecosystem.

3) Contains the most integrity and secure tropical ecosystem of Southeast Asia.

4) Being the source of two major rivers where their watersheds are still complete and well-sheltered; and rarely exist in Asian region.

### **3.3.3 Diversity Sources of Fauna and Flora**

1) The biodiversity in Thung Yai Naresuan and Huai Kha Khaeng forests are very excessive. Due to the diversity of habitats, the Wildlife Sanctuary covers a remarkable area that combines the four biogeographic zones of Southeast Asia. There are species that normally appear in the north, south, east and west regions appearing together in this area. This is a special feature that is not found anywhere else. There are also many endemic species of western forests and the Dawna-Tenasserim highland.

2) Wildlife sanctuaries are home to at least one third vertebrate fauna found throughout Southeast Asia. Correspondingly, there are two third of large mammals discovered in the region; which includes big birds and rare riparian and wetland species.

3) It is the endemic source, both plants and animal species; and may be the bank genetics for the hard-breeding species in the future.

### **3.3.4 Scientific Value**

1) Due to the variety of species found, Thung Yai and Huai Kha Khaeng forest are the important source for taxonomic studies; for the species to the sub-species level.

2) As the watersheds of these two streams are not disturbed; it could be the best place in aquatic species study. It is valuable not only in conservation and taxonomy study, but also the ecological impacts on aquatic species, affected by dam and commercial fishery.

3) The variety of species in this area is suitable for studying ecology and its relationships; including the forest dynamics and impact of the forest fire.

In summary, this forest is unique in terms of size, complexity and diversity. These distinctions result from the location and the undisturbed nature.

## **3.4 Justification for Inclusion to the World Heritage List**

In the process for gaining World Heritage status for Thung Yai Naresuan and Huai Kha Khaeng must pass the assessment of the Advisory Body, which evaluates

whether the property offered by the State Party has universal value; or based on the actual conditions and has completeness that meet the requirements of protection, and management. The responsible advisory body for assessing the world's natural heritage; is the International Union for Conservation of Nature (IUCN).

According to the IUCN Appraisal Report proposed to the World Heritage Committees (IUCN,1991), the important features that make Thung Yai Naresuan and Huai Kha Khaeng forest valuable and important are:

#### **3.4.1 The Area Size**

Thung Yai Naresuan and Huai Kha Khaeng forests is the biggest protected forest. The size is twice as large of Kaeng Krachan National Park in Petchaburi Province which is the largest national park; and the size is 3 times larger than Khao Yai National Park. The mainland protected areas in Southeast Asia with approximately the same size is the Taman Negara National Park, Malaysia. Thung Yai Naresuan and Huai Kha Khaeng is also part of the Western Forest complex of Thailand. Other conservation forests that are equally important are the natural buffer zone, on the north and south sides. And one side also contact with the forest along Myanmar border. Beside the vast area, Thung Yai Naresuan and Huai Kha Khaeng Forests are free of disturbance from various threats; and thus, have the potential to protect ecosystems of various animals and plants, are rich sources of forest types and species diversity; 77 percent mammals, 50 percent large birds, 33 percent vertebrate animals report for the total species of Southeast Asia. It is the only place Asia to find four species of wild bovids, 5 species of macaques, 6 species of hornbills, and carnivores more than elsewhere in the region. The biodiversity of this world heritage site is linked to the status of a type evergreen forest; which is tolerance to the dry condition.

#### **3.4.2 Biological Diversity**

The next reason is The Thung Yai-Naresuan and Huai Kha Khang forests; is a combination of four biogeographical regions, Sino-Himalayan, Sundraic, Indo-Burmese and Indo-Chinese. There are no conserved areas that will mix of four geospatial zones like appearing here.

The importance of interconnection of 3 biomes; Himalayan, Indochina, and Malaysia, is a wealthy forest area consisting of two main forest types: the first group is

the Evergreen forests in tropical zone, such as Hill evergreen forest, Tropical rain forest, Dry evergreen forest and Riparian forest, the second group is the Deciduous Forest, e.g. Mixed Deciduous Forest, Dry Deciduous Dipterocarp Forest, Grassland, limestone forest. There are also swamp forest, water source and saltlicks. The flora and fauna species here are the mixture of 3 biomes. Particularly, wildlife which is the focus of the area; for example, Tapir the wild animal that only be seen in the south of Thailand, Malaysia and Sumatra Island, Asian wild elephant, wild water buffalo, guar, banteng, tiger, leopard, clouded leopard, and marbled cat. It is also expected to have Sumatran rhinoceros remained in the area. The essential aves species detected in this area are; green peafowl, rufous-necked hornbill and other four types of hornbills and Red-headed vulture. Finding Long-tailed macaque, Silvery lutung, Phayre's leaf monkey and rhesus macaque is the evidence of transboundary of animal between the tropical and subtropical regions. Discovering the wide range of biodiversity, many endemic species within the vast area of complete forest; is the cause that Thung Yai Naresuan-Huai Kha Khaeng wildlife sanctuary has been inscribed as the Natural World Heritage.

The next characteristic is the potential of the area that facilitates the survival of wildlife. As there are enough space for living; the size of population of those big mammals such as wild elephants and predator like tigers, here are bigger than elsewhere. Thung Yai-Naresuan and Huai Kha Khaeng forest has been recorded for discovery the largest group of guars. The area also has the potential to accommodate large animal such as elephants

Two other important features that are particularly striking from other places; the large grassland that surrounded by savanna forest, which consists of cycads and palms. Another great feature is the large river valley plains compare to other riparian in Asian forest that are often threatened by deforestation or dam construction.

Therefore, it is clear that the Thung Yai-Naresuan and Huai Kha Khaeng forests; is outstanding and most valuable for natural source on the land forests of Southeast Asia. This effect comes from a location, and the biological fertility of the area.

### **3.4.3 The Integrity**

According to the evaluators at the time (IUCN, 1991), Thung Yai- Naresuan and Huai Kha Khaeng is sufficient in terms of area, scope and legal status. Although

the treatment area is separated and managed independently of each other; but both sites are coordinately under the same agency (the Royal Forest Department, at the time). The forest protection unit system is used for both wildlife sanctuary, but still lack of adequate equipment. While the rangers are will need training to enhance their work skills. The management plans are already prepared; the local area management projects on the buffer zone or buffer zone, which is supported by the World Wildlife Fund, has already started. The policy to evacuate communities who are illegal reside in forest areas has been defined and implemented in many areas. The officials participate and discuss in the meeting with society leaders regularly. People in the surrounding communities were hired as officers of the wildlife sanctuary. There are wildlife research stations that can provide academic support and are just one of the two wildlife research stations in Thailand.

Concurring to the evaluator's report (IUCN, 1991), it also stated that although the area has a positive factor support the management; but they are still faces threats like hunting, development of agricultural areas, and also dam construction that lead to forest invading. The deforestation along buffer zone has been increase significantly in the last decade. The mining activities near the sanctuary's edge in the west and south is also a threat to the area. Whereas, the biggest threat is the Nam Jone Dam construction project, which was suspended due to public objections. If this dam was constructed, the 75-kilometer dam will divide the forest into two parts; cause the loss of animals and plants species, as well as biodiversity defeated in long- term.

The results of the master plan for the management of both wildlife sanctuaries; provide information to clarify the importance of the geographic area, appropriate physical condition and the most valuable biological condition for being a natural world heritage site. The master plan of both areas can refer to Thailand's complete protection of the proposed site. The important measure is to protect the value of the area, the buffer zone management and public knowledge generation. The reference is taken from Nomination of The Thung Yai-Hau Kha Khaeng submission (Sueb Nakhasathien, & Stewart-Cox, 1990).

The information above, have described the universal outstanding value, the suitability and the important of the area. Therefore, the evaluation committees declared

that Thung Yai Naresuan and Huai Kha Khang forest is the Natural World Heritage, by passing criteria 2, 3 and 4 as follows.

Criterion 2, is an outstanding example of a significant geological process representation, biological evolution and human actions. Thung Yai Naresuan and Huai Kha Khaeng forest also represents the outstanding biome; that combine 4 biogeography regions (Sino-Himalayan, Indo-Burmese, Indo-Chinese and Sundaic); making this forest special characteristic, with diversity of species. Thung Yai forest is the best sample of savanna forest in the tropical forest of Southeast Asia.

Criterion 3, includes a great or rare and unique natural phenomenon, or contains areas where natural beauty is acceptable. Thung Yai Naresuan and Huai Kha Khaeng forest has outstanding natural attraction both physical and biological characteristics, and enclose great scientific value, including two major watersheds and other natural forests.

Criterion 4, includes important natural habitats. Thung Yai Naresuan and Huai Kha Khaeng forest hosted many animal and plant species, especially the species with important scientific and conservation value at international level. Wildlife in this forest can be spread without restrictions. It is home to numbers of endemic species and 28 globally threatened species, and at least one third of all wild mammals in Southeast Asia are visible here.

At the 15th Intergovernmental Panel Meeting on the Protection of the World Cultural Heritage, in Tunisia between December 9-13, 1991; the convention approved Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as a World Natural Heritage, following the criterion no 2, 3 and 4 which appears on Minute of Meeting (UNESCO, 1991)

## **CHAPTER 4**

### **RESEARCH METHODOLOGY**

This research, entitled *The Policy and Management Strategies of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as a World Natural Heritage Site*, is a qualitative study. The researcher designed the research methodology as follows.

#### **4.1 Research Design**

##### **4.1.1 Type of Research**

The objectives of this research were to study the historical background, current status, environmental situation, and related designated policies of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries, which is considered a single World Heritage Natural Site, in order to propose the management strategies and policies with respect to appropriate guidelines for its full potential as a World Natural Heritage Site for the sustainable interests of the nation.

In order to fulfill the aforementioned objectives, the qualitative research method was considered an appropriate methodology, as Suchat Prasith-rathsint (2011, pp. 44-45) indicated that qualitative research aims at seeking to gather an in-depth understanding of the objective or phenomena, or experiencing the natural setting of the objective of the study. Qualitative research encompasses many research methods to interpret the meaning of words, sentences, and various events. It corresponds to Supang Chantavanich's (2006, as cited in Inthira Kongsiri, 2014) notion that this is the study of social phenomena from the point of view of all real environmental dimensions in order to reflect on the relationship between phenomena and the environment. It is a pursuit of knowledge that emphasizes the importance of information, opinions, definitions of situations, as well as the determination of the values and ideals of the people associated with the phenomena. This kind of research often involves a long-term follow-up and mostly employs interpretative data analysis in order to reach inductive conclusions by using various elements and factors as a guideline for the research.

According to Cresswell (1998), qualitative study can be divided into 5 approaches or traditions: 1) biographical life history; 2) phenomenology; 3) grounded theory; 4) ethnography; and 5) case study. This qualitative research employed the case study approach as defined by Suchat Prasith-rathsint (2011, p. 111), who indicated that the case study approach is an analysis of a bounded system of events or conditions and their relationships. This is correspondent with Bogdan and Biklen's (2003) notion that this kind of research is a thorough study of one area or one particular subject, matter, or event that is of interest and is significant to be examined. Case study was used in order to gather related data and to identify the roles of stakeholders regarding the policy and management strategies in relation to Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as a World Natural Heritage Site from its formulation to implementation. Gathering in-depth data from a variety of data sources, i.e., observations, interviews, documents and audiovisual aids, was required for this research. The use of multiple sources is the primary strength of case study methodology (Stake 1995; Yin, Rothstein, Qi, & Liu, 2009). Holistic analysis together with the description of the context of the case involved are used to discover what really happens and to gain an insider's view of the case and thereby seeing the situation from the perspective of those involved.

## **4.2 Research Methodology**

The research methodology in this study is comprised of five steps: 1) determine and define the research questions; 2) determine the data-gathering and analysis techniques; 3) prepare to collect the data; 4) data collection; and 5) evaluate and analyze the data. Details are as follows.

### **4.2.1 Determine and Define the Research Questions**

The research contains 6 questions as detailed in 1.3. Answering the questions attained the objectives of the study which were: 1) to study the historical background of the World Natural Heritage Site of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries; 2) to study and analyze the current status, situations, and problems regarding the management of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries; 3) to propose strategic management measures based on technical points of view regarding

the World Heritage management of Thung Yai Naresuan and Huai Kha Khaeng Sanctuaries; and 4) to propose management policy for the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries with respect to appropriate guidelines for their full potential as World Natural Heritage Site for the sustainable interests of the nation.

#### 4.2.2 Determine the Data-Gathering and Analysis Techniques

In order to obtain sufficient data to accomplish the research objective, multiple sources of data were determined for gathering the data. Details are as follows.

**Table 4.1** Determining the Data-Gathering and Analysis Techniques of the Research

<b>Research Questions</b>	<b>Data-Gathering and Analysis Technique</b>
1) From 1991, after registration as a natural World Heritage Site, how did Thailand designate measures or management plans for the Thung Yai Naresuan and Huai Kha Khaeng World Heritage Site? And did it comply with the obligations under the World Heritage Convention?	Secondary data from documents such as Thailand's report to the World Heritage Convention (2003), together with in-depth interviews with the representatives at the top management level and managers of the field sites
2) Did the management framework of the responsible units match their assignment and mission in the management, protection, and preservation of the Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage Site? Should there be extra strategic units responsible for such a mission?	In-depth interview, focus group
3) Was there any change before or after the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries became a natural World Heritage Site?	In-depth interview, non-participatory observation

**Table 4.1** (Continued)

<b>Research Questions</b>	<b>Data Gathering and Analysis Technique</b>
4) What were the benefits gained by Thailand after the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries became a World Natural Heritage Site?	Secondary data from documents, in-depth interview, non-participatory observation
5) How can one designate management strategies for the effective and sustainable management of this Natural World Heritage Site so as to comply with the obligations under the World Heritage Convention?	Focus group discussion, participating observation, and in-depth interviews with the representatives of executive officers and technocrat groups
6) How should the Thai government designate policy in order to protect and preserve this World Natural Heritage Sites for their sustainable value and benefits	Focus group discussion, participatory observation and in-depth interview the representative of executive officer and technocrat group

### **4.2.3 Prepare to Collect the Data**

The researcher divided the data access and data collection into two categories, as follows.

