

**TOURISM'S DRIVING FORCES ON LAND USE  
CHANGE IN PHU KRADUENG NATIONAL  
PARK, THAILAND**

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**TOURISM'S DRIVING FORCES ON LAND USE  
CHANGE IN PHU KRADUENG NATIONAL  
PARK, THAILAND**

by

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## LIST OF ABBREVIATIONS

PKNP	Phu Kradueng National Park
PAs	Protected areas
UNWTO	World Tourism Organization
DNP	Department of National Parks, Wildlife and Plant Conservation
NESDB	National Economic and Social and Development Board
UNEP	United Nations Environment Programme
IUCN	International Union for Conservation of Nature
UNESCO	United Nations Educational, Scientific and Cultural
DFID	Department for International Development
FAO	Food and Agriculture Organization of the United Nations
UNCED	United Nations Conference on Environment and Development
WCPA	World Commission on Protected Areas
MEA	Millennium Ecosystem Assessment
GIS	Geographic Information System
TAO	Tambon Administrative Organisation
TAT	Loei Regional Office of the Tourism Authority of Thailand
DASTA	Loei Regional Office of the Designated Areas for Sustainable Tourism Administration
LDD	Land Development Department of the Phu Kradueng District
ALR	Loei Agriculture Land Reform Division

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**DAYA PENGGERAK PELANCONGAN TERHADAP GUNA TAHUN  
DALAM KAJIAN KES DI PHU KRADUENG TAMAN NEGARA,  
THAILAND**

**ABSTRAK**

Dalam tahun-tahun kebelakangan ini, banyak taman negara telah menghadapi ketegangan yang disebabkan oleh pertumbuhan pesat pelancongan berasaskan alam semula jadi. Pelancongan tidak menjejaskan taman negara sahaja, tetapi juga merentas ke kawasan bersempadanan, atau dikenali sebagai kawasan perlindungan-pinggiran. Walaupun permintaan yang semakin meningkat untuk pelancongan dalam kawasan lindungan, kajian terdahulu yang mengkajinya masih terhad dan istilah perlindungan- pinggiran jarang digunakan. Oleh itu, adalah penting untuk mengkaji dengan lebih lanjut mengenai daya penggerak pelancongan dan impaknya terhadap kawasan unik ini dan masyarakat setempat disekitarnya. Objektif kajian adalah untuk menyiasat corak penggunaan tanah dalam kawasan perlindungan-pinggiran dan peranan pelbagai daya penggerak pelancongan berkaitan. Metodologi campuran digunakan untuk memudahkan pengumpulan data dan analisis. Pendekatan kuantitatif menggunakan program GIS untuk corak penggunaan tanah kawasan kajian dalam tiga tempoh yang berlainan. Kajian ini turut menggunakan kaji selidik atas-talian berdasarkan konsep 5As Dickman untuk mengumpulkan data dari 465 pelancong dan telah menggunakan SPSS untuk menganalisis statistik deskriptif. Untuk pendekatan kualitatif, temubual separa berstruktur telah dijalankan terhadap 77 orang informan utama yang mewakili komuniti berbeza tentang penggunaan tanah kawasan lindungan. Dapatan menunjukkan bahawa terdapat perubahan secara beransur-ansur pada pola penggunaan tanah berdasarkan polisi pemuliharaan dan

pelancongan yang dilaksanakan dan guna tanah telah diklasifikasikan kepada empat zon berbeza. Penemuan soal selidik pelancong mendapati bahawa Taman Negara Phu Kradueng (PKNP) menarik sebagai tarikan destinasi pelancongan yang cantik secara semulajadi diikuti dengan aktiviti dan aksesibiliti. Pengiraan dalam model kesejahteraan kehidupan asset komuniti menunjukkan bahawa modal kewangan berada pada paras purata, dan ini bermakna komuniti masyarakat sekitar mempunyai batasan sumber kewangan yang menghalang mereka daripada mengambil bahagian dalam pelancongan kawasan. Akhirnya, cadangan penambahbaikan dibincangkan dan penemuan ini menjadi penting bagi memastikan sama ada dalam jangka masa pendek atau panjang PKNP dan kawasan perlindungan-pinggiran sekitarnya akan terus menjadi destinasi pelancongan berasaskan alam semula jadi yang diinginkan.



**TOURISM'S DRIVING FORCES ON LAND USE CHANGE IN PHU  
KRADUENG NATIONAL PARK, THAILAND**

**ABSTRACT**

In recent years, many national parks have faced tension caused by the rapid growth of nature-based tourism. Tourism has not only affected the national parks, but beyond the trans-boundary of the neighbouring land area, or it is known as the peri-protected area. Although there has been a growing demand for tourism in the protected area, previous studies investigating the impacts of tourism's driving forces on this area are still limited and the term peri-protected area is seldom used. Thus, it is crucial to further study on tourism's driving forces and their impact on this special area at the national park as well as surrounding local communities. The objectives are to investigate land use patterns in the peri-protected area and the roles of the impact of tourism's driving forces on land use. A mixed methodology was used to facilitate data collection and analysis. The quantitative approach used the GIS program to analyse the land use pattern and land use change over the three periods of the peri-protected area. The current research employed an online self-administered questionnaire survey based on Dickman's 5As of tourist destination concept to collect data from 465 tourists and SPSS were employed to analyse the descriptive statistics. For the qualitative approach, semi-structured interviews were conducted with a total of 77 key informants representing different groups of people who were associated with land use change in the peri-protected area. The findings revealed that there was a gradual change in land use patterns based on the conservation and tourism policy implementation in the Phu Kradueng National Park (PKNP) and land use was classified into four zones. The findings from the tourists' questionnaire

suggest that PKNP was appealing as a tourism destination with natural beauty. Besides, calculation on the local communities' livelihood assets shows that the financial capital value was the average level which means that the surrounding communities had limited financial resources that prevented them from taking part in the tourism industry. Finally, the proposed of improvement is discussed and these findings make a significant to ensuring that either in short or long term the PKNP and its surrounding peri-protected area will continue to be a promising nature-based tourism destination.

