

# Political ecology, privation and sustainable livelihoods in northern Thailand's national parks

Aurathai Phongchiewboon <sup>a1</sup>

Trisia Farrelly <sup>b</sup>

Karen Hytten <sup>b</sup>

John Holland <sup>b</sup>

<sup>a</sup> Kasetsart University, Thailand

<sup>b</sup> Massey University, New Zealand

## Abstract

National parks provide a wide range of ecological, social and economic benefits. However, in some cases the establishment of national parks has also led to the displacement of Indigenous people, the disruption of their livelihoods, and ongoing social conflict. Northern Thailand's national parks are home to approximately one million Indigenous people. Balancing the interests and needs of national park authorities with those of Indigenous communities within and adjacent to these parks poses significant challenges. This article employs qualitative research methods to assess the livelihood strategies of six Indigenous hill tribe communities residing within three national parks in Northern Thailand. Due to the criminalization of the traditional farming systems and restrictions imposed on land use, these communities have had to adapt their livelihood practices to survive. Our findings suggest that communities remain in a state of flux and are continually adapting to changing circumstances. It is argued that greater community empowerment and participation in collaborative decision making is crucial to strengthen both sustainable livelihoods and environmental conservation efforts within Northern Thailand's national parks.

**Keywords:** Sustainable livelihoods, co-management, Northern Thailand, national parks, social justice

## Résumé

Les parcs nationaux offrent un large éventail d'avantages écologiques, sociaux et économiques. Cependant, dans certains cas, la création de parcs nationaux a également entraîné le déplacement des populations autochtones, la perturbation de leurs moyens de subsistance et des conflits sociaux persistants. Les parcs nationaux du nord de la Thaïlande abritent environ un million d'autochtones. Équilibrer les intérêts et les besoins des autorités des parcs nationaux avec ceux des communautés autochtones à l'intérieur et à proximité de ces parcs pose des défis importants. Cet article utilise des méthodes de recherche qualitative pour évaluer les stratégies de subsistance de six communautés indigènes de tribus montagnardes résidant dans trois parcs nationaux du nord de la Thaïlande. En raison de la criminalisation des systèmes agricoles traditionnels et des restrictions imposées à l'utilisation des terres, ces communautés ont dû adapter leurs pratiques de subsistance pour survivre. Nos résultats suggèrent que les communautés restent dans un état de flux et s'adaptent continuellement aux circonstances changeantes. Il est soutenu qu'une plus grande autonomisation et participation des communautés à la prise de décisions en collaboration est cruciale pour renforcer à la fois les

---

<sup>1</sup> Dr. Aurathai Phongchiewboon, Independent consultant, Thailand and formerly Faculty of Management Science, Kasetsart University, Thailand. Email: [aomaura "at" gmail.com](mailto:aomaura@gmail.com). Dr. Trisia Farrelly, School of People, Environment and Planning, Massey University, New Zealand. Dr. Karen Hytten and Prof. John Holland, Institute of Agriculture and Environment, Massey University, New Zealand. Email: [J.D.Holland "at" massey.ac.nz](mailto:J.D.Holland@massey.ac.nz). Acknowledgements: International Doctoral Degree Scholarship from the Faculty of Management Science, Prince of Songkla University, and the referees.

moyens de subsistance durables et les efforts de conservation de l'environnement dans les parcs nationaux du nord de la Thaïlande.

**Mots-clés:** moyens de subsistance durables, cogestion, nord de la Thaïlande, parcs nationaux, justice sociale

## Resumen

Los parques nacionales brindan una amplia gama de beneficios ecológicos, sociales y económicos. Sin embargo, en algunos casos, el establecimiento de parques nacionales también ha llevado al desplazamiento de los pueblos indígenas, la interrupción de sus medios de vida y el conflicto social en curso. Los parques nacionales del norte de Tailandia albergan aproximadamente un millón de indígenas. Equilibrar los intereses y las necesidades de las autoridades de los parques nacionales con los de las comunidades indígenas dentro y adyacentes a estos parques plantea desafíos importantes. Este artículo se basa en métodos de investigación cualitativa para evaluar las estrategias de subsistencia de seis comunidades indígenas de las tribus de las montañas que residen en tres parques nacionales en el norte de Tailandia. Debido a la criminalización de los sistemas agrícolas tradicionales y las restricciones impuestas al uso de la tierra, estas comunidades han tenido que adaptar sus prácticas de subsistencia para sobrevivir. Nuestros resultados sugieren que las comunidades están en un estado de cambio y se adaptan continuamente a las circunstancias cambiantes. Argumentamos que un mayor empoderamiento de la comunidad y la participación en la toma de decisiones en colaboración es crucial para fortalecer los medios de vida sostenibles y para mejorar los esfuerzos de conservación ambiental dentro de los parques nacionales del norte de Tailandia.

**Palabras clave:** medios de vida sostenibles, gestión conjunta, norte de Tailandia, parques nacionales, justicia social

## 1. Introduction

In addition to protecting biodiversity, national parks offer a wide range of socio-economic benefits including educational, economic, recreational and spiritual opportunities for present and future generations (Dudley 2008; Dudley *et al.* 2010; IUCN 2014). Many national parks in developing countries generate income that may directly and indirectly strengthen ecosystem services, develop tourism, stimulate social and economic development, and alleviate poverty (Barrett *et al.* 2011; Cernea and Schmidt-Soltau 2006; Ferraro *et al.* 2011). Traditionally, national parks have excluded human settlements and resource extraction activities in an effort to maintain ecological integrity. However, where ecosystems have coevolved through interactions with local peoples, suddenly and unilaterally excluding them from these areas is questionable both from an ecological and a social justice perspective (Büscher and Fletcher 2020). Recognition of this has led to increasing support for Indigenous communities continuing to reside in national parks. Establishment of national parks in countries such as Thailand, Indonesia, Laos, Vietnam and Cambodia has, in some cases, negatively impacted local communities through population displacement, reduced access to traditional livelihood resources, and increased food insecurity (Cernea and Schmidt-Soltau 2006; Elynn and Masuda 2008; Erdmann *et al.* 2004; Ferraro *et al.* 2011; ICEM 2003). As a result, communities residing in, and adjacent to, national parks have been forced to adapt their livelihood strategies in response to the land use restrictions imposed by national park authorities.

There has been an increase in the global recognition of the value of community participation in natural resource management. It has been shown that participatory approaches and collaborative or co-management can significantly improve park management policies and increase the likelihood of attaining sustainable development goals, particularly in developing countries (Berkes 1995, 2009; Castro and Nielsen 2001; Hickey and Mohan 2004; Nepal 2002; Scheyvens 1999). Co-management can be defined as "the collaborative and participatory process of regulatory decision-making among representatives of user-groups, government agencies and research institutions" (Jentoft *et al.* 1998: 423). It endeavors to encompass multifaceted interests and distribute conservation benefits among national park stakeholders, local networks and communities (Johnson and Forsyth 2002; Limnirankul *et al.* 2015). Co-management assumes that sustainable and well-resourced community-based initiatives receive ongoing support from government and the private sector through collaborative conservation policies, and the provision of human and financial resources, social networking and marketing (Castro and Nielsen 2001; Parr *et al.* 2008).