1) Documents from various sources were studied and collected, such as individuals and printed matter, such as documents, journals, publications, and textbooks related to World Natural Heritage inscription and management, and information on the study area, the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries, and their management strategies and related policy. Some of important documents were the Nomination Proposal of Thung Yai-Huai Kha Khaeng Wildlife Sanctuaries to be a UNESCO World Heritage Site, the Management Plan of Thun Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary 1991-1996, Operational Guidelines of the Implementation of the Convention concerning the Protection of World Cultural and Natural Heritage, Thailand's periodic report on the implementation of World Heritage Convention Heritage Convention (2003), research papers on natural World Heritage

management, and success cases of World Natural Heritages and the factors affecting the success.

2) The researcher prepared the questions base on the objectives of the research for the semi structured in-depth interviews. The questions covered the following issues.

(1) In-depth information concerning the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries before inscription as a World Natural Heritage Site, particularly background information that included the sanctuary status before nomination, identification of the major problems, and justification for these two wildlife sanctuaries to be nominated as a World Heritage Site.

(2) What were the perspectives on the differences that the interviewees had seen in Thung Yai and Huai Kha Khaeng before and after its inscription? What had changed? Finally, what kinds of factors caused or influenced this change, especially in the following points: 1) management policy and strategy and 2) how the reshufflings at the executive level of officers in the government sector affected the management of this natural heritage site?

(3) For future direction, what do the interviewees want to see in the management of this World Natural Heritage Site? What are the suggestions or recommendations for Thung Yai and Huai Kha Khaeng's management as a World Natural Heritage siteSite?

3) Prepare the schedules and agenda for the focus group discussion which covered the following issues:

(1) Analyze the current status of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries' management and administration, and identify the major problems, threats, environment, and designated policies.

(2) Seek a guideline for the management and administration of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries toward an international standard as a World Natural Heritage Site.

#### **4.2.4 Field Data Collection**

The researcher used participation observation, coupled with informal interviews, for the field data collection in order to gain access to the study area. The research methods employed for the data collection were as follows.

4.2.4.1 Direct observation was first used to obtain information about the perception of Thai people about a natural World Heritage Site.

1) An in-depth interview is a conversation with an individual. This method helps to obtain detailed information according to the interview guide. The researcher attempts to gain the most reliable and complete data from the interviewees defined by the aforementioned interview guide. A friendly and comfortable atmosphere is selected for the interview. Notes, audios, and photos are taken with the interviewees' permission prior to each interview session and in-depth interview with the target group. A list of interviewees appears in appendix 2.

2) Focus group discussion was used for the exchange of opinions following the defined issues. This provided the best information from the interaction of the group members.

The focus group discussions were held in cooperation with the target group. The agenda of the discussion were planned and the speakers and target audience were determined. There were 3 focus group discussions held as follows.

The first discussion was held on 16 June 2014 at the Huai Kha Khaeng Wildlife Sanctuary. The agenda of the discussion focused on the perception of the public of the World Heritage listing, promotion and extension of awareness building, and public participation in World Natural Heritage management. The participants in the focus group discussion were:

- 1) Mr. Theerapat Prayurasidhi, Deputy Director General of the Department of National Parks, Wildlife and Plant Conservation ( position at that time)
- 2) Mr. Saksit Simcharoen, Head of Technical Group, Protected Area Administration Regional Office 12 (Nakon Sawan)
- 3) Mr. Pairote Limcharoen, Member of Wildlife Conservation Society, Thailand Program
- 4) Miss Ankhana Mekwilai, officer of the Wildlife Conservation Society, Thailand Program

The second focus group discussion was held on 30 June 2014 in Kanchanaburi. The topic of the discussion was “The Management of World Natural Heritage Management in Globalization.” The participants were:

- 1) Ms. Tuenchai Noochdamrong, Director of Wildlife Conservation Bureau, Department of National Parks, Wildlife and Plant Conservation.

2) Mr. Chatchawan Pittdamkham, former Director of Uthai Thani Natural Resources and Environment Provincial Office, former Director of Wildlife Conservation Bureau, and former Superintendent of Huai Kha Khaeng Wildlife Sanctuary

3) Mr. Weerawat Theeraprasart, President of Nature and Life Restoration Foundation, and former superintendent of Thung Yai Naresuan Wildlife Sanctuary, Kanchanaburi

4) Miss Buranakarn Jatupornpaisan, owner of a private tourism enterprise in Kanchanaburi

5) Mr. Surawut Jongsakul, Thairath newspaper reporter

The third discussion was held on 16 July 2014 at the Faculty of Forestry, Kasetsart University, Bangkok. The agenda of the discussion were focused on significance of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries. Recommendation of policy and management strategies of the World Natural Heritage site. The participants are:

1) The researcher

2) Mr. Anak Pattanavibool, Lecturer in the Faculty of Forestry, Kasetsart University

3) Mr. Chatchawan Pittdamkham, former Director of Uthai Thani Natural Resources and Environment Provincial Office, former Director of Wildlife Conservation Bureau and former Superintendent of Huai Kha Khaeng Wildlife Sanctuary

#### 4.2.4.2 Tools for Research

1) An interview guide for the in-depth interviews developed by the researcher was used to obtain information on the issues according to the research objectives. The open-ended questions were easy to understand and were adjustable to fit the interviewees. There were no leading questions. The entire interview guide was reviewed and corrected according to the recommendations of the experts and advisors.

2) A notebook to use for briefly noting the events or atmosphere as soon as the opportunity permitted upon finishing the observation or interview session, details were written down again. This expanded documentation was performed daily to prevent the loss of memory of the information. The records were organized by categories, so it was easy to examine and analyze them in the next step.

3) A small voice recorder was used for the interviews. Permission to record had to be obtained from the interviewees before each recording. The record was done openly. The information acquired from the interview session was not to be disclosed, relayed, or criticized to other parties according to the non-disclosure agreement.

4) A camera was used to take photos and to record videos.

## **4.2.5 Evaluating and Analysis of the Data**

### **4.2.6.1 Data Validity**

Data validity is performed after the data collection. The field data collection, either through observation or interview, must be accurate and reliable. It must not be distorted from facts. Data integrity in qualitative research requires the researcher to seek data accuracy, as well as to retain an ethical standard in the research since it derives from the interviewees and interviewers. The following are the data validity methods used by the researcher.

1) In order to ensure that the most accurate data were obtained, the triangulation technique as employed. The data obtained from the observations, interviews, and recordings were validated to see whether the integrity of the data met the research criteria and that each piece of data acquired matched the source. Therefore, this research used Denzin's data triangulation technique (Supang Chantavanich, 2003, p. 128, as cited in Inthira Kongsiri, 2014) to prove the integrity of the answers to the research objectives. The validity of the information sources regarding the "on time outlook" shows how the data change when obtaining them at different times. "On place outlook" shows how the data changes when obtaining them at different places. Lastly, the "on people outlook" shows how the data change when obtaining them from different people. This is done in order to attain the most truthful information. Reconciled data are presented to the advisor for examination in accordance with the scope of the study. Recommendations about data collection with some unexplained phenomena are considered by the researcher. A more comprehensive questionnaire was developed, as well as data collection on additional issues.

2) During the data-collection process, data validity was performed with the data provider. Each data collection requires a data analysis that clarifies its purpose. Data were classified in different folders to facilitate further

evaluation of its completeness, continuity of its acquisition, and needs assessment in detail as well. The researcher confirmed the reliability of the information through the selection of the involved parties in the case study. The data providers had an opportunity to evaluate, comment, and agree or disagree on the submitted summarized report. This included both initial data and the researcher's interpreted data.

3) The data gathered through interviews, various documents, and related research were used to provide additional information or detail to the data gathered from interviews. The comparison was done in order to calculate the agreements or disagreements about the data. If disagreement was found, then data validity was performed again with the data provider.

#### 4.2.5.2 Data Processing and Analysis

A systematic processing and analysis of the data for this research was carried out. Definitions of the data and connecting components were obtained, and data correlation was defined in order to understand the dynamics of the phenomena studied. After completing the key informant interviews, the data taken from each of them were analyzed in order to arrive at a conclusion. The researcher used many techniques in the data analysis for this research, as described below.

Content analysis is a research technique that attempts to explain the content of a message or document by using a systematic, objective-oriented qualitative method. Description emphasizes the content as it appears in the text. The researcher avoids making a prejudgment or adding personal opinions into the analysis and interpreting complicated connotations. Content analysis for this case study comprised three key features, i.e. systematic, objective, and theoretical frameworks. Data from the individuals' in-depth interviews were evaluated using content analysis through analytic comparison and comparative description of subjects with agreement or disagreement.

This research explains the historic background of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries, the perception and understanding of the public regarding World Heritage status, and their outstanding universal value and changes in the study area before and after World Heritage status was assigned. There is a need for wildlife sanctuary managers and operational staff for administrative support for working in the field. In order to avoid losing the meaning of the data and to truly reach conclusions without prejudice, key informants' quotations are presented in this research paper so that readers can clearly understand the sentiment of the data providers.

After completing the interviews with the key informants, the data taken from them were evaluated in order to arrive at a conclusion.

Below are the techniques used for the data analysis in this study by the researcher.

1) Categorization of the complete data obtained from documents, interviews, and observations into the right subjects

2) Classification of the data in a systematic form of variables; for example, historic background, environment, situation, problems, management guidelines, as well as the factors affecting those variables

3) Cause and effect linkages among the research findings

## **CHAPTER 5**

### **RESEARCH FINDING**

The study on the Policy and Management Strategies of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary as A World Natural Heritage Site, the researcher has studied the information based on the objectives and the questions set as follows.

- 1) To study a background of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries-the Natural World Heritage sites
- 2) To study and analyze the current status, situations, and problems regarding the management of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as Natural World Heritage sites

The two objectives mentioned have been set in order to answer the following research questions.

(1) After the nomination to be the Natural World Heritage Sites in 1991, how does Thailand designate measures or management plan for the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries and does it comply with the obligations under the World Heritage Convention?

(2) Does the management structure of the responsible or the involved parties are appropriated set or correspond to the mission in the management, protection, and preservation of the Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage sites? Should there be a particular responsible unit for such mission?

(3) Was there any change before or after the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries became World Natural Heritage Sites?

(4) What are the benefits Thailand gained from the nomination of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries as the World Natural Heritage Sites?

- 3) To propose strategic management measures based on technical points of view on the world heritage management of Thung Yai Naresuan and Huai Kha

Khaeng Wildlife Sanctuaries by answering the question; “How to designate the strategy management to effective and sustain preserve this Natural World Heritage site to comply with the obligations under the World Heritage Convention?”

4) To propose the management policy for the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries with appropriate guidelines and optimum capability covering its areas as the World Natural Heritage site in order to have sustain benefits of the country by answering the question; “How the government designate the policy to support protection and preservation this Natural World Heritage site in order to achieve sustainable value and benefits?”.

To answer the research questions according to its objectives set, the researcher presented the research finding upon the following structures.

## **5.1 Background of the Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage Sites**

The study on the background of the World Natural Heritage sites Thung Yai Naresuan and Huai Kha Khang Wildlife Sanctuaries has been done by documentary research and other sources for example newspapers, data of Thung Yai Naresuan Wildlife Sanctuary retrieved from [www.thungyaiwest.com](http://www.thungyaiwest.com), data retrieved from [www.seub.or.th](http://www.seub.or.th), Various document such as the Nomination of the Thung Yai-Huai Kha Khaeng Wildlife Sanctuary to be A UNESCO World Heritage Site prepared by Sueb Nakhasathien and Belinda Stewart-Cox (1990), related researches, as well as an in-depth interview with involved parties or people who had worked or involved in Thung Yai Naresuan Wildlife Sanctuary and Huai Kha Khaeng Wildlife Sanctuary area as follows;

Mr. Nopparat Naksatit, academician, a former officer of the Department of Forestry, interviewed on 12 July 2015.

Mr. Weerawat Theeraprasart, President of Foundation for Ecological Recovery, a former officer of the Department of Forestry as the superintendent of the Thung Yai Naresuan Wildlife Sanctuary during 1978-1995, interviewed on 22 September 2015.

Mr. Phong Leng-E, a former Director General of the Royal Forest Department (1992-1995), worked in the wildlife sanctuary division (1961-1964), head of the

wildlife management division (1970-1974), head of wildlife conservation bureau (1975-1979), interviewed on 16 December 2015.

Associate Professor Dr. Uthit Kutintara, Lecturer and a former Dean of Faculty of Forestry, Kasetsart University, interviewed on 13 March 2016.

Mrs. Rataya Chantian, Advisory Chairman of Sueb Nakhasathien Foundation, interviewed on 14 March 2016.

The data from documentary research indicates the background of the nomination of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries to be a World Natural Heritage as follow;

In 1986, the Electricity Generating Authority of Thailand (EGAT) had a plan to construct a dam for hydro power project blocking the upper Kwai Yai River around the Nam Choan hills where located in the area of Thung Yai Naresuan Wildlife Sanctuary, Kanchanaburi. This is part of the Mae Klong River development project with the collaboration between EGAT and the Royal Irrigation Department (RID). EGAT constructed the dam to store water and the RID constructed the barrage. Phrase 1, Srinagarin Dam has been constructed to block Kwai Yai River using as the large water storage in order to support an expansion project of Vajiralongkorn Dam in sending water to the lower land area along both sides of Mae Klong River about 1.8 million rai (2,880 square kilometre). Phrase 2, Khao Laem Dam has been constructed to block Kwai Noi River using as a large water storage to support the project to construct Nam Choan Dam on the upper Kwai Yai waterway which would be done in phrase 3 (Buergin, 2014).