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Introduction of the chapter**

This chapter introduces an overview of the current research. It begins with the research background and problem statement and identifies the research questions, research objectives and research methodology. It then explains the research process, the scope of the study, the significance of the study, and the operational definition of key terms. The chapter concludes with the organization of the thesis.

### **1.2 Background of the Study**

The World Tourism Organization (UNWTO) estimated that international tourism would reach a value of 1.8 billion USD by 2030 (UNWTO, 2018). According to the international tourism trends of 2017, the total number of international arrivals around the world was 1,326 million people with total international tourism receipts of 1,340 billion USD (Figure 1.1 on page 2). It can be seen that the tourism industry is valuable to the economy worldwide (Nepal, 1997). The tourism industry has become a dominant economic sector that affects global development (Mezei, 2008). These statistics have significance worldwide, but are not specific in some areas, such as nature-based tourism destination. Nevertheless, increases in nature-based tourism, ecotourism and wildlife tourism can be expected (Ceballos-Lascuráin, 1996), especially nature-based tourism in national parks (Nepal, 1997).

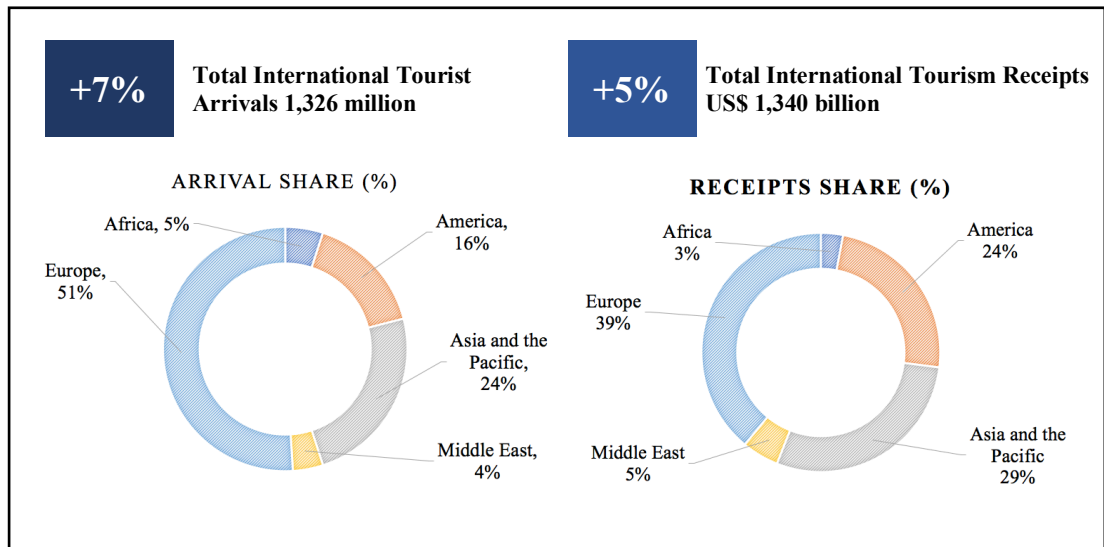


Figure 1.1 International tourism trends around the world in 2017

Source: World Tourism Organization (2018)

As a result of the benefits derived from the tourism industry, it shows that tourism is promoted at every geographical level (Terkenli & Schistou, 2013). Russell (2007) noted that at the local level, the benefits of tourism destination planning create suitable employment, sustains the natural environment, and delivers a quality experience to visitors.

Atik et al. (2010) suggested that tourism activities often occur in environmentally fragile areas with high landscape quality. These activities can have impacts on the ecology and the visual and social-cultural aspects. In addition, tourism development is associated with high demand for land use. According to McLennan et al. (2012), land use for tourism development often replaces traditional land use patterns such as agriculture. The expansion of tourism-related land coverage also means the conversion of traditional land uses such as farming to mixed or entirely tourism-oriented uses (Terkenli & Schistou, 2013).

According to Nepal (1997), national parks are often seen as popular destinations for nature-based tourism, the national park provide a natural environment experience to the tourists and visitors. Tourism in a protected area is a valuable niche market in many countries and visiting protected areas continues to grow, for example, in South Africa and Australia (Strickland-Munro & Moore, 2014). Beyond the immense economic benefit, national parks, the tourism industry and local communities have recognized the potential for mutually beneficial relationships (Stone & Wall, 2004). Local communities who live close to a national park where is popular for the tourist destination are unavoidably confronted tourism impacts. It is often argued that tourism brings positive changes in the livelihood conditions of local communities when local land use is integrated with development planning (Nepal, 1997). Although, there are many potential social and economic benefits, however, there can be negative impacts to the local people (Plummer and Fennell, 2009), for instance, increasing land-use intensity due to the touristization process, with land function changing from villagers' settlement to a modern town (Xi et al., 2014).

