# Community-based Ecotourism as a Tool to Alleviate Poverty and Conserve Wildlife in Chi Phat, Cardamom Mountains in Southwestern Cambodia

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## Abstract

The subject of this study is to understand the impacts of community-based conservation on a forest-resource dependent community that had to alter their livelihood practices, namely hunting and slash-and-burn farming. The drivers that led to people alter their livelihood supporting practices in the name of conservation play a central focus to grasp how to stop people from unsustainable practices such as hunting for the illegal wildlife trade, illegal logging, and unregulated slash-and-burn agriculture through livelihood alternatives. The role of attitudes towards conservation is analyzed to find out how attitudes could be used to engage local people in conservation practices. Once we get a better idea about the role of attitudes as well as external constraints such as lack of livelihood alternatives in affecting the way poor resource-dependent people meet their livelihood needs, we can make conservation efforts a long-term success without harming marginalized people. In this study, a community-based ecotourism project that is situated within Chi Phat commune in the Cardamom Mountains in Cambodia was studied to gain an understanding of how this project has been affecting the livelihoods of project members as well as non-members. 60 semi-structured interviews with project members, management, local authority, and non-members were carried out. I found that livelihood impacts differ among members and non-members, with members generally experiencing positive outcomes while non-members rather negative ones. The degree to which the livelihood has been impacted depends in both cases on the degree of dependency on things that became restricted (hunting, logging, and slash-and-burn). The attitudes people hold, in turn, depend on the livelihood outcomes, meaning people who gained benefits from conservation hold positive attitudes, while the ones that carry the costs tend to hold negative attitudes toward conservation. However, attitudes are based on the monetary value of wildlife and the forest, rather than its intrinsic value. Attitudes seem to have played a minor role in driving the observed behavioral change from for instance poacher to tourist guide. That shift was rather due to a combination of law enforcement and economic incentives for project members, while the reason for non-members to hunt to lesser degrees is the enforcement of restrictions. There are some people that suffer strong adverse effects because besides not being able to hunt and cut trees anymore, they also lost their land due to it being contested with forest protection and reforestation. The project sees tourism as being the silver bullet for aligning conservation goals and the ones of the community in general. However, I make the case that there is a misalignment with local realities and that focus should be more given to agriculture instead of tourism. Through highlighting the gaps, namely adverse effects on some and a misalignment between what is thought to be necessary and what is actually needed, I call for a shift in the current conservation paradigm towards a more integrated approach, merging conservation and agriculture within a multi-functional and inclusive landscape.

# 1. Introduction

## 1.1. Conservation, Development, and Local Communities in Cambodia

The Kingdom of Cambodia has been one of the poorest countries in the world, deeply imbedded in tragedy that stems from the violent recent history generated through Khmer Rouge genocide between 1975 and 1979, where 30% of the population was killed (De Lopez 2001; World Bank 2015). Cambodia was formally classified by the United Nations as a least developed country, but since 1993 it transitioned to a market-oriented democracy, seeking economic development while facing enormous challenges in poverty reduction (Scheidel 2016). Cambodia is still the second poorest country in Southeast Asia and about 35% of Cambodians are living under the poverty line (World Bank 2015). However, there has been a reduction in severe poverty as the World Bank (2015) states in their report that poverty headcount ratios at national poverty line (1.90$ a day) were at 50.2% in 2003. Cambodia is a rural economy with over 80% of Cambodians living in rural areas and therefore heavily dependent on agriculture, forest production, and fisheries (CMDG 2003; Cambodian Journal of Natural History 2008; World Bank 2015). According to McKenney and Prom (2002): "Cambodia's natural resources not only provide a foundation for food security, income, and employment for most of the population, but also an essential 'safety net' for the rural poor". Forest resources contribute from 30% to 42% of total household income for rural people (Kasper et al. 2006) and people living in remote areas are always dependent on forest products (FAO 2010). Therefore, besides agricultural products, timber and non-timber forest products (NTFP) have been the main sources of income for rural people that live close to forests (FAO 2010). The FAO (2010) states that people living near or adjacent to productive forest areas have better living standards than those who live far from forest areas, because they have access to wild vegetables, fruits, meat, medicinal plants, and timber and sometimes those forest products can be exchanged for other products or sold.

Part of the Indo–Burma biodiversity hotspot, Cambodia's forests are incredibly rich and diverse (Myers et al. 2000). Four of the Global 200 Eco-regions (Olson and Dinerstein 1998) are represented within Cambodia, promoting high levels of biodiversity. The Indo-Burma rainforests are among the most threatened in the world, with only 5% remaining, while Cambodia has the largest representations of habitats that previously spread across much of Indochina and Thailand (Loucks et al. 2009). Despite being of global conservation importance, the country's rich biodiversity is threatened by immense anthropogenic pressures that result mainly from habitat loss and the illegal wildlife trade (Cambodian Journal of Natural History 2008). Cambodia experienced the third highest deforestation rate in the world, with over 7 % in the decade from 2002 to 2012 and as a consequence

the intact rainforest cover plummeted from over 70 % in 1970 to 3.1 % as of 2010 (Hansen et al. 2013; FAO 2010 and 2015). When the Khmer Rouge conflict and the civil turmoil completely came to an end in the 90s, Cambodia became economically accessible and as a result, the government auctioned off its forest to logging, mining, and agriculture companies to allow for rapid post-war economic development. In order for the newly created government to stabilize itself and consolidate their power they needed to be able to have control over land and resources, deploying a patronage system that entirely depended on the country's most valuable resources, its forests with the valuable timber (Milne and Mahanty 2015). Cambodia´s post-war economy was made up 43% by wood exports, making it the country with the highest reliance on logging in the world during that post-war economic rush (Le Billon 2002). Forest has been mainly converted for agriculture through large-scale Economic Land Concessions (ELCs), meaning the long-term leases for the development of public land, handed out by the Cambodian government to private companies, for up to 99 years. Cambodia has been described as a "land for sale" with Economic Land Concessions covering over 2 million hectares (73% of the arable land), and over 24% of Cambodia´s land is being under leasing arrangements with private companies (ADHOC 2013 c.f. Milne and Mahanty 2015). Five Cambodian tycoons control 20% of the total land allocated for concessions. Due to the immense scope of this resource accumulation by private companies and elites, that accumulation is usually implemented through forced dispossession of the local people that depend on that land for their livelihood, leading to rising landlessness and countless conflicts over land and resources between private companies and the resource-dependent poor people that had their land and with it their resource base taken away (Subedi 2012; Neef et al. 2013). This conversion of land with associated incidents of land grabbing has especially taken place within Cambodia´s biodiverse evergreen forests that hold precious timber species, and thus illicit and illegal logging activities take place in areas which are protected on paper to extract valuable timber before the land is converted (Milne and Mahanty 2015). Formal logging concessions got suspended in 2001, and as a consequence timber extraction has been permit-based illicit. The mainstream belief blames forest loss on the poor forest-resource dependent villagers that convert the land through subsistence slash-and-burn farming practices. However, the majority of forest clearances stems from logging operations that are frequently associated with ELCs and infrastructure projects, and are often run by powerful individuals or companies, with direct connections to the government (Global Witness 2013; Boyle and May 2012; Frewer and Chan 2014). As a consequence, the deforestation and forest degradation have been accelerating over the past decades, largely because of these large-scale land acquisitions, that are initiated by illicit logging operations ("mining the forest") and then converted for agriculture or large development projects (Davis et al. 2015). The burden of this rapid economic development is carried by the rural poor, who

depend on the forest and the land for their daily livelihood, and the biodiversity that has been in rapid decline. Displacement of people also leads to increased forest degradation through slash-and-burn agriculture in frontier regions that have not been the target of ECLs yet (FAO 2010). The report states "the increasing gap between the rich and the poor is also one of the driving forces in deforestation. The rich gain more lands in the productive agricultural zones, whereas the poor force themselves to clear forestlands for settlement and agriculture" (FAO 2010). Due to the heavy dependence on forest products by rural people, high levels of forest loss do not only have adverse effects on the country's rich flora and fauna but also on the rural poor that depend on forests for their livelihoods. The genocide, civil war, large scale displacements and forced collectivization of farming, poverty, lack of education, corruption, and armed military groups and elites competing for power, have resulted in an underdeveloped civil society, lack of concern for human rights, and little democracy. In addition, land ownership is often contentious, opening the door for land grabbing and therefore robbing resource-dependent communities entirely of their livelihoods (Reimer and Walter 2013; Milne and Mahanty 2015). In a nutshell: the rich and the powerful reap all the benefits, while the rural poor pay all the costs.

According to the FAO (2010) forests and traditional farming practices could play an important role in poverty prevention. When the agricultural production of rural people faces problems such as crop failure, forests are the main reserve for rural people, functioning as a safety net (Hansen and Top 2006). Forests are the main sources of income for many rural poor and can contribute to poverty alleviation by improving rural livelihoods if proper management is achieved (FAO 2010). The Royal Government of Cambodia invests in agricultural development, replacing traditional practices, in the hope that it contributes to more economic growth and poverty reduction (Scheidel 2016). These development efforts have lifted Cambodia's economy, bringing statistical prosperity like never before (World Bank 2015). Expanding at 7 % per year, its economy is among the most rapid growing in the world and as a consequence the World Bank has elevated the country from lower- to lower-middle-income status. Unfortunately, this recent rise in prosperity only accounts for the elite as much of the population still struggles with severe poverty due to land grabbing, forced evictions, land conversions, and the large-scale exploitation of natural resources, as mentioned above. In the traditionally modest and conservative Cambodian society, the newly achievable consumer desires and large-scale development plans of the rich with aid of foreign investors, especially Chinese, lead to a clash with the basic needs of rural communities and the ecosystems they depend upon (Milne and Mahanty 2015; Clements et al. 2014). The country´s recent turmoil has been fueled partly through resistance to elite

accumulation of resources, and as an answer to the impacts of exclusion from natural resources and arable land, social marginalization, and environmental degradation (Neef et al. 2013).

Conservation NGOs on the other hand are trying to conserve and protect ecosystems that are still unspoiled in undeveloped parts of Cambodia. The desperate fight to protect remaining natural areas from development projects and foreign land acquisition leaves local communities caught in the middle, leading to possible conflict with local resource-dependent communities and thus more inequality as strict protection that stems from the conventional conservation paradigm can tie up the resources they depend on (Milne and Mahanty 2015; e.g. Lane 2001). In the course of this sudy this is relevant because the community in focus has been strongly forest-resource dependent and became subject of conservation interventions such as the establishment of the Southern Cardamom National Park and enforcement of associated restrictions.

In Cambodia conservation of both wilderness areas and wildlife has been the result of war and genocide rather than of intentional preservation policies. When the violence came to an end, wilderness areas became accessible to resource exploitation and development. Widespread poverty, the dislocations of the civil war and the Khmer Rouge genocide, and high levels of corruption have exacerbated attempts to strategically conserve nature (Milne and Mahanty 2015; Transparency International 2006). As of 2010 protected forests covered an area of 1 million ha and total conservation areas covered over 25% of the country (FAO 2010). However, the country's weak regulatory framework results in difficult enforcement of conservation legislation and areas assigned protected status are still under considerable threat from illegal logging, poaching, mining, and land development (Milne and Mahanty 2015). Despite the Cambodian government´s strong commitments to the conservation of the country´s rich flora and fauna in the last decade, the tangible outcomes have often been socially as well as environmentally problematic (Milne and Mahanty 2015). International NGOs and donors have been attempting to intervene in the governance of Cambodia's natural resources since the late 1990s. At that time, Cambodia still represented forests and wildlife that had vanished from much of the rest of mainland Southeast Asia. This, in combination with a rapid post-conflict rush to profit of natural resources for development purposes, made Cambodia a hotspot for conservation initiatives (Milne and Mahanty 2015). International and Cambodian conservation NGOs have exercised pressure on the progress of development models to align these with the concerns about global biodiversity preservation (Milne and Mahanty 2015). As a result, management of PAs was intended to satisfy the targets of NGOs and international donors, contributing to local management of global values, creating a misalignment with what local people actually want and need (Virtanen 2003). According to Cascio and Beilin (2010) this leaves little room for bottom-up

approaches to community-based conservation (CBC), even though the whole paradigm is based on community control and co-management. This is also the central point of this thesis, since Wildlife Alliance has a clear idea about how the forest should be saved and why it is important, being a western NGO registered in the United States. They determined that the best way to do so is through law enforcement and economic incentives through ecotourism (www.wildlifealliance.org). However, whether this also aligns with the interests of local stakeholder groups, especially forest-dependent people that do not work in tourism is a key aspect considered in this thesis.

## 1.2. Community-based Ecotourism

Usually, conservation initiatives targeting local communities want to achieve behavioral changes within those communities that cause environmental damage by unsustainable land use and hunting practices, jeopardizing efforts to protect wildlife and ecosystems. The ultimate success in conservation is in the end determined by local people accepting and approving conservation incentives and their willingness to adopt new conservation orientated behaviors (Amel et al. 2017; Berkes 2004). In order for conservation initiatives to not have adverse effects on the people that depend on the resources to be conserved and to engage people in conservation, they need livelihood alternatives to those practices such as hunting and slash-and-burn agriculture that jeopardize conservation goals predetermined by project planners (e.g. Berkes 2004; Lane 2001). This is also the case with Wildlife Alliance and the Chi Phat project. The Chi Phat study site (more described under Study Site) was a hub for poaching and illegal logging, while continued forest encroachment occurred through slash-and-burn practices beyond the sustainable limit (Reimer and Walter 2013; Wildlife Alliance 2012a). Their approach to protecting the landscape was a combination of rigorous law enforcement and a livelihood alternative to these undesired hunting, logging, and slash-and-burn practices. They identified community-based ecotourism as being the best way to conserve the landscape and the wildlife while meeting the needs of the forest-resource dependent community (Sok 2010).

In general, ecotourism aims to promote conservation or ecological sustainability. The focus is directed on preserving the natural attraction that attracts tourists. From a neoliberal market perspective this is simply good business sense: if there is no nature and wildlife to see, there is no “product to sell”. In a nutshell: Preserve the product (nature), preserve the profits. For conservation organizations, ecotourism is simply a tool for the greater goal of keeping ecosystems intact (Reimer and Walter 2013). The case becomes more complex and multi-dimensional when local communities living within natural attractions are incorporated. Thus, ecotourism moves beyond being a simple tourism

business and begins to reflect larger debates over environmental conservation, the rights of indigenous and local people to inhabit their traditional territories, and community development (Reimer and Walter 2013). In theory, it embodies a mutually reinforcing relationship between environmental conservation, local livelihoods, and cultural preservation, benefiting all three sectors (Reimer and Walter 2013). According to Fraser (2009) successful community-based ecotourism projects promote "legal rights to wildlife and wild products on communities - the right to gather plants or cut trees sustainably, the right to develop business centered around ecotourism and sustainable agriculture, the right to a percentage of neighboring park revenues, even limited rights to hunt - triggering an important transformation in local attitudes. Suddenly, wildlife (is) worth something, and it (is) worth protecting". This is critical in changing people's attitudes, because suddenly nature becomes more profitable when it is intact and diverse, and an animal is more worth alive than dead. An intact ecosystem full of charismatic species will attract more visitors, willing to pay for memorable moments in nature, increasing the profits. However, while new employment and income generated through ecotourism may provide increased income to local communities and incentives for conservation, the success of ecotourism projects may also lead to the growth of the tourism industry and consumerism, resulting in the subsequent degradation of the environment (Bernard 2009). Stronza and Gordillo (2008) state: "ecotourism's real connection to conservation comes through participation in ownership and management rather than through economic benefits alone" (c.f. Reimer and Walter 2013). Honey (2008) developed an analytical framework for ecotourism projects that requires the following seven components: (1) involves travel to natural destinations; (2) minimizes impact; (3) builds environmental awareness; (4) provides direct financial benefits for conservation; (5) provides financial benefits and empowerment for local people; (6) respects local culture; and (7) supports human rights and democratic movements.

The high poverty in Cambodia's undeveloped rural areas and the lack of transportation, health, education, and general infrastructure meant that the country's natural areas were ideal for community-based ecotourism (CBET) as a government and NGO strategy to achieve both poverty alleviation and conservation targets in rural areas (Ngamsangchaikit 2017; Thong 2011b). Thus, Cambodian government policy objectives for ecotourism development continue to incorporate poverty reduction, rural community development, education, and conservation of biodiversity (Ngamsangchaikit 2017). With almost 80% of Cambodia's population living in rural areas, where 90% of the poor live (World Bank 2017), CBET is hoped for being the common middle ground for conservation and poverty alleviation, an idea especially supported by conservation NGOs (Walter and Sen 2018).

However, multiple studies (e.g. Virtanen 2003; Ribot 2004; Cascio and Beilin 2010) question the inherent assumptions of participatory management or CBC initiatives that sustainable development and biodiversity conservation can be aligned to create win-win situations for resource-dependent communities and conservationists. The difficulty is that the quest to realize these good intentions of conserving biodiversity, helping people, and creating strong and resilient communities, means the composition and fulfillment of complicated projects that are usually political, and can lead to negative side-effects in practice (Milne and Mahanty 2015). Li (2007) states that development interventions are driven by a good 'will to improve', which is assumed to be universal and good in nature, but in practice can be neocolonial. A conservation or development project's perception of reality must be maintained through its practices and logics, possibly leading to projects and programs that make it difficult for practitioners to acknowledge complicated local realities, leading to unintended consequences (Mosse 2005; West 2006;). Therefore, conservation and development interventions typically encompass a distinct 'anti-politics' that sorts out and ignores chaotic details or problems on the ground (Milne and Adams 2012). As a consequence, conventional conservation and development strategies often advance with insufficient attention to the complexity of local settings in which they are nested, which is especially the case in Cambodia (Milne and Mahanty 2015). The faith put in CBC projects such as CBET is embedded in numerous assumed socio-environmental outcomes, like environmental stewardship fueled by collective action (Ostrom 1990), the capacity to absorb risks and create safety nets, strengthen the ability to adapt and become more resilient (Ayers and Forsyth 2009), as well as significant economic benefits through livelihood alternatives (Peredo and Chrisman 2006).

However, in practice, things can look very different than planned in the beginning and good intentions can have adverse outcomes. Conservation and sustainable development projects are usually driven by western and self-proclaimed "righteous" ideologies and narratives with market-based solutions not appropriate for local realities (Dressler et al. 2010). This way of thinking and the entanglement with bureaucratic institutions, donor expectations, neoliberalism, the lack of understanding of local ways of living, and miscommunication, usually leads to minimal long-term outcomes both for conservation and community development (Dressler et al. 2010; Blaser 2009; Madhumita and Chatterjee 2015). Dressler et al. (2010) argue that CBC has become a universal tool with pre-packed solutions that are disconnected from local realities. Many studies report that community-based approaches are subject to immense challenges, with limited outcomes in terms of livelihood improvements and sustainability, leading to the fact the most CBC projects simply do not succeed (Ojha et al. 2016). It is argued that CBC has simply become a discursive way to authorize other strategic actions of development, conservation, and state organizations (Blaikie 2006), or even the

dominant market institutions, with local community actions increasingly impacted by external forces instead of collective action within the community (Berkes 2007; Ojha et al. 2016). Blaikie (2006) argues that the scientific discourse regarding the conservation of biodiversity at different scales and between powerful NGOs and national implementing agencies may have little relevance for communities living with particular environmental, social, and political histories. In addition, community-based solutions are viewed as problematic, focusing efforts disproportionally on the local level and as a consequence ignoring the ways in which the community itself is rooted in a broader social matrix (Cleaver 2012). In the specific case of ecotourism, it has not demonstrated measurable conservation outcomes in many cases due to complex local realities and prevailing assumptions that by simply giving people economic incentives they will behave in a linear way and start conserving wildlife (Kiss 2004; Bernard 2009; Madhumita and Chatterjee 2015).

In the context of Chi Phat, CBET is the tool used by Wildlife Alliance to align their conservation goals with the needs of the local people. Due to the abovementioned controversy surrounding CBC initiatives such as CBET, it was analyzed what the impacts of CBET on the community as a whole have been, since not every household is part of the project and thus, the benefits and costs might accrue differently. One has to consider whether ecotourism can be a long-term solution for sustainable development of local communities in Cambodia since they become highly dependent on outside forces for their livelihood. That means when tourists would stop coming due to e.g. political instability, their income breaks down and as a consequence, they might revert to activities that damage the environment to meet their livelihood needs. In addition, what happens when nature is solely valued for its financial benefits rather than its intrinsic value? This commodification of nature can be a problem when the whole value of an ecosystem is based on it being a commodity that fulfills a financial purpose (McAfee 1998). When that financial value/incentive is suddenly lost people will revert to their old ways of damaging the environment if it holds no intrinsic value (Dobbs and Pretty 2001).

Thus, it is also of paramount importance that besides adopting new environmentally friendly behaviors, attitudes that favor conservation and intrinsic values for nature are developed. In the end, if nature additionally holds a high intrinsic value for local people and they have conservation orientated attitudes they are more likely to protect nature in the long-term, given they are capable of managing their environment sustainably to meet their livelihood needs. Environmentality, the internalization of conservation practices (Agrawal 2005), is a central aspect for long-term outcomes in a CBC project setting like CBET. These are underpinning questions that are incorporated in the research to determine whether CBET is the right and only way to align conservation with poverty alleviation. People in Chi Phat had to give up their traditional farming practices (slash-and-burn) next

to stopping to hunt and fell trees in the name of CBET. The outcomes of those livelihood changes are deeply analyzed for a better understanding of the impacts CBC projects like CBET can have in a setting like in Chi Phat.

## 1.3. Slash-and-burn Farming

Slash-and-burn farming, also known as shifting cultivation or swidden agriculture, is by far the most dominant land use system in the mountainous and forested regions of Southeast Asia and the most widespread subsistence agricultural system in the tropics (Li et al. 2014). It provides various valuable subsistence products to local farmers, mostly the poor ethnic minority groups. Controversially, it is also closely connected with a number of environmental issues such as greenhouse gas emissions and forest degradation (Cramb et. al 2009). Over the last decades it has become stigmatized by many people in the scientific community, government lines, and conservation NGOs as being primitive, destructive, and non-sustainable (Comte et al. 2012; Li et al. 2014). This traditional way of farming involves 3 characteristic stages: conversion, cropping, and fallow (vegetation regenerating and soil organic content rejuvenation) (Fox 2000; Cramb et al. 2009). During stage one and two (conversion and cropping), human activities frequently trigger a cascade of ecological and environmental concerns, namely forest loss and degradation, resulting in greenhouse gas emissions (Tinker et al. 1996), soil nutrient loss and degradation (Roder at al. 1997), decline of soil biota (Alegre et al. 1996). During the regeneration period the forest growth cycle gets initiated and secondary forests in various stages of regeneration form. However, the time for regeneration is a key factor in whether this farming practice is sustainable or potentially destructive (Metzger 2002). With an increasing population size, the regeneration period gets shorter with tremendous impacts on vegetation recovery, carbon sequestration, and forest ecosystem integrity (Cramb et al. 2009). Market and forest conservation policies also have gradually shortened the regeneration period (Fox 2002). Due to these perceived negative impacts of slash-and-burn agriculture, governments, the scientific community, and conservation NGOs have been attempting to eradicate the age-old farming practice and seek alternative agriculture systems (Cramb et al. 2009; Li et al. 2014).

In the name of economic development and poverty reduction the Cambodian government has been investing in replacing traditional swidden practices (Scheidel 2016) that are viewed as primitive and destructive, blaming local farmers for the country´s high deforestation and forest degradation, despite the large-scale destruction stemming from illicit logging operation and forest conversion by the hands of companies (Boyle and May 2012; Frewer and Chan 2014). In a setting like Cambodia, slash-and-

burn farming practices are used mainly by forest-dependent communities in hilly regions such as the Cardamom Mountains and Ratanakiri Province (Ironside 2013). Multiple scholars (e.g. Cramb et al. 2009; Fox 2000; Ironside 2013) now argue that this mindset and the fight to eradicate this ancient farming practices have to change. Government policies that seek to implement a substitution for swidden agriculture sometimes cause adverse impacts on the livelihoods of farmers (Jakobsen et al. 2007) and brings unsustainable development (Alexander et al. 2010). A fundamental point is that people that depend on this farming practice are generally poor and depend on a plethora of resources from the regenerating forest. The combination of swidden fields and secondary forests diversify people´s livelihoods, increasing their overall resilience through food security. Nowhere else is this more evident than in rural and mountainous areas of Cambodia (Ironside 2015). Cramb et al. 2009 state that swidden farming plays a crucial part in ensuring the livelihood security of local farmers against market fluctuations in Southeast Asia. Besides their staple crop, namely rice, production of a plethora of commodities provided by the regenerating forest e.g. fruit trees, honey, herbs used as spices and medicines, mushrooms, ground tubers and vegetables, rattan, bamboo, timber, animal forage, can be made possible, leading to the diversification of livelihoods and overall resilience through food safety (Penot 2007). For the rural poor that live in mountainous regions in settings like Cambodia shifting cultivation is crucial for their livelihood as they strongly depend on additional forest resources.

Besides the importance of shifting cultivation for people´s livelihoods, it is argued that shifting cultivation is a sustainable and environmentally friendly farming method that sustains high levels of biodiversity when it is maintained well, meaning the fallow periods are long enough (e.g. Kleinmann et al. 1995; Schmidt-Vogt 1998). Fox (2002) states that shifting cultivation is culturally suitable and ecologically appropriate, therefore an effective way to maintain biological diversity across unprotected landscapes across Southeast Asia. For instance, Ratanakiri province in the Cambodian Northeast has been the most forested province until recently, maintaining over 80% forest cover, despite the region being occupied by swidden farmers for centuries (Fox 2002).

In the context of this research, this debate is relevant since this practice became forbidden within the community in focus. The people of Chi Phat apparently stopped slash-and-burn farming, because it was labeled as destructive by Wildlife Alliance and contested with their idea of landscape and wildlife conservation (www.wildlifealliance.org). During the course of this study, the social impact of that restriction is analyzed to understand the outcome for the people that depended on that farming practice.

