INTERACTIONS BETWEEN STATE AND NON-STATE ACTORS IN RESOURCE GOVERNANCE: A CASE OF COMMUNITY PROTECTED AREAS (CPAs) IN PEAM KRASAOP WILDLIFE SANCTUARY, KOH KONG, CAMBODIA

SARY MOM

MASTER OF ARTS
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A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN SOCIAL SCIENCE

GRATUATE SCHOOL, CHIANG MAI UNIVERSITY
SEPTEMBER 2016

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SARY MOM

THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS
IN SOCIAL SCIENCE

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.....Co-advisor
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13 September 2016

To

My parents, professors, donors, fieldwork informants, friends and colleagues

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My childhood was significantly influenced by having grown up in a remote rural area living near the *Prek* (canal) where my family planted rice during the rainy and dry seasons, cultivated *Kachaet* (Water Mimosa), and planted garden vegetables as well as raised chickens. While living at home I carried vegetables to sell both at the market and from house-to-house until I graduated high school. My graduation from high school was a time of celebration for my parents, brothers and sisters, villagers, and teachers.

I almost gave up my studies when I was in eighth grade because at that time many people my age went to work in factories in the city. I had noticed that when these young factory workers returned to the village they had nice clothes, looked good, and had money to spend. Observing them, I began to entertain the idea that I should work in a factory, too. However, my father who is a government official in the agricultural sector encouraged me to take the long-term perspective and at least complete ninth grade in school. By the time I finished grade nine, I was receiving additional encouragement from teachers who provided new positive perspectives for my life until I finished grade 12. During my high school years, I would spend weekends earning income which I used to pay for private English study. I would sell vegetables at the market and house-to-house, as well as selling chickens. I even sold herbs to a teacher in school who made porridge for sale.

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หัวข้อวิทยานิพนธ์ ปฏิสัมพันธ์ระหว่างผู้กระทำการภาครัฐกับผู้กระทำการที่ไม่ใช่ภาครัฐในการจัดการทรัพยากร: กรณีศึกษาพื้นที่อนุรักษ์ชุมชนในเขตรักษาพันธุ์สัตว์ป่าเปียมกระโสบ เกาะกง ประเทศกัมพูชา

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บทคัดย่อ

งานวิจัยนี้ศึกษาการมีปฏิสัมพันธ์ระหว่างหน่วยงานภาครัฐและภาคเอกชนที่มีส่วนเกี่ยวข้องในกระบวนการก่อตั้งพื้นที่คุ้มครองชุมชน (CPA) และโครงการอนุรักษ์ป่าชายเลนในเขตรักษาพันธุ์สัตว์ป่าเปียมกระโสบ (PKWS) ตำบลทูลกอร์กี อำเภอมลฑลเสมา จังหวัดเกาะกง ประเทศกัมพูชา ผู้วิจัยได้ทำการวิจัยภาคสนามโดยใช้ระยะเวลาสามเดือน นับตั้งแต่ช่วงกลางเดือนตุลาคม พ.ศ. 2558 จนถึงช่วงกลางเดือนมกราคม พ.ศ. 2559 โดยมุ่งศึกษาผลกระทบจากกระบวนการบริหารจัดการการอนุรักษ์ป่าชายเลนและความเป็นอยู่ของประชากรในท้องถิ่น งานวิจัยนี้ยังศึกษาความสัมพันธ์และความร่วมมือระหว่างผู้ที่มีอำนาจในการตัดสินใจ ผู้นำชุมชนและหน่วยงานที่เกี่ยวข้องอันประกอบด้วย ผู้ใหญ่บ้าน คณะกรรมการชุมชน สภาตำบล เจ้าหน้าที่ดูแลพื้นที่คุ้มครอง เขตรักษาพันธุ์สัตว์ป่าเปียมกระโสบ กลุ่มองค์กรอิสระ และผู้ที่มีอิทธิพลซึ่งมีส่วนร่วมในกระบวนการตัดสินใจก่อตั้งและพัฒนาพื้นที่คุ้มครองชุมชน

งานวิจัยนี้ได้ประยุกต์ใช้แนวทางศึกษานิเวศวิทยาการเมืองเพื่อวิเคราะห์การมีปฏิสัมพันธ์ระหว่างมนุษย์และการอนุรักษ์ป่าชายเลน ซึ่งเชื่อมโยงไปถึงประเด็นการกระจายอำนาจ การเจรจาต่อรองเพื่อการดำรงชีพ และการรับรู้ของหน่วยงานภาครัฐและภาคเอกชนในด้านการบริหารจัดการสิ่งแวดล้อม

นอกจากนี้ยังมุ่งศึกษาการลงมือปฏิบัติขั้นตอนการกระจายอำนาจในกระบวนการพัฒนาพื้นที่คุ้มครองชุมชน อันเกี่ยวข้องกับกลไกการเมืองที่มีอยู่ กฎระเบียบ การตัดสินใจ ผู้มีส่วนร่วมและความรับผิดชอบต่างๆ

งานวิจัยพบว่าผลลัพธ์จากการเจรจาต่อรองเพื่อการดำรงชีพได้สะท้อนความมีประสิทธิภาพในแง่อำนาจการต่อรอง การเสริมขีดความสามารถ และการแบ่งปันผลประโยชน์ภายในชุมชนท้องถิ่น นอกจากนี้ ผลอันเกิดจากกลไกเชิงสถาบันและการมีปฏิสัมพันธ์ระหว่างมนุษย์ได้แสดงให้เห็นถึงผลในเชิงบวกที่เกิดกับการอนุรักษ์ป่าชายเลนและการดำรงชีพของประชากรท้องถิ่น ผลเช่นนี้เองที่เป็นแรงผลักดันให้ศึกษาการรับรู้ของหน่วยงานภาครัฐและภาคเอกชนภายในเขตพื้นที่คุ้มครองชุมชน ในแง่กลยุทธ์ที่จะประสบผลสำเร็จมากยิ่งขึ้นสำหรับการบริหารจัดการสิ่งแวดล้อมในเขตรักษาพันธุ์สัตว์ป่าเปียมกระโสบ งานวิจัยนี้นำเสนอจุดยืนว่าการบริหารจัดการทรัพยากรผ่านกระบวนการพื้นที่คุ้มครองชุมชน (CPA) และโครงการ REDD+/PES นั้นมีลักษณะหรือโครงสร้างการจัดการแบบล่างสู่บน (bottom-up) ก็เพียงในด้านหลักการทฤษฎีเท่านั้น แต่เชิงปฏิบัติกลับมีลักษณะการจัดการแบบจากบนสู่ล่าง (top-down)

กรณีศึกษาพื้นที่คุ้มครองชุมชนในเขตรักษาพันธุ์เปียมกระโสบพบว่า 1) การกระจายอำนาจในรูปแบบของระบบบริหารจัดการผสมที่ใช้กับการอนุรักษ์และคุ้มครองป่าชายเลนนั้นถูกกำหนดโดยบุคคลที่สาม ซึ่งก็คือ PMCR-MoE และสหภาพสากลเพื่อการอนุรักษ์ธรรมชาติ-ป่าชายเลน/ศูนย์พัฒนาเขมร (IUCN-MFF/KDC) นอกจากนี้องค์ประกอบที่มีอิทธิพลต่อการกำหนดรูปแบบระบบบริหารจัดการยังได้แก่โครงการต่างๆ ที่มีส่วนช่วยพัฒนาพื้นที่คุ้มครองชุมชน (CPA) ซึ่งส่วนหนึ่งเกิดจากหน่วยงานตำบล ทำหน้าที่เป็นผู้มีส่วนเกี่ยวข้องกับพื้นที่คุ้มครองชุมชน โดยมีจุดมุ่งหมายให้เกิดการท่องเที่ยวเชิงนิเวศเพื่อลดการตัดทำลายป่าชายเลนในขณะที่สร้างอาชีพให้แก่ประชากรในท้องถิ่น อีกองค์ประกอบหนึ่งคือระบบขับเคลื่อนทางการตลาดภาคเอกชนอันเกี่ยวข้องกับโครงการ PES และ REDD+ ที่มุ่งลดการเปลี่ยนแปลงสภาวะภูมิอากาศและสนับสนุนการดำรงชีพของประชากรท้องถิ่น 2) มีการเจรจาต่อรองในเรื่องการดำรงชีพ ซึ่งเกิดขึ้นผ่านกระบวนการพัฒนาพื้นที่คุ้มครองชุมชน และ 3) หน่วยงานพื้นที่คุ้มครองชุมชน (CPA) และหน่วยงานภาครัฐในตำบลทูลกอร์กีส่วนใหญ่หาได้มีความรู้โดยตรงในเรื่องโครงการต่างๆ ของ PES และ REDD+ แต่เมื่อได้มีประสบการณ์ในกิจกรรมตัวอย่าง เช่น การคุ้มครองรังนก กลับสามารถนำไปปรับใช้ในการลดการตัดทำลายป่าชายเลนทั้งภายในและนอกเขตพื้นที่คุ้มครองชุมชน

เมื่อศึกษาการอนุรักษ์และการจัดการป่าชายเลนผ่านกระบวนการพัฒนาพื้นที่คุ้มครองชุมชน (CPA) ซึ่งมีผู้มีส่วนได้ส่วนเสียหลากหลายฝ่ายในระดับท้องถิ่นในเขตรักษาพันธุ์สัตว์ป่าเปียมกระโสบ งานวิจัยนี้พบว่า การอนุรักษ์เมื่อต้องเผชิญกับการประนีประนอมเพื่อการดำรงชีพจะส่งผลให้กลายเป็นข้อจำกัดในการมีส่วนร่วมของประชากรในท้องถิ่นตำบลทูลกอร์กี ในด้านการจัดการการอนุรักษ์ป่าชายเลน โดยเฉพาะสมาชิกชุมชนที่มีฐานะยากจน การมีส่วนร่วมของสมาชิกพื้นที่คุ้มครองชุมชน (CPA) ในด้านการอนุรักษ์และคุ้มครองป่าชายเลนจึงค่อนข้างจำกัด การมีส่วนร่วมของประชากรในท้องถิ่นในกระบวนการพัฒนาพื้นที่คุ้มครองชุมชน (CPA) จึงจำกัดอยู่ในกรอบของคำกล่าวอ้างที่มาจากเอกสารยืนยันการมีส่วนร่วมในพื้นที่คุ้มครองชุมชน ซึ่งในความเป็นจริงแล้วมีผลน้อยมาก ประชากรท้องถิ่นต่างอ้างว่าได้ทำหน้าที่อาสาสมัครและได้สนับสนุนด้านเงินทุนเพื่อให้เกิดความต่อเนื่องของโครงการพื้นที่คุ้มครองชุมชน แต่แท้จริงแล้วหาได้เป็นเช่นนั้น ดังนั้น การให้ความสนับสนุนจึงต้องมุ่งเน้นโดยตรงไปยังสมาชิกชุมชนที่ยากจน และสามารถให้กำลังใจพร้อมตอบสนองความต้องการที่แท้จริงได้

Thesis Title Interactions Between State and Non-State Actors in Resource Governance: A Case of Community Protected Areas (CPAs) in Peam Krasaop Wildlife Sanctuary, Koh Kong, Cambodia

Author Ms. Sary Mom

Degree Master of Arts (Social Science)

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ABSTRACT

This thesis concerns the interactions of state and non-state actors engaged in a process of establishing the Community Protected Area (CPA) and mangrove conservation initiative in Peam Krasaop Wildlife Sanctuary (PKWS), Toul Korki commune, Mondol Seima District, Koh Kong Province, Cambodia. Fieldwork was conducted during three months from mid-October 2015 through mid-January 2016, and investigated the impact of local governance processes on mangrove conservation and livelihoods of local people. The research studied relationships and cooperation among key decision makers, leaders and governing agencies, including the village chief, community committee, commune councilors, Protected Area staff in PKWS, NGO groups, and influential others participating in the CPA development decision process.

