



## **Impacts of Economic Land Concessions on Project Target Communities Living Near Concession Areas in Virachey National Park and Lumphat Wildlife Sanctuary, Ratanakiri Province**

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*To:*

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## ACRONYMS

ACLEDA	ACLEDA Bank Plc.
ADHOC	The Cambodian Human Rights and Development Association
AMK	Angkor Mikroheranhvatho
AMRIT	AMRIT Microfinance Institution
BMZ	German Federal Ministry for Economic Cooperation and Development
CARE	CARE International
CBNRM	Community Based Natural Resource Management
CBET	Community Based Ecotourism
CBO	Community Based Organization
CEDAC	The Cambodian Center for Study and Development in Agriculture
CF	Community Forestry
CFi	Community Fishery
CI	Conservation International
CLT	Communal Land Titling / Title
CLV	Cambodia, Lao and Vietnam
CLCD	Commune-Level Consultation and Discussion
CPAs	Community Protected Areas
CPA	Community Protected Area
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
DP	Development Partners
DRD	Disaster Risk Reduction
EIA	Environmental Impact Assessment
ELC	Economic Land Concessions
FC	Forest Concession
FGDs	Focus Group Discussions
FPIC	Free, Prior and Informed Consent
GDP	Gross Domestic Product
HA	Highlander Association
HH	Household
IP	Indigenous People
KIIs	Key Informant Interviews
LICAHDO	The Cambodian League for the Promotion and Defense of Human Rights
MAFF	Ministry of Agriculture, Forestry and Fishery
MC	Mining Concession
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MoE	Ministry of Environment
MoI	Ministry of Interior
MRD	Ministry of Rural Development
NCDD	National Committee for Sub-National Democratic Development
NGO	Non-Governmental Organization
NRM	Natural Resource Management
NTFP	Non-Timber Forest Product
ODC	Open Development Cambodia
PA	Protected Area
PLAN	PLAN International
PRASAC	PRASAC Microfinance Institution Co., Ltd.
PSL	Public State Land / Private State Land
PSLMC	Provincial State Land Management Committee
RGC	Royal Government of Cambodia
RTK	Ratanakiri Province
SCW	Save Cambodia's Wildlife
SLC	Social Land Concession
SME	Small, Medium Enterprise
SNA	Sub-National Administration
SRI	System of Rice Intensification
SPSS	Statistical Program for Social Sciences
WASH	Water, Sanitation, and Hygiene
WHH	Welthungerhilfe / German Agro Action

## EXECUTIVE SUMMARY

### **I. Almost no positive SOCIO-CULTURAL impacts of ELCs perceived by villagers**

The vast majority of respondents perceived no positive socio-cultural impacts of ELC investments on their current and future livelihoods. Negative impacts included reduced or lost land (which led to further issues such as decline in access to natural resources, etc.) and overlap between communal land and ELC boundaries. Few respondents perceived that the ELC companies provided positive impacts, such as provision of funding and other occasional or on-demand support for social development, road construction or school building.

The ELC investments were perceived to have created a space for reconstructing local social systems. Constant interaction between local inhabitants and outsiders, including lowland in-migrants, has contributed positively to new knowledge and technology transfer. However, communities' social values were being deteriorated by unfitting new cultures brought in by newcomers, particularly workers of the agricultural plantations and mining companies. Moreover, local IPs started to realize the substantive value of their traditional community laws and social capital.

Conflicts over land and natural resource management by community groups and the ELCs sometimes even got worse in the areas where interventions of partner NGOs and concerned line departments were minimal or missing. The government was consistently condemned for promoting investments in mineral and agro-industrial sectors as well as for favoring ELC and mining companies.

### **II. Almost no positive impacts of ELCs on LOCAL LIVELIHOODS AND ECONOMY perceived by villagers**

The majority of respondents perceived negative impacts of the ELC companies on the local livelihoods and economy, with more than half contributing the land loss and decline in natural capital stocks to a negative change in their main livelihood sources. The ELC companies were perceived as negative change agents, which could lead to economic threats for the IP communities, if continued to be improperly developed and managed. Local communities dependent on land and natural resources as their main livelihood sources have been threatened by reduced access to and use rights over natural capital stocks.

While the ELC companies provided some employment to local IPs, the available jobs were usually time-bound and low-paid. Moreover, most of the jobs were regarded as labor-intensive, low skilled, dangerous, less numerous, and less suitable to local inhabitants. The IP culture values freedom of work, movement, and reciprocal activities without concentrating much on profit maximization. In addition, remuneration was sometimes reduced or swindled by the supervisors.

### **III. Positive impacts of ELCs on ENVIRONMENT AND CONSERVATION were minimal or almost non-existent**

The majority of respondents did not find any positive correlation between the ELC investments and improved environmental governance regimes, enhanced environmental education programs, better biodiversity conservation, and/or increased funding for environmental protection, preservation, and restoration activities. Conversely, the respondents had the most negative perceptions about decline in quality and quantity of land and natural resources, decline in quality and quantity of natural habitats, decline in quality and quantity of NTFFPs, and loss of natural habitats and extinction of forest and animal species.

Human-induced disasters due to heavy deforestation and extensive resource extraction by the ELC companies were considered to have contributed to the increasing occurrence of land and soil erosion, seasonal drought and flood, and other climate change related problems. Moreover, the use of chemical substances within the agro-industrial plantations has polluted some of the main waterways being consumed by local communities and their animals. The ELC companies have dug ponds or built water reservoirs across the natural waterways to store water for agro-industrial and domestic use. This activity has led to a change in the natural water system and created water scarcity in the downstream areas.

### **IV. Key influences on local livelihoods**

Seven major trends, externally and internally instigated, critically affect local livelihoods:

1. The implementation of countrywide state-sponsored conservation regimes and their resource governance approaches have restricted local communities' mobility and access to land and natural resources.
2. The government's neoliberal development approaches to secure diverse export markets for agricultural goods has further intensified the IP livelihood vulnerability, bringing in domestic and multinational investments that grabbed lands previously owned and managed by IP communities.
3. Increasing job opportunities and market demand for agricultural produce have attracted lowlander migrants, creating tough competition for land use, access to and ownership over land and natural resources of IP communities.
4. Natural disasters in the forms of extreme weather hazards, perceived to be climate change impacts from deforestation and hydropower dam construction, have made IP communities more vulnerable, causing decline in their natural capital stocks, crop yield, and livelihood security.
5. Rising loans from commercial banks and MFIs and their unproductive use have been a great concern for IP communities' livelihood security.
6. Chronic and epidemic diseases were another grave shock for both people and animals. These diseases were compounded by poor housing conditions, low knowledge of hygiene and sanitation, lack of health care information and facilities, and low nutritional consumption. These necessities were inadequately provided by local authorities.
7. The internal change of the community systems, beliefs, and attitudes towards land and natural resource access and use has discouraged IP communities from practicing sustainable livelihoods for community welfare improvement. A growing concern was that local communities, especially IP youth, engaged in illegal logging of timbers and woods to sell to nearby companies or merchants. This was chiefly stemmed from their witness in widespread logging by the ELCs in their areas and weak law enforcement against it.

## **V. Recommendations**

The following recommendations need to be considered by the relevant governmental, non-governmental, and private institutions in order to reduce the negative impacts of ELC development, refine the IP communities' livelihood strategies, and preserve their indigenous culture. Despite listed for different institutions, there is much room for cross-institutional collaboration.

### **For the national government**

1. Improve security mechanisms for communal land rights, forestlands, and sacred places/forests by speeding up the communal land registration and titling processes, in order to help IP communities secure their land and natural resources and reduce the overlapping areas with the ELC companies.
2. Introduce innovative land rights recognition, land administration, and governance of land and natural resources through multi-stakeholder involvement and collaboration, such as REDD+ modality.
3. Strengthen legal, institutional, and policy support, especially focusing on capacity building programs related to relevant land and NRM governance for IP communities, sub-national administrations and local authorities, and private concessionaires.
4. Develop and enforce proper M&E mechanisms for the conduct of EIA on ELC development as well as the consultation and dissemination of EIA reports with concerned stakeholders and beneficiaries, especially local communities. Such mechanisms would enable IP communities to be aware of possible impacts and exert influences to mitigate these impacts.

### **For the sub-national government**

1. Promote community ownership and empowerment programs among IP communities in order to make them more responsible for their own sustainable growth and development.
2. Develop specific and integrated land use planning for the areas impacted by the ELC companies, such as commune or district-level spatial planning based upon ecosystem services and economic and non-economic benefits.

### **For the private sector**

1. Promote corporate-community partnership in information sharing, joint agri-business development and management, joint investment in land and natural resources, and equitable benefit sharing.
2. Introduce strategic cropping techniques and support facilities and technologies to assist IP farmers to meet the increasing demand of agribusiness and agro-industrial markets.
3. Introduce proper market mechanisms to help IP communities access the right information and demand of cash crops. This would minimize the fluctuation of price and demand of cash crops produced by IP communities.

### **For NGOs and CBOs**

1. Promote more participatory and accountable governance of land and natural resources, particularly at the grassroots level, by introducing innovative multi-stakeholder networking platforms and interventions with proper reporting and conflict resolution mechanisms.

2. Promote public consultation on ELC development and its significance between the ELC companies and IP communities as well as between the responsible government authorities and the communities in order to exercise the FPIC mechanisms.
3. Identify sustainable financing mechanisms for long-term biodiversity conservation and conservation-based livelihood programs for local communities.
4. Introduce climate-change-adaptive livelihood development programs and DRD strategies to IP communities in order to enhance their capabilities in addressing their livelihood needs.

### **For Development Partners**

1. Support MAFF to continue to regularly review the existing ELCs in order to monitor and evaluate their compliance with the regulatory frameworks and agreements.
2. Assist MoE to finalize its Environmental Code and apply it with the green growth strategies to achieve green, inclusive, and resilient development.

## CHAPTER I

### INTRODUCTION

#### I.1. Background and Rationale

Cambodia is striving to make its development sustainable, inclusive, and equitable. Economic land concessions (ELCs) have been regarded as a major economic vehicle for job creation, revenue generation, and poverty reduction. Notwithstanding, ELCs may heighten the vulnerability of populations in the ELC-affected areas, especially indigenous peoples (IPs) whose livelihoods rely on natural resources. Further, ELCs might trigger mismanagement, increase population and development pressures, and intensify the destructive harvesting and exhaustion of natural resources by diverse user groups (Neth, Sour, & Va, 2011).

The current economic development in the forms of ELCs, forest and mining concessions, and hydro-power dam construction together with the influence of Cambodia-Lao-Vietnam (CLV) integration have transformed Northeastern Cambodia, particularly Ratanakiri province, into a less nature-harmonious region (Neth, Rith, & Tao, 2015). These development schemes have triggered decreased traditional agricultural production, decreased biodiversity and ecosystem quality, increased competition and conflicts over natural resources, decreased livelihood strategies and cultural alienation of indigenous communities, and increased monopolistic businesses and mono-cropping culture. Resultantly, IP communities in Ratanakiri province are having fewer capital assets for their livelihoods (Neth, Rith, & Saut, 2014). Moreover, there has been decline in community participation in implementing development and conservation-oriented activities as communities are becoming more reluctant to preserve their common pool resources, which could eventually lead to unsustainable community livelihoods.

To refine the linkage between environmental governance and community livelihood improvement, particularly community-based natural resource management (CB-NRM) and conservation schemes, in Northeastern Cambodia, Save Cambodia's Wildlife (SCW) is executing a 3-year (2015-2017) project entitled "*Initiative for the Protection of Tropical Forests and Biodiversity in Cambodia*". This project is intended to contribute to the preservation of Cambodia's tropical forests within their functional capacity as a carbon sink and natural habitat for endangered flora and fauna species. It is focused on seven community protected areas (CPAs) located in and near Virachey National Park and Lumphat Wildlife Sanctuary in Ratanakiri and Stung Treng provinces. These CPAs cover and generate constant benefits to 32 villages in six communes in five districts in these two provinces. The project is expected to render positive impacts on right education and development, protection and conservation of natural resources, and improved media and networking to direct and indirect beneficiary groups, especially local communities and sub-national administrations in the target areas.

However, to move forward with confidence in addressing community livelihood and environmental conservation concerns, it is pivotal to comprehend the current and prospective impacts of ELCs on community livelihoods in the target sites. Such comprehension would

enable concerned actors to verify, rectify and strengthen their intervention mechanisms for the betterment of community livelihood strategies, poverty alleviation, conservation regimes, integrated spatial planning, and multi-stakeholder engagement.

## **I.2. Aim and Objectives**

This study aimed at identifying and analyzing current and prospective impacts of ELCs on the target CPAs and IP communities living near the concession areas in Ratanakiri province. To achieve this aim, the following objectives were addressed:

1. Identify the current ELC existence and practices at different scopes and scales of agro-business or agro-industrial foci in Ratanakiri province;
2. Identify and analyze socio-economic, cultural, and environmental impacts of ELCs on the target CPAs with a particular focus on community livelihood systems and underlying strategies, social fabrics, and cultural diversity and integrity of IP communities in the target sites as well as natural environment and capital stocks that IP communities are dependent on as their main livelihood sources; and
3. Provide suggestions to concerned state and non-state actors on how to improve the community livelihoods and environmental governance in the target sites from the current situations.

## CHAPTER 2

### METHODOLOGY

#### 2.1. Data Collection Methods

This study collected both qualitative and quantitative data for comprehensive and holistic analyses of impacts of the current ELC practices on community livelihoods in the target sites. Critical review was applied to collect secondary data. Key informant interviews (KIIs), focus group discussions (FGDs), and a household questionnaire survey were employed to gather primary data.

##### 2.1.1. Documentary Review

This method was used to collect, review, and analyze existing secondary data. Project documents, reports, scientific papers, empirical case studies, statistics and census, policy and regulatory frameworks, and development and conservation plans of state and non-state actors at provincial and national levels were compiled and examined. Since this study intended to provide up-to-date information to concerned stakeholders, while simultaneously mainstreaming its findings into planning processes through decision- and policy-making for future livelihood and conservation / NRM intervention mechanisms in the province as well as Northeastern Cambodia, it thoroughly reviewed all available research on the region. By doing so, it was able to reconfirm with the previous findings in the forms of consistency and frequency or to improve the understanding of concerned stakeholders on the current situations of community livelihoods and land and natural resource governance in the province.

##### 2.1.2. Key Informant Interviews

This method was employed to interview key representatives of sub-national administrations/ authorities (village and commune chiefs, district governors, and Chief of Development and Investment Unit of the Provincial Hall), provincial line departments (Department of Environment, Department of Agriculture, Forestry Administration Cantonment, Department of Rural Development, and Department of Land Management), non-governmental organizations (such as SCW, CEDA, CARE, PLAN International, HA, and CI), community-based organizations (CFs and CFis), and an ELC firm (Hong Anh Gia Lai). These informants were purposively selected for they were working in the target areas or related with the project. They were asked to provide information and perceptions on the current existence and performance of the ELCs and its underlying impacts on IP community livelihoods and their social fabrics, tangible and intangible cultural properties as well as the quality and quantity of natural resources in the target sites. Their knowledge of community livelihood vulnerability, resilience, strategies, and interventions of state and non-state actors in the areas and their suggestions for improvement of the situations were gathered as well.

### **2.1.3. Focus Group Discussions**

This method was used to gather collective perceptions of local authorities and CBOs in the target areas on the level, visibility, consistency, and frequency of ELC-related impacts on the local community livelihoods and nature. Three FGDs were carried out, one in each target commune. Commune chiefs, village chiefs, village elderly, and CBO representatives were purposively selected for the FGDs. Each FGD comprised 7-10 people, with attempts for gender and age balance. Visual aids, such as village/commune/district/CPA maps, and other support facilities were used to support the FGDs. Meanwhile, seasonal calendar, resource mapping, livelihood rating, and voting of preferred livelihood programs against community needs and assets were applied to support the FGDs.

### **2.1.4. Household Questionnaire Survey**

This method was conducted with ELC-impacted IP communities in the target areas. A close-ended and open-ended questionnaire was developed based on the documentary review and in consultation with the project staff. Household was used as the unit of analysis; and household respondents were selected using a stratification sampling method. They were asked to provide information and perceptions on their livelihood vulnerability, challenges, strategies, capital assets, adaptation, outcomes, and other relevant situations before and after the existence and operation of the ELCs in the areas nearby their CPAs and localities. In selecting the household respondents, these criteria were considered: household characteristics, age group, occupation, length of stay, ethnicity, gender, location of residence, patterns and differences of livelihood strategies, and different levels of access to SCW's project interventions in the areas.

## **2.2. Sampling of Household Respondents**

The sample size of household respondents was determined based on its proportion of the total household population in each target village at a 95% confidence level. Households in seven villages in three communes (Taveng Leu, Srae Angkrong, and Seda) in three districts (Taveng, Kon Mom, and Lumphat) in the province were proportionately selected. In total, 282 households partook in the questionnaire survey. There were three ELC companies operating in the study areas (Table 2.1 in Appendices B).

The following formula was used to calculate of the sample size out of the total household population in the target areas:

$$n = \frac{N}{1 + N(e^2)}$$

- Notes: n = estimated sample size for the survey  
N = total household population in 7 villages of 3 communes in 3 target districts (Chan and Chouy villages of Taveng Leu commune in Taveng district; Villages 1-2-3 of Srae Angkrong commune in Kon Mom district; Samot Leu and Samot Krom villages of Seda commune in Lumphat district)  
e = accepted margin of error (5% or 0.05, allowing 95% confidence level)

### 2.3. Data Analysis Methods

Both qualitative and quantitative data analysis methods were used in this study. Quantitative data from the questionnaire survey were analyzed using SPSS software and presented as descriptive statistics (such as frequency, percentage, cross-tabulation, and mean comparison). Content analysis and livelihood analysis matrix were used to analyze qualitative data from the KIIs and FGDs. Key themes were constructed, coded, and analyzed for common and divergent patterns across the different types of respondents. Direct quotations were presented where relevant and appropriate. Triangulation of primary and secondary data, and participant observations, were conducted in analyzing the qualitative and quantitative data.

### 2.4. Limitations of the Study

This study contained certain limitations. First, attempts to interview all relevant representatives of the local authorities and CBOs in the target districts were unsuccessful. Only a number of them were interviewed. Second, only the representative of one of the three ELC companies in the target areas was accessible for the interview. Third, this study employed a self-reported questionnaire survey with the villagers, which could encounter under- and over-reporting biases. Fourth, the impacts of the ELCs on local livelihoods were examined based on the villagers' self-reported information and perceptions, which could have recall pitfalls. Finally, the environmental impacts were derived from the villagers' perceptions and the local authorities and CBOs' information. Scientific assessment before and after the ELC investments was beyond the scope of this study. Nevertheless, participant observations and verifications with available secondary data were conducted to validate the primary data where appropriate. Ergo, the findings of this study should be interpreted and used in light of these limitations.

## CHAPTER 3

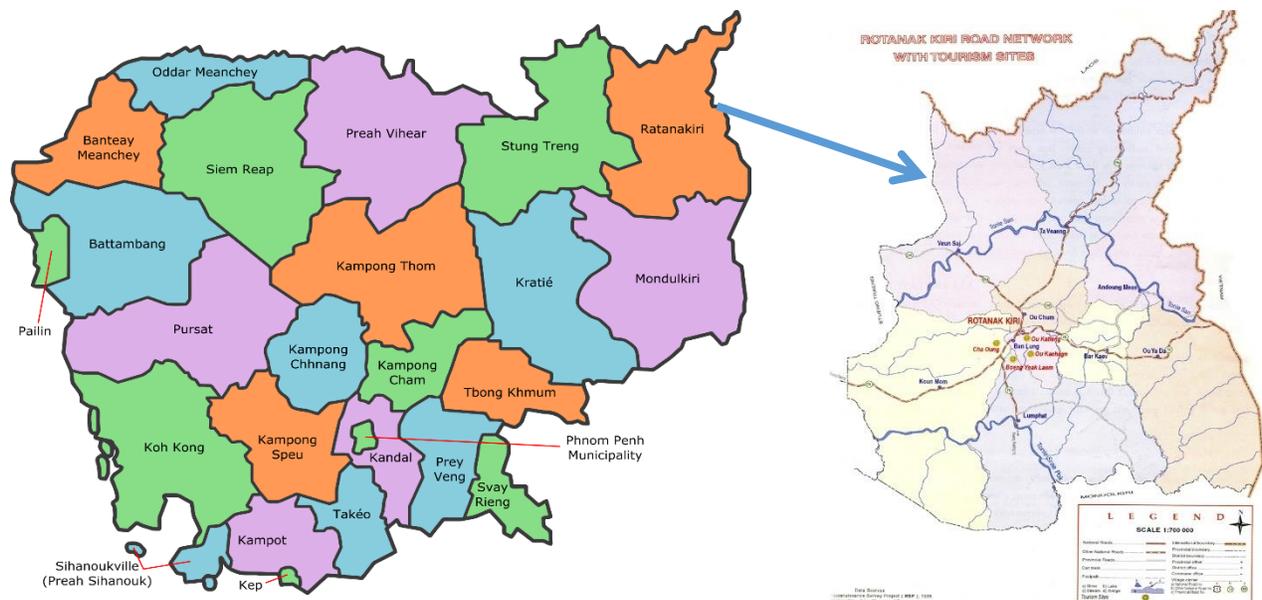
# STATUS OF INDIGENOUS COMMUNITY LIVELIHOODS IN RATANAKIRI

### 3.1. Profile and Characteristics of Ratanakiri Province

Ratanakiri province is located in the northeastern highland of Cambodia, which is bordered by Laos to the north, Vietnam to the east, Mondulkiri to the south, and Stung Treng to the west. It takes about 588 km from the capital city of Phnom Penh along the national road 6A, 7 and 78 to reach this remote province. The total land area of Ratanakiri is 10,782 km<sup>2</sup>, comprising of 8 districts, namely Kon Mom, Lumphat, O'Yadav, Bor Keo, O'Chum, Veun Sai, Andong Meas and Taveng, 46 communes, 243 villages, and one municipality, Banlung. There are two major rivers, Tonle Sesan and Tonle Sre Pok, flowing across this province forming unique livelihoods for those living nearby and along these rivers.

According to Neth, Sour, and Va (2011), Ratanakiri shares a large part of two important protected areas (PA) – Virachey National Park and Lumphat Wildlife Sanctuary with Stung Treng and Mondulkiri respectively. These PAs are covered with evergreen forest, grassy glades, riverine habitats and wetlands, which provides habitats for various types of endangered species including tiger, elephant, banteng buffalo, Asian wild dog and douc langur. Furthermore, the PAs provide breeding grounds for sarus crane (RGC, 2008). This province is also a catchment area of two major Mekong tributaries – Sesan and Sre Pok.

Figure 3.1: Map of Cambodia and Ratanakiri Province



Source: <https://www.google.com/search?q=Map+of+Ratanakiri+Province>

According to the Ministry of Planning (2013), with an annual population growth rate of about 4% adding to an increase from 150,466 people in 2008 to 183,699 people in 2013. The density of population within this province is 17 person/km<sup>2</sup> in 2013. Out of the total 8 districts in Ratanakiri, Taveng contains the lowest population (6,057 in 2008) compared to the highest proportion in Banlung (23,888), where there is the core economic zone of the whole province. (Tao, 2014; NCDD, 2014). However, if reflected with statistics released by UNDP's Poverty Index Map in 2011, Ratanakiri was the poorest province in Cambodia with the most poverty rate of 29% followed by Mondulakiri (26%) and Preah Vihear (25%). According to Oxford Poverty and Human Development Initiative in 2013 and ADB's Cambodia Country Poverty Analysis in 2014, Ratanakiri and Mondulakiri had the highest score (0.409) of multidimensional poverty index followed by Stung Treng (0.369), Preah Vihear (0.369), and Kratie (0.309).

According to Ratanakiri Provincial Department of Rural Development, there are currently nine tribes of indigenous communities with about 17,916 households residing in this province. They are Tumpoun, Jarai, Kachok, Prov, Kavet, Kroeung, Lun, Pnong and Kuoy, and they represent approximately 70% of the total population in the province. These highland tribes have their own customary NRM systems, as well as rich cultures and distinct economic and livelihoods strategies (John & Irwin, 2005; Sok, 2002). The introduction of new technology in NRM and the rapid development of free market economy have detrimental impacts on their lives (John & Irwin, 2005; Sok, 2002).

Most people living in Ratanakiri province are farmers. They grow and cultivate rice, corn, mung bean, cucumber, pumpkin and other daily used crops. Besides, people are increasingly adapting strategic cropping and cash crop cultivations, such as rubber, cashew nut, pepper, cassava, etc. At present, there is an increasing concern over social, cultural and environmental destructions that may subsequently encroach upon traditional livelihoods of indigenous people, alienate their culture and identity, and disaffect poverty reduction strategies in the province as well as northeastern region as a whole. Local (IP) livelihoods are being significantly impacted by land reform and invasion by private investors, newcomers, and lowlanders or in-migrants from all over Cambodia.



*Local cottage near ELC company in Chan village (2016)*



*Rural village-scape in Samot Leu village (2016)*

## 3.2. Livelihood Vulnerability of Indigenous Communities

This part highlights four critical livelihood problems – livelihood shocks, livelihood trends, livelihood seasonality, and livelihood opportunities – faced by indigenous communities in the study areas. Different types of stakeholders perceived these problems during key informant interviews, commune-level consultations and discussions, semi-structured household questionnaire surveys.

### 3.2.1. Livelihood Shocks

The results from key informant interviews and commune-level consultations indicate that most IP communities in the project coverage areas – Taveng, Kon Mom, and Lumphat districts, are vulnerable and poor because of:

1. Poor resources / literacy or knowledge / skill / technology in agriculture
2. Traditional cultural practices, mindsets and attitudes of IP which are hard to adapt to modern economy and economic development induced changes to their lives
3. Traditional mobility of IP's agricultural activities (rice production, home-gardening and animal husbandry)
4. Ineffective management and control of epidemic diseases on IPs & their raised animals
5. Increasing land sale and land speculation in the areas where IP communities reside
6. Impacts of large scale economic development plans in the area as well as province and region (i.e. CLV) as a whole
7. Limited IP community resilience to adapt to and mitigate climate change impacts (drought, flood, epidemic diseases, and declining soil quality) on IP rural production and livelihood system

Conflicts over land and forest resource access and use were consistently perceived by KI interviewees to have increased not only between IP communities and ELC companies in the study areas, but also between community members. Land clearance and forest cutting in community-based land and forest management areas, especially by CBO representatives (i.e. in the case of CPA in Samot Leu village, Seda commune, Lumphat district), had made the majority of community members upset and consequently started to disregard community by-law by poaching and clearing forestland anarchically for personal interests.