## 1.4. The Illegal Wildlife Trade

According to Interpol, the extent of the global illegal wildlife trade is estimated to be as high as $20 billion per year in profits, making it the fourth biggest illegal economic activity after arms, drugs, and human trafficking. The illegal wildlife trade is a major environmental concern worldwide, contributing substantially to the current extinction crisis (Nijman 2010). Considerable global political support and funding have been directed to combat wildlife trafficking (Wright et al. 2016). Much of this support has focused on the charismatic megafauna such as rhinos, elephants, and tigers, emphasizing the transcontinental trade between Africa and Asia (Wright et al. 2016). However, the majority of trafficked wildlife does not count as "high priority" and popular flagship species in the public eye (UNODC 2016). This is clearly illustrated by the pangolin, which is the most trafficked mammal in the world (CITES 2016).

Southeast Asia has been identified as a 'wildlife trafficking hotspot', making it a region where the illegal wildlife trade poses a disproportionally large threat (Davies 2005; TRAFFIC 2008). The main factor that motivates wildlife traders is economic profit and the people involved are across the social spectrum, starting from poor villagers and small-scale traders to large criminal business operations with politically powerful interests. The economic benefits received through involvement in the wildlife trade, range from a regular source of income, an occasional income source, and in some cases no more than a "safety net" in times of hardship for poor rural people (TRAFFIC 2008). Apart from driving wild populations towards extinction, the illegal wildlife trade may also jeopardize attempts to reach sustainable development and poverty alleviation goals in the region through depleting important natural assets upon which millions of people depend for a variety of reasons. Rural people below the national poverty line in Cambodia depend significantly on living natural resources for their livelihoods and thus suffer when biodiversity is depleted. The loss of wildlife, therefore, undermines means of production for a large part of the population in the Southeast Asian countries such as Cambodia, eroding critical coping mechanisms (TRAFFIC 2008). Although being illegal in Cambodia, bushmeat is an important source of protein for local people when their domestic animals face disease and thus when wild populations become depleted, an important safety net is lost (FAO 2010).

While most wildlife is illegally sold on a local and national level, there is a large amount of wildlife that is being traded internationally (WCS and TRAFFIC 2004; Nijman and Shepherd 2007). Trade in CITES-listed wildlife from Southeast Asia involves millions of animals annually, with the majority of animals being poached from the wild both dead and alive (Nijman 2010). The illegal trade is most acute in Southeast Asia, because economic and cultural conditions, and changes in large-scale

agricultural practices that lead to increased accessibility to forests make the illegal trade in this region more detrimental to wildlife than anywhere else (Nijman 2010). In addition, minimal law-enforcement, an offering of an array of endangered species, and the broad use for traditional medicines are also especially evident in Southeast Asia (Davies 2005). In Cambodia wildlife is illegally traded as pets, for medicinal, consumptive, and ornamental purposes, and facilitated to an increasingly wealthy elite class and exported to especially Vietnam and China, resulting in a major threat to the conservation of many impacted species (Davies 2005). Most species traded consist of birds and reptiles, however also primates comprise a large proportion of traded mammal species in Cambodia and other Southeast Asian countries, for both as pets and for use in traditional medicines (Davies 2005; Nijman 2005a,b). More primates are considered Endangered or Critically Endangered than in any other continent, owing substantially to the trade (IUCN 2008).

Dealing with the illegal wildlife trade is especially crucial in Cambodia, which is a source, transit, and destinations for illegal wildlife products (Gray et al. 2017). Cambodia is one of the biggest exporters of slow lorises (Bengal and pygmy slow loris) and usage of these creatures in traditional Cambodian medicines is a practice with deep historical roots (Nekaris et al. 2010). The high level of corruption worsens the issue, as Cambodia is ranked 156th out of 176 countries globally (Transparency International 2016). This is combined with minimal governmental and civil society capacity and funding for addressing regional and domestic drivers of the illegal wildlife trade (Gray et al. 2017). The extensive regional trade and both domestic and transnational consumption combined with minimal law enforcement efficiency lead to a distinctively Indochinese phenomenon of "empty forests" with far-reaching ecological consequences (Harrison et al. 2016). Selective defaunation of tropical forests through overhunting of large and medium-sized vertebrates may also have important socioeconomic consequences, reducing the extractive value of tropical forests to local people and its potential ecotourism value (Peres 2000).

To combat the lack of law enforcement and the government's low capacity to handle the main drivers of the illegal trade, Wildlife Alliance has been assisting the Government of Cambodia in the formation of the Wildlife Rapid Rescue Team (WRRT) since 2001 (Gray et al. 2017). The WRRT holds a national mandate and judicial police authority to apprehend smugglers and confiscate trafficked wildlife, making it Cambodia's only wildlife trade enforcement unit to hold this power (Gray et al. 2017). There has been a clear reduction in the extent of the trade in the country as a result of the WRRT's performance (Martin and Martin 2013). The WRRT has rescued more than 65,000 live animals and confiscated over 30 tons of wildlife products in Cambodia since 2001, disrupting the wildlife trade in

Cambodia by up to 75% (Wildlife Alliance 2017). Wildlife markets, which openly sell threatened species, are much less present than in the bordering countries Laos and Vietnam (Nijman and Shepherd 2015 a, b).

The root causes of the illegal wildlife trade are multifaceted. Robinson and Bennett (2000) document the root causes of the bushmeat crisis in Africa, which can also be applicable to Southeast Asia. Private companies in extractive industries such as logging do not have wildlife management plans, facilitating increased access and unsustainable exploitation. Governments and land managers have a low capacity for monitoring and enforcement or have poorly designed and implemented policies. Probably the most affecting root cause is that rural and urban populations have different perceptions of wildlife, viewing it as a limitless resource and lacking the general awareness of the impacts. In addition, the poor lack income and/or protein alternatives. These driving causes compound with the commercial unsustainable hunting levels, impacting populations all across Southeast Asia. Thus, responses to illegal wildlife trade need to be multifaceted and holistic with increased engagement of local communities, facilitating behavioral change through economic alternatives, communication, and awareness (Challender and MacMillan 2014; Biggs et al. 2016). In the context of the study site, this is important, because the Chi Phat village was an infamous wildlife trafficking hub prior to the arrival of Wildlife Alliance with the majority of people engaging in poaching to meet their livelihood needs, stimulating the demand for wildlife products. Therefore, the law was enforced through rangers and economic incentives were presented in the form of ecotourism to draw people away from hunting. In the course of this research, it is analyzed what the main reason was for people to stop hunting and engage in different practices. The attitudes towards wildlife and hunting are analyzed to see how those possibly changed with the influence of the CBET project. Some former poachers became guides and the question is whether their attitudes towards wildlife were altered in the process and did that change in attitudes influence behavioral changes. In a nutshell: Do attitudes towards wildlife actually play a role in the decision to hunt?

## 2. Research Aim and Objectives

The **overall aim of this research is to understand the effectiveness of CBET in improving the livelihoods of poor resource-dependent people, impacting their attitudes toward conservation, driving behavioral changes to benefit conservation, and fostering environmentality**. In the course of this study, one of the main drivers of the illegal wildlife trade is addressed, which is the lack of income alternatives to poaching. The Chi Phat CBET project presents livelihood alternatives by attempting to fulfill the needs of the community that was once an infamous

hub for wildlife poaching and logging. **The goal of this research is to find out what the drivers were that led to the adoption of new behaviors of the community members and how their livelihoods were impacted through that change in practices.** It is researched whether villager attitudes towards the environment possibly changed once they saw certain livelihood improvements through conservation-orientated behaviors and how those might have led to environmentality, catalyzing further engagement in conservation. It is believed that once the basic needs and desires of local people are met and their livelihoods and overall wellbeing are improved through engaging in conservation-orientated livelihoods their attitudes towards wildlife conservation will change.

The Chi Phat community, which in the past met their livelihood needs via slash-and-burn agriculture, hunting, and logging, reduced these environmentally damaging activities, engaging in different practices to sustain their livelihood (www.wildlifealliance.org; Reimer and Walter 2013; Ven 2015). However, since "only" 340 families/households out of 632 are CBET project members (termed direct beneficiaries by WA), one cannot view the community as a homogeneous group and generalize findings for the community as a whole when only project members are interviewed. Thus, a crucial question is what about the people not part of the project? They are termed indirect-beneficiaries, but the question is if there are possible negative livelihood implications for community members that are not part of the project since it is forbidden to hunt, fell trees, and encroach into the forest through slash-and-burn practices. People across the entire community had to give up these income generating practices and it was analyzed what the livelihood outcomes and attitudes towards that change are. Thus, this study attempts to understand the impact of the project on the livelihoods of both project members ("direct beneficiaries") and non-members ("indirect beneficiaries"). It is looked at whether there are differences in attitudes towards conservation and hunting. As it is evident from Reimer and Walter (2013) and Ven (2015) there seem to be differences in how the project is viewed depending on the stakeholder interviewed and thus the goal is to include as many different local stakeholders as possible in this study to get a holistic, yet detailed understanding of the project's impact on different members of the community in terms of livelihood implications and the attitudes towards conservation.

In the end, this study seeks to grasp the current gaps of the project in terms of possible adverse effects on people that might carry the burden since certain income generating practices had to be given up regardless whether CBET project member or non-member. By finding these gaps the idea is to give recommendations based on these findings. This context leads to the following research questions:

## 2.1. Research questions:

1. What were the drivers that facilitated the apparent behavioral shift towards a "conservation-oriented lifestyle" within the Chi Phat commune in the Cardamom Mountains in Southwestern Cambodia? In short: How come that people stopped/reduced hunting, logging, and slash-and-burn practices?
   1.1 What are the livelihood impacts of CBET on member and non-member households?
2. How do Chi Phat villagers feel about the project and to what degree were their attitudes towards conservation altered?
   2.1 What role did attitudes towards conservation play in guiding behavioral changes?
   2.2 How do attitudes toward conservation differ between project members and non-members?
3. What are the gaps in the project in terms of livelihood implications due to the need to give up hunting and stop slash-and-burn practices?

# 3. Study Site and Wildlife Alliance

## 3.1. The Cardamom Mountains

The Cardamom Mountains represent one of the largest remaining wilderness areas in Southeast Asia and the largest and most pristine forest left in Cambodia. It was a stronghold of the Khmer Rouge up to 1998 and as a consequence, much of the Cardamoms is still largely undisturbed. Thus, the landscape still allows the persistence of the highly endangered Cambodian megafauna such as elephants and gaur that have disappeared from most parts of the country (Cardamom Mountains Biodiversity Survey 2000). The forest is home to a multitude of other threatened species such as the pileated gibbon, clouded leopards, Asiatic black bears, green peafowl, the critically endangered Siamese crocodile, and some 1000 species of birds (CBET 2012). Comprising an area of roughly 1,000,000 acres, the Southern Cardamoms Protected Forest and the Koh Kong Conservation Corridor contain one of the last remaining elephant migration routes in Asia (Clements et al. 2008). Therefore, the region holds an exceptionally high conservation value and as a result, about a third is formally protected. In addition to high levels of biodiversity, the Cardamom Mountain range is essential for the entire region's fresh water supply, with its streams and rivers flowing into the Tonle Sap Lake and providing dirking water for over 30.000 people. The critical watershed function ensures food security for many of Cambodia's poorest people by supporting rice and fish production in the lowland agricultural plains (www.conservation.org). However, the human population within the Cardamom

Mountains although very small is extremely poor and relies on exploiting the environment to sustain their livelihood through practices such as shifting cultivation, hunting, and logging (Cardamom Mountains Biodiversity Survey 2000). The landscape is also under increasing pressure from wealthy businessmen trying to exploit the natural resources for instance through mining and illicit logging activities (Reimer and Walter 2013).

Wildlife Alliance (WA) is an international conservation NGO mainly focusing on habitat protection, sustainable community development through participatory management, and combating the illegal wildlife trade by rescuing and releasing wildlife, outreach strategies, and closely working with law-enforcement. Their main conservation focus is on protecting the Cardamom Mountains and combating the illegal wildlife trade. WA's approach for the protection of the Cardamom Mountains, while ensuring sustainable development of local communities, is to create strategic protection plans, and help develop profitable family enterprises that result in highest conservation impact by active community engagement through participatory management of natural resources (Wildlife Alliance 2012a). According to WA the first strategy to effectively protect the forest is law enforcement, ensuring that compliance with legal boundaries such as regulations of hunting, logging, and slash-and-burn agriculture are enforced. The second aim is the facilitation of zoning and demarcation of land for local communities, ensuring that communities have enough land for permanent agriculture or other sources of livelihood. The involvement of local communities in their own resource management and planning results in two benefits: it gives the local community clear land ownership and also provides clear boundaries for the strictly protected forest (www.wildlifealliance.org). In addition, WA helps in developing sustainable livelihood alternatives such as organic agriculture, ecotourism, or development of small family-scale businesses (www.wildlifealliance.org). WA reports that over 5000 local people in the Cardamom Mountains have benefited from the development of sustainable alternatives, including 8 communities. As a result, it seems that communities that reaped the benefits of conservation significantly reduced practices that damage the environment.

During the course of this thesis, it was studied what the impacts of these regulations for the local community of Chi Phat have been and how their attitudes towards those might be. In addition, it was analyzed whether land available for agriculture is enough for the community to be sufficient with their current farming practices.

## Chi Phat commune - Community-based Ecotourism (CBET) Project

Chi Phat CBET locates in Chi Phat commune, which is located upriver along the banks of the Prek Phipot River, within the rainforest of the Southern Cardamom Protected Forest near the border with Thailand and is accessible by boat or a rough motorcycle journey. The remote village was a military base for the Khmer Rouge from 1975 to 1979 and was then administered by Vietnamese troops in the 1980s. The Cardamom Mountains were a stronghold of the Khmer Rouge up to 1998 and as a consequence, much of the Cardamoms is still largely covered in old-growth evergreen forests, since the presence of the Khmer Rouge discouraged development in the region. Between the 80s and the 90s the village was restructured into the present Thma Bang district (kyte), Chi Phat commune (khum) with the four villages (phum) of Chi Phat, Chorm Sla, Teuk L'aak, and Kam Loat (Reimer and Walter 2013). After the last Khmer Rouge surrendered, the forest around Chi Phat was heavily exploited through logging, hunting, and extraction of other forest resources, charcoal production, and slash and burn agriculture. The forests were being cut by indigenous borechin people, landless Khmer migrants that migrated to the Cardamoms from other parts of the country, and wealthy, outside businessmen who profited from large scale, illegal timber extraction operations. Therefore, Chi Phat commune was an infamous hub for wildlife smuggling and illegal logging before the arrival of Wildlife Alliance in 2002 and the establishment of CBET in 2007 (Reimer and Walter 2013; Ven 2015). The community of Chi Phat struggled with high levels of poverty due to the continued degradation of the resource base and displacements (Wildlife Alliance 2012b). Most residents are poor Khmer who migrated into the area in the mid-1990s to work in logging or construction, making an additional income through hunting, fishing and subsistence farming (Reimer and Walter 2013). The area is also home to Khmer Dauem people (borechin), which are the indigenous people of the Cardamoms (Sarou 2009).

To conserve the forest and wildlife WA started to protect the area in 2002 through enforcing restrictions, namely stopping people from hunting, cutting trees, and encroaching further into the forest through slash-and-burn practices, yet without giving livelihood alternatives (based on interviews with local respondents). When they were met with local resistance, they had to shift their conservation approach towards improving livelihoods by engaging local people in conservation through offering former poachers and loggers a new job in the form of ecotourism. WA identified community-based ecotourism as the best livelihood alternative to conserve the forest while satisfying the needs of the local people (Sok 2010). WA started to work with the community as of 2007 to establish alternative livelihoods for income generation, in this case through CBET.

Chi Phat villagers also form community patrols to enforce that no hunting and logging is taking place within their community forest. This is key in assuring that wildlife from Phnom Tamao Wildlife Rescue Center released in the forests surrounding the village is safe (Wildlife Alliance 2012b). The project has an elected management committee with the objective to conserve natural resources, preserve local culture, improve livelihoods of the community, exchange tourists' and local cultures, and to empower local communities to manage the project independently. In short the preliminary aim of the project is biodiversity conservation, enacted in the development of CBET through education, capacity building and poverty alleviation (Reimer and Walter 2013; Wildlife Alliance 2012a): "We the people of Chi Phat commune, want a community-based ecotourism project that is developed by our community and partners and will empower our community, attract tourists, and contribute to protect natural and cultural resources and better livelihoods as well as improve infrastructure and the commune environment" (CBET 2012).

According to WA and other independent sources (e.g. Reimer and Walter 2013), community members have successfully implemented new land use practices and reduced slash-and-burn and hunting and are now earning a higher income from ecotourism. Of the 632 households that live in Chi Phat 340 directly benefit from ecotourism, while the rest are called "indirect beneficiaries". WA and Reimer and Walter (2013) state, the project generates a source of livelihood for many villagers, either directly or through supporting activities. However, Reimer and Walter (2013) report that income provided by CBET is rather additive than an alternative. They claim that because of the rotating participation system, income is spread widely over a large number of CBET members and thus does not contribute a significant amount to any one member. Reimer and Walter (2013) also mention in their study that the income generated through ecotourism is only making up a part of the income of most people and the most common forms of other income sources is the cultivation of rice and fruit trees (bananas) and non-specific "buying and selling." According to a more recent study by Ven (2015), 69% of all the households are primarily rice farmers and about 13% have primary occupations as cultivating crops and vegetable, fishing, and raising livestock. Only 4% of all the households collected non-timber forest products (NTFP). The rest had the primary occupation as craftwork and service (trader, repairer, and transporter). In addition, multiple villagers also work as government officials, private sector staffs, workers, and migrant laborers (Ven 2015). However, the study carried about by Reimer and Walter is 5 years ago and the situation might be a very different one today in terms of income generation through CBET since the project has gained in popularity over the last years and more and more tourists are arriving.

The Chi Phat project was one of six CBET sites in Cambodia to win a USAID-sponsored award for its sustainable development potential in 2010 (USAID 2010). It is also featured as Cambodia's "best ecotourism destination" in the Lonely Planet guidebook series. Reimer and Walter (2013) conclude that the project fully meets five of the seven concepts developed by Honey (2008) for authentic ecotourism: (1) it involves travel to natural destinations, (2) minimizes environmental and cultural impact, (3) builds environmental awareness, (4) provides financial benefits and empowerment for local people, and (5) respects local culture. It also provides to some degree indirect financial benefits for conservation and supports human rights and democratization. As of 2017, the Chi Phat project established certain bylaws that protect the more vulnerable community members through making it difficult for certain people within or from outside the community to reap all the benefits. Project manager Sophany Touch explained to me that before the bylaw certain people that were already higher placed in the community started to build bungalows and advertise through booking.com by themselves, accumulating the majority of the tourism benefits. Another issue was that developers from outside tried to take advantage without belonging to the community. These bylaws prevent people from accumulating the benefits in order to protect the community as a whole.

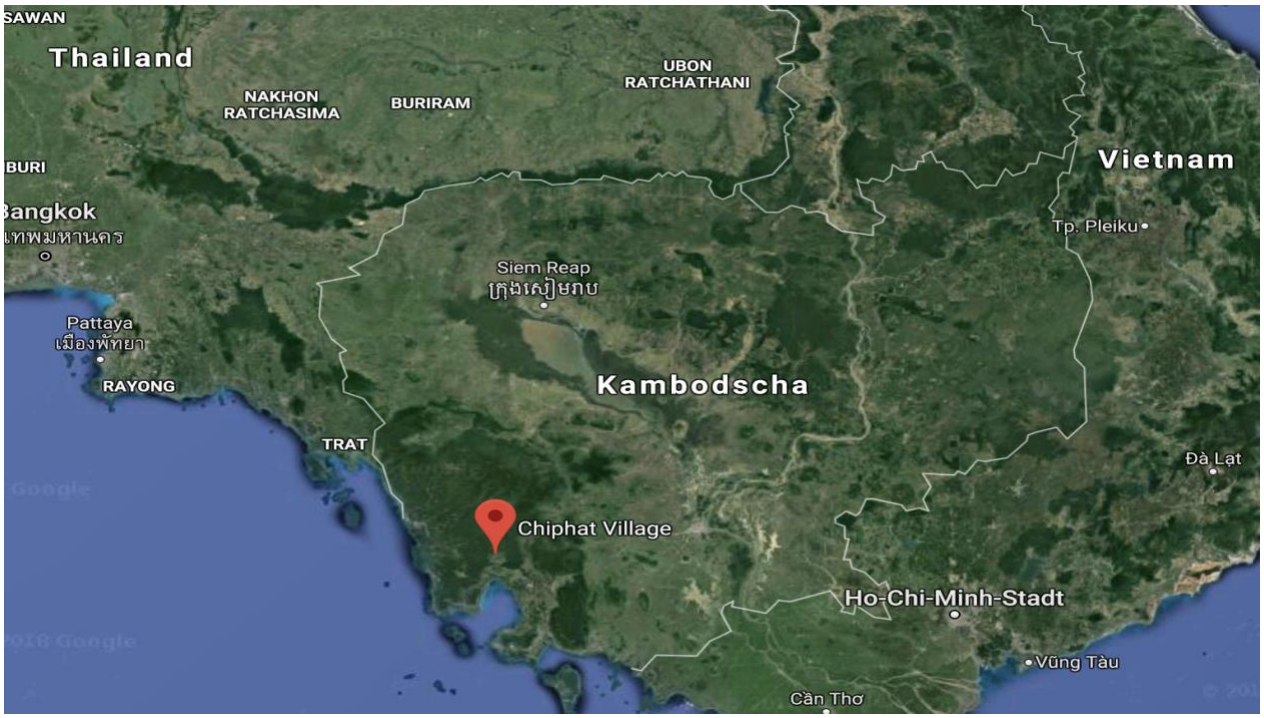


***Fig. 1*****:** *Chi Phat village and community-protected area embedded in Cardamom Mountains landscape (Koh Kong SW Cambodia) represented by red dot (Source: Google Maps).*

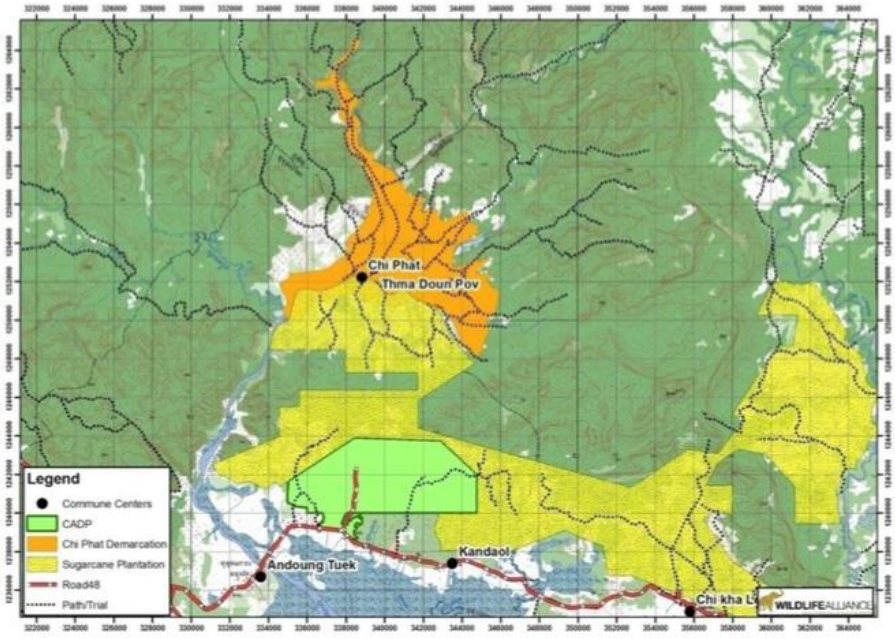


***Fig. 2:*** *Map of Chi Phat commune (Source: Wildlife Alliance 2012).*

## 4. Theoretical/conceptual framework

### 4.1. Conservation Attitudes and Behavior

The way humans value, feel about, and behave towards wildlife determines whether wildlife will be able to coexist with humanity or dwindle further towards extinction. The loss of biodiversity is preliminarily caused by human behaviors such as overexploitation, consumption of endangered species, habitat modification, which are in turn underlined by internal (e.g. values and attitudes) and external drivers (e.g. socio-economic and cultural contexts). Thus, understanding what factors might change the way people value, feel about, and ultimately behave towards wildlife is of paramount importance for conserving biodiversity (Manfredo 2008).

Attitude is a human psychological tendency expressed by evaluating a particular object with favor or disfavor and consists of beliefs and values, which are connections people build between the attitude object and different attributes of that object (Ajzen and Fishbein 1980). In the case of this thesis, the object will be wildlife and conservation. A belief is a mental state in which a proposition is held as true (Manfredo 2008). The attitude of a person is usually made up by an array of beliefs and evaluations that are connected to those beliefs (Ajzen 2001). According to Ajzen and Fishbein (1975), attitudes are the proximate cause of the behavior and thus influence human behavior. Jacobs and colleagues (2014) also state that although values direct attitudes, attitudes impact behavior more directly. One focus of this study lays on the attitudes of local people towards wildlife and conservation because

attitudes are thought to have a direct influence on how people act. However, according to Heberlein (2012), attitudes and behavior are typically not highly correlated and can thus be contradictory to one another, suggesting that in reality, things can be more complex than the assumption that by changing someone's attitudes you will change that person's behavior. Specific settings and factors outside the individual have far more influence on what people do than beliefs, knowledge, or emotion, which are the drivers of attitudes (Heberlein 2012; see fig. 3). Internal drivers like attitudes influence behavior (Bamberg and Möser 2007), but behavior takes place within a powerful ambiance consisting of cultural worldviews, social networks and inequalities, policies, roles, and rules (Amel et al. 2017). Yet, Manfredo (2008) states that many scholars believe that attitudes are fundamental in changing human behavior. This concept might not easily apply to people that do not have a secure livelihood and struggle with poverty, lacking livelihood opportunities. For instance, a desperately poor poacher might know that what he is doing is wrong and dislike his actions, yet he has to provide for his family and as long as the livelihood needs are not fulfilled, changing a person's attitude alone will likely not result in changed behavior (see the following section).