Weerawat Theeraprasart (personal communication, September 22, 2015) stated that he had worked as the head of the Thung Yai Naresuan Wildlife Sanctuary since 1978. There was a survey in Nam Choan forest area in Thung Yai Naresuan Wildlife Sanctuary to construct Nam Choan Dam, per his perspective, based on his own experience working with Salakpra Forest Wildlife Sanctuary, Kanchanaburi in 1976, there was a construction of Sri Nagarin Dam where an extensive forest areas have been destroyed. Therefore, he disagreed on the construction of Nam Choan Dam. He said there should not have any construction of the large dam in the forest area because it would destroy the extensive forest area. As the superintendent of Thung Yai Naresuan Wildlife Sanctuary, he planned to protest this dam construction with cooperation of the

civil sector in Kanchanaburi. This protest campaign has been done continuously until it became a bigger unit and there was a collaboration with internal organization which is the International Union of Conservation of Nature (IUCN, 1991).

Weerawat added that the protest on Nam Choan construction has started in 1978 and it was clear in 1983 because the civil sector of Kanchanaburi has stepped in and the media also paid attention to the matter. The international level has started to know about the situation and paid attention to it and they understood that Thung Yai Naresuan is a rich forest. If there was a construction of Nam Choan Dam, the extensive forest area would have been destroyed. Of course, it would create both direct and indirect impacts. Moreover, there is the risk of the earthquake in the future in this area as construction the dam would spend up to 85,625 rai with the 370 meter-height, it would flood the center of Thung Yai Naresuan forest which would damage about 80,000 rai (128 square kilometers).

Nopparat Naksatit (personal communication, July 12, 2015), Weerawat Theeraprasart (personal communication, September 22, 2015), and Uthit Kutintara (personal communication, March 13, 2016) have mentioned common opinion saying that the protest on Nam Choan Dam construction, Sueb Nakhasatien, former superintendent of Huai Kha Khaeng Wildlife Sanctuary, played important role as well as the experience on the wildlife migration at Chiewlarn Dam has been brought to support this protest. The case study on the wildlife migration at Chiewlarn Dam has provided the important information regarding the impact from dam construction towards wildlife. Wildlife migration was unsuccessful. Survived wildlife from that particular migration were less than 10 percent.

The evidence proving on the important role of Sueb Nakhasatien on the protest of Nam Choan Dam construction has appeared on many sources. In 1987, he wrote the article about the impact of hydropower project from the upper Kwai Yai River or Nam Choan Dam in the Nature Conservancy Club Booklet, year 4, and issue 21 November to December 1987. The article has described as follows.

“The hydropower project from the upper Kwai Yai River (Nam Choan Dam) has direct impact to the lowland forest and the wildlife habitat where considered as the last conservation area of the country. An execution regarding the dam construction area is the small portion of the entire conservation area and it is an invalid reason to disprove because the Kwai Yai valley area considered as the central of the conservation area where its surroundings are the plant and wildlife species where the deep or an insight studies has not

yet been constructed. The studies in the past were only a sampling around this outer area- the area considered as the central of the Thung Yai Naresuan which cannot be a representative of the particular area. Diversity of plant and wildlife species in the Kwai Yai waterway have not yet been studied in details as well as it is the area where a self-development and spread out genetics are combined. A distribution to the other area of the forest should have been taken extra care as it is valued for conservation for further studies because it cannot be replaced with any other sources. Currently, the conservation forest area have been destroyed as it reflected from the destroying rate at 1.5 million rai (2,400 square kilometres) per year. Therefore, in 1985, the forest area of the country left now is only 29 percent.

The prospective reservoir of the project would divide the forest into two parts. The big wildlife such the elephant, bison, and tapir where season migration may not be happened as they must stay in the particular limited area. The area around the reservoir would have different forest conditions and the plants from the rich lowland area of Kwai Yai waterway particularly the area where the wildlife traveling through in the past would have been separated. The wildlife would be unable to walk across the forest of the mountain as they had done before. Therefore, the wildlife have been limited according to its existing population, habitat, and food areas. The genetic development by a mixed- animal breeding between the external animal groups would have been limited. Consequently, the animals would breed among themselves and their babies would have common genetics or characteristics which would impact to the genetic development and it would be extinct in the end.

Loss of the archeology and historical sites of the country. The excavation is unable to define the duration if the excavation in the extensive area is required. Unlike, dam construction where the limitations in studies are different. Moreover, currently, the conservation area have been less destroyed. The insight study or survey prior to its implementation in some particular development area have been constructed.

Loss of the source of fish breeding and the natural fish habitat. Construction Nam Choan dam would block diversity of fish to spawn and feeding the newborn fish at the upper Kwae Yai. Therefore, many fish would have no place to spawn as well as the fish that live around the flowing water and required the high oxygen which usually available at the upper Kwae Yai and its branches. This fish would become distinct in the end because

the water in the reservoir is still and deep, and less oxygen. Moreover, the deep study on the fish species that are difficult to find have not yet been conducted and there might have new fish species that have not yet been discovered in any other places of Thailand.

Loss of reptiles and amphibians' habitats. The study on the dam construction in the place that would have a direct impact has not been conducted rather than employment a comparison of the surrounded area instead. Therefore, loss of these types of animals may greater than the estimation.

Loss of the quantity of the water at the upstream of Kwai Yai because Nam Choan dam must store partial of the water to support the hydro power project. Therefore, this part of the water must be always stored and cannot be spend in other purposes.

Loss of natural richness as the dam would block plenty useful dregs which are useful for the plants or farming. Therefore, the water left from the hydro power project would not have useful dregs and inappropriate for the farming area at the end of the river. This would make the farmer to use more fertilizer in farming instead.

Thailand has designated the preservation area according to the forest policy about 14 percent but currently only 9.4 percent of the entire country has been assigned. Moreover, some preservation areas have been disturbed, destroyed, and occupied by the people as well as the development project on the dam construction and the large reservoir in the particular area. This circumstance conflicted with the government policy because the valuable resources are destroyed even it is minor when comparing to the entire area but it is the activity directly performed by the government agencies.

The secondary forest that have been replaced the natural forest where were destroyed by the government activities or disturbed by the people should have not called a forest because the natural forest where the perfect element of its ecology system cannot be replaced or regrown. Additionally, the natural development to be the forest takes century therefore, it cannot be replaced by the secondary forest.

In summary, building Nam Choan dam would have both direct and indirect impacts to the resources. No matter how good of the resolutions have been set but about 140 square kilometers of the upper Kwai Yai river would be lost. The plant and animal species at the flooding area would be lost. Moreover, the indirect impacts may cause from road constructions to be used at the center of the project, building way to move woods out from the reservoir and many other illegal activities.

Weerawat, one of the leaders in the Nam Choan dam construction protest was the person who persuaded Sueb Nakhasathien to use knowledge and academic information to support this protest. During the protest, there was an exhibition about Thung Yai Naresuan to educate people in Kanchanaburi Province to acknowledge on the value of Thung Yai Naresuan forest.

The source that reflect to see the participation of the people in the protest on Nam Choan dam construction could be found in the article on “24 Years Sueb Nakhasathien” (Thung Yai Naresuan Wildlife Sanctuary, 2011) which referred to the quote of Mr. Boonsong Chansongratsami, the leader of conservancy club Kanchanaburi who accepted that Sueb Nakhasathien is an inspiration for a seller like himself to become a preservationist. He mentioned about Seub who presented the studies on wildlife migration in Chiewlarn Dam as follows.

Some night in the exhibition, Sueb presented the slide about the migration of the wildlife in Chiewlarn Dam. He described and made the wildlife I saw in the slide became lively, the animals cried and asked for their life. They hurt and sounded out together with Sueb. From that day, I saw the fighter soul in order to protect wildlife from the Seub’s wording which I had never seen from anybody else. (Chiewlarn Dam, personal communication, September 28, 2515)

This article tells about the important role of Sueb Nakhasathien as the person who prepared the academic information to protest on the construction of Nam Choan dam at that time.

Weerawat added that “Sueb walked into Thung Yai forest about 5 days and 5 nights to seek for information. Once he conducted the air survey, he found 50 gaurs living together which was the biggest group that have ever discovered in Thailand. This discover is the evidence proving on the richness of this forest. Sometime he has chance to take the journalist into the particular area where Nam Choan dam would be built. He told the journalist on the lesson of Chiewlarn dam that in the future this particular area would become a lake, the high hills would become the islands because of flood. He also told about how the animals would die from the dam construction. The last week prior to the decision making of the government whether to construct the dam, Sueb had worked very hard until

he could finish the report about “An evaluation on helping the left-over wildlife in Chiewlarn dam”. This report has much influence to the government consideration as it was the first time to study about the impact the wildlife encountering from dam construction.”

The consecutive protest of the people made the government delaying the Nam Choan dam construction project. The cabinet resolution on April 4, 1988 decided to adjourn this project.

### **5.1.1 Nomination of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries to be a UNESCO World Heritage Site**

#### **5.1.1.1 Nomination Process**

Weerawat Theeraprasart, Nopparat Naksatid, and Rataya Chantaratian (personal communication) have mentioned on the situation that the government has the decision to delay the Nam Choan dam construction project at that time did not make the people trust on the government as they did not believe that the government would not take this issue into consideration again in the future. Therefore, people sought for the long-term resolution in order to make sure that Thung Yai Naresuan forest would be protected. The idea to nominate this forest to be the natural world heritage site has been taken to account.

Weerawat added that the situation at that time Thailand has participated in the ratification to the world heritage convention on 17 September 1987 where the Office of the Natural Resources and Environmental Policy and Planning acts as the coordinator in the international level of this convention. This office also acts as the secretary to the National Committee on Cultural and Natural World Heritage Sites Protection where is under the responsibility of the Fine Arts Department and Department of Forestry. After being a member of this convention, according to its mission saying that Thailand must propose or nominate the cultural and natural world heritage sites under section 3 of the convention which indicated that “it is obligation of the member to classify and analyze the difference of the properties as mentioned in section 1 and 2 under their own territory” and according to section 11 which indicated the following.

1) If possible, the members must propose the list of properties which are part of the cultural and natural heritage sites located in their territory and it

is appropriate to mark in the list as mentioned in paragraph 2 under this section. Supporting report or documentation about the location and value must be attached.

2) Refer to the list of the cultural and natural heritage sites proposed by member according to paragraph 1 under this section, the world heritage committee would consider and mark in the “World Heritage List” where update and publication would have been done continuously. The “World Heritage List” must be the cultural and natural heritage sites as indicated in section 1 and 2 of this convention where must be outstanding according to the international criteria set. The current of world heritage list must be public to the world at least two years.

Weerawat and Nopparat added that during the protest, the academician on forestry including Weerawat Theeraprasart, Nopparat Naksatid, Dr. Naris Bhumiphakphan, and Sueb Nakhasatien had collected data about the value and the importance of the Thung Yai-Huai Kha Khaeng to present as the academic document and public to make people to realize the importance of the forest and animals and they should have been protected and preserved. The nomination of the Thung Yai Naresuan to be the UNESCO Natural World Heritage site, there is agreement between the academician and the World Heritage Committee Thailand to combine Huai Kha Khaeng forest as it would add value of the area in terms of the diversity of biology and ecology systems. Sueb has been assigned to gather and write the report to present according to the procedure of the Nomination of The Thung Yai-Huai Kha Khaeng Wildlife Sanctuary to be a UNESCO World Heritage Site. Sueb collaboratively worked with Ms. Belinda Steward-Cox, a British researcher who came to conduct research in Thailand at the time.

Dr. Uthit Kutintara (personal communication, March 13, 2016) added that the National Economic and Social Development Plan Volume 6 (1987-1992) indicated that Thailand must provide a model scheme of the conservation forest management including 6 wildlife sanctuaries and 17 national forests. At that time, the model scheme has been conducted for the three conservation places which are 1) Huai Kha Khang Wildlife Sanctuary, 2) Khao Yai National Park, and 3) Tarutao National Park. Therefore, these three places are ready to propose as the tentative list to be the World Heritage Sites. Later, the model scheme of the conservation forest for Thung

Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries have been implemented during 1991 to 1996.

Mr. Phong Leng-E (personal communication, December 16, 2015), a former Director General of the Department of Forestry, stated that the Nomination of the Thung Yai-Huai Kha Khaeng Wildlife Sanctuary to be a UNESCO World Heritage Site is the consecutive collaboration of the Wildlife Conservation Bureau, Royal Forest Department where is responsible to the management of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries together with the head of the field conservation unit including Weerawat Theeraprasart, superintendent of Thung Yai Naresuan Wildlife Sanctuary, and Sueb Nakhasatien, superintendent of Huai Kha Khaeng Wildlife Sanctuary. This management received well cooperation from the involved parties which are the Office of Natural Resources and Environmental Policy and Planning, Ministry of Science and Technology (currently is Office of Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment), and the World Heritage Committee Thailand as this nomination must follow the procedures indicated under the convention of the protection of the cultural and natural world heritage sites.

#### 5.1.1.2 Justification for Nomination

##### Significance of the site

Thung Yai Naresuan and Huai Kha Khaeng has been declared as the Natural World Heritage site according to the criteria number 2-4 where the description of the radical and criteria in the Nomination of the Thung Yai-Huai Kha Khaeng Wildlife Sanctuary to be a UNESCO World Heritage Site are mentioned as follows.

##### 1) Size

Thung Yai Naresuan and Huai Kha Khaeng forest is the biggest legally conservation forest in Thailand and Southeast Asia encompassing more than 12,000 square kilometres which is the best forest as a long-term habitat for living thing.

Moreover, it is one of the conservation forests in this region where is large enough to be the secure habitat for the large herbivore and carnivore in the dry evergreen forest ecology.

## 2) Diversity and Integrity of Habitats

(1) Thung Yai Naresuan and Huai Kha Khaeng forest consists of almost all types of the existing diversity land forest ecologies in Southeast Asia because there is Savanna forest or Thung Yai which is outstanding significant.

(2) There is a combination of geographic feature, height, rain level, land feature, and marine living thing where have significant variant and are the cause of habitats and different ecological systems which are vulnerable and complicated.