Since the late 1990s there have been some attempts to establish co-management initiatives in some Thai national parks. However, the complex and multifaceted social, political, and economic interests of national park

stakeholders have posed significant challenges. Efforts to establish co-management initiatives have been constrained by government instability, prejudice against ethnic minorities, ongoing deforestation and environmental degradation, government-imposed limitations on the availability of agricultural land, and conservation policies that continue to negatively impact on the livelihoods of Indigenous communities residing within and adjacent to national parks (Johnson and Forsyth 2002; Limmirankul *et al.* 2015; Parr *et al.* 2008; Vandergeest 2003; Wittayapak 2008). Unfortunately, while co-management initiatives in some of Thailand's national parks have achieved conservation success, this has not always been accompanied by socio-economic progress due to limited and unequal economic benefit-sharing and an absence of conflict resolution mechanisms (Freudenthal *et al.* 2012; Parr *et al.* 2008). Bennett and Dearden (2014) found that co-management initiatives in the coastal regions of southern Thailand remain problematic and may be actually contributing towards diminishing social equity and declining ecological sustainability.

Northern Thailand's national parks are home to approximately one million Indigenous people of different ethnic groups, including the Karen and the Hmong (HRDI 2008, 2009). The Karen are the largest Indigenous group in Northern Thailand with most Karen villages located in the middle zones of the uplands (Rajah 2008). The Hmong are the second largest upland ethnic minority in Northern Thailand and Hmong villages are among the most elevated in Northern Thailand (Forsyth and Walker 2008). Both Karen and Hmong communities have traditionally practiced shifting cultivation, sometimes also referred to as 'swidden' or 'slash-and-burn' agriculture. Shifting cultivation typically involves cutting down trees and undergrowth and allowing it to dry out before burning it. Crops are then grown on the cleared fields for one or more rainy seasons, before being left to accumulate biomass during a long fallow period while farmers move to another site and begin the cycle again (Forsyth and Walker 2008; IMPECT and FPP 2006).

The Forest Act 1941 was the first step towards criminalizing the Karen and Hmong's way of life whereby, unless land was classified as 'agricultural' or express permission was granted, building, swiddening and other activities deemed 'destructive' to the forest were banned (*ibid.*, p. 14). As such, The Forest Act effectively outlawed Karen and Hmong traditional harvesting and farming methods. Despite subsequent amendments to the Act, its fundamental impact has remained unchanged and continues to show a lack of understanding of the impacts of shifting cultivation (Survival International 2017). In many parts of the world, swiddening has long been practiced as a sustainable subsistence agricultural practice and it is often associated with minority groups who live in hilly and remote regions, are forced to make the most of fragile or poor soils, and continue to face land tenure constraints. While yield is low compared with modern farming systems (using fertilizers, pesticides and farm machinery), it also provides a relatively reliable livelihood (Dressler *et al.* 2017).

Traditional swiddening practices can "maintain very high levels of biodiversity while providing livelihood for populations in tropical forest areas worldwide. Far from being responsible for destroying biodiversity, tribal swidden systems are being recognized as having contributed to the diversity of forest areas and to maintaining the ecological value of these areas." (Survival International 2017). Indeed, research demonstrates that in some cases swiddens provide better land management and biodiversity than reforestation (Alford 1992; Schmidt-Vogt 1999). The livelihood alternatives offered to local communities where swidden systems have been outlawed may not provide better outcomes (Dressler *et al.* 2017). Mountainous topography, limited infrastructure, and limited market demand and access to capital hamper alternative agricultural practices where shifting cultivation is criminalized. Thus, the Karen and Hmong continue to occupy an economically and politically disadvantaged position within Thai society.

They have ardent advocates. Kundstadter *et al.* (1978) demonstrated that each ethnic group had its own unique swidden system. Chapman and Sabhasri (1983), McKinnon (1983), and McKinnon and Bhruksasri (1983), and others exposed many of the complexities of deriving a livelihood amongst the hill tribes. Drawing from the work of these scholars, Ives (1983: 311) argued:

...some broad issues emerge: (1) existing Thai development policies may not be adequately based upon the behavioural patterns and perceptions of the local people; (2) the perception of highlanders by the Thai and outsiders are not necessarily accurate... the problems are neither technical nor scientific, but social and economic... Throughout the developing mountain world, solutions imposed by outsiders will frequently fail; success depends upon the degree to which the local people are enabled to take the initiative.

It was only in 1959, that the term 'Hill tribes' gained some official recognition in Thailand. The Hill Tribe Welfare Committee was formed under the Ministry of the Interior (Morton and Baird 2019: 12). Over the decades, they have been stigmatized as mobile "border transgressors" and even anti-state, or communists. (*ibid.*). The term Indigenous dates to the 1990s in Thailand, associated with the establishment of the Asia Indigenous Peoples Pact and other organizations. Despite official regulations allowing Indigenous communities to collectively manage and use state-owned land (Prime Minister's Office on the Issuance of Community Land Title Deeds 2010) in May 2014, 39 Karen were arrested by the army for cutting down trees to build their homes. In July 2014, the RFD reclaimed the land of three Karen families in Thung Pa Ka village, northern Mae Hong Son province and in May 2015, 39 Pga k'nyau Karens were arrested by the army for cutting down trees to use the timber to build their homes (Cultural Survival, NIPT and AIPP 2016).

Despite the Thai government adopting some policies favourable to Indigenous peoples such as the Amendment to the Nationality Act 2008; the Community Land Title Deeds Regulation 2010; the Restoration of the Traditional Practices and Livelihoods of Karen and Sea Gypsies in 2010; and the Ministerial Regulation on Community Schools 2015, there is little evidence of these being implemented. The government ratified the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007 (Morton and Baird 2019: 26). The ruling National Council for Peace and Order (NCPO) has made efforts to protect and promote human rights. However, the United Nations' Periodic Review of Human Rights in Thailand was scathing of the government stating that "the Thai Constitution does not recognize Indigenous peoples – let alone their rights as per the United Nations Declaration on the Rights of Indigenous Peoples" (UPR 2016).

Regulations such as NCPO Order No. 64/2014 and 66/2014 under the Forestry Master Plan, the 10th Internal Security Operation Command (ISOC) Action Plan, National Park Act, National Forest Reserve Act, Wildlife Conservation and Protection Act, and NCPO Order 4/2014 continue to deprive Indigenous peoples of their rights and empower authorities to arrest and prosecute people for illegal logging and encroachment of land, and confiscate their land and destroy their crops (UPR 2016).

Since the early 1990s there has been a move toward the devolution of national park management to local authorities. This shift toward decentralisation offers the potential for Indigenous communities living in national parks and protected areas to participate in park management. The 1994 Tambon Administration Act (TAO) was the earliest evidence of this shift. It provided a greater role for local government units in forest management. Under this Act, TAOs (sub-district governments units) have responsibility for managing all natural resources within their boundaries. This decentralization plan was further supported by the Thai Constitution which came into effect in 1997. Both of these laws further enshrine local communities' participation in forest management and pave the way for clarifying land-use issues and local communities' role in forest management (Pragtong 2000). The Constitution states that local people and organizations should be involved in managing their natural resources. However, following a military coup, the Constitution was amended in 2007; suspended in 2014 following a further coup; and the 2017 Constitution is under military oversight.