Two predominant wildlife value orientations are currently recognized, namely domination (former known as utilitarianism) and mutualism (Manfredo et al. 2009). The individuals that believe wildlife should be managed for the sole purpose of human benefit and are more likely to prioritize human welfare over wildlife conservation in their attitudes and behaviors, thus possessing a highly anthropocentric domination value orientation (Jacobs et al. 2014). In addition, they are keener to justify the treatment of wildlife in utilitarian terms and to find behaviors that harm wildlife as acceptable (Jacobs et al. 2014). A mutualistic wildlife value orientation, on the other hand, represents an egalitarian ideology that has fostered a more ecocentric view and equality for non-human entities. These individuals believe that wildlife has its own right to exist regardless of human use, giving it an intrinsic value (Jacobs et al. 2014). Thus, mutualistic people are less likely to behave in a way that causes harm to wildlife, more likely to engage in conservation-orientated behaviors, and expected to view wildlife in human terms (Jacobs et al. 2014). This domination and mutualism dichotomy is generally reflected through cultural ideologies (Manfredo et al. 2009). Mutualism is more likely to be the predominant wildlife value orientation in post-industrial societies that generally do not have to worry about basic needs, whereas the domination value orientation is predominant in societies where fulfillment of the basic needs is a struggle and poverty is high (Manfredo et al. 2009). Poor people simply do not have the luxury to worry about wildlife, when their main focus is to survive by acquiring basic needs such as food, water, and safety. Thus, changes in social life lead to changes in values, attitudes, and behaviors, leading to the observation that the wealthier, more urbanized, and higher

educated a nation, the less domination, and more mutualism oriented its citizens (Manfredo et al. 2009). Since Cambodia struggles with high levels of poverty and the basic needs of many are not fulfilled it is expected that people might have a value orientation that reflects domination rather than mutualism without intrinsic worth for wildlife.

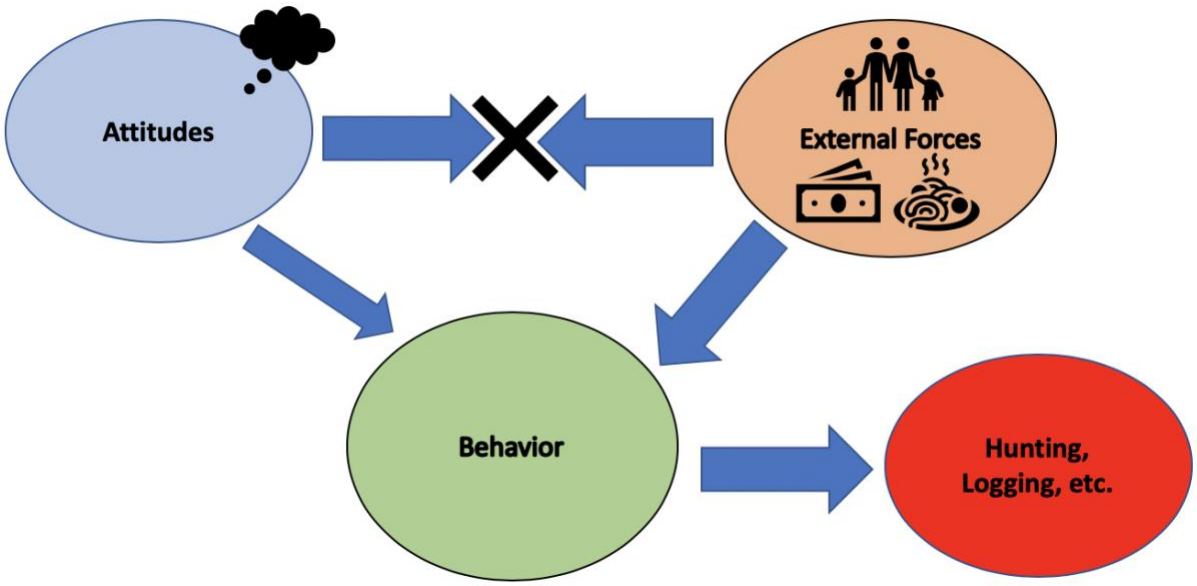


***Fig. 3:*** *Illustration of how forces outside the individual (e.g. need to provide for family) encourage people to maintain their behavior even though they are aware and might have changed attitudes towards the illegal wildlife trade. Thus, attitudes might be contradictory to behavior and vise versa. Also shows how internal and external forces might impact one another. Idea adopted from Heberlein (2012).*

This concept of attitudes toward conservation and behavior that aligns with the conservation paradigm, was used to design interview questions and ask respondents in a way to understand how their attitudes towards hunting actually played a role in guiding their behavior (more in the methods section).

## 4.2. Theory of Change and Environmentality

This section uses the concept of the 'theory of change' applied through livelihood alternatives that brought a change in livelihood generating practices of the Chi Phat community. In the context of this study, this is relevant because WA's project intervention seeks for local people to change their behavior to allow the success of their conservation and sustainable development agenda. Ecological systems that humans depend upon are threatened and human behavior is to blame for being the root cause of environmental problems including the loss of biodiversity. These problems are thus not of ecological nature, but rather related to how humans meet their needs and desires in over-exploitive and environmentally damaging forms (Amel et al. 2017). Usually, conservation initiatives targeting

local communities want to achieve behavioral changes in local communities that cause environmental damage by unsustainable land use and hunting practices, jeopardizing efforts to protect wildlife and ecosystems. The ultimate success in conservation is in the end determined by local people accepting and approving conservation incentives and their willingness to adopt new conservation orientated behaviors out of their own interest. Even though attitudes do not equal behavior, they can be a crucial step in guiding behavioral changes (Amel et al. 2017; Ajzen 2005).

In Cambodia many people do not have their basic needs fulfilled, struggling with poverty and thus generally do not have the luxury to worry about wildlife and conservation. For desperately poor people natural resources including wildlife are necessities to get by. Thus, their basic needs, desires, and aspirations have to be fulfilled first, before starting to talk about wildlife conservation. However, humans can move towards a sustainable society by creating conditions that motivate collective conservation and environmentally responsible action (Amel et al. 2017). The focus has to be thus on collective effort. If it becomes the common norm of a community or a society to be environmentally responsible, individuals damaging the environment will not fit in. Most humans have the strong urge for social connection and thus it is perhaps the most influential of all factors that influence behavior (Cialdini 2005). One promising way to change the collective behavior of poor people in underdeveloped countries is community-based conservation (CBC), which aims to simultaneously accomplish sustainable development and conservation goals, meeting at least in theory the desires of local people and conservationists (Berkes 2004). CBC programs utilize various strategies to connect with local communities and encourage participation to achieve conservation targets, for instance by creating socio-economic incentives as a result of conservation and giving communities authority over natural resources (Brooks et al. 2012). Motivations to fundamentally change behavior can be created when the benefits local communities receive from conservation outcompete the costs (Campbell et al. 1996; Wood et al. 2013).

The theory of change hypothesizes that certain interventions might lead to desired future outcomes such as livelihood improvements through conservation initiatives and predicts what impact these interventions, in turn, might have on local communities (Morrison 2015). Conservation approaches need to be based on an understanding of the impact of conservation goals on local people (Morrison 2015). The impacts on local people from behavioral changes towards conservation-orientated livelihoods need to be evaluated and understood. It also has to be clear what benefits the local community may receive from conservation that can motivate that change (Morrison 2015). Local people can receive a myriad of co-benefits from preserving nature for their wellbeing through vital ecosystem services with environmental degradation impacts their livelihood outcomes. Benefits

should be planned for, quantified, increased, and communicated to reach continuous accumulation of those (Morrison 2015).

The communities that are close to wildlife are crucial in fighting the illegal wildlife trade, as they are often times at the beginning of the supply chain for wildlife products (Biggs et al. 2016). Socioeconomic, political, legal, and environmental factors impact the relationship with wildlife and thus attitudes toward the illegal wildlife trade differ, affecting the types of community-engagement interventions that are likely to succeed (Biggs et al. 2015). The assumption behind community-based conservation programs is that changing human behavior and for local people to develop environmentality are often prerequisites in achieving desired conservation outcomes (Nilsson et al. 2016; Agrawal 2005). For people to adapt conservation-orientated attitudes and behaviors, they need the right incentives that lead to the fulfillment of their needs.

Based on a review of 17 different community-based conservation projects with one being the Chi Phat project, Nilsson and colleagues (2016) created four program theories/strategies to guide fundamental behavioral change and engagement in conservation efforts. The first strategy focuses on economic value through integrated conservation and livelihood goals that engage local people in conservation-focused livelihoods and associated behaviors for them to seek economic benefits. The second strategy targets that benefits outweigh the losses, meaning the benefits of the environmentally friendly behavior outperform the losses from stopping the previous unsustainable behavior. In this case, the strategy is to give economic and development benefits in return for pro-conservation behaviors, engaging communities in new behaviors. In addition, the value of a diverse natural capital through ecosystem integrity has to be incorporated and understood, since an array of benefits are provided from healthy ecosystems. The third strategy delivers community control over natural resources. To put it simply, communities will control their resources sustainably out of self-interest, in turn, benefitting conservation outcomes. A fourth strategy is "education" (collective/joint learning) and awareness about ecological complexities relevant to farming and conservation. This allows communities to know how to engage in conservation and creates an understanding of its importance, enabling them to conserve their natural heritage (Nilsson et al. 2016). These concepts are guidelines to fulfill livelihood needs and give the people alternatives to be able to change the behavior that previously was harmful to the environment and in the end also on these resource-dependent communities. Interview questions were designed in a way to incorporate these strategies identified by Nilsson and colleagues (2016) as illustrated in Figure 4, to find out which of the factors is the most predominant in the case of Chi Phat and whether there might be additional factors that drive the behavioral change e.g. from poacher to tour guide.

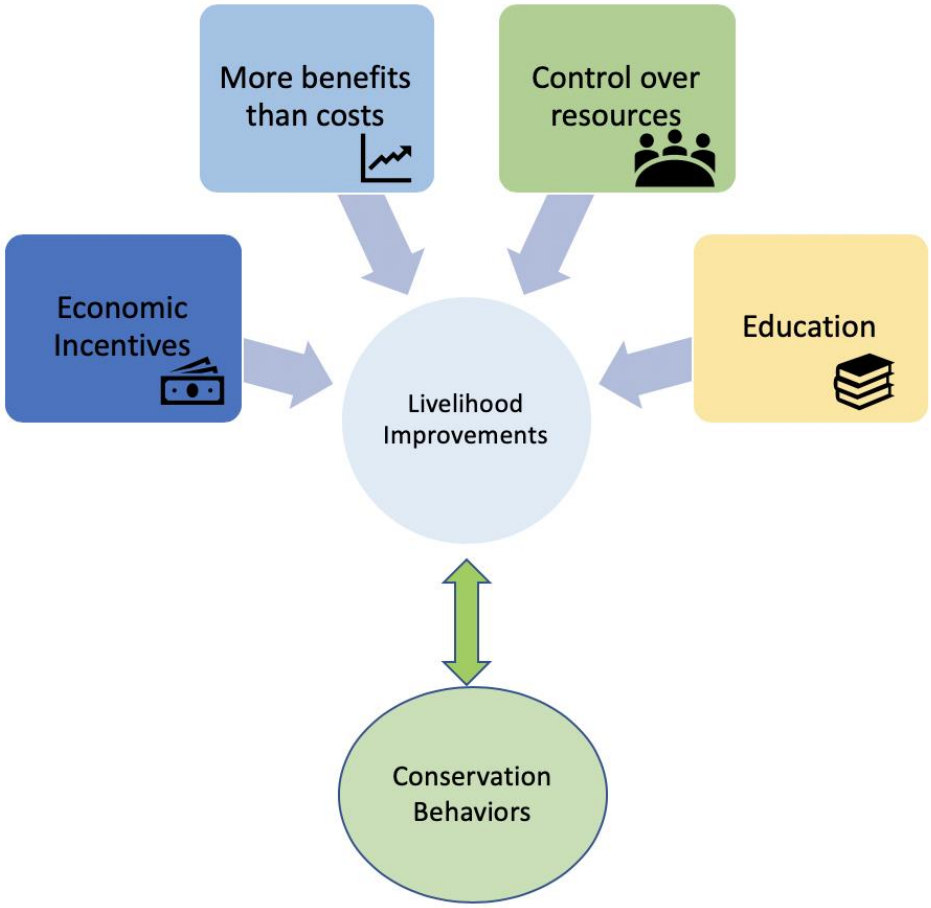


***Fig. 4:*** *Illustration of four strategies driving behavioral change in local communities (Nilsson et al. 2016) and the interaction between conservation-oriented behaviors with an improved livelihood.*

The assumption is that once the livelihood and the overall wellbeing are improved through engagement in conservation behaviors, the attitudes towards conservation are changed and in turn catalyze further conservation-orientated behaviors (see Fig. 5). It is important however that livelihood improvements and thus wellbeing of the local community are defined by the community members themselves instead of outside actors with eurocentric narratives about improved well-being that might lead to conservation responses unfit for local realities (Woodhouse et al. 2015). This multi-dimensional concept of subjective well-being reflects people's own assessment of their livelihoods and the impact of conservation on their livelihoods (Diener 2006). Putting local people at the center of this conservation impact evaluation about their livelihoods encompasses letting them define the impacts (Rasolofoson et al. 2018). This participatory approach to subjective conservation impact evaluation involves asking local people directly about their attitudes towards the impacts of conservation on their livelihoods (Woodhouse et al. 2015). This is why in the context of this research respondents were asked to freely describe in which ways the CBET project has affected their livelihood from their subjective perspective.

Agrawal (2005) demonstrates the reason for rural communities in northern India to suddenly care about the environment was community participation in management and decision-making through forest councils. This engagement made them appreciate their environment and care about its conservation, shifting the general attitudes and behaviors of the community towards forest protection. The paper also shows that community members who did not participate in participatory decisions about forest regulations and management, did not change their attitudes towards the environment. This illustrates that there can be crucial differences among community members in terms of possible benefits and inclusion in decision-making. Agrawal (2005) states that people often first come to act in response to what they may see as a compulsion or according to their short-term interest and only then develop beliefs that defend long-term-oriented actions. He argues that beliefs and attitudes are created in response to experiences and outcomes. This opposes the common previously discussed presumption that actions follow attitudes. This is also supported by the study (Ven 2015) that took place in Chi Phat, which is further described in the discussion.

Overall the studies of Agrawal (2005), Nilsson et al. (2016), and Ven (2015) demonstrate the paramount importance of livelihood improvements through conservation-orientated behaviors and that people come to realize the possible benefits generated through sustainable practices, and only then the attitudes towards conservation change. It is crucial that initially the people are made aware of the possible benefits in order to engage them in the project. Once they see certain outcomes (e.g. higher income) people change their attitude further engaging in conservation-orientated behaviors, developing a sense of stewardship and internalizing conservation and sustainability agendas. In short: for people to adopt conservation-orientated behaviors and attitudes they need positive livelihood outcomes through engaging in conservation. The current study investigates how this played out in the context of Chi Phat by finding out if and for what reasons the attitude of people towards conservation changed or didn't change. By studying the people´s attitudes towards conservation and how they might differ depending on the stakeholder in focus, one can get an understanding about the role of attitudes in engaging people in conservation, how attitudes come to change, and whether it leads to environmentality in the process. Respondents were asked a range of questions to understand their attitude towards conservation, how these were impacted by the project, and whether they play a role in how they act. Both members and non-members were asked similar questions in order to gain knowledge whether there are differences depending on being a project member or not.

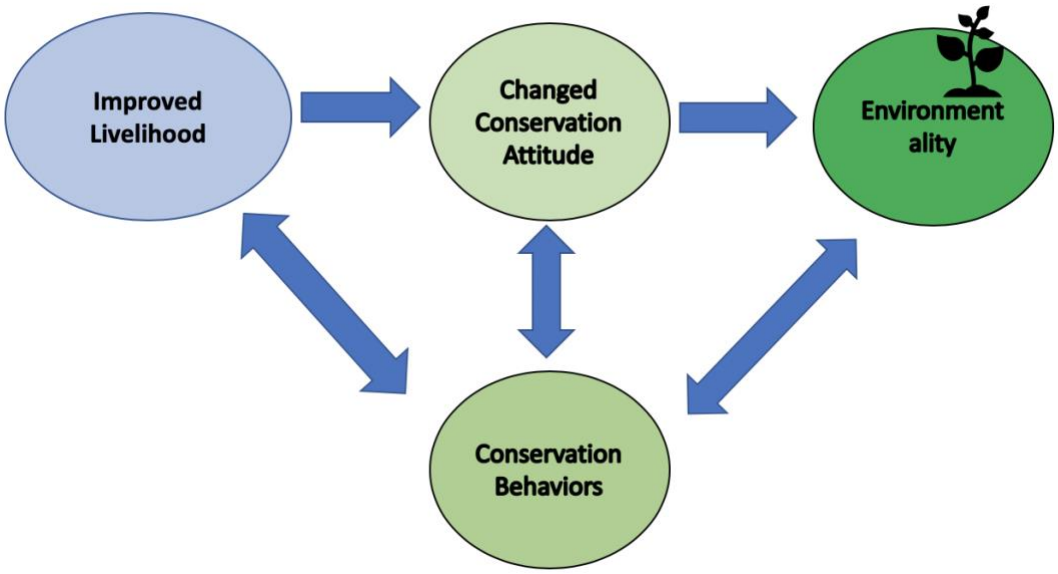


***Fig. 5:*** *Illustration of the impact of an improved livelihood on attitudes and behavior as well as the possible impact of a changed behavior on attitudes and vise versa. The engagement in conservation behaviors and the improved livelihood outcomes impact one another. After seeing certain livelihood outcomes, people develop environmentality and their attitudes towards conservation change. This is based on the Theory of Change (Morrison 2015) and the concept of environmentality (Agrawal 2005) and put into context of this research. Everything is connected and influences each other, but attitudes only change once certain outcomes are visible through the engagement in conservation (Agrawal 2005).*

One has to be aware that a community such as Chi Phat cannot be viewed as a homogeneous group that does not entail variation in attitudes and behaviors. Generally, not all members of the community participate in the project and benefit from it and therefore project outcomes might not be equally distributed and universal for the community as a whole. In many CBC projects, it is observed that people who are not part of the project and do not receive direct benefits are engaged in practices such as hunting and logging to meet their livelihood needs and thus jeopardize the entire project (Dressler et al. 2010; Ojha et al. 2016; Kiss 2004). In the case of Chi Phat, 340 families out of 632 directly benefit from the project, while the rest are considered indirect beneficiaries by WA since they belong to the community and benefit through the created economic flow according to WA. Therefore, this study investigates across a range of stakeholders, looking at possible differences in livelihood outcomes and attitudes.

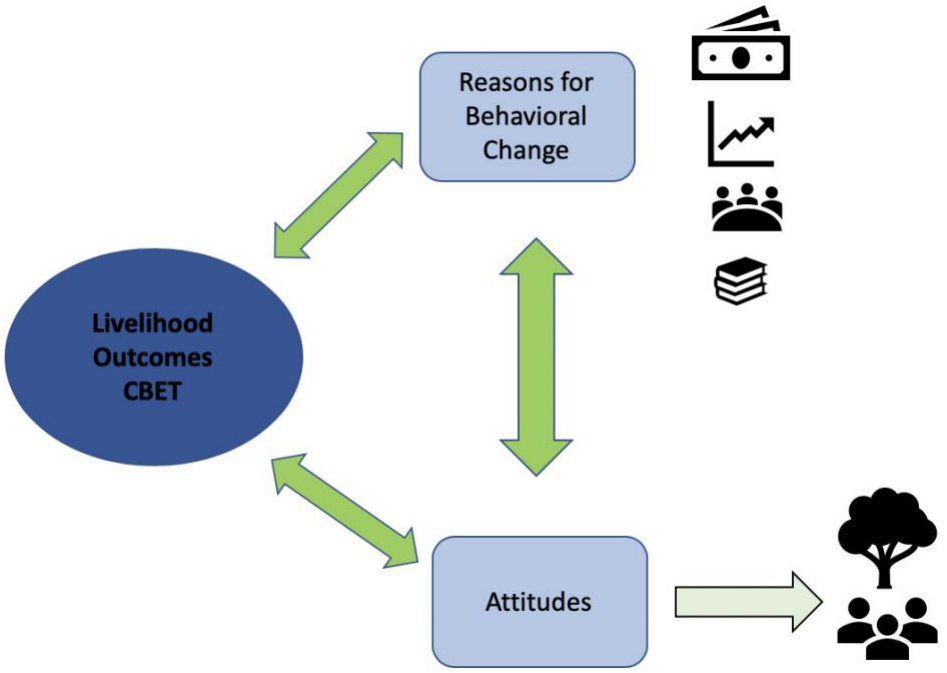


***Fig. 6:*** *Overall framework that connects the previous two figures and that will be used as guidance for analyzing the data via coding, helping in answering the research questions. It also shows how livelihood outcomes might impact attitudes and behavior and vise versa. It also presents that changed attitudes might lead to environmentality (represented by symbol: three people around a tree) and which factors that were identified by Nielson et al. (2016) possibly guide behavioral changes among resource-dependent communities (economic incentives, more benefits than costs, control over resources, and education).*

The conceptual framework that is based on the concepts of the Theory of Change (e.g. Morrison 2015), Environmentality (Agrawal 2005), and the Attitude Behavior Relationship (e.g. Ajzen 2005; Heberlein 2012) was used to develop the codes for analyzing the data alongside the overall framework depicted in the figure above (more under Data Analysis below).

What has to be reflected on is that behavior is not always linear in nature and does not necessarily follow rational thinking (Heberlein 2012). As discussed above, the behavior is compounded by a plethora of internal (e.g. attitudes and values) and external drivers (e.g. societal context and financial circumstances). The societal norms have a huge influence on both how a person thinks about a certain issue and how the person acts (Amel et al. 2017). The idea of giving people economic incentives and livelihood improvements is based on the rational idea that people will behave in a linear way, accepting the incentives and improvements to their livelihood and as a consequence dropping the behavior that is undesired by project planners (Kiss 2004). Yet, local realities such as poverty and the desire for more than that is provided by the project have to be considered. In the context of Chi Phat, people are generally poor, and a livelihood improvement does not mean that their life is as they desire. It might be that people welcome the benefits of conservation, but to cover some of their livelihood

needs that cannot be addressed with their income from the project and legal livelihood practices, some that go against the norm of the project might sneak into the forest, catch an animal, sell it, and then buy the desired new scooter or send the kids to school. Also, the common norm with societies that are embedded in poverty and where the struggle to make a living is an everyday reality, is the need to provide for the family no matter what. In addition, people that are not part of a project such as CBET in Chi Phat might feel less of an incentive to give up livelihood-supporting practices (e.g. Kiss 2004). Therefore, all stakeholders within the Chi Phat community were considered to grasp how this concept plays out in the context of Chi Phat, if there was a shift in practices generated through the livelihood alternative in the form of ecotourism, while 60% of the community is not part of the project. In the end, hunting has not been completely eliminated but significantly reduced, and it might be because some do not have the incentive to stop and others might just want it on top of the presented alternative, namely a job at the project.

# 5. Methodology

## 5.1. Overview

The Chi Phat village research site was selected because it has been praised as a model CBET project by both government and non-governmental organizations among ecotourism projects in Cambodia and as a result, has won international awards (Reimer and Walter 2013). Wildlife Alliance provided assistance throughout the research via transport to the project site and accommodation at the project site. The data generated during the course of this research comes from semi-structured interviews with local people of Chi Phat village. Consent to carry out this research was given by the local authority and a contracted was signed that my work at the village will be carried out under ethical guidelines. The consent of respondents was given before starting

During this research, the Chi Phat case study was analyzed to intensively study the phenomenon of livelihood impacts on project members and non-members, attitude towards conservation, and the motivation behind behavioral changes as a result of CBET within its natural setting. The primary method used for data collection was semi-structured interviews. Interviews were chosen because they are an excellent way of measuring a wide variety of unobservable data, such as people's preferences (e.g. political orientation), attitudes (e.g. towards conservation), beliefs (e.g. about their place in nature), behaviors (e.g. hunting and slash-and-burn), or factual information (e.g. income) (Bhattacherjee 2012). However, interviews are subject to a large number of biases such as sampling bias, social desirability bias, and recall bias (Bhattacherjee 2012). The case study in focus for this thesis consisted mostly of qualitative and interpretive case research to shed light on the impact of

conservation actions in reaching local people's attitudes towards conservation and to identify the drivers that play a role in altering their former "unsustainable" livelihood towards a conservation-oriented livelihood.

## 5.2. Why Qualitative Research?

Most knowledge generated is of qualitative and interpretative nature since this study is rather explorative, and hence contextual and not generalizable. Yet this research seeks to offer a basis and to function as an example of potentially successful conservation strategies that were able to combine positive livelihood and conservation outcomes from a local people perspective as well as shed light on outreach impacts of wildlife rescue and rehabilitation facilities on visitor attitudes towards conservation in Cambodia. I chose interpretative research because it is more holistic and contextual, rather than being reductionist and isolationist and therefore being more appropriate for these case studies than quantitative research (Bhattacherjee 2012). Also, interpretative research is suited for exploring hidden reasons behind complex, interrelated, or multifaceted social processes, such as behavioral changes and attitudes, where quantitative evidence may be biased, inaccurate, difficult to obtain, and too "black and white" (Bhattacherjee 2012). The emphasis in qualitative analysis is "sense-making" or understanding a phenomenon, rather than predicting or explaining it in pure statistical and "narrowed down" terms (Bhattacherjee 2012). This research required a more holistic or a so-called "birds-eye view" to make sense of the link between conservation initiatives and local people, which might not be linear in nature, highly context-dependent, and misrepresented by statistics.