Such a phenomenon happened as a result of limited or no consultation between ELC companies and IP communities as well as among IP community members. Also, it is triggered by the lack of knowledge about related laws and regulations (i.e. land law, NRM law, forestry and fishery laws, mining law, and other land and NR related regulatory frameworks) among ordinary IPs as well as sub-national administrations (at village and commune levels) and CBO representatives. Conflicts were also attributed to the slow process of communal land titling (CLT) in the area, and thus leading to continuous loss of land and natural resources, which were regarded as main sources of local livelihoods. This impediment had triggered IPs to initially wish to have their land registered and titled for their private property rights as a way to secure their assets amidst current complex land administration and registration.

A representative of the concerned SNAs said,

*“... mostly ELCs are approved by the national authorities. SNAs and responsible line departments have no voice to give consent, even in planning process. This lack of information sharing usually provokes land conflicts over overlapped areas.”*

A local authority in Seda commune said,

*“... we have more conflicts with ELC companies in the area. Right now, we are having an unresolved conflict with an ELC operating in Samot Leu village. We have claimed many times to the provincial authority as well as responsible ministries. Although a government representative from the Ministry of Interior came here to resolve our conflict with the ELC company which resulted in joint agreement between the two parties, that company never respect the agreement.”*

An interviewed CBO representative in Seda commune reported,

*“... during the CLT process, Chief of IP community encroached on some parts of communal land and claimed unofficial ownership for its use. Community members have since then become hopeless and disappointed with CB-NRM efforts and as a result, more people are clearing forestland for their personal benefits. Therefore, it has caused a delay in communal land registration and CLT.”*

KI interviewees also perceived that the level of indebtedness among IP was widespread and increasing rapidly due to their limited abilities to repay debts together with their inadequate knowledge and understanding of complex policies of concerned banking and micro finance institutions providing loan services in the area. In addition, the lack of training programs on family planning and business planning that could be supported by concerned banking and microfinance institutions as well as NGOs helping IPs in the studied districts had also limited IP's knowledge to use loans in an effective manner for their livelihood improvement through self-employment and increased agricultural productivity. Mostly people spent their loans for agricultural production and daily household expenses followed slowly by their purchases of living commodities and materials and their expenses for social events, including weddings and funerals.

An NGO interviewee said,

*“... nowadays, IP borrow more money from the banks and MFIs. I am afraid that they do not know how to calculate interest rate, how to use money for improving their production and livelihoods. The more they borrow, the more they are prone to the loss of their properties as they normally use them as collaterals with the banks or MFIs.”*

The absence of appropriate market mechanisms to promote local IP markets as well as to find relevant markets for IP agricultural produces was considered as another major livelihood problem for local IP living in Ratanakiri province. This issue was followed by the problems caused by the influx of semi-permanent and permanent in-migrants / lowlanders and private foreign investors into Ratanakiri in search for available arable land for agricultural and agribusiness production as well as for job opportunities mainly in agriculture and extractive industries (i.e. mining).

The current development and regional economic integration process without proper FPIC (free, prior and informed consent) mechanisms and regard of IP livelihood needs and culture had brought in new livelihood challenges onto IP's traditional livelihood system. KI interviewees also indicated the high prevalence of cultural degradation and alienation among IP communities at present as another problematic livelihood shock for IP communities in Ratanakiri.

A local villager said,

*“... we cultivate cash crops to sell for money. Our people follow one another ... sometimes we just do what we are informed to grow, but we do not know whether they are profitable as prices are always changing, and so are our crop systems. Before growing, the price of agricultural produce is high, but after harvesting it becomes much lower. Sometime we could not even cover our production cost.”*

A key informant of one NGO said,

*“... I see that IP youth do not want to work as hard as their forefathers. They are more materialistic and often want to earn quick money. They have changed a lot ... and I am worried about that.”*

The results from semi-structured household interviews pointed out major problems currently affecting livelihood security of IP communities in Taveng, Kon Mom, and Lumphat districts of Ratanakiri province (Table 3.1). They included the followings:

- Natural disasters (82%), of which drought (55%) was considered to be the severest natural disaster in the target sites followed closely by flood (40%), forest fire (40%), and rainstorm (33%)
- Insecure land tenure mainly caused by time-consuming communal land titling process (70%)
- Rapid decline in land and natural capital stock for local consumption (67%)
- Shrinking livelihood sources (64%) and land loss triggered by ELC development (63%)
- Conflicts over land and natural resource access and use (58%), and
- Over-exploitation and misuse of natural resources (49%) by both locals and outsiders

The occurrence of natural disasters was perceived by most IP households in Taveng (97%) and Kon Mom (89%) district. Local people in Lumphat district (69%) were found to be less prone to extreme weather hazards. Damages caused by natural disasters ranged from the loss of properties to soil erosion and loss of human and animal life. Often, these major livelihood problems were interlinked and simultaneously caused severe threats to IP livelihoods apart from harming the local natural environment.

Households in Taveng district were the most vulnerable in almost all cases. However, households in Lumphat district were facing the most insecure land tenure (72%), because land conflict between ELC companies and villagers in this area had not been settled yet, and thus led to a delay of CLT process. Almost half of those selected household (45%) perceived that they had limited access to and equitable use of arable land for agricultural production in Lumphat district as well. When disaggregated by gender, female household respondents were more concerned about all major threats to their families and communities.

A female NGO representative said,

*“... the weather this year is terrible. Since I was young, I haven't seen many natural disasters like these last years, especially drought. Water scarcity and prolonged drought have caused people to buy water, let alone their crops and animals suffer damage and / or death.”*

The results from commune-level consultations and discussions showed that IP communities in the three target communes of Taveng, Kon Mom, and Lumphat districts were very vulnerable to current living and development impacts in the region. Their vulnerability was strongly associated with:

- Limited livelihood capabilities: shrinking livelihood assets, limited skill and knowledge, limited protective rights given by state and sub-national authorities in modern society, and limited participation and access to information
- Nature-based subsistence livelihood and conventional food production system: limited knowledge and technology, lack of support facilities, lack of available or reserved arable land, waning soil quality / fertility, limited financial capital asset to invest in agriculture, and decreasing labor productivity as IP youth increasingly do not want to be rural farmers
- Limited knowledge of food production and strategic cropping techniques and lack of market mechanisms: i.e. market information, price fluctuation, strong dependence on middlemen, etc.
- High agricultural production cost versus low profitability of selling local produces to middlemen who normally controlled market demands and price fluctuation
- Limited livelihood diversification and strategies
- Very limited resilience or adaptation ability to current natural and human-induced impacts;
- Adverse land use change impacts on IP livelihoods
- Insecure tenure of and dilapidated access to land and natural resources among IP communities

Despite these impediments, IP communities in the target districts were encountered to have also provoked negative change upon their own community-based natural resource management regime (i.e. CPA, CF, and CFi) and natural capital stock, especially by resorting to illegal activities in the areas. This argument could be comfortably proved by local involvement in catching fish during the drought period in the reserve deep pits along Sesan River in Taveng district and young IP's rapid movement to commit illegal logging and forestland clearance for personal gains in Lumphat district.



Wood stacks cut my local households in Samot Krom village, Lumphat district (2016)



Wildlife trafficking by a local household in Village 1, Srae Angkrong district (2016)

### 3.2.2. Livelihood Trends

This part focuses mainly on resource trend, the trend of people's attitude and behavioral manner towards land and natural resource use, and the trend of IP community livelihoods amidst current change of their community system and livelihood capital stocks.

The results from KI interviews and commune-level consultations denote that the declining land and natural resources in the three target districts have made IP communities suffer from increasing livelihood loss. Resource availability for community ownership and utilization is declining at a rapid scale and uncontrollable speed, let alone main livelihood sources and socio-cultural fabrics of IP communities in the areas become fragmented. A number of key factors leading to resource depletion include:

- Unsustainable exploitation of land and natural resources by ELC companies and other large scale economic development activities
- Continuing conversion of natural forestland into agricultural and agro-industrial land by ELC companies and the elite groups
- Poor law enforcement
- Increasing market demands for agricultural land and commercial timber
- Increasing local involvement in illegal activities due to their growing disappointment and distrust with government and non-government interventions to help save their areas
- Unsophisticated land use planning in the areas and RTK province as a whole
- A growing interest among IP to register private land property that is seriously affecting the traditional collective land management in the areas

Table 3.2 (Appendix B) shows that almost all major natural capital assets of IP communities in the target districts were less abundant or had been dramatically extinguished by over-exploitation. The majority of households reckoned that this dramatic change had sequentially impacted on the quality and quantity of natural landscape (98%), forests and forest cover (97%), NTFPs (96%), wildlife (96%), natural habitats and biodiversity resources (96%), and fishery resources (92%). The issue of natural resource depletion was critical in Taveng district, and was

even more critical in Kon Mom (59%) and Lumphat (52%) districts. In total, NTFP resources in Kon Mom district (58%) had declined at a fastest speed closely followed by those in Taveng (54%) and Lumphat (52%).

The results from observation revealed that a current trend of IP community's attitude towards land and resource consumption was grave at present. Since people had limited capabilities to enhance their livelihood strategies to support their livings, increasing number of IP households, especially those residing in Samot Krom village of Lumphat district, had adapted illegal logging and commercial timber / wood transporting for selling to logging companies in the area. Some of them even transported wood / timber to Vietnam through some corridors in O'Yadav district.

Wood and timber cutting, selling, and trafficking have become one of the common income generation activities in the selected districts. Resorting to the current system controlled by local patrons and external elite groups was perceived to have supported local IP households in temporarily securing their earnings for daily cost of livings as well as for saving. Such a behavioral change happened as a result of increasing mistrust of IP in current natural resource management efforts by the government and non-government stakeholders. The observation done during fieldwork period proved that IP communities gradually disbelieved that corruption, nepotism, elitism, deforestation, and misuse of land and natural resources by ELC companies and outsiders could be resolved immediately. Most local respondents elucidated that their lives would not be better off, if they did not resort to the system of client-patron relationship. Other household respondents were much concerned about sole elite capture, and thus provoked them to take quick advantage of current resource exploitation situation to save their livelihood loss. It was learned during the interviews that the locals could earn between USD 25 – USD 30 from selling one kilogram of rosewood, and between USD 70 – USD 80 from trafficking and selling high commercial wood per trip to the middlemen (usually they could transport and sell wood / timber two times per day from the forest).

A key informant said,

*“... IP have lost their lands, mountains, grasslands, and forests due to current development. Now, they have to adapt new ways of living on permanent plots of land allocated by the government. I see they are knowledgeable of strategic cropping, but have no idea of market economy. I am always concerned about their traditional land and natural resource based livelihoods. More and more companies are coming and they make little improvement to the area ... usually they exploit IP resources, and now IP are following them in cutting down trees and hunt animals ...”*

A provincial line department representative said,

*“... IP sell their shifting agricultural lands in the communal land area, especially to immigrants. Some IP say those lands are unfertile, some say it is difficult to prevent people's grabbing, and some sell them just for buying modern materials.”*

The study also found that the current IP livelihood shift from slash and burn agriculture to crop farming and strategic plantation on permanent plots had emerged as a result of continuing loss of forests and related resources, land speculation and increase in land price, increasing demand

on land for strategic crop cultivation, implementation of RGC's related laws/policies, and rapid population growth. This shift also led to a change of IP rights over traditional livelihoods and the use of land and natural resources. The results of KI interviews disclosed that over the past decade IP communities had often been convinced, induced or deceived by outsiders to sell their lands in exchange of luxury goods or money to address their basic needs.

At present, after having experienced intense decline in land and forest resources for future use, most IP did not want to sell their lands anymore. This was because they were afraid of losing land-based livelihood activities to support their livings. However, IP's land ownership was still uncertain due to their increasing interest in borrowing money from potential money lenders (36%), such as commercial banks and MFIs, on a collateral base, which could gravely result in land loss when IP have to sell off their lands in order to comply with repayment requirements (Table 3.10 in Appendix B).

### **3.2.3. Seasonality**

The seasonal changes of climate and water hydrology had a big influence on livelihoods, food security, and health condition of IP communities as well as on the selection of their livelihood strategies in the target districts. The fluctuation of flood and drought varied alongside variation of rainfall made local IP suffer, especially those who did not have enough adaptive capacity to deal with changing living and natural environments in the areas.

The results from commune-level consultations and household surveys showed that IP communities were prone to natural disasters, diseases and food and water shortage over the year round. Their susceptibility was not seasonal. Table 3.3 in Appendix B shows that although 90% of the total households interviewed had three meals per day, 30% of them had seasonally experienced food shortage or food insecurity. Households in Taveng district were the most vulnerable to this seasonal food shortage (59%), and 70% of the experienced households had limited or no food / rice to eat at least 1-2 times a year (18% for all districts, and 70% just for Taveng district alone), mostly before harvesting or during the rainy season. The situation in Taveng district was the most critical one because of rapid decline in biodiversity resources caused by hydropower dam in the upstream region and the disappearance of NTFP and other by-forest products caused by land expansion of ELC company over forestland in the area.

Dry season months (January to April) and the previous drought period (February to early June 2016) were perceived to be one of the most vulnerable time for all households in the target districts, especially in Taveng where water system had also been affected by the hydropower dam in the upstream area of Sesan River. While flood (40%) was a common natural disaster in RTK province, drought (55%) was recently considered as the most severe problem, causing increasingly livelihood vulnerability in the study areas (Table 3.1 in Appendix B).

Local households were found to have experiences with rainstorm or tornado in similar months. Rainstorm was reported to usually happen in the rainy season (between September and early November). Apart from inadequate food stock, IP communities in the target areas encountered water scarcity during the driest months starting from March through to early May. To deal with food and water scarcity, people involved both on-farm (rich cultivation, mixed cropping /

vegetation, and some livestock rearing) and off- farm livelihoods (wage labor in nearby agro-industrial plantations) or borrowed money from local moneylenders and / or micro-finance institutions (i.e. AMK, PRASAC, AMRIT, STHAPANA, Village Bank, ACLEDA, etc.).



Flood/drought prone Sesan River in Taveng district (2016)



Water shortage in Samot Krom village (2016)

### 3.2.4. Livelihood Opportunities

Conventional livelihoods (i.e. shifting agriculture, subsistence farming, and NTFP collection) of IP communities in the target districts were slowly replaced by alternative livelihood opportunities, such as strategic cropping and off-farm labor work, etc. as part of people's adaptation to current market economy. Despite its economic benefits, such an adaptation strongly affected IP communities in many ways, especially when they were not capable of adapting or integrating themselves into modern economic system. On the one hand, they did not have adequate knowledge and skills to cope with market-oriented cash /strategic crop production system, to work in agri-business fields or the service sector, while their limited financial capacity hindered them from setting up and managing their businesses in an effective manner. On the other hand, alternative livelihood options were perceived by local households and key informants to be contradictory to their socio-cultural fabrics, especially in a way that IP continued to judge time-specific and intensive labor work performance in related plantations as improper to and against their rights and freedom of work.

A local authority in Samot Leu village said,

*“... ELCs give few jobs. However, people do not want to work for them because they are busy working in their fields.”*

A representative of IP community in Samot Krom village said,

*“... local IP villagers are not interested in labor works with ELC companies. We do not want to be workers because they do not give us bright future. We want freedom of work, and we want to serve ourselves.”*

Fluctuating market prices and demands on local agricultural produces and commercial NTFPs had also made IP become more vulnerable. Usually, most of them depended strongly on middlemen or merchants (75.5%), who came to buy produces in their villages (Table 3.14 in Appendix B). Prices offered by middlemen / merchants were reportedly low or much lower than market prices. The study found that local people's economic benefits from working on farm and in deep forest had been ripped off by middlemen or local merchants, who were more knowledgeable of updated market information or were proficient in running or negotiating businesses with local IP.

A local household in Samot Krom villages, Seda commune of Lumphat district said,

*“... all villagers in Samot Leu and Samot Krom had sold off their cassava to outside middlemen just for 250 – 300 Riel (0.10 USD) per kilogram. We just realized that the price offered by them was much cheaper than the market price at Bor Keo Township, which was offered from 650 – 700 Riel (0.20 USD) per kilogram. But it was just too late for us to realize this after sale, and it was just 19 kilometers from our villages. We wished we were informed about it beforehand.”*

Another emerging opportunity for quick moneymaking amongst local IP was illegal logging and forestland clearance for selling to outsiders. It was hard to believe that IP communities could adapt this practice as it contradicted their socio-cultural norms, especially their decade-long involvement in community-based natural resource management and conservation projects supported by both government agencies and environmental NGOs working in their areas. This economic activity had gained its momentum and popularity among IP youth, and it was considered as a major alternative livelihood source to generate quick income in the short-run. According to in-depth interviews with CBO representatives and local household respondents, people realized that this livelihood opportunity was unsustainable and destructive for their forest and natural capital stock, especially common pool resources, but they had no better choices at present. Besides, they perceived that forests and forestlands would incessantly vastly destroyed if the business-as-usual scenario was still exercised without any sound interventions from responsible bodies.

A representative of provincial line departments reported that,

*“... local people had been suppressed by quick land loss and rapid decline in forest and natural resources due to ELCs and poor law enforcement. Nowadays, most indigenous youngsters went to cut commercial woods / timbers, transport or sell them to nearby companies and / or middlemen. They liked this career as it gave them quick money so that they could save their families and buy luxurious things in exchange. Following the execution of Directive 001, most households were given formal right to own their land properties. Yet, some IP households sold them to in-migrants, while others had encroached on new land to claim their ownership and sometimes to sell to outsiders. This problem had become another challenging task for local authorities and sub-*

*national administrations to tackle and report to the national level for immediate interventions.”*

An environmental NGO staff said,

*“... local IP were worried about the loss of land and natural resources. They had no solutions to stop illegal logging, forestland clearance, and social intimidation by ELCs. I thought maybe because they knew they could do nothing more, some of them started to cut and transport high valued timbers or woods to keep for their house construction and / or selling to local merchants for quick income.”*

A local household respondent in Samot Krom village claimed that, *“... I knew it caused the destruction of forest. But my family had small land, and we saw other villagers and in-migrants were doing the same. It was difficult to earn money, and only this job could feed us well at present.”*



Wood transporting in Taveng district (2016)



Forestland clearance in Seda commune (2016)

### **3.3. Capital Assets of Indigenous Community Livelihoods**

#### **3.3.1. Human Capital Assets**

##### ***Profile of Household Interviewees***

The average number of household size in the study area was 5.4, 5.5, and 4.5 members in Taveng, Kon Mom, and Lumphat districts respectively. However, of total household respondents, male was the dominant sex proportion (54%). The average percentage of female household interviewees was 26% in Taveng, 63% in Kon Mom, and 50% in Lumphat districts. 78% of the interviewed households were IP households with Tumpoun as a majority of the respondents followed by Kroeung, Khmer-Lao, Prov, Phnong, and Jarai. Each household has an average of 2 to 3 male and female children. (Table 3.4 in Appendix B)

According to Table 3.5 (Appendix B), education statistics of IP household communities in all

selected districts showed a low level of human development index in Ratanakiri. More than half of the household respondents received primary education or lower, while 14% and 20% of male and female members had obtained no education respectively due to poverty and limited teaching and learning facilities and educational intervention programs in the areas.

### **Priority Livelihood Sources and Its Diversity**

Households were also asked to list down and prioritize their livelihood sources in the areas. Table 3.6: Multiple responses show that the most commonly practiced livelihood activities among local households interviewed was rice farming on permanent plot (80%) followed by other farm-based and off-farm occupations. These included livestock raising (53.5%), cassava cultivation (47%) and other strategic cropping (cashew nut: 29%, corn: 12%, mung bean: 10%), casual wage labor in agro-industrial plantation (21%), shifting cultivation (19%), fishing (17%), forest and NTFP harvesting (17%), and others. Usually, agricultural produces from strategic cropping were mainly for sale, compared to rice and homegrown vegetables and raised animals that were mainly for household consumption. Potential economic drivers for increasing household cash income in the target areas were strategic cropping, regular wage or paid labor, and forest products and NTFPs harvesting including logging (Table 3.6 in Appendix B).

The average annual cash income from all livelihood sources of all the interviewed households was approximately USD 1,036. This average income excluded non-cash income from a variety of sources, such as homegrown mixed vegetables / cropping, raised animals, subsistent rice cultivation, and NTFP collection for daily survival (Table 3.6). The level of annual income was fluctuated depending on the location of settlement and proximity to township, social and public services, and the heart of natural resources, particularly forest and non-forest products.

When asked to prioritize top three livelihood activities to generate income and support their household economy, household respondents reflected that rice farming on permanent plot (49%) was the most important livelihood sources followed by strategic cropping (30%), and livestock / animal rearing (18%). Table 3.7 in Appendix B also illustrates that among the top three livelihoods, strategic cropping (48%) and livestock rearing (43%) had produced similar amount of yield while rice cultivation (35%) had decreased if compared to last year. However, the majority of interviewed household respondents, regardless of district, provided a negative projection of growth for all livelihood activities for the next year. This was mainly due to increasing natural disasters, especially flood and drought in the areas, which harmed their production processes and the lower prices of agricultural produces in the market.

Table 3.8 shows that 43% of the interviewed households perceived that their livelihood income was able to meet their household needs, while 21% reported that it was more than enough to address their basic needs. This situation was pretty common in all target districts. However, about 30% or above of the households reported insufficiency of their income to support daily livelihoods, and were very much concerned if extreme weather hazards (mainly drought) and decreasing market prices for their produces would continue to grow over time.

## **Health Condition**

The results from KI interviews and commune-level consultations and discussions showed that local people in the target districts and RTK province as a whole were susceptible to waterborne and other curable diseases (i.e. diarrhea, respiratory diseases, malaria, dengue fever, viral infection and stomach ache, etc.). Though the occurrence and dispersion of diseases were found seasonal, the local governments did not have enough capacity to handle them due to inadequate budget, limited and unsophisticated health facilities, and insufficient resource persons (medical doctors and nurses). The absence of good public health services and reliable private health treatment had caused IP's health issue become more critical. As a result, it affected the quality of human capital in the communities. It was reported that seasonal health issues often caused more problems to women and children because women did not have a proper health check-up, while children did not receive good health care services, especially in relation to hygiene and sanitation.

According to Table 3.9, people regarded local health care center as the most common health facility (62%) in the areas followed by district-level referral hospital (36%), private clinic (28%), and province-level hospital (21%). However, some local communities still relied on witch doctors (15%) and medicinal plant collection (9%) to treat their illnesses. Although there were limited medical facilities and services in the areas, the majority of households interviewed from the three districts perceived that the current medical treatment was more or less effective (91%). However, most local villagers requested for more sophisticated health services in both quantity and quality.

### **3.3.2. Financial Capital Assets**

#### **Existing Financial Stocks**

As shown in Tables 3.6 and 3.7, the main livelihood and income sources for local communities Taveng, Kon Mom, and Lumphat districts were rice farming on permanent plot, strategic cropping, paid labor work, livestock rearing, and forest product (high valued wood / timber) and NTFP harvesting and selling. Their financial stocks were derived from cash and non-cash income sources and household properties (houses, lands, animals, daily consumption facilities, and agricultural instruments, etc.). Livestock were buffaloes, cows, pigs and chicken and were usually kept for household consumption, on-farm work, and religious sacrifice. Rearing livestock was like saving money indirectly. This had especially benefited IP communities a lot in terms of addressing their immediate livelihood needs. Further, it provided food for them during special occasions, such as religious rituals and wedding ceremonies.

Table 3.6 shows that 21% of the total households interviewed also depended on additional seasonal income sources from working in agro-industrial plantations, and 46% of them in Taveng district alone has considered this occupation has the ability to help them accumulate their earnings during off-farm season. This inevitable interest among local people, especially IP youth, highlighted an increasing significant behavioral change and mindset towards their integration into modern economic systems.

## Loans and Indebtedness

Another financial means, which was increasingly practiced by local households in the three districts, is to borrow money from banks (i.e. ACLEDA) and / or micro finance institutions (i.e. AMK, PRASAC, AMRIT, Village Bank, etc.). Money borrowing was considered helpful when dealing with immediate financial shock for medical treatment, weddings, funerals, etc. Some villagers wanted to increase financial capital from cash crop or strategic crop production. Since strategic cropping (i.e. pepper, cassava, cashew nut, rubber) required sufficient capital investment, local people had to get loan to address high production cost, including for buying machinery, fertilizer, etc. Due to climate change and unstable market demand and price, local borrowers encountered more financial risks, especially in repayment, and they were found to be more prone to the loss of their properties being caused as collaterals at the bank or MFI.



Cashew nut nursery in Samot Leu village (2016)



Pig raising for income accumulation in Srae Angkrong commune (2016)

Table 3.10 shows that indebtedness is an emerging issue in the study areas. 36% of the interviewed households had borrowed money from the bank or MFI, and about half of them (42%) often encountered many difficulties in repayment, especially among those living in Taveng (60%) and Kon Mom (48%) districts. While more people in Taveng district borrow money from friends and relatives (70%), local households in Lumphat and Kon Mom districts intended to approach commercial banks and MFIs, because both districts had more financial institutions, while Taveng district is located far from urban center and less financial institution. Borrowers from Taveng district (60%) had the most difficulty in repayment followed closely by those in Kon Mom district (48%). The followings were reasons leading local IP to increasing indebtedness:

- High production cost of strategic cropping or cash crop cultivation
- Low and seasonal income
- Lack of agricultural land, capital, knowledge and technology for increasing agricultural productivity
- Fluctuation of prices for agricultural produces
- Decline in land and forest resources
- Disequilibrium between earnings and expenses
- Decreasing yields due to prolonged drought period

Table 3.11 presents average monthly expenses and list of priority expenses by local households, surveyed in Taveng, Kon Mom, and Lumphat districts. In total, the most common average spending was USD 107, and 50% of them spent from USD 50 to USD 200 monthly. Multiple responses in Table 3.11 reveal that local households mostly spent money for daily expenses, such as food (73%), followed by payments for health care services or treatment (34%), purchase of agricultural instruments / machinery (22%), social events (22%), children's education (20%), and buying clothes (19%). Households in Taveng districts spent most money on health care (43%), children's education (31%), and buying clothes (26%), while those in Lumphat district spent mostly on food (78%), social events (25%), and buying materials for agricultural production (24%). In Kon Mom district, daily expenses included food (66%), health care (29%), children's education (20%), buying clothes (19%), and buying materials for agriculture (22%).

