The Performance of Alternative Livelihood Initiatives on Local Livelihoods and Forest Conservation Management - A case study in Talai Commune, Dong Nai Province, Vietnam

Submitted by

Duong Thi Minh Phuong

BGeog. University of Social Sciences and Humanities, HCMC

MEVDM. The Australian National University, Canberra

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Declaration

I certify that the substance of this thesis has not been submitted for any degree and is not currently being submitted for any other degree or qualification. I certify that, to the best of my knowledge, any assistance received in preparing this thesis, and all sources used, have been acknowledged.

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List of abbreviations

CBE Community Based Ecotourism

CTNP Cat Tien National Park, Vietnam

FPT Forest Protection Team

HCMC Ho Chi Minh City

TCG Talai Cooperative Group

NGO Non-governmental organisation

NTFP Non timber forest products

VDF Village Development Fund

VND Vietnamese Dong (currency)

WWF World Wildlife Fund

Abstract

Protected forest areas worldwide are located close to forest dependent communities that continue to use forest resources for their livelihoods to varying extents. With these areas designated as protected areas it prevents local people from practising their traditional income-generating or subsistence activities that rely on access to forest areas. Although governments view protected areas as a measure for forest conservation, they pose a number of key challenges to local people's livelihoods.

In a number of developing countries, including Vietnam, the use of forest resources in protected areas have presented a threat to forest conservation outcomes. A satisfactory resolution to the tension between livelihoods and biodiversity conservation objectives in protected areas is an ongoing challenge for governments and local people living near protected areas.

Cat Tien National Park, a protected area in Dong Nai Province, Vietnam is well-known for its diversity of flora and fauna and offers a noteworthy case study. One of the issues in Cat Tien National Park is the practice of collecting non-timber forest products that is considered widespread, despite it being illegal under the protected status of the Park. Achieving forest conservation goals under these circumstances, even if extraction levels were low, appears to be a challenging task. In order to address livelihood challenges, governmental agencies, and non-governmental organisations have attempted to engage local people in alternative livelihood initiatives. These initiatives commonly seek to provide new income sources as a substitute for earnings from traditional livelihood practices, thereby reducing extraction pressures on the Park. These livelihood initiatives have been active in the last thirteen years.

The aim of this thesis is therefore to examine the performance of two alternative livelihood initiatives (the Talai Ecotourism Venture and the Forest Protection Team (FPT)) on local livelihoods for those ethnic groups living in close proximity to the Park and associated effects on forest conservation management goals. The research provided insights into the participation of local people in decisions about the management and conservation of forest resources in their role as FPT members. It also attempts to draw lessons that can be applied to alternative livelihood initiatives elsewhere in Vietnam and other developing countries. A case study approach with a mixed method has been employed in this study. Household surveys (n=150) of three ethnic groups (Chau Ma,

Stieng and Kinh) and key informant interviews (n=36) were conducted to collect data on a range of aspects, including: household demographics, forest usage, and local views on the impact of the two alternative livelihood initiatives on their livelihood and perception of forest conservation. The key informants were interviewed at length about their roles, responsibilities, the quality of the local participation, and evaluation of the effectiveness of the two alternative livelihood initiatives on local livelihood and forest conservation. Field research findings were supplemented and triangulated with participant observation activities to gain insight into the physical, social, cultural, and economic aspects of the case context.

About one third of Chau Ma and Stieng households had a high reliance on NTFPs, while Kinh households had no reliance on NTFPs for their livelihood. The dependence on NTFPs for Chau Ma and Stieng people was a result of limited opportunities for other livelihood options due to relinquishing agricultural land and low education levels. For Chau Ma and Stieng people struggling to adjust from a subsistence forest-based livelihood to living outside the forest, around 41% continued to visit the forest for cultural reasons, but at low to moderate levels (63%).

A significant finding of the study is that the benefits of the alternative livelihood initiatives did not extend to the whole community and were focused largely on those ethnic minorities of Chau Ma and Stieng directly involved in the initiatives. Further, for the two alternative livelihood initiatives, the direct participants gained the greatest benefits either through employment, access to Village Development Fund, or greater access to NTFPs.

The study has also found that current livelihood initiatives have not been effective due to limited local participation in decision-making processes, and minimal interaction with local people outside the initiatives. Specifically, the governance of these initiatives was not aligned with community-based principles. The one-way information sharing, and top-down decision-making led to the ethnic minorities assuming only a passive role in the process for the two alternative livelihood initiatives.

In addition, local members of both livelihood initiatives did not receive the training or support they required to effectively carry out their responsibilities. The results of the case studies also showed that there was a lack of responsiveness from key governing authorities such as the Private Company, Talai Forest Station, Park Board to variations in ethnic groups' socio-economic status, and levels of literacy. As a whole, such deficient governance arrangements and processes prevented the initiatives from achieving their goals and engaging with the broader community. In addition,

evidence suggests that the Talai Ecotourism Venture and the Forest Protection Team initiatives have not led to a substantial change in local people's awareness of the importance of forest conservation and lessening the pressure on forest resource extraction as expected.

These findings demonstrate the need for better governance, which provide stakeholders with the ability to demonstrate their understanding and fulfil their responsibilities independently. A greater level of accountability and transparency in benefit sharing mechanisms such as Village Development Fund (Talai Ecotourism Venture), and Forest Protection Team reporting is also required for ensuring greater community participation and empowerment. Another important implication of improved accountability is for a more effective relationship between government, private enterprise and local people in decision making and empowering them in their roles. Finally, the findings also highlight the significance of capacity building for various stakeholders so that they can develop skills and knowledge required to carry out decision-making responsibilities in ecotourism and forest management. Most importantly, alternative livelihood initiatives need to be designed and implemented with sensitivity to the local cultures otherwise; they can limit potential equality and increase obstacles to local people's participation and decision-making. Thus, it is recommended that Indigenous knowledge should be recognized and incorporated into initiatives for protecting and managing forest resources.

Chapter 1. Introduction

Globally, about a third of the world's land area, around 4 billion hectares, is covered with forests (Pirard et al., 2019) with 14.7 per cent requiring protection (Leberger et al., 2020; Saura et al., 2018). Threats to forests globally include direct human activities such as land clearing, burning and harvesting of economically important species, as well as indirect threats such as climate change, pollution and urbanization (WWF, 2018).

Major protected areas contain resources (with non-timber forest products (NTFPs)), which local communities have been collecting traditionally (Dahlberg et al., 2010). It is estimated that 75 - 90% of the world's poor people depend on forests and NTFPs for at least a portion of their income (Tugume et al., 2017). In Asia, about 500 - 600 million people have been expected to rely on forests and woodlands for their livelihoods (Byron and Arnold, 1999). In another example, approximately 50 million local people in India were likely to directly depend on forests for subsistence alone (Poffenberger and Singh, 1992).

1.1 Role of non-timber forest products and local livelihood development

Collecting NTFPs has been a major portion of Indigenous people's activities and livelihoods globally (Sunderlin et al., 2005). The role of forest resources and their influence on household income amongst forest-dependent households has been a topic of interest, given that 1.095 - 1.745 billion people are considered to be forest-dependent (Byron and Arnold, 1999).

Previous research has focused on the relationship between economic conditions (total household income) and NTFP reliance (Paumgarten and Shackleton, 2009; Widianingsih et al., 2016). Where the economic contribution of NTFP harvesting to rural livelihoods can be as high as 70% of annual household income but is highly variable (Table 1). Most of the research focuses on the economic contribution of NTFP collection with little examination of the other reasons people may be collecting NTFPs.

Table 1. The economic contribution of NTFPs to household annual income.

Case studies	NTFP income contribution to annual household income (%)	Authors
Jaldapara National Park, Indonesia	20 to 70	Lepcha et al. (2019)
India's Dry Deciduous Forest	2 to 48	Mahapatra et al. (2005)
Tiprapara, Bangladesh	19	Mukul et al. (2016)
Falgore Game Reserve in Kano, Nigeria	20-60	Suleiman et al. (2017)
Gimbo District, South West Ethiopia	54	Kassa and Yigezu (2015)

Designated protected areas have been created in an effort to safeguard biodiversity and forest ecosystems (Castro et al., 2015). Such approaches exclude local people and their activities because they are considered a threat to biodiversity. Despite these protected areas attempting to exclude local people's access, degradation of forests within them continues leading to unsuccessful conservation outcomes in designated protected areas (Andrade and Rhodes, 2012).

In particular, when protected areas for nature conservation were designated, Indigenous populations with a history of using forest resources may have their livelihoods disrupted or curtailed. With changed circumstances tensions and conflict may arise between meeting the livelihood needs of local people and the goals of forest conservation (Angelsen et al., 2014). Addressing these seemingly incompatible goals, inquiry also needs to be invested into the solutions that best address the reasons for local people collecting NTFPs in protected areas.

From the 1970s, new approaches to forest management and governance have emerged in order to respond to this conflict (Khatun et al., 2015). To support indigenous livelihoods of those living near the forest, raising local people's awareness as to the value of forest conservation, and protection several alternative livelihood initiatives have been undertaken.

An alternative livelihood initiative, which demonstrated a way to expand local livelihood opportunities for forest conservation was the Campaign to Protect the Sichuan Golden Snub-nosed Monkey, Tuhe Nature Reserve in China, funded by the Word Wildlife Fund 2013–2014 (DeWan et

al., 2013). The project activities reduced local people's need for fuelwood collection by using fuel-efficient stoves, hence reducing pressure on the habitat of the threatened species. Another example of an alternative livelihood initiative was the Missool ecotourism resort, Raja Ampat, in Indonesia. Through community engagement in ecotourism, this initiative hoped to provide alternative income to fishermen through ecotourism, while at the same time, addressing pressures on biodiversity (Prasetyo et al., 2020).

Both these alternative approaches sought to reduce the pressures caused by local activities (e.g. harvesting of NTFPs, fuelwood collection) on biodiversity (Boli et al., 2014; Lele et al., 2010), but had different outcomes. The first case was successful in biodiversity and forest quality enhancement and local livelihood improvement by freeing up of labour for farming and reducing wood extraction for fuel wood (DeWan et al., 2013), while the second case, ecotourism, had limited success because artisanal and recreational fisheries (ecotourism) continued to place pressure on biodiversity (Prasetyo et al., 2020).

These approaches have emerged in line with the principles of community-based development to improve community livelihood and forest conservation management simultaneously (Farrelly, 2011; Fiorello and Bo, 2012; Pirard et al., 2019). Research into the performance of these examples from China and Indonesia showed they generated mixed outcomes for forest conservation, with some success in the first case but limited success in the second. In addition, this research provided little insight into the situation for forested areas in Vietnam.

1.2 Evaluation of livelihood benefits from alternative livelihood initiatives

The evaluations of the alternative livelihood initiatives on local livelihoods have been the subject of previous studies (Bayrak, 2019; Gurung et al., 2011; Kuijper et al., 2010) where they focused on employment opportunity creation, annual household income, and benefit-sharing mechanisms. Several arguments presented in the literature reveal these alternative initiatives can help local people who live near forest to be less reliant on forest resources as they become more involved in other economic activities outside the forest (Ashley and Elliott, 2003).

A critical aspect of discussions around the alternative livelihood initiatives is identifying who benefits (Roe et al., 2015). Most authors emphasise that the fair distribution of benefits among local people is very important (Conning and Kevane, 2002; Scheyvens, 1999). They also questioned

whether the equitable distribution of benefits was possible in alternative livelihood initiatives (Agrawal and Redford, 2009; Bayrak, 2019; Haas et al., 2019).

Indeed, the literature suggests that the distribution of livelihood benefits for local people as well as the broader benefits from the alternative livelihood initiatives was not always clear. Whether and when local people benefit economically from these alternative initiatives remains ill-defined (Nepal and Spiteri, 2011).

1.3 Participation and empowerment in alternative livelihood initiatives

Central to the success of alternative livelihood initiatives is the concept of participation by local people and their subsequent empowerment through the development process (Scheba and Mustalahti, 2015). The literature demonstrates that the effectiveness of people's participation in alternative livelihood initiatives requires a number of factors, including: the two-way communication between participants (Reed, 2008), where information is exchanged through dialogue or negotiation; the opportunity for local participation in decision making (Islam et al., 2013), and the enhancement of community capacity (Bennett and Dearden, 2014). It is argued that local people are more likely to actively participate if they are well-informed or actively encouraged (Mak et al., 2017). How effective this is depends, to a great extent, on the governance arrangements that allow communication and information to flow.

1.4 Governance arrangements in alternative livelihood initiatives

In an attempt to elucidate the factors affecting the performance of alternative livelihood initiatives on local livelihood and forest conservation there is a need to examine the governance arrangements (Agrawal, 2001; Sikor and To, 2011). This is important because governance arrangements affect political, social, cultural, and economic development in any context and vice versa (Agrawal, 2003; Kaufmann et al., 2007). Therefore, the performance of alternative livelihood initiatives in achieving their goals requires an examination of governance arrangements.

A key principle of good governance, particularly for implementing alternative livelihood initiatives that are community-based, is promoting stakeholder interactions (Bramwell and Lane, 2011). Ensuring that the lead organisation has the appropriate skills and support structures to facilitate effective local participation during the initiative implementation process, and later, during its operation is critical for success (Jamal and Getz, 1995; Piabuo et al., 2018).

In addition, both practitioners in international development organisations and academic scholars commonly recognise that governance arrangements can affect the responsibilities, accountability, and transparency of the relevant stakeholders (local authority, local people, private sector, Non-government Organisations (NGOs)) during the initiative implementation process (Tacconi, 2007).

1.5 Forest conservation outcomes of alternative livelihood initiatives

Conservationists believe that the alternative livelihood initiatives will help to enhance livelihoods and provide other forms of income, hence reducing local people's reliance on the forest for their livelihood, ultimately addressing one of the pressures on protected areas (Mukul et al., 2016).

Although a theory of change developed by the conservation organisation RARE[1] highlights that behavioural change will be a key pre-requisite for lessoning threats to forest conservation and therefore improving the status of the biodiversity goal. A key step in bringing about behavioural change is changes to attitudes (Roe et al., 2015). However, there is on-going debate in the literature about the importance of attitudinal change towards conservation and its impact on behavioural change (Herrold-Menzies, 2006).

1.6 Protected area management in Vietnam

Vietnam has been ranked as the sixteenth most biodiversity-rich country in the world (Markowski and Bartos, 2018). According to Vietnam's national guidelines, in order to protect its forest and biodiversity, Vietnam has established three categories of forest in the forest management system. The first category is a system of 'protection forests', which consists of forests functioning for watershed protection, mitigation of natural disasters and protection of other environmental values. The second category is 'production forests' which comprises forests managed mainly for producing timber and other forest products. The third category is 'special use forest' (SUFs), comprising terrestrial forests, and several wetland and marine areas (ICEM, 2003). Special Use Forests are further grouped into four types: National Parks, Natural Conservation areas, including nature reserves, and species and habitat conservation areas, Landscape Protection areas, including historical, cultural, and landscape sites, and Research and experimental forest areas (Table 2). Currently, the government owns all the protected areas in Vietnam.

1 **Rare** is an international conservation organization whose stated mission is to help communities adopt sustainable behaviours toward their natural environment and resources.

Table 2 Category and number of special use forests in Vietnam.

Category of Special-Use Forest in Vietnam	Total number	Total area protected (ha)
National Parks (NPs)	30	1,077,236
Natural Reserves (NRs)	58	1,060,959
Species and Habitat Reserves (SHRs)	11	38,777
Landscape Protected Areas (LPAs)	45	78,129
Experimental and Scientific Research Areas (ESRA)	20	10,653
Total	164	2,265,754

Source: (USAID, 2013)

The first formally protected area in Vietnam, Cuc Phuong National Park, was established in 1962. In 2003, the government increased the number of SUFs to 122 and by 2013 to 164. These protected areas cover an area of 2.3 million hectares, making up approximately 7% of Vietnam's land area, and 4.9% of national territorial waters (USAID, 2013). The following section provides an overview of one case study in a protected area in Vietnam. This includes the problem statement, followed by the research aim and objectives.

1.7 Setting of the study

One of the challenges facing protected areas, and the Vietnamese government officials responsible for them, is the continuing collection of NTFPs by local people who live near protected areas. Studies by Quang and Noriko (2008) in the northern central uplands of Vietnam, Vien et al. (2006) in the north-western case studies; Polesny et al. (2014) in the Phong Dien Nature Reserve, Thua Thien Hue showed that local people who live near forests still relied on forest resources (food, medicine or construction material, wild and planted fruit trees) and forest land. NTFPs also provide supplementary inputs for farming, and reduce vulnerability during food shortages for the local people in these areas (Swinkels, 2006).

The case from Cat Tien National Park is used to illustrate the general conservation efforts in Vietnam (Figure 1). The establishment of a protected area is said to raise conflicts between conservation officials and local people (West et al., 2006). Despite the status of the National Park, the ethnic minorities (Chau Ma and Stieng) are still shown to travel into the protected forest to collect NTFPs as a means of increasing income because of limited viable alternatives. Ethnic majority Kinh people also live in the region, having migrated in various waves since the 1980s

(Nguyen and Hoang, 2013), and the interaction between these ethnic groups and their livelihood options is unknown.

To increase the protection of the forest by promoting external income and thus decreasing dependence on the forest, several alternative livelihood initiatives such as community-based ecotourism and forest protection involvement have been implemented. These livelihood initiatives were provided by a variety of organisations (both Government, NGOs) and have been adopted in other protected areas in Vietnam, including Cat Tien National Park. The aim of the two livelihood initiatives was to place local people at the core of forest protection measures and this resonates with people-centred approaches to forest conservation (Chambers, 1994). Local involvement in the Ecotourism Venture and the Forest Protection team is also believed to help improve local awareness as to the value of forest resource conservation and the protection of forest quality.

Given that the principal goal of the Cat Tien National Park is to establish it as a special use forest where the management goals include protecting the forest ecosystems to conserve biodiversity, the impact of the socio-economic development components of two alternative livelihood initiatives remains uncertain. The benefits for ethnic minorities' livelihood (Chau Ma and Stieng) from the two cases, are not clear. It is also unclear what factors affect ethnic minority people's participation in these livelihood initiatives and the effects on NTFP levels that have been positively affected by the two initiatives.

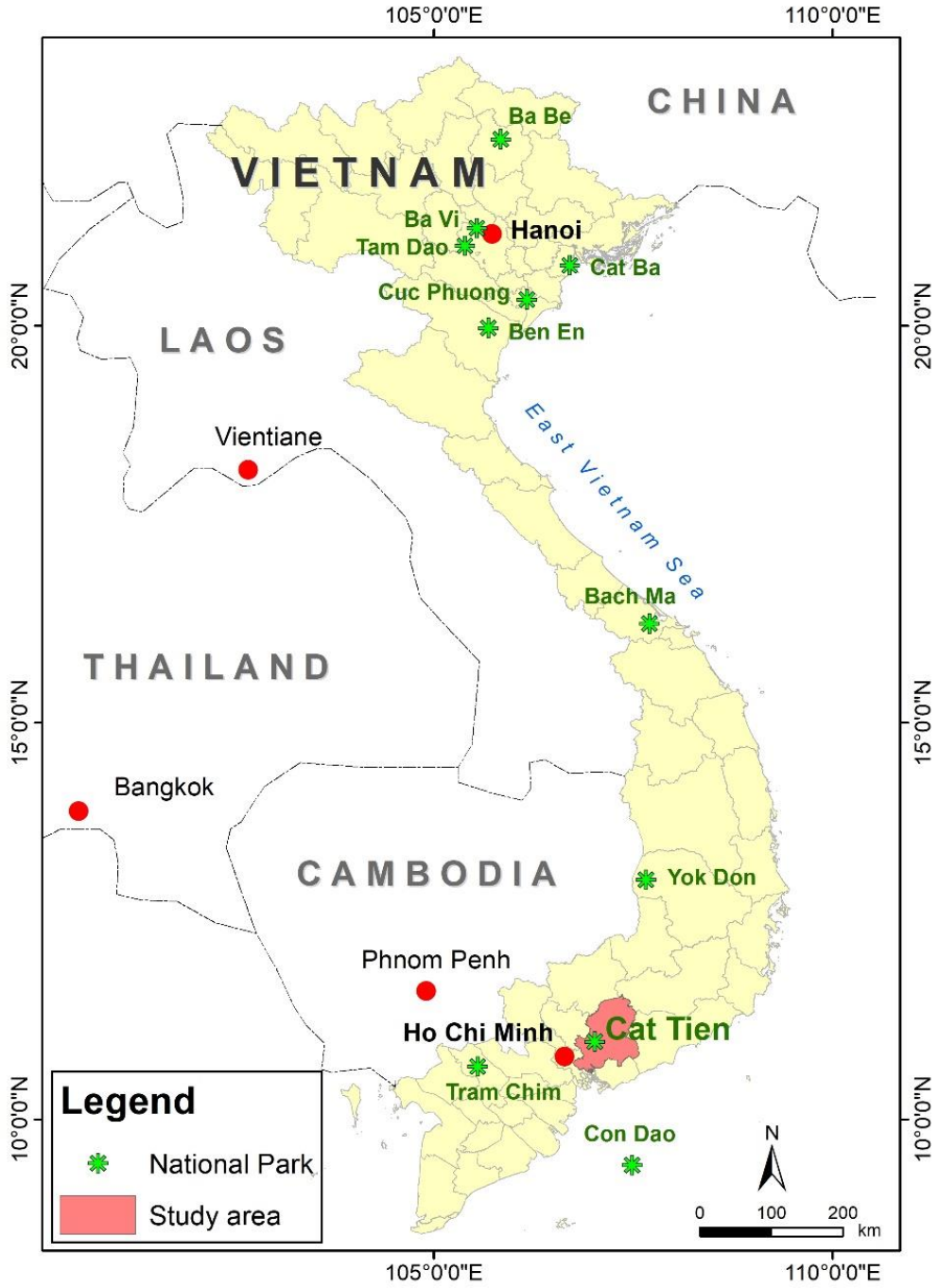

Figure 1 Location of Cat Tien National Park, in the south of Vietnam.

1.8 Aim and objectives

This study examines the performance of two alternative livelihood initiatives on ethnic people's livelihoods for those living in the buffer zone adjacent to Cat Tien National Park, and associated effects on forest conservation management goals. The two alternative livelihood initiatives were: community-based ecotourism venture, and employment as a forest protection team member. In order to achieve the main research, aim the following were undertaken in the study village of Talai Commune:

1. to determine the nature and level of reliance of ethnic people (Chau Ma, Stieng and Kinh) on non-timber forest resources, and their reasons for collecting NTFPs (Chapter 2);
2. to examine the impact of livelihood initiatives (i.e. Talai Ecotourism Venture and the Forest Protection Teams) on the livelihoods of those ethnic groups involved (Chapters 3 and 4);
3. to identify and analyse factors that affect local people's participation in these livelihood initiatives and the effects on non-timber forest resource harvesting levels (Chapters 3 and 4), and
4. based on those findings, evaluate the implications for designing alternative livelihood initiatives to better engage local communities, broaden benefit-sharing, and reduce forest dependency.

The study assesses the performance of two alternative initiatives and how they impact the livelihoods of ethnic people in the case study. It seeks to contribute to policy formulation and provide recommendations on the effective implementation on ways of improving local livelihoods as well as forest conservation management in the protected areas in Vietnam. This study will add to the research knowledge on the analysis of reliance on NTFPs and strives to capture the complexity and variety of ethnic group characteristics. The study also provides insight into the importance of linking conservation and alternative livelihood initiatives and concludes by drawing key lessons that can be learned from this study on how best to integrate livelihoods with forest conservation needs in Vietnam.

1.9 Methodological approach

To address these research questions, a case study design was applied to investigate a contemporary phenomenon within its real-life context (Yin, 2014). Quantitative and qualitative forms of data collection and analysis were used to describe and understand the circumstances and perceptions of the research participants (Kumar, 2019). Having multiple stakeholder groups facilitated cross-checking and comparison of findings.

Household surveys were conducted in the village to collect detailed information about local livelihoods in the study area. The household survey included both open-ended and closed questions about household information including: general demographics, ethnic groups and education, collection of NTFPs, on-farm, off-farm and NTFP income, perception of NTFP reliance, and contribution of subsistence use to total NTFPs in Cat Tien National Park (Appendix 1. Household survey). Qualitative questions explored issues such as roles, responsibilities, quality of the local participation, and evaluation of the effectiveness of the two alternative livelihood initiatives on local livelihood and forest conservation. These data enabled identification of links between NTFP reliance and socio-economic and cultural indicators in the study area to evaluate the impact of the alternative livelihood initiatives and to understand the factors that determined whether the outcomes were successful or not (Appendix 2. Key informant interview).

Key informant interviews were face-to-face communication with relevant and experienced stakeholders involved in the two alternative livelihood initiatives. Information was collected from those interviewed in a number of areas, including: their understanding of aims and functioning of the initiatives, their roles and responsibilities, levels of participation by local villagers, policies supporting the aims of the initiatives, and their perceptions of other stakeholders' involvement. Participant observations were conducted during the fieldwork activities to capture the experiences of village members in their local context (Musante and DeWalt, 2010; Nkemnyi et al., 2013). This entailed living in the village for two months and observing daily life in the village and the general characteristics of a local Chau Ma, Stieng and Kinh people. This process was useful for contextualising information gained in the household surveys and key informant interviews.

1.10 Thesis outline

This study consists of five chapters. This thesis structure is organised as follows. Chapter 2 examines the nature and level of reliance on NTFP collection between ethnic groups (Chau Ma, Stieng and Kinh) in the study village. Based on the understanding of the context presented in chapter 2 on NTFP collection in the study village, chapters 3 and 4 assess separately the performance of the two current alternative livelihood initiatives implemented in this village: The Talai Ecotourism Venture initiated by NGOs (World Wildlife Fund), and the Forest Protection Team initiative initiated by the Vietnamese Government. The areas of performance examined in both chapters are on local livelihood (household income, subsistence use), community participation and attitudes to forest conservation in the village for participants ad non-participants. Each chapter also examines the quality of local participation (outcomes and process) in these alternative

livelihood initiatives and provide insights into the institutional arrangements and how they shape local participation. Chapter 5 (‘Implications for alternative livelihood initiatives to better engage local communities and reduce forest dependency’) synthesises chapter 2 to chapter 4 regarding the quality of local participation and the factors affecting the effectiveness of the two livelihood initiatives. Finally, it draws out the implication for designing alternative livelihood initiatives to better engage local communities, broaden benefit-sharing, and reduce forest dependency.

Chapter 2. Nature and level of non-timber forest product reliance

2.1 Introduction

The livelihoods of about 1.6 billion people worldwide depend fully or partially on non-timber forest products (NTFPs) derived from forests. In order to do so forest-reliant people still require access to collect and use NTFPs as an essential part of their livelihood (Steele et al., 2015). There is increasing research on evaluating the impacts of NTFP collection on forest-reliant livelihoods globally, including in Africa and Asia. Households may derive a significant portion of their income from the collection of NTFPs (Dash et al., 2016). Evidence from Nigeria indicates that NTFP income accounts for 40% of the total income of over two-thirds of the surveyed households (Suleiman et al., 2017). Similarly, a study conducted in the context of Tharawady District of Myanmar found that income from NTFPs constitutes 44% of the total household income (Moe and Liu, 2016). However, these studies did not account for subsistence use or variation in reliance due to other factors.

Understanding reliance on NTFPs should also take subsistence use into consideration. NTFPs form a resource that contributes directly to Indigenous peoples' livelihoods by supplementing their subsistence and income sources, and can reduce vulnerability to risks such as price shocks, extreme climatic events, infrastructure failure, and diseases or illnesses (Wunder et al., 2014). Frey et al. (2019) agreed that the traditional analytical approaches to NTFPs may overlook the subsistence element that is an essential part of livelihoods. Such an omission underestimates the impact of local collection activities on NTFP harvesting limits, and visitation on forest health. If using only average annual income (share or absolute of total household income), it is not possible to fully capture the important role of environmental income (Vedeld and Angelsen, 2004). However, measuring the level of household reliance on NTFP subsistence use has been largely overlooked (Wunder et al., 2014).

A broader understanding of NTFP users in relation to their reasons for collecting NTFPs, or not, has also been largely under-researched (Cocks et al., 2011; Steele et al., 2015). Much of the research on local livelihood dependence on NTFPs has focussed on economic aspects such as income generation and fails to acknowledge the broader context that includes cultural and social factors. While Indigenous people, remain the focus of NTFP research across many countries such as India, Indonesia, Brazil, and Canada, studies do not explicitly stratify according to ethnic groups or consider those that are not harvesting NTFPs (Perez, 1996). Therefore, when researching reliance

on NTFPs and its impact on forest conservation, the NTFP collection behaviour of all ethnic groups in resource use should be considered (Shackleton et al., 2018).

The main aim of the research was to examine the nature and level of household reliance on NTFPs by all ethnic groups in one locality to consider which ethnic groups were reliant on NTFP collection. By understanding the relationship between NTFP reliance and an ethnic group, it is possible to analyse the potential for alternative livelihood options that reduce dependency on NTFP collection for those people. A case study was conducted in a village adjacent to Cat Tien National Park, Dong Nai province, Vietnam. This village is located in the buffer zone of the Park where three ethnic groups (Chau Ma, Stieng and Kinh) reside in separate parts of the village.

The specific objectives were to determine for all three ethnic groups in the village:

1. the income distribution from all potential sources (on-farm, off-farm, NTFPs);
2. the level of total reliance on NTFPs (income and subsistence use);
3. the contribution of subsistence collection of NTFPs to total NTFP reliance, and
4. the reasons they gave for collecting NTFPs, and the implications for NTFP collection.

2.2 Methods

2.2.1 Methodological approach

A case study approach was followed in this research. Case studies provide in-depth, multi-faceted interactive explorations of complex phenomenon in real-life context with qualitative as well as quantitative data collected from multiple sources, including documents, interviews, observations and artefacts (Crowe et al., 2011). Knowledge produced is contextual and interpretive. It is not meant to be generalisable, but may provide a comparative basis for other case studies (Yin, 2014). A case study approach helps to understand the interaction of socio-cultural, political, economic, and environmental factors in a particular context.

Fieldwork was conducted from April to May 2018, and from November 2018 to January 2019. The field site of Village A, Talai Commune, Tan Phu District, Dong Nai Province, Vietnam, is located in Figure 2. The case study applied both quantitative and qualitative approaches to analysing data collected through key informant interviews (KIIs) and survey of Village A households, which are detailed more fully under the relevant section. Firstly, general demographics of households in the village were described with descriptive statistics using SPSS. Household level data were used in

calculating: on-farm, off-farm and NTFP income separately, total NTFP reliance, and contribution of subsistence use to total NTFPs. These measures are explained in detail later and were used to examine the nature and level of reliance on NTFP collection between ethnic groups (Chau Ma, Stieng and Kinh). Secondly, content analysis of responses from the household surveys and the KIIs was carried out using NVivo 12 Plus. This analysis allows examination of each ethnic group (Chau Ma, Stieng and Kinh people) separately and investigates the reasons people gave for their collection of NTFPs. The interview transcripts were translated into English and the responses were coded using data-driven nodes with specific themes. Theme nodes identified from content analysis of qualitative data from open-ended questions in the household survey that examined reasons for ethnic groups' collecting NTFPs; and why others did not enter the Cat Tien National Park to collect NTFPs. The theme nodes could be further explored using matrix query function in NVivo and the results separated according to how sources were classified e.g. ethnic group or level of NTFP reliance.

The research was approved by the University of New England Human Research Ethics Committee (HE17-262), and all participants (household survey and key informants) gave written informed consent, but the village has been anonymised for ethical reasons.

2.2.2 Case study description

Cat Tien National Park (Park) is located in the south of Vietnam, nearly 150 km north of Ho Chi Minh City. The total area of Cat Tien National Park is 73,100 ha covers three provincial sectors: Nam Cat Tien (38,900 hectares) in Dong Nai province; Tay Cat Tien (5,141 hectares) in Binh Phuoc province, and Cat Loc (30,435 hectares) in Lam Dong province (Nguyen and Hoang, 2013). The Park is comprised of primary and secondary tropical rain forests of high conservation value (Figure 2). The Park was designated as a special-use forest for conservation but its biodiversity remains under pressure from human activities (Thuy et al., 2011). According to the Management Plan of Cat Tien National Park, the buffer zone surrounding the Park consists of 67,225 hectares which is comprised of 8 districts, 42 communes and 160,000 people living in four provinces (Gilmour and Nguyen, 1999).

The buffer zone has been defined as a continuous land area of those communes adjacent to the protected areas, however, it also includes additional communes within 3 km of the Park in which human populations may present an actual or potential threat to biodiversity conservation (Morris

and Polet, 2004). Buffer zones were established around the Park to protect or regulate encroachment (including hunting, logging, and NTFP collection) by ethnic minority peoples who live within the boundaries or beyond (Sunderland et al., 2012).