A political ecology approach was applied to analyze human-interactions and mangrove conservation linked to decentralization, negotiating livelihoods, and perceptions of state

and non-state actors concerning environmental governance. This research focused on implementation of decentralization in a CPA development relevant to existing political mechanisms, rules and regulations, decision-making, participants, and responsibilities.

Moreover, negotiating livelihoods outcomes reflected CPA development effectiveness in mediating power, empowerment, and benefit sharing within the local community. In addition, results of both institutional mechanisms and human interactions revealed little positive impact on mangrove conservation and local livelihoods. This provided the impetus for investigation of perceptions of state and non-state actors within CPA boundaries regarding more successful strategies for environmental governance in PKWS. This thesis argues that resource governance through the CPA and REDD+/PES schemes is bottom-up in language but top-down practice.

This case study of the CPA in PKWS found that: 1) decentralization as hybrid governance system in mangrove conservation and protection was determined through third parties, namely the PMCR-MoE and International Union for Conservation of Nature-Mangrove for the Future/Khmer Development Center (IUCN-MFF/KDC), and are projects assisting CPA development, partially formed of commune authorities as CPA actors, aiming to convert private tourism into eco-tourism in order to reduce mangrove cutting and create local jobs for local people, and emerging non-state market driven systems related to PES and REDD+ initiatives aiming to reduce climate change and ensure livelihoods of local people; 2) livelihoods were negotiated and occurred through processes of CPA development; and 3) most CPA and local state authorities in Toul Korki (TKK) had no direct knowledge of PES and REDD+ programs, but through examples such as bird nest protection were quick to grasp the implications for minimizing mangrove cutting both inside and outside their CPA community.

This research studied mangrove conservation and management through CPA development involving multiple stakeholders at the local level in PKWS, and suggests that the conservation versus livelihoods compromise limits participation of TKK-CPA's

local people in mangrove conservation management, especially poorer members of the community. CPA member participation in mangrove conservation and protection was limited. Participation of local people in the CPA development process was limited to claims made on documents affirming voluntary CPA participation but was in actuality of little substance. Local people claimed they were volunteers who contributed their own money to sustain CPA work, yet did not. Thus, support must be directly distributed to poorer members of the community, and in ways which will effectively provide encouragement and beneficial support specifically designed to meet real needs.

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LIST OF ABBREVIATIONS

ELCs	Economic Land Concessions
CBNRM	Community-Based Natural Resource Management
CBOs	Community-Based Organizations
CDC	Community Development Mechanism
CFi	Community Fishery
CF	Community Forestry
CRDT	Cambodian Rural Development Team
CPA	Community Protected Area
CSOs	Civil Society Organizations
D&D	Decentralization and Deconcentration
DoE	Department of Environment
DKC	Development Khmer Centre
FA	Forestry Administration
FAO	Food and Agriculture of United Nations
FiA	Fisheries Administration
FGDs	Focused Group Discussions
FCPF	Forest Carbon Partnership Facility
GDANCP	General Department of Administration for Nature Conservation and Protection
GDP	Gross Domestic Product
HHs1	Households in village 1
HHs2	Households in village2
HHs3	Households in village3
HHs4	Households in village4
IDRC	International Development Research Center

INGOs	International Non-Government Organizations
IPs	Indigenous Peoples
IUCN	International Union for Conservation of Nature
MAFF	Ministry of Agriculture Forestry and Fisheries
MAP	Mangrove Action Project
MEA	Millennium Ecosystem Assessment
MFF	Mangrove for the Future
MoE	Ministry of Environment
MoT	Ministry of Tourism
NGOs	Non-Governmental Organizations
NRM	Natural Resource Management
NSDP	National Strategic Development Plan
NSMD	Non-State Market Driven
NTFPs	Non-Timber Forest Products
PA	Protected Area
PA Law	Protected Area Law
PES	Payment for Ecosystem Services
PKWS	Peam Krasaop Wildlife Sanctuary
PLUP	Participatory Land Use Planning
PMCR	Participatory Management of Coastal Resources project
PMMR	Participatory Management of Mangrove Resources project
P1V1	Patrol group1 village 1
P2V2	Patrol group2 village2
P3V3	Patrol group3 village3
P4V4	Patrol group4 village4
UNFCCC	The United Nations Framework Convention on Climate Change
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme

UNTAC	The United Nations Transitional Authority in Cambodia
UN-REDD+	United Nations-Reducing Emission from Deforestation and Forest Degradation
RBS	Rights-Based Approach
REDD+	Reducing Emission from Deforestation and Forest Degradation, "plus" conservation programs
RGC	Royal Government of Cambodia
RSP	Rectangular Strategy Plan
SEILA	Social Economic Improvement Agency Program
SNAs	Sub-National Authorities
TKK	Toul Korki
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund for Nature

*1USD=4000riel

*1USD=35Baht

CHAPTER 1

Introduction

This study primarily focuses on mangrove forest governance at the local level and examines supporting examples of mangrove resource administration at the national and global levels to provide a deeper more nuanced understanding of the topic. There presently exists underutilized potential for development of mangrove ecosystems which can benefit communities, reinforce efforts to protect biodiversity and reduce threats to mangrove forest viability. This chapter begins by describing the potential of mangrove ecosystems for human benefit and biodiversity, and identifies key factors which threaten mangrove ecosystems. The author briefly classifies relevant international and national agencies involved in the protection, conservation and utilization of mangroves, and mentions the principal state agencies that supervise natural resource management in Cambodia. And further, this chapter introduces a research site example, key people resident in the community where the site is located, and livelihoods of local people living in the community. The discussion cites a few past studies, and describes past efforts at mangrove conservation and protection, environmental issues, and the resulting adaptations made by local people living in the Toul Korki commune (TKK), Peam Krasaop Wildlife Sanctuary (PKWS). A discussion of the political mechanisms used by state and non-state actors participating in the mangrove governance process in PKWS is integral to topics covered in this chapter, as well as those that follow.

1.1 Background and Research Problem

Effective mangrove conservation and protection is a part of environmental governance organized to ensure the sustainability of ecosystem services, augment carbon sequestration and improve livelihoods of those living in Community Protected Areas. And although mangrove forest areas provide natural resources which benefit both the

local and national economy, however mangrove forest areas now face diverse threats. It is estimated that 15.2 million hectares of mangrove forest exist worldwide in 123 countries and territories (Mangrove for the Future (MFF), 2012), with 70,000 hectares in Cambodia. Mangroves provide vital ecosystem services including forest products, environmental education opportunities, and reduction of carbon emissions (Saenger et al., 2013 and Vannucci, 2004). Mangrove forest use is detailed in Bann's environmental economic perspective which describes both direct and indirect uses (Bann, 1997). Direct uses include wood for fuel, edible food, construction materials, and as sites for human habitation. Indirect uses include ecological benefits such as natural barriers to shoreline erosion, reduction of storm surge and flooding effects. Mangroves improve water quality by filtering pollutants and support a wide range of wildlife. It is therefore clear that mangrove forests represent an important resource providing crucial sources of livelihood for coastal communities which adds to the national economy, and contributes to the natural environment.

Despite their critical importance to the economy and ecology of coastal areas, leading institutions involved in mangrove projects have reported potential and actual threats to mangrove resources. MFF (2012) showed that, during the last 100 years, 50 percent of worldwide mangrove forests have been destroyed by unsustainable human development activities. The International Union for Conservation of Nature (IUCN) (1997) reported that although most mangrove forests are managed under national parks or protected areas, one third of them are being converted, modified or transformed by farming, logging, mangrove cutting and clearance for aquaculture, charcoal burning and other resource exploiting activities. The World Wildlife Fund for Nature (WWF) (2013) and Ek (2013) have conducted studies on mangroves in the Mekong Region which confirm that multiple factors threaten mangrove ecosystems. These threats include increasing human population as well as income inequality; unsustainable levels of resource use throughout the region driven by the increasing demands of export-led growth rather than local use; unplanned and frequently unsustainable forms of infrastructure development such as dams, irrigation and roads; misguided government policies and lack of integrated planning, poor resource governance, corruption and wildlife trafficking on a massive scale.

Cambodia's mangrove forests are found in Kampot, Koh Kong, Preah Sihanouk and Kep provinces. A recent study conducted by Rizvi and Singer (2011) showed that Kampot province is facing mangrove degradation due to shrimp farming, and charcoal production. Preah Sihanouk is affected by environmental issues related to mangrove degradation, port management, land reclamation, solid waste management and pollution due to industrial effluents. Kep province faces mangrove and sea grass degradation due to salt farming and overfishing. Meanwhile, Koh Kong is subject to mangrove degradation, habitat destruction, biodiversity loss, issues related to marine aquaculture, sand mining, and flooding. Regarding mangrove degradation in the four coastal provinces in Cambodia, infrastructure development projects are the major cause (Marschke, 1999; Lisa, 2001; Adeel and Pomeroy, 2002; Kim and Marschke, 2008; Rizvi and Singer, 2011). Recently, large scale land acquisitions through government promoted economic land concessions (ELCs), increased urban development, effects of climate change, and sand mining have all contributed to destruction and degradation of coastal habitats (Rizvi and Singer, 2011; and MFF, 2015). Destruction of coastal regions is seen as a combined result of social, economic, environmental and governance problems in Cambodia. It is estimated that 70,000 ha. of mangrove forest remain in the four provinces (Doma, 2014). According to 1980, 1990, 2000, 2005, 2010, and 2015 investigations, mangrove resources declined significantly from 91,200 ha., 82,400 ha., 73,600 ha., 69,200 ha., 56,000ha., to 50,000ha. continuously (WWF, 2013 and FAO, 2015). This indicates a lack of success at preventing Cambodian mangrove deforestation (management) from 1980 to the present.