The Decentralisation Act 1999 emerged from the new Constitution, and sought to devolve power and responsibility from central government to local government (Charas and Weist 2010; Dupar and Badenoch 2002; Ferguson and Chandrasekharan 2005). The Act has catalyzed a range of co-management initiatives in Thailand's national parks and protected areas, for example, in 1991, the Ministry of Agriculture and Cooperatives and Royal Forest Department initiated The Pilot Project of Community Participation in National Park Management (RFD 2000) which emphasizes 'partnership and benefit sharing' in park management. This project was applied to six protected areas including Ob Luang National Park.

In January 2011 at the IUCN Commission on Environmental, Economic and Social Policy *Sharing Power* conference in Whakatane, New Zealand, a meeting was held between Indigenous representatives, the chairs of three IUCN Commissions, other IUCN staff, and representatives of several other conservation organizations. The outcome was an agreement to review and advance the implementation of resolutions relating to Indigenous People adopted at the 4th World Conservation Congress in 2008, held in Barcelona, Spain. In particular, the Whakatane Mechanism was proposed as a response to the IUCN's Resolution 4.052 which calls for "mechanisms to address and redress the effects of historic and current injustices against Indigenous peoples

in the name of conservation of nature and natural resources" (ICUN 2008). The aim of the Whakatane Mechanism is "to assess the situation in different protected areas around the world and, where people are negatively affected, to propose solutions and implement them" (Whakatane Mechanism 2018). It seeks to ensure that conservation practices respect the rights of Indigenous people as recognised by the UN Declaration on the Rights of Indigenous People and promote the full and effective participation of Indigenous people in conservation policy and practice (Freudenthal *et al.* 2012: 87). Two initial pilot assessments took place in 2011 and 2012, in Mt Elgon, Kenya, and Ob Luang National Park in Thailand.

The assessment in Ob Luang National Park was carried out by a team of Indigenous people in collaboration with many of the organisations involved in the national park including the Department of National Parks, Wildlife and Plant Conservation (DNP), the Inter Mountain Peoples Education and Culture in Thailand Association, The Forest Peoples Programme, and local NGOs including the Watershed Network and Highland Nature Conservation, Chomthong (FPP 2012). First, representatives of these groups gathered for a roundtable discussion about the concept of the Whakatane Mechanism and to plan the assessment. Next, several days were spent undertaking a scoping study within the national park, meeting with communities and local officials. A second roundtable was then held to discuss the findings and agree upon recommendations of the assessment (Freudenthal *et al.* 2012: 88). It was found that current joint management initiatives within the park were widely supported and had resulted in positive effects for both communities and conservation, including "reduced tensions between the government and communities, increased protection of forests and watersheds, and improved livelihood security for indigenous peoples and local communities" (IUCN *et al.* 2012: 22).

However, Ob Luang is one of only a limited number of national parks in Thailand where joint management practices have been promoted. Most Indigenous people living in national parks are still considered to live there illegally, with limited opportunities to participate in decision making about national park management (IUCN *et al.* 2012: 22). Parr *et al.* (2008: 294-5) suggest that while there has been a slight shift towards informing and consulting local communities, national parks in Thailand were still managed largely in the realm of 'ignore and repress' where government agencies hold full authority and responsibility for the management of protected areas.

To examine the extent to which co-management and a more democratic approach to livelihood improvements is occurring, we compare and contrast the Department for International Development's (DFID) sustainable livelihood framework (SLF) with the livelihood practices of six Karen and Hmong hill tribes living in three Northern Thailand national parks. We argue that improved participatory national park management policies, plans and practices that attend to local community livelihood needs would lead not only to more sustainable livelihoods, but also to improved environmental sustainability in Northern Thailand's national parks.

## 2. Research methods

Six Indigenous communities located in three Northern Thailand national parks were selected to explore local livelihood strategies. The chosen case studies included three Karen villages: Baan Mae Klang Luang and Baan Pa Hmoon in Doi Inthanon National Park; and Baan Huay Ka Noon in Ob Luang National Park; and three Hmong villages: Baan Hmong Doi Pui and Baan Hmong Mae Sa Mai in Doi Suthep-Pui National Park; and Baan Pa Kluay in Ob Luang National Park (Figure 1). All three national parks are in Chiang Mai Province and are promoted as premier tourism destinations. The villages were selected based upon three criteria: that they comprised a representative sample of typical villages; that the villagers were willing to participate; and the villagers had participated in conservation activities/initiatives.

Developed for and then by the UK's Department for International Development (DFID) in the 1990s (and then rolled out into UK aid programs, and with a continuing presence in NGO project frameworks), the Sustainable Livelihood Framework provides an analytical tool to facilitate analysis of the key components of sustainable livelihoods: vulnerability context, livelihood assets, transforming structures and processes, and livelihood strategies and outcomes.

In its simplest form the framework views people as operating in a context of vulnerability. Within this context, they have access to certain assets or poverty reducing factors. These gain their

meaning and value through the prevailing social, institutional and organisational environment. This environment also influences the livelihood strategies – ways of combining and using assets – that are open to people in pursuit of beneficial livelihood outcomes that meet their own livelihood objectives. (DFID 1999)

Some of these elements leap scale to show the impacts of larger scale processes on local livelihoods, and are therefore important in a political ecology analysis of the relationships between parks and local people. Within the Sustainable Livelihood Framework, the vulnerability context refers to the way social and environmental pressures including shocks (e.g. natural disasters, war and political instability), trends (e.g. economic trends and social changes), and seasonality (e.g. climatic changes, floods and droughts) impact on the accessibility of livelihood assets (Ashley and Carney 1999; Carney 2002; DFID 1999). The framework highlights the importance of five different types of livelihood assets: human capital, natural capital, financial capital, physical capital and social capital (as described in Table 1).

Data on aspects of livelihoods and park conflicts were collected between February and August 2012 using a range of qualitative research methods including in-depth interviews, observation, and document analysis. In total, 116 interviews were carried out with 72 villagers, seven government officials, 14 academics, eight representatives of NGOs, and 15 tour agency representatives. Purposive and snowball sampling were employed for research participant selection. In each village 12 people were interviewed including the park official of the village, their assistants, village committee members and villagers. All interview data were transcribed and translated from Thai into English and thematically organized using NVivo™ software. The data were analyzed using content analysis which focused on the five livelihood assets of DFID's Sustainable Livelihood Framework.

Access to livelihood assets is mediated by transforming structures and processes (Scoones 1998). These can include processes associated with laws, policies, cultures, and the structure and function of both government and private sector institutions, which can both enable and constrain livelihood strategies (Ashley and Carney 1999; Baumann and Subir 2001). Livelihood strategies are the varied capabilities of individuals and households to access and utilize resources. People develop and employ a range of livelihood strategies over time to enable them to achieve positive livelihood outcomes (Ashley and Carney 1999; Scoones 1998; Toner and Franks 2006). Positive sustainable livelihood outcomes include increased income, improved well-being, reduced vulnerability, improved food security, and more sustainable natural resource use (Ashley and Carney 1999; DFID 1999).