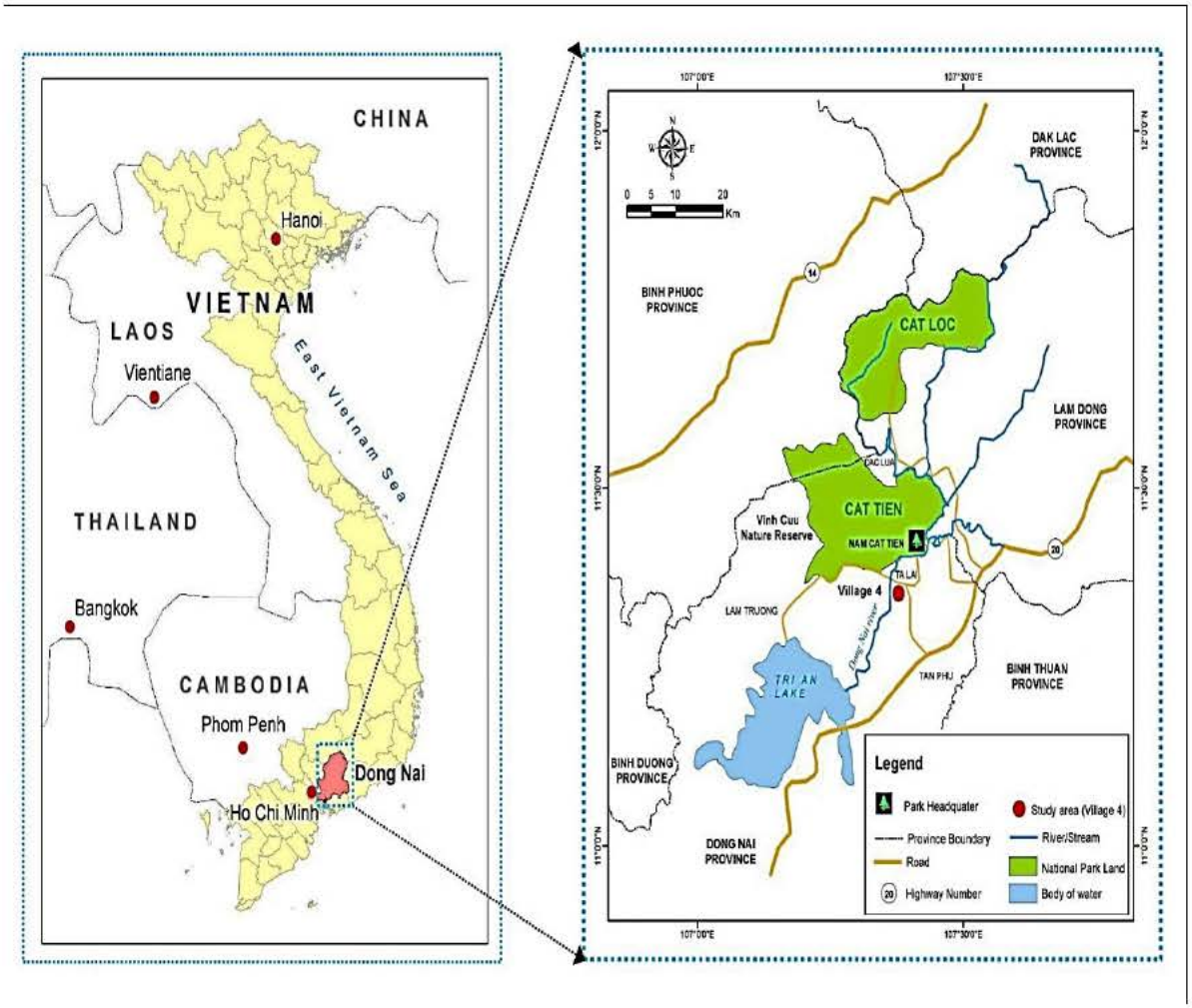

Figure 2. Location of Village A in Cat Tien National Park, in the south of Vietnam.

Prior to 1978, the Chau Ma and Stieng people lived in the forested area that is now Cat Tien National Park. These ethnic minorities traditionally maintained their livelihoods through swidden agriculture and utilised the natural resources in the forest. These products included timber and non-timber forest products such as bamboo shoots, fuelwood, traditional medicine, small animals, and other forest products (e.g. wild vegetables, snails, honey) (Sunderland et al., 2012).

In 1978, the government gazetted 35,000 ha in Nam Cat Tien as a Forest Reserve under Decision No. 360/TTg of Council of Ministers of Vietnam. The establishment of the Nam Cat Tien Forest Reserve was a result of governmental efforts to increase the country's forest cover and restore forest

quality that had been promoted by President Ho Chi Minh since 1960 (Thuy et al., 2011). In the same year, Dong Nai Province People's Committee moved the ethnic minorities (Chau Ma and Stieng people) from the forest within the Park to one of the villages (located in the current buffer zone adjoining the Park in Talai Commune (latitude 11.3677° N, longitude 107.3670° E).

In 1992, the Decision No. 08/CT of the Chairman of the Council of Ministers upgraded Nam Cat Tien status to that of a Park of 38,900 hectares. An investment plan was approved by Decision No. 38/1998/QD-TTg for the newly established Cat Tien National Park. In December 1998, by Decision No. 1090/TTg of the Prime Minister, the responsibilities for the management of this Park were transferred from the Provincial People's Committees to the Ministry of Agriculture and Rural Development (MARD) because of the special importance of protecting an area whose territory spans more than one province (Polet et al., 2003). In 2001, the Ministry of Agriculture and Rural Development (MARD) declared the Administration and Operations Program Regulation for the Park and its buffer zone, finally setting out the regulation for the management of the area (Sunderland et al., 2012).

Among the villages in the buffer zone area, Village A was chosen as the case study for this research because it offers a good illustration of a very widespread phenomenon of resettlement to the buffer zone of a protected area. Resettlement of the ethnic minorities from the forest to the study village in 1978 imposed significant changes in their livelihoods. Households were resettled to areas with unfamiliar environmental conditions, forcing them to adopt different cropping patterns from their former practices (i.e. the change from swidden agriculture to settled agriculture). Ethnic minorities found adjustment to life outside the forest more difficult when they did not have opportunities to access alternative income sources to substitute for NTFP collection from the Park.

Before 2011, the buffer zone boundaries were undetermined, so ambiguities were apparent in terms of which activities were permitted or advisable. Hunting, animal trapping, and NTFP harvesting had still been favoured by the ethnic minority group in the forest for their basic needs. There were violent conflicts between forest users and forest guards prior to 2011. This phenomenon was only reduced when the stringent laws for special use forests were enforced in 2011 (Mcelwee, 2008b). However, the ethnic minorities continue to collect NTFP resources for their livelihoods despite the fact that the status of the Park is a 'forbidden forest' or special-use forest (Morris-Jung and Roth, 2010).

Another major change in settlement and land use patterns has been the movement of Kinh people into the area under the New Economic Zones' program since the 1980s and 'Doi moi' (Renovation) policy in 1986 (Mcelwee, 2008b). Archival documents do not reveal if the Kinh settler's livelihood practices were similar to those of the ethnic minorities, such as hunting and collection NTFPs. But from the time of settlement, Kinh sought to buy land from the Chau Ma and Stieng and develop productive wet rice cultivation and a home garden system that can include a range of fruit trees, vegetables, and medicinal crops integrated with penned livestock and fish raising in a small pond (Gilmour and Nguyen, 1999). Currently, Kinh people have relied on agricultural activities for their livelihood but potentially could also be collecting NTFPs. Kinh people also trade commodities in the region, of which some would be NTFPs (Nguyen and Hoang, 2013).

Other developments in the last 10 years relevant to this case study have been Government initiatives aiming to provide alternative livelihoods for ethnic minorities that lessen their reliance on forest resources in the Park. These include the Forest Protection Team established in 2003 and World Wildlife Fund for Nature's ecotourism project centred on the Talai Longhouse (2008-2013).

2.2.3 Household survey

For the household survey the households in Village A identified from a list provided by local administrative officials and village elders, were stratified according to proportion of ethnic groups in the village. To establish the ethnic segmentation, the Village Head stated that in 2018 the village had 500 households, of which 29% were Kinh, 34% Stieng, and 37% Chau Ma, living in separate parts of the village. A sample household was randomly selected from each ethnic group (60 households from Chau Ma, 50 from Stieng, and 40 from Kinh) according to their representation in Village. The response rate was 100%. The head of each household was interviewed, since this individual is likely to be most well-informed about his or her household's livelihood activities. In the absence of a head of household, another adult household member was interviewed.

The wealth level of household income was classified into one of four levels based on the Vietnamese government criteria relating to average monthly income per person, according to Decree No.59 on 19 November 2015. The average monthly income per person for: poor households is USD 0 – 30.89 per person; near poor households is USD 30.93 – 44.13 per person; medium-income households is USD 44.17 – 66.19 per person and well-off households is > USD 66.19 per

person. Economic data were collected in Vietnamese dong (VND) and converted to US dollars (USD) based on the exchange rate at the time (December, 2018) of USD 1 = VND 22,660,000.

The total monthly household income was calculated by aggregating the income over a year from on-and off-farm activities and sale of collected NTFPs and dividing by 12 to obtain a value per month. It is noted that, NTFP collection for subsistence use was not included as part of the total monthly household income. Per capita household monthly income was calculated by dividing total household monthly income by the number of family members living together in the same dwelling. This calculation allowed the researcher to compare the per capita household monthly income to Government categories.

On-farm income was the income from agriculture crop production, planted fruit trees, and husbandry. Off-farm income (income from non-agricultural activities) was the income earned by small-scale activities as well as wages generated from skilled and unskilled labour (e.g. traditional handicrafts, working as labourers inside and outside the village, Talai Longhouse employees, forest patrolling team members) other than NTFP income.

The value of NTFPs for cash income and household consumption was calculated based on households' self-reported amounts collected in local measurement units (bó, gùi). These amounts were converted to a monthly value using local market prices averaged over a year. This approach allowed comparison of the values of subsistence and non-subsistence NTFP collection on a consistent basis. Previous studies on NTFP reliance have focused only on cash income from NTFP collection as a proportion of household income and not accounted for subsistence collection which also impacts on household livelihoods and forest health.

To measure the total NTFP reliance, we used two separate measures. Firstly, total NTFP reliance was the proportion of average total household monthly income (on farm; off-farm, NTFPs for cash income) accounted for by the value of household NTFP collection (in terms of both subsistence and cash income): 0% (no reliance); 1-29% (low reliance); 30-59% (medium reliance) and ≥ 60% (high reliance). NTFP collection for cash income is defined as the share of household income received from the sale of NTFPs. The NTFP collection for subsistence is defined as household use of NTFPs in traditional food, cultural events, and other purpose (e.g. medicine, household products, gifts). The choice of levels of reliance categories was guided by a previous study (Singh et al., 2010) and distribution of collected data. Secondly, self-reporting from the household interviewees, who were

asked to classify their respective levels of livelihood reliance on NTFP collection. The head of the household could nominate one of the four qualitative categories: non-reliance, low reliance, medium reliance, and high reliance. No actual monetary values were attributed to these categories.

The NTFP subsistence reliance in this study is defined as the contribution percentage of NTFP subsistence use to the total NTFP reliance percentage, e.g. if total NTFP reliance is 60% what proportion is only for subsistence use in a household? Categories of NTFP subsistence contribution to the total NTFP reliance (in percentage) were based on previous studies of Jain and Sajjad (2016) and Vedeld and Angelsen (2004) and distribution of collected data, they were: 0% (no contribution); 1 to 19% (low contribution); 20 to 39% (medium contribution) and ≥ 40% (high contribution). Household's value of NTFP subsistence collection was obtained by converting quantities of NTFP collected for the household's subsistence use to market values as if the products were traded.

SPSS was used for all quantitative data analysis. Descriptive statistics (mean, frequency) were used to present the characteristics of households; calculate the total NTFP reliance and, especially to investigate the influence of estimated monthly household income on NTFP reliance. Cross tabulation and the statistical test (Welch's ANOVA test) were used to determine if any significant differences existed between three ethnic groups of people - Chau Ma, Stieng and Kinh - in terms of total average monthly NTFP household income (cash income and subsistence). A Welch's ANOVA test was used for assuming unequal standard deviations (Field, 2013). Linear regression was used to estimate (a) the association between the average total monthly household income and total NTFP reliance of households, and (b) the relationship between NTFP subsistence and total NTFP reliance.

2.2.4 Key informant interviews

Key informants provide a detailed understanding of NTFP collection in the village of which they have in-depth knowledge. Key informant interviews were structured around issues regarding local livelihoods, ethnic minority characteristics, and the nature of NTFP reliance. The relevant KIIs (n=10) were conducted with the representatives of local authorities (two Leaders of Village A), two representatives of Park Board, three Government officers (Farmer Union representative, Women Union representative, and Deputy of Talai Commune Committee); and an elder from each of the Chau Ma, Stieng and Kinh ethnic groups in Village A. The local people interviewed were elders since they best understand the village history, and the local system of norms, rules, and cultural

values that influence ethnic minority behaviour in collection of NTFPs. They were asked open-ended questions about ethnic groups (culture, NTFPs consumption pattern), description of daily livelihood activities around use of NTFP resources, factors influencing local people's access to Park resources, and effectiveness of agricultural and other alternative initiatives for improving local livelihoods. Another group of key informants were government officers at the commune level. These interviews were to gain insight into relevant socio-economic contexts that influence local livelihoods in the area and provide information about governance structural issues. These interviews were also concerned with local government roles in community livelihood development in the study area. Finally, interviews were conducted with Park Board representatives to understand interactions between the community and the Park, over natural resource management, and how these interactions affect Park management strategies.

The transcripts from KIIs were translated into English and the responses were coded using data-driven nodes using NVivo 12 Plus with specific themes (1) the effect of ethnic minorities and Kinh people on the level of NTFP reliance; (2) ethnic minority peoples' descriptions of lifestyle when they were in the forest and the current influence of these lifestyle on their current livelihoods, especially in NTFP usage; (3) opinions among key stakeholders about the impact of NTFP collection on forest conservation; and (4) insights into NTFP reliance level and assessment of livelihood initiatives among respondents, differentiated by the income categories distinguished.

2.2.5 Participant observation

Participant observation was conducted during fieldwork activities to capture the experiences of Village A members in their local context (Musante and DeWalt, 2010). The purpose of this activity was to (1) observe livelihood activities in the village, (2) record notes of the local practices and community livelihood in the field, and (3) gain insight into physical, social, cultural, and economic aspects of the case context. This process was beneficial for contextualising the data collection and analysis of household surveys and KIIs. The lead researcher maintained a research journal by writing brief summaries after each field visit. The journal contents were then categorised into themes based on the content analysis of the household surveys and the KIIs.

2.3 Results

2.3.1 Socio-economic characteristics of the study village

The households in Village A undertake a range of livelihood activities, including on-farm and off-farm activities, and NTFP collection. Of the households surveyed the average cultivated land area for the Chau Ma households (0.19 ha) and the Stieng households (0.22 ha) was found to be smaller by 38% and 29% respectively compared with the Kinh households (0.31 ha).

The average monthly income level in Village A for all households was estimated to be USD 44 per person per month. The ethnic minorities living in Village A were calculated to have a lower average monthly income compared with the Kinh people (estimated USD 64 per month per person). The average monthly income per person in Chau Ma households was estimated to be USD 37, and in Stieng households to be USD 44. On average, these estimates place members of the ethnic minority households in the near poor income category, and members of Kinh households in the medium income category. The average household size for all households surveyed in Village A was 4.5 people per household. The Stieng households were the largest with 4.9 people per household, followed by Chau Ma households with 4.5 people per household, and lastly the Kinh households with 4.0 people per household. Household size has implications for the calculation of household income as it is based on amount per month per person.

Overall, Village A was estimated to have 64% of households with members in the poor or near poor income brackets, and only 23% of households with members in the well-off income bracket. Ethnic minorities were estimated to be poorer on average than Kinh people, with the Kinh estimated to have a higher proportion (40%) of households with well-off members than the Stieng (20%) and Chau Ma (13%) (Figure 3).

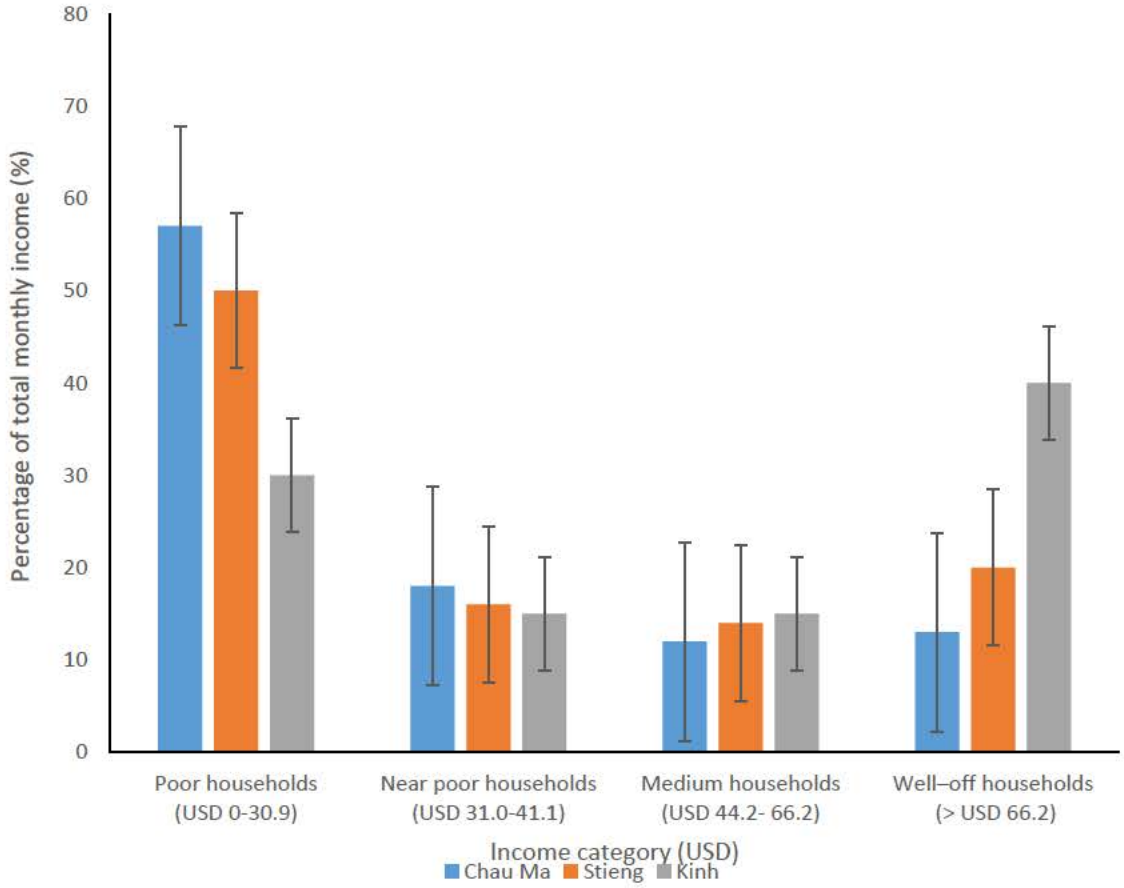

Figure 3. Distribution of average estimated monthly income per person per household in the three ethnic groups in Village A (n=150). Error bars indicates standard error of the mean.

On- and off-farm activities (48%, 52%, respectively) were estimated to be approximately the two primary sources of household income for Kinh people (Figure 4). For the Kinh people on-farm activities included rice, cashew, grapefruit, oranges, and other cash crops. Perennial crops such as orchards perform an essential source of farm income in Kinh livelihoods. While, animal husbandry includes chickens, ducks, and pigs were mainly raised for household consumption, and buffalo, goats, and cows were mainly raised for income. Kinh people were operating business such as small grocery stores and shops in the area, tailoring, and motorcycle repair. They would also be likely to trade NTFPs for off-farm income.

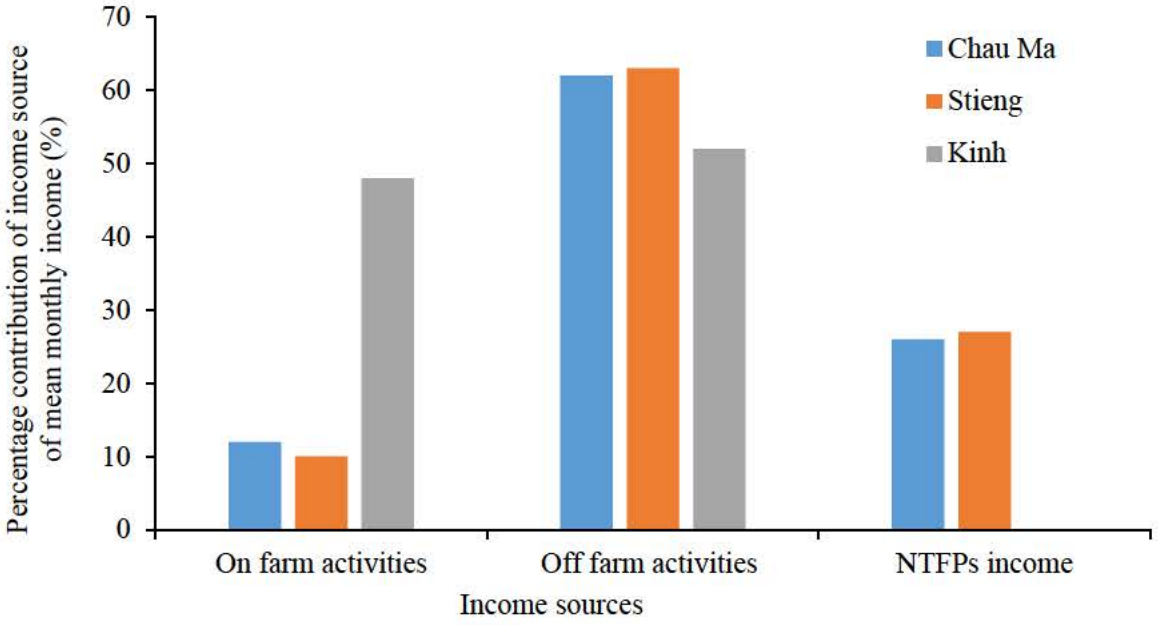

Figure 4. Estimated contributions of income source to an average monthly household income of the three ethnic groups (n=150).

In contrast, income from on-farm activities was estimated to be a minor source of household incomes for both ethnic minorities (12% of household income for the Chau Ma and 10% for the Stieng) (Figure 4). Views expressed by Women and Farmer Union representatives and local key informants were consistent with responses to open-ended questions in the household survey to the effect that the poor were mainly ethnic minorities with low education and having little means to earn money to support themselves.

The Government staff interviewed considered farming by ethnic minorities to be less productive than that of Kinh people because the minority groups had difficulties in applying existing technology to agricultural development. The Government officer stated that:

> *Our recent implementation of developing agricultural programs was usually ineffective here due to the ethnic minority people's low level of education. They do not know how to farm and are unwilling to learn the farm techniques for improving their farming (Talai Government officer 2 interview).*

The ethnic minorities also felt the agricultural techniques were 'too difficult for them to implement'. One local ethnic minority person from a key informant interview observed:

> *The Government did not provide clear farming technological guidelines for us [the ethnic minority people]. The technician trainer from the Government is impatient to guide us carefully to implement the technique (Stieng person 2 interview).*

For all three ethnic groups, off-farm income contributed 58% (average of all three) of total household income. In the study village, ethnic minority households had a heavy reliance on household income from off-farm activities. Their predominant income source was estimated to be off-farm in both cases (Chau Ma, 62%; Stieng, 64%) (Figure 4). Key informant interviews with the Government officers revealed that the ethnic minority people generated off-farm income by working as labourers outside the village. Labourers from the village, especially from the Stieng people, go to the neighbouring forest areas outside Park to undertake manual work such as collecting cashew nuts or coffee beans. However, this type of work for ethnic minority groups is unreliable, and the salary is low (from USD 6.6 to USD 8.8 per day). The labourers in the village also travel to Bien Hoa city, or Binh Phuoc, Binh Duong province to work in the industrial zone and factories, about 40 kilometres away.

In the highest income group (> USD 150 per month per household) there were four of the seven households belonged to ethnic minorities. The common characteristic of these households was that they have a wide range of income-generating options outside agriculture activities (3 households were Stieng whose members have a stable monthly income from working in the factories and one Chau Ma household worked in ecotourism business) (Figure 6).

The level of NTFP contribution to overall household income was estimated at around 26% for the ethnic minorities (Chau Ma and Stieng), with the Kinh people estimated to receive no direct income from this source (Figure 4). There were significant differences in total NTFP reliance levels between the three ethnic groups (Chau Ma, Stieng, and Kinh) ($F = 13.593$; $p < 0.05$). The level of reliance of the Chau Ma and Stieng people on NTFP collection is considered in greater detail in the next section.

Figure 5 shows that the education level of the Kinh group was estimated to be highest among the three ethnic groups. The estimated proportion of Kinh people having gained secondary and high school levels was 83%, considerably higher than that of the ethnic minority groups. While a third of Chau Ma and Stieng households were estimated to be illiterate, only an estimated 5% of Kinh households were in this category.

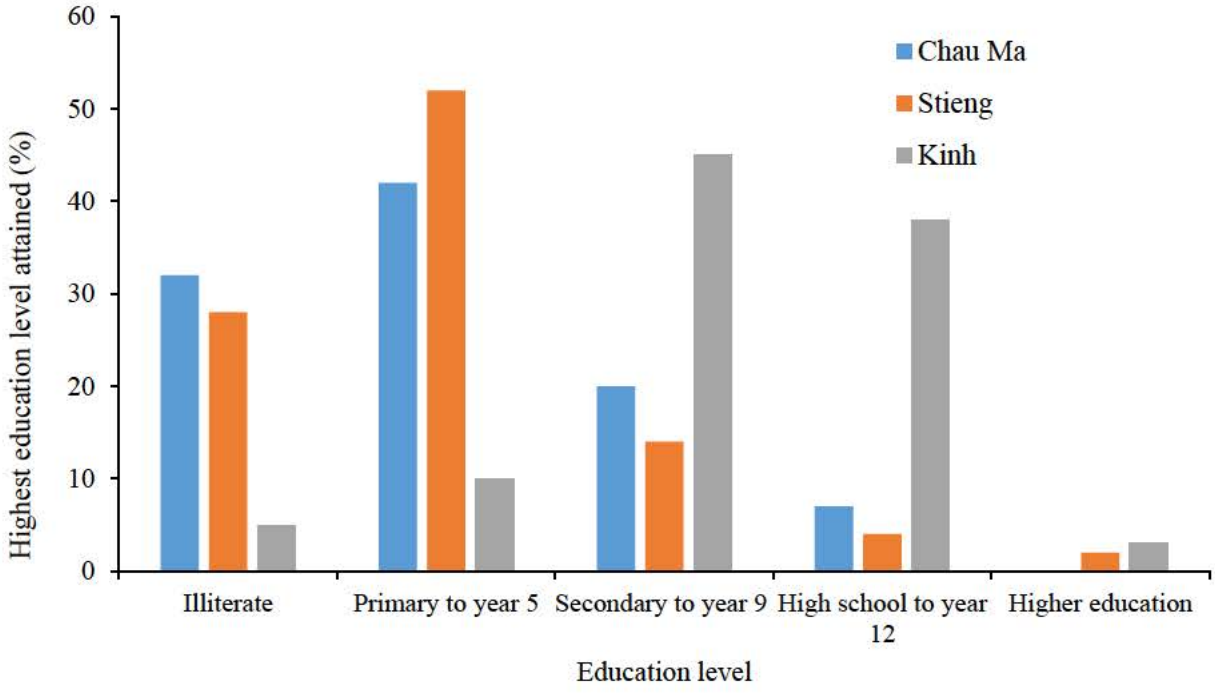

Figure 5. Highest education level attained among the three ethnic groups in Village A of Talai Commune (n=150).

2.3.2 Levels of NTFP reliance among ethnic groups

The results from the household survey across all three ethnic groups showed that 33% of interviewed households were non-reliant on NTFPs for cash income or subsistence use. Separating into ethnic group, most Kinh households (98%) were estimated to be not reliant on NTFPs while only a small proportion of Chau Ma (12%) and Stieng (6%) households were not reliant on collection of NTFPs (Table 3). Similar proportions of Chau Ma and Stieng households exhibit a medium level of reliance on NTFP collection (18% and 14% respectively). However, a greater proportion of Chau Ma households were calculated to have high NTFP reliance (30%) compared with Stieng households (22%). Also, a higher proportion of Stieng households (58%) had a low total reliance on NTFPs for cash and subsistence compared with Chau Ma households (40%). Hence, overall Chau Ma households exhibited a greater reliance on collection of NTFPs compared with the Stieng households.

Table 3. Percentage of households categorised according to level of total NTFP reliance (cash income and subsistence use) and self-reported reliance on NTFPs (in brackets) of three ethnic groups (n=150).

Ethnic group	Non-reliance (%)	Low reliance (%)	Medium reliance (%)	High reliance (%)
Chau Ma n = 60	12 (12)	40 (41)	18 (27)	30 (20)
Stieng n = 50	6 (16)	58 (60)	14 (18)	22 (16)
Kinh n= 40	98 (98)	2 (2)	0 (0)	0 (0)
Total	33 (33)	36 (37)	12 (17)	19 (13)

We compared two measures of collecting data on the level of NTFP reliance: calculations-based household reporting of NTFP collection amounts and qualitative self-assessment by households. The two measures yielded similar results in terms of the percentage of households in various categories of NTFP reliance. However, a lower percentage of Chau Ma and Stieng households self-reported having a high level of reliance on NTFP collection than was found from the household survey data (by 10%, by 6% respectively). The percentage of Chau Ma and Stieng households self-reporting a medium level of NTFP reliance was found to be higher than was found from the household survey data (by 9%, by 4% respectively).

Figure 6 shows the relationship between the reliance on NTFP resources (combining estimated cash income and subsistence values) with average total monthly household income. The figure shows that most of ethnic minority households were estimated to fall within the category of low monthly household income per person, and that total reliance of these people on NTFPs was variable. Even though the Kinh people had a wide range of income levels they had a no reliance on NTFP collection (Figure 6). Average total monthly household income was estimated to have a significant negative relationship (slope = -0.459, $p < 0.001$) with household level of total NTFP reliance. This suggests that greater levels of average total monthly household income tended to be associated with lower total reliance on NTFPs, and vice versa. Only a small percentage (9%) of Chau Ma and Stieng households, exhibited a very high total NTFP reliance (cash income generation and for subsistence) yet despite that their average total monthly household income is less than USD 50 (Figure 6).

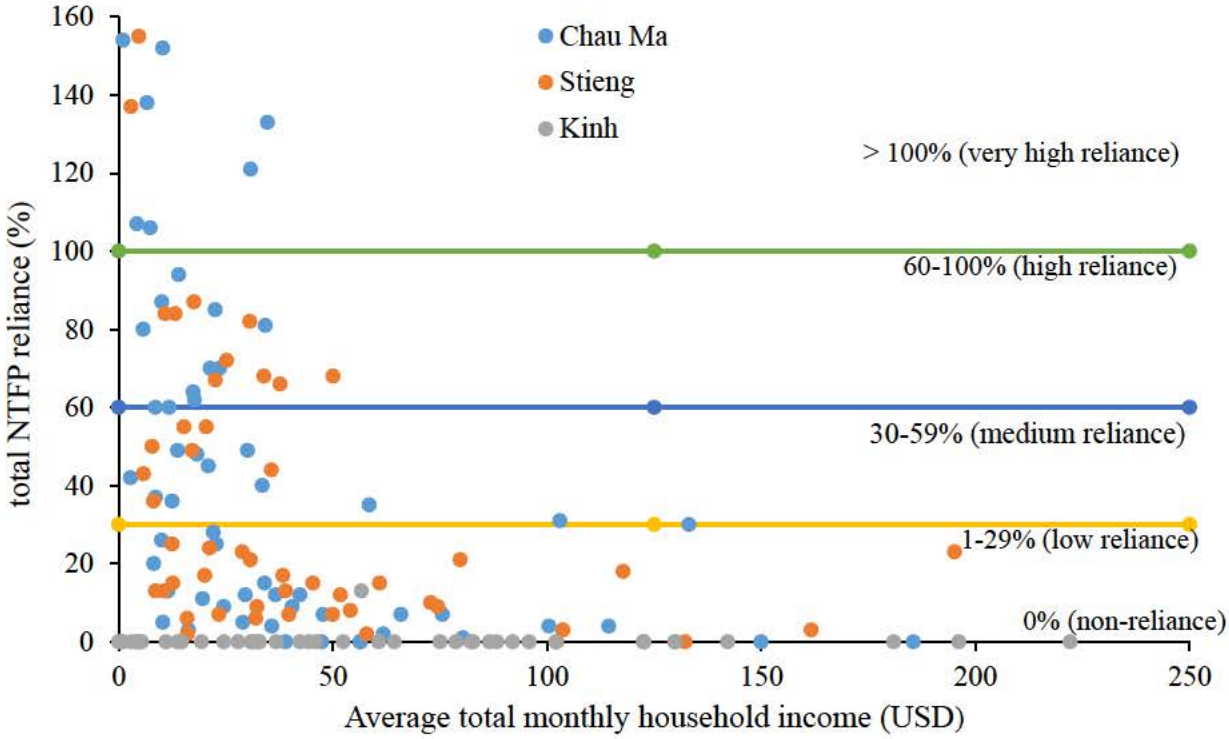

Figure 6. The relationship between average total monthly household income and the total NTFP reliance (as a percentage contribution of NTFP subsistence and cash- income over total income) in the three ethnic groups (n=150).