Trends in visitation to national parks show a significant increase in visitor numbers. In many countries, especially in developing countries where national parks are an important natural attraction and nature experience (Phumsathan, 2013). For Thailand, the Department of National Parks, Wildlife and Plant Conservation (2018) reported that, in 2019, there are total of 154 national parks around the country. Prior to tourism in national parks, biodiversity conservation and research were the first and second purposes of the establishment of national parks (Department of National Parks, Wildlife and Plant Conservation, 2016). Figure 1.2 shows the DNP's annual visitor number reports (2018) which reveals that the number of visitors in national

parks increased from 11,288,893 in 2009 to 19,640,382 in 2018. It also increased revenue at the destination as the number of visitors grew. Figure 1.3 shows that in 2018, the revenue grew to 77,385,162.60 USD from 15,639,051.50 USD in 2012 (DNP, 2018).

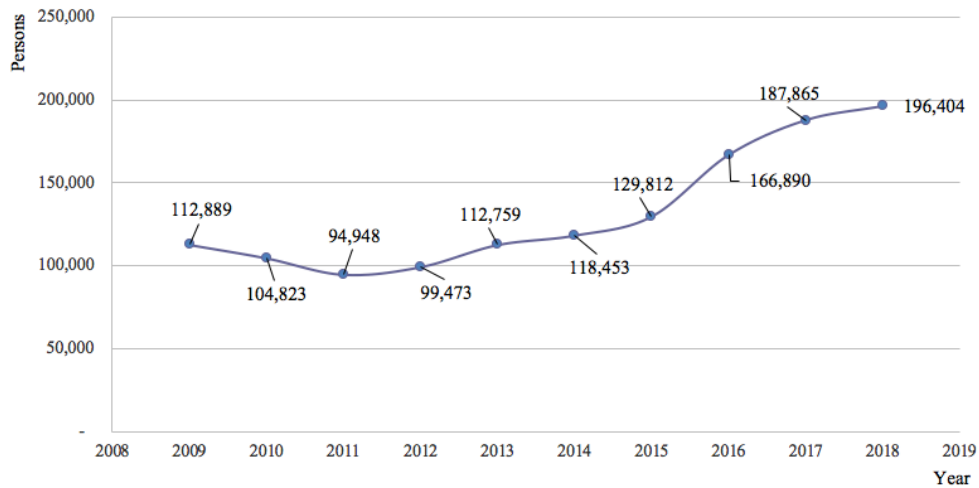


Figure 1.2 Annual visitor numbers to Thailand's national parks (2008 – 2017)

Source: Department of National Parks, Wildlife and Plant Conservation (2018)

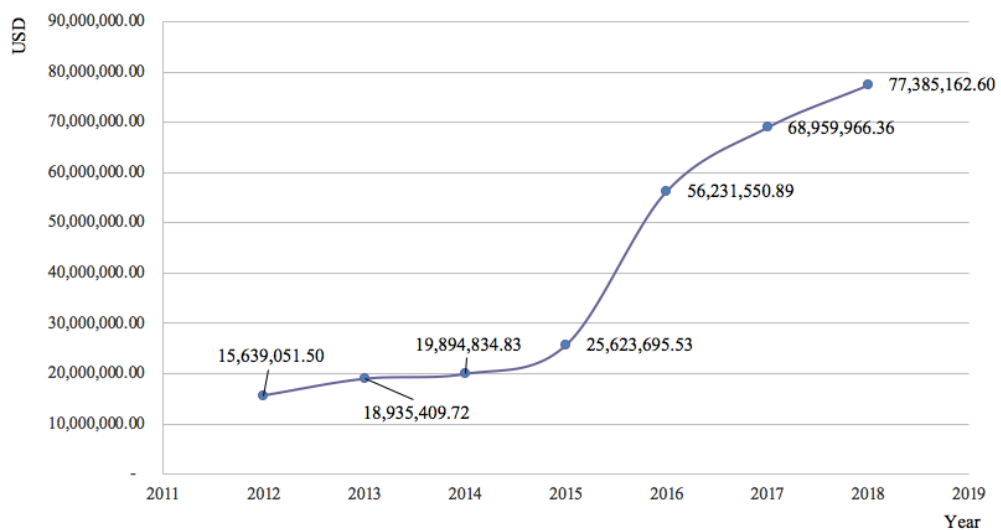


Figure 1.3 Annual revenue of Thailand's national parks (2008 – 2017)

Source: Department of National Parks, Wildlife and Plant Conservation (2018)

At the end of WWII, there was a series of attempts to establish national parks in Thailand. The primary reason for these attempts was that, at the time, there was rapid population growth. Subsequently, it created economic pressure and increased demand for land. Consequently, legislation was proposed to conserve and protect nature and natural resources through the establishment of national parks. His Majesty King Rama IX gave royal assent by signing the National Park Act 1961 (National Park Office, 2006). This act was established to protect the environment and raise public awareness on the value of natural resources. The management of natural areas in Thailand is under the control of the Ministry of Natural Resources and Environment (National Park Office, 2004).