(3) There are examples of the tropical evergreen forest ecology systems of Southeast Asia where considered as the most secure and integrity.

(4) There are two water sources where the river basins are still rich and protected which is difficult to find in Asia currently.

## 3) There Are Variety of Seeds and Animals.

(1) The diversity of species in Thung Yai Naresuan and Huai Kha Khaeng forest is relatively high because of many different habitats. The wildlife sanctuary covers the outstanding area where is the combination spot of the four bio-geographic land features of the Southeast Asia. Some of the species where usually found in the north, south, east, and west are also can be found in Thung Yai and Huai Kha Khaeng forest which is very special and cannot be found in any other places. Moreover, many of the endemic species of the western forest also can be found here.

(2) Wildlife sanctuary is the place that the animals that have at least three parts of spins/ backbones of the entire land animals discovered in Southeast Asia can be found here. There are two-third of the large mammals are discovered in this region. Moreover, there are large birds and marine species in the river basin and wetlands where is rare sight to find. The overall situation, about 28 species are at the world violation which are 14 types of mammals, 9 types of birds, and 4 types of reptiles.

(3) Full of local plants and animals species where in the future might be the center of heredity of either plant or animals that is difficult to breeding.

#### 4) Scientific Values

(1) Thung Yai Naresuan and Huai Kha Khaeng forest is the important place for taxonomy study either at the type or sub-type levels because of the diversity species found.

(2) The river basins area of the two streams from this forest are not troubled, therefore it is an appropriate place for marine species study. The river basins area is not only valued for conservation and taxonomy studies but also for the ecology system study of the marine species where are impacted from the dam construction and the commercial fishing.

(3) The diversity species found facilitates the ecology study and its relations and the forest dynamic or the impact from fire.

In summary, this forest is outstanding in terms of size, complexity, and variety. These significant outstanding are because of its location and the environmental conditions of the habitat without disturbance.

The procedure of the Nomination of The Thung Yai - Huai Kha Khaeng Wildlife Sanctuary to be a UNESCO World Heritage Site, the advisory body must evaluate the properties list proposed by the members has international outstanding value or not, it is in the real conditions or not as well as it is under the need of protection and management or not. The International Union for Conservation of Nature (IUCN) is responsible for evaluation of the Natural World Heritage site.

According to the evaluation report of Thung Yai Naresuan and Huai Kha Khaeng forest done by IUCN (1991) that has been presented to the World Heritage Committee in the 15<sup>th</sup> Meeting conducted on 9-13 December 1991 in Turkey, it presented the significant value and importance of this forest as follows.

##### 1) Size

Thung Yai Naresuan and Huai Kha Khaeng forest is the protected area of Thailand with the largest size comparing to other conservation forests. It is a double size of Kaengkrachan National Park in Petchaburi. It is the largest national park where accounted as 3 times of Khao Yai national park, and it is similar to Taman Negara National Park in Malaysia. Thung Yai Naresuan and Huai Kha Khaeng forest is part of the conservation forest area of the west forest of Thailand. There are other forests where are important in terms of being the natural barrier or buffer zones in the

north and south. The west side is adjacent to the natural territory of Myanmar. Apart from its wideness, it is the forest without any violations. Therefore, it is appropriate to be a habitat for animals and plants in the different types of the ecology systems where combined the different forest types existing in Southeast Asia. Moreover, it is the pool of the diversity animal species. The mammals found in this forest is accounted as 77% of the entire species found in Southeast Asia, the large bird found is 50%, and the land vertebrates is about 33%. This forest is the only place that the four types of wild bovids are found, five types of macaques, six types of hornbills, and the number of carnivores are greater than other places in this region. This diversity of biological has related to the environment condition as a dry evergreen forest where can survive under the driest condition.

Next reason, Thung Yai Naresuan and Huai Kha Khaeng forest is the combining of the four biogeography elements in one place which are Sino-Himalayan, Sundaic, Indo-Burmese, and Indo-Chinese. None of the forest could be found this combination.

Next outstanding feature is the capability of the area that facilitate the living of the wildlife therefore, the greater wildlife population can be found. Its large size is enough for the large herbivores to live for example wild elephant, and carnivores i.e. tiger. Moreover, the biggest group of bison has been found and recorded. The forest size has capability to be the habitat of the large animals such as elephant.

The other two outstanding features are the savanna forest where full of cycads and palms and different from the other forests in the region as well as the large river basin where the other forests in Asia usually disturbed by wood cutting or dam construction.

Therefore, it is explicit seen that Thung Yai Naresuan and Huai Kha Khaeng forest has most outstanding value among the land forests in Southeast Asia. Such outstanding features obtained from its location, without disturbing conditions, and the integrity of the biological of the area.

## 2) Outstanding Universal Value

The committee (IUCN, 1991) has stated that Thung Yai Naresuan and Huai Kha Khaeng has enough integrity either geographical area or legal

conditions. Even the two wildlife sanctuaries are separated in terms of management but they are under the same department which was the Department of Forestry (at that time) where they could cooperate for practices. Both places have set the protection forest unit to take care and protect the forests but the equipment is inadequate and staff are required training on extra operation skills. The plan has been prepared as well as the buffer zone management plan which would receive supports from World Wildlife Fund also has been started. The policy to migrate the community illegally located in the forest area has been started in many areas. The staff of the Wildlife Sanctuary conducted the meeting with the leader of the villages to consult on preservation regularly and people who live in the villages around the forest are hired as the staff of the Wildlife Sanctuary division. There is a Wildlife Research Station which is one of the two stations available in Thailand, can provide support in terms of academic.

Refer to the report of committee (IUCN, 1991), it is also mentioned that even there are positive factors to support its management, the hunting still happening as well as the development land for farming and the dam construction project are the channel for people to disturb the forest area. The forest in the buffer zone has been destroyed over the past decades as well as the mine outside the western and southern forest is still the threat of the area. The most crisis threat is Nam Choan Dam construction project which has been stopped earlier because of the strong protest from the people. If Nam Chaon dam has been constructed, the 75-kilometre large reservoir would have been divided into two parts which would cause of the loss of plant and animal species as well as the diversity of the biological in a long-term. Apart from that, the flooding area would also destroy the habitat of the rare and almost distinction species of animals the Southeast Asia. Such mentioned rare species are otter and peacock.

The model scheme of the two Wildlife Sanctuaries indicated the importance of the forest area in terms of geographical and physical conditions well as the biological condition which has outstanding value for being the Natural World Heritage site. Most importantly, the model scheme the two wildlife sanctuaries proved that Thailand has the protection plan toward this particular forest area. The significant measure is to preserve the value of the area, to manage the buffer zone, and to educate people where Sueb Nakhasathien and Belinda Stewart-Cox (1990) have cited in the

documentation of the Nomination of The Thung Yai-Huai Kha Khaeng Wildlife Sanctuary to be a UNESCO World Heritage Site.

The aforementioned information describes on the outstanding universal value, the importance, and the appropriateness of the forest. Therefore, the IUCN agreed to nominate the Thung Yai-Huai Kha Khaeng Wildlife Sanctuary to be a UNESCO Natural World Heritage Site as it matches with the criteria numbers 2-4 as follows.

Criteria no. 2-Thung Yai-Huai Kha Khaeng Wildlife Sanctuary represents an outstanding and unique biome in mainland Southeast Asia, combining Sino-Himalayan, Sundaic, Indo-Burmese, and Indo-China biogeography elements, with the flora and fauna characteristics of all four zones. The property encompasses significant ecological and biological processes, including habitats, mineral licks, wetlands, and sink-holes. The savanna forest of Thung Yai is the most complete and secure example of Southeast Asia's dry tropical forest.

Criteria no. 3-Thung Yai-Huai Kha Khaeng Wildlife Sanctuary contains biological features of outstanding natural beauty and of great scientific value, including many natural features and two major watersheds with their associated riverine forests.

Criteria no. 4-Thung Yai-Huai Kha Khaeng Wildlife Sanctuary has exceptional species and habitat diversity. The property supports many wild plant and animal relatives of domestic species, with many reaching the limits of their distributions in the sanctuary. In addition to many regional endemic species and some 28 internationally threatened species, at least one-third of all mainland Southeast Asia's known mammals are represented within the boundaries of the property.

Later, the meeting of the committee between the governments in the 15<sup>th</sup> Cultural World Heritage Protection held in Tunisia during 9-13 December 1991, there was a decision to accept the Thung Yai Naresuan-Huai Kha Khaeng to be the Natural World Heritage Site upon the criteria no. 2-4 as recorded in the meeting minutes (UNESCO, 1991) as follows.

“The committee agreed to accept Thung Yai Naresuan-Huai Kha Khaeng Wildlife Sanctuaries as the Natural World Heritage site and encouraged Thailand to immediate perform according to the management plan of the two wildlife sanctuaries as well as the projects in the buffer zones. Moreover, the committee also

admired Thailand regarding the dismissal of the Nam Choan Dam Construction project as well as to address their concerns that some suggestion might have impact towards the integrity of the forest area along Myanmar boarder site. The committee recorded that Myanmar may propose the nomination of the adjacent forest to be the Natural World Heritage site as well after they become the member under this convention.”

Dr. Uthit Kutintara (personal communication, March 13, 2015) stated that an acceptance and nomination of the Thung Yai-Huai Kha Khaeng to be the World Natural Heritage site occurred because of the presentation the outstanding features of the area which are the junction of the unique biome including Sundaic, Sino-Himalayan, Indo-Burmese, and Indo-China biogeography elements as well as the example of the diversity of plants and animals species. Moreover, the presentation on the possibility of the management plan is also support this agreement. While the Khao Yai National Park, IUCN stated that the property presented are not yet integrity and has not yet been covered large enough area which would not be sustainable. There should be combination of the joint conservation area in order to have integrity of its ecological system as well as the Tarutao Marine National Park also has not enough outstanding universal value, its management plan was not reliable to be under the condition of without the human disturbance or destroy.

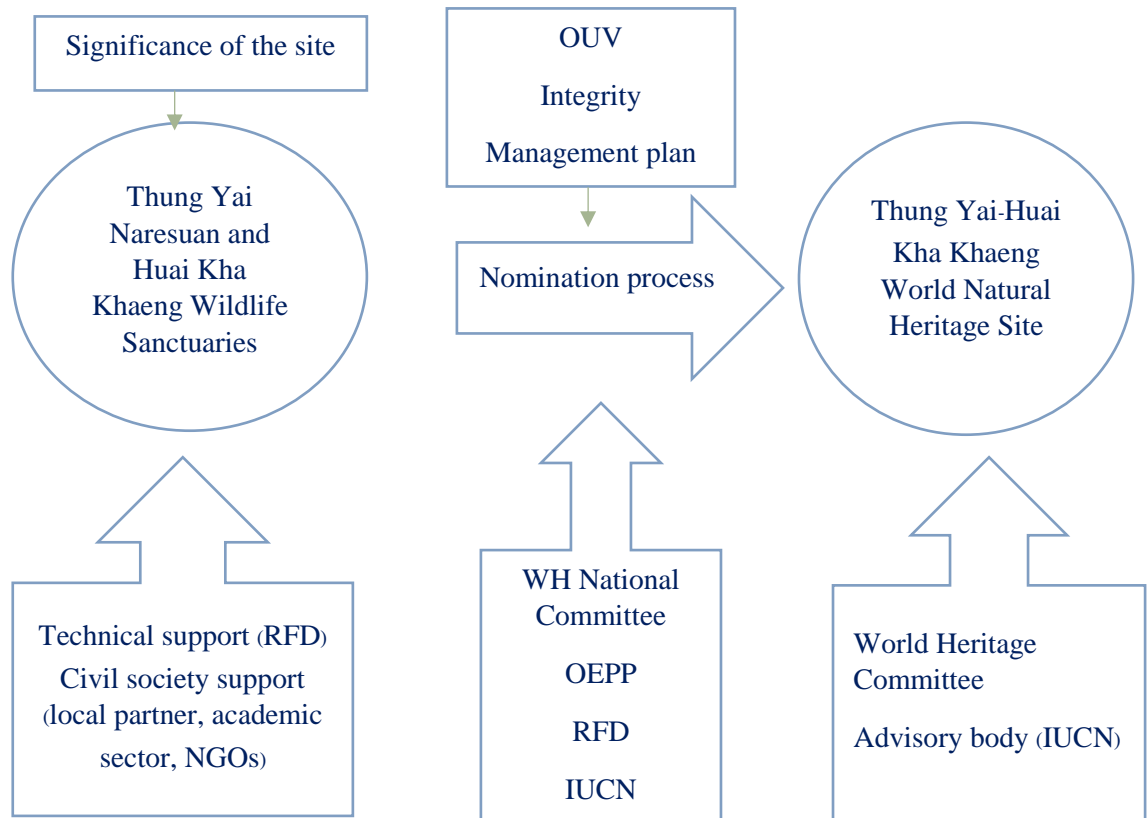
Later, there was adjustment on the criteria to nominate the Cultural and Natural World Heritage site. Therefore, Thung Yai Naresuan-Huai Kha Khaeng also has been adjusted according the criteria number 7 and 9-10 as follows.

Criteria no. 7-The property outstanding example represents the important revolution of the past, and the place represents the important era such as reptile era which reflected the development on a natural diversity on earth or ice era where the human and environment have been extensively changed.

Criteria no. 9-The property occurred from the natural phenomenon which are special and difficult to find i.e. occurrence, or features, or the natural beauty, the density of plant and animal population, as well as the combination of the cultural and natural elements.

Criteria no. 10-The property is the habitat of the animal species and rare species or endangered plants and animals but they could survive in this area as well as

the ecology system where combined the integrity of plants and animals species and are interested by the world.