Most ethnic minority households (52%) use NTFP resources for subsistence at a low level of reliance (Table 4). Over a quarter of households from Chau Ma and Stieng have a high total reliance on NTFPs (cash income and subsistence), of which a third also have a high reliance on collecting NTFPs for subsistence use ($\geq 40\%$).

Figure 7 shows the relationship between NTFP subsistence and total NTFP reliance of ethnic minority households in the context of overall total household income (Kinh households were excluded from this analysis as they were not reliant on NTFPs). The slope of the relationship was significant (slope = 1.64, $p < 0.001$, $R^2 = 0.605$), indicating a moderately strong positive correlation between subsistence use and total reliance on NTFPs.

Table 4. Relationship between NTFPs monthly subsistence use and total NTFP reliance of Chau Ma and Stieng people

Total NTFP reliance as a proportion of total household monthly income of ethnic minority households	Contribution of NTFP monthly subsistence use as a proportion of total NTFP reliance of Chau Ma and Stieng households (n= 110)				
	Non-contribution (0%)	Low contribution (1 - 19%)	Medium contribution (20 - 39%)	High contribution (≥ 40%)	Total
Non-reliance (0%)	7%	2%	0	0	9%
Low reliance (1- 29%)	21%	27%	0	0	48%
Medium reliance (30 - 59%)	1%	11%	4%	0	16%
High reliance (≥ 60%)	1%	11%	5%	9%	26%
Total	30%	52%	9%	9%	

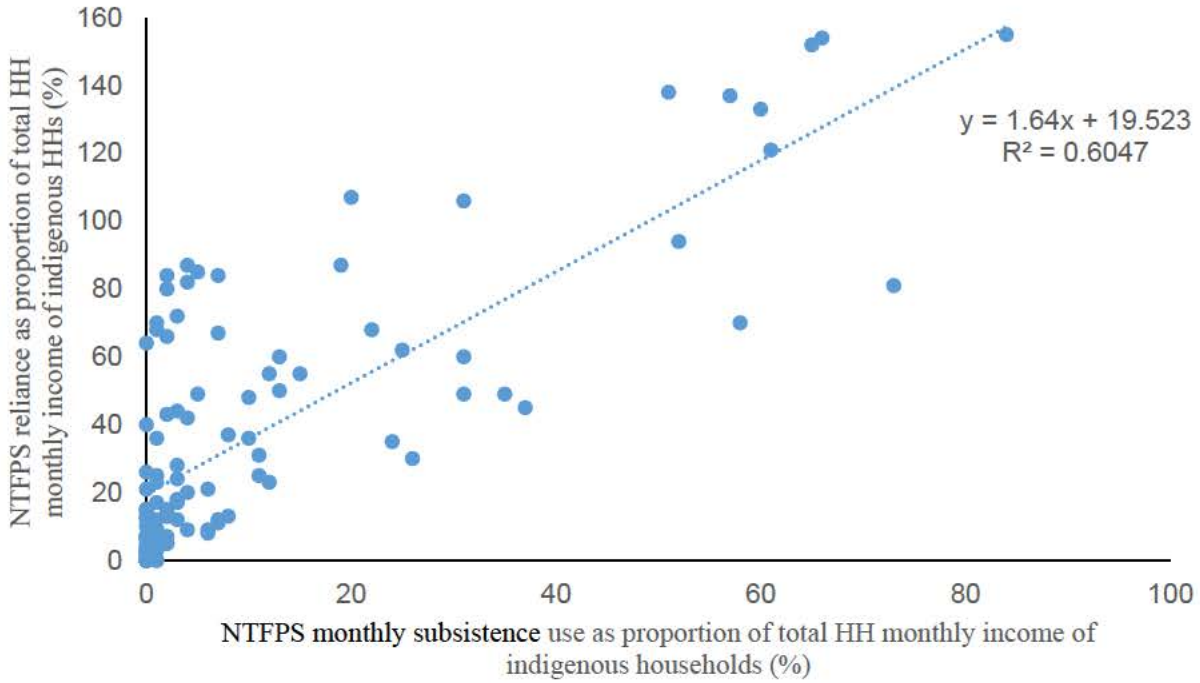

Figure 7. Relationship between NTFP subsistence and total NTFP reliance of combined indigenous ethnic groups (Chau Ma and Stieng households) (n= 110).

Data from open-ended questions in the household survey were analysed using NVivo 12 Plus to understand the reasons Chau Ma (n=60) and Stieng people (n =50) had for entering the Park to collect NTFPs. The reasons they provided were: to collect for cash income (65% of 110

households) and to collect NTFPs for cultural reasons such as traditional food, family weddings, funerals or anniversaries (41% of 110 households: 15% from Chau Ma and 25% from Stieng) (Table 5).

This means that 54% of Stieng households (n=27) collect NTFPs from the forest for their traditional cultural celebrations or traditional foods, while a lower proportion of Chau Ma households (30%, n=18) travel into the forest for cultural celebrations or traditional food sources (Table 5). Nevertheless, those Stieng households that were more likely to travel into the forest for cultural reasons have overall a low or medium NTFP reliance level as shown earlier. In contrast for those Chau Ma households who gave cultural reasons for collecting NTFPs more than one third of households had a high reliance level on NTFPs. Overall for those households that visited the forest for cultural reasons or traditional food sources there was a low proportion of households that also had a high reliance on NTFP collection (11% of 110 households).

Chau Ma and Stieng spoke of the reasons for traditional use of NTFPs as 'Our family use lá nhiếp and đọt mây and bamboo shoot for the favourite daily food' and 'Lá nhiếp and đọt mây are still used in many of our traditional occasions such as weddings, funerals or anniversaries of the deaths of our grandparents and parents' or 'Although mây đọt đắng (Plectocomiopsis geminiflorus) have the bitter taste but we like them most'.

In the excerpt below from an interview with a Stieng person, he explained his customary use of NTFPs

> *You know, we love eating Lá nhiếp. Lá nhiếp is very delicious when cook for soup with fish. Also, we usually harvest young rattan shoots to cook for a daily meal. If there are no more rattan shoots or lá nhiếp, we will miss them very much (Chau Ma elder key informant interview).*

During key informant discussion, one elderly Stieng man also said that

> *In the village, we often use fresh bamboo shoots for cooking with meat. If we have too much bamboo shoot, we can pickle or dry sliced them and then store them for our subsistence in other seasons. Sometimes, we also use some kind of leaf to make 'Rượu Cần' [an indigenous traditional alcohol] for traditional festivals, parties of the lunar new years', weddings, or other events (Stieng elder key informant interview)*

In terms of some of traditional cultural and ritual practices of both Chau Ma and Stieng that were related to customs which are now less prevalent and being gradually abandoned (e.g. 'Lễ cúng lúa mới' or 'Lễ hội đâm trâu' (Buffalo-stabbing festival), or tập tục trả của (demand presents for a wedding from the future wife's family)). Such cultural and ritual practices were viewed by the Government officer or Chau Ma and Stieng key informants as backward, superstitious and wasteful (*Government officer key informant interview, local interview discussions*).

Table 5. The level of total NTFP reliance between Chau Ma (n= 60) and Stieng (n=50) in using NTFPs as traditional food and cultural events.

Level of total NTFP reliance	Total (%)	Chau Ma (n=60)	Stieng (n=50)
Low reliance (1- 29%)	35	8 (13.3%)	11 (22%)
Medium reliance (30 - 59%)	27	2 (3.3%)	12 (24%)
High reliance (≥ 60%)	17	8 (13.3%)	4 (8%)

A more prevalent reason for travelling into the forest was to collect NTFPs for cash income, with 65% of 110 households stating this, and, 37% were from Chau Ma and 28% were from Stieng households. NTFPs were often sold quickly to earn disposable income for essential parts of their daily existence. These essential expenditures included buying food (54%), medicine (9%), school fees (19%), fertilizer (9%), and other expenses (8%) (n=110).

Meanwhile, for Kinh people (98%, n=40) who do not go into the Park to collect NTFPs, their explanations were, from most to least stated reasons: they were focused on crop cultivation and fruit tree planting (60%), lack of interest in NTFP collection (25%), fear of forest guards (15%), and concerns about personal safety ranging from being attacked by wild animals, bad weather and the unfamiliar terrain of the forest (10%).

2.3.3 Type and frequency of NTFP harvesting by Chau Ma and Stieng

The findings from the KIIs corroborated those from the household survey that ethnic minority households continue to collect NTFP for reasons of income generation and subsistence use. While only a small proportion of ethnic minority households in the village (9%), predominately Chau Ma, have a high subsistence and income reliance on those resources throughout the year. A list of NTFPs and types collected was recorded for each household in 2018 and summarised in Table 6.

Table 6. Seasonal calendar of NTFPs in Village A in 2018. Note: M = main season harvesting, V = year-round visitation.

Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bamboo shoots	V	V	V	M	M	M	M	M	M	V	V	V
Lá nhiếp	V	V	V	V	V	V	V	V	V	V	V	V
Đọt mây	V	V	V	V	V	V	V	V	V	V	V	V
Ươi nuts			M	M	M							

The most common NTFPs collected by Chau Ma and Stieng people in 2018 were Bamboo shoots, lá nhiếp (*Gnetum gnemon* L.), đọt mây (*Calamus tetradactylus* Hance), and Ươi nuts (*Scaphium macropodum* (Miq.) Buem.). Lá nhiếp and đọt mây are the Vietnamese names of vegetables growing in the forest and Ươi nuts are a high value commodity.

On average, the frequency of bamboo shoot collection by ethnic minority people in this village is 13 times per household per month. In the bamboo shoot season (April to September), a majority of ethnic minority people in the village enter the forest to collect this product, and this may increase the pressure on flora and fauna in the protected area through their visitation. In addition, đọt mây and lá nhiếp were observed to be collected by ethnic minority people over the whole year (Table 6). However, one Chau Ma person interviewed complained that ethnic minority people were needing to travel much further into the forest to access sufficient amounts of đọt mây

At harvest time for Ươi nuts, there was competition among Chau Ma and Stieng as this NTFP commanded a high price. Demand for these nuts led to the NTFP being harvested prematurely. Data from the household survey indicate that 34% of Chau Ma and Stieng respondents collect Ươi nuts from the forest during its harvesting season (from March to May). This finding is corroborated by the following quote from a Stieng respondent:

> *Most collected Ươi nuts are sold and play an important role in our income generation; each household can collect more than 60 kilograms per season and can sell it at around USD 10/kilogram (Local Stieng person 2 interview).*

Harvesting of Ươi nuts has led to unsustainable nut harvesting methods, such as the cutting down of the entire trees or of major branches, which leads to a complete loss of the tree. There was also a decline of forest area supporting this Ươi species, as well as reduced tree populations and decline in tree heath (as supported by an interview with a local person interview).

2.4 Discussion

This study explored the nature and level of NTFP reliance and subsistence use in three ethnic groups living in the buffer zone of a Park in southern Vietnam and on the underlying reasons for collecting NTFPs. By understanding the relationship between NTFP reliance and an ethnic group, it is then possible to explore the potential for alternative options that reduce reliance on NTFP collection in those ethnic groups that require it. While previous work on NTFP reliance has focused on the relationship between economic conditions and NTFP reliance in the context of total household income (Heubach et al., 2011; Widianingsih et al., 2016), our research also examined total NTFP reliance through subsistence use and income-generating potential, and the reasons for NTFP collection. The results, therefore, provide a more comprehensive examination of NTFP reliance by including subsistence use and shed light on land use patterns of Kinh and local ethnic minorities in the study village that affect their NTFP collection behaviour.

2.4.1 Economic status of ethnic groups

There was a gap in the overall economic situation between the Kinh and the minority ethnic groups, Chau Ma and Stieng. The ethnic minorities had lower economic status than the Kinh because of two major factors: Park governance that meant ethnic minorities had to establish a livelihood outside the forest, and the effects of historical land-use policy resulting in Kinh migration to the area.

In 1978 Chau Ma and Stieng people were moved out of the forest. This type of resettlement was viewed by the Park authority as a solution to perceived ethnic minority threats to conservation of protected areas (Morris-Jung and Roth, 2010). These ethnic minorities were not familiar with sedentary agricultural practices and failed to thrive in this new environment (Nguyen and Hoang, 2013). The government-sponsored Kinh migration from over-populated lowland areas to upland areas in the 1980s caused a sharp increase in the number households in the village, increasing five-fold from 30 households before Kinh immigration to more than 150 households. The migration of Kinh people from the lowlands had changed not only the general population of the whole village but also the local political economy, removing the Chau Ma and Stieng people from their traditional

role as the exclusive residents and resource users (McElwee, 2008a; Phuc, 2009). The reconfiguration of land ownership and use - from community ownership to individual household ownership - conflicted with the traditional practices of the Chau Ma and Stieng. Such a land use policy, combined with the movement of ethnic minorities out of the forest, led to increasing competition for land, while doing little to reduce the pressure on Park's timber and non-timber resources (Morris-Jung and Roth, 2010).

The gains from the implementation of this new land use policy were short lived. Although the Government compensated the ethnic minorities by allocating them land outside the park, these people sold their land to Kinh people. Key informants for this research, Chau Ma and Stieng local residents, and two Government officers, one from the Park and one from the Talai Commune further elaborated on the situation. At that time ethnic minorities needed cash to buy necessities for their daily needs, livestock (e.g. pigs, cows, or buffalo) for ceremonial events such as funerals and weddings, or recovery from adverse weather conditions, such as storms. The Kinh lent the ethnic minorities money to cover these expenses, but in order to repay their debt the ethnic minorities then needed to sell their land. The Government did not regulate land trading from the Chau Ma and Stieng people to Kinh people. The pattern of ethnic minority groups relinquishing land, their most valuable asset, has been observed elsewhere in northern and central highlands of Vietnam (FAO, 2015).

In addition, Kinh people who migrated from lowland areas were experienced and knowledgeable farmers, a finding strongly supported by key informant interviewees. The Kinh were skilled in rice cultivation and their farmland was productive and avoided crop failure through judicious land management decisions. Kinh households in central Vietnam have been reported to have greater levels of food-sufficiency and more diverse income-earning opportunities due to better education and greater access to farmland (Nguyen et al., 2019), as this case study has also shown.

The higher level of education of the Kinh people relative to the ethnic minorities places them at an advantage in adopting agricultural technologies and achieving higher returns from off-farm work. Previous studies have also demonstrated the significant differences between ethnic groups, with the Kinh demonstrating a higher capacity to diversify livelihoods and income sources as when compared to the ethnic minorities (Trædal and Vedeld, 2017). Higher levels of education increases the Kinh people's ability to manage their household economy. Meanwhile, ethnic minorities have low levels of education and high levels of illiteracy. The low education levels of Chau Ma and

Stieng people often did not satisfy the qualifications required for certain off-farm activities, which would provide them with a more stable household income. Financial gains from the collection of NTFPs was low for ethnic minorities. The lack of significant economic benefit for the Chau Ma and Stieng peoples from NTFP collection was possibly due to the poor marketing and negotiation skills of these ethnic minorities, as reported in India (Pandey et al., 2016).

Off-farm activities could be seen as an alternative livelihood choice for the Chau Ma and Stieng people, but it is not necessarily a stable income source due to variable demand for seasonal labour. In the village, more ethnic minority households were likely to participate in seasonal migration for manual labour in neighbouring provinces such as Lam Dong and Binh Duong. This kind of work includes agricultural labouring (e.g. soil preparation, spraying pesticides, weed removal, planting, and harvesting) which is unskilled and poorly paid, hence possibly leading to increasing vulnerability and insecure incomes (Karacimen, 2015).

2.4.2 Reliance and subsistence: the contribution of NTFPs to livelihoods

NTFP collection practices were linked to minority ethnic groups continued need to derive income and to visit the forest for harvesting traditional foods and use in occasional ceremonies while the Kinh people had little need to collect NTFPs and showed little interest in doing so. The majority of Chau Ma and Stieng people exhibited a low level of total reliance on NTFPs but there were 26% of Chau Ma and Stieng that had a high total NTFP reliance. Their existing knowledge and experience in harvesting forest products allowed them to continue NTFP collection practices with little additional investments. As was found in this study, forest collection activities although easily undertaken with low levels of capital requirement and purchased inputs, in most instances provided only low economic returns (Shackleton et al., 2018). However, during times of crop failure, unemployment and other hardships (flood, drought), it has been reported in and around a north-eastern protected area in Bangladesh that NTFPs served as important emergency resource for people's livelihoods (Mukul et al., 2016).

A small proportion (~9%) of ethnic minority households in the village were estimated to have a high to very high level of subsistence and income originating from NTFP collection. These households reported that they did not possess land and had few opportunities to generate alternative income. Consequently, these households attempted to harvest NTFPs at high levels and were not discouraged despite the Park having forest patrol, permits, and harvesting regulations. The reason

for continued NTFP collection, by ethnic minorities is that access to forest resources is hard to control (Hardin, 1968), but livelihoods were also exacerbated by governance systems (broader issues of historical land use change and ineffective forest policy) that has allowed uncontrolled access to NTFP (Shackleton et al., 2018). Clear documentation of property rights is necessary to provide all peoples with security of land tenure and access (Ostrom, 2009).

The relationship between high NTFP reliance and low educational levels was confirmed in this study and was also associated with ethnic differences in NTFP collection (i.e. Kinh people were significantly less reliant). Other case studies in South-east Asia (e.g. Vietnam, Myanmar) and Africa (e.g. Rwanda and Zambia) have also reported that households with poor education tend to depend more on NTFPs (Mugido and Shackleton, 2019; Soe and Yeo-Chang, 2019).

Previous research has found that NTFP harvesting impacts on forest condition can be low because the products were usually harvested from plants with relatively high reproduction rates and in ways that were not terminally destructive to plant growth (Ticktin, 2004). Other research findings from Bowyer et al. (2014) in China and Huy (2012) in three Parks (Cat Tien, Dak Uy and Bach Ma National Parks) in Vietnam asserted that collecting NTFPs was still detrimental to the forest environment and places pressure on various species of plants and animals in the forest, not just the target species itself. For example, over-collection of bamboo shoots has been found to lead to a decline in biodiversity of other organisms, and damage to soil physical structure and reduced water-holding capacity (Bowyer et al., 2014).

The intensity and frequency of collecting can have an impact on the growth rates of NTFPs (Ticktin, 2004). Chau Ma and Stieng practice relative high frequency and intensity of NTFP collection, especially in peak harvesting seasons. This poses a threat to less resilient plant and animal forest species, but not to those fast growing NTFPs. Huy (2012) confirmed that the fruit harvesting practice of branch cutting in Bach Ma and Cat Tien National Parks damaged the crowns and stems of younger Ươi plants, had adverse effects the height growth of Ươi plants, and can cause considerable site disturbance. Intensive harvesting methods such as clear-felling trees leads to further forest degradation and is an unsustainable harvesting practice (Ticktin, 2004), as local people in Village A have been reported to be doing when collecting Ươi nuts from the high branches of Ươi trees.

In addition, the analysis of NTFP reliance level of three ethnic groups demonstrates that Chau Ma and Stieng livelihood prospects were highly interwoven with the fortunes of the Kinh. From a situation of low population density and environmentally balanced livelihood embedded in the forest, to a sedentary livelihood outside the forest on small parcels of land due to relinquishing land to Kinh and Park zoning that forbids them to collect NTFPs. This change in livelihood is linked with concepts of private land ownership, capital inputs, modern agricultural technology, and market access which is at odds with traditional subsistence-oriented agricultural and ritual practices based on collective arrangements within ethnic minorities in the village.

2.4.3 Land use and forest conservation policy considerations

Cat Tien National Park currently seeks to enforce conservation laws and regulations, and there is a strict embargo on any level of NTFPs harvesting. However, these control measures were not entirely effective because traditional NTFP subsistence collection continues among the ethnic minorities albeit for most Chau Ma and Stieng households at a low level. For the small proportion of ethnic minority households with a high level of NTFP subsistence use they tend to be poor, landless and lack educational and employment opportunities, sometimes with insufficient food for a full year.

The Park Board could consider negotiating the regulation of NTFPs through a benefit sharing mechanism rather than outright prohibition. Regulations for conservation management would need to be developed which include greater flexibility for collaborative management and sustainable approaches to NTFPs harvesting. Benefit-sharing mechanisms in natural resource management have shown the potential improve local livelihoods and forest conservation (Trædal and Vedeld, 2017).

People in marginalised ethnic minority groups need to be part of the management process of the local natural resources. It is believed that the Chau Ma and Stieng were knowledgeable in forest resources and this knowledge may improve the effectiveness of forest management. Evidence from another Vietnamese forest management study, suggest that local participation in forest management can reduce conflict between local communities and Park authorities (Sikor and Tan, 2011). Those ethnic minorities that can demonstrate they are harvesting NTFPs in a sustainable manner by using local knowledge to determine harvestable limits should be allowed to continue with a negotiated permit and under effective monitoring by forest protection teams (Huynh et al., 2016).

Gaps in income and livelihood resilience may be addressed by alternative interventions such as targeted education and training programs (Nguyen et al., 2019). District and Provincial authorities, by conducting workshops and community meetings, can identify the needs of the ethnic minorities in Village A and collaboratively formulate plans to meet their identified needs, with the long-term goal of reducing harvesting pressure on forest resources. Almost all households in the study suggested that education is a key priority for improving local livelihoods. Investment in increasing the ethnic minority educational level and improved access for Chau Ma and Stieng to further education is an important pathway for increased livelihood opportunities and decreased reliance on NTFPs (Nguyen et al., 2019).

2.5 Conclusion

This study sought to investigate the nature and level of NTFP reliance among three ethnic groups (Chau Ma, Stieng and Kinh) in the buffer zone of Park in southern Vietnam, and the reasons people gave for collecting NTFPs. The results showed that most Chau Ma and Stieng households were reliant on NTFPs albeit at a low level, while Kinh households had no reliance on NTFP collection. The Chau Ma and Stieng were at a disadvantage in terms of education and skills for agricultural production and this limited their employment opportunities on and off-farm. Chau Ma and Stieng people had struggled to adapt from a self-sufficient forest-based livelihood to living outside the forest and the land they had been given had been sold to Kinh, thus further disadvantaging them. In order to sustain local livelihoods, government authorities should incorporate livelihood strategies into the sustainable harvesting of NTFPs, developing participatory management systems with effective benefit-sharing. Ethnic minorities also need to have access to longer-term employment opportunities through education and training.

Chapter 3. Talai Ecotourism Venture in Vietnam: Does it improve local livelihoods, and is it community-based?

3.1 Introduction

As discussed in the previous chapter, the ethnic minorities in the study village of Talai Commune have a low socioeconomic status, with a low household monthly income and low education level. Chau Ma and Stieng people still travel into the forest to collect NTFPs for their livelihood despite the status of the forest as a National Park.

Two initiatives, a Forest Protection Team (FPT) and Community-based ecotourism (CBE), are currently operating in the village with the aim to improve the ethnic minority people's livelihoods. One involves forest protection team within the buffer zone of Cat Tien National Park (Park), with 23 Chau Ma households and 15 Stieng households participating in the initiative. The forest protection initiative will be discussed in more detail in the next chapter. The second initiative, which is the focus of this chapter, is a venture that was intended to develop community-based ecotourism (CBE).

Community based ecotourism is defined by community caring for its natural resources in order to gain income through ecotourism, and using that income to better the lives of its people, it also involves nature conservation, business enterprises, and community development (Sproule, 1996).

Strong arguments from the literature have been advanced in support of CBE as it focuses on the removal of constraints to local participation in ecotourism and enhancing the local livelihood through this initiative (Sakata and Prideaux, 2013). Particularly, CBE aims to develop the human capital of the local scale by creating local employment, building gender equality, skill training and education for locals, and on applying a comprehensive community development process to tourism planning. In addition, CBE try to respect for social and cultural identity of local communities, and it is responsible from reinforcing the social cohesiveness (Choi and Turk, 2006).

Observations of CBE initiative implementation in previous studies, for example in northern Botswana (Mbaiwa, 2018), Cambodia (Lonn et al., 2018; Reimer and Walter, 2013), and other developing countries (Byczek, 2011; Sakata and Prideaux, 2013) suggest that a fundamental outcome of successful CBE is the improvement of local livelihoods. CBE envisages that income from ecotourism be equitably distributed within, and managed collaboratively by, the local

community(Sakata and Prideaux, 2013; Scheyvens, 1999). Mearns (2012) adds that an important aspect of CBE is community involvement and management in sustainable development.

However, achieving success in improving local people's livelihoods, and authentic local participation in CBE enterprises, is complex in practice. Research in CBE ventures introduced by international organisations in developing countries, such as in the Greater Mekong Sub-regions (Myanmar, Thailand, Cambodia, Vietnam, China, and Lao PDR) (Krongkaew, 2004), other parts of south-east Asia and in some African countries (Songorwa et al., 2000), have had limited success. Researchers have identified several problems with CBE implementation and outcomes, including: lack of local participation in decision making (Tosun, 2006); ineffective benefit-sharing arrangements (Kim et al., 2019; Wang et al., 2016); and inequality of employment opportunities among the local people (Lonn et al., 2018). There also exist a few case studies that demonstrate how the income generated through CBE in protected areas can be distributed equitably to communities (Ly et al., 2017; Scheyvens, 1999), and how the distribution of income might affect their livelihood goals (Ogutu, 2002). But overall the literature does not comprehensively reflect what occurs in practice around the impact on livelihoods, in particular social contexts (Foucat, 2002; Reimer and Walter, 2013).

3.1.1 CBE in Vietnam

Vietnam has a great potential for ecotourism resources with a large system of national parks and protected areas. Since 1995, there have been CBE initiatives in Vietnam on national parks and protected areas based on two objectives; poverty reduction as a possible alternative to a subsistence and forest-dependent livelihood and species conservation (Lipscombe and Thwaites, 2003).

The literature on CBE in Vietnam documents the failures of several ecotourism ventures in Vietnam's national parks in terms of locally powerful elites gaining the venture benefits and gender inequity (Tran and Walter, 2014), inadequate cooperation across different stakeholders and among different levels of authorities (Markowski et al., 2019). Suntikul et al. (2010) during the examination process of the implementation of community-based ecotourism (CBE) in two national parks (Cuc Phuong and Cat Tien National Parks) illustrated specific manifestations of conflicts between ecotourism and local livelihood (interest conflict, benefit conflict) in both cases. These conflicts are caused by political, social, cultural, and economic factors in the context of Vietnam's current period of transition (Suntikul et al., 2010).

A critical question for CBE initiatives conducted near national parks in Vietnam concerns how community livelihoods might actually be improved through participating in ecotourism activities. Drawing on a case study of the Talai Ecotourism Venture in the buffer zone of Cat Tien National Park in southern Vietnam, this chapter sought to address the following objectives:

1. Determine the governance structures and processes of attempted CBE in the Talai Ecotourism Venture case study;
2. Analyse the factors that influence the livelihood outcomes of local people directly and indirectly involved in the Talai Ecotourism Venture;
3. Examine the type and level of community participation in the ecotourism activities comprising this venture; and
4. Identify the factors that influence local people's involvement in this Talai Ecotourism Venture.

3.2 Methods

3.2.1 Case study description

The case study approach (Yin, 2014) to research applied in this thesis was discussed in the previous chapter. This chapter describes the process that was followed in undertaking key informant interviews and household surveys in respect of the Talai Ecotourism Venture. The main stakeholders in this venture are summarised in Table 7.

A detailed description of the study area for this research - Village A in Talai Commune, Dong Nai province, Vietnam - was provided in the previous chapter. The focus of this chapter is the community-based ecotourism (CBE) venture called the Talai Ecotourism Venture. Cat Tien National Park became a protected area in 1992. In the 1978, two ethnic minority communities (Chau Ma and Stieng) lived in one of the buffer zones of the national park; and harvested NTFPs for home use and sale. Around the same time, Tày (an ethnic minority in the north of Vietnam) and Kinh (the ethnic majority group in Vietnam) families immigrated to the area, settling in the buffer zone of the national park and commencing agricultural activities for their livelihoods, growing crops, including cashews and rice, and rearing livestock.

3.2.2 Talai Ecotourism Venture description

In 2008, with the support of the Danish International Development Agency, the Worldwide Fund for Nature - Denmark (WWF - Denmark) and the Worldwide Fund for Nature - Vietnam (WWF -

Vietnam) worked together on a venture to initiate CBE in Talai Commune, Dong Nai Province. Vietnam's Ministry of Agriculture and Rural Development approved the ecotourism guesthouse as a Talai Ecotourism Venture from 2009 to 2014. The key venture partners involved in the formation of collaborations and partnerships included Park representatives, WWF Vietnam, Talai Commune People's Committee (local government), a private company (tour operator), and the local people (Nguyen, 2014).

The rationale for supporting the CBE initiative in the village was two-pronged. Firstly, ethnic minorities are often potential ecotourism destinations with an abundance of cultural and natural resources. Hence ecotourism has been seen as an alternative income source for ethnic minority people. Secondly, this venture was based on the assumption that the ethnic minorities were willing and able to cease their current practice of forest resource collection, which was considered to impact forest health, if they could be provided with alternative livelihoods.

In late 2010, the Talai Ecotourism Venture (hereafter referred to as the venture), was built in the village near the ethnic Chau Ma and Stieng resettlement area in Talai Commune, Tan Phu District, in the southern province of Dong Nai. The objectives of this venture were to (1) create alternative livelihood opportunities for the ethnic minority people by developing the ecotourism potential with relevant stakeholders to enhance the economic situation of the local ethnic minorities, and (2) reduce the dependency of local ethnic minorities on natural resources within the Park, thereby contributing to nature conservation in the Park (Nguyen, 2014).

In 2011, WWF, the Park Boards, and Talai Commune People's Committee worked together to establish the Talai Cooperative Group (TCG) as a legal entity to support the venture. Further information on the original partnership agreement such as who were its leaders, who were its members, and the process of choosing leader and members will be provided later in 'the governance structure of the venture' section. Also, the reason why Tày people from another village were members of the TCG, while Stieng people from the study village were not members of the TCG will be presented in results section on quality of local participation.

Later, in March 2011, WWF Vietnam also facilitated the partnership between TCG and the private sector through working together for development. Through this three-year contract (collected from the second trip), TCG and private companies would jointly manage the ecotourism business and share the profits (Nguyen, 2014).

The first private company had significant experience in adventure tourism and was dedicated to community development. However, after one and a half years of working in this area, the original company officially withdrew. Another private company took over because the former company had not been successful in attracting enough tourists for the venture to be financially successful. The decision to install a new private partner in the venture was made by WWF jointly with the two companies, Talai Commune People's Committee authority, and the Park Board. In mid-2014, the second private company officially entered the ecotourism business by signing a five-year contract with the TCG and the Talai Commune People's Committee authority concerning management of the venture (Nguyen, 2014). It is noted that the TCG owns the longhouse which was approved by WWF. However, the TCG did not own the land that the longhouse resides on although it had a 30-year rental agreement with one villager in the village.

Currently, the venture is managed by a private coffee trading company from Ho Chi Minh City, Vietnam. The company's roles in the ecotourism venture include communication with tourists and the Cat Tien National Park staff, hosting guests, organising guided tours of the National Park, and organising ethnic minority cultural events in the longhouse. The majority of visitors to the long-house were international rather than domestic, including European tourists, students from international schools in Ho Chi Minh City, and backpackers (Nguyen, 2014). These tourists typically spend one night in the longhouse, taste traditional food, and tour the Park's forest ecosystems. The Cat Tien National Park staff usually book the tours. The company also arranges outdoor sports events, such as team-building activities, trekking, biking, and canoeing activities for tourists. Meanwhile, local people provide traditional singing, music and dancing performances and gong shows.

A benefit sharing mechanism (Village Development Fund) was built into the contract between the partners (the private company and the TCG) in order to increase the local benefits and to distribute benefits more equally both between the members and within the local community.

3.2.3 Methods of data collection and analysis

Key informant interview

Key informant interviews were conducted before the household survey. A summary of responses from key informant interviews is presented in Table 7. The qualitative data obtained from key informants provided an in-depth understanding of the research context, selecting representative

sampling frames for household survey questions in the next step, and enabled greater insights from data analysis and interpretation (Morgan, 2015). The qualitative data enabled an accurate understanding of household wealth categories, which were particularly critical in the cross-cultural context of the household survey, and thereby strengthening the internal validity of subsequent structured analysis (Drury et al., 2011). All of the TCG members identified in Table 8 were interviewed.

Table 7. Summary of key informant interviews. (WWF = World Wildlife Fund Vietnam, CBE = community-based ecotourism, TCG = Talai Cooperative Group, VDF = Village Development Fund.)