However, the increase in the number of visitors and the revenue from tourism activities in protected areas raised the economic contribution of tourism development from both the public and private sectors (Figure 1.4 in page 4). Since 1961, the tourism sector was regarded as part of the national development plan in the First National Economic and Social and Development Plan of 1961 – 1963 (NESDB, 1961).

As has been mentioned, it can be concluded that tourism growth has raised demand for new tourism destinations and nature-based tourism in national parks, which is one of the alternatives for tourists. In fact, nature-based tourism takes place in fragile and sensitive areas, so that any activities associated with such areas must be thoughtfully developed to sustain the true value of these significant natural areas. Furthermore, the growth in tourism income in Thailand's national parks, where nature-based tourism, ecotourism, and adventure tourism take place, has occurred over decades. However, far too little attention has been paid to local communities in terms of how they use and manage their land; how they are involved in the tourism industry and the benefits they derive from tourism development in national parks.

Consequently, understanding how local people deal with the transformation of tourism destination in natural and rural areas is essential.

Russell (2007) suggested that the public sector should take opportunities to gain the benefits from tourism revenue to improve the livelihoods of its residents. Unfortunately, many tourist destinations carry on activities by the practitioners without proper planning and with a lack of consideration for the impacts of such development on the local people. This could bring more harm than good for long-term development. Thus, knowledge about how local communities use and manage their land associated with nature-based tourism in national parks will be useful for policy-makers, park managers and other practitioners to improve the land use activities of the local community. As a result, it may improve the welfare and livelihoods of local communities, which is one the purposes of the sustainable tourism development (UNEP & UNWTO, 2005; Weaver, 2006).

### **1.3 Problem Statement**

National parks are one of the main categories of the International Union for Conservation of Nature (IUCN) protected areas system that allows people to use the land for recreation or nature-based tourism purposes (Dudley, 2008). National parks can, therefore, be expected to be large, untouched areas of the natural environment, with significant features that are protected at the highest level, facilitating among other uses, recreation and tourism (Butler & Boyd, 2002).

The protected natural areas in the world were established to meet biodiversity conservation goals. Protected areas are the cornerstones of international nature protection policy (Wallner et al., 2007). Protected areas and buffer zones are the key concepts from the international nature conservation organizations such as the IUCN



and United Nations Educational, Scientific and Cultural Organization (UNEP-WCMC, 2014). The concepts have been applied worldwide to manage significant areas that host biodiversity. Although, the protected areas concept were employed in Thailand's protected areas system for more than fifty years, however, the buffer zone concepts is no mention in the Thailand's protected area Act. In addition, the surrounding area where should be use for the buffer area of the protected area but often use for another purpose instead. Consequently, understanding the peri-protected area or the surrounding areas of the protected area is significant for Thailand's protected area system management in terms of the improvement of the appropriate land use.

In recent years, many national parks have faced pressure from tourism development. This is due to the rapid growth of tourism which has affected not only the national parks, but also the neighbouring areas. Murphy (1985) suggested that this issue should not be overlooked because local people adjacent to the national park, like any other communities at tourist destinations, play important roles in sustainable tourism development since they are directly affected by the industry. In Thailand, famous national park around the country got report on the impact from tourism in the high season, for example, crowded in the waterfall, traffic jam along the road to the world heritage national park, local people move out of the village due to the high-cost of living, land tenure changing from local people to the outsider investors. Therefore, for long-term tourism development, it is essential to investigate how tourism affects the nature of land use in the peri-protected area, which is the PKNP and Sritan sub-district.

Nastran (2015) proposed that the perceptions and attitudes of local people towards protected areas have been identified in the literature as a key factor for

national park conservation success since perceptions affect operations within the natural environment. However, tourism has driven local people's awareness of nature conservation, and the national park also has economic value resulting from the revenue from tourists. Besides, tourism is often used as an environmental tool to strengthen the conservation capacity of the park authority and also to influence local people's attitudes toward conservation since tourism also provides opportunities for local people to gain benefits from the conservation efforts – for instance, fresh air, freshwater, food and products from the protected area or even jobs in the national park. In this study, PKNP boundary is settled in the Sritan sub-district and the villages located surrounding the PKNP from the north to the east and south of the PKNP. The relationship between the PKNP and the villages of the Sritan sub-district is in the positive way due to the mutual benefit. The benefit in the form of the jobs, and products from the forest.

Atik et al. (2010) reported that in natural areas, tourism is one of the major driving forces behind land use change at many tourist destinations, such as coastal areas. Land use change in some areas is essential for economic development and social progress (JunJie, 2008). Furthermore, Strickland-Munro et al. (2010b) revealed that the factors that influence land use by the local communities in peripheral areas of the natural tourism attraction have received less attention despite the growth in tourism activities in protected areas and these factors may have a significant impact on local people.

The decision-making on land use is complex. Decisions should be made about the use, the intensity of use, and the form of management. These decisions depend partly on the objectives or goals of the land user and the decision process that the land user employs (Mather, 1992). Land use planning and policy decision-

making on public land in Thailand were based on the central government. Farmer are also often make a decision on land use or land management which influenced both by agricultural policy and multiple stakeholders (Duangjai et al., 2015).