### 3.3.3. Physical Capital Assets

Table 3.12 shows that most of the basic public and social infrastructural services in the target districts had been improved (houses: 85%, roads: 94%, public buildings: 75%, technology use for agriculture: 57%). The variation of gender-based perception showed that male respondents had more positive reaction towards such improvement than females because men were exposed to outside news, while women usually stayed at home to take care of their family and children, animals and attend to household chores. Although the typical architectural style of indigenous house building had been mainly transformed into Khmer-style design, IP households perceived that their shelters became more permanent and suitable to the geographical and climate conditions of the areas (Taveng: 79%, Kon Mom: 84%, Lumphat: 88%).

The majority of local households recognized a significant improvement of infrastructure - schools, hospitals, and other public buildings (Taveng: 67%, Kon Mom: 70.7%, Lumphat: 82%) in the areas. However, the number and quality of the resource persons (teachers, nurses, medical doctors, and local authorities) were still deficient to improve the quality of social development and community welfare in the areas. The existence of health care centers and services as well as sophisticated facilities was perceived to be very sporadic in the three districts, especially in the remote Taveng district. The shortage of such services in the areas had made IP communities vulnerable to even curable diseases throughout the year.

Usually, transport means for inter- and intra-villages as well as between residential area and farmland (*Chamkar*), village and market, is mainly done by own motorcycles or by walking for poor families. Accordingly to Table 3.12, road conditions were much improved similarly in Taveng district (95%), Kon Mom district (93%), and Lumphat district (93%). Most IP households reported a similar experience with difficult bumpy and muddy roads in rainy season, except for those living in Lumphat. Table 3.13 explains that very few of local households use motorcycle (15%), walking tractor (*Kor Yun*) (2%), pick-up car (3%), or walked on foot (3%) to transport their agricultural products to markets. Due to accessibility and lack of transport means, most households decided to sell their produces on cheap price to merchants (75%). For example, the distance between Seda commune to Bor Keo district is around 19 km with good road condition. Because most producers in Samot Leu had no tractor or truck to transport their products, they sold their cassava for 250 to 300 Riel (0.10 USD) per kg, while the cassava price

at Bor Keo district was 650 to 700 Riel (0.20 USD) per kg. For some products such as rice and other non-cash crops, some 39% of local households interviewed just kept them for household consumption.

When asked about the status of their agricultural production, the majority of household respondents in Lumphat district (65%) stressed some improvement in technology and facilities employed mainly in farming. For example, the use of sophisticated facilities, such as ploughing machines (Kor Yun and tractor), and farming techniques (usually trained on SRI, animal husbandry and tending by local NGOs with partial participation from Provincial Department of Agriculture) were encountered during the fieldwork. However, such improvement was experienced mostly with better-off households, model farmer groups, and those receiving opportunities to attend technical trainings locally and outside their areas. The quality of knowledge of local people and authorities had been moderately improved, most specifically in Kon Mom district (69%) due to its location along the national road and knowledge and technology transfer between mixed Khmer-Lao ethnicity and Khmer in-migrants living in the area.



*Improved road and school quality in Seda commune (2016)*

*Tractor use by local IP in Samot Krom village (2016)*

The majority of local households reported that if compared to other social and public services, the supply of public electricity (50%) and clean drinking water (42%) did not make any remarkable progress (Table 3.12). Although 94% of the people reported their improved access to electricity consumption in the area, only battery-spawn electricity (91%) was mostly accessible (Table 3.13). Other electricity sources from generator and solar power were available, yet minimally consumed by few households in the area due to expensive cost for solar power installation and maintenance. Observably, a small number of households interviewed still used kerosene lamps at night. Female respondents were more concerned about electricity power than the male ones, when disaggregated by gender. Although underground and clean puddle water was consumed by the majority of local households in the area, the quality of water was still questionable, sometimes poisonous and contaminated due to the change of waterway and water volume (during drought period) and water pollution caused by the use of chemicals in agro-industrial plantations in the upper regions. Impacts of use of unclean and

contaminated / polluted water brought about waterborne diseases and sometimes caused death to people and animals in the areas.

### 3.3.4. Social Capital Assets

This part refers to social capital assets of local households in Taveng, Kon Mom, and Lumphat districts mainly as social inclusion and connectedness, trust and relationship of trust, participation and networking.

Table 3.15 indicates that the most common means of access to social information (69%), economic and market information (62%), political information (83%), and environmental information (76%) in the area was done through village and commune meeting. Word of mouth was considered as the second most commonly used tool for distributing information to the locals followed reluctantly by NGO meeting / project for environmental (30%) and social (21%) information sharing and families / friends / relatives for political (14%) and economic / market (13%) information sharing. In Taveng district, word of mouth and NGO meetings received a different popularity for being the most practical means of exchanging political information and environmental information respectively. Information sharing through word-of-mouth and village / commune meetings is still popular among rural IP communities in the studies areas, let alone other means being restricted or dysfunctional in attracting the locals to participate proactively in development and conservation processes for the betterment of their society and natural resource management.

Household respondents were also asked about their experience with local participation in any substantive planning, development, and implementation processes (Table 3.16). The high proportion of household respondents in all the target districts, regardless of gender and ethnicity, had been invited to participate in or informed about community development plans mainly in relation to management and conservation of land and natural resources and livelihood improvement approaches (Taveng: 92%, Kon Mom: 68%, Lumphat: 75%, M: 74%, F: 75%). For a minority of local households who had not been invited or informed about any community development plans showed their firm interest to participate for the betterment of their livelihoods and natural environment if opportunities arise.

Most frequently, people were invited by village chief (Taveng: 64%, Kon Mom: 75%, Lumphat: 83%) to participate in local development and conservation meeting. More women (80%) were invited to participate than men (74%), because women mostly stayed at home, while men worked at the farm or went to collect NTFP and commercial wood / timber in the forest during the day. Local households in the areas usually participated less proactively or only as observers, and they rarely initiated ideas to help stimulate local economy and conservation activities. Although only about one third of household in Kon Mom (29%) and Lumphat (29%) and half of those in Taveng (44%) had experience in providing inputs during the meetings, approximately half of their ideas or initiatives had been accepted or heard, mainly by local NGO representatives and local authorities.

### 3.3.5. Natural Capital Assets

This part focuses mainly on three key issues, namely: (1) diversity of land properties; (2) existing quality and quantity of natural resources; and (3) land tenure, access, and use.

#### ***Diversity of Land Properties and Possession***

Table 3.17 shows that most of the local households interviewed possessed residential land (96%), dry and wet rice farmland (74%), and strategic crop farmland or permanent orchard (58%). Forestland was perceived to have declined rapidly, while shifting cultivation land still existed. When disaggregated by district, households in Lumphat (73%) and Taveng (64%) had more permanent farmland than those in Kon Mom (42%). Accessing and using shifting cultivation land was only commonly practiced among some IP households (18%), especially those living in Taveng (36%). Shifting cultivation was conducted mainly within traditional land reserve in the communal land areas or land that was cleared claimed ownership by the locals. Wet rice cultivation was more common in Kon Mom and Lumphat districts. Home-gardening was not a habitual rural production and livelihood system in the study areas. Yet, 7% of the total household respondents had sufficient land for home-gardening, usually for mixed cropping or vegetation. Getting access to land for agricultural practices through clearance of forestland was noticed as habitual during the survey. Although very few households (16%) were engaged in forestland clearance, it was observed that illegal logging, hunting, and clearing communal lands among some IP and in-migrant households became widespread.

Land ownership was one of the critical questions to ask the target households during the household surveys, because of the ongoing land conflict between an ELC company and indigenous community in Samot Leu village at Seda commune, Lumphat district while others indigenous like Taveng and Kon Mom district used to have such kind of conflict as well in the past. The majority of local households, regardless of place of living and gender, perceived that most of the land in their areas and RTK as a whole was owned by private companies (83%) under long-term lease or concession schemes supported by the government as part of its strategic plan to foster economic growth in the region (Table 3.17). In contrast to Land Law that states that "*the government possesses both public and private state lands*", the local households interviewed attested that only a remaining small amount of land fell under ownership of the government (10%) and local (IP) communities (4%) at present.

74% of the local households perceived that the issue of inequitable land possession was not different from what they experienced in the past. 55% of local people argued that this matter had caused negative effects on their livelihoods and IP culture, and usually led to increasing conflicts over overlapping areas between communal land and concession land as well as over land and natural resource access and use (59%). Among key stakeholders providing livelihood and development interventions in the area, village chiefs (54%) were mostly involved in conflict resolution. Yet, it was skeptical whether their authority allowed them to resolve the conflicts in a timely and effective manner. This was because all concession projects in the areas had been approved by responsible bodies at national level without or with less FPIC with sub-national administrations and target communities.

## **Existing Quantity and Quality of Natural Resources**

Regarding the quality and quantity of natural resources in the area, local IP households interviewed realized that all types of natural resources in the areas were becoming less abundant or declining swiftly in both quantity and quality (Table 3.18 in Appendix B). Forest cover, forest and fishery resources, natural landscape, NTFPs, mineral deposits, and natural habitats have been exploited at a scale faster than they could recover. This had led to shrinking or limited ecosystem services and landscape change across the areas, which sequentially affected IP community livelihood sources. The most important resources in the areas for supporting the local livelihood of indigenous people (residential land, permanent farmland or cultivation land, grassland, and waterway) were limited. This phenomenon was explained during the interview by local households to have strong connection with several main factors, such as rapid population growth, over-consumption and over-exploitation of land and forest resources, large scale economic development projects introduced by the government, and newly restricted legal frameworks which define legal and legitimate citizen in the areas. Soil fertility and quality are also becoming an impediment to IP agricultural production due to deforestation and erosion, mono cropping culture in agri-business, while natural disasters, especially flood, have created severe impacts on IP livelihoods, properties and lives.

### **Land Tenure, Access, and Use**

95% of local household respondents perceived that land and natural resources were vital for their livelihoods as well as social and economic development in the areas (Table 3.19). When disaggregated by gender and district, there were not much different between all responses given by the locals (Taveng: 92%, Kon Mom: 96%, Lumphat: 95, Male: 94%, Female: 96%). In addition, 95% of the total households reported that these resources had not been used, managed, and conserved properly. Women were more concerned with this issue than men as they were in charge of managing the household economy. It was found that several key internal and external factors had led to severe decline and loss of natural capital stocks in the area, including illegal logging (79%), ELC (58%) and other concessions (33%), illegal forestland clearance (55%), illegal hunting (40%), over-exploitation by the locals (20%), rapid population growth (20%), natural disasters (16%), and illegal intrusion by in-migrants (12%).

Access to land and natural resources increasingly becomes a big challenge for local (IP) communities in the study areas (Table 3.20). 44% of local households revealed that such access had become restricted, and this issue was perceived to have been worse than before (52%), especially in the context of Taveng district (64%). As the amount of natural capital stock available for local use is declining, in order to gain access to land and natural resources, local villagers have to ask for permission or seek an agreement with community leaders and among villagers to use the land and collect natural resources in the area. Since local people's understanding of current land use planning and management remains deficient and more resources are being depleted (mostly illegal logging and forestland clearance within ELC areas), some of the IP (20%) have also resorted to high commercial timber and wood cutting for selling to get quick money as well as to intrusion in natural forests to expand their agricultural land and settlement area (Table 3.19).



*Local access to land and natural resources is limited by ELC existence in Taveng Leu commune (2016)*



*Local villager's cashew nut plantation intruding their burial places in Samot Krom village, Seda commune (2016)*

## CHAPTER 4

# ECONOMIC LAND CONCESSIONS AND IMPACTS ON INDIGENOUS COMMUNITY LIVELIHOODS

### 4.1. Status of Economic Land Concessions in Ratanakiri Province

ELC is defined as the granting of private state land through a specific concession contract or agreement with a private concessionaire over a restricted period of time for the purposes of agricultural and agro-industrial production. According to Article 2 of the Sub-Decree N° 146 on ELCs issued by the RGC in 2005, those purposes include:

- Cultivation of food crops or industrial crops, including tree planting
- Raising of animals and aquaculture
- Construction, such as a plant or a factory and underlying facilities for the processing of local agricultural produces
- A combination of some or all of the above activities

The development and management of ELCs have evolved through three major regulatory frameworks, namely Land Law 2001, Sub-Decree N° 146 on ELCs 2005, Directive 001 or the Leopard / Tiger Skin Strategy 2012, and the lately Sub-Decree N° 69 on the Transfer of the Protected Forest, Forest Conservation and Production Forest Areas, and ELCs between MAFF and MoE in April 2016. In 2016, according to own statements, the MoE has revoked 23 ELCs, downsized 4 ELCs, had 4 ELCs returned voluntarily, and been reviewing 20 ELCs under its 6-month review process across Cambodia. Statistics reported by MAFF in 2016 show that since Year 2000 till present MAFF has revoked 78 ELCs, which are accounted for 630,895 hectares of land, 11 of which (9,292 hectares) had been under the authority of the provincial state land management committee, while other 67 ELCs (630,895 hectares) had been supervised by MAFF directly. In addition, 78 revoked, returned, and downsized ELCs (450,695.75 hectares) by MoE have been transferred to be under MAFF's jurisdiction. The total duration of each ELC, which was commonly given between 70 and 99 years in the past, has been downgraded to 50 years operation only.

Ratanakiri province has been prioritized by the government for mining and agro-industrial development, due to its rich natural endowment. It is part of the Triangle Development Plan for CLV's economic integration. A significant number of forestry concessions, economic land concessions, and mining concessions have been granted in this province. According to MAFF and MoE, there currently are 26 ELCs in this province, of which 16 companies are managed by MAFF and the rest were under the control of MoE (Open Development Cambodia, 2016).

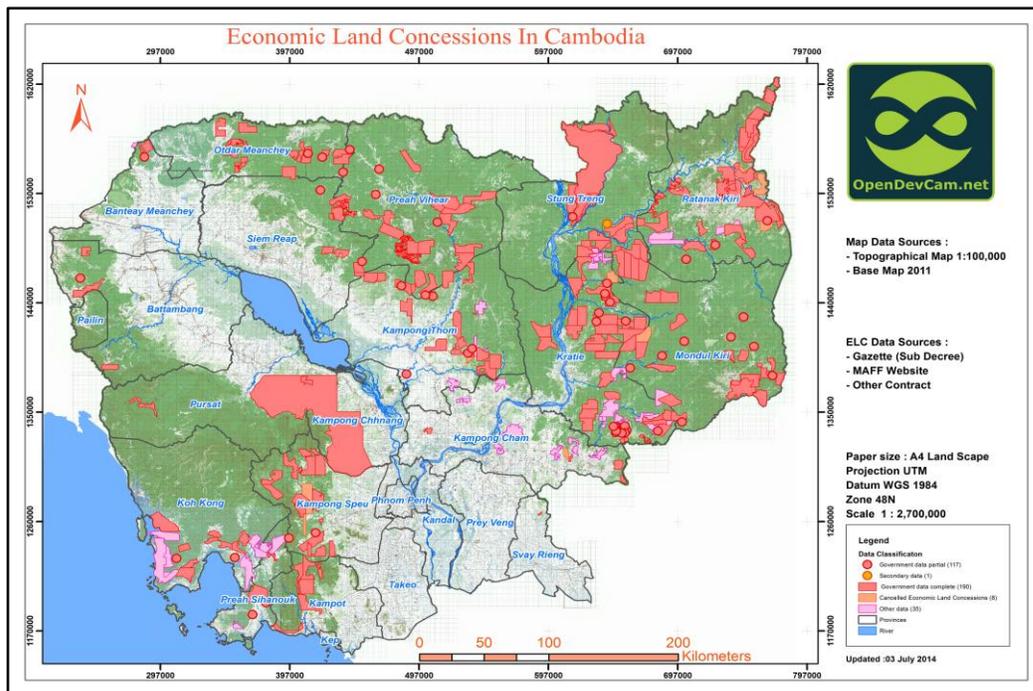
To date, 4 ELCs in Ratanakiri have been cancelled and the land has been returned to the government (Table 4.1b in Appendix C). Results from KI interviews with SNAs reveal that:

- MAFF has revoked 2 ELCs, namely Dai Dong Yeung ELC over 4,889 hectares and Heng Heap ELC over 6,000 hectares in O'Yadav district, and
- MoE has revoked 3 ELCs, namely Fu Sheng Hai ELC over 7,079 hectares, Jin Zoung Tian ELC over 9,936 hectares, and Try Pheap ELC (about 4,000 hectares of the total land area with grown rubber trees has been given back to the company following revocation and review) in the converted land of Virachey National Park.

When combining with the data from the Provincial Office of Investment and Planning (2016) and LICADHO (2016), there are 37 different ELC companies<sup>1</sup> (Table 4.1a in Appendix C). It appears that some companies have not been registered or they have been disguised under other companies. Among the 37 ELCs, 17 have been downsized to allocate some land for social land concessions by the Order 01.

The main sources of investment are from Cambodia and Vietnam, which own 17 ELCs and 14 ELCs respectively. The other investors are from China, India, and Korea. The majority of investments (32 ELCs) are in rubber plantations, mainly in Lumphat, Taveng, Andong Meas, and O'Yadav districts. At present, due to declining market price and climate change, some big ELCs like Hoang Anh Co., Ltd. have adapted palm oil plantations, mixed fruit plantations, animal raising, and multi-cropping systems in their concession areas.

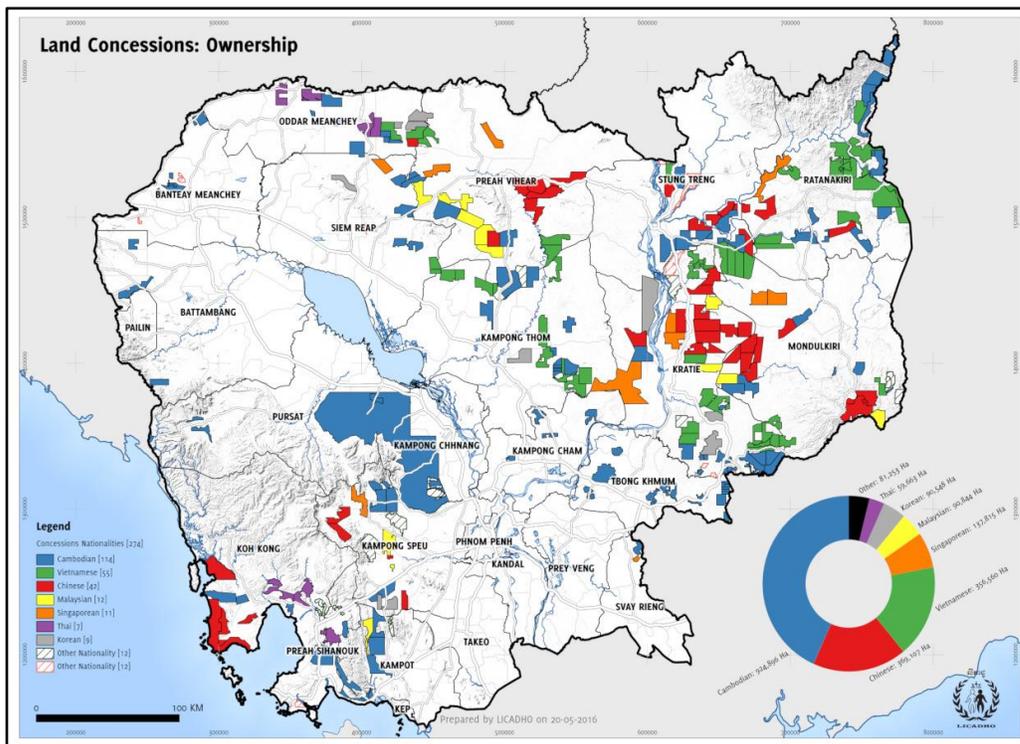
Figure 4.1: Map of economic land concessions in Cambodia



Source: Overseas Development Cambodia (2016)

<sup>1</sup> According to Statistical Analysis of ELCs in Cambodia by NGO Forum in June 2016, 27 ELCs have been granted under specific names to private concessionaires to operate in 139,571.92 hectares of land in Ratanakiri province.

Figure 4.2: Ownership over economic land concessions in Cambodia disaggregated by country



Source: LICADHO (2016)

## 4.2. Impacts of ELCs on Indigenous Communities and their Areas

### 4.2.1. Local Knowledge about ELCs

Most of the respondents were aware of the existence (89%), origin (67%), and location (50%) of the ELC companies in their areas (Table 4.2 in Appendix B). Taveng district had the greatest proportion of respondents who knew about the existence (97%), name (56%), origin (77%), and location (59%) of the ELC in their area. However, very few respondents received information on the expected impacts (37%), compensation for environmental and socio-economic losses (13%), ELC license (7%), length of operation (16%), and processes of public consultation by ELC and EIA companies (4%). Men had higher percentages of knowledge about the ELCs than women. Moreover, regardless of gender and target district, almost all respondents showed limited knowledge about the responsible institutions in charge of granting licenses to the ELC companies.

The variations in the levels and types of information among the respondents might be due to the different types and practices of the ELCs, and the different levels and approaches of awareness raising and advocacy by relevant stakeholders. The minimal knowledge about the expected impacts, compensation, and the responsible institutions makes more efforts by concerned actors to disseminate this information to local communities necessary.

#### 4.2.2. Perceived Socio-Cultural Impacts of ELCs on Local Livelihoods

While the majority of respondents (64%) felt that it was important for them and their community to be involved in the planning for ELC investment and operation, very few households had been asked to provide community input or invited/allowed to give consent (4%) on the prospective ELC activities and underlying impacts in their areas during the public consultation stage. The reasons for wanting to participate in the decision-making were the interest in learning about possible benefits/job-opportunities, the need for respecting local people's opinions and rights, and the desire to express one's own opinions on the impacts of ELC activities on the local livelihoods and natural environment.

A local villager said,

*"... I do not know why ELC companies come to our area. People have never been informed about it and what benefits we could get out of its existence and clearance of our forestland. It is nice if the governments and NGOs could let us talk about our lands and any businesses involved by outsiders and the government. We do not want to lose our properties!"*

The vast majority of respondents perceived no positive socio-cultural impacts of ELC investments on their current and future livelihoods. When disaggregated by gender, women seemed to know more about this uncertainty and irrelevance for they were in charge of household economy and usually had more time to attend village meetings. Few respondents perceived that the ELC companies provided positive impacts, such as provision of funding and other occasional or on-demand support for social development (24%), road construction (12%), and school building or renovation (10%).

The qualitative data show that the ELC investments were perceived to have created a space for reconstructing local social systems. Key local informants hinted this issue in two ways. First, they stated that there had been a healthier range of social patterns and options, which helped change local communities from being previously secluded to being openly vibrant. Constant interaction between local inhabitants and the outsiders, including lowland in-migrants, has contributed positively to new knowledge and technology transfer (especially in agricultural production).

In addition, it had brought in various interventions from state and civil society organizations in the forms of infrastructural and social services development and other socio-cultural outreach activities.

Second, they noted that local IPs started to realize the substantive value of their traditional community laws and social capital; by doing so, it could help them to maintain their solidarity and cultural continuity against the intrusion of new state-driven development options. Such realization has also been enhanced by the civil society groups mainly represented by local NGOs, whose missions covered not only integrated development programs, but also human rights, environmental/social governance, and cultural revitalization programs.

A representative of RTK line departments said,

*“...ELCs have potential to support skill, knowledge, and technology transfer. Now, we see more local people are adapting strategic cropping and innovative technologies to increase their production and earnings. I think now more interventions are given by NGOs and the government to support IP.”*

A local villager in Samot Krom village, Seda commune said,

*“... People observe what in-migrants and nearby ELCs are doing on their lands. If my family has money, I will purchase tractors like them, because it is easier to work in the field.”*

Nonetheless, the majority of respondents (71%) perceived that they and their communities had been negatively affected by the ELC operation, especially to the extent that their lands had been reduced or lost (63%) due to the overlap between the communal land and ELC boundaries as well as encroachment by the ELC companies. Land loss or reduction was perceived to trigger other key issues, such as limited access to land and natural resources (37%), changing and increasing loss of traditional livelihoods and culture (33%), relocation and resettlement as well as forced eviction (22%), and loss of raised animals (18%). When disaggregated by gender, men had more knowledge and were more sensitive to the current and future negative socio-cultural impacts, particularly to the issues of access and resettlement/relocation. Men were reported to play more crucial role in getting access to land and natural resources and heavy works. Yet, women seemed to pay more attention to the increased food and income insecurity and increased water scarcity. Women were reported to be mainly in charge of household economy and chore as well as water collection for their families.



*Local women fetching water in Samot Krom village (2016)*



*Local IP planting cashew nut trees in Seda commune (2016)*

The qualitative data supports the perceived negative socio-cultural impacts of ELCs. Increased contact with outsiders and the coming of unwanted development have caused various potential risks to the communities, including community disruption and a change of conventional cultural landscape of IP communities. The ELC company and its in-migrant workers were reported to have disregarded or ignored IP's social fabrics in the forms of religious practices and collective use of common pool resources. In addition, communities' social values were being deteriorated

by unfitting new cultures brought in by newcomers, particularly workers of the agricultural plantations and mining companies.

Social systems of IP communities have also been negatively impacted. The increasing number of local IPs, especially young villagers, had participated to ruin IP's existing local knowledge and skills for daily livelihoods. The study encountered that most of them did not want to do traditional farming and NTFP collection anymore, yet curious to learn skills and techniques, such as agri-businesses and commercial wood/timber cutting and transporting, for quick income earning. The continuous change of communal land use patterns from shifting agriculture to crop cultivations has made local villagers acquire new skills and knowledge to integrate into modern economy. This also led to depletion of human and social capitals – skills, knowledge, experience, teamwork, and networks of supply and distribution – as the locals started to learn specialized skills as part of their adaptation strategies to the current land use planning.

A representative of Taveng Leu Commune Council said,

*“... ELCs create more negative impacts than positive impacts. Today, our sacred land and forest and burial ground of our community are lost.”*

Conflicts over land and natural resource management by community groups and ELC companies generally are worse in the areas where interventions of partner NGOs and concerned line departments were minimal or missing. The government was consistently condemned for promoting investments in mineral and agro-industrial sectors as well as for siding with ELC and mining companies. Local authorities, particularly at village and commune levels, usually were misinformed or little informed about the ELCs in their areas. This hindered them from working at full capacity to help their local inhabitants, especially IPs, in the conflicts. In addition, the lack of information sharing and collaboration from the top level as well as between village, commune and district levels caused administrative conflicts and constraints between national and sub-national governments as well as local management regimes.