Role	Topics discussed
Organisation: WWF. Key informants: Site officer. Number of interviews: 2	
WWF is the facilitator of the venture. It funded the venture, involved relevant stakeholders, and promoted local capacity building in the period from 2009 to 2012.	How the Talai Ecotourism venture operated on the site, and evaluation of local participation in the venture. Evaluation of how successfully Talai Ecotourism Venture engaged the villagers and improved local livelihoods
Organisation: Cat Tien National Park. Key informants: Management Board representatives. Number of interviews: 2	
The Cat Tien National Park established the collaboration between the WWF, the private company, and the local community in managing the venture.	(1) The context of the venture, (2) interaction between the local villagers and the Park, (3) evaluation of how the venture affects Park management strategies.
Organisation: Talai Cooperative Group. Key informants: Talai Cooperative Group leader. Number of interviews: 1	
The TCG leader was involved in the enforcement of regulations (according to the contract) at the TCG level. TCG leader has the right to control the land tenure for the private company investment partner's venture facilities and area of operation on community lands.	Determine the quality of participation mechanisms of TCG themselves in ecotourism activities in the venture: opportunity to participate, encouragement to participate, incorporation of views into decision making.
Organisation: Talai Cooperative Group. Key informants: TCG members. Number of interviews: 11	
TCG members all belong to the Chau Ma, and the Tày minorities (another village). No Stieng member in TCG. The TCG members delivered ecotourism services on-site.	The procedures of how TCG members were engaged with ecotourism issues in the area in conjunction with the other stakeholders. The quality of the local participation, the challenges facing the CBE activities, the benefits associated with CBE activities, and the local livelihood improvement due to the ecotourism venture
Organisation: Current private company. Key informant: Company representative. Number of interviews: 1	
The private company was engaged as a partner to promote, manage, and run the venture as a tourism business, employing local staff. The company signed the partnership contract with the Talai Collaborative Group in 2013.	The interviews were to discuss the relationship between TCGs and the company and the operation of the Village Development Fund
Organisation: Talai Commune. Key informant: Talai Commune representatives. Number of interviews: 2	
Talai Commune collaborated with the WWF in establishing the TCG. Talai Commune was also in charge of collaboration with the TCG to develop a plan for the VDF under the original private company operating the venture.	Relationship between the Talai Commune and TCG. The interview questions focused on Talai Commune efforts in developing the policies supporting community participation in the venture, and on how TCG governed the VDF.
Key informants: Villagers. Number of interviews: 3	
The last set of key informant interviews was held with the local people in the study village (same 3 people were also interviewed for the household survey) in Talai Commune.	To acquire the in-depth knowledge and experience of the local people involved in a CBE venture, their opinions of ecotourism, and the benefits of the venture for their livelihoods and forest conservation. The implications of the CBE venture in the study area.
Organisation: Central Venture Management Unit (CPMU), Government of Vietnam. Key informant: Government official. Number of interviews: 1	
The government official interviewed plays an important role in respect of the overall strategy of the ecotourism development in the National Park	To discuss general policy in terms of ecotourism development in National Park at the national level

Table 8. Description of TCG members in the study village

	Gender	Age	Ethnicity	Education	Status
Person 1	Male	55	Chau Ma	Primary school	Leader
Person 2	Male	50	Chau Ma	Primary school	Full-time Member
Person 3	Male	43	Chau Ma	Primary school	Full-time Member
Person 4	Female	43	Chau Ma	Primary school	Full-time Member
Person 5	Male	55	Chau Ma	Primary school	Full-time Member
Person 6	Female	28	Chau Ma	High school	Full-time Member
Person 7	Male	60	Chau Ma	Primary school	Part-time Member
Person 8	Male	56	Chau Ma	Primary school	Part-time Member
Person 9	Female	46	Chau Ma	Primary school	Part-time Member
Person 10	Female	47	Chau Ma	Primary school	Part-time Member

All the TCG members were employees of the private company, while those employed part-time (n=4) were not members. The people who were TCG members were first employed by the private company before becoming TCG members, except for the TCG leader who was selected by the villagers in the study village.

The qualitative data from the key informant interviews were analysed with NVivo 12 Plus. The interview transcripts were translated into English and responses were coded in NVivo 12 Plus using data-driven nodes with specific themes: benefit distribution, power relationships, and the nature and quality of participation in the venture. These themes emerged from the key informant analysis process.

Household survey

The selection of participants for the household survey included those involved in the CBE venture (10 Chau Ma people), and randomly selected households in the study village who were not employed in the venture (50 Chau Ma, 50 Stieng and 40 Kinh households). Non-participants in CBE were interviewed to determine whether they indirectly benefited, economically and/or environmentally, from venture activities, given that the aim of the venture was to improve livelihoods generally within the community. It is noted that Tày people who were also TCG members live in a different village, so they are not part of the study village.

Households provided information through the survey about their estimated household monthly income from various sources, and their evaluations of the venture as an alternative source of livelihood in the study area. The impact of the venture on local people in the village was divided

into direct impacts (employment opportunities, and cash income) and indirect impact (environmental attitude) (Mbaiwa, 2005).

MS Excel was used to tabulate and undertake descriptive statistics of categorised data according to role in CBE of household (people who work in the venture; people who are non-participants). Mean and frequency metrics were used to summarise household responses and the estimated monthly household income was calculated for different household categories (participating households and non-participating households). Cross tabulation was applied to determine the significant differences in total monthly income between the household categories.

For data collected from open-ended questions in the household survey, the matrix coding query in NVivo Plus 12 was used to compare attitudes from the village between those people who were involved in venture and those who were not involved. Attitudes were assessed in respect of several issues including the local opinion of venture's impact on local livelihoods, and the operation of Village Development Fund (VDF), and participation levels.

Participation observation

The researcher also conducted participatory observation (Moeran, 2009) during the entire field data collection period to observe and document the experiences of the informants in their home environment. The researcher accompanied the village head to walk around the village to observe livelihood activities, ecotourism activities in the venture, and some other livelihood activities. During the fieldwork, the researcher observed the local villagers' behaviours, including two informal conversations in the residential areas. The researcher also took notes of any practices, behaviours, and community livelihoods that she observed in the field. This observation phase was beneficial for improving the data collection and analysis of key informant interviews. Procedures were undertaken to seek clarification, e.g., explanations (during and immediately after the interviews, as recommended by Harrison et al. (2001). All field notes were translated into English.

3.3 Results

3.3.1 The governance structure of the Talai Ecotourism Venture

The complex interaction among the stakeholders involving the Talai Ecotourism Venture was analysed based on these field results. This analysis highlighted the importance of institutional arrangements in the governance of the venture (Figure 8).

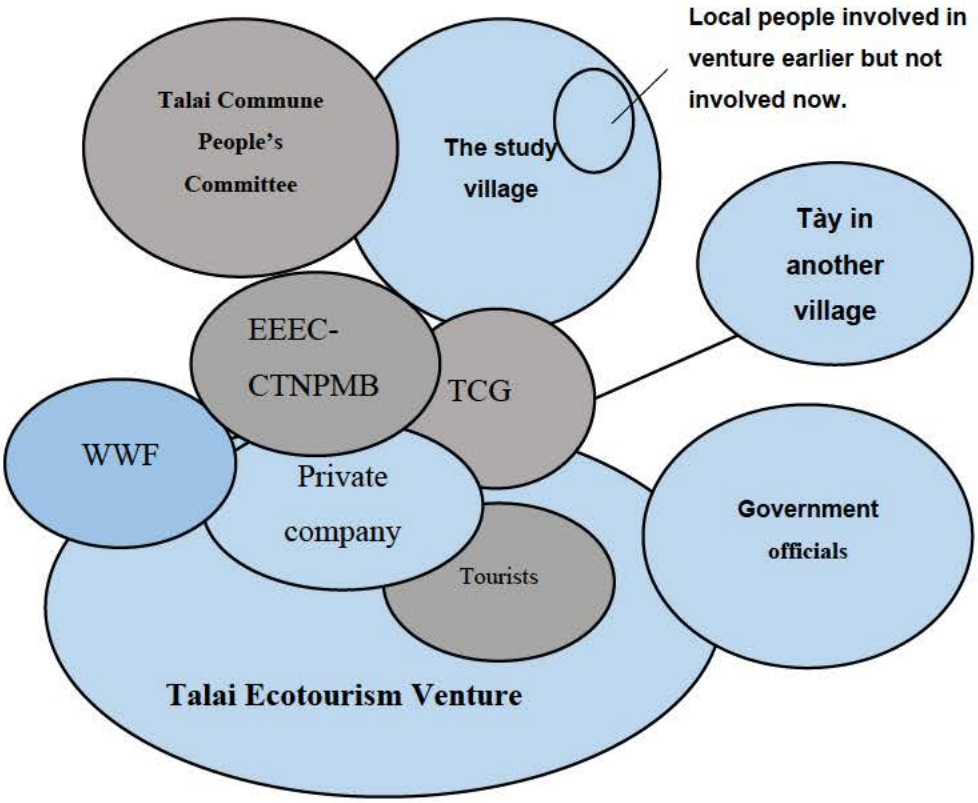

Figure 8. Stakeholder groups in Talai Ecotourism Venture. Notes: Environmental Education and Ecotourism Center (EEC) – CTNPMB (Cat Tien National Park Management Board), TCG (Talai Cooperative Group), VDF (Village Development Fund), WWF (Non-Government Organisation World Wildlife Fund for Nature), Talai Commune People's Committee and connections to the study village.

The collaborative partnership between WWF and the study village began with the construction of the venture in 2008. During the start-up phase of the venture (2009 - 2010), the WWF officers worked with the local people in the study village for site selection, design, and construction of the longhouse.

The Environmental Education and Ecotourism Center from Cat Tien National Park is the key government department that coordinated this venture with WWF officers, and is located in the Park. The Park's motivation in promoting CBE in the area was to promote biodiversity conservation by providing villagers with alternatives to obtaining their livelihoods from harvesting resources from the Park. The Talai Commune People's Committee involvement was mainly in the provision of

policy guidelines for ecotourism development in this Commune. For example, they directly organise the enforcement of laws and policies to local people, and they have collaborated with the WWF in organising the TCG. In addition, the Talai Commune People's Committee support administrative procedures for the TCG.

The Talai Cooperative Group (TCG) is managed by one Chau Ma leader from the village, plus ten other ethnic minority members (Chau Ma, and minority Tày people). The elected leader was the person who has the main responsibility for the internal and external communication locally (with Talai Commune whenever the private company needed to get written approval from Talai Commune.

The TCG leader was selected by the villagers from the whole village. Residents in the village who were interested in the venture could join the meeting conducted by the WWF officer in order to select who were their representative and would become the TCG leader. The leader was selected based on status, experience and enthusiasm: 'The leader got high respect in the village. He was a well-spoken person and thus has more influence' (TCG member interview). Meanwhile, the TCG members were appointed by the TCG leader. These members were chosen based on the quality of their relationship with the leader or leader's relatives.

Through contractual agreement, the TCG and the private company would jointly manage the business and share its profits. The TCG was supposed to represent the interests of the ethnic minorities in the partnership with the private company, to ensure the venture was truly community-based and that benefits from the venture were shared fairly with the community and between its different ethnic minority groups.

A five-year contract was signed between the two parties (the TCG and the new private partner) with strong support from the Park Board and the Talai Commune People's Committee authorities, to provide a firm legal foundation for practical cooperation. One of the obligations from this contract was that the private company needed to help improve TCG members' capacity to undertake ecotourism activities in the village.

Also subject to this contract, a benefit-sharing mechanism was introduced to distribute a share of revenues from venture activities fairly among the local people in the whole village. This mechanism involved the private company establishing a Village Development Fund (VDF). This was intended

to support villagers in meeting their livelihood needs, such as through local house repairs and maintenance, providing interest-free fund loans for local households to raise livestock or poultry, and supporting public facilities (e.g. village road maintenance). After a five -year contract, a one-year contract is to be re-negotiated annually by the private company.

Specifically, this benefit-sharing mechanism involved remittance of USD 7 per adult tourist night, and USD 4 per child tourist night, to the VDF. This fund was to be directly managed by the TCG under consultation with the local government of Talai Commune People's Committee to support the poor, provide loans for households to develop livelihood activities, and provide funds for local activities and environmental protection. According to the WWF report on this venture (Nguyen, 2014) the fund has been more substantial, (based on discussion with the private company representative who were responsible for venture management).

3.3.2 Direct outcomes of the Talai Ecotourism Venture

Only six Chau Ma members of the village were hired full-time to take care of practical work at the venture, including cooking, cleaning, maintenance, gardening, tour guide and security and others. Four other people from the village were appointed to part-time positions with the venture. The remaining members working in the venture were five Tày people from another the village and two Kinh people from the private company, HCMC. Employment opportunities have been limited by the private company's demand for labour. According to a TCG member who was interviewed, only the leader and members of the TCG were told about future employment opportunities at the venture.

The pay for a full-time employee at the venture ranged from USD133 to USD221 per month, compared with a typical income for a seasonal worker of USD100 per month with average 20 days a month. Hence employment at the venture was lucrative compared with alternative employment opportunities available to people from the village. Despite this, TCG members also received income from the VDF of around USD 50 per month (TCG members' interview).

Figure 9 compares three groups of households in the village – households employed by the venture; and non- participating households – in terms of the monthly income categories. Overall, the analysis shows that households with a member employed by the venture tend to have greater household monthly incomes than households without such a member. More than 80% of the 10 households with a member employed by the venture belong to the medium-income or well-off household

income categories (Figure 9). Around 83% of Chau Ma and Stieng households not involved in the venture fell into the poor or near poor household income categories. It appears that the TCG members received higher incomes through their membership (and gaining access to venture employment and revenue from the VDF).

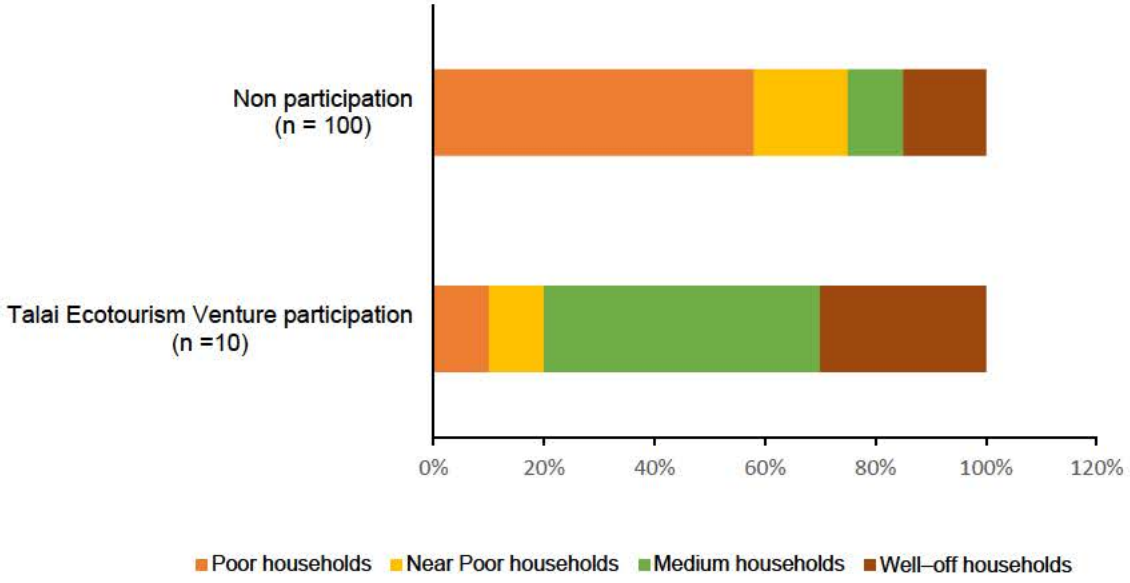

Figure 9. Distribution of ethnic minority households (Chau Ma and Stieng) in Village A between household income categories, distinguished by whether they were employed by the venture or not.

The WWF officer interviewed thought the venture was unsuccessful as a community-based ecotourism because the benefits for the local community were limited to a small proportion - 10 households - of all households in the study village which the venture was targeted. Similarly, when discussing this issue, a government official from the Park stated that:

> *The venture only provided employment and salary for those who worked for the private company in the village. The employment opportunity was very limited (Government officer 2 interview).*

3.3.3 Benefit distribution from the Village Development Fund (VDF)

To spread the benefit beyond those directly involved in the venture, the private company and Talai Cooperative Group (TCG) had established a benefit sharing mechanism called the Village Development Fund (VDF). According to the Evaluation Report (Nguyen, 2014) evaluated from

2012 to 2014, the success of this partnership between the private company and Talai Cooperative Group (TCG) would have dispersed the benefits to the village. Households in the village were supposed to benefit from each visitor staying at the venture, and the money was to be transferred from the VDF every three months to the TCG. The profit that TCG members receive was their individual income for working full/part time for the venture (Nguyen, 2014). However, in practice, it seems that VDF funds were not distributed by the TCG to the households in the village beyond those of the leader and members of the TCG. One of the TCG members observed that:

> *VDF revenue was shared amongst members of Talai Collaborative Group and contributed little to livelihood diversification in the village (TCG member 1 interview).*

Hence the economic impact of the venture on most households in the study village was limited. Of all respondents to the household survey, the responses of 67% of households not involved were consistent with the following key informant observation from a villager:

> *Most of us did not know in great detail how the fund from the venture was allocated to the whole village through a benefit-sharing mechanism (Local person 1 interview).*

Among 33% of the remaining households, 13% households agreed that: 'the Talai Ecotourism Venture is beneficial for the village, especially those who participate in the venture activities'. Meanwhile, there was appropriate 20% who said that: 'we had own jobs, so we don't care'.

Data from the key informant interviews with nine TCG members suggested that the TCG leader was able to capture opportunities to benefit themselves and their families.

> *The TCG leaders help a private company in dealing with external communication, such as paperwork, with the Talai Commune People's Committee and thus get more benefits from the company in terms of higher pay or employment opportunities (TCG member 2 interview).*

3.3.4 Environmental outcomes of Talai Ecotourism Venture

Another outcome of the venture that was anticipated in venture's objectives (Nguyen, 2014) was an improvement in local attitudes towards the natural environment specifically forest conservation. The following comment from one of the WWF officers was consistent with this anticipation:

> *Overall, change was observed in local people's behaviour in keeping their houses clean and not littering on the main roads. You see, the garbage bins (there were around 34 bins in the village) were put along the road. Tourists' behaviour, such as collecting and properly disposing of trash in designated places, had also influenced the villagers' behaviour (WWF officer interview).*

Likewise, the Talai Commune People's Committee representative who was involved directly in the venture claimed that:

> *Through the venture, the local awareness of ecotourism, and the environment, had also been strengthened. There were some positive changes in the local attitude towards environment since the venture operated (Government Officer 3 interview)*

However, in terms of forest conservation perspective, the responses to open-ended questions in the household survey suggests that the impact of the venture on local people's environmental attitudes has not changed considerably as a result of its presence. Only 6% (n= 9) of surveyed households agreed that there was an improvement in local environmental awareness after the longhouse (part of the venture) was built in the village. The villager's opinions included fairly insubstantial changes in local village environment such as it was cleaner and there was less garbage lying around. Most of the villagers (69%) agreed that 'there was no relationship between conservation and ecotourism in the venture'. Approximately, 25% of the villagers were not even aware of the existence of the venture and hence did not provide any responses to the questions.

Hence, the ecotourism activity from the venture was not necessarily a way to reduce the frequency of villagers going into the forest. The initial expectation was that the venture would provide villagers with alternative livelihoods, through employment in the venture and associated business opportunities, that would reduce their livelihood reliance on forest resources (Nguyen, 2014). The benefits that were derived from the local communities involvement in such an initiative was supposed to create incentives to ensure the continued conservation and protection of the natural environment (Butcher, 2011). However, there was evidence that the alternative livelihood benefits of the venture were limited and restricted to only a few village households. This suggests that few villagers would have reduced motivation to extract forest resources as a result of their involvement, either directly or indirectly, in the venture.

3.3.5 The quality of local participation and stakeholder collaboration

This section presents findings on attempts to engage villagers in the village through stakeholder collaboration including in designing the venture and then in ongoing venture operations. In 2009, as mentioned earlier, the Park and WWF began a series of consultative meetings with the local and relevant stakeholders in venture design phase. These organisations and the Talai Commune People's Committee jointly planned the design of the venture building and highlighted issues including the need for technical assistance and local capacity building in order for the venture to succeed as an exercise in CBE. WWF officer key informants remarked that around five meetings with local people, as well as household visits, were conducted to consult with villagers during the start-up period of the venture (2009-2010). However, the majority of the meetings and consultations held by the WWF and Talai Commune People's Committee were not successful in getting the local people's attendance and ideas about the venture. A WWF officer commented in a key informant interview that 'few local people attend the meetings. Local people felt entitled to get paid for the time they spent on the training, which was not possible'.

WWF was responsible for facilitating the meeting and providing training courses to engage the local people in the venture during its start-up phase. These courses included cooking, tour guiding, and English classes, which aimed to equip the locals with relevant ecotourism skills so that they could more confidently become involved in the ecotourism operation. A TCG member voiced their support, stated:

> *We were trained by some courses in skills such as cooking, guiding, dancing, and tourism hospitality by the WWF which was organised in the Cat Tien National Park. These training courses helped us a lot in servicing the tourists (TCG member interview)*

After the establishment of TCG in 2011, all of the TCG members were employed by the private company. All of the Chau Ma members in the village were relatives of the TCG Leader. The TCG leader first make sure their relatives got jobs at the venture, and then ensured that the people with jobs became the members of the TCG. Hence, no Stieng people were involved in ecotourism activities of the venture. As indicated by the following quote, there was a failure to find ways to involve Stieng people in ways that were sensitive to their cultural norms.

> *Stieng people are disinterested in participating in ecotourism activities in the venture because Stieng women's partners did not want them to participate in some [dancing] activities which were organised in the evening [because they were jealous]. That was*

> *the reason why WWF officers tried to get Tày people from another village for replacement at that time. Engaging Stieng people in tourism activities in Talai Ecotourism Venture proved to be a challenge (WWF officer interview).*

Meanwhile, one of the Stieng locals claimed that:

> *We did not have any relevant information and opportunities to take part in venture activities. The venture was very helpful for only Chau Ma people (Local Person 3 interview).*

The lack of Stieng involvement in the venture (either in the past or now) illustrates an overall lack of understanding and empathy toward Stieng cultural values and the need for more culturally inclusive plans for ethnic minority engagement. The result was a bias in the venture towards certain ethnic groups and the exclusion of others.

TCG leaders and members met every three months. The focus of the meetings was limited to discussing how to share the VDF funds between TCG members and choosing poor households in the village who needed financial help from the VDF. It seems that the TCG members were quite reluctant to decide how many households would be supported and with the limited funds allocated for this purpose normally only 1 or 2 households per annum benefited. The private company staff also participated and contributed their ideas in these meetings in terms of choosing which households would receive money from the VDF, and other administrative tasks.

Based on the discussion with three local people in the village (Table 7), they said the elected leader of the TCG did not consult with the broader community that they were supposed to represent when making decisions on how to allocate funds from the VDF, or more broadly on the management of the venture. The opportunity to do so would have been at regular monthly village meetings held by the Talai Commune People's Committee. Information about venture and TCG activities was therefore limited to TCG members rather than available to the whole village.

Key informant interviews with villagers revealed moreover that they did not feel they were treated respectfully in their interactions with ecotourism activities based in the venture.

> *We were treated like strangers in ecotourism activities in the area. We were only allowed to access the longhouse when the private company wanted us to present gong shows or perform a traditional dance for tourists (Local Person 2 interview).*

3.3.6 Factors affecting local people's involvement in the Talai Ecotourism Venture

It is essential to identify and understand the factors that determine the quality of participation of local people in CBE development. Based on the evidence from key informant interviews, key factors included governance structure and the power relations emanating from these structures as well as local capacity of TCG and local villagers to be involved in Talai Ecotourism Venture.

One of the key principles of CBE is the requirement of local community participation in ecotourism activities (Chanda et al. 2003). Therefore, it is essential to identify and understand the factors that determine the quality of participation of local people in CBE development. Based on the evidence from key informant interviews, key factors included governance structure and the power relations emanating from these structures as well as local capacity of TCG and local villagers to be involved in Talai Ecotourism Venture. The venture was conceived originally as an authentic attempt at CBE by the WWF, but that the original concept became compromised during the venture implementation, including in establishing the TCG and its relationship with the private company later.

Governance structure and power relations

Since 2104, there was a requirement as part of the contract for the private company to train the TCG members to improve their skills in ecotourism, especially by acquiring business management skills, in order that local people would become capable of running the business independently. The vision was for the TCG members to gain the skills necessary for them to take over the running of the business in the interests of their broader community.

However, in reality, the private company did not provide the TCG members with autonomy to plan and develop ecotourism activities. The villagers in the study village were not aware of any information on ecotourism trends and development in their area (TCG members' interview). The WWF officer commented:

> *The five-year negotiation period would be a learning experience for both the community and the company. However, it seems that everything was under the management of the private company rather than that of TCG leader and group members (WWF officer interview)*

Furthermore, the TCG leader stated that the TCG played only a minor role during almost every stage of the venture management. The private company representative on the TCG also admitted that the TCG was excluded from key activities:

> *TCG team members were not allowed to participate in the private company's business plan. They were not allowed to participate in any decision-making activities because, as you know, with the low level of education, they didn't know the way to advertise the venture or couldn't organise an event (Private company on-site manager interview)*

The other WWF officer interviewed provided a similar assessment:

> *Although seen as joint venture partners with the private company, TCG plays a passive role. They worked for the private company and heavily depended on the company support (WWF officer interview).*

Meanwhile, TCG members found it challenging to effectively participate during implementation of the venture given their lack of enthusiasm to be an advocate for members of the community not directly involved. It may be the TCG could have exerted much greater power if it wanted to, (but it did not want to) because the leaders and members were privately satisfied with their jobs (and income) from the private company (and the VDF), and because exercising their power on behalf of the community would have jeopardised their jobs. In this view the company succeeded in co-opting (or 'buying off') the TCG members so that they chose not to exert their power against the company. This inherent power imbalance between the TCG members and the company may pose issues for the long-term sustainability of the partnership relationship.

Local people's capacity

Capacity in community-based ecotourism can be referred to as the skills and abilities that will enable local people to make decisions and actions for themselves in terms of ecotourism management (Aref and Marof, 2008; Laverack and Thangphet, 2009).

One of the main factors that influenced local participation in the venture was the capacities of villagers, and TCG members more specifically, to participate. Most local interviewees noted that villagers were not involved in ecotourism activities due to a lack of ability (e.g. business management skills, ecotourism knowledge). TCG members indicated in key informant interviews

that they were not confident that they could take more control in managing the business without external help from a private company.

More fundamentally, local people might lack some of the basic skills needed for working in the ecotourism sector. As reported in chapter 2 the illiteracy rate of Chau Ma and Stieng groups was high and the low level of education of Talai villagers made it difficult for them to participate actively in the venture. As the majority of the visitors to the longhouse are international visitors, the lack of English skills and inter-cultural awareness of TCG members arguably affected the efficiency of their work. The directors of the private company had therefore employed one Vietnamese (Kinh ethnicity) manager from Ho Chi Minh City to run the company's involvement in the venture and the operation of ecotourism events here.

> *We were not able to operate the venture without the company, and we needed investors and companies to promote and manage the venture [attracting tourists and financial investment]. For example, we don't know the ways how to attract tourists which the company could do very well. (TCG member's interview).*

Further, practicing ecotourism development requires traditional and scientific knowledge and the capacity to communicate that knowledge. Both executing agencies and local government authorities observed that the lack of ability to communicate their knowledge on ecotourism had hampered their participation in ecotourism activities such as; lack of marketing skills, not understanding tourist behaviour, and language barriers.

> *I would say no one in the village had good enough knowledge (of ecotourism) for doing a good job in our ecotourism sector. However, some could work as guides or doing cooking (Private company on-site manager interview).*

While working at the venture, the TCG members mainly undertook rudimentary, low-paid jobs rather than contributing to planning or management. Hence, they were unable gain confidence and knowledge about how to work in the ecotourism business and taking on unfamiliar roles in the venture. A Government officer commented:

> *They [TCG members] were not able to run the venture themselves without the company, and the [TCG] leader argued that they need investors and companies to promote and run the venture (Government officer 3 interview).*

The TCG members were aware that they lacked the skills needed to meet the requirements of the ecotourism-related jobs. The lack of sufficient training was likely to have hindered most locals from taking up greater responsibility (and consequent remuneration) to practice ecotourism activities. The absence of particular skills in ecotourism management might be expected among inexperienced local people. However, the lack of training to address this absence prevented TCG members from improving their understanding of what services would be required, how to manage tourist visits, and how to effectively promote their economic activities. One TCG member commented:

> *We lacked great management skills, well-developed management and administrative procedures, and adequate financial management and control if we ourselves manage the Venture (TCG member interview).*

3.4 Discussion

The aim of this chapter was to examine the impacts of the venture, as an attempt at CBE on: local livelihoods, the quality of local participation in the venture (given the emphasis of CBE on authentic local participation), and the factors influencing this participation.

3.4.1 The economic and environmental outcomes of the Talai Ecotourism Venture

If community-based initiatives for ecotourism are to be effective, they should address the needs of the local people. The emphasis on local scale of CBE can provide an opportunity to create job opportunities (e.g. ecotourism guiding), broaden entrepreneurial capacity and offer stable incomes at the village level (Eshetu, 2014b; Sakata and Prideaux, 2013), and promote environmental awareness (Hiwasaki, 2006) and the preservation of cultural values (Gurung and Scholz, 2008). However, the ecotourism partnership in Talai Ecotourism Venture only generated employment opportunities and revenue for members of the TCG (which was supposed to represent the interests of the village as a whole), rather than opportunities more broadly for ethnic minority people in the village. There were no opportunities for villagers other than TCG members to learn about how much revenue had accumulated in the VDF account, and they were unaware of how these funds were allocated by the TCG committee (either to TCG members or ethnic minority villagers more broadly).

The challenge remains for the TCG to distribute the VDF equitably and contribute more broadly to local livelihoods within the village from the activities of the venture. The issue of dominance by a ‘group of people’ in ecotourism venture has also been experienced in other ecotourism ventures in

developing countries such as Zambia and Tanzania (Benjaminsen and Bryceson, 2012; Mensah, 2017; Sebele, 2010). For example, in the study of Tanzania conducted by Benjaminsen and Bryceson (2012), the benefits of community-based safari ecotourism development often accrued to a few local people and rarely reached the whole community. The Chau Ma people who held positions on the TCG, despite not being allowed autonomy in the venture were still acting as an elite compared to the other Chau Ma in the village that were economically worse off and benefited little from VDF or ecotourism activities. Wider local participation by the village households in the venture livelihood benefits were greatly limited by TCG members having captured all employment opportunities and most of the benefits from the VDF.

While economic benefits for communities and households can be an important aim of CBE schemes, other goals such as sustainable natural resource management are also important (Cobbinah, 2015). CBE involving local people often increases environmental awareness and adoption of conservation practices among residents (Masud et al., 2017). According to Boley and Green (2016), the income from ecotourism activities can provide a strong incentive for conservation by replacing many traditional livelihood activities that damaged the environment such as hunting, food and fuel gathering, and livestock grazing. Also, evidence from Ethiopia indicates that high local participation in ecotourism has changed local attitudes to exploiting natural resources and thereby contributed to conserving a national park (Eshetu, 2014a) and preventing conflicts between local communities and the national park authority (Kala and Maikhuri, 2011). However, the Talai Ecotourism Venture failed substantially to deliver alternative livelihoods to local ethnic minority people in the village other than to the relatively few individuals from this population with membership of the TCG. Consequently, the benefits of the venture in helping to raise local people's awareness of environmental protection were limited. The limited achievements of the venture in providing alternative livelihoods meant also that the livelihood dependence of most ethnic minority people in the village on harvesting resources from the Park is unlikely to have been lessened to any significant extent.

3.4.2 Quality of local participation

CBE, in theory, should not be seen as an end in itself but as a means towards empowering poor communities to take control over their land and resources, to tap their potential and to acquire the skills necessary for their development (Mearns, 2012). In this sense, CBE is often promoted as an effective mechanism for the empowerment of ethnic minority communities, allowing them to

participate in decision making about tourism development. It is apparent from the evidence presented that the process of participation in development of the venture was mainly planner-centred and top-down, resulting in little meaningful community participation and limited local ownership of the venture. Typically, the participation of local people requires inclusive policies that facilitate bottom-up processes and the sharing of administrative and economic powers (Tosun, 2000).

The original venture concept was for local ethnic minority people to be at the centre of the venture. They were meant to be involved in the whole process (planning, development, decision-making, and management), with WWF acting as a facilitator to guide and develop the partnership among the local people, the private sector, and the Park (Nguyen, 2014). Joint decision-making between the TCG, representing the interests of the local community, and the private company was also expected (Nguyen, 2014). Participatory decision-making centres on involving the community in planning and maintaining tourism development to ensure the sustainability of the venture (Blackstock, 2005).

However, the partnership between the TCG, private enterprise, and the Cat Tien National Park was found to pose challenges arising from power imbalances and governance arrangement (Snyman, 2012). Even though the TCG had legal ownership of the land upon which the longhouse was built and is the physical focus of the ecotourism venture the rights to manage the business had effectively become monopolised by the private company. Over time the role of the TCG had diminished and with it its commitment to community-based ecotourism. It has been previously noted that the TCG did not own the land that the longhouse sits on but had a 30-year rental agreement with a villager in the village.