This research intends to fill the research gap on local land use affected by the tourism's driving forces in the national parks. The process of tourism development as a driving force of land use change is crucial information for sustainable land use planning. Understanding one another may enhance the relationship between government agencies and the local people and may help in reducing land use conflict. Such a situation may help in maintaining sustainable livelihoods for local people. Moreover, understanding local decision making about land use will enhance park management and land administration in Thailand. In these regards, the current research seeks to better understand the driving forces of tourism affected land use change in the peri-protected area. In addition, to fill to another research gap, the current research seeks to understand the holistic view of tourism in the peri-protected area from different perspectives.

## **1.4 Research Approach**

### **1.4.1 Research Questions**

The current study aims to understand the tourism's driving forces that affect land use change in a specific peri-protected area. The focus of this research is on the land use change by local communities in the peri-protected area. The peri-protected areas in this research refer to the PKNP and the surrounding communities. The primary research question of the current study is "What are the roles of the tourism's driving forces on land use change in the peri-protected area?" The specific questions are as follows:

- 1.4.1(a) What are the land use patterns in the peri-protected area?
- 1.4.1(b) What are the roles of various tourism's driving forces on land use change?
- 1.4.1(c) How do the tourism's driving forces impact on land use change?

#### **1.4.2 Research Objectives**

The general objective of the current research is to understand the driving forces of tourism on land use by the local communities and local authorities who reside in and near the national park. The specific objectives are as followed.

- 1.4.2(a) To analyse the land use patterns in the peri-protected area.
- 1.4.2(b) To examine the roles of various tourism's driving forces on land use change.
- 1.4.2(c) To investigate the impacts of the tourism's driving forces on land use change.

#### **1.4.3 Research Methodology**

The current research employs both quantitative and qualitative methods to provide relevant data that helps to explain how the tourism's driving forces impact on land use change in the PKNP and surrounding communities. This national park was selected as the study area because of its unique natural features and because it was the second national park in Thailand. It is one of the fourteen in the group of natural areas with high annual visitor numbers.

The study employs mixed method techniques to collect data. The quantitative method is used to collect data from several datasources including historical and temporal imagery analysis, self-administered online questionnaire surveys, and

livelihood assets assessment. On the other hand, the qualitative methods is the semi-structured interview to collect data from the local communities and local government in the study area. In addition, the researcher uses observation notes while visiting the study area. The research methodology is further elaborated in Chapter Three.

#### **1.4.4 Research Process**

The research procedure draws on process-orientated approaches from resilience and system thinking, based on resilience assessment guidelines to define the system of peri-protected areas and tourism (The Resilience Alliance, 2010; Strickland-Munro et al., 2010a). The research is divided into four main phases. Figure 1.5 conceptualises the current research process.

Phase one: The research overview of the study consists of the research problem, the research questions and the research objectives.

Phase two: The literature review in this study includes land and land functions, the concept of peri-protected areas, communities in the peri-protected area, how tourism development in protected areas impact local communities, emerging tourism destinations at the national park, and the application of tourism destination concepts and sustainable livelihood assets.

Phase Three: Data collection in this study involves collecting information on land use patterns, semi-structured interviews with key informants, self-administered online questionnaire survey with PKNP tourists, semi-structured interviews with villagers.

Phase Four: Data analysis and conclusions.