## 5.3. Interviewing and Sampling Technique

The attitudes of the villagers, the motivation in changing their behavior, and livelihood outcomes were studied through semi-structured face-to-face interviews with the help of a translator. The interview questions were determined along the conceptual framework in a way to find out the livelihood outcomes, attitudes towards conservation, and what led people to adopt new livelihood practices. Despite that the interview questions were prepared in advance; the questions sometimes varied and were improvised depending on the respondent and they left room for the respondent to express him or herself (example questions can be found in the appendix). S

emi-structured interviews were chosen because they give the respondents the freedom to express themselves, while yet moving alongside topics that have to be addressed in order to answer the research questions (Bernard 2011). The interviews were recorded with the recording application on

the iPhone 7 and field and scratch notes were taken in a paper notebook. They were then digitally transcribed and analyzed alongside the conceptual framework (further described below).

60 face-to-face interviews with a length ranging from 10 to 30 minutes depending on the respondent were conducted with all stakeholders, meaning project management and staff, local authority, project members, and project non-members. The perceptions of Wildlife Alliance about the project was taken from their official website (www.wildlifealliance.org) and reports (e.g. Wildlife Alliance 2012a,b) where their views, ideologies, and methods are expressed. This was then compared to what is actually happening on the ground. The interviews with project management (3 interviews), local authority (3 interviews), and most project members (23 interviews) were pre-organized by the project. The interviews with project management and local authority were mainly concerned with their perceptions of (1) how the village has changed since the start of the project; (2) what the livelihood outcomes are for both members and non-members; (3) current challenges and their ideas of how things can be improved. The member interviews focused on finding out (1) their attitudes towards conservation and hunting, and how those might have changed since being part of the project; (2) their livelihood outcomes; (3) the reasons for joining the project; (4) their ideas on how to improve things. The project selected members from the range of occupations at the projects (tour guide, jungle cook, cook, driver) with most people interviewed being former poachers and loggers. Obviously, this pre-organized interviews with the direct involvement of the project created a bias that was partially mitigated through randomly selected members and former members where the project had no involvement in the selection of who is to be interviewed.

The non-members (27 interviews) were selected randomly at first with no involvement of the project in the selection process. This random selection was done by walking through the village with my translator and asking people at their house if they are willing to participate in the research. After a certain number of interviews, the selection process became purposive, meaning that I wanted to find certain people that could help me understand better specific things and answer my research questions. Therefore, I asked people from the village whether they might know people that fit these criteria. These people were the most marginalized and resource-dependent community members, some of which lost land and are still actively hunting. Through these purposive interviews, I was able to better understand the impacts of the project across the community through incorporating not only the people that were easily available. The interviews with the non-members were designed in such a way to find out (1) the livelihood implications for them since the project arrived; (2) their attitudes

towards conservation and the imposed restrictions; (3) their own ideas about what things need to be improved.

The sample size was enough to find out specific trends and gradients, however, one has to be careful with generalization since heterogeneity between different stakeholders and among the same stakeholder group was observed. I believe the trends and gradients represent different stakeholders in focus, yet with keeping in mind that things can differ on a household basis. Not everyone is the same and that is also visible it the research outcomes. When there was a difference between the general trends observed for the specific stakeholder group e.g. non-member and the individual respondent, then this was noted and viewed in context. For instance, when the general trend would be that project members have now a higher income than before and then one former hunter says it is less now, then this might depend on his individual circumstances. This individual might have heavily relied on hunting and sold many species with a high market value such as bear and pangolin. Therefore, the income generated at the project does not make up for it. When these things occurred during an interview, the respondent was asked to describe why this might be the case. Also, attitudes can differ within the same group. To give an example, some poacher might feel bad about what they are doing, and they dislike it, and others might not feel anything and think it is okay to do so. These individual differences that might not be according to the general trend were accounted for and are also reported. (*List of respondents can be found in appendix 1; List of interview questions can be found in appendix 3*).

The research objectives and my independence from government and the NGO were explained and complete anonymity was guaranteed. The same was done when talking randomly to project members that were not chosen by the project itself. Before each interview, regardless whether member or non-member it was clarified that the interviews are anonymous and that I, the researcher, have no involvement with the project and the government (*The respondent list can be found in the appendix*).

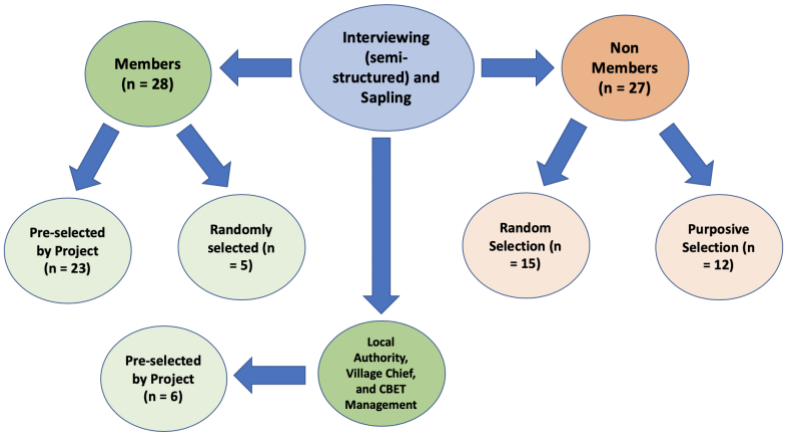

***Fig. 7:*** *Illustration of sampling procedure.*

Three studies (Reimer and Walter 2013; Nilsson et al. 2016; Ven 2015) were used as triangulation and comparison to my findings. The translator was a trusted Khmer person close to me that grew up in a provincial village similar to Chi Phat and therefore could establish trust with the respondents by being viewed as one of "them". My translator, whom I knew on a personal basis for 2 months prior to the start of the research was briefed about the entire research.

We stayed in a Chi Phat homestay for 3 weeks, getting a first-hand idea and experience from Chi Phat. During this time, I was able to form my own picture of the project, put everything in better context, allowing me to get a stronger research outcome from the combination of interviews and my own experience there. I took part in tourist activities and got to know people on a personal basis. I was able to do some informal interviews ("chatting") that was used for contextualization and triangulation of some findings when "hanging out" with people.

## 5.4. Data Analysis

First, the interviews were transcribed and then analyzed by organizing the answers into groups alongside the conceptual framework. Basic coding was used to make sense of the responses after the grouping had taken place. Codes were pre-developed to some extent and also emerged with the responses to fit the conceptual framework in order to entangle and then create certain themes that developed when analyzing the data. In the table below are the codes that were used alongside the conceptual framework and simplified example themes are used for better visualization.

**Table 1:** Codes used to analyze that interview data alongside the conceptual framework, leading to certain themes.

| **Framework** | **Codes** | **Themes** |
|---|---|---|
| Livelihood Outcomes | Costs (-) and Benefits (+) | e.g. members experience and higher income but the costs are that they cannot farm as they used to |
| Attitudes towards conservation and hunting | 1. Pro- and con-conservation<br>2. Attitude base | e.g. attitudes towards conserving wildlife has changed but is based on the monetary value of wildlife |

| | | |
|---|---|---|
| Reasons for behavioral change | 1. Econ. Incentives<br>2. Benefits outweigh costs<br>3. Control over resources<br>4. Education<br>5. Attitudes<br>6. Other | e.g. the main reason to shift the behavior away from poaching and to become a member was a combination of economic incentives and law enforcement. |
| Environmentality | Present or absent | e.g. people generally have not internalized conservation concepts but are more aware about the importance of the forest. |

# 6. Results

## 6.1. Livelihood Outcomes Perceived by Wildlife Alliance and Project Staff

WA´s idea of conserving the landscape and the wildlife is through a combination of strong law enforcement and a livelihood alternative to undesired practices such as hunting, logging, and slash-and-burn agriculture. The livelihood alternative tool used by WA is community-based ecotourism, which is perceived as the best way to align their conservation agenda with the needs of the local people that depend on the land for growing food and the forest´s resources. WA´s perceives that the livelihoods in the village have generally improved through the project´s intervention in deciding how the landscape is to be conserved. They state that people at the project earn now a higher income than before and that people not part of the project also benefit and experience livelihood improvements, therefore they give the term “indirect beneficiary”.

During a talk with project manager Sophany Touch, he described that benefits accrue across the community, but that there are challenges with making everyone happy. Interviews with project staff revealed that they say see the need to include more people into the project so everyone can benefit more. However, the general perception is those livelihood improvements are achieved through the project´s capacity to attract more and more tourists, and as a result have more jobs available. Ecotourism seems to be perceived as the “silver bullet” by project planners to align conservation with livelihood improvements. Little emphasis is given on other ways of conserving the landscape and alleviate poverty, and a rather conventional conservation paradigm, meaning rangers to enforce restrictions and the commodification of nature through tourism, is employed.

## 6.2. Member Results

### Livelihood Outcomes

Generally, the member interviews revealed that the livelihood of project members has improved since they started to work with CBET. Mostly the job at the project is, however, only one aspect of multiple that makes up people´s livelihood. The livelihood of members besides the project consist usually of farming for subsistence and additional income generation, operating a small business such as a store, fishing, and collecting NTFPs like jungle rubber. People describe the job at the project rather as a side job and that the income generated through the project is additive and on its own not enough to support the family. However, the job helps to improve the livelihood overall, depending on the season. In the high season there are a lot of tourists and thus the majority of income is made within that period, while in the rainy season people rely more heavily on their other jobs such as rice cultivation.

There has to be a differentiation between members that heavily relied on the forest through logging, wildlife poaching, and shifting cultivation, meaning on practices that are not allowed anymore, for their livelihood prior to the project and people that had livelihood practices that had nothing to do with these restricted practices. Since hunting, logging, and agricultural encroachment into the forest became forbidden, people that depended on those practices had to completely alter their livelihood to fit into the conservation strategy deployed by WA. Former poachers and loggers work now as guides, jungle cooks, and community patrol rangers since these jobs require experience in the forest and those people are the most qualified to spot wildlife for enthusiastic tourists. They describe life as easier and better but that the income through the project is difficult to compare to hunting since hunting was an unstable and irregular income and the income made through the project is valued for being legal, safe, and stable. Yet, some former poachers and loggers state that overall, they now make less money but are fine with it since the job at the project is legal and safe, and it is better than doing nothing since activities such as hunting are no longer possible as in the past, making it economically not viable to poach.

For the people who never depended on the forest and that were therefore not affected by the restrictions, the income seems to be purely on top of what the household already made. These people are mostly women that operate stores and are the wives of men that occupy jobs such as policemen or other lines connected to the government and have thus nothing to do with resource extraction nor shifting cultivation. Others that had enough capital prior to the project operate bungalows and guesthouses. The household heads in these families, the men, seem to have always worked in jobs that are not connected with forest-resource extraction but rather business and government line. Thus,

it becomes evident that depending on the type of livelihood prior to the project the net livelihood outcomes differ. In a nutshell: The people that heavily depended on the activities that became forbidden, meaning hunting, logging, and slash-and-burn had to give up something in order to get something, and others that didn't, seem to have a net gain in benefits in terms of additional income.

Most people farm beside working with the project, cultivating mainly rice, additional banana, and other fruits and vegetables. Rice is mainly grown for self-consumption and even has to be additionally bought from outside since the rice grown is usually not enough. People state that selling their banana and other products is very difficult, because there is no connection to markets, due to the remoteness of the village and that the crops they grow are already sold in high amounts everywhere, meaning the market has no real demand for their bananas. Therefore, numerous people started to grow durian, which is in high demand and expensive.

People that had to completely change their livelihood supporting practices had to give something up and adjust, while people that occupied jobs unrelated to forest-resource extraction and shifting cultivation only had something to gain. However, people still have access to certain forest resources in the form of NTFPs and many people that always lived off the forest continue to do so by collecting rubber, rattan, wild fruits, and vegetables, etc., contributing to overall income. When looking at people´s livelihoods it becomes evident that the project is one part of sometimes two to three other livelihood supporting practices, but nonetheless contributes positively to the livelihood of members. Yet, people that left the project state that the money they made was too little and insignificant that they rather put their effort on something else. These findings show that even within the members there is heterogeneity regarding the livelihood outcomes, but in general, the trend seems to be that livelihood outcomes for members are positive. This observation is supported through the facts that all active members but one reported that the benefits of the project outweigh the costs, yet while benefits and costs seem to vary based on the prior degree of resource and shifting cultivation dependency as well as the position held at the project.

Former poachers describe that it was not easy to just stop and do something else. They state that the cost was that they had to stop what they were doing and trade it for something else. Yet, most of them say that it was worth it since the benefits outweigh the costs for them. The main benefits that they perceive are a stable, safe, and legal income when comparing it to poaching and logging. People that were poaching and logging before working at the project describe it as a very high-risk job that depended on luck and only brought a sporadic income, but if they were able to catch a good animal or cut a good tree then the reward was high. Besides income, people value other benefits such as a

healthier environment, better connection to the outside world, and education. People that depended on shifting cultivation report that they struggle with farming now, stressing decreased production due to lack of know-how. They state that overall agriculture has become more difficult and is an issue that needs to be solved for people in general to have a better life.

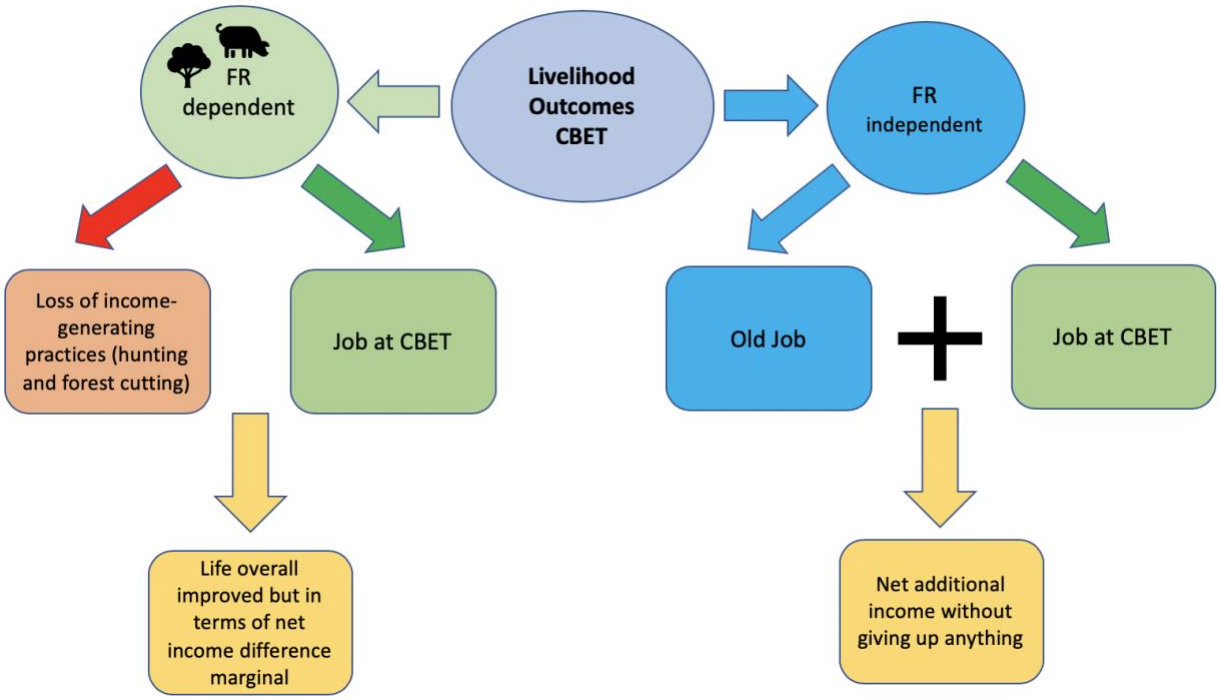


***Fig. 8:*** *Graphic that illustrates the different outcomes for members that heavily depended on activities that became restricted (FR dependent) and on members that did not (FR independent) (FR = Forest Resource). Overall life has improved for both, but people that depended on hunting, logging, and shifting cultivation close to the forest, had to give up something and people that did not depend on these activities were able to continue their normal life plus earn an additional income.*

## Drivers behind behavioral change and attitudes

In the past people usually hunted for subsistence until middlemen and people that were exposed to the trade came from the outside to the village, connecting Chi Phat to the wildlife trade and therefore creating a sudden demand for species such as bear and pangolin. With the injection of the illegal wildlife trade to Chi Phat people started to hunt for money rather than eating and more species that previously were not interesting became the target e.g. pangolin and gibbons. Prior to the project over 80% of households relied on hunting. Based on interviews with former poachers and what WA claims, hunting has been reduced to 20% of what it was before the intervention of WA. This was achieved through a combination of enforcement and livelihood alternatives, namely the carrot and the stick approach.

The interview results with former poachers suggest that above all the reason to become a member of the project and stop hunting was socio-economic. Attitudes seem to have played a minor role in the decision since for poor people that heavily rely on forest resources such as wildlife and timber, the driver to stop doing that is because they needed to earn a living. The reason why people hunted wild animals and cut the forest in the first place was simply to survive and support their family. Former poachers describe the job as very hard, dangerous, and dependent on luck and state that they were glad to do something else. When asked how they felt about what they were doing many said they didn't feel anything because the only thing they knew and cared about was survival and supporting the family. Others stated that they knew what they were doing was bad, but they had no other choice.

In 2002 Wildlife Alliance came to enforce forest protection through rangers without presenting livelihood alternatives to the community that heavily depended on hunting, logging, and slash-and-burn. This approach led to hostile attitudes towards conservation since they lost their ability to make a living. In 2007 WA adopted a new approach by creating CBET. They explained people the importance of the forest and the benefits they can get through joining the project. Generally, people were glad to join once they understood the benefits they can get through conservation. Thus, there was a shift from hostile attitudes towards pro-conservation attitudes, but only once certain benefits were realized and experienced. What became clearly evident though is that general attitudes are still based on the socio-economic value of wildlife and the forest. People generally seem value wild animals and the forest because they attract tourists, generating income. Yet, many people are aware of the various ecosystem services the forest provides, mainly flood protection and the regulation of rainfall. They claim to have learned that through the project. It can be said that attitudes toward conservation changed, but they are still based on socio-economic factors rather than the intrinsic worth of wild animals. Wildlife attracts tourists and tourists bring money. This poses a dichotomy between western NGO values about wildlife and the way poor resource-depended people perceive and value wildlife in a setting like Chi Phat.

Environmentality, the internalization of conservation practices, does seem to be very limited if present at all because people tend to put the worth of the forest and wild animals on a money generating basis. However, there are signs that a few former poachers internalized conservation both within and outside the commodification paradigm, pointing to increased environmental consciousness and awareness since the project became established.

Giving up hunting, logging, and slash-and-burn practices were not voluntary and people that continued to do so and got caught were arrested. This "carrot and the stick" approach does not directly

force people to join the project, but it rather presents them an alternative, so villagers can have benefits through conservation and not hold attitudes of hostility towards conservation. Thus, the smart thing to do for someone that depended on activities that became restricted and difficult to continue is to join the project. This clearly shows that the main motivation behind joining the project is to get socio-economic benefits, namely an income. Roughly half of the former poacher and loggers interviewed claimed that even if the project would stop, they would not go back to the old ways and try to find another way, because now they realized how important the forest and wild animals are and in addition it is illegal. The other half stated that they for sure would go back because there is no other option to survive, even though they would not like doing it. In a nutshell: People joined the project, so they can earn a living and they developed attitudes that align with conservation once they realized the benefits that can accumulate through conservation, yet the value of wildlife is still primarily based on socio-economic factors. (*See Table 4 in appendix 2 for the quotes that represent and underline the member results*).

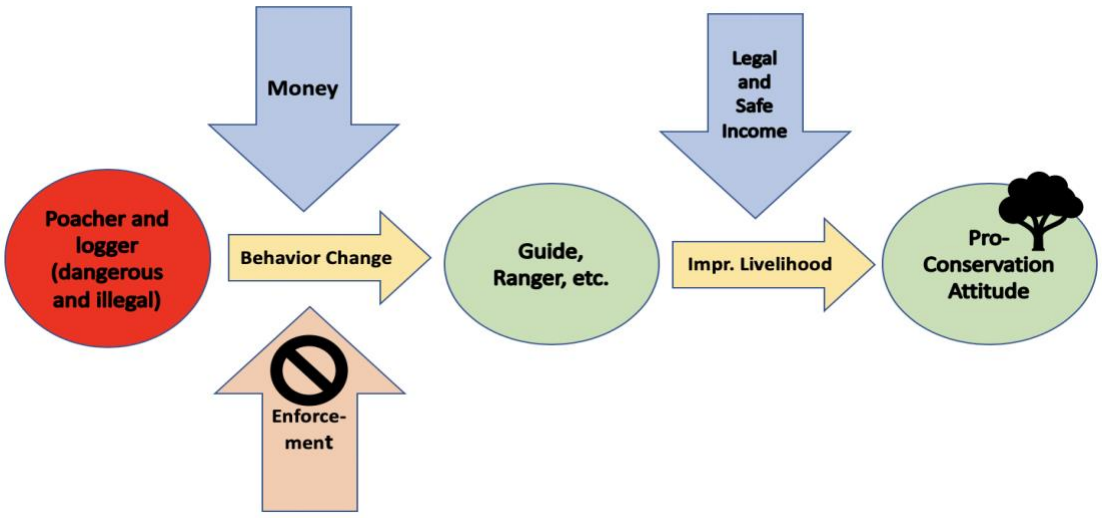


***Fig. 9:*** *Graphic that illustrates that the reason for poachers and loggers to work for CBET were mainly socio-economic and pushed by the enforced restrictions. Once people realized the benefits and their livelihood improved, their attitude towards conservation changed. Attitude not the cause of changed behavior.*

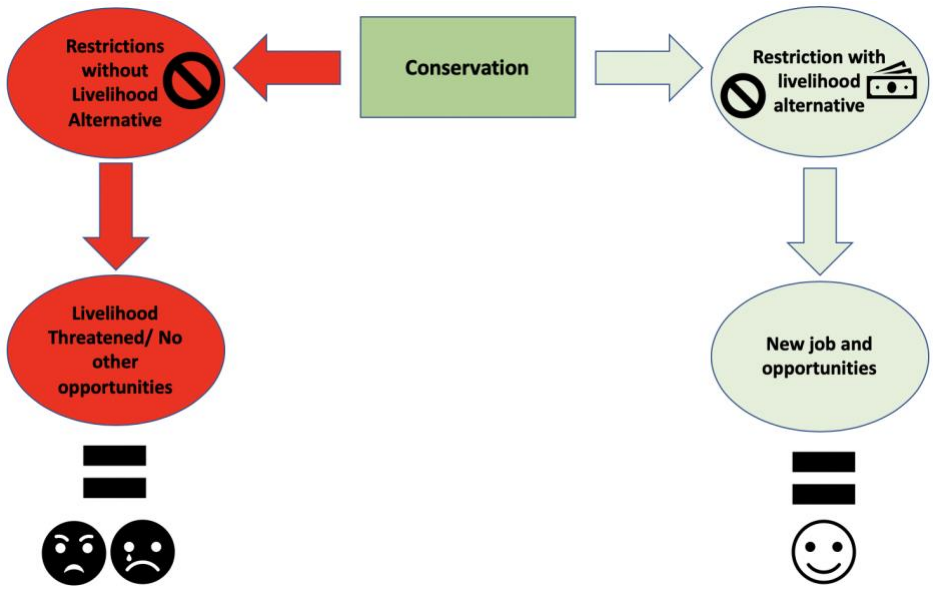


***Fig. 10:*** *Graphic represents that the attitudes towards conservation initiatives were negative and hostile when WA only enforced restrictions without presenting alternatives. Once people got benefits from conservation, their attitudes changed.*

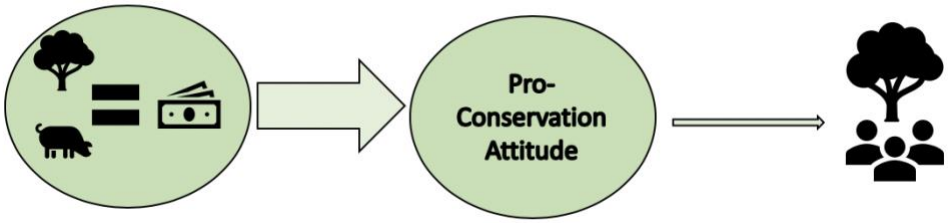


***Fig. 11:*** *Illustration presenting that Conservation attitudes are based on monetary value of forest and wildlife. Environmentality is only present among a very few people, which is represented by the narrow arrow.*

## 6.3. Non-member Results

### Livelihood Outcomes

Before the restrictions were enforced by Wildlife Alliance and the government regarding forest resource extraction and slash-and-burn agriculture, people´s livelihood was diverse and mainly made up by hunting for subsistence and selling, logging, collecting NTFPs, fishing, and rice farming through shifting cultivation. Over 80% of households were using the forest to hunt and cut trees. Usually, most households had a diverse livelihood that consisted of the above-mentioned things with varying degrees. For instance, people that were hunters also cut trees, collected NTFPs, and practiced shifting

cultivation. As mentioned, hunting only became a business once outside middlemen connected the remote village to the outside market and with it to market forces that made villagers react to the demand in certain wildlife products such as pangolin.

When looking at the factors making up the livelihood of the people it becomes very clear that they were highly dependent on forest resources (animals, wood, and NTFPs) and the land around the forest for growing crops through continuously shifting once nutrient exhaustion after 3-4 years was reached. Therefore, it seems obvious that when taking three factors that contributed to the livelihood away through conservation measures that there are certain effects on the people that depended on those factors. Not a single non-member that was interviewed stated that they were receiving benefits through the project. What became clearly evident through the range of interviews with different kinds of non-members is that people that relied on practices such as fishing, farming further away from the forest edge, or engaged in another kind of work such as operating small businesses, report that the project had and has no effect on their livelihood neither positive nor negative. Yet, local sellers state that despite the influx of tourists they sell fewer vegetables compared to before since many villagers left the village due to a lack of opportunities and they produce less because farming became more difficult.