**Figure 5.1** Justification and stakeholders in nomination of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries to be A World Natural Heritage

**Note:** OUV- Outstanding Universal Value

RFD - Royal Forest Department

OEPP - Office of Environment Policy and Plan

IUCN - International Union for Conservation of Nature

NGO - Non Government Organization

## 5.2 Management after the Declaration as the Natural World Heritage Site

The researcher has studied the management after Thung Yai Naresuan-Huai Kha Khaeng has been nominated to the Natural World Heritage Site from the many sources of the Department of National Park, Wildlife and Plant Conservation such as

the Periodic Report Volume 1 (2003) and Volume 2 (2010), the model scheme of the management of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries year 1991-1996, the management plan of Uthaitani and Kanchanaburi provinces, report, academic letter, laws, and related government decision, as well as from an in-depth interview with involved people including administrative group of the Department of National Park, Wildlife and Plant Conservation which are the Wildlife Conservation Bureau, the Conservation Management Area 3 (Ban Pong) where is responsible for the management of the Thung Yai Naresuan Wildlife Sanctuary, the Conservation Management Area 12 (Nakonsawan) where is responsible for the management of the Huai Kha Khaeng Wildlife Sanctuary. Moreover, the interview has been conducted with the people who work for Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries including the head of wildlife sanctuary, and officers who work at each wildlife sanctuary unit, officers from related agencies which are Office of Natural Resources and Environmental Policy and Planning (former Office of Natural and Environment Plan), Office of Natural Resources and Environment Regional Office Uthaitani and Kanchanaburi, academician, lecturer from Faculty of Forestry, Kasetsart University, as well as the private development organization such as Sueb Nakhasathein Foundation, World Wildlife Foundation, Foundation for Ecological Recovery, Freeland Foundation, Wildlife Conservation Foundation, and with the private sector which are entrepreneur and media.

The performance after the nomination to be the Natural World Heritage site are as follows.

### **5.2.1 Mission**

Thailand as a member of the convention on the world heritage protection has obligation to preserve the world heritage as mentioned in measure 5 stating that “to build the trust on the cultural and natural world heritage sites under its boundary would have been protected, preserved, and continuously presented the effective measure, members must perform all appropriate activities as much as they can. Such activities are as follows.

- 1) Member must designate the general policy to ensure the cultural and natural heritage site would have benefits for people, the protection, and preservation of

the cultural and natural world heritage must be described in the government management plan.

2) Under the sovereignty, if there is no responsible unit or organization, it must have been established at least one unit or organization or more than that to operate activities in protection and present the cultural and natural world heritage sites with appropriate staff and working process in order to achieve the goal set.

3) Develop the scientific research procedures and techniques to utilize in the operation as well as to advance the capability of the country to have readiness in resolution toward threat on the cultural and natural heritage sites.

4) Designate appropriate legally measures, scientific techniques, management technique, and financial management in order to classify the detail of protection, preservation, conservation, proposition, and the maintenance of the cultural and natural heritage sites.

5) Support the establishment of the development or training center in the national or regional levels in order to support the protection, preservation, and proposition the cultural and natural heritage sites as well as promote to have research for such particular mission.

### **5.2.2 Operation of Thailand**

After the Thung Yai Naresuan-Huai Kha Khaeng Forest have been declared to be the Natural World Heritage site, Thailand has the following management.

#### **5.2.2.1 Management Structure and Responsible Unit**

Chatchawal Pisdamkham (personal communication, June 17, 2015) , a former Superintendent of the Hai Kha Khaeng Wildlife Sanctuary (1991-1995), a former director of Wildlife Conservation Bureau, Department of National Park, Wildlife, and Plant Conservation (former Royal Forest Department) (2010-2011), and a former director of the Office of Natural Resource and Environment Uthaitani (2013-2014) had provided information about the situation of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries after the nomination as follows.

In 1991, Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries Natural World Heritage site, the status was only the conservation forest of Thailand which are Thung Yai Naresuan Wildlife Sanctuary and Huai Kha Khaeng Wildlife

Sanctuary under the Wildlife Conservation Division, Natural Resources Conservation Bureau, Royal Forest Department. It is under the Wild Animal Reservation and Protection Act B.E.2535 (1992) which complies with the World Heritage Convention measure 5 (2) and (4).

Later in 2002, there was a revolution of the government system, therefore, the Royal Forest Department has been divided into two department which are the former Royal Forest Department, and the Department of the National Park, Wildlife, and Plant Conservation. This revolution made the form Wildlife Conservation Unit has been promoted to be the Wildlife Conservation Bureau under the Department of the National Park, Wildlife, and Plant Conservation. Moreover, Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries which is under the Wildlife Conservation Bureau ( former Wildlife Conservation Unit) has been moved to be under the Department of the National Park, Wildlife, and Plant Conservation. However, change in terms of the structure this time has no impact to the practice of the sub-working unit or the Wildlife Conservation Regional Office because the obligations are unchanged, under the same law, as well as no structural development of the sub-working unit, staff remain unchanged, therefore they can continue perform their assignment as usual.

In 1999, the Office of the Natural World Heritage has been established (Royal Forest Department, 2002) obtaining the supporting fund from World Heritage Conservation Foundation. The committee approved and assigned the Office of the Natural World Heritage to responsible for making management plan, and control the operation in the natural world heritage sites as well as to be the coordination office for any operation related to the World Heritage Convention (Royal Forest Department, 2002).

Later in 2002, before the revolution of the government system, the Royal Forest Department has established the Wildlife Conservation Development and Extension Center where is the source for natural studies, source of information about the world heritage, and promote the participatory of the people. Later the name has been changed to the Nature and Wildlife Education Center with the same mission.

Moreover, Khao Nang Rum Wildlife Research Station is located within the Huai Kha Khaeng Wildlife Sanctuary. It is established to be the support the management unit by conduction research. Its responsibilities are to provide information

in terms of scientific for management purpose which complied with measure no. 5(3) of the convention about the development and study the scientific process and methodologies for its operation as well as to promote the capability of the country to have readiness for resolution for the danger or threat towards the cultural and natural heritage sites.

Therefore, Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries has the organization where are responsible for management, protection, and supporting unit under the law. However, the support unit such as Nature and Wildlife Education Center, and Wildlife Research Station are available only at Huai Kha Khaeng Wildlife Sanctuary but not in Thung Yai Naresuan Wildlife Sanctuary.

#### 5.2.2.2 Implementation of the Proposed Management Plan

Assoc. Prof. Dr. Uthid Kood-in stated that the implementation according to model scheme of the management plan of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries can be summarized as follows.

1) Establishment of the conservation forest unit in Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries in order to increase the number of units where is the main resource for the protection and preservation mission.

2) Allocation additional fund and staff in order to increase its capability in management of the area.

3) Migration of the people who live in the forest area to live within the provided location outside the forest in order to recover the forest condition and decrease the risk or other type of threat towards the forest area.

4) Combine the rich forest as part of the wildlife sanctuary

5) Manage the buffer zone forest outside the Huai Kha Khaeng Wildlife Sanctuary

6) Publication

After the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries became the Natural World Heritage sites, Thailand has established the department to manage on the world heritage forest and perform the practice according to the management plan (Royal Forest Department, 2002). Refer to the documentation prepared for the seminar on the opinion about the management plan for the Natural

World Heritage Site of Thailand on 11 December 1996, Uthid Kood-in summarized the progress of the operation according to the management plan as follow.

1) Increasing the protection measure for the world heritage site by increasing the forest conversation unit in the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries. During 1992-2012, there were 8 additional forest conservation units covering the area of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries.

Later, in 2014, there were additional 16 forest conservation units as shown in table 5.1 below.

**Table 5.1** Number of Forest Conservation Unit in the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries

Year	Number of Forest Conservation Unit		Total
	Thung Yai Naresun Wildlife Sanctuary	Huai Kha Khaeng Wildlife Sanctuary	
1992	19	17	36
1997	21	20	41
2002	23	21	44
2014	27	23	60

**Source:** Department of National Park, Wildlife, and Plant Conservation, 2016.

2) Allocate additional fund and staff in order to increase the capability in management in the area. According to the management plan, there must be 24 staff per forest conservation unit, it has not yet completed currently. However, the number of available staff are adequate for its obligation.

3) Migration of the people who live in the forest area to live in the provided area where located outside the forest area has been done in order to recover the forest condition and to reduce the risk or threat that might happen toward the forest. This migration has been done successfully. Currently, there is no people live in the Huai Kha Khaeng Wildlife Sanctuary. People settle the villages called Pong Chang Puerk

and Khao Hin Daeng. Villagers in these two villages are the primary cause of the hunting and tree cutting. All of them have migrated to live at Pong Samsib Village where located outside the forest area. People had well cooperated with this migration and it was done according to the plan set without any conflict.

4) Extension of the Thung Yai Naresuan Wildlife Sanctuary which encompassing about 44,720 hectare in 1990 (Figure 5.1).

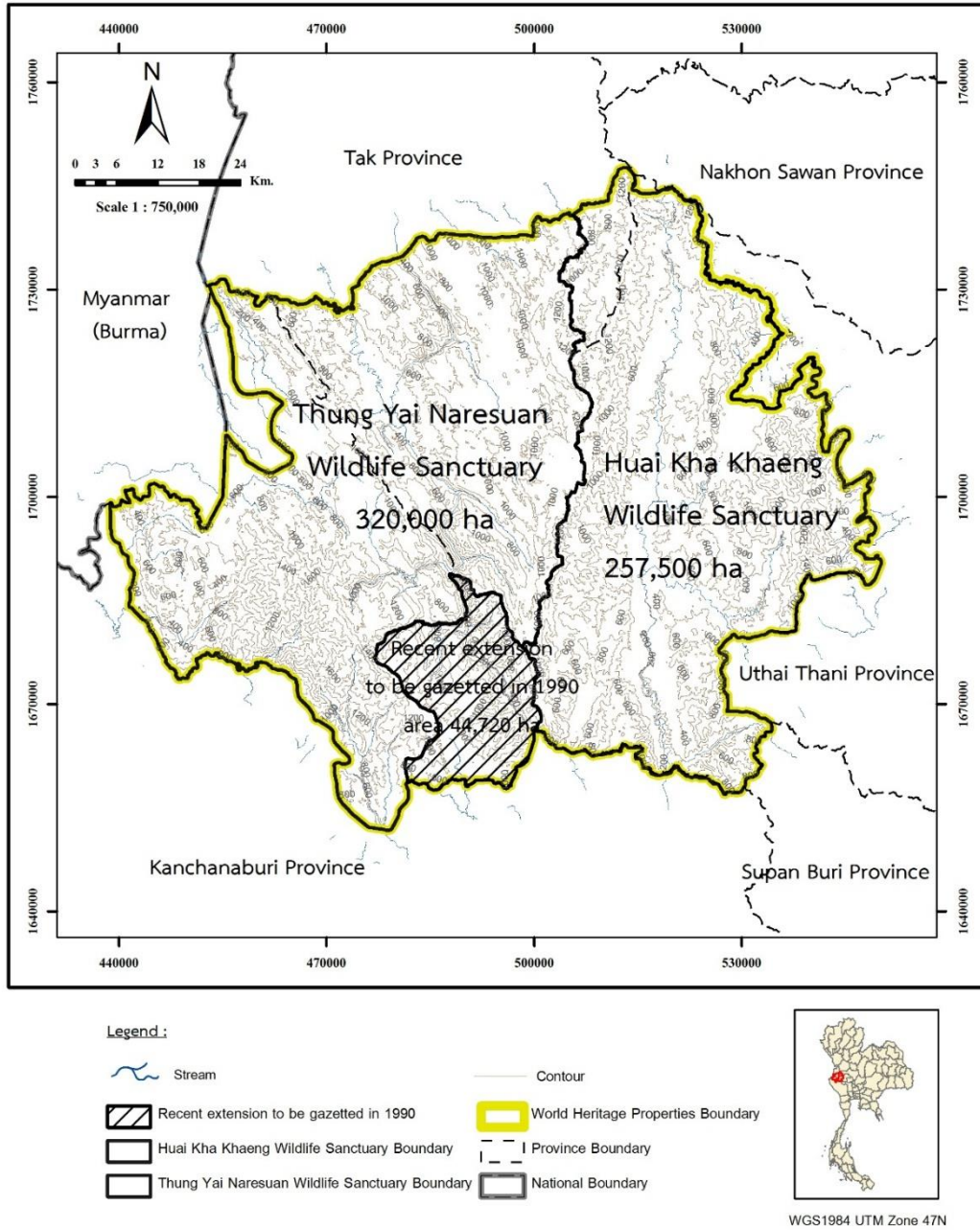
**THUNG YAI - HUAI KHA KHAENG WILDLIFE SANCTUARY**

Thung Yai Naresuan Wildlife Sanctuary 320,000 ha.

Huai Kha Khaeng Wildlife Sanctuary 257,500 ha.

Extension of Thung Yai Naresuan Wildlife Sanctuary 44,720 ha.

Total surface of the World Heritage Property inscribed 622,220 ha.



**Figure 5.2** Extension of the Thung Yai Naresuan Wildlife Sanctuary

#### 5) Management of the buffer zone forest outside the Huai Kha Khaeng Wildlife Sanctuary

The management on the buffer zone outside the Wildlife Sanctuary obtained well support from Uthaitхани province. A five-kilometer long of the buffer zone has been assigned from the Huai Kha Khaeng Wildlife Sanctuary boarder. This buffer zone has been assigned to be the development area as well as to develop the villages alongside of the buffer zone about 26 villages including growing forest.

Uthaitхани province is alert and realizes on this matter. The committee for this operation has been set-the provincial governor acts as the Chief committee and proposed the management plan to the cabinet which is the big plan and required great fund. The outstanding activity is growing forest alongside the buffer zone (Somphot Maneerat, personal communication, September 15, 2014). The activity has been done about 600 rai with the collaboration of the private sector and Sueb Nakasathien Foundation. This growing forest cannot be done consecutively alongside of the buffer zone as some part some the buffer zone are the farming area of the people (Uthit Kutintara, personal communication, March 13, 2016). After 2002, the project has stopped as lack of supporting fund (Somphot Maneerat, personal communication, September 15, 2014).