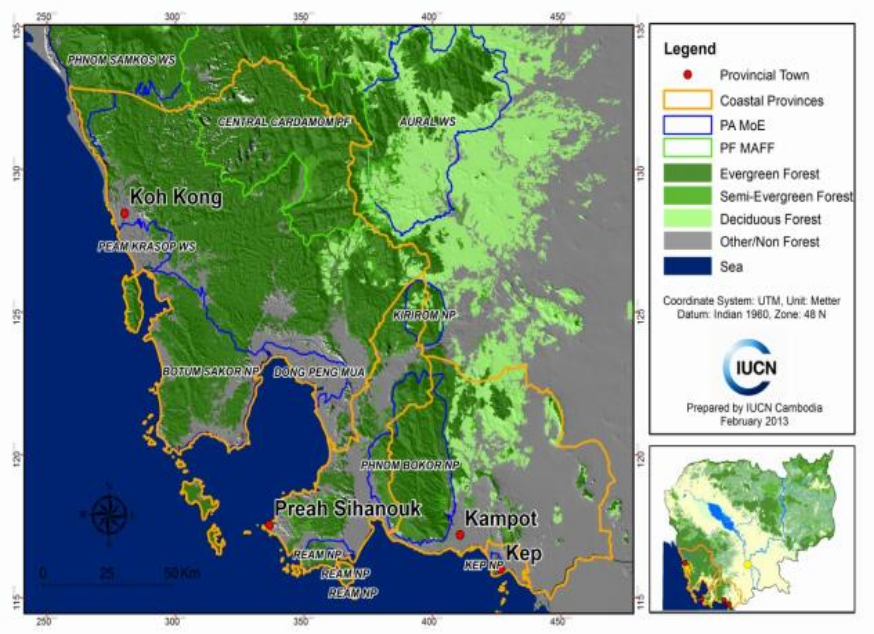

Figure 1.1 Coastal provinces of Cambodia, source: MFF, 2013

The state of the environment including mangrove re-forestation is a global issue. There are many diverse involved actors including both state and non-state actors (Donors, NGOs, communities, private sector) working to create mechanisms for sustainable environmental governance (Chervier et al., 2010 and WWF, 2013). These initiatives recognize the importance of mangrove forest to the world's ecology including the use of mangroves for blue carbon with a focus on mitigating climate change (Zoological Society of London, 2014). Many countries are increasing efforts to restore, conserve, and manage mangrove sustainability (Field, 1999; Lewis, 2005; Walton et al., 2006; Bosire et al., 2008; Morrisey et al., 2010; and MFF, 2012). The actions of multiple actors in mangrove management and conservation can be viewed as a hybrid governance system at the local level. Today, PKWS is regulated by the General Department of Administration for Nature Conservation and Protection (GDANCP) (An et al., 2009), however government agencies do not act alone to effectively manage and conserve mangroves in PKWS. Many stakeholders are involved in mangrove management and conservation in this area, including local communities and relevant sub-national authorities (sanctuary authorities, local village/commune level, and provincial authorities), supported by a diversity of donors and multi-level NGOs.

Leading conservation groups in Cambodia have provided funds and technical assistance aimed at increasing capacity for local communities and local government officials to manage natural resources and institute conservation measures. Since 1997, various agencies have contributed to conservation efforts in Cambodia, including the International Union for Conservation of Nature and Natural Resources (IUCN), World Wildlife Fund for Nature (WWF), Wildlife Conservation Society (WCS), World Bank, Wild Aid and other projects (World Bank, 2009). These agencies are part of a wider natural resource and conservation management assistance provided to the Cambodian Government working in partnership with local government agencies and local communities. The WWF, for example, provides overseas scholarships for Cambodian Government officials and support staff of involved NGOs.

The WWF (2013) and Duggin (2014) identified mechanisms designed to reduce human impact to ecosystems allowing degraded ecosystems to recover, contributing to poverty reduction in rural areas and local communities. Mechanisms include REDD+ (Reducing Emissions from Deforestation and Forest Degradation), a natural capital and environmental service promoting lower-carbon growth through PES (Payment for Ecosystem Services) re-plantation, and establishment of efficient market driven mechanisms. In Cambodia, forest conservation mechanisms include National Protected Areas and Parks, Community-Based Organizations, Community-based Natural Resource Management (CBNRM), Community Forestry (CF), Community Fishery (CFi), Community Protected Area (CPA), and market-oriented mechanisms (Kim and Marschke, 2008; Sango and Milne, 2015).

During the 1980s and 1990s, Cambodian mangrove areas attracted commercial enterprises from both insiders and outsiders, Vietnam and Thailand, with opportunities to establish shrimp farms which led to significant negative impact to mangrove forests. The designation “insiders” refers to people that migrated to PKWS for settlement and economic purposes after the Khmer Rouge period (1975-1979). At the time, natural resources including mangroves were classified as common pool resources which were not controlled by any state agency. In 1993, the PKWS was established by royal decree (Bann, 1997; Marschke, 1999; and An et al., 2009) during a period when mangrove

areas became threatened by shrimp farming, salt farming, charcoal production and water bird trapping. The will of local authorities and local people to participate in natural resource conservation and protection programs was disregarded, resulting in continued control and management of natural resources by one state entity. A decentralization mandate was not instituted until 2002. And from 1997 to 2004, some projects, such as the Participatory Management of Coastal Resources (PMCR), formed partnerships with the Mangrove Action Project (MAP) working closely with local people through the CBNRM in a pilot project to provide awareness to local people concerning the beneficial potential of natural resources. Under this pilot project local people participated in mangrove conservation, restoration and plantation (PMMR, 2000) leading to an end of illegal high yield charcoal making kilns, as well as increased awareness of local people about the potential of natural resources to benefit livelihoods for themselves and following generations. After the Protected Area Law was established in 2008, local authorities and local people became more involved in natural resource conservation and protection (PA Law, 2008). The author's research is a case study of the Community Protected Area in Toul Korki, PKWS in Cambodia. The study focused on the relationships between the CPA, local authorities, non-governmental organizations (NGOs), and the emerging Non-State Market Driven (NSMD) approach to mangrove management and conservation in PKWS.

This study was conducted at the Toul Korki commune, Mondol Seima district, located in PKWS, Koh Kong province. In 2016, there existed 11 CPAs in Koh Kong province (7 CPAs in PKWS). The CPA presented in this research was legally recognized by the Ministry of Environment in 2013. Little research had been conducted in PKWS; it is remote with few projects to support livelihoods of local people or raise local resident awareness concerning potential of natural resources. Approximately 80 percent of TKK households are farmers planting rice and managing *Chamkar* (farms growing vegetables and fruit trees). Local people collect Non-Timber Forest Products (NTFPs) as well as catch fish inside mangrove areas for subsistence livelihoods (Kim et al., 2015). Decline in fishery resources, unstable or low income, and lack of available land all have impacted livelihood strategies. Impacts related to climate change in Toul Korki include more severe storms with heavier rains that impede fishing, as well as changing tides

which interfere with crabbing, pushing gillnets, and other methods of fishing. Heavy rains caused increased inflow of fresh water from rivers and canals altering ocean water salinity, forcing fish to move further offshore. Larger tidal surge required stronger infrastructure to prevent flooding of homes. Villagers in TKK are also challenged by insufficient fresh water for rice production, and degradation of fish habitats and mangrove forests (Kim and Kim; 2012, Doma, 2014; fieldwork, 2016). Each CPA in PKWS employs unique strategies to deal with climate change related impact. The CPA has responded to these challenges by using different varieties of rice seeds, raising more chickens and improving home gardening. Recently, there has been more involvement of local authorities in TKK engaged in natural resource conservation and protection. The aforementioned examples provide a more in-depth understanding of actor relationships in CPA development, as well as current practices among these actors and other groups at different levels in the mangrove conservation and protection process. The CPA development in TKK involved both state and non-state actors. This research set out to understand how the CPA has evolved within PKWS which is itself an area under the responsibility of the government's GDANCP and MoE.

The interactions of local authorities, communities and NGOs is a case of actors influencing environmental governance, especially in the context of conservation and management issues affecting mangroves in PKWS. State actors were involved in a number of areas bearing on: the local economy, the environment, infrastructure and local political stability, as they formulated natural resource protection policy (Ek, 2013; UNEP, 2014; Tacconi, 2015). Non-State actors usually focused on pursuing an environmental protectionist agenda with solutions and incentives for the local community (Chervier et al., 2010; WWF, 2013; and Clements et al., 2013). Non-state actors also had individual political and economic agendas which they pursued while acting to facilitate more general mangrove conservation and restoration programs.

1.2 Research Questions

This research aimed to better understand how and why state and non-state actors interacted to further mangrove conservation and management goals. It represents an attempt to observe state and non-state actors' interactions relevant to mangrove resource management as they established a CPA, and to analyze strategies employed by local people as they negotiated livelihoods. Moreover, the researcher maintains that positive mangrove governance in PKWS can be improved through application of similar models and knowhow provided by state and non-state actor entities operating elsewhere. This research sought to answer the following questions:

1.2.1 What were the key factors that influenced the current process and patterns of decentralization for CPA management? How were stakeholders involved as a hybrid governance system in mangrove conservation and management?

1.2.2 How did the local community perceive decentralization, and what tools or processes were used to negotiate with the dominant power for both community livelihoods and mangrove forest conservation? What differences existed within the community concerning how they understood and negotiated important issues?

1.2.3 How were non-state market driven (NSMD) systems of environmental governance viewed and used by state actors, villagers, and NGOs as alternative methods for governance of mangrove forests in PKWS?

1.3 Research Objectives

Following from the main research questions, three research objectives were pursued:

1.3.1 Examination of how institutional structures and strategies involving state and non-state actors determined the success of decentralized decision making with respect to halting the decline of mangrove resources in the coastal area in PKWS;

1.3.2 Learning how policy and regulations (related to mangrove forest policy, coastal zone management, and protected areas) were created and implemented at the local level to manage and protect mangrove resources and its impact on livelihoods of the local community;

1.3.3 Exploration of the perceptions of state actors, villagers and NGOs regarding new ideas and methods of mangrove forest management in PKWS.

1.4 Operational Definitions

Peam Krasaop Wildlife Sanctuary is one of 23 protected areas in Cambodia managed by the government's Ministry of Environment. PKWS covers 23,750 hectares and is surrounded by mangroves. It provides ideal conditions for fishing and other natural resource-based livelihoods.

Protected Area is a category of conservation area which includes a strict nature reserve area, wilderness area, national park area, space for natural monuments or features, habitats or species management areas, protected landscape or seascape, and a protected area for sustainable natural resource use (Dudlley, 2008).

Community Protected Area is a part of the PA territory under the management of residents (people who have been living in the PA since before it was established) and state agencies. Key residents proposed to the government that some parts of the PA be put under their control, allowing them to manage and access natural resources. A definition of the CPA was provided by Kim et al (2015, p226): "CPAs are neutral resource schemes co-managed between the MoE and a club of authorized users represented by a committee. Authorized users are entitled to use and manage natural resources in accordance with their requirements and with management plans they have submitted."

Decentralization is a redistribution of responsibilities and capacities of central state governments to local state governments (Larson, 2002). Decentralization in this study is more focused toward the commune level involving multiple actors and different levels in mangrove conservation and protection in PKWS.

Stakeholder refers to anybody who can affect or is affected by an organization, strategy or project, or those who have the power to impact an organization or project in some way. Stakeholder refers to individuals and social groups of various kinds with an interest or stake in a particular issue or system (Agrawal and Gibson, 1999). Stakeholders here refers to cooperation among state actors and non-state actors such as the commune chief, village chief, CPA people, and Mangrove for the Future (MFF)/ Development Khmer Center (DKC) partnerships with the International Union for Conservation of Nature and Natural Resources (IUCN) in Cambodia, some of the national staff from the Ministry of Environment and the Provincial Department of Environment in Koh Kong province, the PKWS director, and the owner of a tourism enterprise.

Local governance refers to decentralization governance comprised of a set of state and non-state institutions, mechanisms, and processes to ensure that public goods and services are delivered to citizens to meet their interests and needs, mediate their differences and exercise their rights and obligations (UNDP,1997).

Negotiation livelihoods is a back and forth communication designed to reach an agreement when two or more parties have interests that are shared or opposed (Fisher and Ury,1981). Negotiation livelihoods concerns negotiating to access natural resources (Bebbington and Simon, 2001). Different forms of negotiation and involvement of different actors exist within the CPA boundaries in TKK. Livelihood refers to the abilities of people or households to transform assets into income, dignity, power and sustainability (Bebbington and Simon, 2001).