People that depended the practices that became forbidden report that the project impacted their livelihood negatively and that life is now much more difficult for them. Thus, the degree of forest resource and slash-and-burn agriculture dependency seems to determine the degree of influence on people´s livelihood. The people with a high degree of dependency therefore have been experiencing adverse livelihood outcomes once those resources become tied up and accessible only by risking arrest upon getting caught. A handful of people report that they lost their land when the forest became protected and they couldn't prepare it for agriculture anymore. Since people depended on shifting cultivation, they encroached into areas with forest cover to be able to grow their staple crop, which is rice. They state that they had the right for the land when the government allowed the people to claim it. Yet, the land that they claimed was partly in the forest and not cleared, and as a consequence, it became contested with forest protection. This led to the loss of land, leaving them without suitable land to grow food for subsistence and for income generation. A few people I talked to even stated that they already had cleared and planted the land at the forest edge, but the project took it from them and started to reforest the area.

The people that in addition to not being able to hunt and cut trees also lost their basis to grow food for survival can be categorized as the most marginalized that are left with only a limited amount of

choices. One older woman states that the land was lost because it was within the forest that was designated as protected and her family only got a little piece of land around their house left with unsuitable sandy soil that only can sustain some coconut palms. A handful of respondents lost their land and relied on hunting. They claimed that they have no choice but to sneak into the forest and risk being arrested. They mentioned that there is no other way since they lost their livelihood and did not get compensated through a job at the project or alternative suitable land. Others stated that they lost their land unrelated to the project due to a sugar cane company that claimed the land on the other side of the river, leaving many community members that live close to the river landless. However, this is unrelated to the project, but the restrictions imposed by the project tie up the potential forest-resource safety net of the people that were victims of land grabbing even though the reason why they lost their land is not connected to the project.

The previously mentioned lack of livelihood alternatives for some community members partially explains why some people still see no other option but to resume hunting, despite its illegality and danger. Based on multiple accounts of former and active poacher about 20-25 percent of households occasionally need to hunt to support their family. This makes about a third of non-member households.

People, in general, seem to struggle with farming, since many had to completely shift their farming practices from slash-and-burn to farming without being able to move. They report that they produce far less rice and as a consequence have to buy rice from outside. Also, people claim that they lack know-how about how to grow rice this way because nobody taught them. In addition, people experience crop failures, especially when they try to grow durian, also due to the lack of know how. This shows that the "forced" transition from shifting cultivation to stationary farming was and is not easy for the people, causing indirect problems of production shortages that lead to the necessity to source food from the outside instead of being self-sufficient, which negatively impacts the money available. I use the term forced, because the transition is not voluntarily, but rather top-down enforcement, so people´s life fits within the conservation discourse. (*See Table 5 in appendix 2 for quotes underlining this section*).

## Attitudes towards the project and conservation

The people that carry the burden of resource protection and the CBET project, namely the people that depended most heavily on forest-resources and slash-and-burn practices, tend to hold negative attitudes towards the project. They seem to be unhappy with the fact that they had to give up their income generating practices without getting any benefits in return. Most of these people understand

that conservation is important, but they say that they and their family have to survive as well. Despite understanding that conservation is important they state that if they could go to the forest and hunt, they definitely would do so. Wildlife is seen as an important way to earn money, even if it means depleting wild population, but the lack of alternatives choices leaves people no other way. People that did not need to give up parts of their livelihood, because they were not farming close to the forest or extracting restricted resources from the forest, are not concerned with the project and have neutral attitudes and are even glad that the forest and wild animals remain. In the end, the behavior of not hunting is purely due to the enforcement of restrictions and the fear of getting caught. Regardless if people hold an attitude that reflects a standpoint of pro-conservation, socio-economic factors such as the need to make an income for survival are much stronger. These factors are so strong that some people risk a lot to make money to get by.

Something that came up when talking to active and former poachers is that they would do something else if they could make enough to earn a living a different way. They describe the job as extremely dangerous, hard, difficult, and unstable, and they would be more than happy to support their family by doing something else, but if they do not have another alternative they are left without a choice, especially if they do not have land to grow enough food for themselves. When asked how they felt when hunting, some poachers state that they do not feel anything other than the need to survive and others feel not good about killing and selling animals but the way they feel does not matter since the family is more important for them. It becomes evident that regardless of one's attitudes, when the basic needs for a living and a certain standard for the family are not achieved, then the behavior will be according to the pursuit of fulfilling those needs and standards. Thus, bluntly spoken, money matters more than one's attitude if the people do not have a certain standard of living and fulfillment of their direct needs.

Many non-members, both people that had to give up or change their livelihood and people that did not regularly perceive the project as being unfair in the way that they chose who can work with them and who cannot. Some people claim there is favoring of family relatives and friends as well as people that hold a higher status in the community. Overall many non-members seem to dislike the project and claim that life in the village is worse than before due to the project´s intervention in people´s life. The degree of resentment towards the project seems to depend on whether people were negatively affected by it or not. The non-members that relied heavily on the forest and on shifting cultivation in areas that became protected carry the burden of conservation, while non-members that were not affected by the project in such a way are mostly neutral towards the CBET project.

When asking non-members about what they would like to see improved they suggested to make the life better for people that do not benefit from the project to have the project bring experts in agriculture and show them how to farm better. At the same time, they stress the importance of being connected to markets, so they can sell what they produce. In addition, people desire a better road and a bridge that connects to the outside better so transportation of products in and out the village becomes easier. These suggestions are universal across villagers, regardless whether they are members or non-members. Almost all respondents stressed the importance of agricultural improvements, while generally members and project management see the solution for making things better in attracting more tourists so there are more jobs available. Non-members seem to more care about having enough land and good farming practices, so they can produce enough for eating and selling at the market. Over and over people described the importance of better agriculture to improve their livelihoods. A handful of active poachers stated that with sufficient production and land to produce on, they would not see the need to go into the forest to hunt. The perception of project management and staff that the answer is more tourists points to a misalignment with local realities on what is actually needed to benefit the community as a whole. (*See Table 5 in appendix 2 for non-member quotes*).

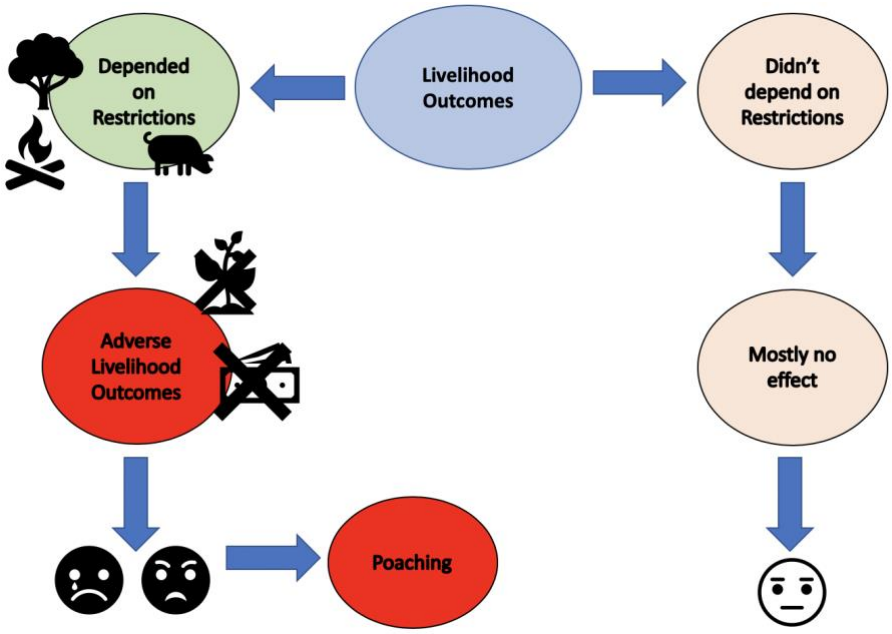


***Fig. 12:*** *Illustration of the livelihood outcomes of non-members and the resulting attitudes, depending on the degree of forest resource dependency (hunting, logging, and slash-and-burn). Some people need to sneak into the forest to hunt due to the lack of alternatives.*

***Table 2**: Summary of Results. Division into the categories that emerged within members and non-members, namely restriction dependent and not dependent prior to the project. Restriction dependent refers to the practices that became forbidden (hunting, logging, and slash-and-burn). Note: These are simplified and according to the trends that were observed.*

| | **Members NRD** | **Members RD** | **Non-members NRD** | **Non-members RD** | **WA´s perception on Chi Phat** |
|---|---|---|---|---|---|
| **Impact of project** | Positive | Mostly Positive | Neutral to negative | Negative | Positive for most people regardless if member or non-member |
| **Income generated** | Higher | Sometimes more, lower, or no change but safer and more stable | No change to lower | Lower | Higher |
| **Jobs** | CBET, farming, local business, fishing | CBET, farming, NTFPs, and fishing | Local business, farming, and fishing | Farming, NTFPs, Fishing, Labor for others, and people with no land cannot farm; poaching | People have now many more options to make a living<br><br>But not enough jobs at the project for everyone yet |
| **Benefits of the project** | Job that brings additional income on top; education | stable, safe, and legal work; education | No benefits | No benefits | People have a job; forest and wildlife are protected; people earn a higher income; non-members benefit as well |

| | | | | | |
|---|---|---|---|---|---|
| **Costs** | No costs | Some earn less money<br><br>Restricted access to resources<br><br>Difficult to adjust to new way of farming => produce less | Some have no costs, others have problems with the new way of farming, since they cannot move anymore | Livelihood contributing factors disappeared (e.g. hunting); Difficult to adjust to new way of farming for people that did shifting cult. => produce less<br><br>Some people lost land<br><br>Injustice and inequality | Overall no costs<br><br>=> CBET is the best way to help people and conserve wildlife |
| **Attitudes towards CBET** | Positive | Mostly positive | Neutral to negative | Negative | Positive => people want and love CBET |
| **Attitudes towards Cons.** | Positive | Positive | Positive and Neutral | Negative as long as no benefits | People agree with conservation |
| **Attitudes towards wildlife** | Wildlife valued for tourism | Wildlife valued for tourism | No specific value or importance | Important for next generations | People want to conserve it because it brings tourists; needs to be protected by rangers otherwise some will hunt |
| **Suggest. for improv.** | More tourists; better road and connection to markets | More tourists; better road and connection to markets; help with farming | Better road, a bridge, school, hospital, help with farming, more equality inside the project | Enough land to sustain the family, help with farming, connection to markets, more equality inside the | Increase capacity so there are more jobs through tourism |

| | | | | | |
|---|---|---|---|---|---|
| | | | | project | |
| **Import. of the forest** | Attracts tourists | Attracts tourists, weather regulation and flood protection, NTFPs | Flood protection and weather regulation | Source of income, weather regulation and flood protection | People understand the importance |
| **Environmentality** | None | Little | None | None | A concept that is not fostered |

# 7. Discussion

## 7.1. Wrapping it up

As it is evident from WA´s perception about the livelihood outcomes, they seem to not fit with local realities, shining the light on a misalignment that arises once a multitude of stakeholder groups are considered, especially forest resource and shifting cultivation depended non-member households. Looking only at project members, the notion of livelihood improvements is justified, however, a higher income is not universal. The degree of costs and benefits depend on prior dependency on the activities that became restricted. Yet, the general trend among members is that livelihoods improved, while only a few people claim that life has not changed much. However, the income generated through the job at the project is additive rather than an alternative, being one of multiple income-generating practices.

For non-members, on the other hand, the trend is the opposite. Non-members did not report any benefits and the costs vary with the dependency on practices that became restricted, namely hunting, logging, and slash-and-burn. The most adverse effects are observed with people that lost their land once the forest where their land was located became protected from agricultural practices the people relied upon. On top of losing an income source (e.g. hunting), these people lost their land and thus carry the heaviest burden of conservation. The term “indirect-beneficiaries” used by the project to describe non-members is unjustified since no non-member respondent reported any benefits but rather costs.

The project´s idea of improving things is based on creating more capacity to attract more tourists since CBET is viewed as the best way to create a win-win among the community overall and Wildlife

Alliance. Therefore, it seems tourism is viewed as what is needed universally across the entire community. However, the concerns of most non-members are not related to tourism but rather with improving agriculture since most villagers depend on farming for subsistence and income-generation. This presents a misalignment with the perceptions of the project on what is thought to be needed and the realities on the ground regarding aligning conservation goals with poverty reduction. Multiple project members state also that improvements in agriculture and the creation of more opportunities outside the project are crucial for overall wellbeing.

In short, generally the benefits of the project are livelihood improvements for member households through a legal, more stable, and safe income source that mitigates the livelihood implication of giving up poaching, logging, and shifting cultivation. The costs are mainly carried by the non-member households, and these include less income through the restriction of income-generating practices, production shortages due to problems with adjusting to farming without shifting, and in some cases land loss.

Attitudes towards conservation differ among members and non-members and also to some degree within in these groups, depending on the experienced benefits and costs. Members generally tend to have pro-conservation attitudes, while non-members tend to hold negative attitudes towards conservation. The trend observed is that the more people depended on the practices that became restricted, the more hostile are their attitudes towards conservation if they did not get the chance for a livelihood alternative, meaning a job at the project. In a nutshell: the people that carry the burden hold hostile attitudes, while the ones that experience benefits have positive attitudes towards conservation. This has to be viewed as a gradient with intermediates such as neutral attitudes when there are neither costs nor benefits experienced. The attitude one person holds does not seem to have influenced the decision to stop hunting.

The reduced hunting levels are mainly due to law enforcement and secondly an alternative income source for members. People that did get the chance to join the project did so in order to earn money when the practices they depended on became restricted. The attitudes of former poachers toward conservation changed once they came to realize the benefits that could accrue for them through the project. However, the attitudes are based on the monetary value of wildlife, which is attracting tourists who bring money. There does not seem to be an intrinsic value for wildlife, pointing to a dichotomy between WA´s perception of wildlife and how wildlife is perceived and valued by the local people. Wildlife is mainly viewed as a commodity, meaning for something that brings money. In the past wild animals brought money through selling them and now, they bring money through tourism.

When it comes to surviving, wildlife is no more than a way to meet direct livelihood needs and the reason why hunting has gone down is mainly through strong enforcement through rangers. If people could hunt, they would. Environmentality was only observed to a very limited degree with a handful of project members.

## 7.2. Putting it into greater context

**Livelihood outcomes members and non-members**

The evidence suggests that the effects on the community are unequal and not generalizable across the entire community. Reimer and Walter (2013) state local people are no longer logging and hunting as they used to, have a greater awareness of environmental issues, local culture is being valued and respected, and there are significant livelihood improvements for CBET participants and the community in general. I agree with the first four points, but not with the last. Based on my qualitative evidence there are no significant livelihood improvements for non-members and even adverse effects on the most marginalized, while members generally benefit. However, the income earned through the project is rather additive and only makes up one part of people´s overall income, with the main activity besides the project being farming. This finding is mirrored by Reimer and Walter (2013) regarding the CBET income.

It is impossible to generalize the impacts of the CBET project on the community as a whole. The effect on people´s livelihoods depends on whether they work in the project or not and on how much of their livelihood-generating practices they had to give up. Non-members experience drastically different outcomes than members and among non-members, the ones that strongly depended on hunting and shifting cultivation, and additionally lost land due to forest protection and reforestation, experience the most negative outcomes under the current conservation paradigm. These livelihood outcomes for non-members lead to the observed negative attitudes towards the project. People describe that it is unfair that they did not get a job, even though they had to give up their income-generating practices. They feel left out and are angry about these inequalities.

Due to the lack of opportunities and incentives for non-members, some resume hunting, while others either try to cope with the circumstances or have left the village to work in factories. Non-members that did not depend on forest-resources and did not lose land but nonetheless needed to transition from shifting cultivation to farming at one place, state that life is now more difficult since they produce less and lack the know-how to farm without shifting. As a consequence, they are not self-sufficient anymore and have to increasingly rely on the outside for commodities, especially rice. Now they have

to use more and more chemical fertilizer to buffer against soil nutrient depletion, which will lead to increased soil degradation over the next years.

The suggestions most non-members gave to improve their life have nothing to do with tourism, but rather they want help with agriculture and connection to markets to sell their commodities. This observation is almost universal across respondents. Also, non-members wish for more equality and that the project does not favor the people that already had something before the project was established such as people with government jobs.

These drastically different livelihood outcomes among the stakeholder groups in focus, namely member and non-member, indicate a clear misalignment between the perceptions of the CBET project planners, who have been labelling non-members "indirect-beneficiaries". The project assumes that the need for CBET is universal across the community and the best way to alleviate tensions between resource-dependent people and project planners. The qualitative evidence shows that the term "indirect-beneficiary" is a rather a drastic overstatement than reality.

A study carried out by Cascio and Beilin (2010) in another village in the Cardamom Mountains analyzed the problems surrounding conservation and the ethical issues of engaging local people for a specific conservation agenda without a clear understanding of the consequences for the people in their specific local setting. The study found that there is a misalignment between conservation planners and the local people because people contested the meaning and usefulness of the PA and the CBC projects. They state the concerns of the local people were rather cultural, social, economic and political than environmental, exposing unbalanced power relations, different concerns, and uncertainty regarding the long-term outcomes. This trend is also observed in Chi Phat, where only project-members, which represent less than half of the households residing within the community, are concerned with tourism while the rest of the people seem more concerned with agriculture.

In many occasions, values and ideologies of local people are sidelined once they do not align with the agendas of the NGO (e.g. Blaser 2009; Milne and Mahanty 2015). Even in community-based projects, the top-down enforcement of foreign agendas and ideas is oftentimes the case and local people only adopt new behaviors to be eligible for the project or simply due to restrictions and enforcement of those rather than through their own internalized commitment and changed attitudes (Dressler et al. 2010). Often the limitations of international conservation projects in socio-ecological settings like Cambodia result from their underpinning assumptions and logic, stemming from eurocentric ideas and values of nature, and paradigmatic thinking about how it should be saved, which is completely different from how the local people that depend on that nature see things (Adams 2009; Milne and

Mahanty 2015). Chi Phat, despite the label of being community-based, is rather a top-down and an eurocentric enforcement of how the landscape should be saved and how people should relate to it. From a conservation perspective, the people inflicted damage to the forest and the wild animals through hunting, logging, and slash-and-burn agriculture. However, for the people, it was just the way to get by. The CBET project only offers an opportunity to some, while many people that strongly depended on practices that became forbidden did not get an alternative thus, they have to carry the burden. These people that don't benefit from CBET are not concerned with tourism and want to resume their practices whether it fits into the conservation paradigm or not. The concept of conservation is out of their scope since their basic needs are not fulfilled. As it is basic knowledge among conservation practitioners, the needs of the local people have to be fulfilled first (e.g. Sayer and Campbell 2004).

This concept is also recognized by WA (see www.wildifealliance.org), yet on the ground, this has only been achieved for some. These different livelihood outcomes between different stakeholder groups are a widespread issue among CBC projects such as CBET and have the potential to jeopardize the long-term success of such initiatives (e.g. Berkes 2007; Ojha et al. 2016). Aswani and Weiant (2003) state that, when local people are excluded from their resource-base and their needs and ambitions are ignored, it becomes remarkably difficult to implement successful conservation policies.

Even though people still have access to NTFPs and can farm, it is not enough, especially when prior to WA´s intervention people used the landscape in a plethora of ways. Income-generating practices became forbidden, while many that had to give up these practices for the benefit of CBET do not gain any benefits from CBET in return. In addition, the change in farming practices brings its own difficulties, because people generally lack the knowledge of how to grow their staple crops without shifting. Currently Chi Phat is an example of that creating these win-win situations among conservation NGOs and the local community as a whole is more of an illusion than an actual reality with tangible outcomes on the ground. The misalignment between the project´s perceptions of the outcomes and the reality for most non-members is generally being ignored since it undermines the current conservation agenda, presenting a case where ecotourism is not the tool for creating that ultimate win-win situation.

The whole official paradigm surrounding Chi Phat is helping the community, while conserving the forest and wildlife, using community-based solutions. Yet, the way conservation has been implemented is mainly through top-down ideas how the landscape should be conserved, and the tools used, namely rangers that enforce restrictions and commodification of the resource-base, are

embedded in western concepts and ideologies. This conventional approach to conservation is a set of externally driven activities that are guided by an overall rationale to ameliorate or 'govern' the relationships between people and nature (Li 2007). This usually entails the enforcement of powerful and eurocentric ideas about the importance and value of biodiversity and how it should be preserved, for instance, by establishing protected areas or commodifying it through neoliberal market integration (Adams and Hutton 2007; Igoe and Brockington 2007). Community-based sounds bottom up, but in the case of Chi Phat, it is more top-down enforcement, which entails more exclusion than inclusiveness when looking beyond project members.

**Drivers that facilitated behavioral change**

The project was effective in implementing a change in behaviors. The theory of change (Morrison 2015) states the for conservation to be effective, people that are the target group usually need to alter their livelihood-generating practices. This theory is put to practice when looking at the four strategies that were identified by Nielson and colleagues (2016) to guide the transition to conservation-orientated behaviors (benefits outweigh the costs; economic incentives; control over resources; and education), three of them apply and one very important aspect is ignored (see conceptual framework). For the most part, the benefits seem to outweigh the costs for the members, with some variation, depending on how much they had to give up and how much they gained in return. The economic incentives are also present, namely through an alternative legal income. The project also brought education by helping people understand the importance of the forest and wildlife making them realize the benefits that might accumulate through the project. However, people do not have control over resources. They have limited access to resources. That is a big difference since if they would have control over resources, they could decide for themselves if they want to hunt, cut trees, or practice shifting cultivation. This is not the case and people are only allowed to collect NTFPs like rubber and rattan.

Finally, the big aspect that is not mentioned in their study is that enforcement of restrictions is a big factor, playing a critical role in pushing people towards conservation-orientated practices. If there would be no rangers and with it no risk of being arrested, then most certainly people would carry out restricted practices if they could. Most non-members stated that they would like to continue what they were doing, but they cannot because of the rangers. Even some members stated that they would do it if it was allowed.

In the end, it is the carrot and the stick approach for members, while members do not gain benefits through the project in the form of a livelihood alternative. On the one hand, some people get an

alternative and on the other restrictions are enforced, since otherwise forest cutting, and hunting would take place. Maybe to a lesser extent but it would have never reached the low rate of forest cutting, which is almost zero, since you cannot burn forest or fell big trees without being noticed, and hunting, which has been reduced by roughly 80%. People tend to think that by giving a livelihood alternative alongside education alone, people would simply stop with hunting. Some might, but others would welcome the extra money that can be earned if there is no risk of being arrested.

The most dominant factors in reducing hunting and guiding that behavioral change are the fear of getting caught doing something illegal (both members and non-members) and the alternative option to make money (members only). Is it from the people´s own realization that it is bad for the future? Or is the change bottom up, where people developed environmentality? The answer to both of these questions is no because WA came in 2002 to enforce forest protection alone. WA realized that and developed the CBET project to give people an alternative, but forest protection still needed to be enforced. However, in the end, it is still top-down, but more socially just and inclusive compared to before.

The different accumulation of benefits helps to explain why there is still hunting to supply the illegal wildlife trade going on. Based on local accounts and WA, hunting has been reduced to about 25% of what it was prior to WA´s intervention. This 25 % seems to be preliminarily made up by people that do not have the incentive to give it up, despite the danger of getting caught by rangers. Based on interviews with active poachers, the reason why they keep doing it is simple. They lack the alternative to doing something else. Differences in livelihood outcomes thus help explain the differences in the behavioral choices some people have to make (Kiss 2004). This leaves the door open for the illegal wildlife trade that is driven by a continuous demand, exploiting poor people that lack the alternative to do something else.

However, as mentioned in the conceptual framework, due to realities such as individual desires and also greed people might not behave in the rational and linear way this is expected, resuming to poach despite a livelihood alternative. The demand for illegal wildlife products will create the supply because there will be people that despite an alternative want to earn some extra money on-top to fulfill their own personal desires. In a nutshell what drove the observed shift away from practices labelled as unsustainable? The answer is the enforcement of restrictions through rangers and additional economic incentives for some. The lack of economic incentives for others partially can explain that hunting and forest cutting has been reduced and not eliminated. The theory of change discussed in the conceptual framework might have different outcomes on the ground than initially

planned and accounted for, which is well represented in the context of Chi Phat.

**Attitudes towards conservation**

The results go against the common notion that attitudes play a profound role in a person´s behavior (e.g. Manfredo 2008 and Jacobs 2014). The findings rather support the case of Heberlein (2012), who states that socio-economic factors have a far bigger influence on a person´s behavior than how a person feels about something. The different livelihood outcomes among members and non-members reflect the different attitudes towards conservation, ranging from positive on one end of the spectrum to hostile on the other.

Attitudes of especially the most resource-dependent people toward the project were hostile and negative at the beginning because people felt their livelihood was being threatened. They still remembered WA´s initial approach and thus they held attitudes that were against conservation measures. Only once they were explained about the project and the possible benefits for them, they started to welcome the project and attitudes started to shift once they realized certain beneficial outcomes. These results are mirrored by a previous study carried out in Chi Phat (Ven 2015).

Ven (2015) suggests that villagers who strongly depended and depend on resource extraction tend to hold a negative attitude towards ecotourism development since it is perceived that it has negative effects on the livelihood assets. The author justifies these finding by the fact that Chi Phat used to be a hub for illegal logging and wildlife poaching and ecotourism meant that those activities will at least not be possible to the past extent. The adverse livelihood outcomes for many non-members are the reason behind the negative attitudes towards the project. The more people depended on activities that became forbidden, the more negative the attitudes towards the project will be if they did not get a livelihood alternative. Many forest resource-dependent people perceive the restrictions as unjust and feel excluded from their resource-based, pointing to the outdated “fortress conservation” paradigm (e.g. Lane 2001). Multiple scholars state (e.g. Lane) that this approach can result in hostile attitudes from local resource-dependent people towards conservation strategies, putting protection policies on stake through the tension between park managers and local communities, minimizing the effectiveness of PAs for conservation.