DFID's Sustainable Livelihood Framework can be applied to investigate various aspects of peoples' livelihoods and how they interact with each other and external factors (Ashley and Carney 1999; Krantz 2001). It has been used by many researchers to explore the challenges facing local communities, including Indigenous communities in protected areas (Ashley 1999; Bennett and Dearden 2014; Bennett 2010; Toner and Franks 2006). The Framework can provide insights into the transforming political structures and processes of conservation policies that play a vital role in shaping livelihood resources, strategies, and outcomes in the context of the relationships between people and national parks (Fox 1997; Hussein 2002; Mazibuko 2013; Murray 2002). An understanding of these institutions is important for an in-depth exploration of the complexities of social relationships and power dynamics embedded in such communities (Carney and Britain 2003; Clark and Carney 2008; Glavovic *et al.* 2002).

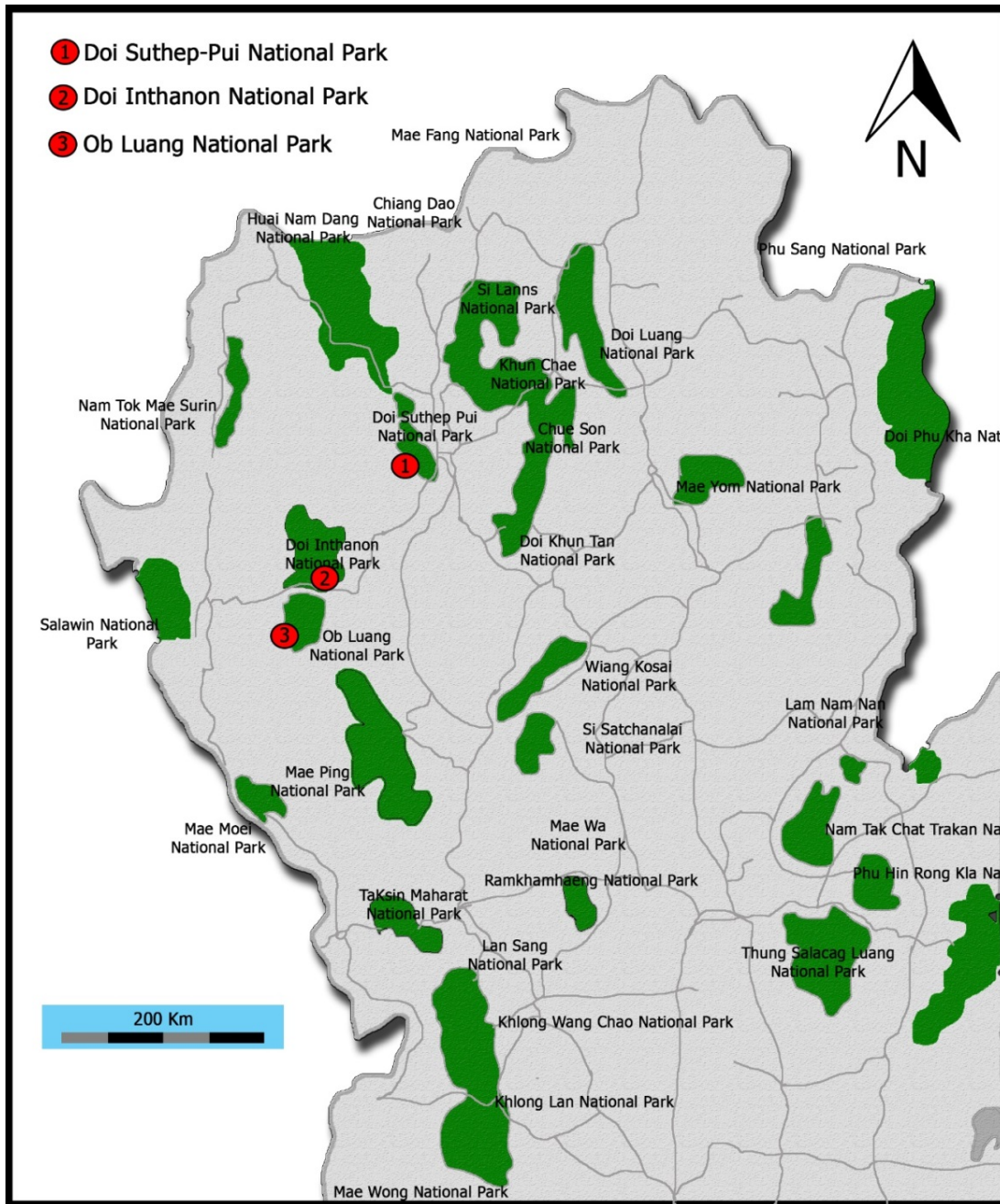


Figure 1: Case study areas in Northern Thailand's national parks.

| <b>Livelihood Assets</b> | <b>Definition</b>  |
|--------------------------|--|
| Natural capital          | "The natural resource stocks from which resource flows and services (e.g. nutrient cycling, erosion protection) useful for livelihoods are derived."   |
| Human capital            | "The skills, knowledge, and ability to labor, and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives."  |
| Social capital           | "The social resources upon which people draw in pursuit of livelihood objectives which are developed through networks and connectedness, membership of more formalised groups, relationships of trust, reciprocity and exchanges." |
| Physical capital         | "Physical capital comprises the basic infrastructure (e.g. roads, rails and telecommunications) and producer goods needed to support livelihoods."   |
| Financial capital        | "The financial resources that people use to achieve their livelihood objectives. It includes available stocks and regular inflows of money."   |

Table 1: Types of livelihood assets. *Source:* DFID (1999: 7-15).

### 3. Results

We found that the six case study villages face similar challenges, and share similar livelihood strategies and environmental management practices, which they have customized according to their individual geographical locations, available resources, histories, traditional knowledge, beliefs and other cultural factors. The results of the interviews, observations and document analysis are presented below in relation to the key components of DFID's Sustainable Livelihood Framework.

#### *Vulnerability contexts*

A significant factor defining the vulnerability context of the case study villages are the restrictions imposed by national park regulations. In all six communities, older villagers described the rapid and dramatic impact that the establishment of the national parks<sup>2</sup> had on their livelihoods. Key issues included the reduction in land available for agriculture, and the prohibition of hunting and collecting food and timber from the forests:

National parks officials came here once... without warning, they came into our village and told us that the area of the village was confined within the boundaries of the national park... our village had an invisible fence that limited the size of village... [Community member, Doi Inthanon National Park]

Access to the protected forest is prohibited since the park was established... Many years ago, one community member was arrested in the forest because he would like to gather mushrooms and herbs... After that, he was sent to jail for many months because he could not pay the fine... quite a lot money... Since then, it is the responsibility of the park official of the village to warn community members at every community meeting. [Community member, Baan Pa Hmoon village, Doi Inthanon National Park]

<sup>2</sup> Doi Inthanon National Park was established in 1972, Doi Suthep-Pui National Park in 1981 and Ob Luang National Park in 1991.