#### **4.2.3. Perceived Economic Impacts of ELCs on Local Livelihoods and Economy**

More than half of respondents (62%) perceived that ELC companies had tried to provide a range of job opportunities for the locals during both on-farm and off-farm seasons. However, in contrast to the households in Taveng (92%) and Kon Mom (76%), those in Lumphat (38%) perceived that job opportunities provided by the ELC companies were limited due to existing land conflicts and the presence of lowlanders to work in the areas. The available jobs were usually time-bound and low-paid, which were different from what the IP communities were accustomed to working on their farmlands. Moreover, supporting local economic growth through creation of small and medium enterprises (SMEs) was not embraced by the ELC companies.

The qualitative data also unveils some positive perceptions. New jobs, ranging from un-skilled to low- and semi-skilled jobs (mainly paid laborers), were available in the agricultural plantations. Because of the geo/socio-cultural conditions (land-based activities) and close proximity to the working areas, there was a good fit between such jobs and the local human environment. In addition to new jobs, the agro-industrial investments were also perceived to have a possibility to inject capital flow into the communities, which could serve the needed functions of social and infrastructural development in the areas. Particularly, the improvement of road conditions could facilitate faster and smoother transportation of local agricultural produce to the markets.

A local villager in Taveng Leu commune said,

*“... Now the ELC company allows all villagers to travel through its' roads. It has also helped us to construct a red soil road to accommodate our inter- and intra-village transport.”*

A commune representative in Srae Angkrong commune said,

*“... the ELC company has constructed our commune hall, which costs around USD 30,000. According to their plans, this company will help use to build a local health care center for local medical check-up, and will supply grid electricity to the locals from year 2017 onward.”*

Nevertheless, the majority of respondents perceived negative impacts of the ELC companies on the local livelihoods and economy. More than half (63%) indicated that land loss and decline in natural capital stocks had significantly contributed to a negative change in their main livelihood sources.

The qualitative data reveal that the informants did not support ELCs as an economically attractive option. The ELC companies were perceived as negative change agents, which could lead to economic threats for the IP communities, if continued to be improperly developed and managed. Local communities, dependent on land and natural resources as their main livelihood sources, had been threatened by reduced access to and use rights over natural capital stocks, while those with low income or limited livelihood alternatives have been pressured by rising costs of living. This agro-industrial development limited the IP communities' capacity to attract more preferred types of economic development, such as ecotourism and agricultural community enterprise. This dilemma was increased by the lessened quantity and quality (i.e. mono crop / plantation) of high commercial forest by-products and NTFPs.

A key informant of concerned line departments said,

*“... ELCs usually do not offer certain job opportunities to local IP. Most existing jobs are conflicting with IP culture and mindset because IP do not want to work under pressure. We do not see any real benefits to local and national economies as ELCs pay more attention to land clearance and forest cutting, while local IP do not want to work with ELCs although they could earn additional income to support their families.”*

Moreover, most of the jobs generated by the ELC companies were regarded as labor-intensive, low skilled, dangerous, less numerous, and less suitable to the local inhabitants. The IP culture values freedom of work, movement, and reciprocal activities without concentrating much on profit maximization. This value contradicts the nature of jobs provided by the ELC firms. In addition, the ELC companies offered low-paid jobs (around USD 5–6 per day), while weekly or monthly remuneration was sometimes reduced or swindled by ELC work supervisors.

A local household respondent in Srae Angkrong commune said,

*“... the ELC company has provided few job opportunities mostly as unskilled to low-skilled low-paid workforce. People are so disappointed with work supervisors of this ELC since they did not pay back our works in the past. Now, we are still afraid that our labor-intensive works will not be paid well and regularly by the company.”*

#### **4.2.4. Perceived Environmental Impacts of ELCs on Natural Environment and Conservation**

Positive environmental impacts of the ELC companies on the natural environment and conservation were minimal or almost did not exist. The majority of respondents did not find any positive correlation between the ELC investments and improved environmental governance regimes, enhanced environmental education programs, better biodiversity conservation, and/or increased funding for environmental protection, preservation, and restoration activities.

A local NGO representative said,

*“... I think ELCs are good according to our country’s laws and policies. However, in practice, we see less or no benefits from previous and current operations of ELCs in the province. Forests and forestlands have been cleared, land conflicts are increasing and being still unsolved, and NTFPs are less abundant and mostly they are not much accessible. We have to do a lot more to protect and preserve forest and natural resources.”*

Conversely, the respondents had the most negative perceptions about decline in quality and quantity of land and natural resources (53%), decline in quality and quantity of natural habitats (50%), decline in quality and quantity of NTFPs (49%), and loss of natural habitats and extinction of forest and animal species (38%).

A local villager in Taveng said,

*“... I have been living here since my childhood. I see a lot of change in waterway, mountain, and landscape. Our forests are leaving us! It is hard to find available NTFP in nearby areas as rubber trees are everywhere. Our village has become so tiny. We do not have enough land to grow our crops.”*



*Landscape change upon natural forest in Seda commune, Lumphat district (2016)*

The qualitative data point to the increasing natural landscape change and pressing environmental degradation. The ELC investments were perceived as a major resource-based tool for economic growth favored by the government as part of its long-term CLV economic integration and commercialization of private and public state lands. However, this effort was believed to have substantiated constant dramatic change of the natural environment and ecosystems as well as transformation of natural and cultural landscapes into an agro-industrial landscape. Extensive forestlands have been cleared and converted into large-scale agribusinesses under long-term agricultural leases or ELC policies.

The loss of forestlands has led to continued destruction of natural habitats, wildlife and plant species as well as substantial forest and non-timber forest products. Human-induced disasters - heavy deforestation and extensive resource extraction by the ELC companies - were considered to have contributed to the increasing occurrence of land and soil erosion, seasonal drought and flood, and other climate change related problems.

A local authority in Chan village, Taveng Leu commune, said,

*“... Today there are no ponds, creeks, and lakes in our areas. We have more difficulties in getting fish for our families. Before the company came, we were quite able to catch a lot of fish for our families and people.”*

A member of Srae Angkrong Commune Council said,

*“... Land and natural resources like woods and NTFPs, such as mushrooms and wild vegetables, etc. are declining in our community. Our reserve communal land is decreased due to increased in-migration and ELC intrusion.”*

Forestland clearance increasingly committed by the ELC companies and local inhabitants has caused the decreasing quality of the natural environment, while previous rich ecosystem services have been changed and downgraded. Moreover, the use of chemical substances within the agro-industrial plantations has polluted some of the main waterways being consumed by local communities and their animals. The ELC companies have dug ponds or built water reservoirs across the natural waterways to store water for agro-industrial and domestic use.

This activity has led to a change in the natural water system and created water scarcity in the downstream areas.

A local authority in Srae Angkrong commune said during a group consultation meeting, *“... the ELC company in our area uses chemical fertilizers and other chemical substances in their palm oil and rubber plantations. We have encountered that this has caused water pollution and diseases or even death to our animals.”*

### **4.3. ELC-Community Conflicts and Existing Conflict Resolution Actors**

61% of the interviewed households had experience with ELC-induced conflicts, and the frequency of conflict was mostly 1 time per year (58%) followed by 2-3 times (34%) and more than 3 times (8%) per year (Table 4.5 in Appendix B). Households in Lumphat (74%) and Taveng (69%) had more conflicts than those in Kon Mom, due to the current unsettled problems with Roth Sokhorn - Zumvang (Cambodia-China's partnership) and Krong Buk (a Vietnamese company) respectively. Most of the conflicts were triggered by overlapping boundaries between ELC and communal land areas (84%), company's intrusion on local farmland (31%), and continuing blocked access to farmland and NTFP collecting grounds (28%) by respective ELCs. Other considerable drivers of company-community conflicts encompassed causes of death animals (19%), and ELC invasion on IP's sacred forests and burial grounds (10%). Minor cases, such as intrusive expansion of ELC on farmland and sacred places, water pollution and sexual harassment, were more consistently reported by local households in Taveng district followed marginally by those in Lumphat district.

The majority of local households (67%) perceived that those conflicts had happened in the areas since long ago and still remained unsolved by concerned state and non-state actors (Table 4.5 in Appendix B). Despite prevailing existence of such conflicts, several key bodies were considered as conflict resolution facilitators or actors to help address local needs, all of who were more interested to apply non-judicial methods to settle conflicts in the areas. Mostly, village chief (64%) and commune chief (61%) were regarded as the most reliable and approachable actors in the areas. Interventions by higher levels of authority were reckoned to have less influence, if compared to community's own effort (19%) and company-community dialogue / negotiation (11%) with strong support and facilitation from provincial authority (8%) and local (human right development) NGOs (15%) or NGO network (8%). As long as local (IP) communities became well-represented and active citizens for endogenous development on their own lands, 61% of all local households interviewed realized that their effort to solve the conflicts were more effective than those offered external stakeholders, yet cautious of getting constant technical support by the civil society organizations in making their voices heard by the public, especially relevant government ministries. However, joint efforts by community groups and external players were mostly preferred by local households as the most effective, most helpful, and fairest way to resolve current and future conflicts (Table 5.3 in Appendix B).



*Existence and access block of ELC company that has caused community-company conflict in Seda commune (2016)*

## CHAPTER 5

### LIVELIHOOD INTERVENTION PROGRAMS OF CONCERNED STAKEHOLDERS

#### 5.1. Community Perceptions of Current Livelihood Intervention Mechanisms

The study finds that both state and non-state agencies have been working on the ground to help local (IP) communities settle their livelihood problems and preserve and protect their culture and natural environment. Intervention programs are dispersed in size and scope, varying over space and time, and targeting mainly different types of ethnic minorities across Ratanakiri province. Usually their interventions range from livelihood programs through improved diversified agricultural production systems, to community-based natural resource management (CB-NRM), human right development, climate change adaptation and mitigation, disaster risk reduction, WASH (water, sanitation, and hygiene), capacity building through formal and informal schooling / training systems, community cooperative and enterprise establishment, local SMEs, physical infrastructure development, social and public services, and legal supports. Four key agencies are found to have provided general or specific programs to the areas, and they are relevant government provincial line departments, provincial / local authorities, local and international NGOs, and CBOs.

Despite many intervention programs to date, only 8 areas of work focus involved by these stakeholders are found very common and vary over time in scope and focus depending on their project frameworks and mandates and capabilities, particularly funding opportunities. These areas are:

1. Water, sanitation, and hygiene
2. Community health services
3. Animal husbandry / livestock rearing
4. Vegetable production
5. Fruit production
6. Rice production
7. Integrated farming
8. CB-NRM

Among all key stakeholders, local and international NGOs were considered to have provided most of these programs in close collaboration with concerned government agencies and gained reputation through their direct outreach and on-demand intervention activities (Table 5.1 in Appendix B). Sub-national administration, particularly village and commune chiefs, were ranked second in terms of their approachability, effectiveness and helpfulness in assisting IP communities in the areas. However, provincial line departments (i.e. Department of Rural Development, Department of Agriculture, etc.) were partially functioning in the areas of rice and vegetable production and infrastructural development.

Work performance by local and international NGOs were perceived to be the most effective by the majority of households in the three target districts, most exclusively in Taveng (85%), where social and public services of the government were limited (Table 5.2 in Appendix B). Such perceptions were similarly given by both male and female respondents (M: 65%, F: 63%). This group also received the most trust from local people. The next group of stakeholders, whose works were considered the second most effective was local and provincial authorities - particularly village and commune chiefs, who normally worked closely with local communities on the ground to help tackle their livelihood problems. Following CBO groups, who were ranked the third most effective work performers, relevant provincial line departments received the least preference in terms of work judgment and trust from the locals.

About half of all total households pointed out that their work had been performed in an effective (49%), helpful (51%), fair and just (50%) manner (Table 5.3 in Appendix B). These responses were almost the same when disaggregated by district and gender. This might be indicative of the fact that local (IP) communities are becoming more aware of external stakeholders' interventions on their livelihoods and resource conservation, and often a combination of efforts and funding programs by multiple donors / agencies is the best choice and the most preferred one at present.

## **5.2. Community Perceptions of SCW-WHH Support Programs**

Save Cambodia's Wildlife (SCW) is a local environmental NGO, whose mission aims mainly at protecting and conserving natural and biodiversity resources and wildlife habitats through:

- (i) carrying out action research, publication and education programs on relevant issues
- (ii) promoting efficient alternative livelihood support programs
- (iii) playing a constructive role in raising public awareness about climate change concerns and promoting use of available means for community based climate change adaptation and individual active participation in climate change mitigation.

SCW has been involved in environmental conservation and climate change and adaptation for over 16 years in Cambodia.

Since 2015, SCW has been cooperating with German NGO Welthungerhilfe (WHH) under a project entitled "*Initiative for the protection of tropical forests and biodiversity in Cambodia (KHM1051)*". This project lasts until the end of 2017 and is co-financed by the German Federal Ministry for Economic Cooperation and Development (BMZ) and WHH. SCW has been working in close collaboration with WHH to contribute to the preservation of Cambodia's tropical forest in its function as a carbon sink and habitat for endangered animal and plant species.

The project's direct target areas are 6 state-registered CPAs, located on in Virachey National Park and Lumphat Wildlife Sanctuary - currently populated by 74,820 residents. To make this project even more impactful, SCW decided to include another CPA in July 2015 (Seda commune, located in Lumphat Wildlife Sanctuary). In total, there are now 7 CPAs benefiting with 32 villages in 6 communes in 5 districts within the provinces of Ratanakiri (Taveng, Veun Sai, Lumphat and Kon Mom) and Stung Treng (Siem Pang).

Only 36% of the selected households knew about SCW's mission, especially with regard to the three cornerstones of its project focus - (1) Rights Education, (2) Protection and Conservation of NR and wildlife habitats, and (3) Media and Networking. Most of the households were more aware of previous intervention programs on livelihood improvement and diversification through crop and animal production, food security and processing, community empowerment and participation, health improvement through access to improved water and sanitation / hygiene services, and CB-NRM (Tables 5.4 and 5.5 in Appendix B). About 26% of them were knowledgeable of SCW-WHH's livelihood intervention programs, the remaining majority to have limited acquaintance with current project frameworks. This could also be interpreted that local people preferred actual tangible livelihood programs to conservation-driven livelihood activities in order to address their current immediate livelihood needs. Community participation had been moderately promoted (25% as showed in Table 5.5. in Appendix B), especially by transforming people's passive into active and proactive participation in all stages of project orientation, demonstration, and implementation.

About 38% of the household respondents were satisfied with current SCW-WHH programs, particularly its current project to uplift benefits for IP community livelihood strategy development and food security improvement. Local households in Taveng district had the most knowledge (54%), participation (49%), and preference on SCW-WHH programs. This might be indicative of the fact that local IP in Taveng need more external interventions on their livelihoods and resource conservation for they are living in the far-off location, where economic opportunities are minimal whilst local access to land and natural resources are limited by current ELC operation in the area. They were found to have received the most benefits (67%) from SCW-WHH livelihood project implementation in their localities.

### **5.3. Community Perceptions of Priority Interventions to Improve Local Livelihood Strategies**

Obviously, different geographical, demographic, and socio-economic characteristics of IP communities require different types of immediate, intermediate, and long-term livelihood interventions. When asked to prioritize urgent needs to address their livelihood problems with support from SCW-WHH, the majority of households in Kon Mom (62%) and Lumphat (55%) districts chose animal husbandry / livestock rearing as the most important driver for their livelihood improvement, while those living in Taveng district chose agricultural extension services (65%) followed by livestock rearing (56%). When access to improved quality of water, sanitation and hygiene was respectively considered the third and fourth priority livelihood needs for Taveng (40%) and Lumphat (24%) IP communities, this supporting livelihood program was ranked the second in Kon Mom district (48%).



Tube-digging well in Chan village, Taveng Leu commune, Taveng district (2016)



Office of IP Community and supported activities for CPA in Seda commune, Lumphat district (2016)

**Community-driven protection and conservation of natural resources and wildlife habitats**, which is one of the major project pillars of SCW-WHH in the target districts, was perceived to be the third and fourth most important divers for improving IP livelihood strategies in Lumphat (31%) and Kon Mom (32%) districts (Figure 5.1 in Appendix B). Yet, in Taveng district, it was ranked the fifth, following agricultural extension, animal husbandry, water and sanitation / hygiene, rice production (32%), and vegetable production (23%). Although rice cultivation is substantial for daily food consumption, IP communities in the target districts tended to regard this activity as the less prioritized one, given that rice production was mainly for subsistence livelihood. Their involvements in other activities, such as strategic cropping and vegetable and fruit productions, were regarded as enabling factors to increase their cash incomes or savings to improve their welfare, while addressing their vulnerabilities.

#### 5.4. Perceptions of ELC Companies on their Operations and Impacts on Community Livelihoods

This part focuses on analysis of responses solely given by a representative of Hoang Anh Gia Lai Co., Ltd. - a Vietnamese ELC company operating in Ratanakiri since 2010. This ELC company is at present implementing its multi-step plans to plant rubber and palm oil trees over 30,000 ha of concession land in Kon Mom, Andoung Meas, Lumphat, and O'Yadav districts. Depending on profits gained and business risks experienced from its first phase operation, under its several sub-names, this company is planning to continuously expand its business in Ratanakiri.

Although Hoang Anh Gia Lai ELC got permission from the government through responsible ministries (MAFF and MoE) for their investment in agro-industrial plantations, mainly rubber and palm oil, it was found out that this company had increasingly been practicing other crop and animal production systems in the areas. Up till now, according to the interview, their agri-businesses simply became multiple - stretching over designated land areas. These include palm oil tree plantation (20,000 – 30,000 hectares), rubber plantation (about 1,000 hectares), mango

tree plantation (2,000 - 3,000 hectares), dragon fruit plantation (about 1,000 hectares), orange plantation (about 1,000 hectares), cow raising (about 5,000 cows imported from Malaysia), pasture (about 5,000 hectares), and seasonal corn production on available lands. It was reported during field observation that this company had also practiced sand dredging along Sre Pok River and other waterways in the concession areas, mainly for supporting construction purposes.

As part of its business plan, Hoang Anh ELC in Kon Mom district stressed their understanding of the importance of company-IP community partnership as well as its contribution to sustainable community development in the area as well as in Ratanakiri province. Such relation and contribution were explained to be at the heart of their strategies for sustainable development of ELC business. The company representative expressed his ELC's commitment and willingness to see, if it could be able to help promote local wellbeing. Building a close rapport with local communities and authorities was also explained to be a key driver to help the company to reduce or avoid company-community conflicts, while at the same time obtaining local consent for smooth and successful multiple agri-businesses in the area.

Job creation, revenues, and knowledge and skill transfer were mentioned as the core inputs that this ELC company could or planned to provide to IP communities in Kon Mom district, while helping them to integrate themselves into modern economy. Helping the locals, especially the Khmer-Lao ethnicity, to improve their socio-economic status would also mean ameliorating conflicting perspectives between company and IP communities on development and securing company's productions and profits from using local labor. For example, 25,000 Riel (USD 6.25) are a standard wage for labor on a normal day and 50,000 riels (USD 12.5) per one-off events, such as Khmer New Year, Pchum Ben Festival, and other national holidays.

In an effort to sensitize local (IP) employees, Hoang Anh Gai Lai, which operates multiple businesses in Ratanakiri, including agro-industrial plantation and mining, plans to (i) construct small houses for local workers, (ii) connect electricity grid to local communities residing around or nearby the company, (iii) provide rice and other crop species to the locals, (iv) provide health care services to encourage people to do regular physical check-up and immediate treatment, and (v) to build connecting roads within and around the company's coverage area. So far, this company has built a commune office for Srae Angkrong commune, which costs about USD 30,000. In addition, it has constructed loop-roads around the ELC areas as well as in the locality for local use.

Hoang Anh Gia Lai ELC has taken corporate-community conflict into serious account, according to an in-depth interview with its representative. Having experienced through severe conflicts with the locals, particularly IP, this company has collaborated with local authorities and the responsible ministries to demarcate their allocated land areas and communal land boundaries so as to avoid increasingly local resentment, which could impede their investment in the areas. Different modes of compensation to local communities that had been applied by Hoang Anh Gia Lai ELC, including but not limited to:

1. purchase conflicted lands on an agreed market price
2. retract the lands and give back to the locals in case an agreement is not reached

3. support infrastructural and social development (e.g. current plans to build a health care post for local medical treatment and to supply grid electricity after 2017), if requested by local authorities and community representatives
4. allow locals access to and transport across ELC areas
5. immediate interventions during natural disaster period, i.e. providing water to people during last drought
6. pay locals to look after their draft animals in order not to let them trespass onto ELC areas

However, IP communities' right to FPIC as part of company' strategic business operations in the area was not much familiar to Hoang Anh Gia Lai ELC, nor did they seem interested - despite their official acknowledgement and regard of culture. Usually this company works closely with local and provincial authorities as well as concerned government ministries to resolve conflicts with the locals in the area. Although the ELC company acknowledged that improved Corporate Social Responsibility (CSR) is one of the key success factors to promote its reputation and long-term financial performance, from their point of view, issue of FPIC should be overseen by the state.



Red soil road construction donated by Roth Sokhorn ELC to local villagers in Chan village, Taveng Leu district (2016)



Commune Hall establishment donated by Hoang Anh ELC in Srae Angkrong commune, Kon Mom district (2016)

## CHAPTER 6

### DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

#### 6.1. DISCUSSION

##### 6.1.1. Key Influences on Local Livelihoods

Local communities in the target districts are becoming increasingly prone to the paradigm shift of contemporary economic development and neoliberal approaches applied by the government to support trade liberalization for economic growth. They are usually economically impoverished and poorly educated, while their rich cultural diversity and integrity are being deteriorated. Since Ratanakiri is regarded as a northeastern strategic economic corridor to support cross-border trade and regional integration, natural resource extraction and consumption have become the forefront of economic transformation. Most of the forestlands and forest cover have been converted into agricultural and industrial investments in the forms of ELCs, mining concessions, forest concessions, and hydropower dam construction.

Extensive forestland transformation into agro-industrial plantations and mining concessions, coupled with the influx of domestic and foreign migrants, have caused land speculation and grabbing, which have reduced IP communities' access to land and natural resources for daily consumption and income generation. Since these resources, including forest by-products and NTFPs, have been the main sources of their livelihoods for generations, decline of these resources as well as limited or no access to them, have lessened the IP's livelihood capabilities or made them face complete livelihood loss. Besides, the current economic transformation has affected the cultural landscape of IP communities, disregarding their traditional local wisdom and unique socio-cultural fabrics.

Seven major trends, both externally and internally instigated, were found to have critically affected local livelihoods in the province.

(1) The implementation of countrywide state-sponsored conservation regimes, such as National Parks and Protected Areas, and their resource governance approaches since the early 1990s have restricted local communities' mobility and access to land and natural resources. Since IP communities are culturally accustomed to free movement and conventional consumption patterns without formal land ownership/title or management rights for generations, they usually face difficulties to adapt to these legal and policy frameworks.

NGOs and development partners have introduced conservation-oriented and community-driven development, particularly through CBNRM mechanisms, communal land titling, and diversified farm-based livelihoods, to IP communities. These were to help them to sidestep their livelihoods from the conventional shifting cultivation system, open wildlife, and NTFP collection. Despite diverse state and non-state interventions to improve their resilience and adaptation to this fundamental shift over resource ownership and consumption rights, these schemes were not fully effective and often conflicted with their traditional land use management

and ways of living. Additionally, perpetual reforms of land policy and management since 2001 have contributed significantly to increasing the vulnerability of IP communities, mainly because they did not possess sufficient human capital and understanding of the land-based market economy and were not well-represented by their CBOs that still had limited institutional capacity.

(2) The government's neoliberal development approaches to secure diverse export markets for agricultural goods has further intensified the IP livelihood vulnerability. As part of its long-term commitment to trade and economic liberalization, the government is determined to embolden plans that allow extensive resource consumptive and extractive industries to prevail over large portions of land and forestland coverage. These plans aim to support transnational and cross-border trade and investment as well as economic regionalization. However, these have brought in domestic and multinational investments that grabbed lands previously owned and managed by IP communities. While CB-NRM and CLT processes were complicated and slow, these investments sparked unclear land demarcation and management rights, especially over overlapping boundaries.

(3) Increasing job opportunities and market demand for agricultural products have attracted domestic and foreign migrants. The influx has created tough competition for land use, access to and ownership over land and natural resources, including common pool properties of IP communities. These in-migrants often purchased shifting cultivation lands for cheap prices from local IPs or through exchange of basic commodities and luxurious goods. Although there has been some skill and technology transfer between migrants and IP communities, local IPs were found to be inferior and likely to alienate their unique, authentic culture.

(4) Natural disasters in the forms of extreme weather hazards have become more prevalent. Global climate change impacts, deforestation and forest degradation, and hydropower dam construction have made IP communities more vulnerable to these natural hazards, causing decline in natural capital stocks, crop yield, and livelihood security. This study found that about half of the households in the target districts were at high risk of droughts and floods. These phenomena together with constant insect infestation have made local communities suffer from farm-based and livestock production problems, epidemic diseases, and water scarcity.

(5) A substantial number of IP communities borrowing money from commercial banks and MFIs has been a great concern for livelihood security. This study found that about 40% of the households were concurrently indebted to these agencies. Although these loans were intended for livelihood diversification and intensification, the lack of planning and capacity could result in rising indebtedness, livelihood shocks, and the loss of land and other properties. Mostly, people borrowed money to buy vehicles, conduct social events, build houses, and pay for medical expenses, while a few used it to buy agricultural machinery. Another reason for indebtedness was increasing gambling in some villages.

(6) Chronic and epidemic diseases were another grave shock for both people and animals. IPs' traditional ways of living with livestock and letting livestock roam and live freely in the communities were one of the root causes of epidemic diseases. Chemical substances and fertilizers used in the mining and agro-industrial concessions heightened the causes, and also

strongly polluted water sources and caused chronic diseases among IP communities. These diseases were compounded by poor housing conditions, low knowledge of hygiene and sanitation, lack of health care information and facilities, and low nutritional consumption.

(7) The internal change of the community systems, beliefs, and attitude towards land and natural resource access and use has discouraged IP communities from practicing sustainable livelihoods for community welfare improvement. The resource grabbing by outsiders and local elite, diminishing cultivation lands, decrease in natural resources for local exploitation, and limited job availability incentivized local communities, especially IP youth, to engage in illegal logging of timber and wood to sell to nearby companies or merchants. The loss of confidence in concerned stakeholders' interventions on livelihood improvement and resource conservation made them resort to the current client-patron relationship. More local communities were reported poaching in PAs and CPAs, clearing forestland, and hunting wildlife. Another trend among IP youth was to work in strategic cropping and off-farm occupations, and thus unappreciated their local living culture and traditional livelihood systems.