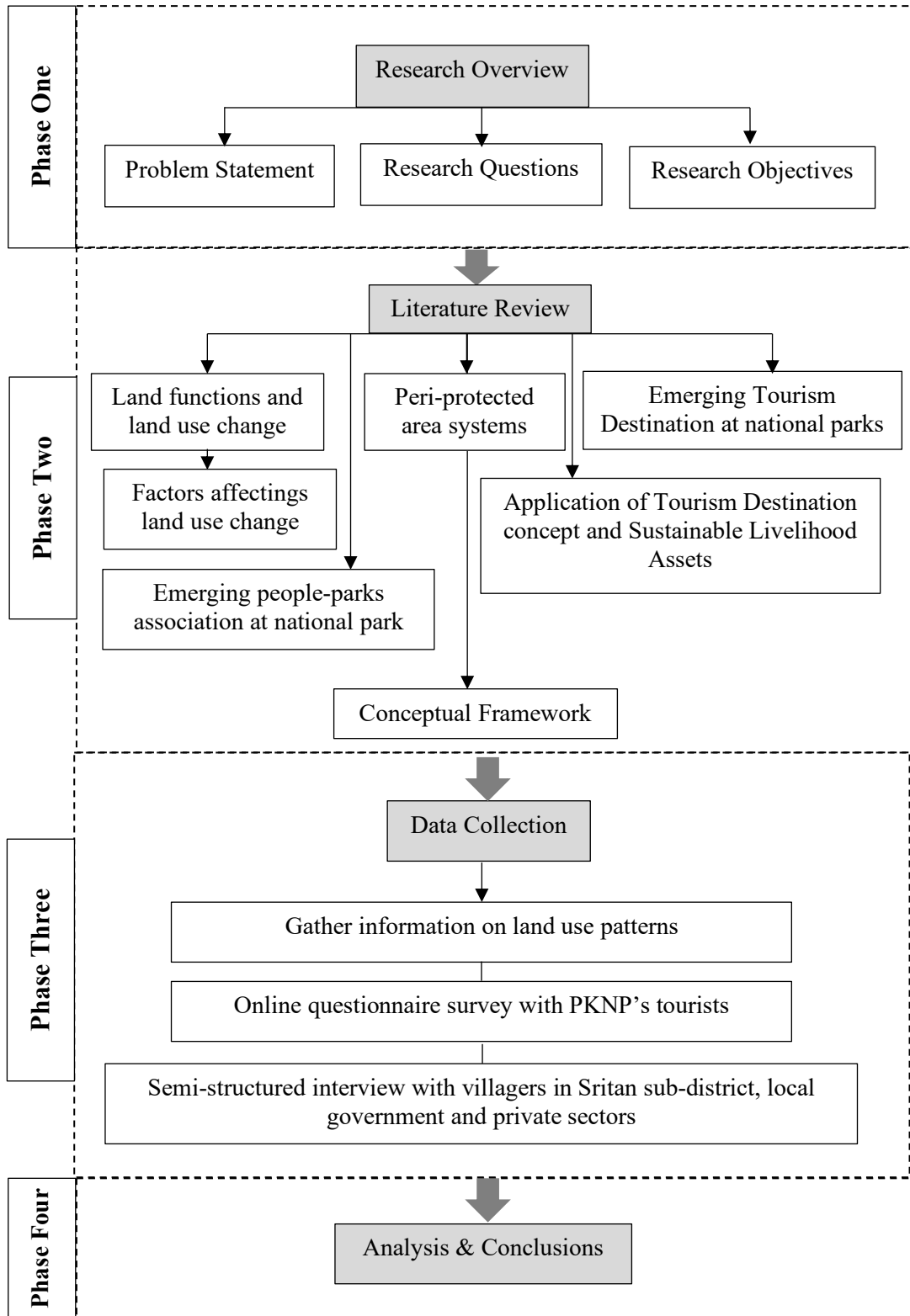


Figure 1.4 The Research process for this study

### **1.5 Scope of the Study**

The current research mainly focuses on the peri-protected area where tourism activities can have both positive and negative impacts on the local communities. The study site is PKNP which is one of the most popular national parks of Thailand. PKNP has a long history since its establishment and its unique characteristics are the mountains and outstanding natural scenery, flora and fauna. It also delivers ecosystem services to the surrounding communities in the form of non-timber products. It is not only food and products from the forest that the surrounding local communities acquire from the PKNP but also the extra income from tourism. This research, therefore, selected the villages which are located adjacent to the PKNP.

### **1.6 Significance of the Study**

The current research makes a significant contribution to knowledge about protected areas, tourism and local communities. This study is essential in many other ways. Firstly, it aims to address the issue of the driving forces of tourism on land use in the peri-protected area. This study provides insight into how tourism affects the local communities in managing land. Secondly, the understanding of land use patterns will support land use planning in the areas around the national park. The understanding the land use in regard to the driving forces of tourism will provide essential information for policymakers, land use planners and park authorities to support local land use planning. Lastly, this findings will contribute to the knowledge base regarding the interactions between local communities, protected areas and tourism. The use of peri-protected areas should be highlighted to reflect its importance.

## **1.7 Operational Definition of Key Terms**

According to the purposes of the current research, the following definitions have been used throughout the thesis.

### **1.7.1 Tourism's Driving Forces**

Tourism's driving forces are the drivers or keystone processes of change (Marcucci, 2000; Burgi et al., 2004) in associated with tourism. In this research, tourism's driving forces comprise forces from tourism demand and tourism supply. Tourism demand comprises tourists' opinions on tourism destination components and suggestions on improvements to the peri-protected area as a tourism destination. Tourism supply comprises villagers' opinions about tourism development and their capability and intention to get involved in the tourism industry.

### **1.7.2 Tourism Destination**

A destination is a place where tourism has developed spontaneously or has been actively encouraged. Tourism destination also refers to a place where tourists intend to spend their time when they are away from home. The geographical unit of the tourist destination can vary in scale from a town or village, a city, a region or an island, or even an entire country, or in other words, island, coastal, mountainous, rural or urban destinations. Dickman (1989) proposed that a viable tourism destination should involve the five-A components: Attraction, Activity, Access, Accommodation, and Amenity. In this research, Dickman's five-A is as a framework for nature-based tourism destination assessment at PKNP.



### **1.7.3 Nature-based Tourism**

Nature-based tourism is a type of tourism which is based on the enjoyment of natural areas and combines recreation, education, and adventure (Valentine, 1992). Nature-based tourism must take place in a natural environment. Furthermore, this destination has natural features that attract tourists to visit it. This research selected PKNP as a nature-based tourist destination.

### **1.7.4 Peri-protected area**

Peri-protected area used specifically through out this thesis is based on the concept of protected areas and buffer zones. The protection of the periphery of the national park or equivalent reserve, where restrictions are placed upon resource use or special development measures, is undertaken to enhance the conservation value of the area (Martino, 2001). A peri-protected area is a transitional zone which is influenced by the protected area ecosystem. This research employs the concept of social-ecological resilience to define the system of the peri-protected area and tourism which is adopted from the socio-ecological system and resilience thinking of Stickland-Munro et al. (2010a, 2014), the Resilience Alliance (2010) and Ruiz-Ballesteros (2011).