Non-members that were relatively unaffected by restrictions, usually hold neutral attitudes towards the project. These findings are similar to Ven (2015). In addition, the socio-economic status is relevant in influencing the perceived livelihood assets, which in turn influence the perceived livelihood outcomes and the support for the project. Ven interprets it by saying that community members with

high socio-economic status might conceive that they could personally benefit from CBET through private guesthouses, bungalows, and Eco-lodges that belong to those with high socio-economic status. Finally, the study found that the perceived impacts of CBET on livelihood assets affect the perceived impacts on livelihood outcomes, influencing the support for the project. This indicates that the motive for support for CBET was the expectation that CBET could lead to livelihood improvements. The study by Ven (2015) further mirrors my findings that pro-conservation attitudes arise once certain benefits are realized and experienced. The study is a good triangulation for the accuracy of my findings since both studies do not contradict one another.

It is common sense that when people only have costs and no benefits, that they will dislike the project. Despite the hostile attitudes towards the project, people seem to agree that the conservation of wild animals and the forest is important, however, survival of the family comes first. This further demonstrates that attitudes only will be effective in guiding behavioral changes once the basic needs of the household are fulfilled and they can have a certain standard of living. If the direct socio-economic needs are not fulfilled, people will do what they have to, even if it means doing something dangerous and illegal, possibly contradicting their attitude due to these external socio-economic constraints.

Former and active poacher described over and over how unpleasant the job is and that if they could do something else, they would. The concept of conserving the forest and wild animals is completely out of their scope of concern because these people live from day to day and don't have the luxury to worry about anything other than providing for their family. They do not have their current livelihood needs fulfilled and all of them describe that their life is now worse compared to before the restrictions were enforced. It is only logical that the attitudes will be negative toward the project and conservation when people experience only costs and no benefits. Attitudes of hostility towards a conservation project by a significant amount of community members will lead to a difficult implementation of conservation ideas, and therefore jeopardize long-term outcomes (e.g. Lane 2001).

As discussed in the conceptual framework, attitudes toward conservation change once people profit from engaging in conservation-orientated practices, which is the case for project members. However, since non-members do not have any benefits and mainly costs, depending on the degree of dependency on activities that became restricted, their attitudes remained somewhat hostile. This underlines the notion by Agrawal (2005) that people will change their attitudes only once they experience certain beneficial outcomes, and this might catalyze the development of environmentality, which is discussed below.

The way wildlife is being commodified through ecotourism led to a change in attitudes among members to conserve it, because they can generate an income through wild animals without the need to hunt it. This is a useful tool to conserve wildlife in the here and now. However, the way wildlife is valued by the people has not changed. Before they made money with wildlife by hunting it and now, they make money through showing it to tourists. In the short-term this might be an effective conservation measure, because it gives people a much-needed economic incentive to not kill wildlife. Yet this value orientation imbedded within the commodification paradigm has to be viewed critically, since it raises the question what would happen if that economic incentive is lost? Basing the sole value of wildlife on it being a commodity pushes wild animals into a spot where they are integrated into the neoliberal market economy, where they have to be valued high enough in order to survive (McAfee 1998). When this market value is lost, for instance when there are no tourists, the wildlife is literally worthless for the people that value wildlife as being a commodity. Then in a setting like Chi Phat, where wildlife is kept alive through its commodification, it becomes highly problematic when the tool it is being commodified with (tourism) is lost due to the dependency on external market and political forces (e.g. Kiss 2004; McAfee 1998). Therefore, it is crucial in the long-term that people give wildlife an intrinsic value outside of the commodification paradigm, so they see it as a moral obligation to conserve it instead of a financial obligation coupled by law enforcement. Once the general community gives wildlife and ecosystems an intrinsic value, then it will be more likely that people do not revert to practices that harm wild animals.

The first sentence in the conceptual framework, which states that the way people value and perceive wildlife will determine whether humanity and wildlife can co-exist. However, as Heberlein (2012) puts it and as this research demonstrates, socio-economic constraints that force people to fulfill their imminent livelihood needs first are much stronger than how a person feels and thinks, posing a problem to the idealistic concept of peaceful co-existence between wildlife and poor resource-dependent people that respond to the demand of wildlife products stemming from the illegal wildlife trade to meet the direct livelihood needs. Therefore, the imminent livelihood needs have to be secured first and then people can start giving wildlife more of an intrinsic value out of the luxury that they do not have to worry about their day to day survival, which was fulfilled through hunting in the past. How to fulfill the imminent livelihood needs of the people in Chi Phat both in the long- and short-term is addressed in the recommendations

**Environmentality**

Environmentality, the internalization of conservation concepts, was only detected to a very limited

degree among project members. People seem to have gained more knowledge and are aware of the importance of the forest, namely that the forest is important for protecting against floods, regulating the weather, and attracting tourists. The project seems to have been effective in communicating these aspects and in making people generally more environmentally aware. However, based on the qualitative evidence, the forest and wild animals would not be conserved by the villagers themselves without the enforcement being present that protects from forest cutting and poaching. Being aware that the forest is important does not mean people would not cut it. Some people knew already before the project and still cut the forest and poached wildlife due to external factors that influenced their behavior, in this case mainly the lack of alternatives, resulting in socio-economic constraints which makes people vulnerable to be the bottom end of the illegal wildlife trade. This again supports the concept of Heberlein (2012).

Environmentality would be the case if the community as a whole would conserve the forest for their own good because they internalized the importance of keeping ecosystem integrity for their own well-being (Agrawal 2005). Without active protection, the forest and wildlife populations would dwindle to meet the short-term needs of the people. Environmentality is a concept that happens through the community and would mean the community are the protectors and not solely the NGO or government rangers.

In a nutshell: if there wouldn't be the enforcement of protecting the forest from hunters, loggers, and agricultural encroachment, then these practices would take place unless the community develops a sense of environmentality, with sustainable stewardship of the resource-base. Even though members generally do benefit through conservation, their attitudes are based on monetary/tourism values of the forest and the wildlife rather than an internalized understanding about conservation and how to practice it to meet long and short-term needs. Patrols might still be necessary even under the most ideal scenario to guard the forest against people from outside the community or people within the community that go against the common norm.

In a meta-analysis carried out by Andrade and Rhodes (2012), it shows that one of the most crucial general strategies for developing acceptance of conservation initiatives by local communities is community participation in management and planning. According to Mbile (2005) co-management to enhance biodiversity protection is crucial for the long-term success of protecting nature. At best, the few community members working for the project do participate to limited degrees, while the main decision-making stems from WA and the CBET committee. The most marginalized, who carry the burden, and non-members in general, do not have a say in things and are basically left out, even when

they are the ones that experience the costs.

To enable long-term conservation through co-management, the local community as a whole needs to directly benefit from altering their livelihoods to more conservation-orientated behaviors, and not just the minority of community members, while the rest experience costs to varying degrees without benefits. Incorporation of local people in decision-making processes can create a sense of stewardship and environmentality, where all stakeholders work together with conservation officials to conserve biodiversity and improve their livelihoods (Lane 2001; Agrawal 2005). In Chi Phat, this is not the case yet. There is no control over resources and the responsible stewardship that would enable environmentality to unfold is not present either. In the end, the project is mainly driven by outside ideas about how the resources should be managed and strongly depends on WA´s presence and support. The people need more knowledge about sustainable land-use practices e.g. agroforestry or strict quotas on resource extraction, experience in implementing that knowledge, and more power to decide, so that they can ultimately be able to sustainably manage their resources, opening the door for stewardship and through it environmentality.

## 7.3. Limitations

First of all, the results are based on villager's accounts and how they perceive reality. This thesis tries to understand their reality and make sense of the complex relationship between them and their environment and how the project intervention might have impacted that relationship. The data acquisition was subject to numerous biases that will now be discussed in the following section:

The most prominent bias is that all but five interviews with members were pre-arranged and selected by the project. This leaves the possibility that respondents were briefed on what to say or were hesitant to completely open up. However, people seemed honest about their responses, since during the interviews they also mentioned aspects they did not like or things that need to be improved. Also, one has to keep in mind that project manager Sophany Touch wanted me to find out the gaps of the project, so I could give recommendations for improvement. The pre-arrangement and selection of member respondents and other stakeholders such as the local authority, in my opinion, was to make the research process easy and represent the complete cross-section of jobs people hold at the project.

Yet, to triangulate findings, 5 members were randomly selected with no involvement of the project in the selection process. All the other interviews, meaning the ones with non-members were selected randomly at first and then in a purposive way without project involvement. Purposive sampling has the drawback that you cannot generalize findings, but I believe that by finding the people most

vulnerable and most impacted by restricted access to resources, one can form a more detailed picture of the situation and also since most people in Chi Phat depended on hunting, logging, and shifting cultivation, the purposive sampling of finding those people delivers a story that reflects a significant amount of villagers. Within the given time period it was more effective to actively look for people that were the most resource-dependent to fully understand how those people were affected by the CBET project.

One type of bias that came up during interviews is that people have generally an agenda, are very subjective, and might want to portray themselves in a good light. For instance, when former poachers that now work in the project were asked why they stopped hunting, some replied by saying that they wanted to protect nature instead of destroying it and not do something illegal. This might be true but the most dominant factor that influences people´s behavior is money because for them it is about day-to-day survival and whatever helps them get by will be done. Of course, they now might feel prouder about the work they do, but I believe that sometimes people will represent themselves more honorable than to say it is all for the money. In end most, former poachers stated that the reason why they stopped is very simple. They couldn't hunt anymore without the substantial risk of going to jail or being fined. Thus, a significant part of their livelihood supporting income fell away and the ones to get a livelihood alternative through the project off course took the opportunity to do so.

To counter biases in interviews that arose with specific questions, especially the ones that ask about moral issues such as poaching or about possible negative aspects of the project, I looked for inconsistencies in answers within the same interview. Except for a few interviews, there were no inconsistencies detected. For instance, one former poacher and now ranger described how important the forest and the wild animals are and that he never would want to hunt again, but when asked if he would go back to hunting if there would be no project, he said yes. Other instances arose when asking people about the costs of the project, many replied by saying there are none, but later went on to describe how the life is now more difficult due to the restrictions in forest resource-use and farming practices.

A very important aspect to consider is that people needed to trust me and my translator in order to open up. This was especially critical when talking to non-members that are still using the forest to hunt. In some cases, we had to explain a couple of times that the interviews are anonymous and that I am independent of the government and the project, and that the goal is to understand the project´s impacts in order to improve things. My translator grew up under similar conditions and thus was able to establish the necessary trust and as a consequence people opened up and told us things that could

get them in trouble.

Another important point to keep in mind, especially when talking with non-members that were generally unhappy with the project, is that people might overstate things due to their attitudes towards the project and push a certain agenda and interest. Thus, the results can only be viewed in context. However, despite the above-discussed biases I was able to gain a lot of qualitative information about the aspects I wanted to research, allowing me to answer all the research questions in a meaningful way and give recommendations to the project about what things need to be improved to benefit more people and become a long-term success.

What also has to mentioned and taken into consideration is that viewing a village as a community is usually a simplification (Li 2002). People who live in the same village differ in many ways, possibly having radically different life histories, livelihoods, political ties and amounts of wealth and connectedness (Biddulph 2013). This is also the case in Chi Phat. The village is made up of people that have lived there for generations with close ties to the forest, outside migrants that came to work in logging and hunting, and more wealthy outsiders that claimed land for agriculture and operate businesses. Former poachers state that in the past people just used the forest for subsistence, but people from the outside made hunting a business by connecting Chi Phat to the wildlife trade, making the village a hub for wildlife and timber extraction. Therefore, villagers vary in their economic status and connectedness. As a result, heterogeneity in responses to interview questions was observed and hence a pure generalization of Chi Phat and its people would be inappropriate. However, characterizing trends and gradients emerged, making it possible to represent the broader picture in a meaningful way.

For future research, more people from the different groups should be interviewed to quantify the impacts of the project. At the moment the data gathered is of qualitative nature, explaining complex processes and reasons behind things. Quantitative research should be carried out that is based on these qualitative findings.

## 7.4. Considering both sides of the coin

The big dilemma in conservation: how can conservation NGOs protect the ever-dwindling forest and wildlife population with at the same time being 100% socially just? In an ideal world, you could create win-win situations where livelihood alternatives are presented, or people are “educated”, and as a result, people would just stop hunting. However, especially in settings like Cambodia the circumstances are far from ideal. Without enforcement and drastic action to protect the wildlife and

the forest, the situation might be very much worse for everyone in the community today. We have to see both sides of the coin to grasp this conflict of interest from above, namely the need to protect wildlife and the forest, while people have to meet their short-term needs.

Considering a scenario, where people resumed the practices that became forbidden, the remaining forest most likely would have been defaunated, degraded, and continuous encroachment into the interior through unregulated slash-and-burn practices would occur. This is the dire reality in many regions in Cambodia, where forests are hunted out and degraded through slash-and-burn practices with short fallow periods because more and more people are forced into frontier regions due to increasing landlessness that results from land-grabbing (see intro). Despite the industries and markets driving the dispossession of poor people, they are the ones that have to respond through meeting their short-term needs which are often times leading to environmental degradation. Regardless whether local people are in the end the victims, NGOs that are concerned with wildlife conservation have to take drastic measures due to the lack of time, even if it means that initially costs are carried by people that are the victims of market forces and government policies.

The question is what would happen if people were left alone to poach wildlife to supply the illegal trade and practice slash-and-burn farming beyond the sustainable limit. As discussed in the intro well-managed slash-and-burn farming is sustainable and contribute to the maintenance of biodiversity. However, once people are forced to respond to market pressures or supply food for an increasing population because more and more people are becoming landless migrants that are driven to frontier regions such as Chi Phat, then the sustainable cycle is broken, and it becomes destructive.

What would happen if an increasing populous could freely cut the forest and hunt wildlife? The resources the people depend on would be depleted and then the outlook would be grim. We have to keep in mind that we cannot romanticize all forest-dependent communities as people that live in harmony with the ecosystem. Most people in Chi Phat are landless migrants that came to the area to clear forest for farming, work in logging, and poach wild animals to supply the wildlife trade. All over Southeast Asia, especially in Cambodia, forests get poached out for the illegal wildlife trade and remaining forests continuously degrade (see section on illegal wildlife trade). The poor forest-depended people are at the beginning of the supply chain, while the trade is driven by powerful interests (see conceptual framework). As discussed in the intro local people are not the ones that drive the wildlife trade, but they are supplying it also when they are only the victims that respond to the demand out of despair.

For community-based projects to really work and bear the fruits of success a lot of time is needed,

usually more than there is funding (Dressler et al. 2010). However, this is the time that the rapidly dwindling megafauna simply does not have. What is a wildlife conservation NGO supposed to do other than stopping people from hunting and cutting forest? Off course if there would not be a demand then people would not hunt many species such as pangolin. Yet, the demand from China and Vietnam seems never-ending. Also, the way people hunt is not selective. They hunt with snares that might be intended for abundant species such as wild pig and deer, yet a baby elephant or a critically endangered leopard can get caught in it as well. Many respondents said that wild animals became less and less and that now there seem to be more. The forests have been dwindling across Cambodia for the last decades and many forest-depended people lost their resource base and their safety net (see intro).

However, Chi Phat still has these resources left and WA has to be given credit for it. Yes, the implementation was and to some degree still is top-down and Eurocentric, but timely and drastic actions were needed. There is definitely social injustice through adverse livelihood outcomes for a significant amount of forest-depended community members and agricultural issues that arose through an improper and rough transition away from slash-and-burn farming. Yet, without the intervention, even more people might be suffering now due to resource depletion and landscape-wide degradation. Now at least some earn a better living compared to before and there is the potential to improve the livelihood of others through more inclusiveness into conservation, slightly shifting the current conservation paradigm since now drastic action has been implemented and the time has come to bring benefits to the community overall. Below I give recommendations on how I believe this could be achieved.

## 8. Recommendations

In the following section, I will give recommendations based on what I think needs to happen to move towards an outcome that is satisfactory for more members of the community, allowing the project to become a long-term community-based conservation and sustainable development success. These recommendations are for one based on my personal knowledge, the collected evidence, and literature reviews.

Ven (2015) came up with the following recommendations for the Chi Phat project: (1) Educating the villagers that have high community concern about CBET's contribution to improving their livelihood assets. As a consequence, the perceived impacts on livelihood outcomes and support will enhance since perceived impacts on livelihood assets influenced the perceived impacts on livelihood outcomes, which in turn impacted the support. (2) Alternative benefits need to be provided to those

with lower socio-economic status. This can be achieved by giving employment opportunities at the project. (3) Last but not least providing training about CBET is crucial because knowledge about CBET possibly improves the perceived livelihood outcomes. (4) Educating those people that are highly dependent on natural resources about the benefits that can result through CBET so that their negative attitude can be minimized. As it is visible these recommendations do not address the bigger picture and are only concerned about tourism. This is simply too narrow and does not address the main problems at hand, which in my opinion can only be solved through improving agriculture and fostering environmentality through community stewardship of the resources they depend on for their direct and indirect wellbeing.

Reimer and Walter (2013) recommended that the CBET project could better incorporate marginalized non-members, "who appear to remain mostly outsiders to the project and its economic benefits but are nonetheless pressured to restrict traditional livelihood activities in hunting, logging, harvest of forest products and agricultural practice, and to give up their traditional rights to land and forest". I agree with that the project has to be more inclusive, however, I don't believe meaningful change will happen through investing into job creation with tourism but instead changes in the current paradigm through looking into ways of improving agriculture by integrating conservation and production. I advise the project and WA to consider the following aspects:

1. **Tourism is not the silver bullet – don't rely on it!**

Attention should not only be given to tourism and it shouldn't be seen as the silver bullet for combining conservation targets with poverty alleviation. WA initially identified the most ideal livelihood alternative for Chi Phat is ecotourism. However, dependency on tourism means dependency on external forces, especially the economy of other countries and their relations to the Cambodian government. Tourists might stop flocking to Chi Phat if there is either turmoil in Cambodia itself or an economic crisis in the countries where tourists come from, making extravagant and expensive travels to far away countries like Cambodia impossible.

CBET has to be viewed for what it is. A tool to make some people happy by giving them an alternative to practices that became restricted, generating an additional legal and safe income. Yet, for most people, the job at the project is simply a side job that does not provide a significantly better income. It is better than nothing and contributes to the household's overall livelihood. In the end, wildlife and the forest are commodified and as a consequence, the values people tend to hold are mostly money-

based. Therefore, when this economic incentive to conserve the forest and wild animals stops, things would go back to how they were, because there would not be another alternative to make a living other than hunting, logging, and burning the forest to make way for rice cultivation.

Besides the hope of reducing poverty, there is the prevailing assumption that community-based ecotourism will directly lead to biodiversity conservation because people are given incentives through livelihood alternatives. This assumption is based on linear behavioral responses, but in reality, things can be much more complex, leading to the observation that most ecotourism projects fail to demonstrate measurable and long-term conservation outcomes (Kiss 2004; Wells et al. 2004). In many cases giving local people economic incentives alone through ecotourism does not lead to the desired outcomes (Kiss 2004; Salafsky et al. 2001; Ferraro and Kiss 2002).

Reasons for these observations include that first of all not all tourists are interested in wildlife conservation issues. Secondly, villagers working in ecotourism might continue to hunt when there are no tourists in the area to generate additional income or they simply like to eat wild meat. Also, villagers that might not receive ecotourism benefits may continue hunting (Eshoo et al. 2018). This is the case in Chi Phat where a proportion of non-members need to sneak into the forest since they do not have any incentives to stop. Yet, besides giving local people economic incentives it is of critical importance for local people to change their attitudes toward wildlife and conservation and value nature also for its intrinsic purposes. If that is not the case and the environment is solely valued on a monetary basis to generate economic benefits, then reverting to the old ways will be the most likely outcome once these incentives should seize (Dobbs and Pretty 2001).

Wildlife conservation through the current commodification and enforcement paradigm might help conservation in the short-term, however, long-term conservation requires commitment and participation by the people that were the initial target group and not only by half of the households, as it is in Chi Phat. The system has to be self-sufficient with an initial kick-start during which local skills, interests, capacities, and conservation-orientated attitudes are developed in the community overall to achieve long-term success. Therefore, the entire community must act to develop mechanisms to sustain the conservation outcomes and benefits through time by internalizing environmentally responsible behaviors and this includes attitudes that favor nature conservation also for intrinsic purposes (Morrison 2015; Agrawal 2005; Dobbs and Pretty 2001).

Most people in Chi Phat do not benefit from tourism and the ones that do depend more on other practices such as farming. Thus, this raises the question of how tourism can be the complete and sole solution for aligning poverty alleviation and conservation? The identification of tourism being the ideal tool to conserve the forest and animals, while alleviating poverty, indicates a clear misalignment between project planners and local realities. People are more concerned with agriculture since most people are farmers and the CBET job is only a job on the side that cannot support the family on its own. This brings me to my second point:

**2. Improve the agricultural capacity to improve livelihoods overall**

The qualitative evidence suggests that attention should be more given to agriculture instead of basing everything around tourism. The project should not only focus on tourism, for the above-mentioned reasons, and instead include community-based agriculture. Currently, the community struggles with producing enough food, especially their staple crop, rice. This is because they lack the knowledge and experience of how to farm without shifting. I believe what is needed is the creation of a multi-functional landscape that integrates conservation and production under the landscape approach (e.g. Melo et al. 2013; Sayer et al. 2013; Law et al. 2015).

The people of Chi Phat, which mostly depended on forest resource extraction and shifting cultivation, and still depend on farming and forest-resources (e.g. NTFPs), are tied to their land due to this dependency. The land they can grow on, the rivers they can fish in, and the forest that provides a plethora of ecosystem services, are everything. This fact has to be included in planning the future of Chi Phat. As mentioned above, only 40% of households with a maximum of one family member per household are part of the CBET project, and many project-members depend on farming as well. The conservation paradigm employed by WA separates the landscape into the protected and unprotected area. This western conservation thinking artificially separates people from nature, creating an imaginary and eurocentric dichotomy between forests and agriculture (nature and society), that in reality does not exist among the people that live within the targeted conservation area (Adams and Hutton 2007).

People depend on the land and the state of the land, in turn, depends on how people make use of it. Additional options to CBET and ranger enforcement should be taken into consideration to conserving biodiversity and ecosystem properties by giving more attention to traditional forms of land use that incorporate strict fellow periods needed for it to be sustainable. For instance, Ratanakiri Province has

maintained over 80% forest cover, consisting of primary and secondary forest up until recently (Fox 2002), despite the occupation of the evergreen forests by indigenous groups and their shifting cultivation practices (Ironside 2013). Conservation efforts should not treat forested landscapes in isolation free of human use, but instead, they should be viewed in a larger ecological, socio-ecological, and cultural setting (Puppala 2013).

The landscape people in Chi Phat occupy, consists of a diversity of habitats ranging from waterlogged rice fields, land currently regenerating, and a variety of plantations, creating a mosaic of habitats from the forest edge to the river bank. However, there is a dichotomy imposed by WA between agriculture and the forest. Traditional swidden practices are no longer possible to prevent further encroachment into the forest and as the results indicate, people struggle with adjusting to farming as a consequence, being no longer self-sufficient and experiencing food shortages. The majority of people depend on farming and not on tourism and there seems to lay the biggest gap.

Therefore, based on the collected qualitative evidence, I believe a new approach has to be applied that breaks the separation between agriculture and conservation. Currently, in Chi Phat, there are sharp boundaries between the protected forest and the land people use for farming, reinforcing this separation between people and nature. The landscape has to be viewed as a whole and as a fluid system, that allows for spatial and temporal diversity (Sayer et al. 2013). Pimbert and Pretty (1995) state that local management practices contributed to or even preserved the appearance of so-called pristine forested landscapes yet in fact, these landscapes are highly modified, complex and dynamic mosaics with tremendous amounts of heterogeneity and therefore, biodiversity. Small-scale temporal disturbances such as the ones that are induced by swidden practices, create and maintain biodiversity and ecosystem function by forming a gradient between planted land and secondary forests, that can support an array of flora and fauna, and maintain critical ecosystem functions (Steinmetz 1996).

This sheds light on the importance of understanding practices that are based on ecological knowledge, that work with ecological cycles between recurrent small disturbances and periods of regeneration (Sandberg 2007). Looking at traditional shifting cultivation practices without the stigma of being responsible for deforestation and degradation, one can also see the potential to integrate these practices in the management and use of multi-functional and diverse landscapes, since until the recent past these systems have allowed integration with forest and agriculture in the tropics (Cramb et al. 2009). Shifting cultivation is basically nothing else than a cycle of disturbance and regeneration, creating a mosaic of secondary forest in different stages of the forest growth cycle and fields planted

with crops. As discussed in the intro, the livelihood importance of shifting cultivation for farmers cannot be ignored. Patches that are not planted can still be used for the collection of wild fruits, vegetables, medicinal plants, bamboo, vines, and many other products. Secondary forests also provide habitat for a range of wildlife and perform other ecosystem services such as nutrient cycling and carbon sequestration (Chazdon 2014).

In the last couple of decades, there has been increased attention given to agroforestry as the ideal substitute for slash-and-burn practices, which is ecologically and socially desirable (Rahman et al. 2016). However, the only meaningful difference between shifting cultivation and agroforestry is that diversity is arranged in different dimensions. Shifting cultivation represents temporal diversity when looking at one plot, meaning a gradual change from a planted field to secondary forest. Whereas with agroforestry the diversity is spatial, since species are arranged in a way to resemble a diverse forest (Rahman et al. 2016). The use of shifting cultivation becomes only problematic with increasing pressure on land, requiring more and more encroachment into the forest and shorter regeneration periods, leading to the continued degradation of the landscape (Cramb et al. 2009). This scenario as it is increasingly the case does not create a mosaic of used fields and forest in different stages of regeneration anymore, but rather unproductive fields and land overgrown with grasses and shrubs. As a consequence, the sustainable cycle of replanting and regeneration is broken, requiring the continued clearance of mature forest, degrading the landscape (Rahman et al. 2016).