Hybrid governance system refers to multiple actors and roles of state and non-state actors in mangrove conservation and protection. There are both state and non-state actors in the Toul Korki commune. Existing state actors in Toul Korki commune include village chiefs, the commune chief, the commune police, the PKWS manager and rangers, the DoE, MoE, Fisheries Administration (FiA), Forestry Administration (FA), and the MoT. Existing conservation projects in Toul Korki commune are the Participatory Management of Costal Resource project, Ministry of Environment (PMCR-MoE), the IUCN/MFF and DKC projects, Wildlife Conservation Society, and the owner of a private tourism enterprise.

1.5 Research Methodology

1.5.1 Research Sites

The CPA in Toul Korki was established in 2013, and is located within PKWS, Koh Kong province. PKWS was established in 1993 by Royal decree. It is under the control of the GDANCP of the MoE (Ken, 2003). The CPA in TKK is located in Toul Korki Commune, the district of Mondol Seima, 10 kilometers from the town of Koh Kong. Toul Korki has 275 households and 1,200 people, 200 of whom are away working in the cities of Cambodia and Thailand (Commune chief in TKK, 2014). There are four villages in the Toul Korki commune including Toul Korki Leu, Toul Korki Krom, Koh Chak and Tachat. The TKK-CPA covers an

area of 1,813 hectares, of which approximately 60% is land in Toul Korki that is mountainous, 30% shrub area, 5% homestead, and about 5% or 520 hectares is mangrove area.

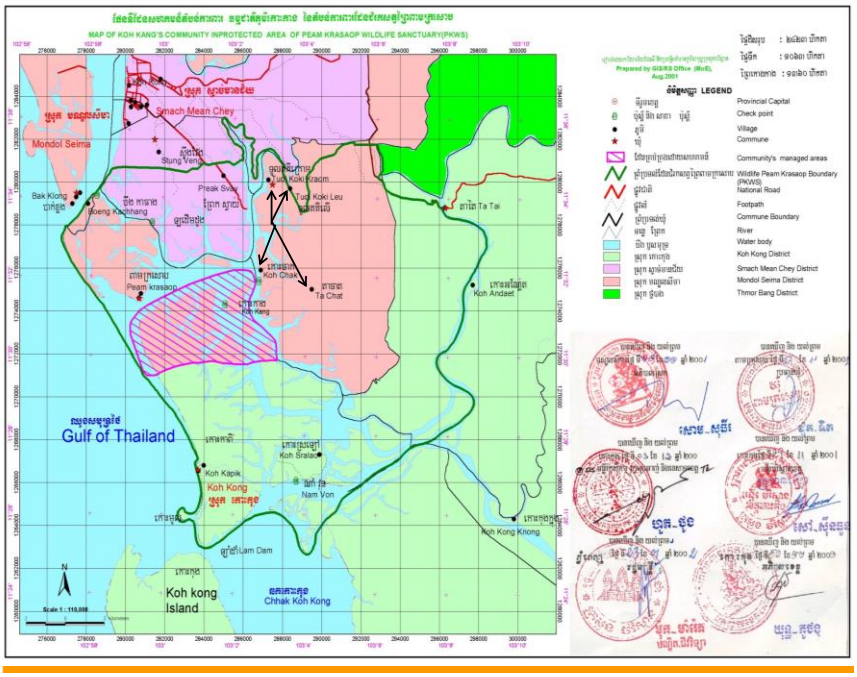

Figure 1.2 MAP of Koh Kong Community Protected Area of PKWS

1.5.2 Key Research Arguments

This thesis argues that resource governance through the CPA and REDD+/PES schemes is bottom-up in language but top-down practice. The research conducted by the author concerned interactions of state and non-state actors engaged in the process of establishing the CPA, purposed to improve natural resource management and conservation practices, and to improve the livelihoods of local people.

The establishment of governance systems that surround creation of the CPA in Toul Korki and influence its governance structure had profound

effect on the outcomes for natural resource management and conservation in the area as well as on livelihoods.

Arguments for this research originated with the local governance processes and resulting impact on livelihoods and conservation. These include key decision makers and governing bodies, such as the village chief, CPA committees, commune council, the PA staff in PKWS, NGO groups and others exercising power in the decision-making process.

1.5.3 Data Collection

The fieldwork was conducted from mid-October 2015 to mid-January 2016. The researcher organized in-depth interviews, focus group discussions, life histories, participant-observations along with household surveys. Data sources included participant-observation, field notes, voice recordings, flip charts, camera photography, personal casual interviews, and daily reflective diary keeping by the researcher. This research study is applied qualitative in nature. Qualitative analysis includes questions about process, understandings, and beliefs (Barbour, 2008). It was used to analyze the interactions of state and non-state actors as they engaged in resource governance in PKWS. Qualitative data was categorized and interpreted based on the concepts of decentralization, negotiating livelihoods, and environmental governance. Data collection focused on understanding mangrove forest management relevant to rights of access to resources, and use and control of these resources for utilization by villagers pursuing local livelihood strategies, both before and after the establishment of the CPA in Toul Korki. Data was transcribed from tape recordings and note-taking and classified into tables, figures and transcripts of verbal statements assisted by computer.

1.5.4 Population and Sampling Techniques

Table 1.1, page 14 shows the main methods of data collection: existing secondary data collection, and primary data collection through focus group discussions, in-depth interviews, life histories and participant observations mixed with household surveys. Four main actors, and different groups and levels (CPA, state authorities, NGOs and private sector) were identified as sources for data collection in the CPA. Six focus group discussions were conducted with different levels of actors. The following table represents the main actors and sources in this study; secondary data analysis included books, papers and reports.

Table 1.1 Methods for data collection

Data collection and type of Actors/sources	Topics/Relevant information
1-Documentary and visual sources Documentary and visual sources refer to pre-existing materials as sources of data (Barbour, 2008).	
Articles, texts, journals, and social media	Policy and regulation in resource governance, decentralization and negotiating livelihoods.
2-Life history=1 person Ethnographic research involves oral interview combined with observation but more focused to understand individuals and their socio-cultural communities (Casey and Edgerton, 2005).	
-1 CPA patrol (male, 50)	-Livelihood and conservation activities
3-Participant Observation and mix with household survey questions=40 households Participant observation is about observing activities which are routine (Barbour, 2008).	
-40 households (CPA members and non-CPA members, farmers, sellers, labor sellers, fishermen, in-immigrants)	-Everyday engagement with all actors -Individual and community practice -Their interactions -Geography in TKK (mangrove site, farm, road etc.) -Livelihood activities -Conservation activities -Perceptions of tourism building in Tachat -Consuming charcoal production at household level -Perceptions of payment for ecosystem services -Development activities in Toul Korki

Table 1.1 (Continued)

Data collection and type of Actors/sources	Topics/Relevant information
4- Focus group discussion=6 FGDs Focus group discussion involves bringing individual together in a set place and at a specific time. It aims to understand decision-making process (Barbour, 2008).	
-1 Focus group discussion (FGD) with Community Protected Area (CPA) Committee (6 persons=4 villages, 2 females,38 and 27; five males,47,40,39 and 50) -2 FGDs with CPA Sub-committees (11 persons=4 villages; 4 females, 30,48,53,55 ;7 males,30,35,36,38,38,46,55) -1 FGD with CPA patrols (6 persons=4 villages, all males,35,38,40,48) -1 FGD with CPA members (12 persons=4 villages;2 females,49 and 55;10 males, 33,39,43,46,46,48,49,49,49,61) -1 FGD with mix actors (commune chief and village chief , 15 persons=4villages)	-Livelihood activities -Perceptions on development activities in Toul Korki commune and KK province -The relationship among actors (mangrove conservation with NGOs and local authorities) -CPA development process, facilitators, CPA management system, mangrove conservation activities -Future planning in the CPA -Perceptions on eco-tourism site and payment for ecosystem services
5- In-depth interview= 20 persons In-depth interview involves individual interviews with a small number of respondents to explore perceptions on a particular idea, program, and situation (Barbour, 2008).	
-1 commune chief (male, 50) -1 CPA chief (male, 47) -4 village chiefs (a female, 55 and 3 males, 50,51,49) -1 Commune Police in TKK -2 MoE staff (males,54 and 57) -1 DoE in KK (male,50) -2 Representatives of local NGOs (males, 28 and 39) -1 PKWS director (male, 37) -2 rangers of PKWS (males, 57 and 55) -1CPA REDD+ Network Member (male, 57) -2 representatives of eco-tourism building in PKWS (males, 35 and 58) -4 Households who cut the mangroves for charcoal productions (a female, 47,3 males, 28, 48, and 57)	-Population growth in the commune -Livelihood activities of villagers -Development project activities in the province and commune -CPA development process and its management system -Their roles and collaboration in mangrove conservation and protection -The perceptions of tourism building in PKWS -Strategies in negotiation and benefit sharing planning among the private sector and CPA members -The perceptions regarding tourism site and payment for ecosystem services -Fund flows from donors: LNGOs/projects--> CPA-->patrol groups and individual household

1.5.5 Research Techniques and Challenges

Research techniques were applied and combined with personal experiences in a local context. Twenty in-depth interviews were conducted with key informants situated at the local level and up to the national level. In Phnom Penh the researcher interviewed members of the MoE staff who worked in or were involved with community development and the conservation sector. The author also interviewed the representative of a local NGO (MFF) who coordinated mangrove planting, introduced a bio-gas digester project, and assisted with CPA development.

While meeting with a representative of the MFF to identify projects that would be useful to this research, the author requested the contact information of the commune chief and the CPA chief, and later spoke by telephone with the commune chief to inform him of this research project. The author communicated the purpose of the research was related to mangrove conservation and requested permission to remain in the village for the purpose of conducting research.

Before the start of fieldwork, research questionnaires were printed and required research tools were purchased including a flip chart, markers, notebook, and a recorder. Upon arrival in the province, the commune chief offered to the author a room to live at the house of the chief's younger sister who was a vice village chief in Toul Korki Krom. That afternoon the author interviewed the commune chief concerning population growth, livelihoods of villagers, the chief's relationship to villagers and CPA members, NGOs and other local authorities, and focused on questions relating to CPA development and its mangrove conservation and protection activities. The author interviewed a commune chief about his knowledge of development activities in the

commune and province, and further about the chief's thoughts pertaining to payments for ecosystem services by sharing examples derived from cases seen in other areas in Cambodia, and a request was made to provide contact details of village chiefs of the four villages in the Toul Korki commune. These village chiefs were interviewed and the same questions were repeated to the village chiefs as had been asked of the commune chief. Through observing material assets, the chiefs' livelihood status could be evaluated, and it was also evident that both the commune chief and village chiefs were very aware of potential political repercussions resulting from the study and the author's presence in the village area. The chiefs seemed to fear that confidential information relevant to the project, as well as politically sensitive information, might leak to the villagers. The representative of the MFF stated that he received a telephone call from the commune chief to again clarify the status of the researcher. Another village chief reported that she felt uncomfortable having contacted the commune chief to "check up on" the author and admitted doing this. The local authorities were very willing to talk with the researcher and share information about research topics, as well as sometimes communicate details about their personal lives.

After meeting and speaking with the commune and village chiefs, the author visited the villagers, household by household, to introduce herself, explain her presence, establish initial rapport with the village residents by asking about their livelihoods, and invite them to participate in a meeting to discuss activities related to the CPA. Some households invited the author to share a meal with them which provided further opportunity to talk. Topics discussed with local residents included livelihood details pertaining to shrimp processing, selling of non-timber products at the local market, and while walking with a daughter of the village chief it was observed that she was taking vegetables (cucumber, gourd, bean, etc.) to sell in the village, household by household. This

excursion provided opportunity to observe the material household assets and view the activities of local people.