### **1.7.5 Land use change**

Land use reflects human needs. It means that people occupy the land for settlement, cultivation, pasture, rangeland, and recreation (Mayer & Turner, 1994). In the case of this research, the focus is on a national park and its surrounding communities, which are both affected by tourism. Land use is the utilisation of available land in a particular area. Land can be used for many purposes depending on

the land user or land practitioner. In this research, land use change in the peri-protected area will be analysed from aerial photographs together with a land use map.

#### **1.7.6 Sustainable Livelihood Assets**

Livelihood refers to the capabilities, assets, and activities required for a person's living, including material and social resources. The concept of Sustainable Livelihood was developed by the British Department for International Development and is widely used in development practice (DFID, 1999). In this research, sustainable livelihood assets is based on five assets; environmental, physical, human, social, and financial capital. The livelihood assets are measured by using a questionnaire with a Likert scale to assess the local communities' livelihoods in the Sritan sub-district.

#### **1.8 Organization of the chapters**

This section focuses on the organization of the chapters. The current thesis is divided into six chapters. Table 1.1 summarizes the presentation of the thesis chapters.

Table 1.1 The outline and structure of the thesis

Chapters	Contents
Chapter 1: Introduction	The first chapter presents the research background and research problem. It also reveals the research questions, the objectives of the research and a brief of the research methodology. The chapter will describe the research process, the scope of the study, the significance of the study, the operational definitions of key terms and the organization of the thesis.
Chapter 2: Literature Review	This chapter presents the review of literature related to the current research. It focuses on the concepts and framework related to land use patterns, peri-protected areas and the driving forces of tourism.
Chapter 3: Research Methodology	Chapter three explains the research methodology of the study. It begins with the research design, the research methods and the study area. It also explains the application of the quantitative research method and qualitative research methods to facilitate the data collection and analysis.

Table 1.1 Continued

Chapters	Contents
Chapter 4: Results and Discussions	Chapter four focuses on the presentation of the quantitative and qualitative data and the analysis. These include land use patterns in the peri-protected area, tourism's driving forces in the peri-protected area, local communities in the peri-protected area and the government sector perspective. In addition, this chapter also presents the research findings discussions. These findings and discussions include the characteristics of land use change, the roles of tourism's driving forces on land use change and an understanding tourism's driving forces on land use practices in the peri-protected area.
Chapter 5: Conclusions and Recommendations	This is the final chapter of the thesis, which will identify the key findings, the contributions of the research in different perspectives and recommendations for future research.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction of the chapter**

The current research investigates the role of tourism's driving forces on land uses in the peri-protected area. This chapter will present a review of literature on the terms, concepts and the relationship between tourism and the peri-protected area. It also offers the rationale for the research problem and proposes a conceptual framework. The chapter begins with the concepts of land functions and land use patterns. Peri-protected area systems and the emerging tourism destination at the national park are then investigated. The issues associated with tourism destination at the national park are then identified. This chapter concludes with the application of the tourism destination concept, sustainable livelihood assets theory and the conceptual framework of the current research.

#### **2.2 Land functions and land use change**

The term 'land' was officially defined by the Food and Agriculture Organization of the United Nations (FAO) in Agenda 21 of the Earth Summit of the United Nations Conference on Environment and Development, which was held in Rio de Janeiro, Brazil in 1992 (FAO, 1993). It was defined as the environment near the surface, the soil, the terrain, the surface hydrology, the sedimentary layers associated with the groundwater reserves, the plants and animals, the human settlement pattern and the physical features.

The general definition of land is more associated with the physical elements including soil, vegetation, relief, hydrology, and climate (FAO, 1976). This concept was supported by Mather (1992) suggesting that land is the basic natural resources

which function for human use in making a living. Land is not only defined by physical elements as people use land for many purposes such as food production, shelter, and recreation. Briassoulis (2000) also proposed a similar concept of land stating that the biophysical characteristics of the land itself determine the function of land, which results from activity in the past and present. Moreover, land use patterns are a product of human actions and the power to change land use according to their needs. The concept of land was also defined by Williamson et al. (2010) who stated that land is associated with two aspects; the physical aspect which is building and resources and the cognitive aspect which is theory and concept. They further explained that the term 'land', as a physical concept, refers to the surface of the earth and includes all that is above or below the surface. From the cognitive aspect, the concepts and ideas about land represent the way of people think about land and influences their behaviour towards the land.

### **2.2.1 Functions of land**

The function of land refers to the capacity of the different natural and semi-natural components and processes that occur on earth to provide goods and services which directly or indirectly benefit human well-being and society. The goods and services are ecological, economic, social or cultural value. The functions of land is defined as the fluxes and processes that occur in ecosystems or landscapes while goods and services are the material and non-material products provided by utilizing the land (Verburg et al., 2009; Silva, 2011).

FAO (1995) stated that land is not only used to produce food and fibre, but land has many functions for people, such as the production function, the biotic environmental function, the climate regulative function, the hydrologic function, the

waste and pollution control function, the living space function, the archive or heritage function and the connective space function. People use land as a multiple-choice approach. They mix and match concepts of land to suit their changing lifestyles or needs. Furthermore, land functions depend on the purposes of land uses (FAO, 1995; Williamson et al., 2010). The various concepts of land function are as follows:

- Land as a natural resource including air, water soil, and subsoil.
- Land as nature which means the natural environment.
- Land as a physical space which means the surface and area in which life takes place.
- Land as a resource, as a source of support or provision.
- Land as an environment, which means a place requiring management to preserve.
- Land as a spiritual entity, which mean the source of all life and a sustainer of all life.
- Land as a community which means a natural ecological community in which individuals have special rights and responsibilities.
- Land as property, which means having the right to own land as a basis for trading.
- Land as a factor of production, which mean a vital economic factor.
- Land as capital, which means a store of economic value.
- Land as a consumer good, which means a consumer good produced and affected by human enterprise as a park and recreation site, as a building lot, and as a factor of production.
- Land as a human right, which means exhortative claims for rights in land are fundamental political tools.