#### 6.1.2. Community Resilience and Adaptive Livelihood Strategies

In response to the socio-economic, demographic and ecological changes, IP communities were gradually adopting new livelihood strategies for both survival and economic reasons. With support from concerned enabling bodies, an increasing number of IPs have developed mixed livelihood strategies through both farm and non-farm based occupations albeit still relying on land and natural resources as the main sources of livelihood.

Local communities have adopted both subsistence agricultural production and strategic cropping systems, and both shifting (slash and burn) and fixed methods of farming. Usually, they have two private settlements and two plots of land (residential land and farmland). Traditionally, they do subsistence farming on their farmland (often located in the reserved communal land) in the rainy season, and live there most of the time. They grow a mixture of rice, maize, tobacco, sesame, long bean, and other vegetables on the same plot. Such production is mainly for subsistence consumption and reciprocal exchange with their relatives and neighbors. In addition, in the rainy season, they collect edible by-forest products/NTFPs, such as bamboo, mushroom, wild fruits, vegetables and animals, to support their nutritional food intake. Sometimes, they sell their surplus in exchange of basic commodities. They also raise draft animals in the wild for farming activities, eating, and religious practices.

Reacting to the market demand, IP communities also learnt to plant seasonal and long-term cash crops, such as cashew nut, rubber, mung bean, cassava, and pepper. These cash crops are usually planted within or in close vicinity to their farmland and sometimes residential land. Such cultivation has been transformed from being an additional livelihood activity to a strategic livelihood function since it could be practiced in both rainy and dry seasons, especially on permanent plots of land. At present, IP communities are becoming increasingly interested in growing these strategic crops to earn quick money to buy living necessities, such as groceries, medicines, clothes, and household facilities.

In the dry season, cultivation of edible crops is impossible due to lack of steady water supply.

This year (2016) witnessed a severe impact of prolonged drought on local communities' agricultural production and health. As most of the villagers are located close to natural waterways, however, they were able to plant some vegetables for daily use. Therefore, IP communities continued to collect forest by-products and forest products, but instead of collecting those for eating they collected those sellable, such as raisin, honey, vine, and wild animals. Noticeably, as afore-mentioned, more and more IPs, especially young ones, got involved in timber logging and harvesting of valuable hardwood for selling to logging companies and wood trafficking merchants operating in the areas.

Besides natural resource and farm-based livelihoods, local communities earned their living from other income generation activities. Merchandises and inter- and intra-village trading, food processing, craft making, providing labor-intensive services, and working in the services sector (mainly in CBT/CBET operation services) and extractive industries (as mine workers, timber cutters, and transporters) were increasingly their alternative sources of livelihood. Yet, their involvement in these activities was still at low scale, seasonal and irregular, and dependent on external support. More noticeably, the conventional mindset and attitude toward routine labor-intensive work have also hindered IP communities, excluding a minority of youth, from being willing to labor in any work offered by outsiders (particularly ELC companies).

## **6.2. CONCLUSIONS**

This study found that the ELCs in the target districts provided some positive impacts on local livelihoods. They provided opportunities for local employment, knowledge/skill/technology transfer, local economic stimulation, increase in state revenues through tax and non-taxed systems, increased multi-sectoral investment, improved social development and environmental conservation through CSR funds, reduced out-migration among local IPs, and improved physical infrastructural development in the areas.

However, the negative socio-cultural, economic, and environmental impacts overwhelmed the positive ones. Environmentally, the negative consequences included (i) land speculation, (ii) encroachment and grabbing, (iii) forestland clearance as well as (iv) increase in conflicts over land, forest, and other natural resources access and use. Dramatic decline in quantity and quality of land and forests, biodiversity resources, ecosystem services, and wildlife and natural habitats, and aggravated fundamental change upon the natural landscape and soil quality and fertility were also reported. Culturally, the key negative impacts comprised of (i) social intimidation and suppression on IP traditional ways of living, (ii) constant loss or transformation of IP cultural identity, diversity, and integrity, and (iii) decline in socio-cultural fabrics and social capital of IP communities. As negative economic repercussions, (i) reduced sources of community livelihoods, (ii) fragile community production and livelihood systems as well as ownership rights, (iii) increase in community dependency on strategic mono-cropping and (iv) increase in indebtedness to commercial banks and MFIs stood out.

The detrimental impacts of the ELCs perceived by the villagers represent common issues that exacerbate their livelihoods since natural resources remain their chief sources of living. These

pressures have forced local communities to seek alternative sources of livelihoods, such as non-farm micro-businesses, cash crop cultivation, and labor-intensive employment. Notwithstanding, these alternative sources do not ensure a long-term, stable livelihood security since they are irregular, insufficient, and non-adaptive for IP communities. These are outside of local communities' customs and capabilities, which require extensive and constant scaffolding from relevant stakeholders.

Three distinct tenets emerged from this study:

- (1) Villagers preferred immediate livelihood activities that tackled their current needs to long-term, conservation-based livelihood programs. This was mirrored in their awareness about, interest in, and prioritization of program interventions by concerned actors. This preference might have been induced by the soaring degradation of their natural resources by the ELCs and in-migrants.
- (2) Relatedly, many IPs wanted to register their land as a private property. This was due to their dwindling confidence in the lengthy and complex procedures and the benefits of CLT. They wanted to make quick returns from their land as much as possible, including selling it off.
- (3) Of utmost concern, a rising number of IPs, specifically the young, engaged in illegal logging to make rapid money to buy living necessities. Again, the externally-instigated decline in their natural resources, allied with weak law enforcement and the culture of impunity, might have driven them to conduct this self-destruction.

These findings imply that conservation-premised interventions for livelihood refinement need to be revamped to gratify the current and changing aspirations of local communities.

- (1) First, conservation-based livelihood programs need to provide (i) immediate benefits addressing the present needs and (ii) long-term benefits, which provide sustainable profits for next generations. Amidst the vast decline of natural resources and the related presence of lucrative businesses, an emphasis on the latter alone would not ensure support from local communities. Nonetheless, how to strike this balance depends on the characterization and contextualization of individual localities and communities.
- (2) Second, since the ELCs provided minimal economic benefits but substantial socio-cultural and environmental shocks, an alternative source of conservation and development for local communities should be explored. Selling carbon credits from the existing common forests to a private player could generate ample funding for development-oriented programs to meet the present needs and to conserve the forests for sustainable and inclusive development. A recent exemplar of the Walt Disney Company-community partnership in Keo Seima Wildlife Sanctuary could be an inspiration to learn from.

Finally, despite these challenges, there are opportunities that conservation and development interventions could capitalize on. The current political and technical commitments by the government, especially the ongoing review of ELCs, logging crackdown and development of the Environmental Code, and the recent high-level Forum on "Protection of Natural Resources", provide greater space for engagement. This political opportunity structure is crucial since CSOs

could build on the land and natural resource reforms undertaken by the government in the run-up to the imminent commune and national elections.

### **6.3. RECOMMENDATIONS**

The following recommendations need to be considered by the relevant governmental, non-governmental, and private institutions in order to reduce the negative impacts of ELC development, refine the IP communities' livelihood strategies, and preserve their indigenous culture. Despite listed for different institutions, there is much room for cross-institutional collaboration.

#### **For the national government**

1. Improve security mechanisms for communal land rights, forestlands, and sacred places/forests by speeding up the communal land registration and titling processes, in order to help IP communities secure their land and natural resources and reduce the overlapping areas with the ELC companies.
2. Introduce innovative land rights recognition, land administration, and governance of land and natural resources through multi-stakeholder involvement and collaboration, such as REDD+ modality.
3. Strengthen legal, institutional, and policy support, especially focusing on capacity building programs related to relevant land and NRM governance for IP communities, sub-national administrations and local authorities, and private concessionaires.
4. Develop and enforce proper M&E mechanisms for the conduct of EIA on ELC development as well as the consultation and dissemination of EIA reports with concerned stakeholders and beneficiaries, especially local communities. Such mechanisms would enable IP communities to be aware of possible impacts and exert influences to mitigate these impacts.

#### **For the sub-national government**

1. Promote community ownership and empowerment programs among IP communities in order to make them more responsible for their own sustainable growth and development.
2. Develop specific and integrated land use planning for the areas impacted by the ELC companies, such as commune or district-level spatial planning based upon ecosystem services and economic and non-economic benefits.

#### **For the private sector**

1. Promote corporate-community partnership in information sharing, joint agri-business development and management, joint investment in land and natural resources, and equitable benefit sharing.
2. Introduce strategic cropping techniques and support facilities and technologies to assist IP farmers to meet the increasing demand of agribusiness and agro-industrial markets.
3. Introduce proper market mechanisms to help IP communities access the right information and demand of cash crops. This would minimize the fluctuation of price and demand of cash crops produced by IP communities.

### **For NGOs and CBOs**

1. Promote more participatory and accountable governance of land and natural resources, particularly at the grassroots level, by introducing innovative multi-stakeholder networking platforms and interventions with proper reporting and conflict resolution mechanisms.
2. Promote public consultation on ELC development and its significance between the ELC companies and IP communities as well as between the responsible government authorities and the communities in order to exercise the FPIC (free, prior & informed consent) mechanisms.
3. Identify sustainable financing mechanisms for long-term biodiversity conservation and conservation-based livelihood programs for local communities.
4. Introduce climate-change-adaptive livelihood development programs and DRD strategies to IP communities in order to enhance their capabilities in addressing their livelihood needs.

### **For Development Partners**

1. Support MAFF to continue to regularly review the existing ELCs in order to monitor and evaluate their compliance with the regulatory frameworks and agreements.
2. Assist MoE to finalize its Environmental Code and apply it with the green growth strategies to achieve green, inclusive, and resilient development.



*Potential of Lomkud Lake for CBET development in Seda commune, Lumphat district (2016)*



*A model of Community Bamboo Enterprise initiated by Bambusa Global Venture that could be replicated in Ratanakiri (Source: [www.easternmirronagaland.com](http://www.easternmirronagaland.com))*

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## Appendix A:

### A STUDY ON “Impacts of Economic Land Concessions on Project Target Communities Living Near Concession Areas in Virachey National Park and Lumphat Wildlife Sanctuary, Ratanakiri Province”

#### QUESTIONNAIRE FOR SEMI-STRUCTURED HOUSEHOLD SURVEY

Questionnaire N<sup>o</sup>: ..... Date: .....  
Interviewer’s name: ..... Time: .....  
Village:..... Commune: ..... District: .....

#### **PART I: Background Information**

1. Respondent’s name: ..... (If allowed by the respondent)
2. Sex:  Male  Female
3. Age: .....
4. Status in the family?  Household head  Wife  Husband  Daughter  Son  
 Others (please specify: .....) )
5. Marital status:  Married  Single  Divorced  Separate  Widow
6. Ethnicity:  Khmer  Khmer-Lao  Tumpoun  Kroeung  Kachok  Kavet  Pnorng  Brau  Jarai  Cham  Others: .....
7. How long have you been living in this village? ..... Years
8. Are you an in-migrant?  Yes  No (If no, skip to Question 9)  
If yes, where do you / your family migrate from? .....  
Year of migration into the area: ..... Reasons for in-migration: .....

#### **PART II: Analysis of Community Livelihood and Production Systems**

9. How many children are there in your family? Male: ..... Female: ..... Total: .....
10. How many schools are there in your villages?  
Primary: ..... Secondary: ..... High school: .....
11. How many members are there in your family? Male: ..... Female: ..... Total: .....

12. Level of education of household members

Level of Education	Male (no.)	Female (no.)	Level of Education	Male (no.)	Female (no.)
No education			Lower secondary		
Functional literacy			Upper secondary		
Education at local pagoda			University		
Primary			Others: .....		

13. What are the sources of your household livelihoods? (You can tick more than one)

1. Shifting rice farming <input type="checkbox"/>	10. Fishing and sale of catches, both fresh and fermented ones <input type="checkbox"/>	19. Forest and non-forest products collecting <input type="checkbox"/>
2. Rice farming on permanent plot <input type="checkbox"/>	11. Vegetable gardening or mixed cropping <input type="checkbox"/>	20. Hunting <input type="checkbox"/>
3. Rubber plantation <input type="checkbox"/>	12. Livestock / animal rearing	21. Handicraft <input type="checkbox"/>
4. Cashew nut plantation <input type="checkbox"/>	13. Business (SME, trading, shop, etc.) <input type="checkbox"/>	22. Artisanal mining <input type="checkbox"/>
5. Corn cultivation <input type="checkbox"/>	14. Official regular part-time employment <input type="checkbox"/>	23. Wage labor in mining <input type="checkbox"/>
6. Cassava cultivation <input type="checkbox"/>	15. Casual wage labor in agricultural land / agro-industrial plantation <input type="checkbox"/>	24. Remittances <input type="checkbox"/>
7. Peppercorn cultivation <input type="checkbox"/>	16. Money lending <input type="checkbox"/>	25. Land leasing <input type="checkbox"/>
8. Mung bean cultivation <input type="checkbox"/>	17. Official regular work with NGOs, government, and / or company <input type="checkbox"/>	26. Others (specify): .....
9. Other strategic cropping / cash crops cultivation <input type="checkbox"/>	18. Wood / timber cutting and /or selling <input type="checkbox"/>	.....
		.....)

14. List down the top 3 livelihood activities and income involved by you / your family. Use information in Q13 to fill out the blanks. And how do you compare your annual household income during these past 12 months with the previous year and next year?

Top 5 Livelihood Activities / Income	Estimated Annual Income from Each Livelihood Activities	Comparison of Annual Income with the Previous Year	Comparison of Annual Income with the Next Year
Top 1 [.....]	..... ₪ ..... \$	<input type="checkbox"/> Increased <input type="checkbox"/> Same as previous year <input type="checkbox"/> Decreased	<input type="checkbox"/> Increased <input type="checkbox"/> Same as this year <input type="checkbox"/> Decreased
Top 2 [.....]	..... ₪ ..... \$	<input type="checkbox"/> Increased <input type="checkbox"/> Same as previous year <input type="checkbox"/> Decreased	<input type="checkbox"/> Increased <input type="checkbox"/> Same as this year <input type="checkbox"/> Decreased
Top 3 [.....]	..... ₪ ..... \$	<input type="checkbox"/> Increased <input type="checkbox"/> Same as previous year <input type="checkbox"/> Decreased	<input type="checkbox"/> Increased <input type="checkbox"/> Same as this year <input type="checkbox"/> Decreased

15. Is your household income enough to support your family on daily expense and other extra costs? More than enough  Just enough  Not enough  Extremely insufficient  No idea

16. How many times does your family eat per day?  
Three times  Two times  One time  (Specify: .....

17. Have you or your family ever experienced having no rice or food to eat?  Yes  No  
If yes, how often? ..... When: ..... How long? .....

18. Do you or does your family borrow money from a bank, a micro-financing institution (MFI), and /or a local money lender?  Yes  No *If yes, answer the followings:*  
 Who is the lender? Bank  MFI  Local money lender  Friends and relatives   
 Agricultural product wholesale buyers (merchant / dealer)   
 Local NGO  Others: .....
- Is it difficult to repay them?  Yes  No Why?: .....
19. What is your family's average monthly spending? Riel / US\$ .....  
 Please priority five of the following expenses by ranking them from 1 (top priority) to 5.  
 Food stuffs, including food processing [.....] Children's education [.....]  
 Buying jewelry [.....] Health care [.....]  
 House construction and maintenance [.....] Buying land for agriculture [.....]  
 Buying materials for agriculture [.....] Clothes [.....]  
 Buying goods (TV, motor, radio, phone, etc.) [.....] Social events (wedding, feast, etc.) [.....]  
 Buying drought animals for rearing [.....] Others: ..... [.....]
20. Where does your family normally go for medical check-up and / or medical treatment?  
 (You can tick more than one)  
 Local health-care post or center  District referral hospital  Provincial hospital  Private clinic   
 Witch doctor / spirit possession  Collect medicinal / herbal plants for own treatment   
 Is medication or treatment effective?  Yes  No Why / why not? .....
21. How far (km) is the nearest hospital or medical clinic from your home? ..... km
22. What are the common diseases that you and your family face in rainy season and dry season?  
 In rainy season: .....  
 In dry season: .....
23. How do you access to markets to sell your agricultural produces? (You can tick more than one)  
 Transport produces by motorcycle  Transport produces by small tractor (Kor Yun)   
 Transport produces by big tractor (including Krabey Yun)  Transport produces by pick-up car or truck   
 Carry produces on foot to the market  Sell produces to merchants who come to the village   
 Sell produces to community cooperatives / enterprises  (specify name of the cooperative or enterprise: .....
24. How do you get access to information outside your village?

Type of Information	Means of Access	Type of Information	Means of Access
Social information, including knowledge and skill development and job opportunities, etc.	- Word of mouth <input type="checkbox"/> - Village / commune meeting <input type="checkbox"/> - Meeting with provincial line departments <input type="checkbox"/> - Meeting with district authority <input type="checkbox"/> - NGO meeting or NGO project in the area <input type="checkbox"/> - Families and relatives <input type="checkbox"/>	Political information, including new political reforms by the government, regional development of Cambodia-Laos-Vietnam (CLV), etc.	- Word of mouth <input type="checkbox"/> - Village / commune meeting <input type="checkbox"/> - Meeting with provincial line departments <input type="checkbox"/> - Meeting with district authority <input type="checkbox"/> - NGO meeting or NGO project in the area <input type="checkbox"/> - Families and relatives <input type="checkbox"/>
Economic and market information, including markets for your agricultural produces, new economic development plans of the government, etc.	- Word of mouth <input type="checkbox"/> - Village / commune meeting <input type="checkbox"/> - Meeting with provincial line departments <input type="checkbox"/> - Meeting with district authority <input type="checkbox"/> - NGO meeting or NGO project in the area <input type="checkbox"/> - Local merchant <input type="checkbox"/> - Families and relatives <input type="checkbox"/>	Environmental information, including conservation activities, quality and quantity of land, forest and other natural resources, etc.	- Word of mouth <input type="checkbox"/> - Village / commune meeting <input type="checkbox"/> - Meeting with provincial line departments <input type="checkbox"/> - Meeting with district authority <input type="checkbox"/> - NGO meeting or NGO project in the area <input type="checkbox"/> - Families and relatives <input type="checkbox"/>

25. How do you think about infrastructure development and physical changes in your area if compared to the last 3 years?  
 Houses:  Improved  Like before / no change  Worsen  
 Electricity:  Improved  Like before / no change  Worsen

- Water:  Improved  Like before / no change  Worsen
- Roads:  Improved  Like before / no change  Worsen
- School, hospital & other public buildings:  Improved  Like before / no change  Worsen
- Technology applied in farming, animal husbandry, fishing, living, & security system:  Improved  Like before / no change  Worsen
- Quality of knowledge of people & local authorities  Improved  Like before / no change  Worsen
- Land tenure / ownership  Improved  Like before / no change  Worsen
- Access to land and natural resources  Improved  Like before / no change  Worsen
- Amount of land and natural resources for local use  Increased  Like before / no change  Decreased
26. Do you have access to common property resources in your locality/community?  Yes  No  
 If 'yes', what types of common property resources?.....  
 If 'no', what are the distracting factors? .....
27. Is access to common property resources restricted at present?  Yes  No  
 If 'yes', how does it affect your livelihoods?  
 Does not affect because current benefits are very small   
 Affect only little but can easily be managed without these   
 Significantly affect our livelihoods because alternative livelihood options are limited   
 Restriction means our livelihood sources are seized under current law and development   
 Others (specify): .....
28. Do you have electricity in your house?  Yes  No If "yes", what is the source of power? ( Generator  Supplied by private electricity generating firm  Electricity spawn)
29. What are the major livelihood problems that cause vulnerability on your family's and community livelihoods? Please tick the answer (s) and describe it / them briefly.
- |  |  |  |       |
|--|--|--|-------|
| Natural disaster   | <input type="checkbox"/> Yes <input type="checkbox"/> No | (Flood <input type="checkbox"/> Drought <input type="checkbox"/> Storm <input type="checkbox"/> Landslide <input type="checkbox"/> Forest fire <input checkbox"="" type="checkbox/&gt;)&lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Epidemic disease&lt;/td&gt; &lt;td&gt;&lt;input type="/> Yes <input type="checkbox"/> No | ..... |
| Conflicts over land & NR access and use                  | <input type="checkbox"/> Yes <input type="checkbox"/> No | .....  |       |
| Decline in or loss of livelihood sources                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | .....  |       |
| Competition with new skills and knowledge of in-migrants | <input type="checkbox"/> Yes <input type="checkbox"/> No | .....  |       |
| Economic land concession                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No | .....  |       |
| Limited land resources for agriculture                   | <input type="checkbox"/> Yes <input type="checkbox"/> No | .....  |       |
| Land tenure, incl. title for communal land               | <input type="checkbox"/> Yes <input type="checkbox"/> No | .....  |       |
| Others:  | .....  | .....  |       |
30. What is the existence and condition of natural resources in your area if compared to the last 3 years?

Type of Natural Resources	Level of Quantity			
Natural landscapes	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Natural habitats	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Wildlife	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Fishery resources	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>

Forests and forest cover	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Wood and fiber	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Birds and water birds	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Water sources and supply	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Non-timber forest products	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Mineral deposits	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Soil fertility for agriculture	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Natural flood control system	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>
Others: .....	Abundant <input type="checkbox"/>	Remained as before <input type="checkbox"/>	Less abundant <input type="checkbox"/>	Being destroyed dramatically <input type="checkbox"/>

31. Are these natural resources important for social and economic development in your village or community?  Yes  No  
 Why / why not: .....
32. Do you think these resources have been used, developed, and conserved properly?  Yes  No *Please explain:* .....
33. If the availability of natural resources is declining in your community / locality, what are the main reasons contributing to this decline? (You can tick more than one)  
 Illegal logging       Illegal hunting       Illegal land clearance  
 Natural disaster       Economic land concession       Forest concession  
 Mining concession       Hydro power dam       Rapid population growth  
 Over use by locals       Over use by in-migrants       Other (specify: .....)
34. Do you think people in your village / community have equal access to land and natural resources consumption?  Yes  No  
 Why / why not? .....
35. What make your village or community different or unique from others in terms of cultural resources?  
  - Cultural knowledge, including traditional knowledge / wisdom: .....
  - Cultural objects: .....
  - Cultural practices / activities: .....

### PART 3: Analysis of Support and Intervention Programs by Concerned Institutions

36. Do you know how many government agencies, NGOs, community services are operating in your locality? Please list them and point out their plans and works.

Name of Institution	Area of Work	Level of Effectiveness (1 = Effective, 2 = No idea, 3 = Not Effective)	Level of Trust on Their Work (1 = Trust, 2 = No idea, 3 = No trust)	Legend of Intervention Areas
<u>Government Departments</u>				1. Agriculture extension services 2. Rice production 3. Vegetable production 4. Fruit production 5. Animal husbandry / livestock rearing 6. Integrated farming 7. Irrigation system 8. Household income generation / small, medium scale enterprises 9. CBNRM 10. Water, sanitation and hygiene 11. Community health services 12. Disaster risk reduction 13. Microcredit / micro-finance 14. Education / literacy improvement 15. Infrastructural development
.....		1 2 3	1 2 3	
.....		1 2 3	1 2 3	
.....		1 2 3	1 2 3	
<u>Provincial / Local Authorities</u>				
.....		1 2 3	1 2 3	
.....		1 2 3	1 2 3	
.....		1 2 3	1 2 3	
<u>Local / international NGOs</u>				
.....		1 2 3	1 2 3	
.....		1 2 3	1 2 3	
.....		1 2 3	1 2 3	
<u>Community organizations</u>				
.....		1 2 3	1 2 3	

.....		1	2	3	1	2	3	16. Human right development / legal services on land & natural resource governance
.....		1	2	3	1	2	3	17. Others (specify): .....

37. Have you ever been invited to participate in or informed about the meetings, discussions, decision-makings, planning, and implementation for the development of your community?  
 Yes  No  If “yes”, who invited you? .....  
 How often? ..... In what ways? .....  
 If “no”, would you like to participate? Yes  No  Why / why not? .....
38. Have you ever initiated or been allowed to initiate any ideas for the development of your community, particularly concerning your livelihood strategy development? Yes  No   
 If “yes”, are your ideas accepted? Yes  No  Why / why not? .....

**PART 4: Land Use Change and Impacts on Community Livelihoods**

39. Do you or does your family have any land?  Yes  No (If yes, continue to the followings.)
- Residential land:  Yes  No ..... m<sup>2</sup>  
 Permanent farmland:  Yes  No ..... ha  
 Rice paddy:  Yes  No ..... ha  
 Shifting cultivation land:  Yes  No ..... ha  
 Home-garden:  Yes  No ..... ha  
 Forestland:  Yes  No ..... ha
40. (Continue from Q39) If no land for rice/crop cultivation or agricultural production, do your family normally lease land? And how much for land lease? (USD 1 = 4000 Riel)  
 Yes  No Riel / USD .....
41. Does your community have a communal land?  Yes  No If yes, how big is it? ... ha  
 If ‘yes’, has your communal land been officially registered and titled?  Yes  No
42. At present, who owns most of the land and natural resources in your area / community?  
 Government  Company (specify type of company: .....)  
 Local IP Community  In-migrants  Land speculators  
 Others (please specify: .....
43. Is land tenure or ownership and use different from what your community experienced in the last decade?  Yes  No  
 If yes, please explain your reasons: .....
44. (Continued from Q43) If yes, is land use change positive or negative on your livelihoods?  
 Positive  Negative Why: .....
45. Overall, what are the three challenges or obstacles to land and natural resource access and use by you and your community in the area?  
 (1) .....  
 (2) .....  
 (3) .....
47. Have there been any conflicts over land and natural resource access and use in your area?  Yes  No If yes, who are involved in resolving conflicts? .....
48. Do you know that you / your community have rights over land and natural resources in your area?  Yes  No If ‘yes’, what rights do you and your community have? (You can choose more than one)

- Right to access    Right to use    Right to conserve and preserve    Right to benefit  
 Other (please specify: .....