When this national park was established, national park authorities came to our village to survey and told us to stop our access to the protected forest. They commanded that we should stay only within the boundaries of the community village... [Community member, Doi Suthep-Pui National Park]

As a result of national park regulations villagers have had to adapt their agricultural practices to increase the productivity of the available land, as well as growing trees for firewood during winter:

Everything changed so fast... However, we had to accept it and adapt our livelihoods in order to comply with the national park regulations... These regulations prohibit us from accessing protected areas of the forests. Hunting animals and collecting edible plants is also prohibited, so agriculture became of greater importance for our livelihood. [Community member, Doi Suthep-Pui National Park]

To comply with the national park's regulations, we are prohibited from accessing plants and hunting animals in protected areas... We had to learn how to live with the changes and had to adapt to sustain our livelihoods. Now our food and products come from agriculture and animal husbandry. We have to work harder in the fields and the only thing that we pray for is to have enough food throughout the year. [Community member, Baan Pa Kluay village, Ob Luang National Park]

A second key factor shaping the vulnerability context of the case study villages is population growth. Several interviewees explained that population growth has resulted in water shortages and increased pressure on agricultural areas. Because national park regulations prohibit the expansion of agricultural areas beyond the boundaries of their villages, villagers have employed agricultural strategies such as shortening the fallow period and abandoning rotational agriculture. However, there are concerns that shortening fallow periods can cause soil erosion, reducing soil fertility and agricultural productivity (Turkelboom and Van Keer 1996).

Interviewees also expressed concerns about seasonal climatic changes that affect what they can grow and can seriously reduce agricultural productivity, further adding to their anxieties around their inability to access forest areas to collect fruit, water, and other resources as they had done in the past:

Over the last two years, we experienced a long drought period that resulted in less agricultural production than other years. We had just enough for our household consumption and did not have any surplus for selling at the local market. Thus, we had to get permission from the national parks official to set up a small water catchment area to ensure that we will have enough water for our agricultural areas in the following years. [Community member, Baan Huay Ka Noon village, Ob Luang National Park]

Fluctuations in the market prices of agricultural products also have significant impacts on livelihoods. Inadequate information on agricultural market trends causes uncertainty, and considerable fluctuations in household incomes. One interviewee explained that the oversupply of produce saw the price of carrots drop from 20-30 Thai Baht (US\$0.50) to just 10-15 Thai Baht (US\$0.35) per kilogram in some seasons. These price fluctuations seriously reduce the income of some households, forcing them to intensify their agricultural land, leading to environmental impacts including soil erosion and water pollution.



Figure 2: Rice cultivation in Baan Pa Hmoon village, Doi Inthanon National Park.

#### *Livelihood strategies*

Key livelihood strategies include subsistence agriculture, cash crops, community-based ecotourism ventures, making and selling handicrafts and employment within and outside the parks. Subsistence agriculture is the dominant livelihood strategy in all six case study communities. As well as growing rice (as illustrated in Figure 2 and Figure 4), villagers grow a wide variety of fruit and vegetables including bananas, plums, persimmons (*Diospyros kaki*), tomatoes, chilis, beans, shallots, cabbages and potatoes, and they raise, pigs, chickens, cows and water buffalo. Surplus produce is sold at the hill tribe markets.

Baan Hmong Doi Pui and Baan Hmong Mae Sa Mai villages have also cultivated cash crops for many years and Baan Mae Klang Luang has become well known for coffee production. The cultivation of cash crops in all six villages has been supported by the Royal Project Foundation, as explained by a representative of the Foundation during a visit to Baan Mae Klang Luang:

Villagers acquire the cash crop seeds, chemical fertilisers and other agricultural inputs from the Royal Development Project on credit. After harvesting, they sell their agricultural products to the Project, deducting the amount owed and making a profit for their community fund. The introduction of organic farming systems are promoted in each hill tribe village as the way to use less chemical fertilizers. [Royal Project Foundation staff member]

Some of the villagers also work for the Royal Project Foundation as laborers, receiving a daily income of around 150 - 200 Thai Baht (approximately 4.5 - 6 USD). Others work in plant nurseries and forest plantations for the Inter Mountain Peoples Education and Culture in Thailand Association, and the Forest Restoration Research Unit.

Four of the case study villages have developed community based eco-tourism ventures (Baan Pa Hmoon, Baan Mae Klang Luang, Baan Mae Sa Mai and Baan Hmong Doi Pui). The scale of these ventures varies. For example, in Baan Pa Hmoon just one eco-lodge had been established (as illustrated in Figure 4), while in Baan Mae Klang Luang, many eco-lodges have been built around the rice fields. Interviewees in all four villages

were enthusiastic about the additional income that these ventures generate. However, they also described concerns about some of the negative impacts associated with tourism, including increased pollution and inappropriate tourist behavior. Villagers in Baan Huay Ka Noon and Baan Pa Kluay expressed a desire to also establish tourism ventures but they currently lack adequate transport and electricity infrastructure.



Figure 3: Community-based eco-tourism lodge in Baan Pa Hmoon village, Doi Inthanon National Park.

Making and selling traditional clothes and handicrafts to domestic and international tourists at the hill tribe markets provides another important source of income. A Karen woman from Baan Pa Hmoon village explained:

I learnt how to make handicrafts from my mother. These products support our family income. A traditional cloth is 400 to 600 Thai Baht depending on styles. One scarf or one shoulder bag are 150 Thai Baht and small bags are 50 to 100 Thai Baht. We sell our handicraft products at the hill tribe market near the national park office. In one day, we can earn around 300 to 600 Thai Baht from selling our products, but we do not make this every day. [Karen woman, Baan Pa Hmoon village, Doi Inthanon National Park]

Figure 5 shows a Karen woman from one of the villages making traditional handicraft products to sell in their hill tribe market. She explained that she could receive a higher income from her handicraft products, than from her family's income from agricultural production.

Many interviewees explained that they also receive remittances from family members working in urban centres such as Chiang Mai City. However, some of them expressed concern that village workers are paid less than other Thai citizens due to their limited education and because of discrimination.



Karen women working in the fields (Figure 4) and weaving traditional cloth (Figure 5).

#### *Livelihood assets*

In all six case study communities, villagers rely heavily on natural capital to sustain their livelihoods. Particularly crucial is the availability of fertile soil and water to support both subsistence and cash crops, and livestock herding. Several interviewees expressed concerns about the impact of deforestation, forest fires, soil erosion and water pollution. They described initiatives they were involved in to try to address these issues including planting trees, maintaining firebreaks and helping fight forest fires when they do break out. Several villagers in Baan Mae Sa Mai village, commented that they are motivated to participate in reforestation efforts because they have found that through reforestation, the problem of water shortages has disappeared.

The communities rely largely on traditional knowledge of medicinal plants for healthcare. In cases of severe illness, they need to travel to a district hospital, which is located very far from their village. Although each of the six villages has a primary school, access to high school is limited. Due to the limited education and employment opportunities some villagers have moved to Chiang Mai city to further their education or to seek work.

In each community we studied there was evidence of strong social networks, both within the villages themselves and between the villages and external organizations. In Doi Inthanon National Park, park administrators frequently convened meetings with villagers to support the development of eco-tourism. Interviewees in all three Karen villages also described working on livelihood development projects with the Royal Project Foundation and several NGOs, including the Forest Restoration Research Unit, the Highland Research and Development Institute, the Inter Mountain Peoples Education and Culture in Thailand Association, CARE Thailand, the Sustainable Development Foundation, and the Forest Peoples' Programme.