Pratt et al. (2013) highlighted the importance of factors driving ecotourism, noting that interested tourists are seeking authentic experiences, with cultural education and personal interaction. The lack of active participation by both ethnic minority groups from the village in the venture undermines fulfilment of that demand.

CBE is often promoted as an effective mechanism for the empowerment of ethnic minority communities, allowing them to participate in decision making about, and control over, ecotourism development. Matarrita-Cascante (2010) emphasise that the possibility of local participation might not always be equally accessible for all members of the community. The barriers to local people engaging in the ecotourism industry are diverse, including lack of appropriate skills to be working

in the industry, social status, and family connections (Schellhorn, 2010). Due to these factors, the benefits generated by attempts at CBE rarely reach the poor and instead largely reside in the hands of local elites (Coria and Calfucura, 2012).

Achieving increased community participation requires a focus on local capacity building (D'Souza et al., 2019; Lima and d'Hauteserre, 2011), through strengthening local institutions and provision of government support at the local level (Beaumont and Dredge, 2010). Observations of CBE initiative implementation in previous studies also suggest that both factors, including local capacity building and local institutional strengthening will help to build leadership skills, establish credibility and build mutual trust and long term cooperation among the key partners: community, government and non-government organisations, and private enterprise involved in ecotourism (Farrelly, 2011; Nault and Stapleton, 2011).

The private company's employment of all TCG members meant that the TCG became effectively co-opted to serve the interests of the private company (and themselves, since disagreeing with the company would jeopardise their ongoing access to salary from the company and to revenues from the VDF) rather than the interests of the wider community.

3.4.3 Governance arrangements at the local level

Several requirements for good governance in community-based ecotourism were identified from the literature review. These requirements include: improving participation in governance of local people and other relevant stakeholders (Jamal and Getz, 1995), and promoting stakeholder interactions irrespective of each stakeholder group's level of power (Bramwell and Lane, 2011). Likewise, according to Pasape et al. (2015), good governance in CBE needs to start at the community level, where local people can jointly develop transparent and accountable institutions. These institutions can help facilitate local participation, equitable benefit-sharing, and community empowerment thereby having a key influence on how involvement in ecotourism occurs at a local level (Palmer and Chuamuangphan, 2018).

The findings from the case study of the Talai Ecotourism Venture show that governance of it was not aligned to the principles for CBE, particularly in respect of interactions between local stakeholders, local government, and NGOs. The venture was unable to deliver the expected empowerment of ethnic minority groups in the village due to a combination of factors including

lack of transparency in decision-making, lack of community capacity including skills and knowledge, and lack of effort by the TCG and private company to build this capacity (Kiss, 2004; Salazar, 2012).

The domination of the venture by a small 'elite' subset of the ethnic minority population demonstrated that the governance arrangements were not adequate to the task of facilitating successful CBE (Stone, 2015; Thompson et al., 2018), failing in particular to systematically address pre-existing power imbalances. A review of several CBE schemes in Kenya found that the private partners in CBE can be expected to pursue their narrow private interests if the governance structure and processes could not provide adequate incentives for them to broaden their interests to encompass those of the community (Manyara and Jones, 2007).

A lack of community empowerment has been reported for many ecotourism ventures across Vietnam, where governments and other participants have failed to deliver real decision-making power to local people (Le et al., 2016). Even where the opportunity has been provided for local people to manage resources, the necessary rights, control, and power to capitalise on this opportunity have been denied to them (Mahanty et al., 2007).

The private company in particular exercised dominant control over the venture, in contrast with the original intention that power to manage the venture would be shared between this company and the TCG (expected to represent the overall interests of ethnic minority peoples in the village). Unwillingness to transfer power and/or ownership in CBE cases has been cited in previous studies, especially in the developing countries context. In Botswana, where wildlife tourism and hunting are primary sources of income, it is considered risky for the higher authorities and businesses to share the power with the community (Songorwa et al., 2000).

In general, despite its origins as a CBE, the venture was conceived as a top-down initiative, with power and benefits concentrated in the hands of few people like the private company and TCG leader. Little consideration appears to have been given to governance mechanisms that could develop and support local ownership and participation. The venture was originally conceived as an authentic attempt at CBE, but the original concept became compromised during the venture implementation, including the establishment of the TCG and its relationship with the private company. Community participation tended to be minimal, with the local people acting as passive recipients of development. For decades, this type of top-down approach has been used by

policymakers in formulating policies on rural development without considering local needs, initiatives and interests.

3.4.4 Local capacity for effective participation in CBE

The ability of villagers to participate in community development has remained an issue of debate in the community development literature (Stone, 2015). There was agreement in the ecotourism literature that ethnic minority people often lack the skills and capabilities to maximise the benefits to themselves of the ecotourism development process (Coria and Calfucura, 2012). CBE development and success relies heavily on the ability of local communities to participate in ecotourism activities, including building the capacity of their members to participate over time (Ormsby and Mannle, 2006).

In the case of the Talai Ecotourism Venture, local people in the study village did not originally possess the skillsets required to be employed in ecotourism jobs such as customer service skills, English, problem-solving skills, marketing skills, and management skills strongly constraining involvement by most community members. TCG members low level of education meant that they were unable to participate in training opportunities initially provided by WWF late in 2010 to late in 2011 and to exercise an active voice in planning and decision making in the venture ecotourism development. Local's people ability to become involved in, and maximise the benefits of, the ecotourism development process due to lack of skills, resources, and capabilities has been reported elsewhere and seems to be a pervasive weakness of CBEs (Butler and Hinch, 2007; Coria and Calfucura, 2012; Schellhorn, 2010). Sander (2012) found that the literate members in her study in Costa Rica gained more participation than those with less education, as they were more capable in articulating their views to the mobilising teams and, therefore, more influential in ecotourism decision-making. Communities with lower levels of literacy would need more time to assimilate and adapt to new policies and concepts like CBE. Almeyda et al. (2010) found that local people with limited education could only get lower-skilled jobs offered by the private tourist lodges and were excluded from jobs requiring marketing and entrepreneurial skills.

3.5 Conclusion

Through this case study of the Talai Ecotourism Venture the results show that its implementation did not follow a participatory ecotourism approach and did not meet the fundamental principles of community-based ecotourism (as evidence by minimal benefit sharing, poor participation, little

empowerment, and low capacity building). In theory, if CBE had been planned and implemented appropriately, Talai Ecotourism Venture in the village could arguably be enhancing the livelihood opportunities for local communities through local employment and community ownership, and also contribute to the conservation goals of the protected area. Despite this vision, the case study findings suggest that the venture did not garner broad participation and support from local people, and that it created alternative livelihoods for only a small proportion of the ethnic minority households in the village. The findings show that the local livelihood impacts of the venture have been very limited and the venture has mainly benefitted the ten locally employed staff members who all came from Chau Ma ethnic group.

The effects on the local people in the village has been very limited as shown in the key informant interviews with key multiple stakeholders such as Talai Commune People's Committee authorities, villagers in the study village, and the Park Board members. The top-down manner in which the venture was actually implemented by WWF with benefits and power concentrated on few community members like the leaders, their families, and their network with little concept of community ownership imposed major obstacles to it succeeding as a CBE initiative. Even though steps were taken to involve the local community in management of the ecotourism venture by establishing the TCG as a partner in the venture, actual community participation fell well short of what was intended. This was exacerbated as the private partner failed to treat the TCG as an equal partner. Ultimately, the TCG leadership and members tended to focus on their own interests rather than enable broad community awareness of, and involvement in, the decision processes surrounding the venture and the sharing of its benefits including employment opportunities and revenues.

Community participation in the venture, both through the TCG and wider community was also constrained by key gaps in community capacities including: management skills, knowledge of administrative procedures, leadership, and the failure of governance structure to facilitate capacity and autonomy with local people. The current practice of the CBE approach in Talai Commune, Cat Tien National Park, was, therefore, not truly community based. It does not reflect an authentic community-based intervention as, for most of the ethnic minority people in the village, there was scant participation with TCG members capturing all employment opportunities in the venture.

Even so TCG members were poorly trained for their positions and there seems little incentive to raise their skills by the private company. TCG's lack of participation in decision making indicates that there was no genuine commitment by the private company to take a community-based approach

to the venture. Nevertheless, local people were clearly dependent on the private company to operate the ecotourism venture as they lacked the necessary business skills to do so.

The Talai Ecotourism Venture should have aimed, from the outset, to facilitate the improvement of ethnic minority peoples' capacity to manage the venture, rather than devolving key responsibilities to a private company that was not connected with the aspirations of the community. A critical understanding of local complexities in the village, particularly local institutions, power structures, and differentiation of Chau Ma and Stieng ethnic groups, must be taken into account during the design and implementation of CBE enterprises to ensure that the policy will be implemented equitably and any community development aims are achieved.

Chapter 4. Effectiveness of the Forest Protection Team initiative in providing alternative livelihoods for local ethnic minorities and shifting their attitudes towards forest health

4.1 Introduction

Chapter 3 examined the impact of the Talai Ecotourism Venture on local livelihoods in the study village. It was found that the Talai Ecotourism Venture failed to deliver the expected social and economic livelihood benefits for local people in this village. It was also found that local people in the village that were directly involved in the venture were acting as passive recipients of benefits from the ecotourism venture rather than actively engaging in it to provide livelihood benefits.

This chapter presents an assessment of the impact of another livelihood initiative – the Forest Protection Team (FPT) initiative – which aims to provide ethnic minorities in the study village with alternative livelihoods and thereby reducing their dependence on the extraction of forest resources.

4.1.1 Participatory forest management

Various stakeholders at different governance levels – including the Ministry of Agricultural and Rural Development (MARD), the Cat Tien National Park Management Board, Talai Commune People's Committees, and ethnic minorities living in buffer zones adjacent to national parks in Vietnam – have sought to integrate conservation and livelihood improvement initiatives in order to support local people living within the buffer zone (Do Thi et al., 2018). The buffer zone has been defined as a continuous land area of those communes adjacent to the protected areas, however, it also includes additional communes within 3 km of the Park in which human populations may present an actual or potential threat to biodiversity conservation (Morris and Polet, 2004). Despite worldwide efforts of many organisations and government policies, degradation of biodiversity resources in national parks has continued, and Vietnam has been no exception (Bustamante et al., 2016; Phuc, 2009). Due to the complexity of communities living in the buffer zones, a flexible approach is required that can be adapted to specific contexts or circumstances (Pinyopusarerk et al., 2014).

The impacts of forest management on local livelihoods have been the subject of previous studies (Bayrak, 2019; Gurung et al., 2011; Kuijper et al., 2010; Porter-Bolland et al., 2012). The study by Gurung et al. (2011) showed that top-down and state-controlled forest management policies in

Nepal been ineffective because these policies did not formally recognise the traditional rights of local indigenous people to access forest resources. This type of forest management led to the continuing exploitation of forest resources (Kuijper et al., 2010). Several alternative approaches to forest management have been attempted in buffer zones to enhance livelihoods and raise local people's awareness of reliance on the forest for local livelihoods. The aim of these alternative approaches has been to reduce the multitude of pressures applied by local community activities (e.g. land use practice, cultivation, grazing, timber logging, harvesting of NTFPs) on biodiversity within protected areas (Mukul et al., 2010).

In many forested areas of Vietnam, and elsewhere in the developing countries, ethnic minorities who live near the forest commonly make up a significant part of the local population and are likely to have strong cultural and economic links with the forest (Bennett et al., 2017). Ethnic minorities continue to use their traditional knowledge in the extraction of forest resources, with varying levels of reliance on those resources for their livelihoods (Dang, 2012; Sang et al., 2012).

However, in recent decades significant demographic and economic changes have altered land-use practices, access and usage rights of natural resources, including forests, and the adaptive capacity of local communities living close to forested areas (Beckman, 2011).

Various integrated development and conservation initiatives have been conducted to support people living in buffer zones, but these initiatives have not necessarily provided better outcomes for either the biological integrity of forests or ethnic minorities' livelihoods (Saito-Jensen et al., 2010). Low incomes and low socio-economic status are common characteristics of ethnic minorities in these settings, and access to the benefits of rural development such as education and medical services are often patchy (Nguyen and Hoang, 2013). Findings from several assessments of such livelihood initiatives reveal that links between livelihood benefits for villagers and the broader benefits of forest protection were not always clear (Nepal and Spiteri, 2011). They revealed also that livelihood gains tended to be distributed unevenly among individuals, raising concerns about the dominant roles of the elite and external organisations in excluding ethnic minorities from decision-making roles and economic opportunities (Bayrak, 2019). While some members of ethnic minorities benefitted from privileged positions in local hierarchies, others were excluded from participation and from accessing funds (Haas et al., 2019).

The literature also documents failures in development and conservation initiatives intended to improve the local livelihoods of ethnic minorities to actively engage these people in these initiatives. Reasons found for ineffective engagement of ethnic minorities in such initiatives include: lack of local empowerment (Scheba and Mustalahti, 2015), community members perceiving inadequate benefits from engagement (Baynes et al., 2015), poorly targeted government policies and institutional arrangements (Cronkleton et al., 2012), and the typically low education levels of ethnic minorities (Chhetri et al., 2013).

Conservationists believe that several alternative forest management approaches in the buffer zones will help to link the livelihoods of people living near natural resources to the conservation of those resources and raise awareness of the importance of forest conservation. Thus, by reducing the multitude of pressures placed on the conservation value of protected areas by local people's activities (e.g., land use practice, grazing, timber logging)(Mukul et al., 2016). This chapter is examining the impact of Forest Protection Teams in this context and will present specific objectives as the end of the next section.

4.1.2 Background to establishment of Forest Protection Teams in the study area

In Vietnam, reforms in forest management responded to the broader transformations brought about by the socioeconomic renovations through Doi Moi (Renovation) since 1986 (Bayrak, 2019). Cat Tien National Park (Park) is a special-use forest where the management goals include: protecting the forest ecosystems to conserve biodiversity, strengthening the management capacity of the National Park, helping local people's livelihoods, and improving local people's awareness of forest protection, and engaging participation of local people in forest conservation activities (Le et al., 2018).

There is potential for government agencies involved with protected area management and local people to work together to achieve these goals by increasing the involvement of all stakeholders in forest management, including local forest protection teams in protecting the protected areas. However, lack of awareness of local people about sustainable resource management has been reported as a key constraint affecting the management of protected areas globally (Khan and Bhagwat, 2010). In addition, Vietnamese forestry authorities (e.g. National Park Management Board) have claimed that local forest protection or ranger teams may not have sufficient personnel to effectively perform their duties in forest protection (Van Dang, 2001).

In response to these challenges, the Park Board has since 1997 promoted a Forest Protection Team (FPT) initiative with the local communities (Table 9). The FPT initiative were initiated in the buffer zone under the Decision 1717/2006-QD-BNN-KL.

Table 9. History of the establishment of forest protection teams in Village A.

Year	Number of participating households	Management form	Area to be protected (hectares)
1997	3 households	Individual household	300
1997-2000	9 households	Individual household	300
2000-2003	29 households	Individual household	500
2003-2018	38 villagers (2 teams)	Group of households	500

The primary aims of FPT initiative were to protect forests from overharvesting of timber and non-timber forest products (NTFPs) (since NTFP harvesting is illegal in special-use forests) and to improve the livelihoods of ethnic minorities who remained dependent on this harvesting. The FPT initiative was expected to compensate these people for losing access to protected forest areas by providing them with an alternative income source. Such compensation was considered especially crucial for the poorest segments of forest-dependent communities, and needed reform from state-dominated to community-based engagement in forestry sector (Hoang et al., 2013).

Up until the 1978, two ethnic minorities, the Chau Ma and Stieng, lived in the forest before being moved to the buffer zone outside the forest (the study area). These two ethnic minority groups harvested NTFPs for subsistence use and sale. Around 1980s, Kinh (the ethnic majority group in Vietnam) families migrated into the area, and also settled in the buffer zone of the Park and commenced agricultural activities (e.g. growing crops including cashews and rice and rearing livestock) for their livelihoods (Nguyen and Hoang, 2013).

Since 2003, following the instructions of the Forest Protection Department (FPD) at the Cat Tien National Park, Talai Forest Station and the forest team leaders (the FPT team leaders were former village heads) selected appropriate households from the village to be members of the FPTs. The list of those households was approved by the Park Board and the Talai Commune People's Committees (local government). Thirty-eight local Chau Ma and Stieng people in the study village were selected to FPTs (by the introduction of FPT leaders or Talai Forest Station staff) and paid to be involved in forest protection through a one-year contract with the Park Board. Members of the FPTs had lived in the village for at least 25 years, and none of them had a level of education exceeding primary

school. The selected people were assigned to two distinct FTPs based on their ethnic group; one was totally comprised 25 Chau Ma households and the other completely comprised of 15 Stieng households. The FPTs were managed by the Talai Forest Station in cooperation with the Talai Commune People's Committee. The relationships between the stakeholder groups are shown in Figure 10.

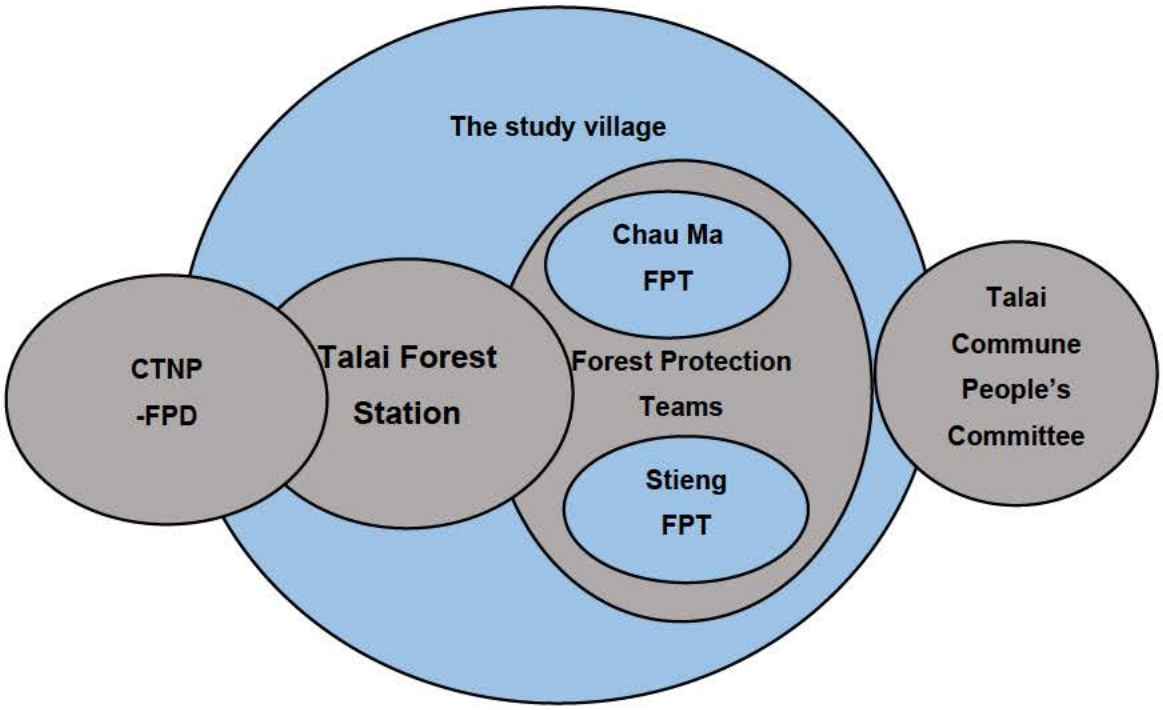

Figure 10. Stakeholder groups in Talai Forest Protection Team initiative. Notes: CTNP (Cat Tien National Park)- Forest Protection Department (FPD), Talai Commune People's Committee, Talai Forest Station, FPT (Forest Protection Teams).

The aim of the FPT initiative in placing local people as the core of forest protection resonates with people-centred approaches to forest conservation (Chambers, 1994). Local involvement in forest protection is believed to help improve local awareness as to the value of forest resource conservation and protection of forest quality. However, these benefits for local people, especially the ethnic minorities, are not always realised. It is also unclear as to whether local ethnic minority attitudes towards forest resource conservation and forest health protection have been positively affected by their involvement in FTP initiative.

Therefore, this research evaluates the impact of the FPT initiative in the study village on: villagers' perceptions about changes in forest conservation in Cat Tien National Park, and the reliance of local households, specifically Chau Ma and Stieng, on forest resources including non-timber forest products (NTFPs). The research aims were to document and analyse in the study area:

1. The operation and governance of the FPT initiative;
2. The factors influencing local people's involvement in FPTs and how the initiative impacts on FPT members' livelihoods and the wider village community, and
3. Local awareness among villager households of forest health.

4.2 Methods

4.2.1 Household survey

The case study method and the approach to field data collection were explained in detail in chapter 2. Households interviewed in the household survey were identified and selected from the list of villagers in the study village provided by local administrative officials and village elders. The households were stratified according to proportion of ethnic group composition in the village and comprised 150 households (60 households of Chau Ma; 50 households of Stieng; and 40 households of Kinh). A list of FPT leaders and members was obtained from the Talai Forest Station. This sample of households included all 38 households involved in FPT in the village (23 Chau Ma and 15 Stieng households). The household survey also included Kinh people in order to have a greater perspective of the impact of FTP on the local livelihoods and attitudes to forest health of the whole village.

The household survey included questions about household demographics and forest usage patterns. Local people were asked to provide an assessment of the forest health[2] by selecting one of the six responses along a Likert scale to the question: "How would you rate the forest health compared to 5 years ago?" (1) greatly improved; (2) slightly improved; (3) no change; (4) slightly declined; (5) greatly declined (6) do not know. All household surveys also including statements from open-ended questions for them to explain further their rating and explore local people's views and behaviour related to the FPTs and forest protection more generally (Appendix 1. Household survey).

[2] It is noted that forest health can be described the same term with forest quality, which is related to biodiversity condition. 'Forest health' is a term used for describing the condition of the forest area ecosystem (Mendez-Lopez et al., 2015; Talo et al., 2014)

Other questions explored the impact of the FPT initiative on members' awareness of forest conservation and their livelihoods and compared the income they received from harvesting NTFPs with their total household income. The research was approved by the Human Research Ethics Committee of the University of New England (HEA 17-262). Household heads were interviewed as it is assumed that heads of the family may possess most of the information relating to various aspects of individual information and their livelihood activities.

Overall NTFP harvesting data was examined and discussed in detail in the results section of Chapter 2. However, in this chapter, data relating to reliance of members of the Chau Ma and Stieng FPTs on harvesting NTFPs will be compared with that of households from those ethnic groups who did have an FPT member. Undertaking this comparison was to verify the role of participating in FPT in terms of their NTFP reliance level.

Summary statistics for the quantitative household survey data were derived using Microsoft Excel 2013. Data analysis and plotting were carried out in R version 3.6.3 (Team, 2020). Density histograms and smoothed kernel density estimates were plotted for of monthly income and NTFP reliance for Chau Ma and Stieng households participating or not in the FPTs. The relationships between total NTFP reliance and estimated total monthly household income (as a percentage contribution of NTFP subsistence and cash-income divided by total income) were assessed using non-linear regression with the exponential decay function, $y = a \times \exp^{-bx}$, where y = NTFP reliance (%), x = household income (USD/month), a = y-intercept and b = decay rate.

Responses to the open-ended questions were coded in NVivo 12 Plus to concepts and themes, which could then be separated according to household categories (e.g. households represented and not represented in the FPTs). The themes explored related specifically to: (a) household perceptions of FPT impacts on local livelihood; (b) local people's awareness of forest health; (c) their opinion of forest health under FPT initiative.

4.2.2 Key informant interviews

Key informant interviews were carried out among staff of the Park Board, officers of the Talai Forest Station, Talai Commune People's Committee representatives, FPT leaders and members, and also more broadly, villagers in the study village. Among these, FPT members were the most significant participant group in this study. In order to select the FPT member representatives, the

village head and the FPT leaders were asked to nominate suitable participants. The key informant interviews explored the research questions through several key themes. These included the nature of forest protection in the study area; roles, responsibilities and effectiveness of the FPTs; benefits and challenges of FPT membership; and perceptions of FPT impacts on forest conservation. A summary of the respondents and discussion topics for the key informant interviews is presented in Table 10.

Table 10. Summary of key informant interviews with role, and topics discussed (Appendix 2. Key informant interview).

Role	Topics discussed
Organisation: Forest Protection Department, Cat Tien National Park Board. Key informants: Government officers. Number of interviews: 2	
The National Park is responsible for environmental and biodiversity conservation	The nature of FPT initiative management, the existing relationship between the CTNP and the Talai Forest Station
Organisation: Talai Forest Station. Key informants: Talai Forest Station Leader and Deputy. Number of interviews: 2	
The Talai Forest Station provides professional knowledge of Cat Tien National Park in managing and protecting the Park.	The interview questions mainly covered by the two FPTs explored the roles, responsibilities of FPTs. Their opinions on the effectiveness of the FPTs and on the adequacy of payment
Organisation: Forest Protection Team (FPT). Key informants: Team leader and member. Number of interviews: 4 (one leader, one deputy, and one member interviewed from each of the two FPTs)	
A Chau Ma Forest Protection Team has responsibility to patrol and protect its assigned area (806 ha). Also participated in the household survey.	To understand Chau Ma households' motivations in being in a FPT, the benefits they received from their role in a FPT, and the challenges they faced in performing their role.
Organisation: Forest Protection Team (FPT). Key informants: Team leader and members. Number of interviews: 4 (one leader and one member interviewed from each of the two FPTs)	
A Stieng Forest Protection Team has a responsibility to patrol and protect their assigned areas (514 ha). Also participated in the household survey.	To understand Stieng households' motivations in contracting with a FPT, the benefits they received from their role in a FPT, and the challenges they faced in performing their role.
Organisation: The study village. Key informants: Chau Ma and Stieng Elder, young Kinh. Number of interviews: 3	
The last set of key informant interviews was held with the local people in the study village	To elicit opinions from local people who had not been involved in a FPT regarding the benefits of the FPT initiative for their livelihoods and for forest conservation.

All text data (interview transcripts, notes, and field observations from the field trips) were transcribed and translated into English, and the resulting texts were analysed in NVivo 12 Plus for thematic data analysis. The key informants' responses were compared to each other through NVivo 12 Plus. The coded texts were compared and contrasted to identify common themes in NVivo 12 Plus. This analysis allows examination of each ethnic group (Chau Ma, Stieng and Kinh people) on the operation of the FPT separately and investigates the impact of the initiative on local livelihoods and forest conservation.

Matrix coding queries were used to analyse the data from open-ended questions in the household survey, including questions related to the impact of the FPT initiative on local people's livelihood, perceptions about forest conservation, factors affecting the quality of participation in, and effectiveness of, the FPT initiative in respect to local community development. Responses were categorised according to whether key informants had, or had not, participated in the FPTs as either leader or ordinary member.

4.3 Results

4.3.1 Forest protection team operation and governance

There were 38 households working as part of two FPTs in the village. They were assigned to the teams according to their ethnic groups: 23 Chau Ma households were assigned to one team, and 15 Stieng households were assigned to another. Each team was under the supervision of a team leader. Each of the two team leaders was a former village head and was responsible for the signing of annual forest protection contracts and managing forest patrol plans. The forest team members were recruited annually following the evaluation of Talai Forest Station leaders on each FPT's performance. Unless their FPT performed well (as shown by working hard, rarely absent, and cohesively with other team members), the forest team members would not be re-recruited. Normally, there were several instances where members' contract was not renewed, but usually a team member would be re-employed (FPT leader interview). The two FPTs have the responsibility to patrol and protect their assigned areas of forest (806 and 514 hectares for the Chau Ma and Stieng FPTs, respectively) from illegal activities such as hunting, animal trapping, tree cutting and NTFP harvesting. In addition, they were responsible for the prevention and fighting forest of fires in the dry season. The FPT leaders allocate tasks among team members and periodically patrol the forest, but they did not go out with their teams every time.

The Talai Forest Station allocates the forest areas and the patrolling tasks to the two FPTs, and guides the operational activities of the teams, such as how to check the animal traps during the patrolling trips, recording the presence of the team members and monitoring the activities of the FPTs (Figure 10). The patrol efforts, as monitored by the Forest Protection Department, will affect the payment the FPT team members receive every six months.

A group of 3-4 FPT members travel together into the forest and patrol a set area each time. The particular area to be patrolled at any time is set by the Talai Forest Station and ranges between 100 and 200 ha per day. Hotspots of illegal activity were prioritised. Although these groups of FPT members might patrol with a staff member from the Talai Forest Station, in many situations this was not the case. FPT members were shown how to use a global positioning system (GPS) instrument to record their patrolling trips. FPTs were also provided with a uniform and necessary field equipment such as a torch, boots, hammock, and raincoat. Technical support, patrol training, and monitoring skill were provided by the Talai Forest Station staff annually (e.g. forest team member interview).

Talai Forest Station staff led patrol reviewing and planning meetings with the FPT leaders and members and were held monthly at their premises. At the meetings, the FPT leaders reported patrolling results (e.g. how many illegal logging cases, number of attendance or absence of FTP members, etc.) and proposed a patrolling schedule for the following month. The rest of the FPT members were also present at these meetings. Although the members were allocated time to present their ideas on the patrolling performance, the purpose of the meetings was mainly to ensure that the protected area was being effectively patrolled and to report any detected violations. The results of the FPT patrol activities were also shared by Talai Forest Station with concerned local authorities such as the Talai Commune People’s Committee and with the Park Board.

According to the FPT leaders and members interviewed, the FPTs did not adequately perform their role in controlling the harvesting of NTFPs in their designated areas as they were powerless to enforce park regulations. Based on the contract, the FPTs do not have the authority for legal enforcement. They were merely to report the illegal exploitation so the Talai Forest Station staff could stop the illegal activity. The Park Board supported the transfer of patrolling responsibilities to the FPT members in the study area, but the limited enforcement rights of the FPT constrained their effectiveness in controlling unauthorised forest exploitation.

In addition, the benefits to FPT members were not considered adequate to offset the considerable time, effort and risks of patrolling the forest. The consensus from FPT members was that patrols usually involved hard, physical work and FPT members sometimes faced risks such as working in severe weather conditions or being subjected to violent opposition when trying to stop illegal forest exploitation.

The interaction between the Talai Forest Station and the FPT members was primarily directed by Talai Forest Station staff and the team leader due to team members' low literacy levels. The members did not have a clear recollection of their roles and responsibilities, despite being informed by the team leader. A low level of education was widespread among the ethnic communities in the village with 80-90% of the surveyed FPT team members having primary school education, and five of 38 FPT members were illiterate, and did not know how to read and write. Information collected from the following FPT member indicates that FPT members did not participate in the process of negotiating the contract under which they were engaged:

> *I still remember, the process to become a forest team member was simple. We needed to submit a copy of our IDs and sign the contract. We could not read the contract, so our team leader read the contract obligations for us. We did not remember every detail and also did not keep the copy of the contract as well (FPT member interview).*

Another task for FPT members that was stipulated in the contract was for them to educate others in the village about forest protection. The aim of this education was to enhance environmental awareness across the village and to shift villagers' behaviours and habits towards more sustainable practices, especially around harvesting of forest resources. Towards this end, all the forest team leaders and members were supposed to coordinate closely with Talai Forest Station staff, village leaders, and officials of the Talai Commune People's Committee to organise meetings at the village level. The FPTs and the Talai Forest Station were responsible for giving speeches at village meetings in which all households were required to have one member participating (often the heads of households). These meetings were to raise people's awareness and motivate them to participate in forest protection by encouraging the villagers and their family members not go to the forest for cutting trees, hunting or NTFP collection. The head of the village confirmed that in practice, however, that when meetings were organised to disseminate information or discuss conservation and forest management issues, most of the ethnic minorities showed a lack of interest in the subject matter. The meetings instead addressed topics more directly related to the daily livelihoods of the local people, especially in respect of agricultural production techniques (e.g., scheduling of fertiliser

applications or spraying pesticides). Hence, local meetings provided few opportunities for helping to change local people's attitudes in favour of forest protection.

4.3.2 The factors influencing FPT involvement and impacts of the initiative on FPT members' livelihoods and the wider community

The critical role of the FPTs in the deployment of the forest protection initiative was established by this research. Talai Forest Station staff and Park Board representatives viewed the salary for FPT members as sufficient to encourage local people to participate in forest protection. The payment to the FPT members was made from the budget that comes from the Government Fund and Payment for Ecosystem Services (the payment for hydroelectric), which paid around USD 14 per hectare per year for all forest patrolling (Vietnam Government Office 2015). One of the representatives from Talai Forest Station said that,

> *Although there was only 38 people recruited as FPT members, this job could generate extra cash and could save a certain amount of money for their living. I believe that these people's living condition would be improved so much (Talai Forest Station representative interview).*

Every FPT member receives around USD 10 per day for their forest protection activities. FPT members generally work 4-5 days per month, giving a total monthly income of up to USD 50. Some FPT members agreed that the payments were beneficial for their household livelihoods, contributing extra income to pay for a range of regular and irregular costs.