**PART 5: Impacts of ELCs on Local Community Livelihoods**

49. Are there any ELC company in your area?    Yes    No    No idea
50. (Continued from Q49) If 'yes', what do you know about this ELC company? (You can tick more than one)  
 Name of company (specify: .....)  
 Origin of company (specify: .....)  
 Location of ELC    Size of ELC    Length of ELC operation    ELC license  
 Benefits of ELC for local people    Negative impacts of ELC on people and nature  
 Compensation for socio-economic & environmental loss in the area    Year that this ELC started: ....  
 Process of public consultation by ELC company    Stage of ELC development  
 Institution granting right / license to ELC company (specify: .....)  
 Type of ELC   ( rubber plantation    eucalyptus plantation    acacia plantation  
 cassava planation    cashew nut plantation    palm oil tree plantation)
51. Has anyone explained to you and your (IP) community about compensation and how it works when ELC operation affects your properties and those of the entire community as well as the natural environment in the area?    Yes    No  
 If 'yes', what compensation is an ELC company expected or required to provide to the community and conservation activities in the area? .....
52. Has you or anyone in your community been told and explained how ELC operation is going to affect your and community livelihoods and land and natural resources in the area?  
 Yes    No (If 'no', skip to Q53) Who told / explained: .....
53. Has the ELC company in or nearby your area provided job opportunities to the locals?  
 Yes    No   If 'yes', specify type of job: ..... Amount of job offered: .....
54. Has the ELC company in or nearby your area provided funding and other supports for social development?    Yes    No   If 'yes', tick one or more of the followings:  
 Road construction or renovation    School construction or renovation  
 Health care construction or renovation    Supply of school facilities  
 Supply of health care facilities    Supply of clean water  
 Supply of electricity or low-cost electricity use    Provide support for literacy class  
 Provide support for capacity building    Construction / renovation of religious center  
 Knowledge, skill, and technology transfer for improving agricultural production of the locals  
 Provide skills and knowledge or fund for the locals to establish local SMEs  
 Build houses for local poor or homeless people    Other: .....
55. Has the ELC company in or nearby your area provided support or funding for environmental protection and preservation and / or environmental restoration activities?  
 Yes    No   If 'yes', specify amount of funding: ..... \$ and tick one or more of the followings:  
 Replantation    Conservation of natural habitats    Conservation of fauna & flora species  
 Support environmental education program    Other: .....

56. Have your family and your community been affected or are being affected by current ELC development and operation in the area?  Yes  No *If 'yes', tick one or more of the followings:*
- Land loss  Relocation and resettlement, including forced eviction
  - Limited access to land & natural resources  Changing or loss of traditional livelihoods
  - Changing or loss of culture and tradition  Injury
  - Occurrence of disease  Loss of raised animals
  - Increased water scarcity for local use due to over-consumption by ELC for agro-industrial plantation
  - Out-migration of locals to work in other areas  Increased food and income insecurity
  - Social intimidation, including sexual harassment, done by ELC company or in-migrant workers in ELC company
  - Other: .....
57. Are there any negative environmental impacts of current ELC development and operation on your family and community at present?  Yes  No *If 'yes', tick one or more of the followings:*
- Decline in quality and quantity of land and natural resources
  - Decline in quality and quantity of natural habitats
  - Decline in quality and quantity for non-timber forest products (NTFPs)
  - Loss of natural habitats and extinction of forest and animal species
  - Contaminated or intoxicated water in downstream areas due to the use of chemicals by ELC firm
  - Increased water scarcity that leads to decrease of soil fertility/quality or increased barren lands
  - Decline in natural resources that are used as core attractions for ecotourism or CBET in the area
  - Increased natural disasters like flood, drought, forest fire, landslide, etc. and extreme weather events
  - Decline in capacity of ecosystems to provide services for local community, human society, and our planet
  - Other: .....
58. Does your family or community ever have any conflicts with the current ELC development and operation in / nearby your area?  Yes  No
- If 'yes', how often?*  1 time per year  2 times per year  3 times per year  > 3 times per year
- If 'yes', is / are conflict (s) the same or different?*  Same conflict (s)  Different conflicts  No idea
- If 'yes', what type of conflict? (You can tick more than one)*
- Conflict over overlapped land  Conflict over blocked access to farmland & NTFP collecting areas
  - Conflict over water scarcity  Conflict over ELC intrusion on farmland
  - Conflict over dead animals  Conflict over ELC intrusion on sacred forest and burial ground
  - Conflict over sexual harassment  Conflict over polluted water sources caused by ELC firm's chemical use
  - Other: (specify: .....) )
59. (Continued from Q58) *If 'yes', who normally involved in conflict resolution? (You can tick more than one)*
- Village chief  Commune chief  District-level committee  Province-level committee
  - Inter-Departmental / Ministerial Committee  Human right development institutions (e.g. ADHOC, LICADO, etc.)
  - Local NGOs  NGO network  Government ministry (e.g. MLMUPC, MAFF, etc.)  Community's effort
  - Community – ELC company dialogue & negotiation  Other (specify: .....) )
- Are their support and involvement (or community's effort) in conflict resolution effective, helpful, fair and just?*
- Very effective  Effective  Not effective  Not effective at all  No idea
  - Very helpful  Helpful  Not helpful  Not helpful at all  No idea
  - Very fair & just  Fair & just  Unfair & unjust  Very unfair & unjust  No idea
- Between community's effort and interventions from external stakeholders, which one is more effective in solving ELC-induced conflicts in your area?*  Community's effort  Interventions from external stakeholders
- How does your community try to solve conflict with the ELC company?* .....
- .....
- How do external stakeholders intervene in ELC-induced conflict resolution?* .....
- .....

## PART 6: People’s Rating and Suggestions for Improved Livelihood Interventions

60. What are the livelihood interventions have you and your community received through SCW programs? Do you like them? How much do you think these intervention programs are helpful for your present livelihood condition?  I know  I don't know

Type of Trainings / Intervention Programs  (Circle Y = Yes or N = No for availability of programs / trainings. If yes, continue to the next columns)	SCW-WHH Projects								
	Level of Preference (1 = Like, 2 = No idea, 3 = Dislike)			Participation (1 = participate, 2 = No idea, 3 = never participate)			Level of Helpfulness (1 = helpful, 2 = No idea, 3 = not helpful)		
Organic and integrated farming (Y N)	1	2	3	1	2	3	1	2	3
System of rice intensification (Y N)	1	2	3	1	2	3	1	2	3
Animal husbandry / livestock raising (Y N)	1	2	3	1	2	3	1	2	3
Home-gardening (Y N)	1	2	3	1	2	3	1	2	3
Multi-cropping and strategic cropping (Y N)	1	2	3	1	2	3	1	2	3
Fruit tree growing / fruit production (Y N)	1	2	3	1	2	3	1	2	3
Water, sanitation and hygiene (Y N)	1	2	3	1	2	3	1	2	3
Processing of food, forest products and NTFPs (Y N)	1	2	3	1	2	3	1	2	3
Handicraft-making (Y N)	1	2	3	1	2	3	1	2	3
Micro, small, and medium enterprises (Y N)	1	2	3	1	2	3	1	2	3
Community enterprise / cooperative (Y N)	1	2	3	1	2	3	1	2	3
Community-based tourism / ecotourism development (Y N)	1	2	3	1	2	3	1	2	3
Sustainable harvesting of forest and natural resources (Y N)	1	2	3	1	2	3	1	2	3
Self-help group / saving group (Y N)	1	2	3	1	2	3	1	2	3
Micro-credit or micro-finance (Y N)	1	2	3	1	2	3	1	2	3
Food, nutrition and food security (Y N)	1	2	3	1	2	3	1	2	3
Indigenous people’s right development and advocacy programs (Y N)	1	2	3	1	2	3	1	2	3
Others: (specify) .....	1	2	3	1	2	3	1	2	3

61. In general, how would you rate your knowledge about SCW’s livelihood intervention programs in your area?

Very knowledgeable  Knowledgeable  No Ide  Know little  Don’t know

If “know little” or “don’t know”, what are the challenges limiting your knowledge about the programs? .....

Suggestions to reduce challenges: .....

62. Overall, how would you rate your participation in SCW’s livelihood intervention programs?

Very high  high  No Idea  Low  Very low

If “low participation” or “very low participation”, what are the challenges limiting your participation in the programs? .....

Suggestions to reduce challenges: .....

63. Overall, how would you rate the benefits you have received from SCW’s livelihood intervention programs in your area?  Very high  high  No Idea  Low  No benefits

If “low benefits” or “no benefits”, please specify your reasons: .....

Suggestions for improvement: .....

64. What are the three priority livelihood intervention programs do you want to see and have them implemented in your area or community with support from SCW? Please list them out and explain your reasons.
- (1) ..... Reasons: .....
- (2) ..... Reasons: .....
- (3) ..... Reasons: .....
65. How do you or your community will contribute to the success of SCW’s livelihood intervention project in your area?
- .....
- .....
66. What would you suggest to the government and NGOs to help improve the current practices of ELCs to have better positive impacts on your / your community livelihoods?
- .....
- .....
67. What would you suggest to the government, NGOs, and the existing ELC company to help reduce negative impacts of ELC development and operation on local community livelihoods and natural environment in your area?
- .....
- .....

**Thanks for your time and collaboration!**

## Appendix B: Tables and Figures

Table 2.1: Demographic profiles of interviewed households

Province	District	Commune	Village	N° of Total HHs	No of Selected HHs	Ethnicity	Name of ELCs
Ratanakiri	Taveng	Taveng Leu	Chan	45	11	Kroeung	Krong Buk
			Chouy	94	28	Kroeung	Krong Buk
	Kon Mom	Srae Angkrong	Village 1	110	39	Khmer-Lao	Hong Anh
			Village 2	140	40	Khmer-Lao	Hong Anh
			Village 3	132	44	Khmer-Lao	Hong Anh
	Lumphat	Seda	Samot Leu	178	56	Tumpoun	Roth Sokhorn
			Samot Krom	178	64	Tumpoun	Roth Sokhorn
					<b>877</b>	<b>282</b>	

Table 3.1: Current livelihood problems faced by local IP communities in the areas

Critical Livelihood Problems of Local Communities	Frequency of Multiple Responses % (n = 282)	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Natural disaster (flood: 40.4%, drought: 54.6%, storm: 33%, forest fire: 40.4%)	230 (81.6%)	97.4	88.6	69.2	80	83
Epidemic diseases	91 (32.3%)	74.4	23.6	27.5	33.3	31.3
Conflicts over land & natural resources access and use	164 (58.2%)	74.4	46.3	65	63	53.7
Decline in and loss of livelihood sources	180 (63.8%)	69.2	64.2	61.7	63.7	63.9
Competition with new skills and knowledge of in-migrants	108 (38.3%)	38.5	31.7	45	37	39.5
Increasing impacts caused by ELC	161 (57.1%)	66.7	45.5	65.8	60	54.4
Land loss caused by ELC	177 (62.8%)	76.9	48	73.3	70.4	55.8
Limited land resources for agricultural production	125 (44.3%)	43.6	43.9	45	44.4	44.2
Increasing misuse of natural capital stock (illegal land clearance: 55%, illegal hunting: 39.7%, illegal logging: 79.4%)	137 (48.6%)	59	47.2	46.7	45.9	56.5
Worsen access to land and natural resources	148 (52.5%)	64.1	44.7	56.7	54.8	50.3
Worsen decline in available amount of land and natural resources for local use	190 (67.4%)	84.6	62.6	66.7	72.6	62.6
No / unclear land tenure, including CLT for IP communities	196 (69.5%)	66.7	68.3	71.7	70.4	68.7

Table 3.2: Trend of availability of natural resources and habitats in the areas

Resource Trend Causing Livelihood Vulnerability	Taveng %				Kon Mom %				Lumphat %				Frequency of Multiple Responses % (n = 282) <i>Critically perceived as being less abundant and destroyed rapidly</i>
	Abundant	Remained as before	Less abundant	Destroyed dramatically	Abundant	Remained as before	Less abundant	Destroyed dramatically	Abundant	Remained as before	Less abundant	Destroyed dramatically	
Natural landscape	2.6	5.1	56.4	35.9	4.9	1.6	65	28.5	1.7	4.2	51.7	42.5	97.7%
Natural habitats	0.0	5.1	53.8	41	0.0	0.8	57	42.1	2.5	2.5	51.7	43.3	96.1%
Wildlife	0.0	2.6	51.3	46.2	0.8	0.8	39	59.3	1.7	5.8	26.7	65.8	95.8%
Fishery resources	5.1	7.7	66.7	20.5	3.3	4.1	54.5	38.2	5.0	3.3	49.2	42.5	91.5%
Forests and forest cover	0.0	0.0	69.2	30.8	2.4	0.8	44.7	52	0.8	3.3	45	50.8	96.8%
Wood and fiber	2.6	12.8	56.4	28.2	16.3	4.1	52.8	26.8	21.7	5.0	42.5	30.8	77.6%
Birds and water birds	2.6	17.9	51.3	28.2	1.7	8.3	57	33.1	0.8	10	46.7	42.5	87.6%
Water sources and supply	10.3	30.8	48.7	10.3	2.5	17.2	59	21.3	6.7	14.2	50	29.2	76.5%
NTFPs	2.6	7.7	53.8	35.9	0.0	3.3	58.2	38.5	0.8	0.8	46.7	51.7	96.3%
Mineral deposits	2.6	41	38.5	17.9	0.9	38.7	40.5	19.8	0.8	38.3	26.7	34.2	57.4%
Soil fertility and quality	12.8	28.2	56.4	2.6	5.7	30.1	46.3	17.9	5.0	13.3	56.7	25	70.9%
Natural flood control system	5.1	43.6	43.6	7.7	2.5	41.2	48.7	7.6	5.8	35.8	37.5	20.8	55.7%

Table 3.3: Current situation of food security in the areas

Condition of Food & Protein Intake (Food Security)				
How many times does your family eat per day?	Frequency (n = 282) %	Taveng %	Kon Mom %	Lumphat %
Three times	253 (89.7%)	100	87.7	88.3
Two times	28 (9.9%)	0.0	12.3	10.8
One time	1 (0.4%)	0.0	0.0	0.8
Have you / your family ever experienced having no rice or food to eat?	Frequency (n = 282) %	Taveng %	Kon Mom %	Lumphat %
Yes	85 (30.1%) <i>18% experienced 1-2 times / year (70% just for Taveng district alone), mostly before harvesting or rainy season</i>	59	24.4	26.7
No	197 (69.9%)	41	75.6	73.3

Table 3.4: Characteristics of the interviewed households

Target Districts	N° of Interviewed Households	Average Household Members	% of Female Household Interviewees	% of Indigenous Households	Average Male and Female Children Per Household
Taveng	39	5.4	25.6	100% (Kroeuung & Prov)	Male: 2 Female: 2-3
Kon Mom	123	5.5	62.6	39% (Khmer-Lao), 61% (Khmer)	Male: 2 Female: 2
Lumphat	120	4.5	50	94% (Tumpoun: 89%, Khmer-Lao: 3%, Phnong: 1%, Jarai: 1%, Khmer: 6%)	Male: 3 Female: 2-3

Table 3.5: Level of educational attainment by household members

Level of Education of Household Members	Male %	Female %
No education	13.8	20.4
Functional literacy	2.9	3.7
Education at local pagoda	2.2	0.0
Primary school	56.8	54.4
Secondary school	14.7	14.2
High school	8.9	6.2
University	0.7	1.1

Table 3.6: Diversity of livelihood sources for cash and non-cash income generation

Sources of Livelihood Income	% Multiple Responses Frequency of HH Involvement in Sources of Livelihood (n = 282)	Taveng % (n = 39)	Kon Mom % (n = 123)	Lumphat % (n = 120)	Estimated Average Annual Income from All Livelihood Sources (Only In-Cash Earning)
Shifting rice farming	53 (18.8%)	46.2	8.9	20	USD 1,036 (USD 1 = 4,000 riels)  • This average annual income does not included non-cash income for
Rice farming on permanent plot	227 (80.5%)	71.8	83.7	80	
Rubber plantation	5 (1.8%)	5.1	1.6	0.8	
Cashew nut plantation	81 (28.7%)	59	15.4	32.5	
Corn cultivation	34 (12.1%)	25.6	10.6	9.2	
Cassava cultivation	134 (47.5%)	51.3	26.8	67.5	
Pepper cultivation	2 (0.7%)	2.6	0.0	0.8	
Mung bean cultivation	27 (9.6%)	0.0	2.4	20	
Strategic cropping / cash crop cultivation	35 (12.4%)	0.0	1.6	27.5	
Fishing and sale of catches, both fresh and	49 (17.4%)	28.2	27.6	3.3	

fermented ones					supporting daily livelihoods of IP communities in the target districts. <ul style="list-style-type: none"> <li>Potential economic contributors to increasing household income are <i>strategic cropping</i> (cashew nut, mung bean, and cassava), <i>wage labor</i>, and <i>forest products and NTFP harvesting</i>, including logging as well.</li> </ul>
Vegetable gardening or mixed cropping	38 (13.5%)	28.2	16.3	5.8	
Livestock / animal rearing	151 (53.5%)	51.3	73.2	34.2	
Business (SME, trading, shop, etc.)	34 (12.1%)	5.1	19.5	6.7	
Official regular part-time employment	4 (1.4%)	2.6	2.4	0.0	
Casual wage labor in agricultural land / agro-industrial plantation	58 (20.6%)	46.2	16.3	16.7	
Money lending	1 (0.4%)	0.0	0.8	0.0	
Official regular work with NGOs, government, and / or company	13 (4.6%)	0.0	7.3	3.3	
Wood / timber cutting and /or selling	20 (7.1%)	7.7	8.9	5.0	
Forest and non-forest products collecting	27 (9.6%)	10.3	11.4	7.5	
Hunting	19 (6.7%)	7.7	10.6	2.5	
Handicraft	6 (2.1%)	10.3	1.6	0.0	
Artisanal mining	0 (0.0%)	0.0	0.0	0.0	
Wage labor in mining	0 (0.0%)	0.0	0.0	0.0	
Remittances	0 (0.0%)	0.0	0.0	0.0	
Land leasing	1 (0.4%)	0.0	0.8	0.0	
Other livelihood sources	17 (6.0%)	5.1	9.8	2.5	

Table 3.7: Three priority livelihood activities involved by local households

Top 3 Livelihood Activities / Income (% Frequency of Multiple Responses)	Comparison of Annual Income with Previous Year (%)			Comparison of Annual Income with Next Year (Based on Respondents' Projection) (%)				
		Taveng	Kon Mom	Lumphat		Taveng	Kon Mom	Lumphat
Rice farming on permanent plot (49%) <b>Taveng: 51.3%, Kon Mom: 44.3%, Lumphat: 49.2%</b>	<input type="checkbox"/> Increased (30%)	35.9	27.9	30.5	<input type="checkbox"/> Increased (28.3%)	28.2	27.9	28.8
	<input type="checkbox"/> Same as last year (35%)	35.9	32.8	37.3	<input type="checkbox"/> Same as this year (43.4%)	46.2	41	44.9
	<input type="checkbox"/> Decreased (35%)	28.2	39.3	32.2	<input type="checkbox"/> Decreased (28.3%)	25.6	31.1	26.3
Strategic cropping (mainly cashew nut followed by cassava and mung bean plantation) (30% - mainly cashew nut and cassava)	<input type="checkbox"/> Increased (29.4%)	19.4	30.3	32	<input type="checkbox"/> Increased (27.9%)	29.4	25.7	29.8
	<input type="checkbox"/> Same as last year (47.6%)	44.4	47.7	48.5	<input type="checkbox"/> Same as this year (51.8%)	47.1	56	49
	<input type="checkbox"/> Decreased (23%)	36.1	22	19.4	<input type="checkbox"/> Decreased (20.2%)	23.5	18.3	21.2
Livestock / animal rearing (18%)	<input type="checkbox"/> Increased (26.4%)	33.3	30.2	20	<input type="checkbox"/> Increased (22.3%)	37	17.9	19.6
	<input type="checkbox"/> Same as last year (42.6%)	42.9	37.7	47.3	<input type="checkbox"/> Same as this year (53.2%)	48.1	53.6	55.4
	<input type="checkbox"/> Decreased (31%)	23.8	32.1	32.7	<input type="checkbox"/> Decreased (24.5%)	14.8	28.6	25

Table 3.8: Level of sufficiency of income against daily expenses

Level of Daily Income	Frequency (%)	Level of Adequacy of Daily Earning for Household Consumption and Goods Exchange / Purchase (Frequency %, n = 282)		
		Taveng	Kon Mom	Lumphat
More than enough	60 (21.3%)	10.3	21.1	25
Just enough	122 (43.3)	56.4	45.5	36.7
Not enough	91 (32.3%)	28.2	30.9	35
Extremely insufficient	9 (3.2%)	5.1	2.4	3.3

Table 3.9: Available health infrastructure and services and their effectiveness in the areas

Existing Health Infrastructure and Treatment Patterns	% Frequency of Multiple Responses (n = 282)	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Local health care post / center	62.4%	43.6	57.7	73.3	60.7	63.9
District referral hospital	36.2%	59	29.3	35.8	37	35.4
Provincial hospital	20.9%	10.3	17.9	27.5	19.3	22.4
Private clinic	27.8%	23.1	37.7	19.2	23.7	31.5
Witch doctor / spirit possession	14.9%	35.9	8.9	14.2	15.6	14.3
Collect medicinal / herbal plants for own treatment	8.9%	12.8	8.9	7.5	6.7	10.9
Opinion on Effectiveness of Available Medical Treatment in the Area	Frequency (n = 282) %	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Yes	256 (90.8%)	89.7	90.2	91.7	93.3	88.4
No	26 (9.2%)	10.3	9.8	8.3	6.7	11.6

Table 3.10: Condition of indebtedness of local households, their repayment, and lending bodies

Experience in Borrowing Money	Frequency (n = 282)	Taveng %	Kon Mom %	Lumphat %	Type of Money Lender	Frequency (n = 282)	Taveng %	Kon Mom %	Lumphat %
Yes	100 (35.5%)	25.6	35	39.2	Bank	30%	10	27.9	36.2
No	182 (64.5%)	74.4	65	60.8	Micro-finance institution	30%	10	25.6	38.3
Difficulty in Repayment	Frequency (n = 282)	Taveng %	Kon Mom %	Lumphat %	Local money lender	2.0%	0.0	2.3	2.1
Yes	41.5%	60	47.5	31.8	Friends and relatives	32%	70	41.9	14.9
No	58.5%	40	52.5	68.2	Local NGO	3.0%	0.0	2.3	4.3
					Others	3.0%	10	0.0	4.3

Table 3.11: Average expenses of local households and modes of priority expenses

Average Household Monthly Spending = USD 107	Frequency Across Three Target Districts (n = 282)	Top 6 Priority of Household Expenses (% of Multiple Responses)	Taveng %	Kon Mom %	Lumphat %
Up to USD 50	37.4%	Food stuffs including food processing ( <b>72.7%</b> )	76.9	65.9	78.3
USD 50 – 100	24.7%	Health care ( <b>34.1%</b> )	42.6	28.7	35.6
USD 100 – 200	25.8%	Children's education ( <b>20.4%</b> )	30.8	19.7	17.8
USD 200 – 500	12.1%	Buying clothes ( <b>19.3%</b> )	25.6	16	20.7
		Buying materials for agriculture ( <b>21.6%</b> )	17.9	20.7	24.2
		Social events (weeding, feast, etc.) ( <b>21.6%</b> )	23.1	18	25.3

Table 3.12: Local perceptions of local infrastructural development to date

Opinion on Infrastructure Development in the Area		Frequency of Multiple Responses	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Houses	Improved	85.1%	79.5	83.7	88.3%	87.4	83
	Like before / no change	11.7%	20.5	11.4	9.2	10.4	12.9
	Worsen	3.2%	0.0	4.9	2.5	2.2	4.1
		Frequency of Multiple Responses	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Electricity	Improved	48.9%	61.5	41.5	52.5	51.9	46.3
	Like before / no change	49.6%	35.9	56.9	46.7	47.4	51.7
	Worsen	1.4%	2.6	1.6	0.8	0.7	2.0
		Frequency of Multiple Responses	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Water	Improved	41.1%	41	36.6	45.8	44.4	38.1
	Like before / no change	41.8%	43.6	45.5	37.5	40.7	42.9
	Worsen	17%	15.4	17.9	16.7	14.8	19
		Frequency of Multiple Responses	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Roads	Improved	93.6%	94.9	93.5	93.3	95.6	91.8
	Like before / no change	5.0%	2.6	5.7	5.0	3.7	6.1
	Worsen	1.4%	2.6	0.8	1.7	0.7	2.0
		Frequency of Multiple Responses	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
School, hospital and	Improved	74.8%	66.7	70.7	81.7	75.6	74.1

other public buildings	Like before / no change	24.1%	30.8	27.6	18.3	24.4	23.8
	Worsen	1.1%	2.6	1.6	0.0	0.0	2.0
		<b>Frequency of Multiple Responses</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Technology applied in farming, animal husbandry, fishing, living and security system	Improved	57.4%	59	49.6	65	61.5	53.7
	Like before / no change	36.9%	35.9	43.9	30	32.6	40.8
	Worsen	5.7%	5.1	6.5	5.0	5.9	5.4
		<b>Frequency of Multiple Responses</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Quality of knowledge of people and local authorities	Improved	64.9%	66.7	69.1	60	63	66.7
	Like before / no change	32.6%	25.6	30.1	37.5	34.1	31.3
	Worsen	2.5%	7.7	0.8	2.5	3.0	2.0

Table 3.13: Access to and sources of electricity for local consumption

Access to Electricity Consumption in the Area	Frequency (n = 282) %	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Yes	264 (93.6%)	87.2	95.1	94.2	93.3	93.9
No	18 (6.4%)	12.8	4.9	5.8	6.7	6.1
Sources of Electricity in the Area	Frequency (n = 282) %	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Generator	11 (3.9%)	0.0	3.4	6.1	2.4	5.7
Electricity spawn	258 (91.5%)	79.4	93.2	92.1	91.3	90.7
Solar power	13 (4.6%)	20.6	3.4	1.8	6.3	3.6

Table 3.14: Household consumption and modes of transport of agricultural products to markets

Consumption Patterns and Modes of Transport of Agricultural Produces to Markets	% Frequency of Multiple Responses (n = 282)	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Do not sell / keep for household consumption	110 (39%)	97.4	35	24.2	42.2	36.1
Sell produces to merchants who come to buy in the village	213 (75.5%)	59	78	78.3	74.8	76.2
Sell produces to community cooperative / enterprise	5 (1.8%)	2.6	1.6	1.7	2.2	1.4
No produces to sell	25 (8.9%)	5.1	11.4	7.5	9.6	8.2
Transport produces by motorcycle	42 (14.9%)	25.6	19.5	6.7	14.8	15
Transport produces by small tractor (Kor Yun)	7 (2.5%)	0.0	4.1	1.7	2.2	2.7
Transport produces by big tractor (including Krabei Yun)	6 (2.1%)	0.0	4.9	0.0	1.5	2.7
Transport produces by pick-up car or truck	10 (3.5%)	2.6	1.6	5.8	1.5	5.4
Carry produces on foot to the market	9 (3.2%)	12.8	3.3	0.0	3.0	3.4