#### 6) Publication

The publication on the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries that became the Natural World Heritage sites has led by the Ministry of Agriculture and Cooperatives which is the original affiliation of the Royal Forest Department. There was a command to use the government channel for example radio station to public and educate people about the World Heritage as well as to public through the local administration units. There was a proposal to the cabinet in order to assign the 9<sup>th</sup> of December as the World Heritage Day of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries Natural World Heritage Sites and there is cerebation every year.

##### Activities for the publication

- 1) Conduct seminar for involved parties to have common understanding
- 2) Conduct training for people living alongside with the buffer zone to create understanding

- 3) Public inside and outside institute for example school, government offices, and private sites
- 4) Conduct the exhibitions
- 5) Prepare public media for example manual guideline for nature trekking, slide with sound, records from the slide, making the demonstration of the trekking path.
- 6) Conduct the exhibition in remembrance of Sueb Nakhasathien Anniversary of his pass away
- 7) Public and mass media such as growing tree alongside of the check-point area, and growing tree held by the Rotary Foundation
- 8) Support the conservationist in the area such as support the establishment of the Natural Resource Conservation Club Uthaithani which obtain supporting fund from Sueb Nakhasathien Foundation and private sectors

### **5.3 The Situation/Status after Becoming the Natural World Heritage Site**

#### **5.3.1 Attentiveness of People**

After the Thung Yai Naresuan-Huai Kha Khaeng became the Natural World Heritage Sites, there was attentiveness of the social trend. There were the publication and provide the information for people to know through diversity of channel. At the same time, there was the implementation according to the management plan. The priority are the management of the buffer zone outside the Huai Kha Khaeng Wildlife Sanctuary and to increase the forest conversation unit for both sites and to public.

Later, in 1995, the government has appointed the 9<sup>th</sup> of December to be the “Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries Natural World Heritage sites Day” in order to encourage people to realize on the importance of the forest area and to preserve its integrity for the next generation.

#### **5.3.2 Development on the Structural Management to Support the Change**

- 1) Establishment of the World Heritage Center

After the declaration to be the Natural World Heritage Site of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries, the Royal Forestry Department (at the time), has established the World Heritage Center to responsible for management on the world heritage sites as well as to coordinate with related agencies

or organization regarding the world heritage convention. The World Heritage Center Office located in the Huai Kha Khaeng Wildlife Sanctuary, Uthaithani where the fund for the mission management has been consecutively allocating since 1997.

2) Establishment of the Wildlife Conservation Development and Extension Center

Later, in 2002, the Royal Forestry Department ( at that time) , has established the Huai Kha Khaeng Wildlife Conservation Development and Extension Center (later, in 2014, it has been changed to Nature and Wildlife Education Center). This center is assigned to responsible for the mission on promotion and publication the knowledge about wildlife conservation and preservation Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries.

### **5.3.3 Technical Assistance from External Organization**

After the declaration to be the Natural World Heritage Site of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries, the Royal Forestry Department (at the time), has collaborated with the external organization asking for assistance on financial and technical management towards this natural world heritage sites from the Huai Kha Khaeng Wildlife Sanctuary, the Eastern Thung Yai Naresuan Wildlife Sanctuary, and the Western Thung Yai Naresuan Wildlife Sanctuary. The details are as follows.

#### **5.3.3.1 The Western Forest Complex Ecosystem Management (WEFCOM)**

The Royal Forestry Department in collaborative with Denmark government have conducted the Western Forest Complex Ecosystem Management (WEFCOM) during 1999-2003 in order to promote the integration management of the forest and Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries. The project aims to get participation from people particularly from the villages around the forest area. The scientific knowledge or technique has been applied to this management which considered as the new way management that not only management on the buffer zone but also on the other forests connecting to the natural world heritage sites. The management has been done as a holism-all elements within the same ecological system must be sustainable survive under the four management principles as shown below.

- 1) All western forests become one
- 2) Use the same preservation plan for the entire forest area
- 3) Preserve to have a sustain value of the western forest
- 4) Open for people to take part in preservation activities under

the principle of “Forest is the property of all Thai people”.

Chatchawal Pisdamkham and Anarak Phattanawiboon (personal communication, September 12, 2015) mentioned about making the proposal of the Western Forest Complex Ecosystem Management (WEFCOM) project to ask for supporting fund from Danish International Development Agency (DANIDA). This project was successful and there was the second phrase later on. The project enable the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries to develop the database for a serious protection. Technology has been used for patrol activity and it also collected database for making management plan. Moreover, making relation between community, providing knowledge, and making participatory of people, planning for the future management plan to cover the extensive operation.

#### 5.3.3.2 Joint Management of Protected Areas in Western Forest Complex (JOMPA)

After WEFCOM ended in 2003, the Department of National Park, Wildlife and Plant Conservation and Sueb Nakhasathien Foundation obtained the support from Danish International Development Agency (DANIDA) which aimed to manage the entire legally western forest area where the center is the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries. The problem that has been take for this management is the people who live in the forest area changed their lifestyle by applied the capitalism from external which effected to the natural resources. JOMPA is accepted based on the principle that people, forest, and animals are able to live. Therefore there is collaboration between three parties including government officers, community, and Sueb Nakhasathien Foundation. This project aimed that all parties would have participation in preservation and are the stakeholders for advantage and disadvantage that might have. All parties must have common understanding and set the goal as mentioned below.

- 1) Agreement on the utilization zone of the community and accepted by all parties

- 2) Set the committee and regulation for resource management within the utilization area of the community and collaborative work with staff in the area in order to protect and preserve the natural resources around the community
- 3) Design the activities which will help to promote the lifestyle, occupation, and culture of the people under the self-satisfaction economy and comply with the lifestyle of the villages in the forest area
- 4) Community and staff in the forest area must have positive attitude in working together

### **5.3.4 Government Management Policy in the Present**

The management policy from the government that applied to the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries can be summarized as follow.

#### **5.3.4.1 Management Measure**

##### **Establishment of the Thailand World Heritage Office**

In 2005, Dong Phrayayen-Khao Yai Forest Complex has been declared to be the second Natural World Heritage site of Thailand where encompassing area of the conservation forest in the northeast including Khao Yai National Park, Tab Lan National Park, Srakaew, Pang Sida National Park, Srakaew, and Dong Yai Wildlife Sanctuary, Buriram. The World Heritage Office has been established for the management mission of the Dong Phrayayen-Khao Yai Forest Complex Natural World Heritage Site. The role and responsibility are similar to the World Heritage Center that have been earlier set for Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries.

Department of National Park, Wildlife and Plant Conservation has developed the management structure to comply with world heritage convention and to management the forest area under its responsibility especially the establishment of the World Heritage Office and cancel the Command Letter No. 2433/2555 dated 3 December 2012 to establish the Natural World Heritage Office and assign the responsibility to the government officers and the officers who work for the Natural World Heritage Office to management the overall management to comply with the World Heritage Convention. The new Command Letter No. 113/2558 dated 16 January 2015 told to establish the Natural World Heritage Office operates under the Department

of National Park, Wildlife and Plant Conservation and directly report to General Director of the Department of National Park, Wildlife and Plant Conservation. The authority that has been assigned are as follows.

1) Manage the Natural World Heritage site to comply with and support the World Heritage Convention and the world heritage committee

2) Supervise, control, support, and make the strategic plan on the management of the ecosystem forest, and the management plan as well as reports to support and promote the natural world heritage management including providing framework and document to nomination the property to be the world heritage site

3) Promote the research study, develop knowledge, and transmit culture in the area of the natural world heritage site as well as conduct the database on management of the natural world heritage sites

4) Promote and perform the publication activities to educate and provide information and knowledge on Thailand Natural World Heritage Sites

5) Be the coordinating center for the management mission of the Dong Phrayayen-Khao Yai Forest Complex Natural World Heritage Site, Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries, the preparation forest area to nominate to be the natural world heritage site-Kangkrachan forest, and other forest area under this preparation, as well as to coordinate with other related parties or organizations

6) Coordinate and operate the international cooperation both for bilateral and multilateral levels, as well as international agreement including international convention on the natural world heritage site management

7) Promote and support the operation on training, fields trip, and meeting in order to increase the capability and effectiveness of the personnel involved with the management of the natural world heritage site

8) Perform or support the operation of involved parties or organization according the assigned missions with the following element;

(1) General administration has the following authorities;

(1.1) Operate on the personnel management, propose appointment letters including the command letter about the Natural World Heritage Center

(1.2) Supervise and take care on documentation activities to comply with the law of the Office of the Prime Minister B.E. 2526 (1983) and the revised version as well as control on other related activities including working hour of the officers, permission for business trip to comply with the related regulation and disburse of budgets to comply with the management plan and budgets plan.

(1.3) Make and control the management plan and budget as well as prepare an annual budget request form or letter proposal from the government and from other sources.

(1.4) Control, take care, and provision all required equipment for the Natural World Heritage Office.

(1.5) Coordinate and operate to conduct meeting, seminar, training, or fields trip in regards of the natural world heritage management in specific area/property.

(1.6) Coordinate with the operation units in the fields and all related parties regarding the management activities as well as promote on the publication information of the specific natural world heritage sites.

(1.7) Perform activities or support the operation of the related organization or upon given assignment.

(2) Planning and strategy division has authority to perform the followings;

(2.1) Study and analyze to defy an effective management guideline

(2.2) Support, promote, and create the management plan, strategic plan, and other plans for the natural world heritage management

(2.3) Report the performance upon the certification of the operation of the office, division, department/bureau, and operate the activity about the Public Sector Management Quality Award (PMQA)

(2.4) Coordinate, follow up, assessment on performance, and write operation or performance report

(2.5) Perform activity or support operation of the involved organization or upon given assignment

(3) Research and development knowledge division has authority to perform the followings;

(3.1) Support, promote, conduct the academic research and develop the new innovation for the management activity

(3.2) Comment on the report about the analysis on the impact of the environment in the property or in the operating area of the natural world heritage sites

(3.3) Prepare and develop the information, database, as well as the website related to the management

(3.4) Support, promote, and conduct activity to transmit knowledge and innovation knowledge on the management activity

(3.5) Perform activity or support the operation of all related organization or upon given assignment

(4) International coordination center has authority to perform the followings;

(4.1) Prepare document to nominate the conservation property to be the natural world heritage, prepare periodic report and report on the situation upon request

(4.2) Coordinate with related organization in all sectors both domestic and international for integration development on the effective management, provide support to comply with the world heritage convention, and the world heritage committee

(4.3) Coordinate and perform activity in bilateral and multilateral level, agreement, and international organizations in order to support and promote the effective management in the specific property

(4.4) Perform activity or provide support to the operation of the related organization or upon given assignment

(5) Natural World Heritage Center- Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries has authority to perform the followings;

(5.1) Support, promote, and perform activity according to the management plan of the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries to comply with world heritage convention on the world heritage protection

(5.2) Coordinate with organization and related organizations about the management of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries

(5.3) Promote the participatory, publication, and transmission knowledge in all activities

(6) Dong Phrayaen- Khao Yai Complex Forest- World Heritage Office has authority to perform the followings;

(6.1) Support, promote, and perform activity according to the management plan of the Dong Phrayaen-Khao Yai Complex Forest effectively and to comply with world heritage convention on the world heritage protection

(6.2) Coordinate with organization and related organizations about the management of Dong Phrayaen-Khao Yai Complex Forest

(6.3) Promote the participatory, publication, and transmission knowledge in all activities

#### 5.3.4.2 Laws

1) The Office of the Prime Minister regulation on the Convention Concerning the Protection of the World Cultural and Natural Heritage 2016.

As Thailand is the member under the Convention Concerning the Protection of the World Cultural and Natural Heritage 1972 and must operate to comply such convention. The Thai government operates on the protection and preservation on natural world heritage site therefore to have effective policy in terms of the management and coordination between the related government agencies to preserve the outstanding universal value of the property, on 31<sup>st</sup> March 2015, the government has decision to draft the regulation Convention Concerning the Protection of the World Cultural and Natural Heritage year ... (not yet assigned) which emphasizes on establishment of the national committee on the world heritage convention to perform activities related to defy the policy, framework, and guideline, and the further plan of the nation on the performance according the Convention Concerning the Protection of the World Cultural and Natural Heritage as proposed by the Ministry of Natural Resource and Environment to the cabinet for further consideration. Later, General Prayuth Chan-ocha, the Prime Minister has signed to certify this regulation on 8<sup>th</sup> January 2016 and it

was announced in the Government Gazette dated 12<sup>th</sup> January 2016 to effective the Convention Concerning the Protection of the World Cultural and Natural Heritage year 2016 since 13<sup>th</sup> January 2016 onward and the Prime Minister acting under this announcement.

#### 5.3.4.3 Government Policy Related to the World Natural Heritage Management

There are government policy related to the World Natural Heritage management as follows:

The Strategic Roadmap on the Implementation of the Convention concerning the Protection of World Cultural and Natural Heritage, which is a part of Ministry of Natural Resources and Environment's strategic plan on Thailand's Protected Area Management, determines the management of protected area which are listed as World Natural Heritage and those to be listed as following

1) Roadmap of protecting the Dong Phrayayen-Khao Yai from being listed as a World Heritage in danger. The aim of this roadmap is to stop illegal harvesting of Siamese rosewood and other valuable plant in the forest complex in order to maintain the outstanding universal value of this World Natural Heritage Site

2) The Roadmap of nominating the Kaeng Kracharn Forest Complex to be listed as a World Natural Heritage site, which focus on moving forward the nomination of Kang Kracharn Forest Complex to be the World Heritage

Both roadmap are considered an urgent plan to be achieved by 2018

## 5.4 Management Problem

The research finding indicates that there is not many problem that considered as threat of biological resources of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries. The most constraints are the administrative and management issues.

According to the result of discussion amongst the managers of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries which held on 17 July 2015, the following issues were raised as a major problems:

1) There is no clear cut policy from government and the ministerial level. This causes the lack of direction for various managerial units in the World Natural

Heritage site which comprises of three wildlife sanctuaries, Wildlife Breeding Station and Natural and Wildlife Education Center to follow. There is no common platform where these managerial units can take part and move forward to achieve the same goal. The management performance of each managerial unit depends on capability of the manager in determining the action plan. It is on risk of non-successful management of the whole area of the Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage site. This can be a serious issues in future if the current situation would not been changed to better environment.