In addition to visiting a number of households in each village, this researcher travelled to mangrove areas by fast-boat with CPA patrols. This visit to view mangrove areas was complicated by what the village chief perceived to be a security issue, particularly near the mangrove cutting areas, possibly due to her unwillingness to allow the researcher to observe mangrove cutting. Consequently, the village chief initially ordered all patrols accompany the author, but finally sent two patrols when the author insisted she was nothing other than a student. The author paid for both boat fuel and a gratuity for patrol assistance, and was transported to the mangrove areas to observe conditions and activities there.

With recent mangrove area observations in mind, during focus group discussions the author queried the CPA committees regarding their CPA roles, and also delineated four levels of CPA actors to be marked for focus group discussions using an identical set of questions previously used with village and commune chiefs, selecting names from the CPA development agreement. A roster of names was compiled from individuals in the CPA committees and sub-committees, patrols, and CPA members who had their thumb prints inked on the CPA development agreement. The researcher contacted each village chief to schedule focus group discussions, and contacted a different village chief to discuss the fact that some individuals selected for focus group discussions were not at that time in their villages but were instead working in other places. The solution offered was to have the village chief select substitute interviewees to attend focus group discussions. Focus group discussions were designed to center on livelihood activities of local people, perceptions about development activities in the town as well as in their commune, CPA development processes, facilitators of

other relevant institutions, the CPA management system and its relationship to CPA actors and other actors, actors' mangrove conservation activities, and perceptions concerning the tourism building in PKWS, and the perceptions of ecosystem services. During these sessions the author routinely shared knowledge she had learned from other communities relevant to community activities including leadership, benefit sharing, rules and regulations, and related knowledge. After concluding these discussions, the researcher visited the households of some FGD participants to observe livelihood activities.

For the purpose of recording life history, the author selected a man living with the commune chief's father who worked days for the younger sister of the commune chief where the author lived during the fieldwork phase of research. Due to the man's proximity and familiarity with the activities of the commune chief and his sister, he was judged a good candidate, and the author interviewed him to learn relevant details about his livelihood and conservation activities.

1.5.6 Data Analysis

The researcher applied a political ecology methodology to analyze human-interactions and mangrove conservation links to decentralization, negotiating livelihoods, and perceptions of state and non-state actors involved in environmental governance, and the responses to the research questionnaires.

The results of analysis included:

First, the analysis examined institutional structures and strategies involving state and non-state actors who were deemed significant in determining the success of decentralized decision making with respect to halting decline of mangrove resources in coastal areas of PKWS.

Development of the CPA is a political mechanism of decentralization. The researcher examined CPA development processes, facilitators, the CPA management system, mangrove conservation and protection activities, and relationships and negotiations present among actors within and outside the CPA. Multiple actors were identified as CPA people, village chiefs, a commune chief, a PKWS manager and rangers, the DoE, MoE, and the MoT, a PMCR-MoE project, IUCN/MFF and DKC projects, and the owner of a private tourism enterprise.

Second, the analysis revealed existing policies and regulations governing natural resource management processes in Cambodia, along with CPA rules and regulations which were created and implemented at the local level to manage and protect mangrove resources, and which impacted local community livelihoods. The author examined the relationships and negotiations of CPA people and decision-makers affecting participation, responsibility, and livelihood activities of CPA people, including their benefit sharing, and ways of accessing, using and managing mangroves, and future planning for their CPA.

Third, the analysis explored the perceptions of state actors, CPA people, as well as documents relating to projects in TKK covering new ideas and methods of mangrove management in PKWS. The author identified and linked key factors which led to mangrove loss including mangrove cutting by people living both inside and outside the CPA's boundaries, monthly rates of mangrove charcoal consuming in each household, and mangrove cutting to generate income in some households. These factors required understanding in the context of remuneration provided to involved actors for such activities as bird nest protection. Bird nest protection is an example of one type of mangrove conservation activity for which actors received payment, and must be understood in relation to perceptions of actors associated with their understanding of REDD+

programs, as well as their interests and planning to ensure future sustainability of CPA related work.

1.6 Thesis Organization

This thesis is organized into six chapters which examine important relevant issues and answer the critical questions pertinent to the objectives of this research.

Chapter 1 Introduction covers topic background and research justification, research questions, research objectives, operational definitions, research methodology and thesis organization to illustrate the overall aspects and understanding relevant to the context of the thesis.

Chapter 2 Theoretical Relevance and Literature Review consists of three main parts including review of theories and concepts, review of related studies, and conceptual framework. This chapter illustrates the existing theories and concepts using earlier studies combined with arguments. Relevant theories, concepts and related studies are introduced for the purpose of discussion. In addition, a conceptual framework is presented to illustrate the important linked concepts analyzed in this study. The conceptual framework offers an analysis of the connections among four main actors involved in environmental governance using different levels of actors, their function, practices, and fund flows.

Chapter 3 Hybrid Governance System: Decentralization in Mangrove Conservation and Protection. This chapter covers current practices of natural resource management at the sub-national level; the engagement of state actors and non-state actors in the TKK-CPA; the various roles of CPA people, the state and local authorities and the private sector; and the perceptions formed by CPA members and non-members about private tourism. The researcher argues that a "decentralization as hybrid governance system" of mangrove conservation and protection by local and state authorities, local people, and business is advancing well in the Protected Area. Key beneficial relationships have been

established which share common goals in terms of enhancing mangrove conservation and protection, and improving the livelihoods of local people who have both similar and dissimilar interests which are not always readily apparent to the observer.

Chapter 4 Negotiating Livelihoods through a Community Protected Area consists of three main parts including the involvement of state and non-state actors as influential entities, empowerment, and benefit sharing; regulations and rules of the protected area development community on paper and in practice; and diversification of livelihood activities. This chapter argues that livelihoods are negotiated utilizing mechanisms in the CPA development process which include the engagement of state and non-state actors taking over control, empowerment, and benefit sharing. Power is achieving legitimacy through the application of institutions. Third parties empower local state authorities and CPA people concerning awareness of natural resource related benefits and problems, regulations and rules, and training and exchange programs for key leaders. Benefit sharing is not restricted to financial support distribution but is recognized by the CPA to include crucial rights to access natural resources.

Chapter 5 Possible Mechanisms for Mangrove Conservation in Environmental Governance discusses several elements, including existing methods of payment for environmental services in Cambodia using "payment for environmental services performed in mangrove conservation and protection" as an example, and it further describes existing environmental resources, as well as perceptions of local state authorities and those of individuals in the Community Protected Area concerning existing payment for ecosystem services. Linkages of chapter three and four provide a comprehensive portrayal of relationships among multiple state and non-state actors involved in CPA development demonstrating common goals as well as dissimilar interests. Functioning of actors in the CPA was observed to be not entirely collective, and cooperation did not extend to all levels of all groups. The researcher considered this deficiency an example of ineffective mangrove conservation and management, resulting from inadequate capable internal leadership and insufficient financial support. The findings in this chapter suggest possible more effective mechanisms appropriate for mangrove conservation and environmental governance. The key considerations of

existing studies concerning PES and REDD+ in Cambodia include regulations, finance, human resource, land tenure and competition options. The perceptions of Non-State Market Driven System (NMDS) gathered from local state agencies and non-state agencies pertain to conservation, sustainability of local livelihoods, benefit sharing and management planning in the area, and contribution of local knowledge to PES/REDD+.

Chapter 6 Conclusions and Discussions consists of five parts including major findings, theoretical discussion, research limitations, recommendations, and further questions generated by the study at Toul Korki. Research findings are based on fieldwork information linked to theoretical discussion and analyzed in relation to the main questions and objectives of this research. The three principal important concepts in this thesis are decentralization, negotiating livelihoods, and environmental governance.

1.7 Conclusion

This chapter provided an understanding of topic background and described the past and present research problems involved in a study of mangrove governance. Additionally, it linked the existing understanding of issues at the global and national levels to research of interactions at the local level which is the focus of this study. The research questions and objectives, operational definitions, research methodology, and thesis organization are presented and analyzed to yield an accurate overview of the study as a whole. The overall argument in this thesis is that resource governance through CPA and REDD+/PES schemes is bottom-up in language but top-down in practice. The implications of this argument are revealed chapter by chapter. The next chapter lists and reviews relevant literature which presents theories and concepts pertinent to topics including decentralization, negotiating livelihoods, and environmental governance. The following chapter discusses related studies which focus on the historical context of natural resource management in Cambodia. And in conclusion, it presents the conceptual framework of the thesis.

CHAPTER 2

Theoretical Relevance and Literature Review

This chapter focuses on reviews in the literature concerning theories and concepts of decentralization, negotiating livelihoods, and environmental governance. Additionally, it presents a discussion of related studies relevant to natural resource management and coastal livelihood activities in historical context. These less current theories and concepts, as well as the related studies based on them, are at variance with more recent research which has taken advantage of an evolved conceptual framework.

2.1 Review of Theories and Concepts

One recent study investigated natural resource management, emphasizing the role of mangrove forest management and conservation, and the not always congruent interactions between involved local government agencies, Community Protected Area (CPA), and non-governmental organizations (NGOs). This study drew on the mechanism of decentralization to identify key decision makers and analyze the involvement of local people, as well as uncover the resulting outcomes from mangrove resource management. The study explored the consequent impact on CPA livelihoods demonstrating that the process of negotiating livelihoods with a dominant power can be viewed on two levels, the state including the Ministry of Environment and the Ministry of Tourism, and second the sub-national authorities. Within each of these two categories exist different levels of negotiating livelihood and mangrove conservation at the village level, CPA, commune level, district level, provincial level and national level. Other literature pertaining to environmental governance through possibility mechanisms is also reviewed.

2.1.1 Decentralization as Hybrid Governance System in Mangrove Resource Management

This section describes the ways governments use decentralization as a political mechanism comprised of decision-making, power transference, accountability, and management structures. Decentralization is the process of redistributing or dispersing functionality, power, people or assets away from a central location or authority. Decentralization theory is applied to group dynamics and management science in businesses and organizations, in political science, law, public administration, economics and technology.

It is commonly recognized among government agencies and involved NGOs that the opinions and interests of local authorities and villagers throughout Cambodia have for the past 20 years gone disregarded; and that this disenfranchisement has meant virtual exclusion of local people from participation in the natural resource governance process. The exclusion of local people from participation in the natural resource governance process varies depending on issues involved and locality in Cambodia. Personal conversations with provincial government officials of Cambodia concerning Community-Based Organizations (CBOs) show that not all CBOs are beneficial. The provincial government officials held the view that CBOs obtained collective land allocation from the government through Community-based Natural Resource Management (CBNRM), Community Forestry (CF), Community Fishery (CFi), and Community Protected Area (CPA) to access, use and manage the land sustainably. However, they found that in some cases CFs, and CF chiefs went along with community members, sold collective land, and then withdrew from the area. Similarly, the central government realized that it lacked adequate monitoring of CFs. Another result related to unrecognized CFs in Cambodia was involvement of unrecognized CF chiefs in political action against the ruling government, as well as

inability of CFs to meet requirements for CFs development. Consequently, the central government rarely acknowledged those types of CFs. Although these cases have been mentioned by the provincial government, yet the actual dynamics seem unclear because no specific cases have been cited and detailed. Under the direction of resource conservation and protection agencies, local authorities and CPA members are becoming increasingly recognized as alternative hybrid governance systems. The author examines how institutional structures and strategies involving state and non-state actors can determine the success of decentralized decision making to halt the decline of mangrove forest resources in and around the coastal area in PKWS.