We found that the financial capital available to the case study communities varied significantly. The poorest village was Baan Huay Ka Noon in Obluang National Park with an average household income of approximately US\$1,140 per annum. Ban Mae Klang Luang, Baan Pa Hmoon and Baan Hmong Mae Sa Mai all reported significantly higher average household incomes (US\$2,314, US\$2,400 and US\$2,865 per annum respectively), while Ban Hmong Doi Pui had the highest average household income (US\$4,762.50 per annum).

Baan Mae Klang Luang, Baan Pa Hmoon, Baan Hmong Doi Pui and Hmong Mae Sa Mai all operate community funds as a financial and social safety net. These funds are used to contribute to resilience and self-sufficiency in times of shock. In Baan Hmong Doi Pui and Hmong Mae Sa Mai these funds also cover the cost of maintaining community-based ecotourism facilities and community-based natural resource management, including reforestation projects and forest fire protection. However, some community members believed that these funds are mismanaged by local leaders. They argued that the way funds received from the Royal Project Foundation are managed needs to be more transparent and carefully monitored.

In terms of physical capital, the villages in Doi Inthanon National Park and Doi Suthep-Pui National Park have much better transportation infrastructure than those in Ob Luang National Park which have the poorest access. The two villages in Doi Inthanon National Parks also have reliable electricity and a good running water supply, making it easier to develop accommodation for tourists. However, during the rainy season all six villages face challenges transporting their produce to markets, and many interviewees argued that there was a need for improved roads to facilitate access to markets, employment and tourism opportunities. Some suggested that corruption within local government hinders the proper maintenance of existing transport infrastructure.

#### *Varying perspectives on co-management*

A national park official in Doi Inthanon National Park explained that he used to view the hill tribe people as problematic because he believed they destroyed the forests. However, he now realises that the hill tribe people are also 'forest protectors' because they have used their traditional knowledge and conservation practices to protect their surrounding forests. Accordingly, he has changed his attitude based on his experiences of the collaborative management of the national parks with many hill tribe communities in Northern Thailand's national parks. He argued that:

If villagers in national parks understand [how to protect the forest], they will work and cooperate well with national parks officials. In my opinion, I think the development of co-management initiatives and the zoning system are significant strategies to enhance the sustainable development in the national parks areas. [Park official, Doi Inthanon National Park]

Similarly, one of the park officials in Ob Luang National Park explained:

Many indigenous communities live in the Northern Thailand National Parks. One lesson that we learnt from the past when we used the traditional national park management was that conflicts arose. Thus, the co-management initiatives have developed as a way to create mutual understanding of the benefit of participating in conservation activities and community-based natural resource management in relation to the indigenous communities' sustainable livelihoods. [Park official, Ob Luang National Park]

However, community members and NGO representatives were more ambivalent about how genuine attempts at co-management have been. Some of the villagers commented that the current situation of local empowerment and participation still looks like "imagined empowerment and participation" as it is not really put into practice. They argued that there was limited evidence of these policies being implemented, with several interviewees expressing concerns about corruption and transparency.

The transparency of national parks is important. Sometimes the policy-making of national parks does not involve Indigenous communities, and it may link to the issue of transparency. Sometimes, the villagers lack opportunities to participate in policy-making processes. [Senior staff member from the SDF]

In practice, the local empowerment and participation of each community has had to adapt over time in response to changes in national conservation policies, which may change again in the future. [Senior staff member from IMPECT]

Based on the interviews, there are two different views that emerge on the practices of national park management and the livelihoods of Indigenous people. Currently, agreements on co-management initiatives have been implemented in the three selected national parks in this study. These agreements enable the Indigenous hill tribe communities to participate in conservation activities and enable them to communicate directly with national park officials. These agreements can be seen as a way of developing a participatory conservation approach to solve the existing conflicts between national park officials and Indigenous communities. However, we also found the results of co-management initiatives vary and may not involve true power-sharing. Rather, they are a way of strengthening and devolving the government's control over national park policy, management, and allocation. Instead of contributing to local empowerment, such arrangements may further marginalize Indigenous hill tribe communities as they still lack opportunities to participate in the policymaking processes of national park management.

#### **4. Discussion**

Indigenous hill tribe communities have had to adapt their livelihood strategies and natural resource management practices to accommodate limited access to land and to comply with national park regulations. There are continuing power inequalities in terms of land access and regulations affecting local livelihoods. The Karen and Hmong study communities have adapted their livelihood strategies by combining their agricultural knowledge, using some new farming techniques. Some have embarked upon tourism businesses, and sometimes in collaboration with government and non-government agencies who encourage tourism as a revenue source (Phongchiewboon 2016: 189).

Adaptive co-management may be defined as "a process by which institutional arrangements and ecological knowledge are tested and revised in a dynamic, ongoing, self-organized process of trial-and-error" (Folke *et al.* 2002: 8). Done well, adaptive co-management can contribute to alleviating poverty, and enhancing local empowerment (Beeton 2005; Berkes 1995, 2009; Stubelj *et al.* 2010; Yates *et al.* 2010). Successful adaptive co-management in national parks requires an understanding of the perceptions, needs, and constraints of local and Indigenous peoples' livelihoods as well as of livelihood practices that support conservation initiatives.

However, adaptive co-management is not just about participation and empowerment, it is also about learning, trial and error, co-production of agricultural knowledge and practices that work in a specific geographical locale and for a specific group of people (Parr *et al.* 2008). Berkes (2007) suggests a range of active learning activities that can be used to promote participation and collaboration in long term projects. Such activities can help all related stakeholders including researchers, practitioners, policymakers and community members to develop a greater understanding of local conservation and livelihood practices and potential enhancements to these practices.

#### **5. Conclusion**

The six hill tribe communities who participated in this study employ a range of agricultural practices that incorporate both traditional approaches and new techniques. They also participate in a range of community-based conservation activities independently and in partnership with a number of NGOs, and some have ventured into community-based tourism to further supplement their livelihoods.

Current co-management practices in Northern Thailand's national parks have demonstrated their potential to strengthen relationships between government agencies, NGOs, and communities, and improve conservation outcomes. However, it was found that local communities continue to be marginalized in legislation, policy development, and national park management. Facilitating more genuine and inclusive participation would not only strengthen already established partnerships between communities, NGOs and

government agencies, but would also have the potential to contribute to improving livelihood and conservation outcomes. A move towards a more adaptive co-management model would provide opportunities to become more reflective and contribute to ongoing improvements in how national park managers engage with communities and facilitate participation.

Our findings reveal that, whilst communities remain vulnerable to political, economic and environmental uncertainty and national policies and sentiments, participatory national park management does contribute to more sustainable livelihoods amongst Indigenous hill tribe communities as well as improved environmental sustainability in Northern Thailand's national parks. While the Karen and the Hmong dwelling within park boundaries have adapted their livelihood practices in response to the restrictions imposed by national park regulations, there are limits to their abilities to ensure the sustainability of their livelihoods, and to conserve biodiversity in the absence of external support. Co-management would give voice to local communities and ensure they are empowered to participate in developing and implementing the policies and plans that determine their survival.