Agroforestry and shifting cultivation are not mutually exclusive and can be used within the same landscape to create a mosaic of old-growth forest, secondary forest in different stages of regeneration, diverse and permanent agroforests that can be tended and maintained through silvicultural practices, and rice fields that are used while the soil is productive (e.g. Hagermann et al. 2009; Sandberg 2007). The case study by Ironside (2013) in Ratanakiri demonstrates the way local people managed their communal land for both agricultural needs and forest regeneration, maintaining and promoting biological and agro-biological diversity. Ironside (2013) identifies strong traditional governance and community cohesion as a critical necessity for achieving the maintenance of traditional forms of land use, and with-it overall ecosystem function. He states that the sustainability of traditional farming systems depends on diversity, entailing the mixture of a range of crops and production strategies, within a diverse and multi-functional natural and semi-natural landscape that lends a range of resources. Ironside argues that these diverse production systems that promote diversity, using complex arrangements of plants, animals, varying types of forests and farms can break the created dichotomy between wilderness conservation and human-dominated systems. He presents communal

and mixed tenure options as best suited for integrating the social and ecological complexity necessary for landscape-level management strategies to forge self-sufficiency, diversity, resilience, and hence more livelihood security.

Despite the cultural differences between Ratanakiri and Chi Phat, namely indigenous people and mostly landless migrants respectively, I believe a similar concept could be applied in Chi Phat to achieve long-term ecosystem conservation and improve the livelihoods of the people that strongly depend on farming and forest-resources. In the case of Chi Phat, the focus has to be on creating a multi-functional landscape with fluid boundaries that allows for the integration of people and biodiversity within the same landscape, instead of reinforcing an imaginary dichotomy. These diverse systems not only contribute to self-sufficiency and food security but also present a safety net in times of hardship when some crops fail and increase overall community resilience and adaptation in times of climate change and uncertainty (Meinzen-Dick and Mwangi 2008).

Currently, the landscape in Chi Phat is not managed as one entity but rather separated into strictly protected forest and land for agriculture. The forest and the wild animals are commodified in the name of tourism, while only the minority depends on the CBET project for one part of their livelihood, while almost all people depend on an agricultural system that is completely insufficient to account for the people´s needs.

I believe there lays the biggest gap and if this gap is not closed through incorporating food production and conservation, then the conservation strategy currently used, namely commodification through tourism and enforced restrictions through rangers, will be insufficient to produce meaningful social and ecological long-term outcomes as it is currently evident. For people to have the basic needs fulfilled, they need enough land to grow food for themselves with the additional surplus to generate an income, which in turn would give them the luxury to value wildlife not only as a commodity but also for intrinsic purposes. Making the community self-sufficient and creating a resilient agricultural system, is vital for the community´s future.

The benefits of well-maintained systems based on shifting cultivation and agroforests include greater food security, retention of soil nutrients and water content, higher biodiversity, and a multitude of other ecosystem services such as carbon sequestration (Cramb et al. 2009; Rahman et al. 2016). Both agroforestry and shifting cultivation can be used together in the same landscape. The amount of benefits and the degree to which they are realized depends on the complexity of the system. In the

context of Chi Phat agroforestry together with traditional swidden practices could fulfill the imminent needs of most people and could be a crucial link between conservation and the needs of the community.

All the people questioned about their openness for the change said that they would be more than happy since currently, agriculture is a big issue for them. Many people invested in durian, but they experience limited if any success with it. Better agriculture would increase livelihood-generating opportunities across the community. I strongly recommend that additional conservation approaches to tourism and conventional protected area management should be considered to alleviate the current social costs experienced by the non-members and especially the ones that most heavily depended on the enforced restrictions. Attention should be given to mixed-use landscapes that form through traditional land use systems e.g. shifting cultivation, novel farming methods in the form of agroforestry, and a protected core area with an adjacent multiple-use zone buffer, providing a possible bridge between maintaining ecosystem integrity and alleviating poverty. The landscape could consist of:

1) An old-growth forest that is inhabited by old-growth forest-dependent species such as pileated gibbons and clouded leopards. This is where the core conservation area is and only the moderate harvest of NTFPs is permitted.
2) Secondary forests in different stages of the forest re-growth cycle and cropped land where fellow periods are respected according to sustainably set regeneration times, creating a temporal and spatial pattern of regenerating forest patches and planted fields. The secondary forest can be used for the moderate harvest of timber and NTFPs.
3) Permanent agroforests that are tended and maintained through silvicultural practices, providing a range of commodities e.g. durian. These systems can vary in diversity and structural complexity according to the desires of the farmer.

Likely the landscape outside the protected forest would not support megafauna such as tiger and elephants, however, the landscape heterogeneity would support diversity and abundance of avifauna, herpetofauna, insects, and small-bodied mammals that are adapted to live in secondary forests and croplands. Humans are an integral part of nature, and the imaginary dichotomy between the natural world and humans has created a disconnection, and as a consequence has led to numerous socio-ecological problems as the complex interdependence between people and the landscape they occupy is not understood by the very people that try to conserve the landscape and help the communities that occupy it. This needs to change. If the project includes these aspects, a plethora of opportunities

would be created that would bring benefits across the entire community and as the evidence suggests, attitudes are determined by the experienced livelihood outcomes, and according to that principle non-member attitudes toward conservation would change once they do not carry the burden of conservation and instead benefit from it.

In the end, for conservation strategies to be successful in the long-term, they must contribute to minimizing the social costs for the community as a whole by bringing benefits through conservation activities (Sayer and Campbell 2004). Exclusion of local people from conservation initiatives might favor biodiversity conservation in the short term. But, in the long run, those strategies will most likely fail to preserve biodiversity if project managers and decision makers ignore the importance of promoting active local community participation, capacity building, improved livelihood alternatives, efficient governance (Andrade and Rhodes 2012), and fostering an intrinsic value and moral obligation to conserve wildlife.

***Table 3:*** *Summary of recommendations.*

| **Situation** | **Problem** | **Recommendation** | **Possible Outcome** |
|---|---|---|---|
| Tourism seen as silver bullet to align conservation and poverty alleviation with little attention given to agriculture. People and nature as seen as two separate entities, which is enforced through the current conservation paradigm. | (1) Only 40% of households benefit from CBET<br>(2) Non-members carry costs<br>(3) Most people depend on farming not tourism<br>(4) Dependency on outside forces<br>(5) Commodification of nature<br>(6) Lack of know-how regarding farming without shifting => production shortages<br>(7) Most people concerned with meeting livelihood | The focus should be on improving agriculture through fusing conservation and production within a multifunctional landscape that incorporates traditional farming practices (shifting cultivation) and novel methods (agroforestry). | (1) Benefits for community overall<br>(2) Diversified livelihoods<br>(3) Self-sufficiency<br>(4) Increased resilience<br>(5) More inclusiveness<br>(6) Pro-conservation attitudes due to overall livelihood improvements<br>(7) Stewardship and environmentality<br>(8) Intrinsic value of wildlife<br>(9) Reduced hunting<br>(10) Range of ecological benefits (e.g. improved landscape matrix) |

| | | | |
|---|---|---|---|
| | needs through farming and not tourism | | |

## 9. Conclusion

Several things can be concluded from this research. First of all, the CBET project overall improved the life of project members, whereas adverse effects are experienced by non-members, depending on the degree of forest resource dependency and shifting cultivation. When restrictions on hunting and forest cutting were enforced, many people lost their livelihood. If in return they did not get a job at the project, then they carry the burden of these restrictions. Even though the livelihood of members has generally improved, the income generated through the project is rather additive than an alternative, making up only a part of people´s livelihood with the main activity being farming. The attitudes of former poachers towards conservation changed once people realized and experienced the benefits the project could bring. However, the value of wildlife is still monetary, and wildlife is seen as a way to attract tourists and earn money. Thus, in essence, attitudes toward wildlife are still socio-economic without an intrinsic value. Non-members tend to hold negative attitudes towards the project since they do not benefit from it. The costs depend on whether people lost livelihood generating practices and land due to the project´s intervention. The higher the costs the more negative the attitudes towards the project. Attitude does not seem to play a role in affecting people´s motivation to join the project. The motivation is first and foremost based on money and the difficulty to pursue restricted activities such as hunting, logging, and slash-and-burn. People are generally more aware of the importance of the forest, in terms of some crucial ecosystems like flood protection and whether regulation, which is mainly due to the project.

The CBET project is seen as the best way to alleviate poverty and conserve wildlife by WA, representing a misalignment with local perceptions. Relying solely on tourism means relying on outside forces and putting a price tag on nature. Once tourists would stop coming, then everything would revert to how it was in the past, since wildlife does not seem to have an intrinsic value. Tourism is not the silver bullet to conserve biodiversity while helping the poor, and local realities showcase that, pointing to a misalignment between planners and the resource-dependent people. The majority of villagers do not work with the project and heavily depend on agriculture and forest-resources. Their concerns and needs are not met with tourism, but rather through agricultural improvements and more control and access to forest-resources such as timber.

I argue and recommend that in order to achieve beneficial long-term social and ecological outcomes, there needs to be a paradigm shift. Currently, people and nature are two separate entities, and this imposed dichotomy by project planners needs to be broken. Since most people are dependent on farming, I call for integrating conservation with agriculture to align conservation goals with the needs of most villagers, opening the door for sustainable stewardship of the landscape and development of environmentality. Fusing agriculture with conservation in the form of a mixed landscape, consisting of protected old-growth forest, and a mosaic of swidden fields, secondary forest in different regeneration stages, and diverse agroforests, would lead to a plethora of social (e.g. diversified livelihoods) and ecological (e.g. improved landscape matrix and reduced hunting) outcomes, benefitting the community overall. Once the community overall experiences livelihood improvements from engaging in conservation-behaviors out of their own self-interest, tensions between resource-depended and marginalized community members and the project will ease, allowing for the creation of a true win-win scenario. This would bring long-term conservation and sustainable development success that is fueled by overall livelihood improvements and social inclusion that could lead to the development of environmentality and with it to people giving wildlife an intrinsic value outside the current commodification paradigm. Thus, securing a better chance for long-term conservation that does not depend on external forces of the international economy and political area, but rather on a self-sufficient, resilient, and environmentally conscious community that has the capacity to value wildlife for more than an income generating commodity.

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## Appendix 1

**List of member respondents:** Presents their occupation and whether dependent or independent on restrictions.

| Members | Job | FR dependent before project | Shifting cult. dependent before project |
|---|---|---|---|
| **R1 (man)** | Guide | Yes (former poacher) | No |
| **R2 (man)** | Receptionist | Yes (former poacher and logger) | No |
| **R3 (man)** | Community Patrol | No | Yes |
| **R4 (man)** | Community Patrol | Yes (former poacher) | No |
| **R5 (man)** | Community Patrol | Yes (former poacher) | No |
| **R6 (man)** | Guide | No | No |
| **R7 (man)** | Jungle Cook | Yes (former poacher) | Yes |
| **R8 (woman)** | Cook | No | No |
| **R9 (woman)** | Cook | No | Yes |
| **R10 (man)** | Tour Guide | Yes (former poacher) | No |
| **R11 (woman)** | Cook | No | No |
| **R12 (woman)** | Cook | No | No |
| **R13 (woman)** | Cook | No | No |
| **R14 (woman)** | Cook | No | No |
| **R15 (man)** | Guide | Yes (former poacher) | No |
| **R16 (man)** | Guide | Yes (former poacher and logger) | No |
| **R17 (woman)** | Guesthouse | No | No |
| **R18 (woman)** | Guesthouse | No | No |
| **R19 (woman)** | Guesthouse | No | No |
| **R20 (woman)** | Guesthouse | No | No |
| **R21 (man)** | Jungle Cook | Yes (former poacher) | Yes |
| **R22 (man)** | Guide | No | No |
| **R23 (man)** | Jungle Cook | Yes (former poacher and logger) | Yes |
| **R24 (man)** | Jungle Cook | No | No |
| **R25 (man)** | Guide | Yes (former poacher) | No |
| **R26 (man)** | Jungle Cook | Yes (former poacher and logger) | Yes |
| **R27 (woman)** | Guesthouse | No | No |
| **R28 (man)** | Repairs | Yes (former poacher) | No |

| | | | |
|---|---|---|---|
| **R28 (man)** | Jungle Cook | No | Yes |

**List of non-member respondents:** Presents their occupation and whether dependent or independent on restrictions.

| Non-member households | Job | FR dependent before project | Shifting cult. dependent before project |
|---|---|---|---|
| **H1 (man)** | Farming | Yes (former poacher) | Yes |
| **H2 (woman)** | Farming | No | Yes |
| **H3 (man)** | Farming | Yes (former logger) | No |
| **H4 (woman)** | Housewife | No | No |
| **H5 (woman)** | Farming and Rubber | Yes (poaching and logging) | Yes |
| **H6 (man)** | Farming and Rubber | Yes (former poacher) | Yes |
| **H7 (man)** | Farming and Rubber | Yes (former poacher) | Yes |
| **H8 (man)** | Farming | Yes (former poacher) | Yes |
| **H9 (man)** | Farming and architect | Yes (poaching and logging) | No |
| **H10 (man)** | Farming and fishing | No | Yes |
| **H11 (man)** | Fishing and work for others | Yes (poaching and logging) | Yes + loss of land |
| **H12 (woman)** | Nothing | No | Yes + loss of land |
| **H13 (woman)** | Fishing | No | No |
| **H14 (man)** | Farming and Rubber | Yes (former poacher) | No |
| **H15 (man)** | Farming and Rubber | Yes (former poacher) | No |
| **H16 (woman)** | Farming and Seller | No | Yes |
| **H17 (woman)** | Landless no job | Yes (husband poacher) | No |
| **H18 (man)** | Farming, fishing, constr. | No | No |
| **H19 (man)** | Farming | No | No but land loss |
| **H20 (woman)** | Nothing, landless | No | No |
| **H21 (woman)** | Farming and livestock | No | Yes |
| **H22 (man)** | Farming | Yes (poacher and logger) | Yes |
| **H23 (man)** | Hunting and Rubber | Yes (poacher) | Yes + loss of land |
| **H24 (man)** | Hunting and Rubber | Yes (poacher) | Yes + loss of land |
| **H25 (man)** | Hunting and Rubber | Yes (poacher) | Yes + loss of land |
| **H26 (man)** | Hunting and Farming | Yes (poacher) | Yes |
| **H27 (man)** | Hunting and Farming | Yes (poacher) | Yes |

## Appendix 2

***Table 4: Member*** *Results are illustrated through quotes organized alongside categories that emerged during the analysis of the interview transcript. The quotes below were chosen to represent the heterogeneity in some responses and general aspects in others.*

| Category | Member (former poachers and loggers) | Members that did not depend on things that became restricted |
|---|---|---|
| **Livelihood impact** | "The life is better now with income and everything." (Tour Guide 1)<br><br>"I feel much better working here because I don't have to feel guilty and be afraid of getting caught doing illegal things although the income is not the best, but I can accept it." (CBET Receptionist)<br><br>"It's not the best but also not the worst. It's okay it didn't change much." (Ranger 1)<br><br>"It is better than before. The amount I earned before often went out again the same day and it depended on luck. Now the money comes in every month and is more stable." (Jungle Cook 1)<br><br>"It is much better now, because before my life was hard. Hunter is a really hard job because sometimes you spent 10 days or half month in the jungle and when you get animal it is good because you can sell and sometimes you come home with nothing." (Guide 3)<br><br>"All depended on luck before and now life is more stable and not risky." (Guide 4) | "I earn now a little bit extra money and I am happy to not only work at home in the kitchen. It makes me proud to work with an NGO." (Cook 1)<br><br>"It is not really much better because the time working here is only very little since it is my turn only for some months." (Cook 2)<br><br>"A bit better now because of the extra money. My husband always worked for the authority." (Cook 3)<br><br>"It helped my livelihood." (Cook 4)<br><br>"Bit better with extra income now". (Cook 6)<br><br>"Before I only had the plantation and I was working in the field now my life is a little bit better. We earn a bit more money now." (Guesthouse Owner 4)<br><br>"It is one step more than before so if it was 2 before now it's 3. So, a little bit better." (Jungle Cook 5)<br><br>"It is better now with income." (CBET Committee 1)<br><br>"Not really different because I just started working with them less than a year ago. I always |

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| | "Before I earned good money sometimes when I could bring something back, but it was also really dangerous to go into the forest and it was not a stable income like here. Now I earn money legally and more constant." (Jungle Cook 4)<br><br>"Before my life was not too bad but also not too good because it was a very risky situation. And now sometimes not good and sometimes good depending on season but I live freely and without these risks." (Jungle Cook 6)<br><br>"I have a better job with more income and it is legal. I don't have to do the things I did before which was a very hard life." (CBET committee 2) | had money with my husband working. It is more an additional side thing to earn money." (Guesthouse Owner 5) |
| **Benefits** | "The benefits are a stable income and education for the village". (Ranger 2)<br><br>"Tourists come to look at the forest without even taking a single leave and we get money for that, so it is amazing." (Jungle Cook 1)<br><br>"Before it was only bad but now, I have a job and now only positive and I feel happy because I can earn money through the project." (Guide 2)<br><br>"If this project wouldn't have come all the forest and animals would be finished now." (Guide 3)<br><br>"The benefit is that there are now more wild animals, especially elephants. And 30 | "The village is more developed and work and there are no costs." (Guesthouse Owner 3)<br><br>"For me I don't see anything negative with the project only the benefits because it stopped the forest and the animals from being destroyed and gave work to the villagers." (Guesthouse Owner 4)<br><br>"The benefits are that the project brought tourists and with it job opportunities." (Guesthouse Owner 5)<br><br>"The benefit is that the forest is kept for the future and that wild animals can be safe." (Jungle Cook 5) |

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| | years ago, the forest lost a lot of big trees and now the smaller trees got the chance to become big." (Jungle Cook 2)<br><br>"The benefit now is that many people can work for the project when they came again in 2007 and offered jobs." (Jungle Cook 4)<br><br>"The project brought education." (Guide 6)<br><br>"The benefits are that the project gave a lot of different jobs." (Jungle Cook 6)<br><br>"Nothing really improved" (Jungle Cook 7) | |
| **Costs** | "The cost of the project is that they made the land for people to have plantations limited and before it was free. Now people have to stay at one place and cannot shift anymore which is difficult for many families." (Ranger 1)<br><br>"The costs of the project are that a lot of people that are not in the project now earn less money. Very little money now. Also, some people inside the project earn less now compared to before. Some people left because there was nothing for them to do." (Cook 1)<br><br>"One cost I can think of is that some people that cannot hunt and don't work with the project are for sure not happy with that." (Jungle Cook 2)<br><br>"The cost of the project was that they stopped people from hunting and cutting | "The costs to some villagers are that people were given lands by the government but without formal papers and when they claimed their land by cutting the forest they were arrested by rangers." (Guesthouse Owner 5) |

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| | the forest without giving people a job. People were not happy because they couldn't earn any money." (Jungle Cook 4) | |
| **Environmentality** | "Protecting brings profit for life while cutting and hunting only brings profit today and maybe tomorrow but nothing in the future." (CBET Receptionist)<br><br>"Before I started working with the project I didn't know much about the importance of the forest and the wild animals. I only cared about making an income by cutting the forest and sometimes hunting animals. But since I joined the project it made me understand that the forest and the wildlife is important and now I want that my grandchildren to see the forest and the wild animals so we have to keep it for the future generations." (Ranger 1) | |
| **Additional Job** | "I fish and grow banana and rice." (Jungle Cook 1)<br><br>"I am now starting with a little farm. Also, I still go to the jungle too sometimes to find the rubber tree." (Guide 3) | "I always had my own store selling things. My husband is a policeman." (Cook 1)<br><br>"I own a store. And my husband is a ranger for the government" (Cook 5)<br><br>"Banana and rice plantation. My husband is village chief." (Cook 6)<br><br>"Nothing, because my husband is in the military." (Cook 7)<br><br>"I grow rice and my husband works for the Ministry of Environment." (Guesthouse Owner 1)<br><br>"My husband is a policeman." (Guesthouse Owner |

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| | | 3)<br><br>"I had a shop but not anymore and my husband works in the government line." (Guesthouse Owner 5) |
| **Reasons for joining project** | "The work before was not safe and it was illegal and now the work is safe and legal. Also, I have a steady income and I don't harm the forest anymore but help protecting it." (CBET Receptionist)<br><br>"They made everything illegal and stricter and so I needed another job to support my family." (Ranger 1)<br><br>"The income and what I was doing is illegal and I didn't want to destroy the forest". (Ranger 2)<br><br>"Before there was a lot of forest even around the village and I could hunt around the house but now a lot of forest has been cut. I supported the idea that we need to protect the forest for the next generations. And off course to earn money another way since I couldn't hut and need to do something legal." (Jungle Cook 1)<br><br>"I had the opportunity to make money a different way." (Guide 2)<br><br>"Because in my mind I didn't want to do that. It is very dangerous... Some people get killed by the animal. Some get killed by the wood. Some fall and break a leg or many accidents more. Also, it's not a real job because sometimes when people go | |

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| | to the jungle, they don't get money only when our trap gets the animal." (Guide 3)<br><br>"Everything is about money also why I hunted and also here it is about money but also that I wanted to stop cutting the forest and protect the animals." (Guide 4)<br><br>"First of all if we would have kept doing that there would be nothing left and the project offered another way to earn money legally instead of illegal and risking to go to jail." (Jungle Cook 4)<br><br>"The project came and explained to me the importance of protecting the forest and the wild animals and how life is when you have a legal job instead of working illegally." (Jungle Cook 6) | |
| **Feelings about hunting** | "I never knew the value of the forest and the wild animals other than making money. I only knew income, living, and eating". (Ranger 2)<br><br>"Before I just wanted to hunt the animals for cooking and selling but now not anymore. Today there are less animals and if you keep killing them there won't be any left for the future." (Ranger 3)<br><br>"I just thought about earning money." (Guide 1)<br><br>"Before I didn't feel bad. I liked it before because it meant I can have money. And then I am very happy." (Guide 2) | "I don't know because we never did it." (Cook 2)<br><br>"I couldn't think much about it because it was the way people survived." (Jungle Cook 5)<br><br>"I felt bad about it. If they would only hunt to eat I would have no problem but when they were hunting to export I didn't like it." (Guesthouse Owner 5) |

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| | "I felt sad about that, but you know I didn't have any choice because I didn't have a job. Also, I didn't want to do that job because being a hunter is very dangerous, it is a real adventure in the jungle. When I joined this project, I was really happy because I don't need to do that anymore and can protect the animals." (Guide 3)<br><br>"I didn't know and feel anything back then I just thought about making money." (Guide 4)<br><br>"I didn't feel good killing animals, but life forced me to do it, so I survive." (Jungle Cook 2)<br><br>"I knew that I was harming nature, but I didn't feel anything because I didn't have a choice and just needed to make money to support my family." (Jungle Cook 4)<br><br>"I didn't feel anything when I was killing wild animals and cut the forest because I needed to make money." (Jungle Cook 6) | |
| **Feelings about restrictions at beginning** | "I didn't have a problem with it because I didn't only rely on the forest. My wife and I also had a business to sell things and I did farm." (CBET Receptionist)<br><br>"At the beginning when they first came, and we couldn't do that anymore I felt depressed about it because I didn't know what to do to survive." (Ranger 2) | "I never had problem with the project because I never went to the forest and earned no money from the forest." (Cook 2)<br><br>"I didn't have any problems because I wasn't working in the forest." (Guesthouse Owner 5)<br><br>"At first I was a bit mad and confused because I didn't understand why the project stopped people from making a living and how were people supposed to live without going to the forest. When |

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| | "I mean what the f*** they came and stopped us from living our life and some of the families suffered from no food. We didn't accept this and had to do something about it. At first, they didn't give us any alternatives for living." (Jungle Cook 1)<br><br>"I was unhappy because they had rangers and it was more difficult to earn money, so I was upset." (Guide 2)<br>In the beginning I didn't feel so happy because my job was poacher and when this project came people just thought it comes to stop them from doing their job, because they didn't understand about that." (Guide 3)<br><br>"At the beginning I felt really bad because I couldn't do hunting and money was really low. But later on, I realized the benefit of the project is to protect the forest and the wild animals." (Guide 5)<br><br>"I was mad at the beginning because I didn't understand what they want again." (Jungle Cook 4)<br><br>"I wasn't happy at the beginning because I earned money through hunting but after some time, I felt also relieved that I don't kill animals anymore because they were getting less and less and now, I am really happy about my job." (Guide 6) | the project explained me the idea and the benefits that come with it by keeping the forest, I liked the idea." (Jungle Cook 5) |
| **Overall impact on village** | "The project brought many good things to the village. It brought jobs and education and also a better connection to the | "Life has changed because some people have different work now in the project and other families have left to work in factories outside |

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| | outside world." (CBET Receptionist)<br><br>In the beginning chi phat was very quiet and remote and only small houses. People didn't have much knowledge. The project brought education to the people." (Guide 3)<br><br>"Now people use the land more for farming like durian instead of going to the forest to hunt and cut it because it is illegal." (Jungle Cook 2)<br><br>"The livelihoods are not so much different only the way people make money and that they are also more educated." (Jungle Cook 4)<br><br>"Life in the village improved a lot with the environment especially with the rubbish on the roads people started to understand how bad it is so people are more aware." (Jungle Cook 6) | because they cannot do hunting anymore." (Cook 3)<br><br>"Many people were hunting and going to the forest before and now people have work here but I don't know what the people do that don't work with the project." (Cook 5)<br><br>"It's a little bit better." (Jungle Cook 5)<br><br>"I just know about my own family and not others, but everything seems to be better now." (CBET Committee)<br><br>"It changed a lot in the way villagers are living. They don't shift with their land and don't hunt like in the past and now are more educated and work a normal job." (Bungalow Owner 5) |
| **No tourists** | "If there are no tourists and rangers, I would go back to hunting to earn money (Ranger 2)."<br><br>"I would feel really bad, but I would find another way. I don't want to do hunting anymore. Because I understand this project. I worked with this project from 2007. I never would go back because I don't want to kill animal anymore. I would farm or find another job." (Guide 3)<br><br>"Yeah I would go back how else could I earn money." (Jungle Cook 4) | |