Previous studies have identified different aspects of decentralization relevant to political negotiation; decision-making, power transference and accountability; and management structure. Vandergeest and Chusak, (2010); Ribot and Larson (2004); and Hadiz (2004) offered the concept of decentralization as a political mechanism. They demonstrated ways in which policy implementation and legitimacy gaining can become effective means to attain desired goals, and that the politics of decentralization involves aspects of power and vested interests that fundamentally shape how decentralization takes place (Hadiz, 2004). A further aspect of decentralization was shown to involve decision-making, power transference and responsibility (Cheema and Rondinelli, 1983; Agrawal and Ribot, 1999; O'Leary and Meas, 2001; Meinzen et al., 2001; Ribot, 2001; Oyono, 2009; Lemos and Agrawal, 2006; and Garden et al., 2010). Lemos and Agrawal (2006) identified decentralization as a management structure in which decentralization becomes a top-down approach to mediate negotiation flow, and by exploring a related aspect of decentralization Howitt (2000) described the stratification of decentralization in terms of size[1], level[2], and relation[3] of the actors.

[1] Size refers to temporal, spatial, and social aspects.
[2] Level refers to global, national, regional, and local.

Similarly, Anderson (2000) identified decentralization as subsidiarity[4], empowerment[5], pluralism[6], and social capital[7].

Another model central to the author's thesis is the hybrid governance system. Zimmerer (2000) discussed "hybridity" in landscape conservation exemplified by systems such as parks-with-people, man-and-the-biosphere, ethnoecology for conservation, conservation-with development, and sustainable development. Zimmerer (2000) claimed these systems were types of nature-society hybrids determined by geographical production, and argued that the conservation boom at that time was part of a global cross-scale reworking of capitalist modernity, and represented an "ecological phase of capital," a "privatization of nature," the "production of commodified nature," and a "new enclosures movement". In Zimmerer's view the formation of nature-society hybrids helps to reshape concepts of territory, scale, boundaries, and conservation-degradation linkages. Bloom (2014) defined the term 'hybrid' as a multi-stakeholder collaboration in governance, and offered the example of NGOs working to integrate smallholder farming into supermarket supply chains. The example of "production of commodified nature" described by Bloom demonstrated the advantages of both benefit sharing as well as the changing role of NGOs. Bloom showed how CPA development becomes a tool to engage multiple actors at different levels in mangrove conservation and protection. Bloom used this approach to describe resource conservation, environmental protection agencies and local authorities in combination with the CPA community to form hybrid state agencies. One example of the benefits of this approach is the use of

[3] Relation refers to society, space, and time including territory, structure, culture, economy, environment, and society.
[4] Subsidiarity refers to minimizing costs and maximizing social well-being.
[5] Empowerment refers to meaningful influence of public policies.
[6] Pluralism refers to more open and equitable relationships among a range of groups and organizations.
[7] Social capital refers collective actions embedded with norms, trust, kinship, reciprocal relations, institutions, and other social networks that underline mutual benefit and cooperation in a local community.

Protected Areas to create "parks-with-people". The author investigated how institutional structures and strategies, both state and non-state actors including the private sector, can determine the success of decentralized decisions and enhance effectiveness at preventing further decline of mangrove resources in coastal PKWS, Cambodia.

2.1.2 Negotiating Livelihoods through a Community Protected Area

The second strategy is one of negotiating livelihoods through CPA development. Negotiated outcomes must be seen as fair, wise, efficient and stable (Hoffman, 1992). Fisher and Ury (1981) described the negotiation process as two-way communication designed to reach agreement when both parties have shared interests as well as conflicting needs, and invariably the negotiation process was linked to livelihoods. And in a further study, livelihood referred to the ability of people and households to transform assets into income, dignity, power and sustainability (Bebbington and Simon, 2001). Moreover, negotiating livelihoods was used to describe the combined aspects of relationship, solutions, outcomes and fairness (Billings -Yun, 2010).

The strategy of CPA development has been viewed as a plan or technique for sustaining a means of living. (Bebbington, 1999; Sen, 1999; and Hann, 2000) identified two types of livelihood sustaining strategies: (1) short-term or temporary response to shocks and stress, referred to as "coping strategies," and (2) long term response to external threats, such as climate change, world market fluctuation, and political instability, which they referred to as "adaptive strategies." They provided an illustration of this concept in negotiating livelihoods within the context of landscape change affecting spaces between the market and the state, and between modernity and local tradition. This tension assumed the form of choices designed to ensure survival and welfare under

conditions where social, economic and environmental forces worked together and overlapped (Bebbington and Simon, 2001). Another means of negotiating livelihood is through negotiating access to resources. The CPA development located in the author's study area primarily involved creating and implementing strategies to gain authority to access, manage and control mangroves and related resources. Importantly, CPA development was used as a means to achieve authority, empowerment and benefit sharing.

Significant challenges to successful implementation of CPA development for the purpose of mangrove conservation and protection include ineffective enforcement of regulations and policies, poor leadership, and the limited capabilities of various groups of actors within the CPA organization. The CPA development agreement in Toul Korki contained regulations and rules governing CPA members that prohibited or restricted the cutting of mangroves for charcoal production, yet some households disregarded these rules and continued to cut mangroves. Other neighboring communities fished during daytime hours and cut mangroves at night. Additionally, although each CPA member was required to pay 500 riels per month toward CPA conservation activities, yet they often failed to pay due to a lack of policing authority to enforce CPA agreements. Likewise, the chief of the CPA found it difficult to explain to CPA members the benefits of investing 500 riels per month to fund eco-tourism activities, principally due to the lack of community experience with deriving income from eco-tourism businesses, unlike a similar neighboring community which was at the same time making appreciable eco-tourism business progress (Beong Kayak).

2.1.3 Possible Mechanisms of Mangrove Conservation for Environmental Governance

Although the concepts of decentralization and negotiating livelihoods are mutually linked and central to this research, yet there exists an important third concept which influences environmental governance. This dynamic was observed in the actions of leadership of both local authorities and communities which was inadequate to successfully manage available natural resources in the area. The author's research evaluated possible mechanisms for environmental governance capable of being incorporated into a comprehensive mangrove resource management and conservation strategy in PKWS which would strengthen the efforts of local authorities and community members. Additionally, the investigation aimed to understand whether NGOs, local authorities, and local communities had plans in place or expectations concerning effective mechanisms that would be applicable to PES or REDD+ programs, and it was acknowledged by the involved actors that it was vital to understand environmental governance from the perspective of all actors involved in the process.

According to Lemos and Agrawal (2006, p298), "Environmental governance is synonymous with interventions aimed at changes in environment-related incentives, knowledge, institutions, decision making, and behaviors. More specifically, we use "environmental governance" to refer to the set of regulatory processes, mechanisms and organizations through which political actors influence environmental actions and outcomes." In their view interactions of diverse actors, such as communities, businesses, and NGOs, political agendas and economic relationships take shape to transform identities, actions, and outcomes of environmental governance. They argued that environmental governance requires specific agents of change, including state and market actors, to advocate for an effective environmental management that is combined

with crucial involvement from communities and local institutions in the governance process.

In a further study, Millennium Ecosystem Assessment (MEA) (2005) evaluated key potential responses and focused on environmental governance, including (a) institutional changes and governance patterns that could effectively manage ecosystems, (b) better alignment of market incentives with the real costs of environmental services, (c) evaluation of social behavioral obstacles to better clarify utilization of ecosystems, (d) promotion of more efficient technologies, (e) provision of better knowledge about changes to ecosystems, and (f) improvement in the efficacy of environment-related decision making. Thus, the entire set of responses identified by the MEA in relation to markets, social behaviors, technological innovation, and monitoring capacity was found to be contingent on changes in governance. And further, Lemos and Agrawal (2006) argued that effective environmental governance also requires the incorporation of knowledge about limits on aggregate levels of human activities that rely on high intensities of resource exploitation or lead to high emission levels. The analysis of changes in governance over longer time periods can provide better insight into the continuities and discontinuities in governance arrangements, as well as show how local rules continue to exist outside formal and changing institutional frameworks (Rammohan et al., 2003). Thus, a variety of multi-level forms of governance can be applied depending on how policy outcomes are understood and on the will to organize communities within systems of power and authority.

Seixas and Berkes (2009) has demonstrated that governance relies on a diverse variety of partners to satisfy a diversity of needs, and underlined the importance of networks and support groups in the transference of common institutions. These partners included local and national NGOs; local, regional and (less commonly) national governments; international

donor agencies and other organizations. Universities and research centers have provided a range of services and support functions, including raising start-up funds; institution building; business networking and marketing; innovation and knowledge transfer; and technical training. These were all considered important factors of governance which should be applied while still acknowledging the diverse nature and interests of multiple agencies and different actors.

Leach et al. (1999) investigated how multiple institutions are involved in natural resource management, and the ways people rely on different institutions to support their claims to environmental goods and services, demonstrating that informal institutions regularize the practices of particular groups of people more than any fixed set of rules, and that dynamic change in social actors will alter their behavior to suit new social, political or ecological circumstances. Their study's conclusion showed that different approaches to the negotiation processes can reflect prevailing power relations. Cheema and Rondinelli (1983) viewed environmental governance as an amalgamation of institutions and processes through which government, civil society organizations and the private sector interact to shape public affairs, and in which citizens articulate their interests, mediate their differences, and exercise their political, economic, and social rights, providing the guarantee of an appropriate mechanism for delegating power and resources to local authorities.

The author employs the three key concepts of decentralization, negotiated livelihoods, and environmental governance to link and analyze research results within the specific context of better environmental governance in Cambodia. Natural resource governance has failed during the past ten years from 1993-2003 as a result of disregard for the important role of local authorities. At the same time, local authorities were engaged by conservation projects and projects

through government participation in natural resource conservation and protection by enlisting the support of community-based organizations (CBOs) in Cambodia. Villagers started to demand access rights, and began managing and controlling natural resources through negotiating livelihoods and the creation of entities such as the Community Forestry or Fishery in Cambodia. Still, villagers were not accorded the opportunity to participate in the operations of the CF and CFi which had been established by sub-decree and external NGOs, and undoubtedly the CF and CFi were never about user rights. San (2003); Eam (2009) and WWF (2013) reported that state and community-based agencies were seen as being deficient in the practical skills required to manage natural resources, and that both communities and the state were perceived as needing financial and technical skill support. This resulting relative ineffectiveness of natural resource conservation and protection led to international interest in supporting alternative mechanisms in Cambodia, such as the non-state market driven Payment for Ecosystem Services/Reducing Emissions from Deforestation and Forest Degradation (PES/REDD+) approach (Chervier et al., 2010 and Duggin, 2014). Similar alternative approaches not only have gained legitimacy to become part of a more comprehensive environmental governance system but local unofficial or informal involvement has become involved in natural resource management. In Cambodia, there were many alternative approaches utilized in the 1990s. However, there existed no REDD+ implementation for mangrove areas in Cambodia, REDD+ at the time of this research was still under development and only piloted in other areas in Cambodia. Previous studies have identified both positive and negative aspects of REDD+ (Poffenberger, 2009; Ken, 2010; Evans et al., 2012; Avtar, 2013; Duggin, 2014; and Milne and Chervier, 2014). This study also aimed to better define the perceptions of state actors, villagers and NGOs about new ideas and methods for mangrove conservation and protection in PKWS.