## References

- Alford, D. 1992. Streamflow and sediment transport from mountain watersheds of the Chao Phraya Basin, Northern Thailand: a reconnaissance study. *Mountain Research and Development* 12(3): 257-268.
- Baumann, P. and S. Subir 2001. [Linking development with democratic processes in India: political capital and sustainable livelihoods analysis](#). *ODI Briefing Paper*. London: Overseas Development Institute.
- Barrett, C.B., A.J. Travis and P. Dasgupta. 2011. [On biodiversity conservation and poverty traps](#). *Proceedings of the National Academy of Sciences of the United States of America* 108(34): 13907-13912.
- Beeton, S. 2005. Empowerment for sustainable tourism development. *Annals of Tourism Research* 32(3): 820-822.
- Bennett, N.J. 2010. [Sustainable livelihood from theory to practice: an extended annotated bibliography for prospective application of livelihoods thinking in protected area community research](#). *Protected Area and Poverty Reduction Alliance Working Paper* No. 1. Victoria: University of Victoria.
- Bennett, N.J. and P. Dearden. 2014. Why local people do not support conservation: community perceptions of marine protected area livelihood impacts, governance and management in Thailand. *Marine Policy* 44: 107-116.
- Berkes, F. 1995. Community-based management and co-management as tools for empowerment. In N. Singh and V. Titi (eds.). *Empowerment: towards sustainable development*. London: Zed. Pp. 138-146.
- Berkes, F. 2007. Adaptive co-management and complexity: exploring the many faces of co-management. In D. Armitage, F. Berkes and N. Doubleday (eds.). *Adaptive co-management*. Vancouver: University of British Columbia Press. Pp. 19-37.
- Berkes, F. 2009. Evolution of co-management: role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management* 90(5): 1692-1702.
- Büschler, B. and R. Fletcher 2020. *The conservation revolution: radical ideas for saving nature beyond the Anthropocene*. London: Verso.
- Carney, D. 2002. [Sustainable livelihoods approaches: progress and possibilities for change](#). London: Department for International Development.
- Castro, A.P. and E. Nielsen. 2001. Indigenous people and co-management: implications for conflict management. *Environmental Science and Policy* 4(4-5): 229-239.
- Cernea M.M. and K. Schmidt-Soltau. 2006. Poverty risks and national parks: policy issues in conservation and resettlement. *World Development* 34(10): 1808-1830.
- Chapman, E.C. and S. Sabhasri. 1983. Natural resource development and environmental stability in the highlands of northern Thailand. *Mountain Research and Development* 3(4): 309-431.

- Charas, S. and D. Weist. 2010. Thailand's decentralization: progress and prospects. In S. Ichimura and R. Bahl (eds.). *Decentralization policies in Asian development*. Singapore: World Scientific Publishing. Pp. 193-224.
- Cochrane, J. 2007. Ecotourism and biodiversity conservation in Asia: institutional challenges and opportunities. In Higham, J. (ed.). *Critical issues in ecotourism: understanding a complex tourism phenomenon*. Oxford: Butterworth-Heinemann. Pp. 287-307.
- Cultural Survival International, NIPT (Network of Indigenous Peoples in Thailand) and AIPP (Asia Indigenous Peoples Pact). 2016. *Observations on the state of human rights of indigenous peoples in Thailand in light of the UN declaration on the rights of indigenous people*. Joint submission prepared for the 2nd cycle of Universal Periodic Review of Thailand, 25th session of the Human Rights Council (April-May 2016). Summary: [https://tbinternet.ohchr.org/Treaties/CCPR/Shared%20Documents/THA/INT\\_CCPR\\_ICO\\_THA\\_23570\\_E.pdf](https://tbinternet.ohchr.org/Treaties/CCPR/Shared%20Documents/THA/INT_CCPR_ICO_THA_23570_E.pdf)
- Dearden, P. 1997. Development, the environment and social differentiation in northern Thailand. In J. Rigg (ed.). *Counting the costs – economic growth and environmental change in Thailand*. Singapore: Institute of Southeast Asian Studies. Pp. 111-130.
- DFID (Department for International Development). 1999. *Sustainable livelihoods guidance sheets*. London: Department for International Development.
- Dressler, W., D. Wilson, J. Clendenning, R. Cramb, R. Keenan, S. Mahanty, T. Bech Bruun, O. Mertz and R. Lasco. 2017. [The impact of swidden decline on livelihoods and ecosystem services in Southeast Asia: a review of the evidence from 1990 to 2015](#). *AMBIO: A Journal of the Human Environment* 46: 291-310.
- Dudley, N. 2008. *Guidelines for applying for protected area management categories*. Gland, Switzerland: IUCN.
- Dudley, N., M. Hockings and S. Stolton. 2010. Precious places: getting the arguments right. In S. Stolton and N. Dudley (eds.). *Arguments for protected areas: multiple benefits for conservation and use*. London: Earthscan. Pp. 253-264.
- Dupar, M. and N. Badenoch. 2002. *Environment, livelihoods, and local institutions: decentralization in mainland Southeast Asia*. Washington, D.C.: World Resources Institute.
- Ellyn, K.D. and M. Masuda. 2008. National park establishment in developing countries: between legislation and reality in India and Indonesia. *Tropics* (2): 119-133.
- Erdmann, M.V., P.R. Merrill, M. Mongdong, I. Arsyad, Z. Harahap, R. Pangalila, R. Elverawati and P. Baworo. 2004. *Building effective co-management systems for decentralized protected area management in Indonesia: Bunaken National Park case study*. Jakarta: Natural Resource Management Program Secretariat.
- FAO (Food and Agriculture Organisation of the United Nations) 2002. *Case study on education opportunities for hill tribes in Northern Thailand – implications for sustainable rural development*. Bangkok: FAO Regional Office for Asia and the Pacific.
- Ferguson, I. and C. Chandrasekharan. 2005. Paths and pitfalls of decentralization for sustainable forest management: experiences of the Asia Pacific region. In C. J. Pierce and D. Capistrano (eds.). *The politics of decentralization – forests, power and people*. London: Earthscan. Pp. 63-85.
- Ferraro, P.J., M.M. Hanauer and K. Sims. 2011. [Conditions associated with protected area success in conservation and poverty reduction](#). *Proceedings of the National Academy of Sciences of the United States of America* 108(34): 13913-13918.
- Folke, C., S. Carpenter, T. Elmqvist, L. Gunderson, C.S. Holling and B. Walker. 2002. Resilience and sustainable development: building adaptive capacity in a world of transformations. *Journal of the Human Environment* 31(5): 437-440.
- Forsyth, T.J. and A. Walker. 2008. *Forest guardians, forest destroyers: the politics of environmental knowledge in Northern Thailand*. Seattle: University of Washington Press.