2) The World Natural Heritage Office that located in the Department of National Parks Wildlife and plant Conservation cannot properly function due to some unappropriated designed function and organization structure. The is no effective coordination to link these office to the World Natural Heritage site and other involved agencies. In addition, there is not enough administration resources allocated in this office: lack of personnel and budget. This office is unable to move forward any policy or plan of the World Natural Heritage site.

3) There is no common goal toward the international standard of management as this area is a World Natural Heritage site for the different managerial units in the site to implement and achieve together. The standard of management goal is in country level, not international standard as it determined.

4) There is no government policy related to Thung Yai Huai Kha Khaeng Wildlife Sanctuaries World Natural Heritage Site management and administration. The aforementioned strategic roadmaps are only for protecting the Dong Phrayayen Khao Yai Forest Complex from being listed as a World Heritage in danger, and for nomination of Kaeng Kracharn Forest Complex to be listed as a World Natural Heritage.

5) There is not enough knowledge and research work to be used for science-based management. There is only one Research station in Huai Kha Khaeng Wildlife Sanctuaries. It is suggested to allocate one more research station in Thung Yai Naresual Wildlife Sanctuary area.

6) The major threats to forest and wildlife such as forest encroachment, illegal logging, poaching, illegal mining and forest fire are still existing.

7) The staffs in field operation still need training and capacity building.

8) The effective monitoring system is recommended to be together with effective management plan.

9) Enhancing community participation and buffer zone management are needed.

## **5.5 Overall Performance**

The overall performance on management of the after the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries became the Natural World Heritage Site can be summarized as follows.

1) The legal status of the property is unchanged. Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries is the forest under The Wild Animal Reservation and Protection Act B.E.2535 (1992) which is the effective law of the country and it makes the property to preserve its integrity.

2) Internal management-set up the forest conservation unit which is a sub-unit of the wildlife sanctuary in order to have effective performance and set up the Huai Kha Khaeng Nature and Wildlife Education Center to provide knowledge and educate people as well as to encourage people to have a sense of ownership of the property.

3) External collaboration in financial and academic obtained through several projects operating in the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries and the west forest. It helped to have an extensive and effective management and was able to solve the significant problem of the property i.e. the West Forest Ecosystem Management project where survey, databased of agencies have been done, the Smart Patrol System where staff have been trained to work effectively on physical, arrest violator, using weapon, first aid, as well as using technology i.e. map, compass, GPS, etc., classify the wildlife trace, make understanding and record a patrol onto the standard form. Moreover, there was a spatial Management Information System (MIST) which staff is able to check the effectiveness of the patrol. It can be analyzed the trend of the problem and help to plan for the next patrol in order to instantly and correctly handle with the unforeseen problem as well as the participatory preservation

project where emphasized on the changing of the role of the staff and to contact with people.

4) External collaboration in academic and supporting fund for research study to have advanced research especially research on the important wildlife species in the world heritage site i.e. Bengal tiger. Khao Nang Rum Wildlife Research Center located in the Huai Kha Khaeng Wildlife Sanctuary. It will study about the nature, ecological of the Bengal tiger which helped to make an appropriate management plan to utilize the property area, conducting Bengal database. Later, there was a DNA prof which applied with the Bengal tiger that were hunt. This implemented tool has been accepted by the court.

5) External collaboration also developed the communication pattern between the property and people in order to create understanding toward the property through activities. The wildlife convention foundation as well as to conduct activities for people to cooperate i.e. being volunteer, doing activities which beneficial to Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries.

6) Over the past, after the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries became the Natural World Heritage Site, many parties concerned as there was the crisis wildfire in 1995 (UNESCO, 1991). Anyhow, the property has not adjusted its level under the threat control level because the staff or related parties could be able to control and manage the fire later on. The Royal Forestry Department (at the time), paid attention to the wildfire management therefore, the Huai Kha Khaeng Wildfire Control Center has been set up and there was provision on equipment to increase the capability on wildfire controlling activity, partial fund obtained from the World Heritage Fund.

7) The government supports on the natural world heritage management by defy the controlling dynamic and assessment on the performance of the responsible units or organization and support the operation to comply with the world heritage convention. The government has issued the Convention Concerning the Protection of the World Cultural and Natural Heritage in 2016 and set up the National Committee for the World Heritage Convention to responsible for its missions to comply with the world heritage convention.

8) However, the government policy in each cabinet from the past until the present has not emphasize on the development or management the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries according to its existing capability rather than on seeking for new property to nomination to be the new natural world heritage site. Additionally, the government also emphasize on seeking for the resolution to clear the Dong Phrayayen-Khao Yai Forest Complex from the crisis list and not to provoke the Natural World Heritage Status.

It can be said that over the past two decades, the management to protect the natural world heritage site has been the significant mission that obtained the collaboration from many parties. Therefore, the status of the wildlife are more emphasized and taken care as the research on wildlife is important to preserve the status of the Wildlife Sanctuary. The Khao Nang Ram Wildlife Research Center is an example for this mission as the “Bengal Tiger” has been studies. From this particular research, it is found that Thailand is the only country in the world that the number of the Bengal Tiger is increased particularly in Hua Kha Khaeng Wildlife Sanctuary area. This make people proud of the property and it considers to have high capability for further development.

## **5.6 Recommendation for Management Policy and Strategic Measure**

From the focus group discussion with involved people and the stakeholders, as well as the suggestion from specialist, executives, and the former executives who had experiences on management the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries about the supporting management policy can be summarized as below.

1) The government should have a policy promoting people to have understanding in the universal value of the natural world heritage site, emphasize on the importance of providing education/knowledge plan, and create a participatory of the people in preservation the natural world heritage sites.

2) Provide a long-term plan to handle with the community located in the natural world heritage sites such as communities in the east and west sides of the Thung Yai Naresuan Wildlife Sanctuary. Weerawat Theeraprasart (personal communication, September 12, 2015), a former head of the West Thung Yai Naresuan Wildlife

Sanctuary, commented that the settlement of the Karen in the old day started from adjustment themselves to the nature and ecosystem before studying livelihood that rely on the nature. Later on, once they settled down, they imitated the nature especially the Karen group Thung Yai. If there is adequate knowledge or understanding and work carefully with the Karen group and protect them from stepping into the new world innovation which could damage the property, it could make them to take care of the nature and it would be beneficial to the management. Therefore, it would create the linkage between the cultural and natural heritage.

3) Study the possibility in making cooperation with Myanmar for the management of the natural heritage area along the board sides which is the West Thung Yai Naresuan Wildlife Sanctuary which would be the way to increase effectiveness in protection and preservation the value of the property.

4) Giving the government sector at the provincial level to be center where is responsible for providing education/knowledge, making understanding, and creating participatory from people to preserve the world heritage site.

## **5.7 Suggestion on the Strategic Management**

The in-depth interview has been conducted to seek for the strategic management for the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries which can be summarized into the following items.

### **5.7.1 Set the Objective of the Management**

The objective set for the management on Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries is to preserve the outstanding universal value of the property. Such outstanding universal value obtained from the following elements.

- 1) The property size which can survive the sustainability of the ecosystem
- 2) The integrity and biological diversity

To set the objective for preservation the outstanding universal value of the property must analyze the following aspects;

1) What are the outstanding universal value of that particular natural world heritage site that required preservation? For example plaubon (coleus) forest in Thung Yai Naresuan Wildlife Sanctuary, Huai Kha Kaeng Brook in Huai Kha Khaeng Wildlife Sanctuary, wild water buffalo, peacock, and Bengal tiger in Huai Kha Khaeng Wildlife Sanctuary, tapir in Thung Yai Naresuan Wildlife Sanctuary, etc. The assumption is that if all of these objectives set still preserve its integrity it means the outstanding universal value of the particular properties are exist.

2) Analyze the occurred or possible threat that might happen towards the outstanding universal value in order to defy the protection measure for such threats before hand

3) Analyze the indicator of the integrity of the set outstanding universal value

### **5.7.2 Strategic Management for the Achievement**

1) Protection, preservation, and conservation the property- continue from the expansion the conservation forest unit as it increased the capability to patrol the entire forest area as well as increase the up-to-date equipment to support the Smart Patrolling System. Moreover, patrolling and collecting data should have been done in order to utilize in making the management plan for the future.

2) Management on buffer zone outside the Huai Kha Kaeng Wildlife Sanctuary – the first phrase has been done after it became the Natural World Heritage Site as it is the management tool and create participatory of people and to assign this buffer zone as the spot where people must not or reduce the activities which take advantage from the forest resource. This project must rely on the cooperation of the Royal Forestry Department.

3) Promote the use of scientific technique in making management plan -support on research studies both area of Huai Kha Kaeng Wildlife Sanctuary and Khao Nang Ram Wildlife Research Center. Also, giving permission external organization to conduct research in the property area in order to use the findings in making the wildlife management plan.

4) Establish more Wildlife Research Centers in both eastern and western parts of the Thung Yai Naresuan Wildlife Sanctuary

5) Develop the structure of the Natural World Heritage Office- give authority to the Thung Yai Naresuan and Huai Kha Khaeng Coordination Center to push, follow up, and supervise the operation and management activities according to the management plan and policy set in order to standardize management to have a competent personnel to design appropriate management plan and activity.

6) Educate people to have good common sense, encourage people to visit and study about the natural world heritage sites in order to have knowledge and be able to tell other people.

7) Conduct interesting activity that hold the identity of each particular area such as wildlife-based ecotourism.

8) Push the management on the natural world heritage site to be the national agenda and making either short- term or long- term strategic plans for a sustainable development

9) Seek for cooperation from external organization where can provide supports in order to push an academic development and create a management partner.

10) Consider on the possibility on setting up a management fund in order to have adequate fund for sustainable management.

## **CHAPTER 6**

### **CONCLUSION AND RECOMMENDATION**

#### **6.1 Conclusion of the Study**

The study on the Policy and Strategy of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary Management, as they are world natural heritages, was carried out in the Thung Yai Naresuan and the Huai Kha Khaeng Wildlife Sanctuaries which were assembled as the Great Thung Yai and Huai Kha Khaeng Forest Area-the first world natural heritage of Thailand as well as the first world natural heritage of Southeast Asia. The purposes are to study its current status and consequent practices after licensed as a world heritage site; and to propose appropriate policies and strategic measures, aiming at four goals:

- 1) To study the historic background of the World Natural Heritage at the Thung Yai Naresuan and Huai Kha Khaeng Sanctuaries.
- 2) To study and analyze the current status, situations, and problems regarding the management of Thung Yai Naresuan and Huai Kha Khaeng Sanctuaries.
- 3) To propose strategic management measures based on technical points of view on the world heritage management of the Thung Yai Naresuan and Huai Kha Khaeng Sanctuaries
- 4) To propose management policy for the Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries with respect to appropriate guidelines for the full potential of the World Natural Heritage for sustainable interests of the nation.

I applied the qualitative research in this study by limiting the area of analysis only in the Thung Yai Naresuan and Huai Kha Khaeng Sanctuaries through data collection from research references, in-depth interview and group discussion with data providers such as officials of the Department of National Parks, Wildlife and Plant Conservation; officers in the study area, technical officers, local villagers, and related supporting non-government organizations so as to derive the exact information of its

world heritage registration, current management status, policies of the government and related agencies. This is to analyze the current problems and propose appropriate policy and strategic measures in order to solve them. The outcomes of study can be concluded as follows:

### **6.1.1 Background of World Natural Heritage Membership**

The Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage site is composed of two conserved forest areas pursuant to the Thai laws: 1) The Thung Yai Naresuan Wildlife Sanctuary-later its management was separated as eastern and western sanctuaries, in Tak and Kanchanaburi Provinces, respectively; and 2) The Huai Kha Khaeng Wildlife Sanctuary in Uthai Thani Province, covering an enormous area of 6,222 km<sup>2</sup> (3,888,750 rai in Thai area measurement unit), which is the largest conserved forest area of Thailand and the forest area with largest wilderness ecosystem in Southeast Asia. The attempt to apply the world natural heritage license for Thung Yai Naresuan and Huai Kha Khaeng forest area was originated from the opposition of Namjone Dam construction in Thung Yai Naresuan Forest, which lasted for years and pioneered by groups of forestry technical officers, conservators, and non-government organizations in Kanchanaburi. Eventually, the Cabinet had a resolution to restrain the construction of Namjone Dam in 1988. Later, Thung Yai Naresuan and Huai Kha Khaeng forest area was applied for the first world natural heritage in 1991 at the 9<sup>th</sup> convention of the World heritage Committee in Tunisia from 9 to 13 December 1991 based on Clauses 7, 9 and 10 of the outstanding universal value (OUV).

The declaration of Thung Yai Naresuan and Huai Kha Khaeng forest area as the world natural heritage site was therefore based on the need for protection and strengthening of the forest area, believing that the world natural heritage would help prevent the forest area from infrastructural development projects utilizing the forest area.

### **6.1.2 Overview of the Outcomes**

It is over 20 years after licensing the world natural heritage in 1991. The management of Thung Yai Naresuan and Huai Kha Khaeng forest areas can be concluded as follows:

1) Legislative status. No amendment of legislative status in the area i.e. Thung Yai Naresuan and Huai Kha Khaeng forest area remains its status as wildlife sanctuary under the Wildlife Reservation and Protection Act B.E. 2535-the strict and effective domestic law for forest area fertility in terms of area size and biological variety so as to highlight its area value and comply with the world natural heritage criteria.

2) Internal administration. Supplement of two related working groups. One for forest surveillance which is the existing state sub-agency of the wildlife sanctuary. This would efficiently strengthen the forest area surveillance task force. And the other, for establishment of new state sub-agency-the Huai Kha Khaeng Natural and Wildlife Study Center-in order to educate Thai citizen of their participation and sense of world heritage ownership.