2.2 Review of Related Studies

2.2.1 Historical Context of Resource Management and Decentralization in Cambodia

In this section the author aims to clarify the functions of local authorities which significantly influence natural resource governance in Cambodia. Decentralization in Cambodia has been implemented primarily through commune councils which were first elected in 2002. The Social Economic Improvement Agency program (SEILA) was one government agency successful in promoting provincial governance and local infrastructure development set up in the mid-1990s (Marschke, 1999; Marschke, 2004a; Marschke, 2004b; and Rizvi and Singer, 2011). According to a 2001 law written by the Administration of Communes in Cambodia, the duties of commune councils should include maintenance of security and public order, and organization of the necessary public services for which they are responsible under the law. Councils were also under obligation to encourage the well-being of citizens, promote social and economic development, improve the living standard of citizens, and ensure environmental protection and conservation of natural resources, and to maintain the national cultural heritage (Blunt, 2005). Regarding natural resource management, the goal was to develop a "bottom-up" governance model in which the community was afforded opportunities to set up administrative plans and government support programs (Marschke and Sovanna, 2010 and Rizvi and Singer, 2011).

In the same study, Marschke and Sovanna (2010) found community-based resource management processes in Cambodia were active in three areas: community fishery management, participatory land use planning (PLUP), and mainstream resource related management of issues relating to commune council planning which was part of the Royal Government

of Cambodia's outline to commune councils. Participatory management was identified as an effective approach to the Cambodian Government's decentralization and poverty alleviation policies (Meas and San, 2005). Moreover, the Government of Cambodia provided encouragement to Community-Based Natural Resource Management (CBNRM), as well as Community Protected Areas (CPAs) (Rizvi and Singer, 2011 and Kim et al., 2015).

As of 2009, there existed 79 Community Protected Areas (CPAs) with 18 of these CPAs established in Protected Areas managed by the Cambodian Government (World Bank, 2009). By 2016, there were 129 CPAs under the authority of the MoE and managed by local communities seeking to engage the involvement of local people and relevant stakeholders in planning, managing, monitoring, and evaluating Protected Areas. Moreover, the benefits derived from CPAs included better biodiversity conservation, livelihood subsistence (Eco-tourism development), and maintenance of cultural and spiritual values (Community Protected Area Development Office, 2004). There were also community development partnership projects that worked closely with local communities in the coastal areas, especially the Mangrove Action Project (MAP) which was supported by the Participatory Management of Coastal Resources (PMCR). Various local institutions, starting in 2003, became actively involved in community protected areas in PKWS by encouraging the involvement and participation of community committees, park directors, park rangers, implementing organizations and government departments (Kim et al., 2015).

According to Cambodian law, Community Forest Sub-decree (Article 41 and 43), community forestry can only take place with approval from the Forestry Administration (FA). Moreover, the FA operates only with approval from the Ministry of Agriculture, Forestry and Fisheries (MAFF). Marschke and Sovanna (2010) argued that when villagers set

up plans and policies for community based management work they required close supervision from key Cambodian political players at all levels in order to implement their plans. Similarly, Marschke and Sovanna (2010) and Vandergeest (2006) argued that the CBNRM approach was not practiced, and did not involve just micro-level interventions, but that it also required the reconstruction of broader development practices and power relations, and the creation of a formal and equitable distribution of economic benefits.

Vandergeest (2006) identified three important aspects of communities: (1) the need for projects to bring together both local and trans-local networks of actors to make communities; (2) the understanding of communities as a means of mobilizing collective action around common projects; and (3) the understanding that communities become collective actors, active both locally and in broader networks. Similarly, Marschke and Sovanna (2010) and Vandergeest (2006) described tension and conflicts resulting from power relations within and among local communities, and between dominant power groups outside of the local community governance system which impeded the attainment of sustainable mangrove resource based livelihoods by local people.

Eam (2009) demonstrated how community life in the Chrouy Pros community changed over time due to social and political reform and market opportunities. The Cambodian government began instituting strict enforcement of existing policies by the late 1990s (both prohibiting mangrove charcoal production and timber cutting) (World Bank, 2009). Unlike earlier reform which ignored community rights to adequate resource management and sometimes involved illegal practices, new government institutions focused on local fishery resource management after a decentralization policy reform was introduced in 2005. Eam (2009) argued that the Chrouy Pros Bay example of community managed common-pool resources was a model providing greater benefits than

could be expected from a regime administered by a centralized government. However, the level of local community participation remained limited due to insufficient community willingness and commitment to resource management.

2.2.2 Coastal Livelihoods Research in Cambodia

Decline of fishery resources has occurred both inside and outside coastal area communities. According to Voe et al. (2015) fishery resources declined in the coastal area of Kampot province seriously impacting the area's livelihoods. Through household adaptation in response to these changes, most coastal people turned to self-employment, non-farm and non-fishing activities (cross-border Cambodia-Vietnam trade), and incurred increased debt while pursuing their livelihoods. Voe et al. (2015) also argued that livelihoods in local communities changed due to degradation of fisheries and ineffective fishery governance by the provincial government and poor community management of resources.

Investigating climate change response, Kim et al. (2015) studied adaptive co-management as a mechanism to ensure food security of coastal people. Livelihoods in PKWS and the other neighboring communities of Koh Sralao, Peam Krasaop, and Toul Korki, have been negatively impacted as a result of climate related change to the environment that has caused decline in fishery resources producing unstable or low income. These changes have been exacerbated by a lack of available land. Decline in fishery resources, unstable or low income, and a lack of available land combined to impact livelihood strategies. Environmental changes in Koh Sralao, Peam Krasaop, and Toul Korki included storms and heavy rains which altered tidal conditions to hinder crabbing, pushing nets and other types of fishing important to local people's livelihoods. Heavy rains and the resulting influx of fresh water from rivers and canals have produced alterations in water salinity causing fish

to move to deeper water. Large tidal surge created the need for strong dike infrastructure to stop flooding in houses built across PKWS. CPAs in PKWS resorted to implementing various strategies to deal with environmental change, and in the case of the CPA in TKK the local people introduced different varieties of rice seeds, raised more chickens and improved home gardening yields. VoE et al. (2015) and Kim et al. (2015) focused on ways resource users build food security capacity rather than the ways policy formation and regulation impact local communities' livelihoods, yet this is only a part of local food security planning. The context of this study in Koh Kong province also focused on governance, particularly the role of decentralization in resource-based livelihoods that depend on CPA development to sustainably manage both mangroves and other natural resources, and which encourages activities leading to more sustainable livelihoods for local people. However, CPA success is dependent on reliable enforcement of legal rights as well as recognized informal rights in the presence of established networks to manage CPAs in the PKWS area. Furthermore, there still exists the question of what governing entity ultimately will become accountable for environmental and economic impact resulting from Natural Resource Management (NRM) decision-making relevant to granting and ensuring access and user rights over mangrove resources. This research attempted to understand how local communities deal with these diverse forms of power relations impacting natural resource management.

2.2.3 Environmental Governance through Non-State Market Driven-Mechanisms in Cambodia

In this section, the researcher reviews possible mechanisms for environmental governance through Payment for Ecosystem Services (PES) and Reducing Emissions from Deforestation and Degradation (REDD+); the REDD+ 'plus' denotes commitment to conservation of forests, enhancement of forest carbon stocks and sustainable

management of forests in Cambodia (CIFOR, 2014). It is a review of existing REDD+ and PES programs aimed at understanding how the implementation of these schemes affects Cambodia through the lens of relevant research conducted in coastal areas to examine the effect of these schemes on environmental governance in Cambodia.

CPA and REDD+/PES were considered to be bottom-up in language but top-down in practice (Baird, 2008, Phelps et al., 2010). A case study of Virachey National Park in Northeast Cambodia showed that the Protected Area management in Cambodia was top-down in practice and both national and international in scale. This PA management was considered a form of nature conservation and included central state and PA specialists who claimed to provide fair treatment and equitable land rights inside the park. However, in practice legal rights were still an issue and land grabbing occurred during the process of Park establishment which led to local resistance to participation in the park (Baird, 2008). This case study is similar to that of the CPA in Toul Korki. In this case, the CPA development operated with a majority collective agreement among four villages and residents through thumb printing on the legal documents to meet the requirements of CPA development, which was a positive requirement. However, in practice a majority of CPA members and CPA sub-committee members did not realize that they were part of the CPA development. There were no clear CPA boundaries in the mangrove areas. Villagers inside PKWS had no legal land title or land certification. Although there was no outright resistance from villagers, however some villagers raised fish and crab in ponds near the mangrove areas and managed ponds on land they had claimed.

REDD+/PES projects are mainly internationally driven, and should not be considered bottom-up in nature. The primary purpose of REDD+ is to help mitigate climate change by reducing carbon emissions caused by deforestation and forest degradation. In theory, PES and REDD+ are

considered bottom-up approaches which promote democratic governance, ecosystem services, poverty reduction, and livelihood well-being. Three main actors, the United Nations Development Programme (UNDP), the Food and Agriculture of United Nations (FAO), and the United Nations Environment Programme (UNEP) have jointly established the UN-REDD+ program in Cambodia, and the World Bank provided a $300 million fund for small projects through the Forest Carbon Partnership Facility (FCPF). REDD+ was initiated in Cambodia by a UN-REDD+ program in 2009, and following this model funding for REDD+ preparedness projects is being considered for distribution throughout Asia and Latin America by the governments of Norway, Australia and the U.K (Ken, 2010).

Three non-state market driven schemes to advance mitigation efforts have been implemented in Cambodia (Avtar and Kumar, 2013; Milne and Chervier, 2014). First, a biodiversity PES program was established by international non-governmental organizations (Wildlife Conservation Society, Conservation International, and World Wildlife for Nature) in cooperation with FA. Second, a watershed PES was implemented by INGO (Flora Fauna International and Wildlife Alliance) in cooperation with the Ministry of Environment, the Ministry of Economy and Finance, and the Supreme National Economic Council. Third, REDD+ was introduced international donors, nationally by the non-governmental organizations (WCS, Pact), supported by the Japanese International Cooperation Agency, UN-REDD+, US-Agency for International Cooperation, and government partners (FA and MoE). Although REDD+ has been piloted in Oddar Meanchey and Mondulkiri provinces, yet currently there exists no legal governing REDD+ framework in Cambodia (Poffenberger, 2009; Ken, 2010; Evans et al., 2012; Avtar, 2013; Duggin, 2014; and Milne and Chervier, 2014).

2.3 Conceptual Framework

The Conceptual Framework of this research is divided into two parts. The first illustrates three concepts and connections to this study. The second describes operational concepts following fieldwork data collection.