Table 3.15: Types and means of information access by local households in the areas

Type of Information Access	Means of Access	Frequency of Multiple Responses (% , n = 282)	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
<b>Social information, including knowledge and skill development and job opportunities</b>	Word of mouth	52.7%	59	51.6	51.7	50.4	54.8
	Village / commune meeting	68.8%	53.8	72.4	70	61.5	75.5
	Meeting with provincial line departments	2.5%	0.0	2.4	3.3	2.2	2.7
	Meeting with district authority	5.3%	10.3	4.9	4.2	4.4	6.1
	NGO meeting or NGO project in the area	20.6%	53.8	11.4	19.2	27.4	14.3
	Families and relatives	15.6%	25.6	13.8	14.2	14.1	17
	<b>Means of Access</b>	<b>Frequency of Multiple Responses (% , n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
<b>Economic and market information</b>	Word of mouth	52.1%	51.3	52	52.5	51.1	53.1
	Village / commune meeting	61.7%	53.8	59.3	66.7	60.7	62.6
	Meeting with provincial line departments	2.1%	2.6	0.8	3.3	2.2	2.0
	Meeting with district authority	3.9%	5.1	4.9	2.5	3.0	4.8
	NGO meeting or NGO project in the area	12.8%	38.5	4.1	13.3	17	8.8
	Families and relatives	13.1%	15.4	16.3	9.2	11.9	14.3
	<b>Means of Access</b>	<b>Frequency of Multiple Responses (% , n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
<b>Political information</b>	Word of mouth	40.4%	53.8	35.8	40.8	40	40.8
	Village / commune meeting	83.3%	78.9	86.2	81.7	83.6	83
	Meeting with provincial line departments	2.8%	0.0	1.6	5.0	3.0	2.7
	Meeting with district authority	5.3%	10.3	4.9	4.2	6.7	4.1
	NGO meeting or NGO project in the area	13.5%	33.3	7.3	13.3	16.3	10.9
	Families and relatives	13.8%	23.1	13.8	10.8	11.9	15.6
	<b>Means of Access</b>	<b>Frequency of Multiple Responses (% , n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
<b>Environmental information</b>	Word of mouth	39.7%	48.7	39.8	36.7	36.3	42.9
	Village / commune meeting	75.9%	66.7	70.7	84.2	76.3	75.5
	Meeting with provincial line departments	6.4%	10.3	3.3	8.3	5.2	7.5
	Meeting with district authority	7.8%	17.9	7.3	5.0	7.4	8.2
	NGO meeting or NGO project in the area	30.1%	53.8	19.5	33.3	34.1	26.5
	Families and relatives	11.3%	15.4	11.4	10	8.9	13.6

Table 3.16: Community control and participation in local development and conservation

<b>Experience in Being Invited to Participate in or Informed about Community Development Plans (Frequency)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Yes	92.3%	68.3%	75%	74.1%	74.8%
No	7.7%	31.7%	25%	25.9%	25.2%
<b>Who Invited You?</b>	<b>Lumphat %</b>	<b>O'Yadav %</b>	<b>Andong Meas %</b>	<b>Male %</b>	<b>Female %</b>
Village chief	63.9%	75%	83.3%	73%	80%
Commune chief	19.4%	16.7%	3.3%	13%	10%
Provincial authority	0.0%	1.2%	1.1%	1.0%	0.9%
Local NGOs	16.7%	7.1%	8.9%	13%	6.4%
Community-based organizations	0.0%	0.0%	1.1%	0.0%	0.9%
Others	0.0%	0.0%	2.2%	0.0	1.8%
<b>Experience in Initiating or Being Allowed to Initiate Ideas for Community Development &amp; Livelihood Improvement</b>	<b>Lumphat %</b>	<b>O'Yadav %</b>	<b>Andong Meas %</b>	<b>Male %</b>	<b>Female %</b>
Yes	43.6%	28.9%	29.3%	34.6%	28%
No	56.4%	71.1%	70.7%	65.4%	72%
<b>If Yes, Have Your Ideas Been Accepted?</b>	<b>Lumphat %</b>	<b>O'Yadav %</b>	<b>Andong Meas %</b>	<b>Male %</b>	<b>Female %</b>
Yes	41%	53.3%	57.1%	52.2%	49.2%
No	59%	46.7%	42.9%	47.8%	50.8%

Table 3.17: Access to land and situation of land tenure and conflicts in the areas

<b>Land Possession</b>	<b>Frequency of Multiple Responses (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Residential land	96.1	89.7	98.4	95.8	95.6	96.6
Permanent farmland	58.5	64.1	42.3	73.3	62.2	55.1
Rice paddy	74.5	66.7	72.4	79.2	74.1	74.8
Shifting cultivation land	18.1	35.9	11.4	19.2	21.5	15
Home-garden	7.1	15.4	5.7	5.8	6.7	7.5
Forestland	16	28.2	14.6	13.3	13.3	18.4
Communal land (CLT – communal land titling is still a big challenge to overcome)	39.6	59	31.7	41.3	41.7	37.6
<b>Have you communal land been officially registered?</b>	36.1	30.8	33.3	42.6	30.6	41.7
<b>Who owns most land and natural resources in the area?</b>	<b>Frequency of Multiple Responses (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Government	9.9	0.0	12.2	10.8	8.1	11.6

Company	83	92.3	85.4	77.5	85.2	81
Local indigenous community	3.9	5.1	1.6	5.8	3.0	4.8
In-migrants	2.1	2.6	0.8	3.3	2.2	2.0
Land speculator	1.1	0.0	0.0	2.5	1.5	0.7
<b>Are land tenure or ownership and use different from what your community experienced in the last decade?</b>	<b>Frequency of Multiple Responses (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Yes	74.1	71.8	69.9	79.2	76.3	72.1
No	25.9	28.2	30.1	20.8	23.7	27.9
<b>Is land use change positive or negative on your livelihoods?</b>	<b>Frequency of Multiple Responses (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Positive	44.5	41.4	50	41	46.7	42.5
Negative	55.5	58.6	50	59	53.3	57.5
<b>Have there been any conflicts over land and natural resource access and use in your area?</b>	<b>Frequency of Multiple Responses (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Yes	59.3	71.8	48.8	65.8	61.2	57.5
No	40.7	28.2	51.2	34.2	38.8	42.5
<b>Who are usually involved in conflict resolution?</b>	<b>Frequency of Multiple Responses (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Village chief	54.4	37.9	42.2	68	50.7	58.1
Commune chief	25.5	48.3	40	8.0	24	27
District chief	8.1	3.4	8.9	9.3	6.7	9.5
Provincial authority	4.0	0.0	6.7	4.0	5.3	2.7
Local NGOs	2.0	0.0	0.0	4.0	4.0	0.0
International NGOs	0.7	0.0	2.0	0.0	1.3	0.0
Community organizations	3.4	6.9	0.0	4.0	5.3	1.4
Government ministries	0.7	0.0	0.0	1.3	0.0	1.4
Others	1.3	3.4	0.0	1.3	2.7	0.0

Table 3.18: Local perceptions of quantity and quality of natural resources and habitats in the areas

Existence and Condition of Natural Resources in the Area	% Frequency of Multiple Responses (n = 282)				Taveng Multiple Responses %				Kon Mom Multiple Responses %				Lumphat Multiple Responses %			
	Abundant	Remained as Before	Less Abundant	Being Destroyed Dramatically	Abundant	Remained as Before	Less Abundant	Being Destroyed Dramatically	Abundant	Remained as Before	Less Abundant	Being Destroyed Dramatically	Abundant	Remained as Before	Less Abundant	Being Destroyed Dramatically
Natural landscape	3.2	3.2	58.2	35.5	2.6	5.1	56.4	35.9	4.9	1.6	65	28.5	1.7	4.2	51.7	42.5
Natural habitats	1.1	2.1	54.3	42.5	0.0	5.1	53.8	41	0.0	0.8	57	42.1	2.5	2.5	51.7	43.3
Wildlife	1.1	3.2	35.5	60.3	0.0	2.6	51.3	46.2	0.8	0.8	39	59.3	1.7	5.8	26.7	65.8
Fishery resources	4.3	4.3	53.9	37.6	5.1	7.7	66.7	20.5	3.3	4.1	54.5	38.2	5.0	3.3	49.2	42.5
Forests, forest cover and / or flooded forests	1.4	1.8	48.2	48.6	0.0	0.0	69.2	30.8	2.4	0.8	44.7	52	0.8	3.3	45	50.8
Wood and fiber	16.7	5.7	48.9	28.7	2.6	12.8	56.4	28.2	16.3	4.1	52.8	26.8	21.7	5.0	42.5	30.8
Birds and water birds	1.4	10.4	51.8	36.4	2.6	17.9	51.3	28.2	1.7	8.3	57	33.1	0.8	10	46.7	42.5
Water sources and supply	5.3	17.8	53.7	23.1	10.3	30.8	48.7	10.3	2.5	17.2	59	21.3	6.7	14.2	50	29.2
Non-timber forest products	0.7	2.8	52.7	43.8	2.6	7.7	53.8	35.9	0.0	3.3	58.2	38.5	0.8	0.8	46.7	51.7
Mineral deposits	1.1	38.9	34.1	25.9	2.6	41	38.5	17.9	0.9	38.7	40.5	19.8	0.8	38.3	26.7	34.2
Soil fertility for agriculture	6.4	22.7	52.1	18.8	12.8	28.2	56.4	2.6	5.7	30.1	46.3	17.9	5.0	13.3	56.7	25
Natural flood control system	4.3	39.2	43.2	13.3	5.1	43.6	43.6	7.7	2.5	41.2	48.7	7.6	5.8	35.8	37.5	20.8

Table 3.19: Local perceptions of significance, access to and management of land and natural resources and drivers leading to resource degradation in the areas

Perception on the Importance of Land & Natural Resources for Social and Economic Development in the Area / Community	Frequency of Multiple Responses (n = 282) %	Taveng Multiple Responses %	Kon Mom Multiple Responses %	Lumphat Multiple Responses %	Male %	Female %
Yes	95%	92.3	95.9	95	94.1	95.9
No	5.0%	7.7	4.1	5.0	5.9	4.1
Do you think these land & natural resources have been used, managed and conserved properly?	Frequency of Multiple Responses (n = 282) %	Taveng Multiple Responses %	Kon Mom Multiple Responses %	Lumphat Multiple Responses %	Male %	Female %
Yes	95%	41	52.8	53.3	45.9	56.5
No	5.0%	59	47.2	46.7	54.1	43.5
Major Reasons Leading to Rapid Decline in Natural Resources in the Area	% Frequency of Multiple Responses (n = 282)	Taveng Multiple Responses %	Kon Mom Multiple Responses %	Lumphat Multiple Responses %	Male %	Female %
Illegal logging	79.4%	69.2	84.6	77.5	77	81.6
Illegal hunting	39.7%	30.8	39.8	42.5	37.8	41.5
Illegal land clearance	55%	46.2	52.8	60	51.1	58.5

Natural disaster	15.6%	20.5	17.1	12.5	14.8	16.3
Economic land concession	58.2%	76.9	48	62.5	62.2	54.4
Forest concession	31.9%	30.8	34.1	30	32.6	31.3
Mining concession	1.4%	2.6	1.6	0.8	1.5	1.4
Hydro power dam	7.1%	7.7	12.2	1.7	5.2	8.8
Rapid population growth	19.9%	7.7	22.8	20.8	17.8	21.8
Over use by the locals	20.2%	23.1	19.5	20	17.8	22.4
Over use by in-migrants	11.7%	12.8	16.3	6.7	6.7	16.3
<b>Opinion on Restriction on Equal Access to Common Property Resources</b>	<b>% Frequency of Multiple Responses (n = 282)</b>	<b>Taveng Multiple Responses %</b>	<b>Kon Mom Multiple Responses %</b>	<b>Lumphat Multiple Responses %</b>	<b>Male %</b>	<b>Female %</b>
Yes	73%	87.2	74.8	66.7	77.8	68.7
No	27%	12.8	25.2	33.3	22.2	31.3

Table 3.20: Local perceptions of existence and condition of access to and consumption of land and natural resources in the areas

<b>Local Perceptions on Quantity of and Condition of Land and Natural Resource Access and Use in the Area</b>		<b>Frequency of Multiple Responses (%)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
<i>Land tenure / ownership</i>	Improved	29.8%	41	30.9	25	26.7	32.7
	Like before / no change	47.2%	38.5	56.9	40	46.7	47.6
	Worsen	23%	20.5	12.2	35	26.7	19.7
		<b>Frequency of Multiple Responses (%)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
<i>Access to land and natural resources</i>	Improved	11.7%	12.8	13.8	9.2	11.9	11.6
	Like before / no change	35.8%	23.1	41.5	34.2	33.3	38.1
	Worsen	52.5%	64.1	44.7	56.7	54.8	50.3
		<b>Frequency of Multiple Responses (%)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
<i>Amount of land and natural resources for local use</i>	Improved	7.1%	5.1	4.1	10.8	5.9	8.2
	Like before / no change	25.5%	10.3	33.3	22.5	21.5	29.3
	Worsen	67.4%	84.6	62.6	66.7	72.6	62.6
		<b>Frequency of Multiple Responses (%)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
<i>Is access to common property resources restricted at present?</i>	Yes	43.9%	43.6	42	45.8	50.4	37.8
	No	56.1%	56.4	58	54.2	49.6	62.2

Table 4.2: Local knowledge of ELC company in their locality

(IP) Community Knowledge of ELC and Its Operation Status in Their Areas	Frequency of Multiple Responses % (n = 282)	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
Existence of ELC in the area	252 (89.4%)	97.4	87	89.2	94.1	85
Name of ELC	95 (33.7%)	56.4	24.4	35.8	43	25.2
Origin of ELC	190 (67.4%)	76.9	69.7	62.5	77.8	58.2
Location of ELC	143 (50.7%)	59	48	50.8	56.3	45.6
Size of ELC investment	53 (18.8%)	30.8	15.4	18.3	18.5	19
Length of ELC operation	45 (16%)	25.6	18.7	10	18.5	13.6
ELC license	21 (7.4%)	12.8	8.9	4.2	8.1	6.8
Benefits of ELC for local people	62 (22%)	25.6	28.5	14.2	23.7	20.4
Impacts of ELC on people and nature	105 (37.2%)	41	38.2	35	37.8	36.7
Compensation by ELC company as a compensation for environmental and socio-economic losses in the area	36 (12.8%)	15.4	19.5	5.0	14.1	11.6
Year that ELC started	82 (29.1%)	25.6	26.8	32.5	33.3	25.2
Process of public consultation by ELC company	11 (3.9%)	5.1	2.4	5.0	5.9	2.0
Stage of ELC development	15 (5.3%)	5.1	6.5	4.2	5.9	4.8
Institution granting right / license to ELC company	9 (3.2%)	0.0	4.9	2.5	4.4	2.0
Type of ELC	66 (23.4%)	18.4	26.5	21.7	23.5	23.4

Table 4.3: Local perceptions of positive impacts of ELCs on their livelihoods, culture, and environment

Perceived Positive Socio-Cultural Impacts of ELC on Local Livelihoods	Frequency of Multiple Responses % (n = 282)		Taveng %		Kon Mom %		Lumphat %		Perceived Positive Economic Impacts of ELC on Local Livelihoods and Economy	Frequency of Multiple Responses % (n = 282)		Taveng %		Kon Mom %		Lumphat %	
	Y	N	Y	N	Y	N	Y	N		Y	N	Y	N	Y	N	Y	N
ELC has provided funding & other supports for social development	24.1	75.9	23.1	76.9	40.7	59.3	7.5	92.5	Provide job opportunities to the locals	62.4	37.6	92.3	7.7	76.4	23.6	<b>38.3</b>	61.7
Support road construction / innovation	12.4	87.6	12.8	87.2	20.3	79.7	4.2	95.8	Provide funds for the locals to run SMEs	0.4	99.6	0.0	100	0.8	99.2	0.0	100
Support school construction / innovation	9.6	90.4	5.1	94.9	19.5	80.5	0.8	99.2	Perceived Positive Environmental Impacts of ELC on Natural Environment & Conservation	Frequency of Multiple Responses % (n = 282)		Taveng %		Kon Mom %		Lumphat %	
Support health care construction / innovation	6.0	94	2.6	97.4	12.2	87.8	0.8	99.2		Y	N	Y	N	Y	N	Y	N
Supply of school facilities	2.5	97.5	0.0	100	5.7	94.3	0.0	100	Provide funding for environmental protection, preservation and /or restoration activities	5.3	94.7	2.6	97.4	9.8	90.2	1.7	98.3
Supply of health care facilities	2.5	97.5	0.0	100	4.9	95.1	0.8	99.2	Support replantation	2.5	97.5	0.0	100	5.7	94.3	0.0	100
Supply of clean water	1.1	98.9	2.6	97.4	0.0	100	1.7	98.3	Support conservation of natural habitats	4.3	95.7	0.0	100	8.1	91.9	1.7	98.3
Supply of electricity or low-cost electricity use	0.0	100	0.0	100	0.0	100	0.0	100	Support conservation of fauna & flora	2.5	97.5	2.6	97.4	4.1	95.9	0.8	99.2
Provide support for literacy class	0.0	100	0.0	100	0.0	100	0.0	100	Support environmental education programs	0.7	99.3	0.0	100	1.6	98.4	0.0	100
Provide support for capacity building	0.4	99.6	0.0	100	0.8	99.2	0.0	100									
Support construction / of religious centers	0.4	99.6	0.0	100	0.8	99.2	0.0	100									
Knowledge, skill & technology transfer for improving local agricultural production	0.7	99.3	2.6	97.4	0.8	99.2	0.0	100									
Provide skills & knowledge for locals to run SMEs	0.4	99.6	0.0	100	0.8	99.2	0.0	100									
Build houses for local poor or homeless people	0.4	99.6	0.0	100	0.8	99.2	0.0	100									

Table 4.4: Local perceptions of ELC impacts on their livelihoods, local culture, and nature

Perceived Negative Impacts of ELC on Local Livelihoods, Culture, and Nature	Frequency of Multiple Responses % (n = 282)	Taveng %	Kon Mom %	Lumphat %	Male %	Female %
<b>Family and community experience as being socio-culturally and economically affected by current ELC development &amp; operation in the area</b>	<b>201 (71.3%)</b>	<b>76.9</b>	<b>63.4</b>	<b>77.5</b>	<b>77</b>	<b>66</b>
Land loss	177 (62.8%)	76.9	48	73.3	70.4	55.8
Relocation and resettlement, including forced eviction	62 (22%)	56.4	22	10.8	28.1	16.3
Limited access to land and natural resources in the area	104 (36.9%)	43.6	22	50	45.9	28.6
Changing and / loss of traditional livelihoods	63 (22.3%)	33.3	22	19.2	23	21.8
Changing or loss of culture and tradition	28 (9.9%)	15.4	9.8	8.3	12.6	7.5
Injury	11 (3.9%)	5.1	6.5	0.8	4.4	3.4
Increase in and occurrence of (new) diseases	15 (5.3%)	15.4	4.1	3.3	5.9	4.8
Loss of raised animals	52 (18.4%)	28.2	8.1	25.8	21.5	15.6
Increased water scarcity for local use due to over-consumption by ELC for agro-industrial plantation	19 (6.7%)	23.1	4.1	4.2	5.9	7.5
Out-migration of locals to work in other places	7 (2.5%)	5.1	4.1	0.0	2.2	2.7
Increased food and income insecurity	9 (3.2%)	5.1	4.1	1.7	1.5	4.8
Social intimidation, including sexual harassment, made by ELC company or ELC's in-migrant workers	4 (1.4%)	2.6	1.6	0.8	2.2	0.7
<b>Perceived negative environmental impacts</b>	<b>185 (65.6%)</b>	<b>76.9</b>	<b>55.3</b>	<b>72.5</b>	<b>71.9</b>	<b>59.9</b>
Decline in quality and quantity of land and natural resources	148 (52.5%)	46.2	48.8	58.3	54.8	50.3
Decline in quality and quantity of natural habitats	141 (50%)	48.7	43.1	57.5	54.8	45.6
Decline in quality and quantity of NTFPs	138 (48.9%)	59	41.5	53.3	55.6	42.9
Loss of natural habitats and extinction of forest & animal species	107 (37.9%)	61.5	33.3	35	42.2	34
Contaminated / intoxicated water in downstream areas due to chemical use in ELC	47 (16.7%)	33.3	16.3	11.7	17.8	15.6
Increased water scarcity that leads to decrease of soil fertility / quality and / or increased barren lands	42 (14.9%)	30.8	13	11.7	19.3	10.9
Decline in natural resources that are core attractions for ecotourism / CBET in the area	46 (16.3%)	38.5	12.2	13.3	18.5	14.3
Increased natural disasters like flood, drought, forest fire, landslide & extreme weather events	30 (10.6%)	23.1	6.5	10.8	11.9	9.5
Decline in capacity of ecosystems to provide services for local communities and nature	20 (7.1%)	15.4	4.1	7.5	8.1	6.1

Table 4.5: Local perceptions of and experiences in ELC-community conflicts and conflict resolution actors in the areas

<b>Experienced Conflicts with ELC Companies Conflict Resolution Facilitators</b>	<b>Frequency of Multiple Responses % (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
<i>Experience of having conflicts with ELC company (1 time/year: 58.1%, 2-3 times / year: 33.7%, &gt; 3 times/year: 8.2%)</i>	61%	69.2	45.5	74.2	62.2	59.9
Conflict over overlapped land	84.5%	81.5	85.7	86.5	84.5	86.4
Conflict over blocked access to farmland & NTFP collecting areas	27.8%	14.8	33.9	34.8	33.3	29.5
Conflict over water scarcity	4.3%	3.7	7.1	2.2	3.6	4.5
Conflict over ELC intrusion on farmland	30.9%	22.2	35.7	34.8	33.3	33
Conflict over dead animals	18.6%	29.6	10.7	15.7	15.5	17
Conflict over ELC intrusion on sacred forest and burial ground	10.2%	22.2	1.8	6.7	8.3	6.8
Conflict over sexual harassment	1.6%	3.7	0.0	1.1	1.2	1.1
Conflict over polluted water caused by ELC firm's chemical use	3.0%	7.4	1.8	0.0	1.2	2.3
<b>Conflict Resolution Facilitators / Actors</b>	<b>Frequency of Multiple Responses % (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Village chief	64%	61.8	54.4	76.1	65.6	66.3
Commune chief	61.2%	58.8	61.8	63	60.4	63.3
District-level committee	17.7%	32.4	13.2	7.6	14.6	13.3
Province-level committee	8.5%	14.7	4.4	6.5	6.2	8.2
Inter-departmental / ministerial committee	2.8%	2.9	4.4	1.1	3.1	2.0
Human right development institutions (i.e. ADHOC, LICADHO, etc.)	7.2%	11.8	8.8	1.1	5.2	6.1
Local NGOs	8.0%	8.8	4.4	10.9	8.3	8.2
NGO network	6.2%	11.8	1.5	5.4	6.2	4.1
Responsible government ministries (MoE, MAFF, Mol, MLMUPC, etc.)	2.3%	5.9	0.0	1.1	2.1	1.0
Community's effort (i.e. via CBOs)	19%	20.6	14.7	21.7	18.8	19.4
Community-ELC company dialogue and negotiation	10.8%	11.8	11.8	8.7	9.4	11.2
<b>Is / Are Conflict (s) Different or the Same?</b>	<b>Frequency of Multiple Responses % (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Same	67.3%	63	58.2	80.5	73.8	67.1
Different	17%	22.2	16.4	12.6	19	11.8
No idea	15.7%	14.8	25.5	6.9	7.1	21.2
<b>Between Community's Effort &amp; Interventions from External Stakeholders, Which is More Effective in Solving ELC-related Conflicts?</b>	<b>Frequency of Multiple Responses % (n = 282)</b>	<b>Taveng %</b>	<b>Kon Mom %</b>	<b>Lumphat %</b>	<b>Male %</b>	<b>Female %</b>
Community's effort	61.4	61.8	52.3	70.2	62	62.6
Intervention external stakeholders	22.8	17.6	24.6	26.2	23.9	24.2
No idea	15.8	20.6	23.1	3.6	14.1	13.2

Table 5.1: Local perceptions of key areas of intervention of concerned agencies

Area of Work Involved By Related Stakeholders	Government Line Departments Involved (% of Multiple Responses)			Provincial / Local Authorities Involved (% of Multiple Responses)			L / INGOs Involved (% of Multiple Responses)			CBOs Involved (% of Multiple Responses)		
	Taveng	Kon Mom	Lumphat	Taveng	Kon Mom	Lumphat	Taveng	Kon Mom	Lumphat	Taveng	Kon Mom	Lumphat
Agriculture extension services	0.0	2.4	2.5	0.0	2.4	0.8	5.1	7.3	5.0	0.0	0.8	0.0
Rice production	2.6	4.9	3.3	7.7	4.1	4.2	10.3	<b>19.5</b>	16.7	0.0	0.8	0.8
Vegetable production	5.1	4.1	2.5	2.6	0.8	12.5	<b>17.9</b>	<b>27.6</b>	<b>22.5</b>	0.0	0.0	0.8
Fruit production	0.0	0.8	0.8	2.6	0.0	0.8	5.1	15.4	9.2	2.6	0.8	0.0
Animal husbandry / livestock rearing	7.7	5.7	5.0	5.1	1.6	8.3	<b>17.9</b>	<b>21.1</b>	<b>20.8</b>	0.0	0.8	3.3
Integrated farming	5.1	1.6	5.8	10.3	0.8	0.0	10.3	11.4	6.7	0.0	0.0	0.8
Irrigation system	2.6	0.0	0.8	0.0	0.0	2.5	5.1	0.8	4.2	2.6	0.0	1.7
Household income generation / small, medium scale enterprises	0.0	0.8	0.0	0.0	0.0	0.0	2.6	0.0	3.3	10.3	3.3	10
Community-based natural resource management	0.0	0.8	1.7	2.6	4.1	3.3	5.1	1.6	12.5	7.7	1.6	0.0
Water, sanitation & hygiene	0.0	2.4	0.8	10.3	5.7	5.8	<b>35.9</b>	<b>18.7</b>	<b>20.8</b>	2.6	1.6	9.2
Community health services	5.1	0.8	0.8	5.1	7.3	3.3	<b>33.3</b>	9.8	10.8	0.0	4.1	1.7
Disaster risk reduction	0.0	0.8	0.0	0.0	0.8	5.0	5.1	1.6	1.7	0.0	0.8	0.0
Micro-credit / micro-finance	0.0	0.0	0.0	0.0	0.8	0.0	7.7	1.6	2.5	10.3	4.1	4.2
Education / literacy improvement	0.0	0.0	0.0	0.0	3.3	0.8	7.7	0.0	1.7	0.0	0.0	0.8
Infrastructure development	0.0	0.0	0.0	2.6	4.9	2.5	0.0	4.1	3.3	0.0	0.0	0.0
Human right development / legal services and aids on land and natural resource governance	2.6	0.0	0.0	0.0	3.3	1.7	2.6	1.6	2.5	0.0	0.0	0.0