- Foucat, V.S.A. 2002. Community-based ecotourism management moving towards sustainability, in Ventanilla Oaxaca, Mexico. *Ocean and Coastal Management* 45(8): 511-529.
- FPP (Forest Peoples Programme) 2012. *Pilot Whakatane Assessment in Ob Luang National Park, Thailand, finds exemplary joint management by indigenous peoples, local communities, national park authorities and NGOs*. [accessed February 5 2018]. <https://www.forestpeoples.org/en/topics/whakatane-mechanism/news/2012/02/pilot-whakatane-assessment-ob-luang-national-park-thailand-f>.
- Freudenthal, E., M.F. Ferrari, J. Kenrick and A. Mylne, A. 2012. The Whakatane Mechanism: promoting justice in protected areas. *Nomadic Peoples* 6(2): 84-94.
- Hall, C.M. and H. James. 2007. Scaling ecotourism: the role of scale in understanding the impacts of ecotourism. In Higham, J. (ed.). *Critical issues in ecotourism: understanding a complex tourism phenomenon*. Oxford: Butterworth-Heinemann. Pp. 243-255.
- Hickey, S. and G. Mohan. 2004. *Participation: from tyranny to transformation? Exploring new approaches to participation in development*. London: Zed Books.
- HRDI (Highland Research and Development Institute). 2008. *Annual report*. Chiang Mai: Highland Research and Development Institute.
- HRDI (Highland Research and Development Institute). 2009. *The statistic number of hill tribe population in Northern Thailand*. Chiang Mai: Highland Research and Development Institute.
- ICEM (International Centre for Environmental Management) 2003. *Lessons learned in Cambodia, Lao PDR, Thailand and Vietnam : review of protected areas and development in the four countries of the Lower Mekong River Region*. Brisbane: International Centre for Environmental Management.
- IMPECT (Inter Mountain Peoples Education and Culture in Thailand Association) and FPP (Forest Peoples Programme). 2006. *Indigenous knowledge, customary use of natural resources and sustainable biodiversity management: case study of Hmong and Karen communities in Thailand*. [accessed July 1 2017]. <http://www.forestpeoples.org/sites/fpp/files/publication/2010/08/10cthailandimpectjun06eng.pdf>.
- IUCN (International Union for Conservation of Nature). 2014. *Summary report: IUCN World Park Congress 2014 Bulletin*. [accessed April 5 2015]. <http://www.iisd.ca/download/pdf/sd/crsvol89num16e.pdf>.
- Ives, J.D. 1983. Preface. *Mountain Research and Development*. 3(4): 309-311.
- Jentoft, S., B.J. McCay and D.C. Wilson. 1998. Social theory and fisheries co-management. *Marine Policy* 22(4-5): 423-436.
- Johnson, C. and T.J. Forsyth. 2002. In the eyes of the state: negotiating a 'rights-based approach' to forest conservation in Thailand. *World Development* 30(9): 1591-1605.
- Krantz, L. 2001. *The sustainable livelihood approach to poverty reduction: an introduction*. Stockholm: Swedish International Development Cooperation Agency.
- Limnirankul, B., T. Onprapai and P. Gypmantasiri. 2015. [Building local capacities in natural resources management for food security in the highlands of Northern Thailand](#). *Agriculture and Agricultural Science Procedia* 5: 30-37.
- Maxwell, J.F. and S. Elliott. 2001. *Vegetation and vascular flora of Doi Suthep-Pui National Park, Chiang Mai Province, Northern Thailand*. Bangkok: Biodiversity Research and Training Program.
- McKinnon, J. 1983 A highlander's geography of the highlands: mythology, process, and fact. *Mountain Research and Development* 3(4): 313-317.
- McKinnon, J. and W. Bhruksasri. 1983. *Highlanders of Thailand*. Oxford: Oxford University Press.
- Morton, M.F. and I.G. Baird. 2019. From Hill tribes to Indigenous Peoples: the localisation of a global movement in Thailand. *Journal of Southeast Asian Studies* 50(1)7-31.
- Natcher, D.C., S. Davis and C.G. Hickey. 2005. Co-management: managing relationships, not resources. *Human Organization* 64: 240-250.
- Nepal, S.K. 2002. Involving indigenous peoples in protected area management: comparative perspectives from Nepal, Thailand, and China. *Environmental Management* 30(6): 748-763.

- Parr, J.W.K., S. Jitvijak, S. Saranet and S. Buathong. 2008. Exploratory co-management interventions in Kuiburi National Park, Central Thailand, including human-elephant conflict mitigation. *International Journal of Environment and Sustainable Development* 7(3): 293-310.
- Phongchiewboon, A. 2016. *Livelihood strategies and environmental management practices in northern Thailand national park communities*. PhD thesis. Palmerston North: Massey University.
- Pragtong, K. 2000. *Recent decentralization plans of the Royal Forest Department and its implications for forest management in Thailand*. Bangkok: Royal Forest Department.
- Prime Minister's Office on the Issuance of Community Land Title Deeds. 2010. Bangkok: Prime Minister's Office.
- Rajah, A. 2008 [1986]. *Remaining Karen: a study of cultural reproduction and the maintenance of identity*. Canberra: ANU Press.
- RFD (Royal Forestry Department) 2000. *Status of protected areas in the Kingdom of Thailand*. Bangkok: Royal Forest Department.
- Roth, R. 2004. On the colonial margins and in the global hotspot: park–people conflicts in highland Thailand. *Asia Pacific Viewpoint* 45(1): 13-32.
- Roth, R. 2008. 'Fixing' the forest: the spatiality of conservation conflict in Thailand. *Annals of the Association of American Geographers* 98(2): 373-391.
- Scheyvens, R. 1999. Ecotourism and the empowerment of local communities. *Tourism Management* 20(2): 245-249.
- Schmidt-Vogt, D. 1999. *Swidden farming and fallow vegetation in Northern Thailand*. Stuttgart: Franz Steiner Verlag.
- Scoones, I. 1998. *Sustainable rural livelihoods: a framework for analysis*. IDS Working Paper 72. Brighton: Institute of Development Studies.
- Sims, K. 2010. Conservation and development: evidence from Thai protected areas. *Journal of Environmental Economics and Management* 60(2): 94-114.
- Stone, L.S. and T.M. Stone. 2011. Community-based tourism enterprises: challenges and prospects for community participation: Khama Rhino Sanctuary Trust, Botswana. *Journal of Sustainable Tourism* 19(1): 97-114.
- Stubelj Ars, M. and M. Bohanec. 2010. Towards the ecotourism: a decision support model for the assessment of sustainability of mountain huts in the Alps. *Journal of Environmental Management* 91(12): 2554-2564.
- Survival International. 2017. Survival International - the movement for tribal peoples. Cambridge, MA.: <https://www.survivalinternational.org/>
- Toner, A. and T. Franks 2006. Putting livelihoods thinking into practice: implications for development management. *Public Administration and Development* 26(1): 81-92.
- Vanderveest, P. 2003. Racialization and citizenship in Thai forest policies. *Society and Natural Resources* 16: 19-37.
- Whakatane Mechanism. 2018 Whakatane Mechanism. [accessed December 17 2017]. <http://whakatane-mechanism.org/about-whakatane>.
- Yates, G.E., T.V. Stein and M.S. Wyman. 2010. Factors for collaboration in Florida's tourism resources: shifting gears from participatory planning to community-based management. *Landscape and Urban Planning* 97(4): 213-220.