> *I have some cash (USD 486 per year) for supporting my family, especially in some important events like the wedding, funeral, and others [laughs]. In the past, I had to borrow some money from my relatives or neighbours over and over again. However, now our family has small savings from the forest protection activities (FPT member interview).*

The extra income is appreciated by another forest team member

> *I think there were many families in the village who have a tougher living condition than us. We were luckier than those families because I got that job [become a FPT member] although the salary from this job was low (FPT member interview).*

Average monthly household income for Chau Ma and Stieng households were greater for participating households than for non-participating households, with greater density at higher

income levels (e.g. ≥ USD100/month) for participating households. The outcomes were different for the two ethnic groups, however Stieng FPT members with higher income were more likely to participate than Chau Ma (density more right-skewed for Stieng), and non-participation by low income households was more constrained in the Chau Ma community (density more left-skewed for Stieng) (Figure 11).

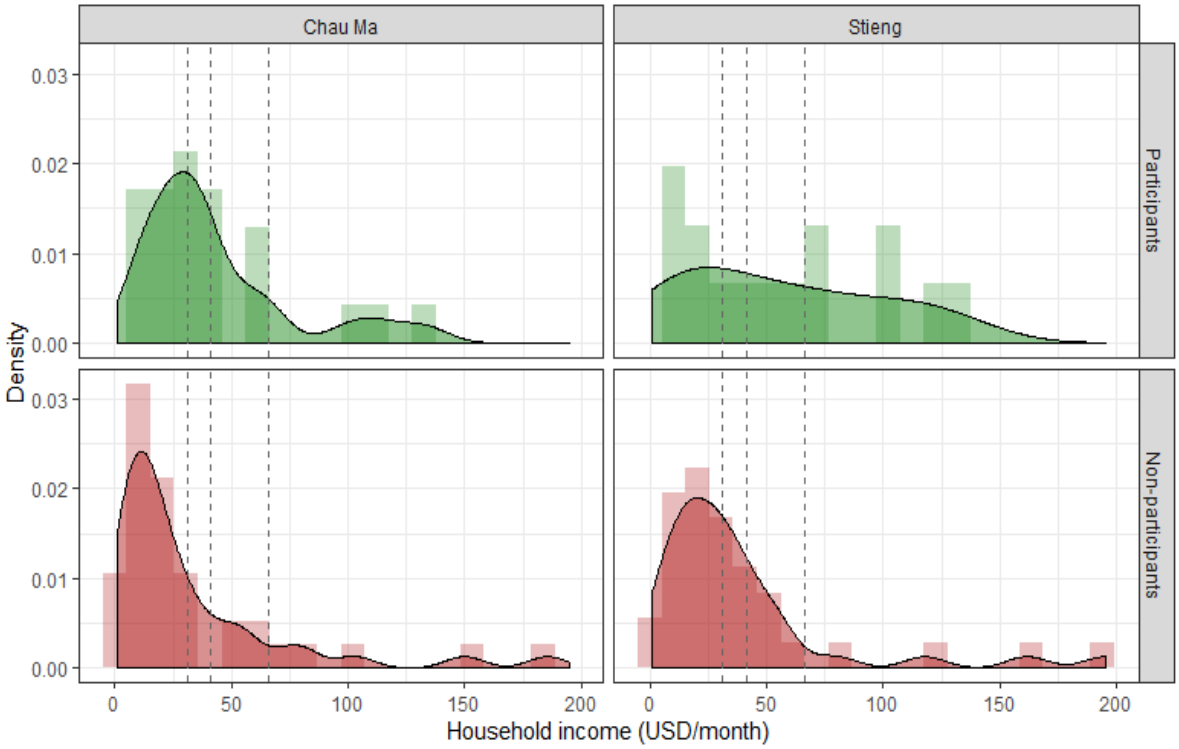

Figure 11. Density histogram of average monthly household income for Chau Ma and Stieng households participating or not participating in the Forest Protection Teams. The bars show the density for each income category on the x-axis, the curved polygon shows the smoothed kernel densities and the dashed lines are the break points between the national government wealth categories.

Figure 12 compares monthly incomes of households participating in an FPT with non-participating households (based on the Vietnamese government criteria of the average monthly income per person according to Decree No.59 on 19 November 2015). Overall, incomes of most households with FPT members falls into the lower-wealth categories. About 63% of participating households fell into the poor and near poor categories, although the proportion was substantially higher (74%) for households not participating in the FPTs. About one quarter of FTP members were from well-

off households (the common features of these households were that they had a variety of income sources), while only 12% of non-participating households were classified as well-off.

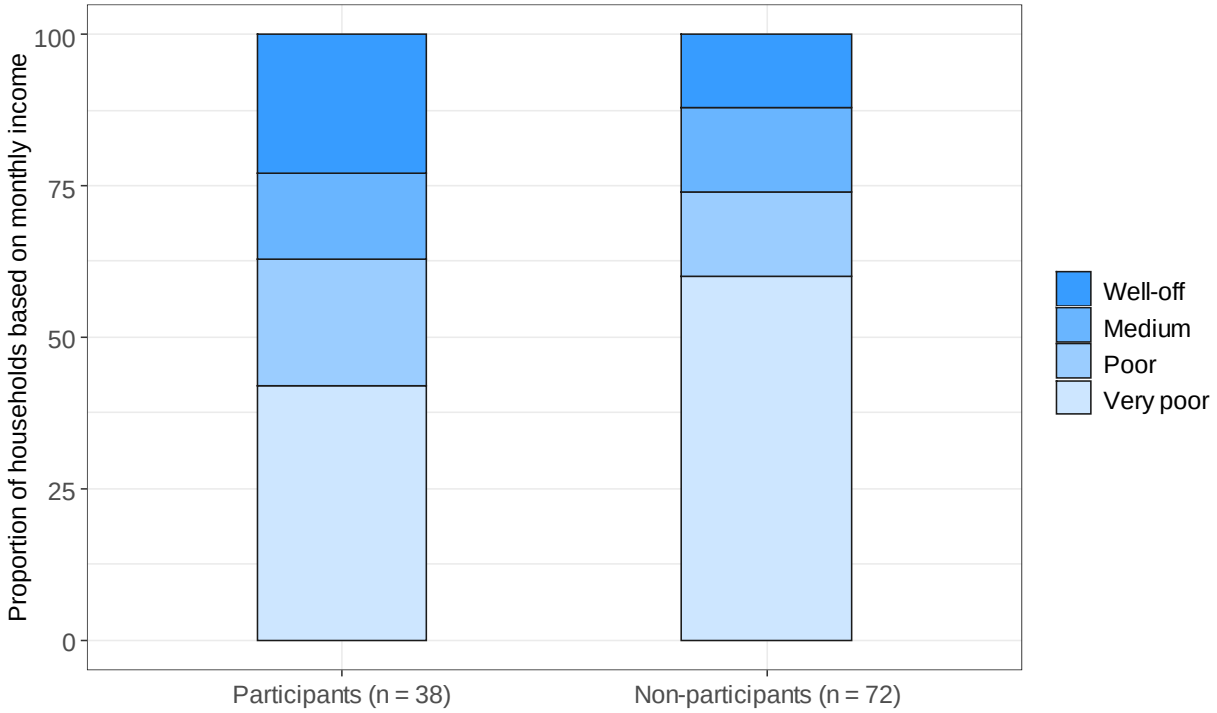

Figure 12. Distribution of estimated monthly income for ethnic minorities household participating and not participating in Forest Protection Teams (FPT).

The payment to FPT members is relatively low in terms of full-time wages. It was equivalent to a casual job or working as a hired labourer in the village, with an average salary of USD 10 per day. Government staff claimed the budget for the FPT was inadequate for effectively protecting large areas of forest (i.e. more than 1,300 ha). In addition, the number of households that could gain a one-year contract with the FPT initiative was limited to 23 Chau Ma and 15 Stieng households, in the village households including an FPT member accounted for 35% of Chau Ma and Stieng of surveyed households (n=110). Therefore, this initiative did not have a significant impact on poverty reduction in the whole village but did address those people who were reported to be poorest in the village (Chapter 2).

The FPT members reported that payments for their participation in the initiative was not sufficient to discourage them from collecting forest resources. When the FPT went patrolling without Talai Forest Station staff, some forest team members did not patrol the whole area they were assigned to. Other participants also admitted that during patrols they did their own reconnaissance for resource

rich areas, spent time collecting forest products (e.g. bamboo shoot, mushroom, and firewood), and that they may also return after a patrol to harvest forest resources. The forest protection team leader explained the reason for their behaviour,

> *As you know, we need to work in a risky condition in their work such as snake or be attacked by the logger, go to the forest at night especially in the rainy season. We do not have social insurance as well. So, it was not a big problem if we collect some bamboo shoot, or đọt mây, lá nhiếp (FPT member interview).*

Discussion with some key informants revealed that the handling of NTFP collection violations had not been executed transparently in the areas 'protected' by the forest protection team members. Hence, the uncontrolled forest resource exploitation, especially of NTFPs was still occurring. Also, the Park Board took a relaxed approach to FPTs controlling harvesting of NTFPs, and instead placed greater emphasis on other breaches of the Park's status as a special-use forest such as illegal harvesting of timber and animal poaching.

> *We do not know what to do with our friends or relatives when I see them in the forest. We usually tell them to go back home but they [villagers] frequently had to resort to tactics such as going to the forest at night or noon after we had gone home to avoid detection (Forest team member interview)*

As shown in Figure 13, on average, Chau Ma households with an FPT member have a greater reliance level on NTFPs than Stieng households with an FPT member 29% and 11%, respectively. Eight per cent of Chau Ma households with an FPT member had very high level of NTFP reliance (more than 60% of monthly household income), while no Stieng households with an FPT member had a very high level of NTFP reliance.

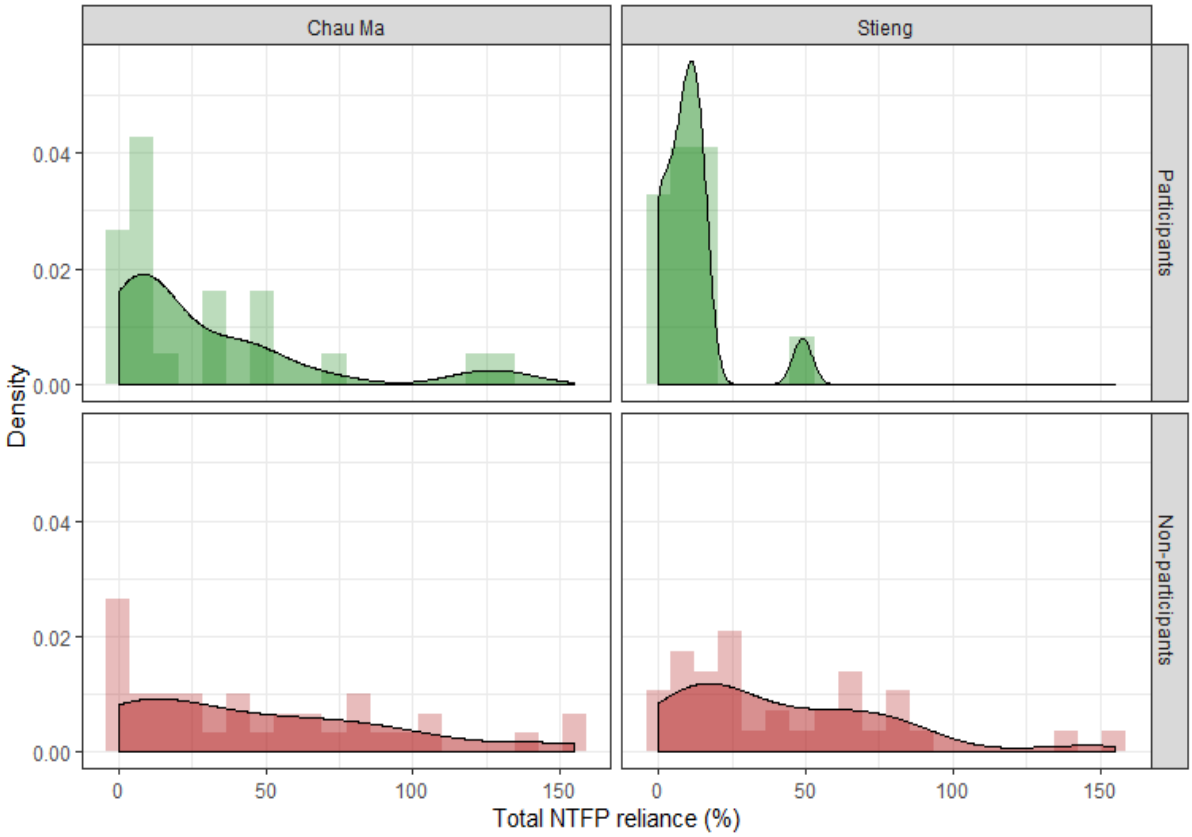

Figure 13. Density histogram of NTFP reliance for Chau Ma and Stieng households participating or not participating in the Forest Protection Teams. The bars show the density for each income category on the x-axis, and the curved polygon shows the smoothed kernel densities.

The relationship between NTFP reliance and household income was analysed using non-linear regression (Figure 14) showed a strongly negative trend for households not participating in the FPTs ($P \leq 0.012$) for households participating in the FPTs was observed ($P \geq 0.128$). The majority of non-participating households in FPT had low incomes and also had higher reliance on NTFPs. These contrasting trends in respect of FPT participation did not differ between Chau Ma and Stieng households, and the benefits were not evenly accessible or distributed throughout the village households.

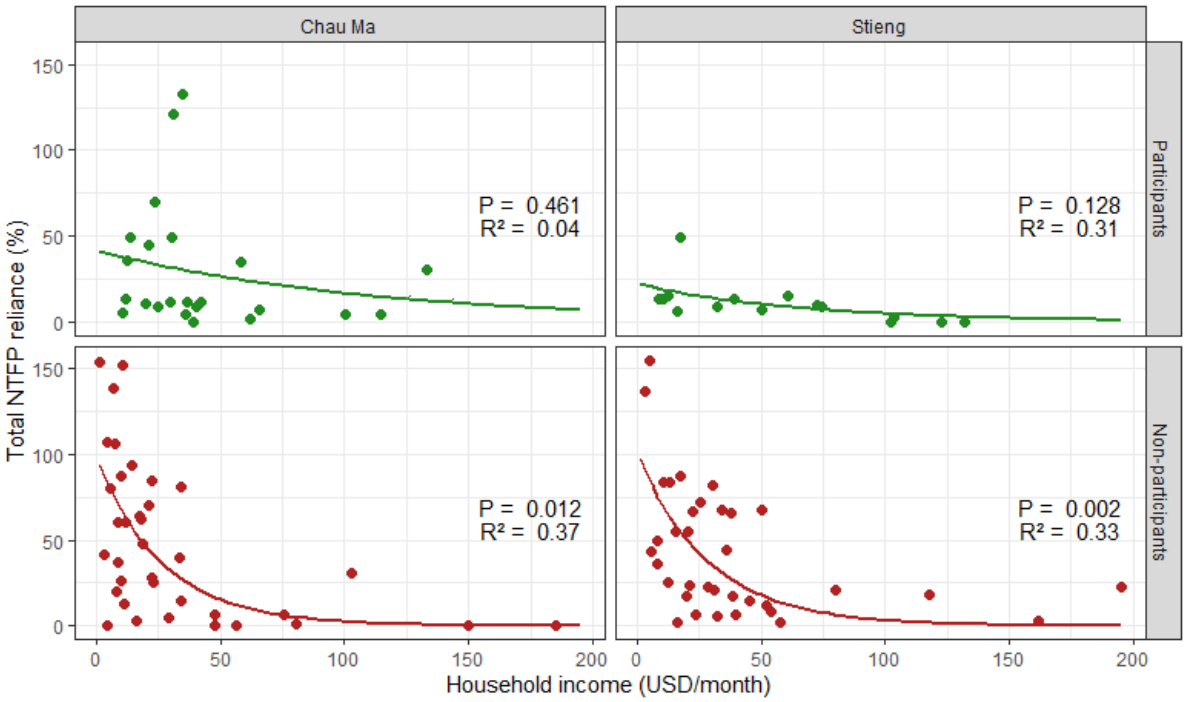

Figure 14. The relationship between non-timber forest product (NTFP) reliance and average total monthly income for Chau Ma and Stieng households participating or not participating in the Forest Protection Teams. The lines show the fitted exponential decay function.

4.3.3 The impact of the FPT initiative on local livelihoods in the village

When households were asked about the impact of the FPT initiative on local livelihoods in the village, more than 58% of the 150 surveyed households reported that they did not see any impact on livelihoods in the village from this initiative. However, for this 'no-impact' answer, two types of response reflected the differences between the three ethnic groups living in the village: Chau Ma, Stieng and Kinh. Breaking the number down, approximately 15% from Kinh households said that the FPT initiative has 'no impact' on local livelihoods because they still see people go into the forest to collect NTFPs. Meanwhile, about 29% from Chau Ma households (n= 60) and around 14% from Stieng households (n=50) explained that the FPT initiative did not matter to them because they could still go into the forest for 'personal use' collection due to the tolerance of Talai Forest Station staff and FPT members.

In contrast, about 10% of households responded that the FPT had been successful in providing employment opportunities 'the FPT initiative provided employment opportunities and cash benefit to the 38 households with FPT members'. Meanwhile, about 8% of households responded that the

FPTs had an impact on local livelihoods, but most of this subset of households assessed the impact to be largely negative where 6% Chau Ma households complained about the existence of the FPT and feeling marginalised by the establishment of the teams. The comments from Chau Ma households included, 'the presence of a forest team member prevents us from collecting forest products' and 'the forest team member often keeps an eye on us, therefore, it is difficult for us to collect NTFPs like in the past'. Approximately 24% of households in the village agreed with the statement: 'I have no knowledge of the impact of FTP initiative on local livelihood'.

4.3.4 Local people's awareness of forest health, and impact of FPT activities

There was a difference between the ethnic minorities and Kinh people within the village in terms of their characterisations of forest health. Both the Chau Ma and Stieng ethnic minority groups perceived forest health in terms of biodiversity, whereas the Kinh people focussed on roles and management issues (the pressure from human activity). There was little difference in terms of forest health perception between Chau Ma and Stieng. According to descriptions from Chau Ma and Stieng households, a healthy forest is a forest with "many big trees, rare trees, and a range of animals" (i.e. biodiversity). Specific kind of trees and animals included: several valuable timber tree species such as rosewood (gõ cẩm, *Dalbergia bariensis*), merawan (sao đen, *Hopea odorata*), apitong (dầu, *Dipterocarpus grandiflorus*) and crepe myrtle (bằng lăng, *Lagerstroemia speciosa*) and well as elephants (*Elephas maximus*), birds and wild pigs (*Sus* species). The ethnic minorities felt that species diversity was the crucial indicator of forest health: 'Various plants and animal species are essential for a healthy environment'. Those people who made such statement among ethnic minorities tended to be older (> 50-years old) and had lived in the area for a long time (> 30 years).

4.3.5 Forest health assessment among different ethnic groups

When households were asked 'How would you rate the forest health compared to 5 years ago?' most of the respondents (43%) agreed that there was no change in forest health (Table 11). Most of the households that believed there had been minimal impact on forest health from villagers collecting NTFPs were from Chau Ma (29%) 'I see nothing change with the forest, everyone here only collect something that being called 'lâm sản phụ' (i.e. Non-timber forest products)'. Meanwhile, a smaller proportion of Stieng (14%) households held a similar view and that the forest heath had remained the same because abundant fauna and flora species in the forest were still observed.

Compared to the high level of households in the village that agreed that forest health had not changed, only 19% of people stated that forest health had slightly improved. For those people who made this judgment, about 12% were from Stieng households (a third of these households were Stieng FPT members) who considered that the forest health had improved because of the presence of the FPT in the village. One such household remarked, 'under the special use forest regulation on NTFP resource collection, we're not allowed to hunt or collect plants from the forest anymore, so there was less forest visitation by local people'. It was also found from the household survey that a low percentage (4%) of households thought that the forest health had 'greatly improved' as a result of FPT activities. The common characteristic of these households was that they were forest team members, including FPT team leaders.

Around 23% of surveyed households reported that the forest health declined slightly. As shown in Table 11, 5% of Chau Ma households and 3% of Stieng households stated that 'due to more frequent adverse weather conditions over the last 5 years, forest health had declined'. Such households remarked that 'big trees fall in heavy rain and strong winds in the rainy seasons, or 'there were too many people in the forest, especially in the bamboo shoot season', while at the same time making no mention of the impacts of FPT activities on NTFP collection. The greatest proportion of households that felt forest health had declined slightly were from Kinh households (15%), as they observed harvesting of NTFPs by ethnic minority people, even though they had little involvement themselves in NTFP collection. The percentage of households who answered they 'don't know" if forest health had changed in last 5 years was found to be 11% of the total, and mostly from Kinh.

Table 11. Forest health assessment among different ethnic groups (n=150)

Ethnic groups	Greatly improved	Slightly improved	No change	Slightly Declined	Greatly declined	Do not know
	%	%	%	%	%	%
Chau Ma	2	4	29	5	0	2
Stieng	2	12	14	3	0	1
Kinh	0	3	0	15	0	8
Total	4	19	43	23	0	11

During household interviews, Chau Ma and Stieng listed several threats to forest health such as illegal harvesting of trees and other plants, forest encroachment through clearing, hunting, poaching

and trapping and adverse weather conditions. They generally did not view collecting NTFPs as a significant threat to forest health.

> *Harvesting NTFPs does not matter to the forest. Because the collection of NTFPs by ethnic minorities has done no real harm to the forest. They [Talai Forest Station] need to concern themselves with illegal logging and hunting and not with our collection. (Chau Ma person interview).*

Kinh households interviewed tended to emphasise management in their definitions of forest health, along the lines of 'the forest will be better, without pressure from humanity exploitation'. These households also had a broad view of forest health, noting the myriad of flora and fauna and included water and watersheds in their descriptions of forest health. They discussed the role of forests as a source of good quality water, fresh air and natural resources, for preventing floods and erosion, and reducing the extinction of rare and exotic wild animals. The Kinh households interviewed felt that improving forest health requires better management and they recognised the role of FPT, even though they had no direct involvement.

> *I think forest health depends on the National Park Management Board. If they [Park Board] were good at doing their part for conservation then it [protection of forest health] worked well, if not then it didn't. But we think that the current activities of the Cat Tien National Park Management Board on forest protection and conservation were not good. The forest law was very strict but not feasible. Chau Ma and Stieng people have experience in the Park, and they have their own ways to enter the forest easily (Kinh person interview).*

4.4 Discussion

4.4.1 Forest protection team operation and governance

Critical commentary of implementation of FPT initiative suggests that the institutional capacity for forest protection can be clustered into political, socio-economic, and contextual categories of factors. Several reasons were investigated by KimDung et al. (2017) when explaining the ineffectiveness of forest patrolling activities in several protected areas in Vietnam, including coordination between different government levels and enforcement of forest regulations intended to restrict harvesting of forest resources (Pham et al., 2018). Poor coordination between different government levels could result in the depletion of forest resources and biodiversity loss (Nguyen and Hoang, 2013).

The implementation of forest protection in the village had not been adequately implemented. In regard to NTFPs, many of the FPT members from the study village have continued to harvest NTFPs, albeit at low levels for some. This contravenes their role as an FPT member. There was little incentive for the team members to report illegal NTFP collection, except when forest patrols were conducted with Talai Forest Station staff. This lack of focus on NTFP harvesting from higher management levels also reduced the motivation of the FPTs to report breaches in that area (Iversen et al., 2006).

Local people who participate in forest protection contracts were unfulfilling an employment role, compounded by low payment for their work. The contract under which they work was a formality that specified no clear legal regulations that would identify their specific roles and responsibilities in forest management. For those reasons, the effectiveness of the FPTs in patrolling activities in the case study area was quite low. The FPT members have generally played a compliant but not proactive role in undertaking the patrolling activities described in their annual contract. This was evident from their low reporting of people collecting NTFPs, especially friends and relatives of the Talai Forest Station staff. Low reporting of infringements of NTFP collection was probably because kinship and community links were considered more valuable to local people (Bennett et al., 2017; Nguyen and Hoang, 2013). Chau Ma and Stieng elders mentioned that the village had a high level of community cohesion with neighbours, friends, and family. Therefore, the FPT members did not want to adversely affect their relationship with close members of their village community. Forest resource exploitation was reported to still be occurring, though only 9% of Chau Ma and Stieng households reported they had a high reliance on the collection of NTFPs.

Agrawal and Gibson (1999) observed that in forested areas that villages were commonly seen as small spatial units with an integrated social structure and shared norms. However, they also noted that social homogeneity was not a universal feature of village-level interactions and that social structure can operate at various levels of politics and social interactions. In the case of the FPT members in the current study, informal local alliances tended to over-ride the formal arrangements, suggesting that the governance structures and reward systems were not suitably targeted (Bayrak, 2019). While there was potential for conflict between ethnic groups within an area (Baulch et al., 2007), the FPTs from the village operating in the Park had separate patrol areas so conflict was not reported by the two distinct FPTs. The lack of enforcement rights of the FPT also constrained their effectiveness in controlling unauthorised forest exploitation. The granting of legal enforcement rights to FPT members would have demonstrated the trust of authorities in the local people

delegated for forest protection. Conversely, lack of such recognition demonstrates to FPT members that they were not authorised to take their responsibilities more seriously. In this case, FPT members did not have the right to stop illegal forest exploitation activities and confiscate the resulting harvested products, nor were they equipped or trained to manage potential or actual violent situations. Although the FPT members were supported financially, their subordinate role in many of the FPT activities made them ill-equipped to carry out their 'protection' role. Since the team members were uncertain of being protected from retribution, they in some situation had to choose a compromise between forest protection and their own safety. While local people's engagement has been identified as an essential factor for strengthening resource management (Fabricius and Collins, 2007), the FPT members were not engaged in anything like an equal partnership with Talai Forest Station (Nguyen and Hoang, 2013).

4.4.2 The factors influencing FPT involvement and impacts of the initiative on FPT members' livelihoods and the wider community

Despite the broad consensus of the Park Board and the local government in favour of forest protection, the institutional design and performance of the FPT initiative did not achieve the initiative's goals (Buscher and Dressler, 2012). The FPT initiative focused on the forest protection objective but not the social goals such as capacity building, income generation and alternative livelihoods (Wells and McShane, 2004). Although forest protection was the primary objective, policy makers should have recognised that achieving this objective through the FPT initiative would require attention to these other elements. As a result, the impact on individual member's livelihoods and the wider community was minimal.

Several key informants among FPT leaders and members claimed that the low annual payment from the Government and payment from forest ecosystem (PES) through hydroelectricity for the FPT initiative was not sufficient to ensure the effectiveness of the initiative and therefore maintain the quality of the special-use forest. Income to FPT members from contract payments for patrolling activities was insufficient to motivate them to discourage the illegal exploitation of forest resources(Sunderlin et al., 2005) and local forest users were still not benefitting from forest protection (Shackleton et al., 2011). The income paid to them was not based on FPT performance in reporting violations so this aspect was not properly monitored and sanctioned. They were concerned that if the poor performance had been reported their income payments would be reduced or suspended and their contracts would not be renewed. To improve reporting payments received by

FPT members needed to increase, and be linked to their actual performance in discharging their duties as FPT members (Nepal and Spiteri, 2011). Therefore income received through FPT could offer a performance incentive and increased household income (Nguyen and Hoang, 2013). When comparing the salary of working as an FPT member with collecting bamboo shoots or working in a factory an FPT initiative in Quang Ngai province, Vietnam, was also found to not have a significant impact on poverty reduction (Tuynh, 2001).

There were concerns about the equitability of the FPT initiative and a failure to identify, negotiate, and implement trade-offs between the interests and claims of multiple stakeholders (Forest Protection Department, Talai Forest Station and FPT). The initiative appeared to favour participation by wealthier households, perhaps through more effective or upward-reaching networks and blood relations (Alatas et al., 2012) and the exclusion of low-income households was associated with continued higher levels of NTFP reliance. It can be argued that the low-income households were not encouraged to join FPTs because they were more dependent on harvesting NTFPs and therefore thought to be less likely to support enforcement of regulations seeking to reduce such harvesting. This uneven distribution of opportunities and benefits in the study area confirms the problem of dominant groups, whether local or elsewhere, which excludes others from decision-making roles and economic opportunities globally (Iversen et al., 2006; Teye, 2011) and in Vietnam (Bayrak, 2019; Haas et al., 2019). The lack of attention to understanding the role of ethnicity was another source of potential inequality (Bayrak, 2019), with evidence of FPT participation being associated with lower incomes and greater NTFP reliance among Chau Ma households when compared with Stieng households.

In theory, the national government (acting through the Park Board) was supporting accountable governance systems in forest resources management at the local level. The state was expected to play an important role in effective environmental management, including resolving conflict, negotiating the distribution of resources, and ‘handing over’ the management and forest resource to local people (Deal et al., 2012). However, in practice, there was little evidence these outcomes were achieved, especially given the low level of local people's involvement in the FPT initiative in the case study reported here, such that the initiative fell a long way short of being community driven (Khadka and Nepal, 2010). Government agencies had not attempted to engage villagers in policy formulation, nor did they aim to build on, or strengthen existing local initiatives and institutions (Kamoto et al., 2013).

Government support through participatory activities is an important factor influencing perceptions and behaviours to improve forest management (Baynes et al., 2015). Several studies have demonstrated the importance of community engagement in changing attitudes for protecting forest resources and conserving national parks by articulating links between livelihoods and conservation (Nepal and Spiteri, 2011), reducing conflict between local communities and national park authorities (Chhetri et al., 2013) and facilitating genuine participation (Pinyopusarerk et al., 2014). However, it was observed that local meetings in the study area provided little opportunity for effective participation or for influencing awareness and attitudes of community members towards forest health and the role of FPTs. Local ideas or concerns were not incorporated into the design and implementation of local awareness-raising activities for the FPT initiative. In particular, most of the ethnic minorities in the village were poor with unreliable and limited income sources. Hence, these people tended to face more basic and immediate needs than considering participation in awareness-raising, educational and on-ground activities in respect of forest conservation. More deliberate and inclusive education and awareness-raising activities are needed to encourage behaviour change for forest protection (Phuc, 2009; Tran et al., 2013).

In general, gaps still exist between forest protection rhetoric, improved forest protection and local involvement and practice. In theory, the FPT initiative wanted to make visible positive impacts on the local livelihoods and the engagement of local people in forest management. In practice, however, the findings of this case study indicate that this initiative was perceived at the local level as a social subsidy rather than as an incentive for forest protection, such that it accomplished little in dissuading people from harvesting NTFPs or strengthening their perceptions of the value of FPTs in forest protection.

4.4.3 Local awareness of forest health

The work of Vodouhê et al. (2010) suggests that the perceptions of Chau Ma and Stieng people towards forest health and the role of FPT would be important in influencing their behaviour with regard to protecting the forest. The results of the present study reveal that the FPTs did little to shift current perceptions of these ethnic minorities in respect to forest health and that for the most part they made no gains in awareness and behavioural changes regarding protection of forest resources. When Chau Ma and Stieng ethnic minorities were asked about ‘forest health’, forest biological diversity was prominent in the respondents’ definitions, but not other impacts of human activities on forest health (e.g. water quality, flooding and erosion).

Both familiarity (how individuals get along with each other) and social cohesion (whether or not households know most people in a population and feel part of a community) are vital to building relationships that increase local people's capacity to act towards a common goal (Baynes et al., 2015; Gutiérrez et al., 2011). The close relationship among local people in the study village was an important factor that made illegal resource exploitation informally 'permissible' in this protected area. In this case, social cohesion was used as a means for local people to break the law, or for those responsible for reporting illegal activities not to do so.

4.4.4 Policy implications for forest protection

In order to enable the FPT initiative to provide local communities with a voice in the management of the Park, opportunities for effective participation by these communities need to be established and a shared understanding generated to bring all parties; the Park Board, Talai Forest Station, and the FPTs together and accountable to each other. Without input from, and appropriate benefits to, the local community the FPT initiative in the study area struggled to achieve its goals (Parrotta et al., 2016). The FPT initiative thus appears to be perceived at the local level as a social subsidy mechanism rather than providing effective incentives for ongoing community forest protection.

Forging a link between positive forest conservation outcomes and local economic benefits is critical if forest protection initiatives are to succeed. Participation of local people needs to be organised around activities that are closely related to their long-term benefits (e.g. sustainable resource use activities), and incentives for such participation needs to be more targeted and flexible. In addition, activities to enhance indirect benefits such as education, capacity building, and maintaining cultural values were either not considered, or only weakly implemented, in the FPT initiative operating within the study area.