Table 5.2: Local perceptions on work effectiveness of and trust on concerned institutions

Perceptions on Work Effectiveness of Concerned Institutions	Frequency of Multiple Responses (n = 282) %	Taveng Multiple Responses %	Kon Mom Multiple Responses %	Lumphat Multiple Responses %	Male %	Female %
Government's provincial line departments	12.8%	20.5%	9.8%	13.3%	15.6%	10.2%
Provincial and local authorities	23.8%	25.6%	19.5%	27.5%	28.9%	19%
Local and international NGOs	64.2%	84.6%	62.6%	59.2%	65.2%	63.3%
Community-based organizations	14.9%	30.8%	10.6%	14.2%	16.3%	13.6%
Perceptions on Trust with Concerned Stakeholders	Frequency of Multiple Responses (n = 282) %	Taveng Multiple Responses %	Kon Mom Multiple Responses %	Lumphat Multiple Responses %	Male %	Female %
Government's provincial line departments	13.1%	17.9%	10.6%	14.2%	15.6%	10.9%
Provincial and local authorities	22.7%	28.2%	17.9%	25.8%	27.4%	18.4%
Local and international NGOs	61.3%	82.1%	59.3%	56.7%	62.2%	60.5%
Community-based organizations	13.5%	23.1%	9.8%	14.2%	14.1%	12.9%

Table 5.3: Local perceptions on level of effectiveness, helpfulness, and fairness / justness currently performed by concerned stakeholders in conflict resolution

Perceived Level of Effectiveness, Helpfulness, and Fairness & Just of Conflict Resolution	Frequency of Multiple Responses % (n = 282)	Taveng %					Kon Mom %					Lumphat %				
		Very Effective	Effective	Not Effective	Not Effective At All	No Idea	Very Effective	Effective	Not Effective	Not Effective At All	No Idea	Very Effective	Effective	Not Effective	Not Effective At All	No Idea
Effectiveness	49.1%	8.8	52.9	14.7	0.0	23.5	8.8	50	16.2	4.4	20.6	1.1	44.6	33.7	9.8	10.9
Helpfulness	51.4%	5.9	55.9	14.7	0.0	23.5	5.9	51.5	17.6	4.4	20.6	0.0	46.7	32.6	10.9	9.8
Fairness and just	50%	2.9	55.9	14.7	0.0	26.5	2.9	48.5	20.6	4.4	23.5	0.0	45.7	33.7	8.7	12

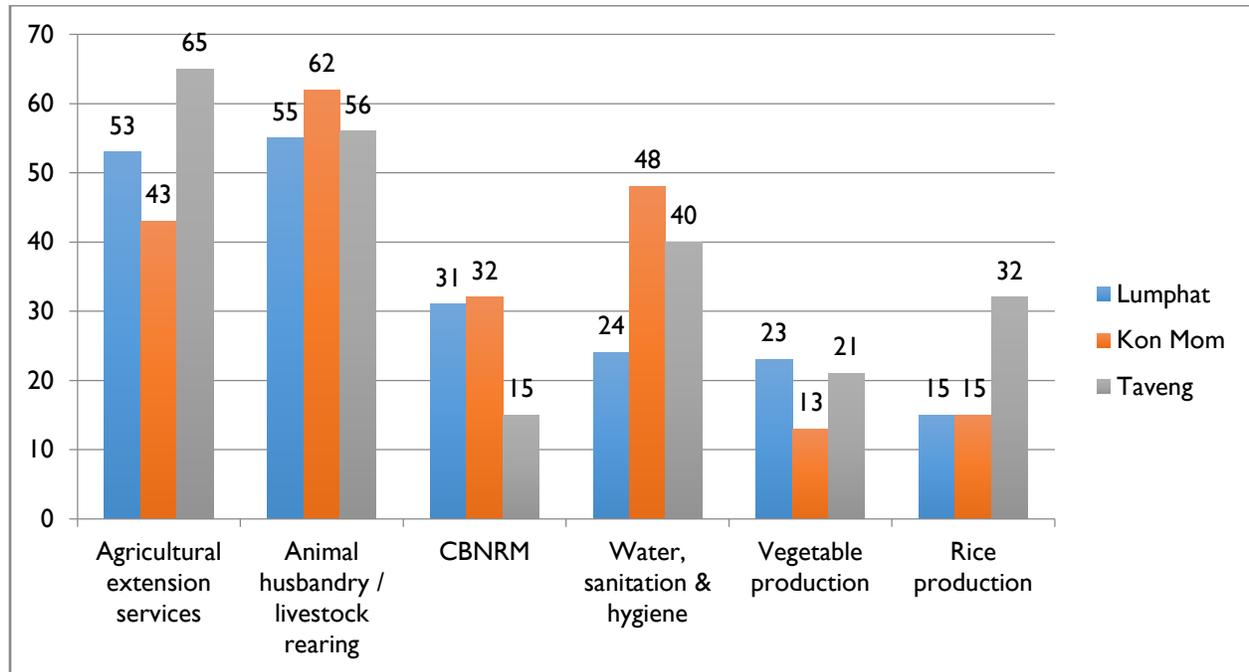
Table 5.4: Local perceptions of SCW-WHH intervention programs in the areas

Community Perceptions of SCW-WHH Support Programs	% of Multiple Responses	Taveng %	Kon Mom %	Lumphat %	Male %	Female %	Level of Preference %			Level of Helpfulness %			Level of Participation %		
							Like	No Idea	Dislike	Helpful	No Idea	Not Helpful	Participate	No Idea	Never Participate
Knowledge of SCW-WHH existence	35.8%	69.2	39	21.7	36.3	35.4									
<b>Knowledge of SCW-WHH Intervention Programs in the Area</b>															
Organic & integrated farming	13.5%	28.2	16.3	5.8	14.8	12.2	12.4	87.2	0.4	10.3	88.3	1.4	11.3	87.6	1.1
SRI	5.0%	12.8	4.1	3.3	8.1	2.0	3.2	96.5	0.4	2.8	96.8	0.4	3.5	95.7	0.7
Animal husbandry / livestock raising	23%	48.7	25.2	12.5	23.7	22.4	23	76.6	0.4	19.5	79.4	1.1	20.6	78	1.4
Home-gardening	14.2%	51.3	13	3.3	17	11.6	12.8	87.2	0.0	12.1	87.6	0.4	12.8	86.2	1.1
Multi-cropping and strategic cropping	11%	33.3	9.8	5.0	12.6	9.5	10.6	89.4	0.0	9.2	90.8	0.0	9.6	89.7	0.7
Fruit tree growing / fruit production	9.9%	23.1	11.4	4.2	10.4	9.5	8.9	91.1	0.0	7.8	91.5	0.7	7.8	91.1	1.1
WASH	23.4%	59	23.6	11.7	25.2	21.8	23	77	0.0	19.1	80.1	0.7	21.3	77.7	1.1
Processing of food, forest products, NTFPs	12.1%	20.5	15.4	5.8	11.1	12.9	11.7	87.9	0.4	9.6	90.4	0.0	9.9	89.4	0.7
Handicraft-making	2.5%	12.8	1.6	0.0	3.7	1.4	1.8	98.2	0.0	2.5	97.2	0.4	2.1	97.2	0.7
Micro, small, and medium enterprises	1.1%	5.1	0.8	0.0	1.5	0.7	0.7	99.3	0.0	0.7	98.9	0.4	1.4	98.2	0.4
Community enterprise	1.4%	5.1	0.8	0.8	1.5	1.4	0.4	99.6	0.0	0.7	98.9	0.4	0.7	98.9	0.4
Community-based tourism / ecotourism	4.3%	7.7	4.9	2.5	4.4	4.1	3.2	96.5	0.4	3.9	95.7	0.4	2.8	96.8	0.4
Sustainable harvesting of forest and resources	13.1%	10.3	15.4	11.7	11.1	15	12.4	86.9	0.7	10.6	89	0.4	11	87.9	1.1
Self-help group management	8.5%	20.5	10.6	2.5	8.1	8.8	8.2	91.5	0.4	5.7	94	0.4	7.1	92.2	0.7
Micro-credit or micro-finance	3.9%	10.3	4.9	0.8	4.4	3.4	2.5	97.5	0.0	1.8	97.9	0.4	3.2	96.5	0.4
Food, nutrition and food security	6.4%	23.1	5.7	1.7	8.1	4.8	6.4	93.6	0.0	5.7	94	0.4	6.0	93.6	0.4
Indigenous right development and advocacy programs	5.7%	20.5	4.1	2.5	7.4	4.1	5.0	94.7	0.4	4.6	95.4	0.0	5.0	94.7	0.4

Table 5.5: Level of knowledge of, participation in, and benefits from SCW-WHH support programs

How would you rate your knowledge about SCW's livelihood intervention programs in your area?	Frequency of Multiple Responses %	Taveng %	Kon Mom %	Lumphat %	Overall, how would you rate your participation in SCW's livelihood intervention programs?	Frequency of Multiple Responses %	Taveng %	Kon Mom %	Lumphat %	Overall, how would you rate the benefits you have received from SCW's livelihood interventions?	Frequency of Multiple Responses %	Taveng %	Kon Mom %	Lumphat %
Very knowledgeable	4.3	20.5	1.6	1.7	Very high	6.7	17.9	5.7	4.2	Very high	7.8	10.3	9.8	5.0
Knowledgeable	21.6	33.3	26	13.3	High	18.1	30.8	19.5	12.5	High	25.9	56.4	29.3	12.5
No idea	1.1	5.1	0.0	0.8	No idea	67	33.3	64.2	80.8	No idea	64.5	33.3	60.2	79.2
Know little	9.6	12.8	12.2	5.8	Low	5.3	10.3	7.3	1.7	Low	1.8	0.0	0.8	3.3
Don't know	63.5	28.2	60.2	78.3	Very low	2.8	7.7	3.3	0.8	Very low	0.0	0.0	0.0	0.0

Figure 5.1: Local perceptions of priority needs for SCW-WHH livelihood interventions (% of multiple responses, n = 282)



## Appendix C:

Table 4.1a: Profiles, coverage areas, and status of ELC companies in Ratanakiri province

No.	Company's name	Country	Size (ha)	Location	Main Purpose of Investment	Remarks
1	Hong An Mang Yang K Rubber Development	Vietnam	6891	Veun Sai District	Rubber	Continuing
2	Krong Buk Ratanakiri Rubber Development	Vietnam	6695	Taveng District	Rubber	-According to Sub-Decree No. 112, dated on 12 March 2014, 50.8667 hectares were excised from Krong Pok Ratanakiri Rubber Development. -According to Sub-Decree No. 132, dated on 13 March 2014, 206.6956 hectares were excised from Krong Pok Ratanakiri Rubber Development. -According to Sub-Decree No.76, dated on 24 February 2014, 140.8859 hectares were excised from Krong Pok Ratanakiri Rubber Development. -According to Sub-Decree No. 97, dated on 08 March 2013, 7.9642 hectares were excised from Krong Pok Ratanakiri Rubber Development.
3	Kiri Development	Cambodia	807	Veun Sai	Rubber	16 June 2013, 6.7129 hectares were excised from Kiri Development.
4	Chea Chan Rith Development	Vietnam	5124	O'Yadav District	Rubber	- According to Sub-Decree No. 336, dated on 07 June 2013, 733.0002 hectares were excised from Chea Chanrith Aphivath. -According to Sub-Decree No. 08, dated on 11 January 2013, 486.3813 hectares were excised from Chea Chanrith Aphivath. -According to Sub-Decree No. 10, dated on 11 January 2013, 258.1733 hectares were excised from Chea Chanrith Aphivath. -According to Sub-Decree No. 12, dated on 11

						January 2013, 520.1717 hectares were excised from Chea Chanrith Aphivath.
5	Cheong Ly Investment Co. Ltd	Cambodia	1900	Andoung Meas District	Rubber	-According to Sub-Decree No.106, dated on 12 March 2014, 477.0359 hectares were excised from Jiang Ly Investment Co., Ltd. -According to Sub-Decree No.108, dated on 12 March 2014, 57.8405 hectares were excised from Jiang Ly Investment Co., Ltd.
6	7 Makara Phary Co. Ltd ( Previously Heng Development Co. Ltd)	Cambodia	8654	Andoung Meas District	Rubber	Continuing
7	Dai Dong Yoeun Commercial Joint-stock Company	Vietnam	4889	O'Yadav District	Rubber	Continuing
8	DM Group	Cambodia	749	Andoung Meas District	Rubber	-According to Sub-Decree No. 145, dated on 24 March 2014, 225.79588 hectares were excised from DM Group. -According to Sub-Decree No. 147, dated on 24 March 2014, 11.1458 hectares were excised from DM Group.
9	CRD Co. Ltd	Vietnam	7591	Ou Chun-Bar Keo District	Rubber	-According to Sub-Decree No. 220, dated on 07 May 2013, 751.6643 hectares were excised from C R D. -According to Sub-Decree No. 94, dated on 08 March 2013, 300.2686 hectares were excised from C R D. -According to Sub-Decree No. 98, dated on 08 March 2013, 633.9770 hectares were excised from C R D.
10	Veasna Investment	Cambodia	5080	Andoung Meas and Bar Keo District	Rubber	-According to Sub-Decree No. 411, dated on 17 June 2013, 69.0858 hectares were excised from Veasna Investment. -According to Sub-Decree No. 220, dated on 07 May 2013, 919.6064 hectares were excised from Veasna Investment.

						<p>-According to Sub-Decree No. 95, dated on 08 March 2013, 1300.0267 hectares were excised from Veasna Investment.</p> <p>-According to Sub-Decree No. 97, dated on 08 March 2013, 1162.9505 hectares were excised from Veasna Investment.</p> <p>-According to Sub-Decree No. 99, dated on 08 March 2013, 48.9604 hectares were excised from Veasna Investment.</p> <p>-According to Sub-Decree No. 229, dated on 05 December 2012, 1849.2533 hectares were excised from Veasna Investment.</p>
11	Hong An O'Yadav Co., Ltd.	Vietnam	9000	Andoung Meas District	Rubber	<p>-According to Sub-Decree No. 145, dated on 24 March 2014, 405.6210 hectares were excised from Hoang Anh O'Yadav Co., Ltd.</p> <p>-According to Sub-Decree No. 147, dated on 24 March 2014, 9.7102 hectares were excised from Hoang Anh O'Yadav Co., Ltd.</p> <p>-According to Sub-Decree No. 133, dated on 19 March 2014, 1028.8280 hectares were excised from Hoang Anh O'Yadav Co., Ltd.</p> <p>-According to Sub-Decree No. 134, dated on 19 March 2014, 1650.5177 hectares were excised from Hoang Anh O'Yadav Co., Ltd.</p> <p>-According to Sub-Decree No. 140, dated on 19 March 2014, 777.4593 hectares were excised from Hoang Anh O'Yadav Co., Ltd.</p> <p>-According to Sub-Decree No. 97, dated on 12 March 2014, 350.1756 hectares were excised from Hoang</p>

						<p>Anh O'Yadav Co., Ltd.                      -According to Sub-Decree No. 109, dated on 12 March 2014, 1192.8897 hectares were excised from Hoang Anh O'Yadav Co., Ltd.                      -According to Sub-Decree No. 110, dated on 12 March 2014, 244.6207 hectares were excised from Hoang Anh O'Yadav Co., Ltd.                      -According to Sub-Decree No. 410, dated on 17 June 2013, 198.5918 hectares were excised from Hoang Anh O'Yadav Co., Ltd.                      -According to Sub-Decree No. 412, dated on 17 June 2013, 296.2719 hectares were excised from Hoang Anh O'Yadav Co., Ltd.                      -According to Sub-Decree No. 411, dated on 17 June 2013, 200.1246 hectares were excised from Hoang Anh O'Yadav Co., Ltd.                      -According to Sub-Decree No. 413, dated on 17 June 2013, 292.7919 hectares were excised from Hoang Anh O'Yadav Co., Ltd.</p>
12	Jing Zhong RI Co., Ltd.	Cambodia	9224	Lumphat District	Rubber	Continuing
13	Try Pheap Import Export Co., Ltd.	Cambodia	9709	Taveng District	Rubber	Continuing
14	Srun Sovannaphoum Investment Co., Ltd.	Cambodia	8998	Taveng District	Rubber	Under the review of implementation and reduce the duration from 70 years to 50 years; there will be an actions if the company does not implement properly
15	Noupheap Sophy Investment Co., Ltd.	Cambodia	9000	Taveng District	Rubber	Under the review of implementation and reduce the duration from 70 years to 50 years; there will be an actions if the company does not implement properly
16	Doun Penh Agrico Co., Ltd.	Cambodia	8825	Lumphat District	Rubber	-According to Sub-Decree No. 100, dated on 12 March 2014, 138.4499 hectares were excised

						from Daun Penh Agrico Co., Ltd. -According to Sub-Decree No. 94, dated on 12 March 2014, 179.2492 hectares were excised from Daun Penh Agrico Co., Ltd.
17	SK Plantation	India	8000	Koun Mom and Veun Sai District	Rubber	-According to Sub-Decreed No. 95, dated on 12 March 2014, 225.6920 hectares were excised from S K Plantation (Cambodia) Pte. -According to Sub-Decreed No. 98, dated on 12 March 2014, 1.6477 hectares were excised from S K Plantation (Cambodia) Pte. -According to Sub-Decreed No. 101, dated on 12 March 2014, 37.6317 hectares were excised from S K Plantation (Cambodia) Pte. -According to Sub-Decree No. 387, dated on 16 June 2013, 282.5435 hectares were excised from S K Plantation (Cambodia) Pte. -According to Sub-Decree No. 388, dated on 16 June 2013, 40.5255 hectares were excised from S K Plantation (Cambodia) Pte. -According to Sub-Decree No. 389, dated on 16 June 2013, 654.4436 hectares were excised from S K Plantation (Cambodia) Pte. -According to Sub-Decreed No. 390, dated on 16 June 2013, 111.7418 hectares were excised from S K Plantation (Cambodia) Pte.
18	Mkok Pich Development Agro-Industry	Cambodia	1950	Lumphat District	Rubber	According to Sub-Decree No. 220, dated on 07 May 2013, 32.7790 hectares were excised from Mkok Pich Development Agro-Industry.
19	Hong An Andoung Meas Co., Ltd.	Vietnam	9470	Andoung Meas District	Rubber	Continuing
20	Holy Kkho-Industrial	China	7497	Koun Mom District	Cassava-Rubber	-According to Sub-Decreed No. 141, dated on 19 March 2014, 1050.9162

						<p>hectares were excised from Holy Ykho-Industrial.</p> <p>-According to Sub-Decreed No. 99, dated on 12 March 2014, 491.1920 hectares were excised from Holy Ykho-Industrial.</p> <p>-According to Sub-Decreed No. 102, dated on 12 March 2014, 1519.4852 hectares were excised from Holy Ykho-Industrial.</p> <p>-According to Sub-Decreed No. 111, dated on 12 March 2014, 78.9310 hectares were excised from Holy Ykho-Industrial.</p>
21	Jing Zoung Tian Co. Ltd	Cambodia	9936	Taveng District	Rubber	09 January 2015, this concession was cancelled.
22	Fu Sheng Hai	China	7079	Taveng District	Rubber	According to Sub-Decree No. 02, dated on 09 January 2015, this concession was cancelled.
23	Oryung Construction (CAM) Co., Ltd.	Korea	6866	Andoung Meas District	Rubber	Continuing
24	Kao Su Ea Lev BM JSC Ltd.	Vietnam	8400	Lumphat District	Rubber	Continuing
25	30/4 Gialani Co., Ltd.	Vietnam	9380	O'Yadav District	Rubber	Continuing
26	Heng Brother	Vietnam	2361	Andoung Meas District	Rubber	Continuing
27	Ra Ma Khmer International and Mittapheap Men Sarun	Cambodia	6324	O'Yadav District	Rubber	Continuing
28	MDS Tmor Da SEZ	Cambodia	9146	Taveng District	Rubber	Continuing
29	Try Pheap	Cambodia	150	O'Yadav District	Entertainment Club	Continuing
30	BVB Investment	Cambodia	218	Ban Lung City	Tourism Entertainment	Continuing
31	Elev Rubber Joint Stock	Vietnam	8400	Lumphat District	Rubber	Continuing
32	Heng Pheap Investment	Cambodia	7000	O'Yadav District	Rubber	Continuing
33	Rat Sokhorn Incorporation Co., Ltd.	NA	9000	Lumphat District	Rubber	Continuing
34	Sesan Kiri Joint Stock Investment Trading	NA	4720	Lumphat District	NA	Continuing
35	Chu Prong K Co., Ltd.	Vietnam	NA	NA	NA	Continuing

36	Hoang Anh Ratanakiri Co., Ltd.	Vietnam	NA	NA	Rubber	Continuing
37	Hoang Anh Lumphat Co., Ltd.	Vietnam	NA	NA	Rubber	Continuing

Table 4.1b: Summarizing Chart of Revoked ELCs in Ratanakiri Province

No.	Name of ELC Companies	Geographies and typologies	Total land Area	Terrestrial ecological characteristics	Socio-economic characteristics	Remarked
<b>Revoked</b>						
1	Fu Sheng Hai (Cambodia) Co., Ltd.	Taveng and Andong Meas, Ratanakiri	7079 ha	Land converted from Virachey National Park	Other crop, Eco-tourism and special economic zone	09 Jan 2015 This concession was cancelled.
2	Jing Zoung Tian Co., Ltd.	Ratanakiri	9936 ha	Land converted from Virachey National Park	Rubber and other crops	09 Jan 2015 This concession was cancelled
<b>Downsized</b>						
3	CRD Co., Ltd.	Andong Meas, Borkeo and O'Chum, Ratanakiri	7591 ha (downsized 1051.9329)		Rubber	07 May 2013 , 751.6643 hectares were excised from C R D. 08 Mar 2013, 300.2686 hectares were excised from C R D.
4	Daun Penh Agrico Co., Ltd.	Lumphat, Ratanakiri	8825 ha (downsized 317.6991 ha)	Land converted from Lumphat Wildlife Sanctuary	Unspecific Crops	12 Mar 2014 , 138.4499 hectares were excised. 12 Mar 2014 , 179.2492 hectares were excised.
5	DM Group	Andong Meas, Ratanakiri	749 ha (downsized 236.94168 ha)		Rubber	24 Mar 2014 , 225.79588 hectares were excised. 24 Mar 2014 , 11.1458 hectares were excised.
6	Heng Brother Co., Ltd.	Andong Meas, Ratanakiri	2361 ha (downsized 259.7899 ha)		Rubber and Acacia	08 Mar 2013 , 254.7133 hectares were excised. 05 Dec 2012 , 5.0766 hectares were excised.
7	Hoang Anh Oyadav Co., Ltd.	Andong Meas, Ratanakiri	9000 ha		Rubber and Acacia	24 March 2014, 405.6210 hectares were excised. 24 March 2014, 9.7102 hectares were excise.
8	Holy Ykho-Industrial (Cambodia)	Trapeang Krahom and Trapeang Chres, Kon Mom, Ratanakiri	7497 ha		Rubber and other crops	19 Mar 2014 , 1050.9162 hectares were excised. 12 Mar 2014 , 491.1920 hectares were excised. 12 Mar 2014 , 1519.4852 hectares were excised. 12 Mar 2014 , 78.9310 hectares were excised.

9	Kiri Development	Veun Sai, Ratanakiri	807 ha		Rubber	16 Jun 2013 , 6.7129 ha were excised
10	Krong Buk Ratanakiri Aphivath Caoutchouc Co., Ltd.	Taveng and Andong Meas	6695 ha		Rubber	12 Mar 2014 , 50.8667 ha were excised. 12 Mar 2014 , 206.6956 ha were excised. 24 Feb 2014 , 140.8859 ha were excised. 08 Mar 2013 , 7.9642 hectares were excised.
11	Mkok Pich Development Agro-Industry	Lumphat, Ratanakiri	1950 ha	Land converted from Lumphat Wildlife Sanctuary	Rubber	07 May 2013 , 327790 hectares were excised.
12	SK Plantation (Cambodia) Pte.	Veun Sai and Kon Mom, Ratanakiri	8000 ha		Rubber	12 Mar 2014 , 225.6920 hectares were excised. 12 Mar 2014 , 1.6477 hectares were excised. 12 March 2014, 37.6317 hectares were excised. 16 Jun 2013 , 282.5435 hectares were excised. 16 Jun 2013 , 40.5255 hectares were excised. 16 Jun 2013 , 654.4436 hectares were excised. 16 Jun 2013 , 111.7418 hectares were excised.
13	Veasna Investment	Andong Meas and Borkeo, Ratanakiri	5080 ha		Rubber	17 Jun 2013 , 69.0858 hectares were excised. 07 May 2013 , 919.6064 hectares were excised. 08 Mar 2013 , 1300.0267 hectares were excised. 08 Mar 2013 , 1162.9505 hectares were excised. 08 Mar 2013 , 48.9604 hectares were excised. 05 Dec 2012 , 1849.2533 hectares were excised.
14	7 Makara Phary Co., Ltd.	Andong Meas, Ratanakiri	8654 ha		Rubber	24 March 2014, 820.9471 hectares were excised.

	(previously Heng Development Co., Ltd.)					24 March 2014, 83.6695 hectares were excised. 8 April 2011, the concession was cancelled.
15	Chea Chanrith Aphivath	Borkeo and O' Yadav, Ratanakiri	5124 ha		Rubber	07 Jun 2013 , 733.0002 hectares were excised. 11 Jan 2013 , 486.3813 hectares were excised. 11 Jan 2013 , 258.1733 hectares were excised. 11 Jan 2013 , 520.1717 hectares were excised.
16	Jing Zhong Ri Co., Ltd.	Lumphat, Ratanakiri	9224 ha	Land converted from Lumphat Wildlife Sanctuary	Rubber	07 May 2013 , 147.7342 hectares were excised.
17	Hoang Anh Andong Meas Co., Ltd.	Ratanakiri	9400 ha	Land converted Lumphat Wildlife Sanctuary	Palm Oil	19 Mar 2014 , 650.5177 hectares were excised.