### **2.2.2 Land use change**

The functions of land listed above show that there are many functions of land. Generally, the term 'land use' means people occupy or utilize the land for settlement, cultivation, pasture, rangeland, recreation, etc. Changing land use involves a shift to a different use or the intensification of the existing use (Mayer & Turner, 1994). Land use is physical. The entity regarding topography and spatial nature is always associated with land use and economic value, which is expressed in price per hectare (FAO, 1995). The tendency to change land use reflects its economic value. Human activities are recognized as a major force that shapes the land (Mayer & Turner, 1994). In addition, there are many purposes for land use, for example, agriculture, forestry, wildlife, recreation, and urban development (FAO, 1993).

Vink (1983) stated that land use is a reflection of natural and human needs. Humans have the most severe potential impact on land ecosystems. They can either destroy or build new ecosystems, which are called cultural ecosystems or land utilization types. In a cultural ecosystem, people acquire materials for food, clothes, energy and space for recreation or tourism. Other than that, the protection and conservation of natural ecosystems through nature reserves is seen as a particular kind of land use. It reflects not only human needs, but also human responsibilities.

Human use of land can force in land use change. Briassoulis (2000) found that there are two main drivers of change in land use. The first is bio-physical drivers and the second is socio-economic drivers. Bio-physical drivers are the characteristics and processes of the natural environment; for example, the weather and climate variations, landform, topography, and geomorphic processes, volcanic eruptions, plant succession, soil types and processes, drainage pattern, availability of natural resources, etc. Socio-economic drivers are the factors and processes of the demographic, social, economic,



political and institutional and technological factors (Kindu et al., 2015). Bio-physical driving forces usually directly cause land-cover change and may influence land use decision making. Turner et al. (1993) indicated that even if the characteristics of environmental attributes cause land use change, they also reflect the main uses of land for human activities, such as agriculture, industry, forestry, energy production, settlement, recreation and tourism, and water catchment and storage.

### **2.2.3 Factors affecting land use change in the peri-protected area**

There are many studies on how human activities force change in land use. Economic and policy factors are the main factors affecting land use in urban zones (Bicik et al., 2001; Yao et al., 2015). Furthermore, in the peri-urban area more residential areas are appearing, together with industrial and mining sites, areas of vacant land, and transportation networks (Wu et al., 2008). However, in the rural zone there are settlement and cultivation areas for local people that have replaced forest land (Nzunda, 2013). The changes in land use affect the area of land utilization; there has been a decrease in forest land while agricultural land use has increased. The demand for forest products, illegal logging, shifting cultivation, and increasing crop prices have caused changes in land use (Wu et al., 2008; Liu et al., 2010; Nzunda et al., 2013; Kamwi et al., 2015).

Several studies have investigated land use and tourism development, such as Kuvan (2005), Gaughan et al. (2009), Atik et al. (2010), Holland (2011), Wang & Liu (2013), Mao et al. (2014b), and Marzuki et al. (2016). Marzuki (2016) mentioned that tourism development is one of the major driving forces behind land use and landscape changes. Many tourist destinations in mountain, river basin and coastal regions have reported issues from tourism development on land use change both in

terms of in pattern and process of change (Kuvan, 2005; Gaughan et al., 2009; Atik et al., 2010; Holland, 2011; Wang & Liu, 2013; Mao et al., 2014a; Marzuki et al., 2016).

Gossling (2002) noted a worldwide use and conversion of land to become tourism destinations. Tourism regions often require infrastructure to support the visitors, for example, in mountainous regions e.g. Alps, in coastal areas e.g. the Mediterranean, and in tropical zones e.g. Bali. The conversion of the land is for the development of tourism. The direct land uses for tourism development include transportation (e.g. roads network, railways, airports, ports, marinas, etc.), accommodation (e.g. hotels, vacation homes, campsites, etc.), and tourist activities areas (e.g. ski areas, ports, etc.). Indirect land uses include food production to supply the hotels and restaurants, and the ground used for solid waste and wastewater. The area affected by tourism is thus significantly greater than just the built-up area.

Most of the destinations in mountainous regions face deforestation problems. Forests have been mostly used for tourism to build tourist facilities, for recreational activities (Kuvan, 2005) and for the construction of the buildings and tourism facilities (Mao et al., 2014b). The result of the research on the use of forests for tourism by Kuvan (2005) confirmed Gossling's (2002) study that change in land use is one of the most important components of the global environmental consequences of tourism. The study's findings further revealed that such change has resulted in forest decline. Similarly, deforestation has occurred as a result of intensive development at coastal tourist destinations such as Batu Feringghi in Penang Island (Marzuki et al., 2012).

A study on the Angkor basin in Cambodia is another example of land use change due to the tourism development, the study found that forest loss had occurred