An important conclusion from this case study, as well as other community forest management initiatives in Vietnam, is a need for more focused attention on underlying institutional problems of weak political commitment to forest protection and management (Sunderlin et al., 2008). The FPT initiative facilitated the transfer of patrolling responsibilities to the community but failed to provide the authority for the teams to be effective. Benefits are needed to offset the considerable time and effort that effective patrolling entailed. For the initiative to be properly community-based, it is necessary to provide local people with more equality in influencing decisions made with the government-led protected area authorities (Ribot et al., 2010). Because the FPTs were not

adequately institutionalised or empowered, their environmental and social impacts, and their sustainability remain severely constrained. It is critical then for the government to provide an alternative governance approach within which the local community can collaborate with other stakeholders on a more equal foundation. Responsibilities for managing the protected areas need to be shared amongst government authorities, local communities, private and other interested stakeholders. In order to carry out this collaborative management approach, the ethnic minorities would need to have common social and cultural values and share similar interests in order to manage a protected area cooperatively (Hughey et al., 2017; Morley, 2015). To some extent this was attempted by Talai Forest Station when establishing the separate FPTs based on the two ethnic minorities in the village.

The findings from this research highlight a need also for integration between conservation management and awareness improvement strategies, primarily targeting ethnic minorities in the study area. Forest management initiatives should be adapted to ensure they do not entrench existing inequalities and that they engage marginal groups in appropriate ways. The lack of participation in the FPTs by lower-income households and the continued reliance of non-participating households on NTFP harvesting indicate that the FPT initiative was not addressing underlying poverty and lack of socio-economic opportunities. Previous chapters (chapter 2 and chapter 3) in this thesis also highlight the importance of understanding the needs of the ethnic minorities in the buffer zones. Sustainable conservation processes should determine those needs and include targeted capacity building and engagement activities (e.g. conducting workshops with community leaders).

To effectively motivate team member activities in forest protection, at the local level, the lesson drawn from this situation is that participation of the local people needs to be organised around activities that are closely related to people's long-term benefits (e.g. sustainable resource use activities). At the same time, incentives for the people need to be more targeted and flexible, in order to encourage and sustain their active participation.

It is noted that how forest conservation policy has been implemented at the local level and how its impacts on local livelihoods in one specific context makes it difficult to generalise to other contexts. Therefore, there is a need for additional research on how villagers in buffer zones of special-use forests can maintain their livelihoods and yet improve the effectiveness of forest protection.

The next chapter will be the synthesis chapter. The chapter will first synthesise the findings of the previous chapters and then discuss some of the implications for engaging local people, broaden benefit sharing, and reduce forest dependency are discussed.

Chapter 5. Implications for alternative livelihood initiatives to better engage local communities and reduce forest dependency

5.1 Alternative livelihood initiatives for reducing reliance on non-timber forest products and improving forest conservation and local livelihoods

Official protected areas have been established by governments worldwide over the last 140 years, primarily to conserve natural resources and biodiversity (Possingham et al., 2006). These areas are often under-managed by government agencies and seek to exclude people and their activities, especially resource extraction. Many protected areas are located in areas in which ethnic minority people traditionally resided and carried out their customary livelihoods. With increasing socio-economic and technical changes, there is an ongoing tension between livelihoods and biodiversity conservation in protected areas, and the means for its resolution continues to be debated (DeFries et al., 2010).

The research presented in this thesis focussed on the livelihoods of villagers in the buffer zone of Cat Tien National Park, a high conservation value area in southern Vietnam traditionally occupied by minority ethnic groups. When Cat Tien National Park (Park) was established in 1992, its conservation zone restricted local communities' access to lands from which they had traditionally earned their livelihoods for protecting its biodiversity. While in theory, natural resources in general and forest resources within protected areas are held as state property, in practice local indigenous people often continue using these areas as if they remain their de facto common property (Agrawal, 2001).

The nature and level of NTFP reliance of ethnic minority groups on collecting forest products (for subsistence consumption and cash income) from the Park is unknown, but the extraction of these products was thought to continue despite its illegality (Nguyen and Hoang, 2013). Achieving forest conservation goals in these circumstances, even with low levels of extraction, becomes challenging (Sunderlin et al., 2005), which has resulted in conflicts over forest resource use between local people and forest departments (e.g. Forest Protection Department, Talai Forest Station and Park Board).

To address shortcomings in government efforts to improve forest conservation outcomes, the engagement of local people in alternative livelihood initiatives has been promoted by several national and international initiatives (Nguyen and Hoang, 2013). It was recognised that local people often have long relied on resources from protected area resources for their livelihoods, both culturally and economically (Dinh et al., 2012). These alternative livelihood initiatives commonly seek to provide new income sources as a substitute for incomes from traditional livelihood practices and thereby reduce exploitation pressures on the protected areas (Roe et al., 2015).

Two main arguments can be drawn from the literature in respect of development initiatives seeking to promote effective forest conservation by offering alternative livelihoods. Firstly, improving the livelihoods of those living near forest resources will improve conservation of those resources by reducing their forest dependence (Kusters et al., 2006; Tacconi, 2007). This requires the availability of viable alternatives for wealth creation and food security. Secondly, a community-based approach to such initiatives is necessary if they are to yield improved forest conservation outcomes (Brooks et al., 2013; Jones and Murphree, 2013). Reducing forest resource dependence requires effective governance and, ideally, a high level of local participation (Blaikie, 2006). These two arguments suggest the potential of a win-win situation in which objectives for both forest conservation and improving local livelihoods can be jointly achieved.

This thesis examined the extent to which this potential has been realised in case studies of two alternative livelihood initiatives in a village adjacent to the Park; the Talai Ecotourism Venture and the Forest Protection Team. The studies investigated how the initiatives engaged the participation of local people in decisions about the management and conservation of forest resources, while simultaneously establishing alternative livelihoods enabling them to lessen their reliance on extracting forest resources.

This final, synthesis chapter starts by bringing together the findings from the analyses presented in the previous chapters and provides an overall assessment against the research objectives set out in the thesis Introduction (Chapter 1):

1. to determine the nature and level of reliance of ethnic people (Chau Ma, Stieng and Kinh) on non-timber forest resources, and their reasons for collecting NTFPs (Chapter 2);
2. to examine the impact of livelihood initiatives (i.e. Talai Ecotourism Venture and the Forest Protection Teams) on the livelihoods of those ethnic groups involved (Chapters 3 and 4);

3. to identify and analyse factors that affect local people's participation in these livelihood initiatives and the effects on non-timber forest resource harvesting levels (Chapters 3 and 4), and
4. based on these findings, evaluate the implications for designing alternative livelihood initiatives to better engage local communities, broaden benefit-sharing, and reduce forest dependency (this chapter).

Section 2 of this chapter presents the key findings of the nature and level of NTFP reliance of ethnic minorities, while Section 3 focuses on key outcomes of the two alternative livelihood initiatives in terms of livelihood impacts, governance, and forest conservation. Section 4 describes and analyses the effect of governance arrangements of the two initiatives in engaging local people, especially in decision-making and empowerment. Finally, the policy implications for livelihood initiatives to engage local communities, broaden benefit sharing, and reduce forest dependency are discussed.

5.2 The nature and levels of NTFP reliance among ethnic groups in the village

Results from Chapter 2 reveal that total reliance on NTFPs (both subsistence and cash income) differed significantly between the three ethnic groups (Chau Ma, Stieng and Kinh). The ethnic minorities were reliant on NTFPs, while most Kinh people didn't rely on NTFPs. About 12% of the ethnic minority households reported a medium level of NTFP reliance, while about 9% had a high to very high level of NTFP reliance. Chau Ma households exhibited a greater reliance on collection of NTFPs when compared with the Stieng households. A greater proportion of Chau Ma households have high NTFP reliance (30%) compared with Stieng households (22%). Meanwhile, 98% of Kinh people in the village had no NTFP reliance.

NTFP collection practices of ethnic minorities in this village were linked to their existing knowledge and experience in harvesting forest products and managing the resource as shown in many cases in India or in Vietnam for example (Rist et al., 2010; Sang et al., 2012). Kinh people had little reliance on NTFP collection because they commonly rely on farming and businesses for income and have less knowledge of local forest resources and forest management, a pattern observed in other parts of Vietnam (Dang, 2012; Nguyen et al., 2019). Also, Kinh people tended to have greater access to farmland and agricultural skills, education, and employment opportunities (Trædal and Vedeld, 2017; Tugault-Lafleur and Turner, 2009), as was also shown in this study.

Local livelihood outcomes were also linked to socio-cultural aspects of ethnicity, with Chau Ma and Stieng people struggling to successfully transition from a self-sufficient forest-based livelihood to living outside the forest undertaking unfamiliar livelihood activities (Dang, 2012; Sang et al., 2012).

5.3 Livelihood and forest conservation outcomes

A critical aspect of discussions around community alternative livelihood initiatives for forest conservation is identifying who benefits (Roe et al., 2015). The findings from the case studies presented in Chapters 3 and 4 reveal that neither of the alternative livelihood initiatives that were studied equitably delivered livelihood benefits to local people in the village as expected from a community-driven initiative (Conning and Kevane, 2002). The arrangements for delivering livelihood benefits to villagers by relevant stakeholders (TCG, FPT, the Park, and Talai Commune People's Committee) suffered from poor implementation in the Talai Ecotourism Venture and for the FPT initiative. This research showed that ensuring equitable distribution of livelihood benefits to villagers either through a Village Development Fund (in the case of the Talai Ecotourism Venture) or payment for contracted services (in the case of the FPT initiative) was not adequately addressed by the lead organisation in each case, yet was of central and critical concern to the local people who were the intended beneficiaries of these initiatives (Mansuri and Rao, 2004).

5.3.1 Mechanisms to distribute livelihood benefits

There was an originally clear benefit sharing mechanism in Talai Ecotourism Venture (Nguyen, 2014) but that mechanism (VDF) was not executed effectively during the implementation process. The private company had a contractual agreement to set aside a share of revenue from Talai Ecotourism Venture activities according to an agreed formula in order to establish a Village Development Fund (VDF) that would be shared widely among villagers in accordance with agreed principles.

Reflecting the principle of community-based ecotourism through benefit sharing mechanisms (Stone, 2015), the VDF was intended to help villagers develop alternative livelihoods, including supporting reinvestment activities (the Longhouse reinvestment; road building, schools and local houses maintenance), providing interest-free loans for local households to raise livestock or poultry, and by supporting public facilities in the village (Nguyen, 2014). It was thus intended that a substantial proportion of the village households would benefit from visitors paying to stay at the Longhouse and its ecotourism activities. However, the results presented in chapter 3 reveal that

initiatives to equitably improve villagers' livelihoods seem to have failed. The funds allocated by the private company to the VDF were to be transferred every three months to TCG which, in turn, would distribute those funds. Ultimately, only two households outside the TCG members received support from VDF, as well as for garbage collection every month (in 2018) for the whole village (as discussed in chapter 3).

A primary objective of the FPT initiative was to provide alternative livelihoods to the village households by paying a salary to FPT members in return for providing forest protection services (Government of Vietnam, 2001). Results from Chapter 4, in contrast, show that local people who participate in forest protection contracts were, in reality, was poorly paid for their work. The benefits were not considered adequate to offset the considerable time, effort, and risks of patrolling the forest (working in severe weather conditions or being subjected to revenge when trying to stop illegal forest exploitation). The number of households that could gain a one-year contract with the FPT initiative was limited to 23 Chau Ma and 15 Stieng households. In the village households with an FPT member accounted for 35% of the 110 Chau Ma and Stieng surveyed households. Therefore, this initiative did not have a significant impact on poverty reduction in the whole village.

Similar to several National Reforestation programs related to forest management such as Greening the Barren Hills Program (from 1992 –1997), and then 5 million hectare reforestation program (from 1998–2010) in Vietnam (Sunderlin, 2006), FPT employment provides little incentive for members to become empowered by their role, and take on greater responsibilities. A consequence was that FPT members often chose not to report infringements of forest regulations, especially for NTFP collection when this might provoke a violent response, or when those involved happened to be their relatives or friends. Hence, the Park Board by providing inadequate financial reward to FPT members resulted in diminished returns from FPT activities, and thus the benefits for forest resource protection were considerably less than intended (Adhikari et al., 2014; Ruiz-Mallen et al., 2015).

5.3.2 Local people's participation and empowerment

Central to CBE initiatives is the concept of participation by local people and their subsequent empowerment through the development process (Scheba and Mustalahti, 2015). Local people are more likely to actively participate if they are well-informed or actively encouraged (Mak et al., 2017). Participation includes two-way communication between participants, where information is

exchanged through dialogue or negotiation (Reed, 2008). The case studies of the Talai Ecotourism Venture and FPT initiatives demonstrated that the neither of the initiatives were designed to adequately act in a community-based manner representing the interests of the village households – the TCG in the former case and the FPT members in the latter (Government of Vietnam, 2001; Nguyen, 2014).

Advocates of CBE have a broad notion of participation which includes active participation in decision-making processes, not just passive attendance (Fabricius and Collins, 2007). The extent of local involvement in the decision-making in two alternative livelihood initiatives in the study village remained very limited. Chapter 2 and 3 reveal that the two alternative livelihood initiatives were constructed in a way that limited local autonomy. The central authorities had minimal interaction with local people, and our research showed most local people were passive recipients of development (Blaikie, 2006).

In respect of the Talai Ecotourism Venture, wider local participation by the village households in the initiative's livelihood benefits were greatly limited by TCG members having captured all employment opportunities and most of the benefits from the VDF. Partnerships between the community and/or private organisations were not capable of stimulating genuine community participation (Manyara and Jones, 2007). At a higher level, the potential of the TCG to eventually take over control of the venture was also not realised because TCG members were unable to acquire the necessary management, marketing and ecotourism skills required. Indigenous people often lack the skills and capabilities to become involved in and maximise the benefits of the ecotourism development process (Coria and Calfucura, 2012; Tosun, 2006). Therefore, in this case, the private company contracted to lead the venture lacked motivation to act in the interests of the village because it was not held accountable for failures in developing these skills. Achieving increased community participation requires a focus on building local capacity (D'Souza et al., 2019; Lima and d'Hauteserre, 2011) and strengthening local institutions and government support at the local level (Beaumont and Dredge, 2010), which can be achieved through improved governance arrangements.

5.3.3 Governance arrangements in livelihood initiatives

There are several requirements for good governance in community-based ecotourism. These requirements include improving local people's and relevant stakeholder's participation (Jamal and Getz, 1995), and the promotion of stakeholder interactions (Baggio et al., 2016; Bramwell and

Lane, 2011) stated that good governance in community-based ecotourism (CBE) needs to occur at a community level, where local people jointly develop transparent and accountable institutions. The findings from the Talai Ecotourism Venture show that the governance arrangements of this initiative were not aligned to these principles for community-based ecotourism, particularly the interaction between local stakeholders, local government, and third-party NGOs. This outcome may have been inevitable due to not addressing pre-existing power imbalances (Ramón-Hidalgo and Harris, 2018).

Community members of both livelihood initiatives did not receive the training or support they required to effectively carry out their responsibilities so that the broader initiative aims – livelihood benefits and forest protection – could be achieved (Government of Vietnam, 2001; Nguyen, 2014). As in the ecotourism venture, involvement in the FPTs was organised as an employment relationship rather than a partnership, and the initiative was largely designed to address technical and management needs, rather than underlying institutional problems regarding forest protection and environmental conservation (Sunderlin et al., 2008).

Information sharing between stakeholders was controlled by the private company and TCG in the ecotourism venture and by the government agencies in the FPT initiative. Local people in the village remained poorly informed about policies (e.g. rights, benefits and responsibilities) and management issues (e.g. ecotourism trends, developments and opportunities in their area) related to either livelihood initiative. This limited individuals to acting in a passive manner, and constrained participation and empowerment due to poor information flows and limited opportunity for exchange (Scheyvens, 1999; Thanh, 2015).

Initiatives and activities closely related to local cultures and the social context of the local community are more likely to be successful in engaging and supporting local people (Pagdee et al., 2006). The results of the case studies showed that there was a lack of understanding of ethnic groups and their social status among those in key roles such as the TCG, Talai Forest Station, and Park Board. The lack of participation by members of the Stieng community in the Talai Ecotourism Venture may have been remedied if there had been greater understanding of, and empathy towards Stieng cultural values and the creation of a more culturally inclusive plan for engaging ethnic minority peoples in the venture (Waylen et al., 2010). However, motivations for the private company and the TCG to find ways of promoting Stieng participation were undermined by a lack of incentive to include them from the start as monopolized by Chau Ma. The study village had a high

level of community cohesion with neighbours, friends and family. Therefore, the FPT members were inclined to ignore some illegal NTFP collection because they did not want to adversely affect their relationship with close members of their village community. Alternative livelihood initiatives that do not take the cultural context into account are therefore unlikely to be successful (Dahlberg et al., 2010).

5.3.4 Control of livelihood initiatives dominated by elites

Agrawal and Redford (2009) highlighted that it is common in development initiatives for better-off members of a targeted community to gain a larger share of benefits, and this was the case in each of the two alternative livelihood initiatives studied in the present research. Although these initiatives were originally promoted as community-based initiatives (Talai Ecotourism Venture) or a community involvement initiative (FPT), it was found that both initiatives had many features of a top-down 'command and control' approach, with strongly centralised planning and control, and participation dominated by elites at various levels including at the local community level (Stone, 2015).

WWF initially viewed the TCG as a community-based initiative for ensuring local participation in, and ownership of, all phases of its implementation, such that it would ultimately become capable of taking over greater responsibilities in managing the initiative (Nguyen, 2014). Despite the Talai Ecotourism Venture being labelled as 'CBE', we observed clear distinctions in the level of community representation in ecotourism management (Stone, 2015). Domination from outside interests (e.g. a private company) in Talai Ecotourism Venture also threatened equitable participation and decision-making by local people (lack of Stieng participation) and access to economic benefits (Coria and Calfucura, 2012). Nearly all the VDF funds were captured by TCG members, i.e. around six of the 500 village households. The members of the TCG, who were supposed to act in the interests of the village as a whole, were able to administer the funds received from the VDF to serve their own narrow interests (Benjaminsen and Bryceson, 2012; Mensah, 2017).

The FPT initiative appeared to favour the participation by wealthier households, perhaps through more effective or upward-reaching networks and the exclusion of low-income households was associated with continued higher levels of NTFP reliance (Bayrak, 2019; Haas et al., 2019). Bayrak (2019) reported that in similar cases, informal local alliances tended to over-ride the formal

arrangements, suggesting that the governance structures are not suitably targeted, and the socio-cultural context was not adequately understood.

5.3.5 Forest conservation outcomes of the two alternative livelihood initiatives

The findings of Chapters 2, 3 and 4 demonstrated a range of challenges to achieving forest conservation through initiatives designed to provide traditional users of forest resources with alternative livelihoods. There was little evidence from the case study of the Talai Ecotourism Venture and the Forest Protection Team in the village that it had made a significant impact on perceived conservation outcomes in the adjoining Park.

Ecotourism is believed to help mitigate the negative environmental impacts of tourism, and to build an educated and motivated constituency that supports environmental conservation and social improvements (Powell and Ham, 2008). Although there was an improvement in local behaviour regarding the village environment (e.g. keeping their houses clean, not littering main roads, disposing of trash in designated places), associated with the Talai Ecotourism Venture, the ecotourism activity was not necessarily a way to reduce the frequency of locals going to the forest. The initial expectation was that the venture would provide villagers with alternative livelihoods – through employment in the venture and associated business opportunities – that would reduce their livelihood reliance on forest resources (Nguyen, 2014). The benefits to the local communities are expected to create incentives for conservation of the natural environment (Butcher, 2011). However, there was evidence that the alternative livelihood benefits of the venture were limited and restricted to only to those village households directly employed by the venture. This suggests that few villagers would have reduced motivation to extract forest resources as a result of the initiative (Eshetu, 2014a; Yamanoshita and Amano, 2012).

The goals of community forestry initiatives include enhancing local livelihoods and conserving biodiversity often through the ‘controlling’ of non-timber forest product collection and illegal logging (Humphries et al., 2020), as was the case for the FPT initiative. However, the budget for this initiative was limited, with the result being that only a small proportion of total households from this village could be recruited as FPT members, and only those from ethnic minorities. This suggests that few villagers would have reduced motivation to extract forest resources as a result of the initiative.

The broader goal of the FPT such as environmental awareness-raising activities with villagers through village meetings was not achieved as planned. FPT members were responsible not only for patrolling the forest but also for conducting educational campaigns in their communities to enhance local people's awareness of the importance of the conservation activities (Government of Vietnam, 2001). Monthly village meetings for educational activities were conducted by the Talai Forest Station, FPTs and the village head in the village, but they were ineffective due to the lack of incentive for villagers to follow advice given, so little understanding of the Park's management activities was gained. Awareness raising activities about protecting the forest from illegal cutting and hunting were challenging for the Talai Forest Station, FPTs staff, let alone ethnic minorities with low levels of education, to deliver because local people tended to have more basic and immediate needs than conservation (Bennett et al., 2017).

5.4 Implications for improving outcomes from alternative livelihood initiatives

5.4.1 Governance arrangements

The local engagement strategy in the Talai Ecotourism Venture and Forest Protection Team initiatives need to be following a scaffolded approach, in which members are able to be involved in all initiatives and activities in a supported way (Kiss, 2004). The key areas that this research identified as requiring improvement are set out below.

5.4.2 Roles and responsibilities of stakeholders

Participation can be improved through the clarification of roles and responsibilities for those involved (Jamal et al., 2006). Stakeholders need to demonstrate that they can understand and fulfil their allocated responsibilities (Riggs et al., 2018). In order to ensure greater community or membership engagement, formal communication strategies from the Talai Commune People's Committee, TCG, Park Board and Talai Forest Station were needed to enable the members of FPT or TCG to execute their roles in working in TCG and in forest protection jobs (Armitage et al., 2009; Plummer and Fitzgibbon, 2004). Meetings and following-up on activities will ultimately build self -confidence required for the jobs in the Talai Ecotourism Venture (Sproule, 1996).

The distribution of power and rights that members of FPT need in order to fulfil their role and responsibilities were not clearly indicated or provided in the contract documents or in the government policies (Cronkleton et al., 2012). Therefore, the legitimacy of members of FPT in dealing with breaches should be clearer.

5.4.3 Processes and co-management

The Talai Commune People's Committee and TCG need to have a better understanding of the decision-making processes, benefit-sharing mechanisms, and their relationship with local people and the private sector (Hughey et al., 2017; Morley, 2015). Procedures are needed to ensure that the power of the dominant groups is managed and that negative prejudices are prevented (Mompati and Prinsen, 2000). An example of how this could be done is through proper facilitation of meetings, possibly with only local stakeholders present at some meetings. This can offer a less threatening opportunity for the members to practice negotiating skills and build self-confidence (Nandan and Scott, 2011).

Co-management involves the sharing of power and responsibility in the forest protection between FPT and the Talai Forest Station. The Park Board needs to act in a way to facilitate and empower local communities (Matsvange et al., 2016). It is assumed that, if FPT members once provided with appropriate tools (enforcement) and incentives (higher salary) to manage natural resources, can organise themselves effectively and take appropriate conservation measures (Wali et al., 2017).

Building in such opportunities to co-manage between FPT members and the Talai Forest Station may improve the initiative's impacts on livelihoods and forest conservation. This is more consistent with the more collaborative models of protected area management and suggest ways in which protected area policy (De Koning et al., 2017) and management could be reformed to better protect biodiversity and local people's livelihoods (Tole, 2010).

5.4.4 Accountability and transparency of FPT and TCG stakeholders

Sikor and To (2011) noted that high levels of accountability are key to avoiding potential conflicts of interests where a central state holds a monopoly on management tasks, including monitoring, enforcement and conflict resolution.

Lack of accountability in decisions, actions and their outcomes seem to have been a major reason for the failure of the two case studies to gain community support and shifts in NTFP collection behaviours.

Currently, local authorities in natural resource management strategies in Vietnam tend to be accountable upward to the central government authorities rather than accountable horizontally or downward (Leberger et al., 2020). Accountability of FPT members and the Talai Forest Station for their performance in protecting the forest needs to extend both downwards and upwards. This transparent mechanism can build mutual trust between the Talai Forest Station and FPT. So that FPT patrols always report the violations they observe, and the Talai Forest Station also to ensure that FPT is genuine in the participation activities.

Meanwhile, the TCG needs to represent the interests of the entire community and to be accountable for their decisions made in terms of VDF. A three-month meeting should be held to evaluate the performance of TCG, where the TCG reports back to the Talai Commune People's Committee authority and the villagers. This development will improve transparency and accountability issues, especially if the VDF will also be restructured for transparency (Manyara and Jones, 2007).

5.4.5 Participation and empowerment of local people

The attitudes of people towards alternative livelihood initiatives are very important for ensuring the success of the initiatives (Nilsson et al., 2016). Attitudes can be shaped and influenced through a range of processes and participation activities (Garekae et al., 2016). Linkages across governmental and sectoral levels (e.g. commune level to village level) can provide an effective pathway to disseminate information as widely as possible, although it needs to be based on local social dynamics (Wattenbach et al., 2005) and may need to offer rewards or incentives to encourage participation (Nagendra and Ostrom, 2012). Enhancing villagers' sense of responsibility could be achieved through TV, radio, banners and posters in the village, educational activities in schools, and local information services (Okaka, 2010).

The relationship between high NTFP reliance and low educational levels and ethnic groups is itself linked with educational opportunities (Quang and Anh, 2006; Soe and Yeo-Chang, 2019). This implies a need to improve the level of education in order to obtain access to a wider range of income opportunities which may ensure better household livelihoods (Nguyen et al., 2019), at least from an income perspective and therefore potentially less dependence on NTFPs.

Training courses, potentially offered by the Talai Commune People's Committee, and the Park Board to strengthen TCG and FPT capacity are needed to build the skills and knowledge required to

carry out decision-making responsibilities in ecotourism and forest management (Choi and Turk, 2006). Required skills include hospitality services, language and communication, management, leadership, problem-solving, and knowledge about the relationship between ecotourism and sustainable biodiversity management (Snyman, 2017). This skills enhancement will help participants to be more confident about becoming actively involved in the Talai Ecotourism Venture, and to gradually exercise greater responsibility in their interactions with the private sector (Sproule, 1996; Stone, 2015). This skill development will also help maximise the chances for FPT members to cooperate more with Talai Forest Station staff in discharging their roles and complying with forest regulations. This process also helps to develop the collective consciousness in FPT members' potential.

Currently, there are not many households in the village (38 out of the 500 households in the village) selected to join the forest patrol teams. The potential of the initiative to spread livelihood benefits throughout the village was limited, not to those most in need, but by the people recruited from the village to be FPT members. These recruits were closely related to the leaders of the two FPTs. Therefore, the Park Board should create more opportunities to increase the number of households involved in the patrol teams. The fund for this expanding activity can be taken from the payment for forest services such as watershed protection, biodiversity conservation or hydropower from the Park. This effort can create positive economic incentives for local people to conserve or even improve the forest (Meyfroidt, 2013).

5.4.6 Sensitivity to local cultures

In order to sustain local livelihoods, leading stakeholders should incorporate local practices and belief systems into alternative livelihood initiatives, developing participatory management systems with effective benefit-sharing (Bayrak, 2019). It is important to consider how alternative livelihood initiatives have impacted on the local people’s relationships with nature (Folke et al., 2016). The two initiatives studied did not take into account or value the cultural connection of local people to the natural environment, despite their long-standing inhabitation of and subsistence on the forest and its resources (Cleaver and De Koning, 2015). The backgrounds and cultural values of the Chau Ma and Stieng are integral to the ways in which these communities value livelihood activities such as ecotourism and forest protection, and how they respond to commercial development opportunities (Baulch et al., 2007). Waylen et al. (2010) found that some interventions which make little attempt at understanding local cultural characteristics failed to have positive conservation

impacts. Livelihood initiatives designed and implemented with sensitivity to the local cultures can limit potential inequality(Gautam and Andersen, 2016) and reduce barriers to participation and decision-making (Peterson et al., 2010). Indigenous knowledge should also be encouraged and incorporated into initiatives for protecting and managing forest resources (Camacho et al., 2016), and there was little evidence that the leading authorities here had made an attempt to do so.

5.5 Conclusion

Chapter 5 discussed the findings of two livelihood initiatives and the outcomes for local livelihoods and forest conservation in southern Vietnam. The main implications for the improvement of these two initiatives - the Talai Ecotourism Venture and the Forest Protection Team - where greater emphasis on institution building, creating two-way information flows, enhancing local awareness, improving levels of accountability and transparency in decision-making, and local capacity building for participation and empowerment (Blaikie, 2006). The two initiatives should also be designed to garner greater participation of local villagers by inclusion of socio-cultural norms and behaviours.

A longer-term focus on business development, education and training is also needed (World Bank, 2019). However, it is worth noting that the implications for the two initiatives are based on well-known challenges to engage community in livelihood initiatives that are not easy to address given the political and economic structure in Vietnam (World Bank, 2019). It is because, the Vietnamese State apparatus is often managed for the benefit of the ruling class (Thayer, 2010) there is no real intention to give power and benefits to local initiatives. Therefore, the interventions and initiatives need to be funded over a longer time frame with greater external financial investment to enable relevant stakeholders to make a long term commitment to them (Shackleton et al., 2010).

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Appendices

Appendix 1. Household survey

Household survey

A. Household general description and Assets

1. Please list the household members with their age, ethnicity, education level and current occupation

Person	Relationship with Head of Household	Gender	Age	Ethnicity	Highest education level	Main occupation
(1)						
(2)						
(3)						
(4)						
(5)						
...						

2. Your household economic status

- poor □ - near poor □ - well - off □ - rich □

3. Household Asset for livelihood assets (number per household)

*** Transportation**

Cars: .....
Motorbikes: .....
Bicycles: .....
Agriculture machinery (tractors/ ploughing machines....) .....

*** Communication**

Television: .....
Radio: .....
DVD Player: .....
Mobile Phone (Type): .....
Computer (Type): .....
Wifi access .....

*** Living assets**

Fridge: .....
Electric fan: .....
Others .....

4. Dwelling Do your household own or rent? 1. own □ 2. rent □

5. House

Class of house: 1. class I □ 2. class I □ 3. class III □

Class I: houses structured by thatch, bamboo, leaves, wood or brick wall without cement cover, no ceiling, floor with brick or cement.

1

Class II: houses structured by stone or brick foundation and frame, brick walls with cement cover, tile roof, flowered brick floor, relatively completed systems of electricity, lime –washed front, indoor bathroom and toilet.
Class III: houses structured by concrete foundation and frame, brick walls with cement cover, concrete roof, flowered brick floor, relatively completed systems of electricity and water supply, complete and painted front, bathroom and flush toilet.

6. Total farm area: 6.1. Own..... m^2, 6.2. rent ..... m^2

7. Area of your household farm that is cultivated: 7.1. Own..... m^2, 7.2. rent ..... m^2

Note:
1 **sào (in Vietnamese)** = 1,000 m2 = 0.1 ha
1 **mẫu (in Vietnamese)** = 10,000 m2 = 1 ha

Forest land (Green/Red book certificate)

8.1. Does your household have forest land right for growing crops or raising livestock? 1. Yes 2. No

8.2. If **YES**, how did your household obtain the right of this forest land? (then ask Q8.5)
.....

8.3. If **NO** did your household ever have forest land right? 1. Yes (go to 8.4) 2. No (go to 9).

8.4. Why did your household lose the right to using this forest land? .....

8.5. Area of forest land (under Green book or Red book certificate) your household have **(had)** permission to use
Green book ..... (ha)
Red book ..... (ha)

8.6. How long have **(did)** your household had the right to this land? .....

8.7. What type of certificate is **(was)** it? .....

8.8. What type of crop does **(did)** your household cultivate? 1. Green book 2. Red book

8.9. What type of livestock do **(did)** you raise on this forest land? .....

B. Net income

Sources of annual net income of your household. Please answer the following parts.

9. On-farm activities

Cultivation

9.1 Total Crop in 2018	9.2 Total Crop Area (ha) in 2018	9.3 Net Income/ year 2018 (excluding costs)	9.4 Household use 2018 (self-estimate): Quantity (eg, kgs) of use by household
Main food crops			
Cash crop			

*Husbandry

9.5 Animals	9.6 Numbers	9.7 Net income / year 2018 (excluding costs)	9.8 Household use 2018 (self-estimate)

10. Off-farm activities of household

10.1 Activities	10.2 Working days/month	10.3 Net income / year 2018*	10.4 Household use 2018
Carpenter			N/A
Handicraft			N/A
Day-labourer			N/A
Grocer			
Forest product collection			
Talai Longhouse activities			
Forest protection contract			
Other. Specify			

* Make sure to deduct any direct costs incurred in earning the income)

3

11. Other income from government subsidy? (Prompt: amount of money supported from the government on special occasion like Tet holiday or other special day, ect)

……

……

12. Is your household's net income sufficient to meet its subsistence needs? (e.g. minimal resources that are necessary for survival: food, water, and lodging)
1. Yes □ 2. No □

12.1. If No, please specify your circumstance? ……

12.2. In addition to the sources of net income identified above, how else does your household attempt to meet its subsistence needs?

…… ……
(Prompt: Bank loan, Women Union support, ect.)