3) External cooperation. Both in terms of technical and financial practices, administrative cooperation in all projects in the world natural heritage sites (Thung Yai Naresuan and Huai Kha Khaeng forest area, as well as the western forest area) should be upgraded aiming at the higher effectiveness and quick troubleshooting in the area such as the Ecological Management Project of the Western Forest Area, of which the survey and database were made. In the meantime, the forest patrol should be conducted as smart patrol by officers who passes the training on physical development, culprit arrest, weapon usage, first-aid, and utilization of geographic information technology and devices e.g. map reading, use of global positioning system (GPS) compass, wildlife trace distinguishing, understanding and recording the standard patrol form, acquisition of MIST (Spatial Management Information System) in spatial patrol project for area managers, acquisition of the system that can check the patrol efficiency, through data storage and spatial evaluation, and analyze the trends of possible problems that may incur and lead to further patrol planning so as to avoid such problems instantly and precisely, or the so-called “Contributing Area Management Project”, which would lead to the operators’ change in roles as well as their communication with public.

4) Technical and budgetary cooperation from external sources for researches. This would accelerate the progress of researches, especially the researches on significant wildlife in the world heritage such as Bengal tigers. Currently, the Khao Nang Rum Wildlife Research Center in the Huai Kha Khaeng Wildlife Sanctuary is the research operation unit that supports the concrete management such as the study on

ecosystem of Bengal tigers. This lets us know about the distribution areas of Bengal tigers and leads us to do the area planning appropriately or correctly prepare the Bengal tiger database so it can be used as identification means of Bengal tigers afterwards, especially the hunted tigers in Huai Kha Khang Forest. Also, this was accepted in the court of justice as reference of obvious concrete progress of the researches.

5) External cooperation also helps develop the aspects of communication between the world heritage site and public so that they can understand the value of the world heritage site through mass media and participation of conservation activities e.g. voluntariness, guide activity or natural resources conservation in the said world heritage sites, organized by the Wildlife Conservation Society (WCS).

6) Being the world natural heritage, the Thung Yai Naresuan and Huai Kha Khaeng forest area has been kept an eye on its world natural heritage that have faced the severe menace of wildfire in 1995 (UNESCO, 1991) but such problem was not so serious that it was downgraded as the world heritage in danger because the wildfire was later under control and eventually extinguished. Such event induced the Forestry Department (at that time) to highlight the control of wildfire, establishing the Huai Kha Khaeng Wildfire Control Center and supplied more effective firefighting devices and instruments. Part of which was from the World Heritage Fund.

7) The government should support the management of the world natural and cultural heritage sites by specifying the operation control and inspection mechanism of agencies responsible for the world heritage sites and supervising the operation in compliance with the obligations under the World Heritage Protection Convention, and the World Cultural and Natural Heritage Regulations B.E. 2559 issued by the Office of the Prime Minister, appointing the National Committee for Compliance With the World Heritage Convention to steer the concerning officers' performances.

8) The policies proclaimed by governments so far, however, have not highlighted the development and management of the Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage as per its existing potentials but rather the presentation of more world heritage sites and acceleration of menace troubleshooting in Dong Phrayayen-Khao Yai World Heritage site to be free from the list of world heritages in danger or rejection of world heritage site.

It can be said that over 20 passed years the management of world heritage protection was still a major task jointly performed by concerning parties so that the wildlife status has been improved under more care. Wildlife researches are also key factor of wildlife status conservation in the Thung Yai Naresuan and Huai Kha Khaeng world heritage forest area. Their prominent continual and highly effective substances of Bengal tigers aroused public attraction and pride so they are worth for furtherance.

## **6.2 Recommendation**

### **6.2.1 Policy-Based Recommendations**

Based on the studies on policies and strategies of the Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage, it can be concluded that this world natural heritage site has potential for development furtherance although lack of policy-based steering so the potential of world natural heritage was not fully utilized. I therefore would like to express the following policy-based proposals:

- 1) The Thai government should highlight and publicize the role and significance of the Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage as its first world natural site of the country and its outstanding has been universally accepted as well as its interesting development up till now. Also, Thai people should realize the value and significance of its maintenance not for the sake of its country but global community at universal level. The government should emphasize the educational plan and create public participation in the world natural heritage protection.

- 2) The Thung Yai Naresuan and Huai Kha Khaeng World Natural Heritage site should be utilized as public interest. In the nutshell, the outcomes performed in the world heritage site such as the research on Bengal tigers in the Thung Yai Naresuan and Huai Kha Khaeng Sanctuary is a universal eminent attraction-it reveals that Thailand has had good technical management of the world heritage site, complying with the framework specified under the World Heritage Convention-the excellent prototypical performance. However, if Thailand has some more researches on this matter it would be beneficial to Thailand for it would gain negotiation power in the World Heritage Committee Conference.

3) Long-run plan for coping with difficulties to the existing community areas should be prepared, especially for those in western and eastern Thung Yai Naresuan sanctuary.

4) Cooperation with neighboring country like Myanmar should be paid on natural heritage site along Thai-Myanmar border such as the western Thung Yai Naresuan Sanctuary. This would be a guideline to upgrade the site value protection. In addition, it would be the useful pilot project on international relationship for other sites along Thai-Myanmar border, for example, Kaeng Krachan forests which are under process of application for new world natural heritage by the Thai government.

5) Practical mechanism should be stipulated for provincial offices to play their core roles as knowledge providers, clarifiers of understanding, and coordinators with public for world heritage protection.

### **6.2.2 Recommendation for Management Strategies**

According to the study on policies and strategies of the Thung Yai Naresuan and Huai Kha Khaeng sanctuary management, the researcher has some recommendations for strategic management, as it is the world natural heritage:

1) Determine the clear-cut targets for Thung Yai Naresuan and Huai Kha Khaeng world natural heritage site management, aiming at conservation of its outstanding universal value and planning management.

2) Preventive, protective, and preservative strategies of the site is necessary to sustain its outstanding universal value at all levels, either the area under jurisdiction or key wildlife resources. Thus, there should be continual technological development that could enhance its preventive and protective capabilities. In the meantime, additional instruments should be supplied and preventive drills or trainings should be regularly performed for preparedness.

3) Improve the structure of local world natural heritage office (the Thung Yai Naresuan and Huai Kha Khaeng world natural heritage Coordination Center) to play more roles in following up and control operations and management in compliance with the plans and policies, as well as playing the role in planning or implementing operation plans corresponding to the needs and necessity in locality so as to urge such management toward the standards of protected area management,

consisting of structure and potential personnel for determination of appropriate plans and activities.

4) Highlight the nature education, imbed conscious mind in people and welcome them to visit and learn the importance of the world natural heritage for their knowledge and further dissemination.

5) Try to create public cooperation network so as to arouse the sense of ownership as well as the role of development participation of the said world natural heritage site.

6) Determine the buffer zones out of the Huai Kha Khaeng Sanctuary previously done from the beginning after its world heritage license and take it as a kind of management tool in order to create public participation, a kind of community relief area of forest-originated utilization, and reduction of forest resources utilization. This will be accomplished only with cooperation from the Royal Forest Department.

7) Wildlife research stations should be additionally established in western and eastern Thung Yai Naresuan sanctuaries in order to undertake the concept of scientific information utilization as supporting data for world heritage site management planning.

8) Determine interesting and unique tourist activities in the sanctuaries such as wildlife-based ecotourism so as to respond the need of people who are interested in this field. This would be the foundation of conservative tourism in the future.

9) Study the possibility of establishment of the Fund for Thung Yai Naresuan and Huai Kha Khaeng World Natural heritage Sites to acquire sustainable management budget and reduce constraint of development due to lack of budget. This would create public participation in world heritage site management.

### **6.3 Recommendations for Future Studies**

Based on this study, I have some recommendations for future studies:

1) The study in details of factors affecting the outstanding universal value of the aforesaid world natural heritage sites can distinguish valuable things in the areas such as outstanding or unique ecosystem, rare or nearly extinct wildlife/native animals, significant plant, vulnerable ecosystem or the existing important water

resources which are indicators of outstanding universal value. They point out the features of valuable factors and guide appropriate development and management for value preservation. In this research, the framework is limited only the study on the status of the world heritage sites, changes and performances after becoming the world heritage, disregarding the detailed study on factors affecting its value. Thus, it is just a guideline for future study.

2) The study highlights the managerial evaluation of other world heritage sites, both natural and cultural, in order to find out some guidelines for value promotion of world heritage sites existing in Thailand.

3) The study on strategies aims at the introduction of other sanctuaries in Thailand in case of application for world cultural and natural heritage license.

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## **APPENDICES**

## **APPENDIX A**

### **GUIDE QUESTIONS FOR INTERVIEW**

1. Please give the in-depth review the historic background of Thung Yai Naresuan/Huai Kha Khaeng Wildlife Sanctuary as follow:
  - 1) What is the development or history of the sanctuary before designated as a wildlife sanctuary.
  - 2) What is the historic background or interesting story of the sanctuary before the world heritage status? What is the significant issue that make the sanctuary being listed as the world natural heritage?
2. In your opinion, is there any change that is visible in the status of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuary before and after its world heritage status?
3. What is the significant change can be seen in more than 20 years of world heritage status in particularly the following issues:
  - 1) What are the policy and management strategies designated for the world heritage site?
  - 2) What is changed in the policy and management strategies?
4. What is the desired future direction?
5. What is your comment and recommendation for policy and management strategy of this world natural heritage site?
6. What is the appropriate and effective management strategies and policy
7. What are the roles of stakeholders who are involving in the management of the world natural heritage site

## **APPENDIX B**

### **TARGET INTERVIEWEES**

**Group 1:** Top management/policy makers and key personnel of the Ministry of Natural Resources and Environment, Department of National Parks, Wildlife and Plant Conservation; Wildlife Conservation Bureau under the Department of National Parks, Wildlife and Plant Conservation; Superintendent of Western and Eastern Thung Yai Naresuan Wildlife Sanctuary; Superintendent of Huai Kha Khaeng Sanctuary; officers of the Huai Kha Khaeng World Heritage Center.

1) Ms.Tuenchai Noochdamrong, Director of Wildlife Conservation Bureau, Department of National Parks, Wildlife and Plant Conservation,

2) Mr.Anuchit Taeng-orn, Director of Wildlife Conservation Area Management Division, Wildlife Conservation Bureau

3) Mr.Chalong Nuichim, Director of Wildlife Conservation Division, Protected Area Region 12 Office (Nakhon Sawan),

4) Mr.Sompoch Maneerat, Superintendent of Huai Kha Khaeng Wildlife Sanctuary,

5) Miss Weeraya Ochakull, Superintendent of Western Thung Yai Naresuan Wildlife Sanctuary,

6) Mr.Polawee Buchakiet, Superintendent of Thung Yai Naresuan Wildlife Sanctuary.

7) Mr.Komkrit Setabupha, Officer of World Heritage Office, Department of National Parks, Wildlife and Plant Conservation

**Group 2:** Staff representatives of Thung Yai Naresuan and Huai Kha Khaeng Wildlife Sanctuaries.

8) Mr.Piya Pinyo, Deputy Superintendent of Eastern Thung Yai Naresuan Wildlife Sanctuary

9) Mr.Sanpob Saema, Deputy Superintendent of Huai Kha Khaeng Wildlife Sanctuary

10) Miss Jarunee Ompram, Field Operation Support staff.

**Group 3** Representatives of ex-executive officers and ex-staff in Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuaries.

11) Mr.Phong Leng-ee, former Director General of the Royal Forest Department

12) Mr.Chatchawan Pitdamkham, former Director of Uthai Thani Natural Resources and Environment Provincial Office

13) Mr.Weerawat Theeraprasart, former Superintendent of Thung Yai Naresuan, Kanchanaburi Province

**Group 4** Representatives of related government agencies

14) Miss Korapin Payakaparakarn, Office of Natural Resource and Environment policy and planning

**Group 5** Representatives of technocrats and knowledgeable people such as academician and ones who have outcomes regarding Thung Yai Naresuan and Huai Khakhaeng Wildlife Sanctuary

15) Dr.Uthid Kut-intara, former Dean of Faculty of Forestry, Kasetsart University

16) Dr.Anak Pattanavibool, Faculty of Forestry, Kasetsart University

17) Mr.Nopparat Naksathit, former officer of Department of National Parks, Wildlife and Plant Conservation

18) Ms.Belinda Stewart-Cox

19) Ms.Naomi Doak

**Group 6** Representatives of non-government development organizations e.g. chairperson and secretary of the Sueb Nakhasathien Foundation, representative of the Wildlife Association (Thailand) etc.Representatives of related government agencies: Uthai Thani provinces, Uthai Thani Natural Resources and Environment Office, Wilderness Management Office 12 (at Nakhon Sawan Province), and Office of Natural Resources and Environment Policy and Planning.

20) Mrs.Rataya Chantaratian, President of Sueb Nakhasathien Foundation

21) Mr.Phanudej Kerdmali, Secretary of Sueb Nakhasathien Foundation

22) Mr.Pairote Limcharoen, Wildlife Conservation Society

23) Miss Angkana Mekwilai, Wildlife Conservation Society

**Group 7** Representatives of private sector.

24) Miss Buranakarn Jatupornpaisarn, Owner of Eco-tourism enterprise, Kanchanaburi

25) Mr.Surawut Jongsakul, Thairath Newspaper reporter

## **BIOGRAPHY**

<b>NAME</b>	Mrs. Klairoong Poonpon
<b>ACADEMIC BACKGROUND</b>	Bachelor of Science (Forestry) Kasetsart University, 1990  Master of Science (Forest Resources Administration) Kasetsart University, 2006
<b>CURRENT WORK POSITION</b>	Forestry Technical Officer, Senior Professional Level, 2016 Director of General Administration Division, Wildlife Conservation Bureau, Department of National Park, Wildlife and Plant Conservation
<b>WORK EXPERIENCE</b>	2002-present Department of National Park, Wildlife and Plant Conservation 1990-2002 Royal Forest Department