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| | "I wouldn't because the work I used to do before was really risky and depended on luck. The forest can be really dangerous with diseases and snakes and accidents. And you don't make money a happy way. I would focus on working on the plantation." (Jungle Cook 6) | |
| **Income** | "The income is not enough to support my family, so I have to work other things as well." (CBET Receptionist)<br><br>"The income is now more stable and better since before sometimes I earned good and other times nothing." (Ranger 2)<br><br>"Sometimes it is enough. During the dry season when there are many tourists then yes but in the rainy season no." (Jungle Cook 1)<br>"In the rainy season it is hard for everyone here but in the dry season it is okay." (Guide 3)<br><br>"It's not enough because also my parents don't have any work and there are many tour guides, so I don't always work and also in the rainy season it is very difficult." (Guide 4)<br><br>"I earn less now." (Guide 6)<br><br>"It is really difficult to request for the money you have earned for the work that you have completed and it takes so long to | "I earn more now but it is not enough." (Cook 4)<br><br>"Not enough but still better than before." (Jungle Cook 5) |

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| | get it." (Jungle Cook 7) | |
| **Recommend.** | "I think the project should give more people a job by getting more tourists and also give people that have plantations to sell their products and earn more money so people outside the project benefit more and don't have to cut the forest or harm animals. "(CBET Receptionist)<br><br>"There should be more jobs and opportunities for people that are not in the project, so everyone is happy, and nobody has to go and do illegal things". (Ranger 1)<br><br>"This project needs more tourists coming so people have more job to do as well." (Guide 3)<br><br>"I would like the project to have more space for other villagers. Also, if the project could find a market for families that cannot work with the project, so they can sell the things they grow and don't have to go to the forest destroying it and catch animals." (Guide 4)<br><br>"Not only work from tourism but also other jobs." (Jungle Cook 4)<br><br>"The project should offer more services, so the rest of the villagers are also included in the project and can earn money and have a better life." (Jungle Cook 6) | "Everyone should have job, so people don't need to move to other provinces to find work." (Cook 5)<br><br>"Make better roads and build a bridge." (Guesthouse Owner 3)<br><br>"I think to stop people who are not in the project we need more tourists, so everyone has a real job." (Jungle Cook 5)<br><br>"I would suggest doing the lands better and give clearer and proper titles. Then people can live better." (CBET committee)<br><br>"Better roads, a school, hospital, enough electricity as well as healthy environment with a nice forest surrounding the village." (Bungalow Owner 5) |
| **Importance of** | "I want my grandchildren to see what remains. The forest and the animals I saw | "It protects from floods and storms." (Cook 6)<br><br>"I never was interested so I do not know." (Cook |

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| **the forest** | before won't be the same but maybe at least some part of what it used to be is still left for the future. Also, the weather is hotter since the forest around the village is gone and also the floods are worse now." (Jungle Cook 1)<br><br>"It's very important because if we destroy the forest the tourists won't come anymore." (Guide 2)<br><br>"This area is the last forest in my country, so we should protect it. I collect the rubber and rattan and take the tourists there. No forest no tourists and also really important for the animals." (Guide 3)<br><br>"The most important why we should protect wild animals and the forest is because of tourists." (Jungle Cook 2)<br><br>"For the wildlife, the shade, tourists, and flood protection." (Guide 4)<br><br>"It is really important for the weather and most important it is the place where the animals live. And the forest attracts the tourists. I didn't know the importance of the forest and wildlife before." (Jungle Cook 2)<br><br>"The forest is important for the environment by protecting from floods and controlling the weather. I knew a little bit before but now I know more through working at the project." (Jungle Cook 4)<br><br>"It creates rain and attracts tourists." | 3)<br><br>"When you don't keep the forest, you have stronger floods and things like that like in other countries and wild animals would be nice to have them left for my children to see." (Guesthouse Owner 4)<br><br>"The forest brings rain and attracts tourists and also protects from flooding which is good for the country." (Jungle Cook 5)<br><br>"For protecting from floods and creating rain." (Guesthouse Owner 5) |

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| | (Guide 6) | |
| **Importance of wildlife** | "Before I just thought about catching the animal to make money and now, I want to protect it by working at the project with WA because every tourist that comes here wants to see the animal. If they don't see they are unhappy." (Guide 2)<br><br>"Animal in my country is nearly finished because from the war and also the poachers. Before 80% here of the people were poachers so they kill every day. So, we don't have much left. Sometimes I remind myself back that when I was a poacher, I killed a lot of animals and if I would have kept them for today it would be very good for the people here and more tourists could come and enjoy the wild animals and people would have more job to do as well and it is important for the future generations" (Guide 3)<br><br>"It attracts the tourists." (Jungle Cook 4)<br><br>"The wild animals attract the tourists bringing us money without killing them." (Jungle Cook 6) | "Does not really interest me so I don't know." (Cook 2)<br><br>"The wild animals have a life too and they lose their family like their children, wife, and husband and then they feel bad like humans. Also the animals attract the tourists. And the forest and the animals is now back to 70% compared to before 1970. Because in 81 82 everything was almost finished." (Jungle Cook 5)<br><br>"The most important is that wild animals attract tourists." (CBET committee)<br><br>"Wildlife is important for me because I want the next generations to be able to see them and animals have a family too so if you take one member the others will be sad." (Guesthouse Owner 5) |
| **Reasons for hunting** | "There was no other way to support my family." (Jungle Cook 1)<br><br>"I hunted the sun bear, deer, wild boar, civet cat, pangolin…, many kinds of animal. For selling and eating to support my family." (Guide 3) | |
| **Awareness about impact on** | "Some people would also like to work here but they can't because the place is limited so they have to do something else | "People that are not in the project are still suffering. It is not easy for them." (Guesthouse |

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| **non-members** | sometimes normal job and sometimes something illegal." (Jungle Cook 1)<br><br>"People that have enough land for them it's okay, but some people don't because they either sold it, gave it to their children or lost it and for them it is very difficult because they cannot earn any money anymore from hunting or cutting trees." (Guide 4)<br><br>"Some people cannot go to the forest and also don't work in the project so life is more difficult for them." (Jungle Cook 4)<br>"I would say 50% of the people not in the project have to hunt still. But there are also people from outside hunting here." (Jungle Cook 6)<br><br>"Yes, it affects them that they have no job and no income, and some families sneak into the forest still to make a living." | Owner 5)<br><br>"Yes they are disappointed with the project because they didn't get a job and at the same time can't do what they used to do to earn money." (Jungle Cook 5) |
| **Agriculture and Land** | "Land is enough, but we don't produce enough to eat or sell so we have to get from the outside. Land has to be better used." (Jungle Cook 1)<br><br>Some people have a lot of land and some people have no land. Also, people here don't know very well how to grow crop. They didn't start for a long time but now they started. Before people's main job was poacher. But many people understand now and started to make farming their main job and also plant things like cashew nut." (Guide 3)<br><br>"There were always some problems with | "The project made clear which land was to be protected and where people can farm." (Jungle Cook 5)<br><br>"There are issues with land rights and having clear boundaries. When the project came some land has been informally given with no paper by the government and then there were and are some issues with overlap in protected forest and farm area." (CBET committee) |

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| | the lands with the borders where people decided this is their land. They were moving and didn't care and when the project came boundaries became stricter and some people lost their land because it was forest." (Jungle Cook 2)<br><br>"Mostly enough yes but there is still a lot of help needed with how to grow crops better." (Jungle Cook 6) | |

***Table 5:*** *Results of non-members.*

| **Category** | **Non-Members that depended on imposed restrictions** | **Non-Members that did not** |
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| **Effects on livelihood** | "Since The project came, we have to buy many things from outside not only the rice and that outside food has more chemicals. Before our food was more natural. There was always rice in the house. One year we were at one place and the next year we moved. But when we stayed at one place it didn't work. So now we only can grow durian and banana and buy rice from the outside. The income is the same, but we need to spend more money to buy from outside." (NM1)<br><br>"Tt is actually very bad now. A lot less income than before." (NM5)<br><br>"The livelihood is now more difficult with the income. Most people that are picked by the project and join them live quite close to the project, meaning in the center of Chi | "It didn't affect us. No benefits and no costs." (NM2)<br><br>"For us there was no effect because my dad works in the authority and my fiancé comes from outside." (NM4 woman)<br><br>"It is more difficult now also for me because I sell less since people moved away and make less money." (NM17 woman)<br><br>"It didn't affect us. No benefits or costs." (NM 19)<br><br>"It's neutral no positive and no negative." (NM 20 woman)<br><br>"No problems with them." (NM22)<br><br>"Living is more difficult because |

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| | Phat. People that live further away go to the forest to collect things. A lot of people don't work in the project only very few." (NM6)<br><br>"I earn less money now, farming is not enough." (NM7)<br><br>"I used to go to the forest for living, for business to hunt and cut trees and now there is no work, and everything is so complicated. Some family members have to leave the village to work and earn money to send it back home. Sometimes we collect things like rubber from the forest." (NM11)<br><br>"Everything is very difficult now compared to before." (NM29) | growing food is not the same anymore." (NM 25 woman) |
| **Benefits** | "There are no benefits. It is really hard for some families. We worked with the project before, but we left because you get almost no work and earn no money." (NM1)<br><br>"Nothing! They only work with their relatives and people that were connected and already had enough." (NM6)<br><br>"There is nothing better or improved. No benefits". (NM7)<br><br>"My children got some work that's all but that is not enough to support the family. On our land we have now nothing grows. Not even lemon grass just the coconut." (NM13 woman)<br><br>"I didn't get any benefits, especially now | "There are no benefits for me and for others that don't work there. This year when there was the flood the project helped people with food and things like that." (NM8)<br><br>"For us there are no benefits only for the people that work with the project." (NM9)<br><br>"Sometimes. It depends on the tourists. When there are many tourists they need food and I can sell to them." (NM17 woman)<br><br>"No benefits but sometimes the authority helps me when I got nothing. But when I am sick the |

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| | because I do nothing with them. I don't feel so happy with the project." (NM16) | project sometimes helps me." (NM 24 old lady)<br><br>"Nothing good only costs for us. Only people that live over there got the jobs so for them it is much better." (NM30) |
| **Costs** | "Only having plantation and growing rice is not enough and there is no help from the project so there are really no benefits for us at all." (NM5)<br><br>"You cannot do anything it is really strict." (NM7)<br><br>"Money now is not enough because sometimes can collect a lot of raisin and other times almost nothing so I only get very little money." (NM16) | "It is really hard today because I have to farm at the same place. Before I made 100 bags of rice and now between 20-30 so it got harder. We have no education about farming really, we just know the old way, but we can't do that anymore." (NM9)<br><br>"The costs are more because many people leave the place and that means I can sell less." (NM17 woman)<br><br>"No costs from the project only the company made our life difficult." (NM 19)<br><br>"They took my land to grow a forest again." (NM30) |
| **Job** | "We have a plantation and grow durian and banana." (Non-member 1)<br><br>"We have a plantation and my husband goes to the forest to collect rubber." (NM 5)<br><br>"I go and collect rubber in the forest and we | "We do rice and banana plantation." (NM2)<br><br>"I am an architect for building houses. Some people hire me to build their house and also, I work sometimes for people on their |

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| | grow a bit of rice and banana." (NM6)<br><br>"Not only based on my family but others also do fishing or go out of the village to work in a factory while others still do some illegal stuff. Nowadays it is very difficult for living we have to go sometimes and work for other family like cutting grass and working on the plantation of wealthy people. Most people with large plantations are quite wealthy. We don't have any land ourselves. Some families had land inside the forest and they could not use it anymore." (NM11)<br><br>"We did farm where we always moved. We cut forest to grow rice and then move after a couple years. But now we cannot do anything and have to rely on our kids." (NM 13)<br><br>"I am a farmer and also go to the forest to collect raisin." (NM16)<br><br>"I collect things from the forest like rubber and fruits." (NM 28)<br><br>"I don't have work. Even with agriculture there is nobody that shows how to do it properly and there is no market for the products as well." (NM30) | plantation. I also have my own land where I grow banana and some other things, but it is really difficult to sell because the road is really bad and so the buyer cannot come and bring it to the market. For most things there is no market, so I just grow it for myself and to share it with other villagers." (NM8)<br><br>We have a plantation. Most families here work as farmers. Only 30% of families work with them. (NM9)<br><br>"I sell things at the market." (NM17 woman)<br><br>"I do many things. I do freelance architect, fishing, and also rice farming." (NM 21) |
| **Education and Explanations** | "Yes, it brought education to understand the forest and the wild animals." (NM 1) | "No, they never explain only for the people that are in the project. They just put the rule that if you cut the forest you go to jail." (NM 2) |

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| | | "Yes, they did, and I am happy about the idea about protecting the forest and the wild animals but somehow I don't like how they make it difficult with collecting things in the forest." (NM8)<br><br>"We learned that it is important to keep the forest for the rain and to protect against floods." (NM 19) |
| **Land and Agriculture Issues** | "We didn't have any issues because our land was not in the protected zone. But other families lost their land." (NM1)<br><br>"The land is really dry and there is not enough water and we cannot move anymore." (NM5)<br><br>"Our plantation was taken by the project when they came to protect the forest. We couldn't use our land anymore. Now we only have this piece of land. We didn't get anything for it. Just this small area around the house but we cannot grow anything because it is all just sand. One of our children got a job there but it is not enough to cover for the loss." (NM13)<br><br>"They also took our land and of other people here. We had about 2 ha and all is gone. The land was already cut and planted but the project still took it to grow back the forest by planting trees. I don't understand they came to protect the forest but our land was already planted and they just took it to plant trees again. And now it | "We need people that can help with that." (NM8)<br><br>"There was always the cost of land. Some families had their land where they protected the forest. For myself the land is in the village so there was no problem with that." (NM9)<br><br>"We have a lot of problem with farming because many things don't do well like durian. Most people lost their durian." (NM17 woman)<br><br>"Life is so difficult now we don't have any more plantation because the company took the area away where we grew our rice. People were having their fields back there and lived together in the village but when the sugarcane company came, they took the land. The forest protection didn't affect us because our land was not close to the forest." (NM 19) |

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| | belongs to them because it is forest again. Trust me all families around this area have only little land besides the house left." (NM 28)<br><br>"If the project would have given back the land they took we could grow enough to survive so we never would need to go back to the forest to hunt. Going to the forest is really dangerous and a very difficult life." (NM 28) | "Our land was taken by the company, so they can grow sugarcane. Before everyone living in this area had lands over there growing a lot of rice but everything got just taken away. "(NM 22)<br><br>"I have nothing no land to grow food. My sisters land was taken by other villagers that are rich. She couldn't win because she is also poor, and they have more power." (NM 24 old lady) |
| **Feelings about restriction** | "We had no problem because we couldn't do anything about it, so we just accepted it." (NM1)<br><br>"The leader of WA came here and stopped the people with rangers from cutting the forest and hunting the wild animals. The villagers didn't know what was going on. When people made camp in the forest they were kicked out and the camps were burned without them knowing that it was now forbidden to cut the forest. People got really angry and mad." (NM 3)<br><br>"We were mad because this is what we did for living and we didn't get any real work to make a new living." (NM 5)<br><br>"I was not happy but then they explained why they do it and that it is important and | "We didn't have a problem but since we cannot move anymore from one place to another, we divided our land and plant on year at one place of the land and change it after a couple of years." (NM2)<br><br>"It's a rule so we have nothing to say against that." (NM 25 woman) |

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| | so I live with it. "(NM7)<br><br>"When they first came, we couldn't do anything to fight back. The authority was behind them and they have guns and are powerful. When they caught us, we would flee since if they would arrest us, we would go to jail. People couldn't stop because they had nothing else to do." (NM11)<br><br>"I was not happy but what can I do. The government decides in the end who the land belongs to and they allowed the NGO to protect it, so we cannot do anything." (NM13 woman)<br><br>"I cannot kill the animal anymore, but I still can go to the forest to cut the rattan or collect the raisin. I wasn't angry because it was there job to protect the wild animals, so I stopped and tried to find something else to do." (NM16)<br><br>"I was really mad at the project and the government and didn't understand why they are doing this." (NM 28)<br><br>"I like wild animals but what the project is doing is killing the villagers because many poor people have nothing so what are we supposed to do? Wait until we die? So, we will sneak in and take things to survive. They don't leave us another choice. The way the project came is just taking everything from us leaving us no chances. So, for sure we won't wait until our families die. Everyone loves the forest, but people here have no choice. If they would have enough land nobody would go to the forest to hunt | |

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| | wild animals. But sometimes we have to do something about our situation." (NM28) | |
| **Change of life in the village** | "Nothing improved besides for the people working in the project. "(NM1)<br><br>"The village improved to some degree with the road, school, and hospital but it is not enough." (NM 3)<br><br>"Nothing improved for poor people like us only the wealthy ones. Everything is very difficult and hard since the project came here." (NM11)<br><br>"Yes, it has improved because there are more people with jobs here now compared to before since a lot of people were hunting and now, they do different things." (NM 15 woman)<br><br>"No not really improved. The benefits of the project only go to the people that were already rich and live in the area where the project is. They are not fair and don't pick the poor people that live around here. They are suffering now, and the project is excluding people that are not connected to them by family or friendship ties or that have influence in the village. What is the point of having a project like this if you don't support the poor people that live away from the project and only help the ones that are already doing well?" (NM 27) | "It is not easy, land is not enough. The things we grow like banana and coconut there is no market, so we cannot sell it easily. The rice is just for us. Before we shared and traded more. For example, one family provided meat by hunting and others grew rice but now this is not so easy anymore. It is more difficult now because there is less work and people cannot go to the forest. Life is so difficult because the plantation doesn't give the profit today it takes time and there is no market for many products." (NM2)<br><br>"Before people from outside came to the community people here didn't know anything about selling wild animals only eating them to survive. But since these people came people stared to do that for business. Now that is not possible anymore." (NM4 woman)<br><br>"There is nothing really improved besides for the people that work in the project." (NM8)<br><br>"Since The project came the village became quieter because many people left to work in other provinces because there are less opportunities here now for some |

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| | | families so they go to work in factories. It is difficult to only farm at one place for many years. Before people relied on shifting but now, we cannot do that anymore." (NM17 woman)<br><br>"The area where the project is has improved and life for people that earn enough money working with them. But for the rest of the village nothing better and even worse in some cases." (NM 21)<br><br>"I don't see anything improved at least not for me. Back then my husband and sons were hunting and cutting trees. But they died before the project came." (NM24 old lady) |
| **Reasons for leaving and joining project if former member** | Also, when you work in the project it all depends whether you are friends or relatives with the people that distribute the job. People that are close to them get more opportunities. They favor relatives and friends. Many guest houses closed down because of this. It's not worth it. We did transportations for guests with the buffalo chart, but it was not worthwhile. We got picked maybe once a month or even less, so we didn't earn any money." (NM 1)<br><br>"The reason why I joined was because I didn't want to destroy my country and I also wanted legal work, so I don't need to go to the forest. I left because the money there is not the same always since you don't always have a job. The income was just not | "It takes so long to get work and it didn't help at all, so I left it again." (NM8) |

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| | enough." (NM 3)<br><br>"I needed the money, so I worked as a guide, but I stopped because the money was not enough to support my family." (NM16) | |
| **Thoughts about project** | "Only people close to the project and that are more educated and wealthier get those jobs but the people that live further away and are really poor don't get the job. It is much harder for us now. If the project would give fairly opportunities to every family it would be okay, but they don't do that, only to the people that are wealthy and connected by being friends or relatives. There is corruption inside." (NM11)<br><br>"I think it would have been fair if they take the land to give land to us some other place, so we can produce enough food. We at least should get something. If we have enough, we would never go back to the forest to hunt or cut the tree. There are leeches, mosquitoes, and so much rain. It is really awful and hard. People need something to survive and if there is no alternative what can I do. If I cannot do anything else to give my family a life what am I supposed to do. I'll risk my life and sneak in and do what I have to. I don't understand why they took the land that was already planted with rice and other things. Why can't we use the land that has already been cut? I don't understand that." (NM 29) | "The project management before was bad. They were very excluding and kept money for themselves. It wasn't about actually helping people. They really didn't care about people outside the project and were discriminating. Now with the new management I don't know what's happening but before it was really bad." (NM 21) |
| **Value of the forest and wildlife** | "Back then we didn't know anything. We cut the forest for farming and when we saw wildlife, we caught it to eat it. Now there is | "We know that the forest is important as the place where the wild animals live, and it protects |

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| | no way we could do that and also, we learned some things from the project how important it is not to do that kind of thing. The forest is important for the rain and the floods and things like that." (NM1)<br><br>"We really don't want to go and do that but sometimes people don't have a choice. The forest gives rain and protection from floods and wild animals are not many left, except for elephants now there are more of them." (NM6)<br><br>"The forest and animals are important for the next generations but still we have to live too, and the project developed nothing for us." (NM11)<br><br>"It is really important, and I want to keep it for the next generations." (NM13 woman)<br><br>"Protecting the wild animals is important so their numbers become more again, and they come back and it is also important for our Khmer culture to have this kind of animal. Without the forest there would not be rain and a home for the wild animals." (NM 27) | the village from floods, but we always knew that." (NM 2)<br><br>"I learned from the project that the forest is important for the weather but about wild animals I am not sure." (NM8)<br><br>"Back then we used the forest to survive and it was only about eating and not about selling. That whole business came with the middle guy that brought the market. We hunted only some animals to eat. I am kind of happy that the project stopped forest cutting because I value the forest for keeping the weather stable and protecting from floods. That's what they explained us." (NM9)<br><br>"I don't know much about it, because I never had anything to do with forest and wild animals." (NM17 woman)<br><br>"I don't know about that. We live away from the forest." (NM22) |
| **If no enforcement of restrictions** | "If there would be no protection, we would live our life like before because it was easier. If it would be legal most people would do that because it's the only way, they know how to survive." (NM1)<br><br>"I still would like to hunt but I cannot because the law is very strict, and I would go to jail if I get caught." (NM16) | |

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| **Recommendations** | "For the village it would be the best to have the bridge because the ferry stops at 7pm and sometimes people get sick at night time and then they have to wait until they can get to the hospital." (NM1)<br><br>"Give the people a new job and opportunities by showing them how to farm better and by finding a market for their products so everyone can have a good income, so people survive without going to the forest. And also to have a loaning system so people that don't have enough money to start something can start with agriculture or another business." (NM 3)<br><br>"The project should be fairer so everyone has job, so it is not based on relatives and connections and the road should be better as well at least. From what I have seen the project got worse and worse over the years and not better." (NM11)<br><br>"To have some land to grow enough food to survive and eat." (NM13)<br><br>"Everything should be equal between poor and rich. Fair and more opportunities for the poor than now." (NM 27)<br><br>"I would suggest them that they never should take away the land of the people and protect only the area with forest and now they could give back the land so everyone has enough to grow food. But as far as a job they never would give something to people like us that are uneducated and have nothing. They favor | "Our life would be so much improved if there is a school, a better road, and a bridge." (NM 2)<br><br>"The agriculture is not enough to survive anymore so I wound be so happy if the project or any kind people come and help with the agriculture and make everything better, I would be so happy, but I wouldn't be if there is still no market so there have to be two things, better agriculture and market." (NM9)<br><br>"It would be nice to get help with plantation, so the durian does well." (NM17 woman) |

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| | these pretentious people that are close to them." (NM 28) | |
| **Awareness** | "Yes, everyone knows but people often don't have a choice. It is important to not destroy otherwise the next generations have nothing left." (NM 3)<br><br>"Back then I didn't know but now I know because people explained it." (NM11) | |
| **Feeling when hunting** | "Didn't feel anything. When we saw wild animal, we saw money." (NM6)<br><br>"I had no interest in the forest besides making money because of surviving." (NM11)<br><br>"Before the middle man came just for eating. People were trading meat for rice and other things. When the middle man came it became a business. All about making money and survive. We just needed to live day by day so I had to do that for my family to be okay" (NM 28)<br><br>"I didn't feel anything I just needed to go to the forest to survive." (NM29) | |
| **Reasons for not hunting** | "When it was illegal, we still did it by sneaking in but somehow the profit of doing that is not worth it because you have to prepare a lot before and invest money and time and then you come sometimes home with nothing. Everything is gone already." (NM6) | |

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| | "Wildlife Alliance came to protect the forest and so I didn't have a chance to go in and get the animal out for selling it." (NM 16)<br><br>"They explained how bad it is to kill the wild animals and cut the forest and it got more difficult." (NM 27) | |

## Appendix 3

***Table 6:*** *Interview questions that were used and developed alongside the conceptual framework to answer research questions.*

| **Conceptual Framework/Aspect in Focus** | **Example interview question** |
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| **Livelihood Outcomes** | How has the project affected your livelihood?<br><br>What would you describe as the benefits and what as the costs?<br><br>Would you say life overall has improved? |
| **Attitudes towards conservation and wildlife** | What did you feel when you were hunting?<br><br>How do you feel about the restrictions?<br><br>What is the importance of the forest and wildlife for you?<br><br>Why is conservation important?<br><br>How do you feel about the project? |
| **Drivers that facilitated behavioral changes** | Why did you stop hunting or cutting the forest?<br><br>What were the reasons that you joined the project? |
| **Recommendations** | What has to be improved in your opinion? |
| **Gaps** | What would you describe as the biggest difficulties right now? |
| **Environmentality** | Would you hunt if there wouldn't be the risk of getting caught?<br><br>What do you think you would do if there wouldn't be any tourists anymore? |