C. Involvement in non-timber forest products collection

14. How much does your household's livelihood depend on gathering forest products?
Heavily □ Moderately □ A little □

4

14. Please provide details regarding the types of forest products your household collects from Cat Tien National Park?

14.1 Type of forest products collected	**14.2 All year round or from X month to Y month (number of months over a year – 1 to 12)**	**14.3 How many times would your household visit the forest per month over the collecting NFTPs season? (number of visits per month)**	**14.4 (8.2.2 x 8.2.3) Frequency of NTFP visitation number of months x visits per month**	**14.5 Amount HH collects per year (kg/ bunch/ basket)**	**14.6 The purpose: How your household use the non-timber products ?** 1. Household use 2. Selling 3. Both	**14.7 Amount sold (kg)**	**14.8 How has ease of collection changed over last 5 years?** 1. Easier/ 2. Same/ 3.Harder	**14.9 Is it possible to explain Why it is easier or more difficult to collect?**
Bamboo shoots								
Food plant								
Mushroom								
Uoi nuts								
Rattan								
Firewood								
Fruit								
Resin								
Traditional medicine plant								
Small animal								
Other…								

Note: Harvesting calendar

Bamboo shoot: from May to November; Firewood: around the year; Mushroom: May, June; Leaves (lá nhíp: around the year); Ươi seeds: every 4 years; Traditional medicine plan: from July to September; Rattan: from March to July

5

15. In the above Table (Q8.2.3), you mentioned the number of times in a month your household go to forest to collect NTFPs from the Cat Tien National Park. Can you explain the reasons why your household does this? (tailor according to responses)

……

……

(Prompts: reason for that frequency, example:
- To people go into forest less often: you are too busy to go to forest; you want to go to the forest more often but there are some obstacles that prevent you; forest products are not productive as used to be etc.
- To people go to forest more often: the high value of forest products like Uoi seeds, forest food is used as our daily diet which can't be replaced ;)

16. (only ask to those who involved in forest protection teams) During the time your household patrols with a forest protection team per month, how many days among these would you combine the collection NTFPs with the patrolling work?.

……

……

17. If your household does not go to the forest to collect NTFPs, why is that?

……
(e.g. Fear of being captured by forest ranger/ No need for the NTFPs because I get sufficient income …)

D. Forest health and the local perceptions of forest health

18. How would your household describe a healthy forest?

……
Some criteria can be used as prompts for describing a healthy forest

- Abundant
- Diversity (species, animal, plants)
- Scenic beauty and recreational opportunities
- Ecosystem control (water shed)

19. Do you think the health of the forest has improved, stayed the same, or declined over the last five years?

Improved greatly	Improved a little	Stayed the same	Decline a little	Declined greatly	Don't know

20. If you answered that forest health has improved or declined, in what particular ways has it changed?

……

21. What is the reason for the change you have observed?

……

22. How do you think local collection of non-timber forest products (NTFPs) has affected the health of the forest in the National Park? (Observations of the local area and not just from your own interactions with NTFP collection)

……

E. Local livelihood activities regarding program involvement

23. Has your household has participated in any way in the livelihood program? (Y/N) (over last 5 years)
1. No □ (Go to 23.1) 2. Yes □ (Go to 23.2)

23.1. If No, please tell us the reasons why your household has not participate in these identified livelihood programs?

Talai longhouse project

……

Forest protection team

……

Other programs

……
(Prompt: (1) Lack of information/ (2) the target people of this project is only for ethnic minority groups and I am not in those groups/ (3) Participation opportunities were scheduled at inconvenient times/ …)

7

23.2. If Yes, please answer the following section

23.2.1 The identified livelihood programs	23.2.2 What are the benefits of the named activities:		23.2.3 Value (million VND) per month (contribution/ associated benefits)	23.2.4 Challenges to participating in the named activity	23.2.5 Level of participation in activities (L/M/H)
	23.2.2.1 Income	23.2.2.2 Other benefits			
Talai Longhouse project					
Activities					
1. Dancing					
2 Guiding					
3. Cleaning					
4. Security					
5. Cooking					
6. Cashier					
7. Management activities					
8. Other					
Forest protection team					
Activities					
9. Patrolling					
10. Management activities					
11. Khác					
Other project					
12. Women Union					
13. Famer Union					
....					

L: Low, M: medium, H: high

8

24. From the above Table you spoke of your household involvement in various programs, how many meetings has your household attended in 2018?
□. None (go to question 12.1)
□. 1 meeting
□. 2 – 4 meetings
□. More than 4 meetings
25. Now I would like to ask you about specifics of that involvement? (write in the project/program that your household are focusing on and could be more than one, and would repeat for each one)

25.1 The identified livelihood programs	25.2 Please name the type of issue/s discussed at a meeting you attended	25.3 Has your household ever provided input into a meetings discussion? (Yes/ No).	25.4 How would you provide your opinion in a meeting?	25.5 Did you feel your opinion was included and given consideration in the meeting? 1.Yes/ 2.No Explain why or why not?	25.6 Was the issue you raised satisfactorily resolved? 1.Yes/ 2. No Explain why or why not?
Talai longhouse project					
Forest protection contract					
Other programs					
…					

26. According to you, what are the challenges for your household in participating in these programs? (in general)

Talai longhouse project

……

Forest protection team

……

Other programs

……

9

E. Benefits from involvement in Projects or Programs that seek to improve local livelihoods

27. As you have already detailed from your household involvement in x and y programs/projects/association (e.g. Talai Longhouse project/ Forest protection contract/other) please assess the level of change in your household's livelihood over the last 5 years.

□ 1. Major improvement
□ 2. Minor improvement
□ 3. No change

28. Of the program/project listed below, which one continues to have the most impact on your household's livelihood?

□ 1. Talai longhouse project
□ 2. Forest protection contract
□ 3. Other programs (specify program)

29. Has your household ever heard of the Village Development Fund (VDF) from ecotourism activities related to Talai Longhouse activities?

1. Yes □ 2. No □(Go to 29.4)

29.1. What is your household understanding of the objectives of the VDF? How are the funds supposed to be used?

……

29.2. How did your household hear about the VDF?

……

29.3. What is your household's understanding about who makes decisions about how money in the VDF will be distributed within the village?

……

29.4. (if answered No to Q13) Why do you think your household has not heard about the VDF?

……

30. Tell me about the impact of Talai Longhouse program to livelihood activities in your village?

……

31. Have you ever heard of the Forest Fund (40 million VND per annum) provided by the Government to your village for forest protection?

1. Yes □ 2. No □(Go to 32)

31.1. How did your household hear about it?

……

31.2. What is your household understanding of the objectives of the Forest Fund? How are the funds supposed to be used?

……

31.3. Who manages the Forest Fund?

…… ……

31.4. Is your household aware of how they make decisions about what will be funded? If yes, how are those decisions made?

……

32. Tell me about the impact of forest protection contract program to livelihood activities in your village?

……

33. What do you recommend for improving your household's livelihood?

……

Thank you!
Would you be available for another interview?

Appendix 2. Key informant interview

Chairman Representative of Talai Commune

Q1. What is your role as a person who work for Talai Committee?

Q2a. Can you explain your role regarding ecotourism development of your commune?
Q2b.What particular roles have you played in respect of the Talai Longhouse project?

Q3a. What policies or programs exist for villagers' participation in ecotourism activities in general?
Q3b. And in Talai Longhouse project specific?

Q4. What activities were made, in your role, to encourage local community participation in Talai Longhouse project? (1) Planning (2) management, and (3) in creating the economic opportunities (e.g., employment)? How successful do you think these efforts have been? How do you know about that?
(Note: Make sure give them plenty of time to respond)

Q5. What factors have contributed to the success or failure of efforts to promote local community participation in the Talai Longhouse project?

Q6. In your role in the Talai Longhouse project, what do you regard as the benefits to the village from project and what has not been beneficial? (1) direct benefits (income, employments, infrastructure); (2) indirect benefits (new school, sewage, …).

Q7. What activities does the Village Development Fund (VDF) contribute to? How is the VDF distributed to the village? How does the VDF interact with the Talai Longhouse and the community?

Q8. What in your opinion is the value of ecotourism, in general, and particularly the Talai Long House project, to the village and Talai Commune? (value including tangible/ less tangible things).

Q9. To what extent would you say the Talai CBE project is truly community-based ecotourism? (prompt: Does the community have real decision-making power? Is the community kept well-

informed about the project? Can the community influence who are the members and leaders of the TCG? Can the community hold the TCG and the private accountable for their performance in managing the project and the VDF?)
(Note: Make sure give them plenty of time to respond)

WWF officers (who work directly in Talai project)

Q1. Why did the WWF propose and support the Talai CBE project? (in comparison with other ecotourism project)?

Q2. How and why was the Talai Longhouse project introduced in the area of the village, Talai commune?

Q3. How have you or other members of WWF been involved in project activities?
Have you observed any changes in the local community livelihood since project inception?
(Prompt: income, employment, infrastructure etc).

Q4. How does your organisation (WWF) advocate local community participation? Can you provide egs of support offered?

Q5. When project was first planned, what was the governance structure? (note: need to help with this and be prepared to explain what governance is. Also get them to draw the key stakeholders).

Q6. What was the role of the WWF in the (1) planning, (2) development and (3) implementation of the Talai Longhouse project in Cat Tien National Park?
(Note: Make sure give them plenty of time to respond)

Q7. What are the goals and objectives of local community participation in the implementation process of a community-based ecotourism venture where WWF is involved?

Q8. How and why did WWF facilitate villagers' participation in the process – both participation in planning/implementing the Talai project and in the economic (eg, employment) opportunities provided by the project?

Q9. Could you tell me how the process of local community participation was in the ecotourism activities? What is your assessment of the level and quality of villagers' participation in this project?

Q10. How would you compare the local community participation in ecotourism at the village with local community participation in other project you have been involved with?

Q11. To what extent do you think the process of implementing of the Talai involved the local people? (Recruit people, communication issues, etc). All of the local people or just some people? What types of people tended to participate? Which did not? Why?

Q12. What have been the strengths and weaknesses of the Talai Cooperative Group as a vehicle for local community participation in implementing and managing the Talai CBE project? How successful has it been overall in enabling local participation? How do you know?

Q13. What do you understand of the Talai Cooperative Group purpose?

Q14. In your opinion, how successful was local community participation in the Talai CBE project? Why do you believe this? What did you do to engage local community participation? Was it difficult to maintain their interest?

Q15. To what extent would you say the Talai CBE project is truly community-based ecotourism? (prompt: Does the community have real decision-making power? Is the community kept well-informed about the project? Can the community influence who are the members and leaders of the TCG? Can the community hold the TCG and the private company accountable for their performance in managing the project and the VDF?)
(Note: Make sure give them plenty of time to respond)

Q16. How was the Talai Longhouse project expected to enhance for community livelihoods in Talai Commune?

Q17. Please outline whether you think these expectations have been realised and outline your reasons for this assessment.

Q18. What is your opinion on the Village Development Fund from the Talai Longhouse operation and experience with WWF? Has the VDF for the Talai project operated as was envisaged when the Talai project was first developed?

Q19. What was the role of WWF for this project? (prompts: investigated, funded (building, training, etc.))

Q20. As WWF officer what has motivated you to ensure the Talai Longhouse was CBE venture?

Q21. Aside from the VDF, has the Talai project influenced the livelihoods of villagers in other ways? Please explain.

Q22. Describe how the livelihood benefits of the Talai project (prompt: employment, income) have been distributed across the whole community? (eg, across ethnic groups, or between the rich and poor).

Q23. How does your experience with the Talai Longhouse project compare with your experience with CBE elsewhere?

Cat Tien National Park Management Board

Q1. Could you describe the Cat Tien National Park Management Board (CTNP) roles? (especially in ecotourism development)

Q2. Please describe the roles that your organisation played in respect of the Talai Longhouse project or (if you are not aware of this specific project) in respect of other CBE projects within the CTNP region?

Q3. What do you think would allow the ecotourism project like Talai Longhouse project to have a greater impact on forest management and conservation? Please describe.

Q4. Who from Cat Tien National Park is involved in forest walks and how do they liaise with Talai Longhouse or other ecotourism ventures?

Q5. Are you aware of the level and quality of local community participation in the Talai project – both participation in decisions about project planning / implementation and in economic (eg, employment) opportunities arising from the project? If so, how would you describe the quality of community participation? Please discuss.
(Note: Make sure you clearly separate answers to each planning and implementation)

Q6. What factors explain the level and quality of local community participation achieved in the Talai project?

Q7. To what extent, has the Talai project affected local livelihoods? Please discuss. Can you explain how it has influenced local livelihoods?.

Q8. To what extent would you say the Talai CBE project is truly community-based ecotourism? (prompt: Does the community have real decision-making power? Is the community kept well-informed about the project? Can the community influence who are the members and leaders of the TCG? Can the community hold the TCG and the private company accountable for their performance in managing the project and the VDF?)
(Note: Make sure give them plenty of time to respond)

Q9. What strategies have been used by your organization in order to gain support from the private company to sustain forest conservation programme? How effective of this strategy?

Q10. How is the Village Development Fund supporting the Cat Tien National Park conservation goals? Please describe.

Talai Cooperation Group Leaders (the Head and the Assistant Head)/Interview separately (interview twice)

Q1. What is your position in the community in general and in the private company specifically?

Q2. How did you become a Talai Cooperative Group Leader? What sort of decisions have you been involved in for Talai project? If so, how do you go about this role?

Q3. To what extend do you think your role has changed since you first started? (prompt: participation in making decision, English skills).

Q4. What is your understanding of the purpose of Talai Co-operative Group? Do you see it having a role in promoting local community participation in decision making about the Talai project? If so, how has it pursued this role? (Please provide details)

Q5. How have the Talai Commune authorities support you in your position?

Q6. How do people, that you may know, but they are not involved in TCG, view your position as leader of TCG?

Q7. What is the role of the TCG in deciding the issues as you mentioned in Question 2, (prompt: Village Development Fund, paperwork, and others)? What other parties have roles in this decision making? Does the TCG have a dominant role?

Q8. How often do the TCG meet in different phases?

1. planning,
2. implement,
3. operation?

And what is discussed? What communications mechanisms do you use to involve the members in your group regarding the Talai Longhouse activities? What kind of information do you provide to members? How do members of the TCG raise ideas and bring forward information? Can you provide any recent egs?
(Note: Make sure give them plenty of time to respond)

Q9. What was the outcome of involving local villagers in Talai Longhouse project? What obstacles, if any, have there been to engage with local villagers? Can you provide egs?

Q10. How does the TCG communicate to the Talai Committee/or wider community about the Talai Longhouse activities? When you have communicated with the wider community, what sort of response have you received? What activities had been developed to support the wider local community with the TCG?

Q11. As a leader what do you do to encourage local community involvement in Talai Longhouse? Do you believe it is realistic to expect the community to take greater management responsibility of the Talai Longhouse?

Q12. To what extent, do you think what sort of decisions have local people been involved in for Talai project? Are there any factors (if any) which support or prevent them (local people) from joining Talai CG or participating more generally in decisions about the Talai project? If yes, please identify these factors, and why they are important.

Q13. What type of training and who leads the training? How much time has been spent in this training? How useful was the training? Do you need more training in order to improve your capacity? If so, what kind of training?

Q14. When was the last time you did any training/ skills development to do your work as TCG Leader?

Q15. What changes (revenue, employment opportunities) have you recognised (in terms of livelihood improvement) since the Talai Longhouse project started? If so, have you observed, and describe it?

Q16. What has motivated you to be a TCG Leader?

Q17. How does the Village Development Fund operate? Who is decision maker in VDF distribution? Does distribution of VDF cause any issues between the villagers? If it has can you elaborate on the issues?

Q18. If there are rules or policies for how the Village Development Fund should be shared, then are these rules or policies been followed? Can you share with me the rules you use to manage the VDF?

Q19. During the time period from 2014 - 2017, what are the total contributions from the Talai Longhouse to the VDF per annum?

Q20. How accountable is the Talai Longhouse in reporting revenue that goes to the VDF? Do outsiders, like villagers, able to access records of Talai Longhouse revenue that is deposited to the VDF?

Q21. To what extent would you say the Talai CBE project is truly community-based ecotourism? (prompt: Does the community have real decision-making power? Is the community kept well-informed about the project? Can the community influence who are the members and leaders of the TCG? Can the community hold the TCG and the private accountable for their performance in managing the project and the VDF?)
(Note: Make sure give them plenty of time to respond)

Q22. How would you like to see the Talai Longhouse and the Village Development Fund operate in the future? Would this involve different roles or behaviours from local government and private companies? Is so, please provide details

Secondary documents such as business or management plans, meeting notes or minutes, annual report, Terms of Reference, meeting behaviour, no voting or reaching consensus etc.

Talai Cooperation Group Members (interview twice)

Q1a. How long have you been a TCG member? What is your understanding of the role of TCG?

Q1b. What is your specific role in promoting local community participation in the Talai project? If so, how have you pursued this role? (Please provide details)

Q2. How did you become a Talai CG Member? What do you see as the rewards and challenges of being a TCG member?

Q3. Could you please describe your role in Talai Longhouse, and TCG?

Q4. What sort of decisions have you been involved in for Talai project? If so, how do you go about this role?

Q5. How has your role in the TCG changed since you first started?

Q6. How does the TCG communicate to the community about Talai Longhouse activities? If so, please discuss how this occurs, how frequently, and what feedback do you get from villagers? To what extent has this communication been two-way rather than just one-way? To what extent are you able to influence the decisions made by the TCG? (prompt: allowing foreigners in the village, paper work or VDF).
(Note: Make sure give them plenty of time to respond)

Q7. What, if any, have been the barriers to local community participation in decisions by the TCG or, more generally, about the Talai Longhouse? (prompts, community capacity, ethnicity, skills development)

Q8. What sort of training and/or skills development did you receive because you are a member of the Talai Cooperative Group? What was the purpose of the training? Who provided it? How long did you spend in the training and/or skills development? Was the training useful and have you used it? To what extend do you think you could apply those skills to your current work at Talai Longhouse?
(Note: Make sure you give them time to respond)

Q9. Could you please name what gains in livelihoods that your community derive from ecotourism development in Talai Longhouse?
(Note: Be ready to explore the areas they may bring up with further questions)

Q10. What would be your main livelihood if you weren't working at the Longhouse? What benefits or drawbacks are there from working in the Talai Longhouse Project?

Q11. What is your opinions regarding your family income now compared with before you worked at the Talai Longhouse? Are there non-monetary benefits of being part of the TCG?

Q12. Are there other benefits that your household has gained from the project? (prompt: transportation, suppliers of food, material and other goods used at the longhouse benefits)

Q13. Are there any rules or policies for how VDF should be distributed? Are you aware of these rules? Do you know if the rules are followed? Do you think distribution of funds has been fair? Please provide details.

Q14. To what extent would you say the Talai CBE project is truly community-based ecotourism? (prompt: Does the community have real decision making power? Is the community kept well-informed about the project? Can the community influence who are the members and leaders of the TCG? Can the community hold the TCG and the private company accountable for their performance in managing the project and the VDF?)
(Note: Make sure give them plenty of time to respond)

Q15. How would you like to see the Talai Longhouse and the Village Development Fund operate in the future? Would this involve different roles or behaviors from local government and private companies? Do you want the community to have greater control over the Talai Longhouse management? If so, please provide details.

Private company

Q1. How and why did the private company get involved with the Talai Longhouse Project in the village ?

Q2. What are the activities inside the Talai Longhouse? What is your company's role regarding these activities in the Talai Longhouse project?

Q3. What advantage and disadvantages for your company have arisen from the cooperative arrangement with the TCG?'

Q4.What interactions do you have with Cat Tien National Park staff in organising tour program?

Q5a. Can you describe the relationship between the private company and the Talai Commune?
Q5b. Can you describe the relationship with Cat Tien National Park?

Q6. What activities are currently carried out by your company? (Prevalent/complementary activities, sector of activity, ect.)

Q7. How are TCG members chosen to work at Talai Longhouse? Are they from the previous company Viet Adventure? Is a TCG members automatically an employee of the Talai Longhouse or vice versa?

Q8. To what extent do TCG members take part in your company management at Talai Longhouse?

Q9. What sort of decisions do you involve TCG or local community in?

Q10. What are the advantages and disadvantages of hiring local staff to work in the business?

Q11. In what ways are local staff provided with training or skills in marketing, managing, or running business by the private company?

Q12. How would you describe the capacity of local staff to work in Talai Longhouse ecotourism? Would you consider employing people from outside the village, and if so why?

Q13. How important is the ecotourism business at Talai Longhouse go for private company?

Q14. Have the activities in the Longhouse created an alternative income for the TCG members and local people in the area, and in what way?

Q15. What is your company's future plan for Talai longhouse after five year contract expires? (About the financial status or trend of the company?)

Q16. To what extent would you say the Talai CBE project is truly community-based ecotourism? (prompt: Does the community have real decision making power? Is the community kept well-informed about the project? Can the community influence who are the members and leaders of the TCG?)

Q17. How realistic is it to expect that the local community could manage the project without any outside intervention or support? What would need to change for this to happen?

Q18. What is average number of visitors who have stayed in Talai Longhouse per month? .

Forest protection group team (team member)

Role

Q1. Why did you want to be a team member? What issues were important for you to discuss with other household members before joining the forest protection team?

Q2a. Where did you learn about the forest protection team, and how to join in this program?
Q2b. Did you get any help? (Prompt: the commune authorities, your neighbours and commune extensions worker, and about the program from people from other villages who have participated in forest protection team)?

Q3. How were you prepared to be a member of forest protection team? Have you received training? If yes, please specify.
Which topic?
When?
And how many people from your team attending at the time?
How useful was this support to your job?

Q4. When was your forest protection team established? How and according to which policy was your team formed? How, and by who, were the members of the team selected?

Q5. Explain how your team is organised (leader, members). Is there a roster for patrolling? And how does the roster work? (who does what? eg. Who directs and regulate salary, reporting and information?). Who makes the decisions?

Q6a. Has your team leader explained to your team the conditions of contract?
Q6b. If yes, how did they inform you and what sort of details were provided to your team?
Q6c. If no, how do you know what tasks and rewards are involved in your job as part of a forest protection team?

Q7. What area of forest (in hectares) does your team patrol? What type of forest? (big /small trees, what products can be found?). How are the boundaries determined? How does your team patrol the area? (Who go with whom?; how many times per month, regular patrol route or different routes, etc).

The relationship between the Talai station and forest protection team
Q8a. What is the relationship within the team members and with Talai station staff? (prompt: the way in which your team regard and behave towards each other and with Talai Station).
Q8b. How does your team co-ordinate with Talai station staff in labor division and protecting the forest area?.

Q9a. Have you as a forest team member encountered any difficulties? Explain what the difficulties were and with who?
(Prompt: (1) interpersonal conflict (team members, other people from the village, people from outside the village, the Cat Tien National Park, Talai Station forest guards); (2) lack of resources or (3) inability to schedule forest patrols (4) making time to go out to the forest with forest guards).

Q9b. How were these difficulties resolved? (you can list more than one difficulty and possible solutions for each difficulty accordingly).
Q9c. Did any person help resolve the issue? If so, who helped the forest team and how?

Q10a. Can you tell me about an experience where you expressed concerns or ideas to your team leader or Talai Station staff about how your work in forest protection? Were they acted on by the Park management? Provide an example? Please say who.

Compliance related to forest protection contract
Q11a. Over your time on the forest protection team, how many times have you observed non-compliance with the forest law? Number of times in a year? What was the form of infringement?
Q11b. Were the infringements reported? If yes, who were they reported to? Are you aware of anything happening as a result of reporting non-compliance? If yes, what happened?

Q12a. What are the difficulties of doing forest protection? eg. low payment and the time - consuming nature of the work; difficulties brought about by non-cooperation of parties seeking to extract resources from the forest (loggers, villagers); corruption of the guards.
Q12b. During your work, have you heard of any activities of non-compliance conducted by your friends or other villagers in your village? Have you found yourself in this situation?

Benefits and Impacts to local livelihood

Q13a. What benefits do members of your team obtain from participating in a forest protection team?
Q13b. What has been the impact on your household's livelihood since you became part of a forest protection team?
Has your household's income increased or decreased, or is it the same as before getting involved?
Are there other benefits from your involvement in protecting the forest (eg, NTFP collection)?
Has becoming a forest team member reduced your household's dependence on the forest for its livelihood?

Q14a. How much money does the team get per ha per year?
Q14b. What non-monetary benefits do forest team members obtain from participating in a forest protection team?

Q15a. Is your team allowed under arrangement with Talai Station, to collect non-timber forest products (NFTPs)? If yes, what types of NFTPs is your team allowed to collect (bamboo shoots, food plant..,)? How much can be collected? Where does your team mainly collect NTFPS from? (Prompt: from the forest area that your team is responsible for patrolling, or from other areas)

Q15b. Can villagers who are not members of a forest protection team collect forest products from the area your team patrols? (which products?).
Q15c. Do the villagers understand how much they are allowed to collect? How do they know about that? (Communication mechanism or public document they can access)

Q16. How important is the money from your participation in a team for your household's livelihood? What do your household mostly use the money for?

Q17. What other benefits for your household's livelihood (prompt e.g., rights to collect NTFPs) do you receive from being part of a forest protection team?

Forest conservation
Q18. How does your forest protection team contribute to the conservation of Cat Tien National Park?

Q19. What level of contribution does your forest protection team make to the conservation value of National Park given the activities you mentioned in previous answer?

Forest protection group team (team leaders)

Role

Q1. Why did you want to be a team member? What issues were important for you to discuss with other household members before joining the forest protection team?

Q2a. Where did you learn about the forest protection team, and how to join in this program?
Q2b. Did you get any help? (Prompt: the commune authorities, your neighbours and commune extensions worker, and about the program from people from other villages who have participated in forest protection team)?

Q3. How were you prepared to be a member of forest protection team? Have you received training? If yes, please specify.
Which topic?
When?
And how many people from your team attending at the time?
How useful was this support to your job?

Q4. When was your forest protection team established? How and according to which policy was your team formed? How, and by who, were the members of the team selected?

Q5. Explain how your team is organised (leader, members). Is there a roster for patrolling? And how does the roster work? (who does what? eg. Who directs and regulate salary, reporting and information?). Who makes the decisions?

Q6a. Has your team leader explained to your team the conditions of contract?
Q6b. If yes, how did they inform you and what sort of details were provided to your team?
Q6c. If no, how do you know what tasks and rewards are involved in your job as part of a forest protection team?

Q7. What area of forest (in hectares) does your team patrol? What type of forest? (big /small trees, what products can be found?). How are the boundaries determined? How does your team patrol the area? (Who go with whom?; how many times per month, regular patrol route or different routes, etc).

The relationship between the Talai station and forest protection team
Q8a. What is the relationship within the team members and with Talai station staff? (prompt: the way in which your team regard and behave towards each other and with Talai Station).
Q8b. How does your team co-ordinate with Talai station staff in labor division and protecting the forest area?.

Q9a. Have you as a forest team member encountered any difficulties? Explain what the difficulties were and with who?
(Prompt: (1) interpersonal conflict (team members, other people from the village, people from outside the village, the Cat Tien National Park, Talai Station forest guards); (2) lack of resources or (3) inability to schedule forest patrols (4) making time to go out to the forest with forest guards).

Q9b. How were these difficulties resolved? (you can list more than one difficulty and possible solutions for each difficulty accordingly).
Q9c. Did any person help resolve the issue? If so, who helped the forest team and how?

Q10a. Can you tell me about an experience where you expressed concerns or ideas to your team leader or Talai Station staff about how your work in forest protection? Were they acted on by the Park management? Provide an example? Please say who.

Compliance related to forest protection contract
Q11a. Over your time on the forest protection team, how many times have you observed non-compliance with the forest law? Number of times in a year? What was the form of infringement?
Q11b. Were the infringements reported? If yes, who were they reported to? Are you aware of anything happening as a result of reporting non-compliance? If yes, what happened?

Q12a. What are the difficulties of doing forest protection? eg. low payment and the time - consuming nature of the work; difficulties brought about by non-cooperation of parties seeking to extract resources from the forest (loggers, villagers); corruption of the guards.

Q12b. During your work, have you heard of any activities of non-compliance conducted by your friends or other villagers in your village? Have you found yourself in this situation?

Benefits and Impacts to local livelihood

Q13a. What benefits do members of your team obtain from participating in a forest protection team?

Q13b. What has been the impact on your household's livelihood since you became part of a forest protection team?

Has your household's income increased or decreased, or is it the same as before getting involved?

Are there other benefits from your involvement in protecting the forest (eg, NTFP collection)?

Has becoming a forest team member reduced your household's dependence on the forest for its livelihood?

Q14a. How much money does the team get per ha per year?

Q14b. What non-monetary benefits do forest team members obtain from participating in a forest protection team?

Q15a. Is your team allowed under arrangement with Talai Station, to collect non-timber forest products (NFTPs)? If yes, what types of NFTPs is your team allowed to collect (bamboo shoots, food plant..,)? How much can be collected? Where does your team mainly collect NTFPS from? (Prompt: from the forest area that your team is responsible for patrolling, or from other areas)

Q15b. Can villagers who are not members of a forest protection team collect forest products from the area your team patrols? (which products?).

Q15c. Do the villagers understand how much they are allowed to collect? How do they know about that? (Communication mechanism or public document they can access)

Q16. How important is the money from your participation in a team for your household's livelihood? What do your household mostly use the money for?

Q17. What other benefits for your household's livelihood (prompt e.g., rights to collect NTFPs) do you receive from being part of a forest protection team?

Forest conservation

Q18. How does your forest protection team contribute to the conservation of Cat Tien National Park?

Q19. What level of contribution does your forest protection team make to the conservation value of National Park given the activities you mentioned in previous answer?

Cat Tien National Park Management Board members

Role

Q1. Describe the role as part of Cat Tien National Park Management Board for buffer zones areas (especially in forest protection activities and forest land allocation).

Q2. What is your interaction with Talai station staff?

The forest protection contract

Q3. How many hectares of forest has Cat Tien National Park Management Board currently contracted to each team of households in the village to protect?.

(Ask to see contracts before interviewing)

Q4. What influence do you as a Board member have in writing the contract for forest product for Forest protection teams?

Q5. What are the conditions in the contract for each forest area regarding the rights and responsibilities of every forest protection team?

Q6a. Can forest team influence the conditions in the forest protection contract (or are those conditions non-negotiable)?

Q6b. How are the conditions of the forest protection contracts monitored and enforced by Talai Station?

Compliance related to forest protection contract

Q7a. Can members of the forest protection teams gain permission from Cat Tien National Park to collect NFTPs from the area they patrol? If yes, what is the process for the forest protection team gaining this permission?

Q7b. What types of NTFPs can they get permission to collect, and how much are they allowed to collect of each?

Q8a. Who from the Cat Tien National Park is responsible for ensuring that forest team members fulfill the conditions of the protection contract?
Q8b. Are forest protection activities by the forest team well-managed by the Talai Station staff? Can you tell me how?

Q9a. What is the relationship between the Cat Tien National Park Management Board and the Talai Station staff in relation to forest protection?
Q9b. What are the challenges or the risks for the Park with station staff in respect of the forest protection contracts? In what areas could Talai station staff management be improved?.
Q9c. What do you think about the performance of Talai Station staff in doing their jobs in respect of the forest protection contracts?

Impacts and Benefits
Q10a. Can you see any opportunities to change the forest protection contracts to better help forest team members to improve their livelihoods? If yes, how might the contracts be changed to do this?

Forest conservation
Q11. How do you as a Board of Cat Tien National Park evaluate the effectiveness of the forest protection contract program (according the aims of this program need to be achieved) for the conservation Cat Tien National Park?.

Q12. In your role as a Board of Cat Tien National Park, how do feel you contribute to the forest conservation goals of Cat Tien National Park?

Talai Forest Station staff

Role
Q1. Describe your role at Talai Station. How do you work with the Cat Tien National Park Board?

Q2. How many forest guards are there in the Talai station? What are the forest guards' roles and responsibilities?

The relationship between the Talai station and forest protection team
Q3. How many households in the village currently are part of the two forest protection teams?

Q4a. How does Talai station staff co-ordinate with each forest team in labor division and implementation of the contract conditions in the forest area?
Q4b. Do the Talai station staff apply different methods for working with the Stieng and Chau Ma teams? If yes, how?.

Q5. How do the Talai Station staff monitor the performance of the forest teams in patrolling the forest against what the contract requires it to do?.

Q6. Do the Talai Station staff encounter any difficulties in contacting or communicating with the forest teams? (both team leader and team members). If yes, please explain.

Compliance related to forest protection contract
Q7a. How are the forest protection contracts implemented by the two forest protection teams?
Q7b. How effective are two teams in policing the forest laws? Why are they effective or ineffective?

Q8a. To what extent are forest team members complying with the forest protection contracts conditions in performing their roles under the protection contract?
Q8b. Do they need help in increasing their compliance with contract conditions? If yes, how?

Q9. Where and how often do the Talai forest station and forest team members meet to discuss the monitoring schedule, and difficulties or solutions to meeting the forest contract conditions?

Q10a. To what extent, in what ways, do the households in the village derive benefits from being members of forest protection team?
Q10b. How important are these benefits for their livelihoods in the village? Please discuss. (The prompt: can you explain why, how)

Forest conservation
Q11. How do you as a Talai Station staff evaluate the effectiveness of the forest protection contract program for the conservation with Cat Tien National Park?. (How the impact?)

Q12. In your role as Talai station staff, what specific activities do you feel contribute to the forest conservation goals of Cat Tien National Park?