The concepts of decentralization, negotiating livelihoods, and environmental governance have been linked to show relevance in this study. The Conceptual Framework illustrates actors, purposes, actions, fund flows and interactions of actors influencing environmental governance in PKWS, especially for the Community Protected Area in Toul Korki, Koh Kong province. It depicts multiple actors interacting through a CPA as a strategy for mangrove conservation and protection. Four groups of actors were studied with each actor group differentiated according to level, knowledge and capacity. The first group is divided into four levels of state actors according to relationship and interaction in mangrove conservation, bottom-up management at the village level (four village chiefs in Toul Korki), commune level (commune council and commune chief, and unofficial rangers of PKWS, provincial level (Director of PKWS, Department of Environment in Koh Kong), and national level (staff of Ministry of Environment). The second group includes Community Protected Area (CPA) actors and members, CPA patrol groups, CPA sub-committee and committee members, CPA chief assistant and CPA chief. The third includes NGOs and NGO projects such as the International Union for Conservation of Nature (IUCN)-Mangrove for the Future (MFF), the Development Khmer Center (DKC) and the Wildlife Conservation Society (WCS). The fourth group also includes private sector agencies related to agribusiness such as rubber plantations, fruit tree orchards, and tourism development enterprises. The fourth group also includes Non-State Market Driven (NSMD) programs, such as Payment for Environmental Services (PES) and Reduced Emissions from Deforestation and Degradation (REDD+). These private actors have not yet provided any funds in support of CPA development. PKWS was once the site of forest logging by the military in mountainous areas and forestry products were exported via waterway. Some former military personnel participated in mangrove logging during the 1980s and 1990s. No

mention of this logging was made by local people during the author's fieldwork, 2015 and 2016.

The common goal of these four groups of state and non-state actors is to effectively ensure sustainable ecosystem services, carbon sequestration, and livelihoods for the local communities of TKK. However, this common goal existed only on paper but not in practice. This study examined how institutional structures and strategies involving state and non-state actors can influence the success or failure of decentralized decision making with respect to preventing further decline of mangrove resources in coastal PKWS. The concept of a negotiated livelihood was employed to understand how villagers form CPAs and how their negotiations with local authorities (commune council, village chief, PKWS rangers, Deputy of DoE in KK, and NGOs) are conducted. The research aimed to learn the extent to which policy and regulation have been created and implemented at the local level, and whether or not this has been successful in achieving better management and protection of mangrove resources. It was discovered that the effective performance of local authorities, villagers, and NGOs working toward mangrove conservation and protection was still limited. Mangroves remain under threat and vulnerable as a result of various factors such as cutting for charcoal production. Cut mangroves are used for cooking and selling in the local market to provide income as well as to fund acquisition of technical skills. This study also attempted to describe the existing mechanisms employed by non-state market-driven efforts and conceived by state agencies and NSAs as part of an overall effective environmental governance policy operating in PKWS.

Stage One of the Conceptual Framework describes the relationships and interactions of state actors, NGOs/Projects, and the CPA. A dark red line (Figure2.1) represents the relationships between state actors and NGOs or Projects (PMCR-MoE, IUCN-MFF and DKC, village chiefs, the commune council, commune chief, unofficial rangers, the director of PKWS, and the DoE) influencing the flow of information, resources, and meetings necessary to establish and support the CPA. The double arrow represents the interactions between the CPA and state agencies operating from bottom-up relationships (CPA members, patrol groups, CPA sub-committee, CPA committee, CPA chief

assistant, CPA chief, village chiefs, commune council, commune chief, unofficial rangers, the director of PKWS, DoE, and the MoE) involved in mangrove conservation and protection. It diagrams interactions between state actors and CPA actors under the PA law of 2008 governing training, mangrove patrolling, illegal mangrove cutting reporting, access to mangrove forest areas, as well as proposals for sustainable mangrove cutting as defined by the rules and regulations of the TKK-CPA.

In figure 2.1 of the schematic relating to Stage Two, a dark red line diagrams the relationships between state actors, NGOs and projects in PKWS (Village chiefs, commune council, commune chief, unofficial rangers, director of PKWS, DoE, PMCR-MoE, IUCN-MFF, WCS) affecting the Community Protected Area initiative including support from the IUCN-MFF and the WCS for local livelihoods, mangrove forests, and wildlife conservation and protection in PKWS. The green lines in the Stage Two schematic represent the connections among private enterprise, CPA, and state actors (the owner of a private tourism enterprise, CPA members, patrol groups, CPA sub-committee, CPA committee, CPA chief assistant, village chiefs, commune council, commune chief, MoE and the MoT) engaged in the conversion of tourism into eco-tourism through organizing meetings and securing agreement from CPA people. These negotiations were still in processes during at the time of this writing.

The Stage Three schematic diagrams the IUCN-MFF, DKC and WCS's action and support provided to help local people and the CPA in TKK through meetings, training on PA law 2008, mangrove plantation, chicken raising, bio-digester use, and the hiring of local people to care for tortoise and crocodile farms. Private actors have not yet financially supported the local people or the CPA and are still in the process of understanding the perceptions of local people concerning to PES and REDD+ programs, and the views of the CPA members regarding the conversion of a private tourism business into an eco-tourism site.

Stage Four follows the distribution of funds from the IUCN-MFF and the KDC. Funds flow from the IUCN-MFF to the CPA chief for support of mangrove plantations. Funds

from the KDC are transferred directly to the households of CPA members and local people for chicken farming and to raise crops. WCS built a wildlife aid center which was, at the time of writing, 80 percent completed and purposed to hire local people to care for tortoise and crocodile farms. The owner of the private tourism enterprise had not yet contributed financial support to the CPA due to ongoing negotiations and processes which were awaiting agreement and approval from the CPA, MoE, and the MoT to convert tourism into eco-tourism under the management of the CPA. The perceptions of state actors and members of the CPA toward the agenda of the MFF and DKC and its projects were directly influenced by PES and REDD+ program implementation within the CPA development in PKWS, even though local government authorities and the CPA seemed not to fully understand the function of PES and REED+ programs.

In Stage Five, the author diagrams the distribution of funds from the CPA chief to households for mangrove seedling related expenses and for support of patrol groups with supplies of petroleum, water and food; and when needed the CPA chief provided funds to village chiefs for distribution to households that planted mangrove seedlings. P1V1 refers to Patrol Group 1 in village 1, P2V2 refers to Patrol Group 2 in village 2, P3V3 refers to Patrol Group 3 in village 3, and P4V4 refers to Patrol Group 4 in village 4. HHs1 refers to households in village1, HHs2 households in village 2, HHs3 households in village 3, and HHs4 households in village 4. The CPA and household members appeared more comfortable seeking permission from patrol groups and village chiefs to access mangrove areas and to request permission to cut small amounts of mangroves, seemingly as a result of their closer proximity to village chiefs and patrol groups.

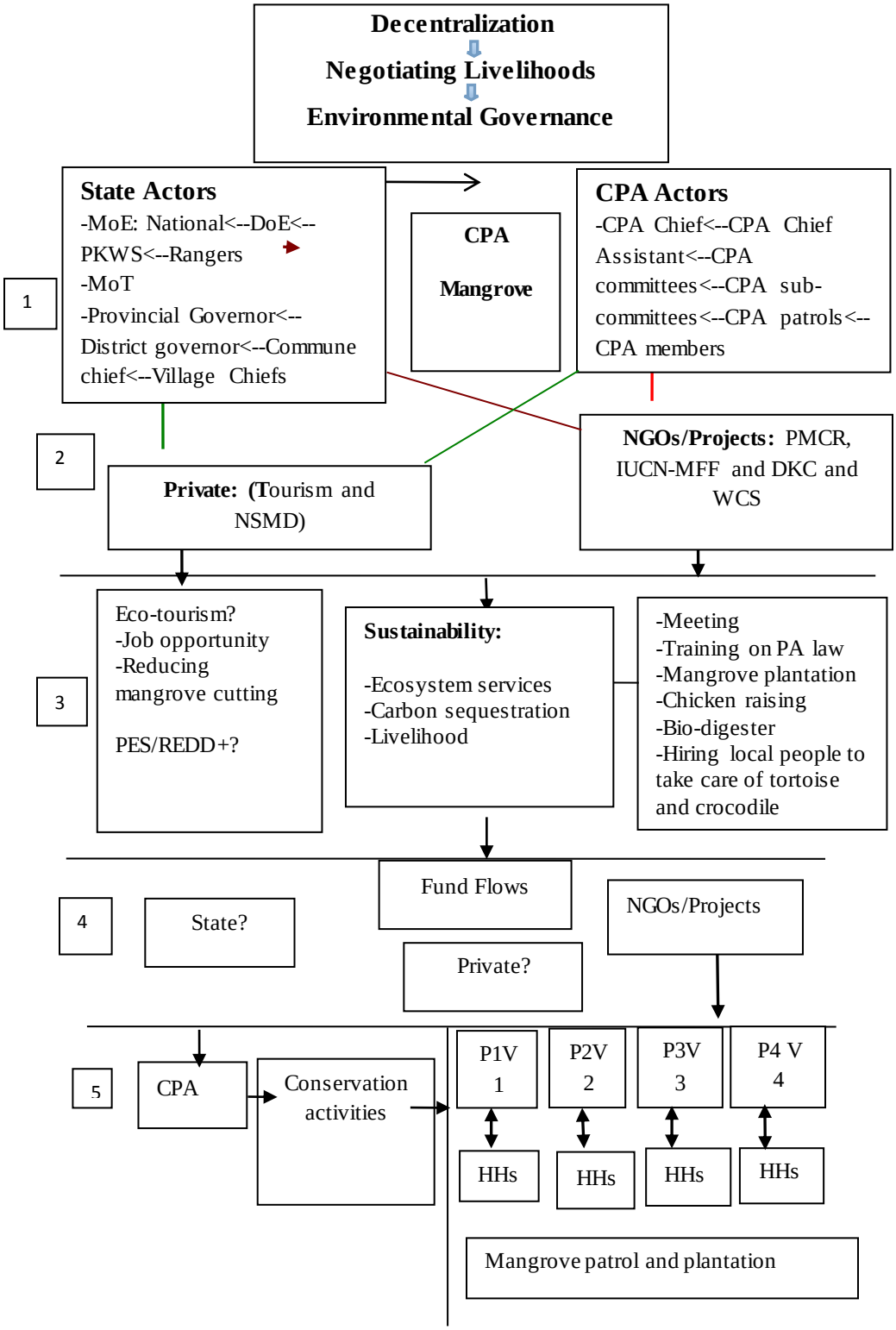

Figure 2.1 Conceptual Framework

2.4 Conclusion

This chapter provided relevant theories and concepts combined with references related to studies which concern decentralization, negotiating livelihoods and environmental governance. Each concept has been introduced using previous studies and linked in a conceptual framework to illustrate the broader context of this research. The following chapter will discuss decentralization as a hybrid governance system for mangrove conservation and protection which relies on formal and informal relationships among local state authorities, local people, and businesses in the Protected Area of concern.

CHAPTER 3

Hybrid Governance System: Decentralization in Mangrove Conservation and Protection

This chapter will make evident the reality that there is no single agency or actor which is solely responsible for improving the sustainable and equitable management of natural resources. In actuality, a cooperative effort involving the local community is more effective. If the state authority takes full control over resource access and use, or if the state government allows exclusive rights only to the private sector, there is the tendency to overexploit and deplete the resource in question (Marschke1999, Eam, 2009 and Voe et al., 2015). Multiple agencies or hybrid agencies working together as a check and balance mechanism provide optimal effectiveness in resource governance. Cambodia as a developing country rich in natural resources is well positioned to take advantage of this trend toward hybrid governance; and within Cambodia today there are already on-going cooperative policy reforms in place at both the national and local level.

Chapter three focuses on the emerging relationships among multiple actors active in natural resource governance of the Community Protected Area (CPA) in Peam Krasaop Wildlife Sanctuary (PKWS). This study examines institutional structures and strategies involving state and non-state actors to evaluate potential for success of decentralized decisions designed to halt the decline of mangrove resources in the coastal areas of PKWS. The concept of PA development is effective in design, however suffers from poor implementation. The intention of CPA development is that governance should be bottom-up, however in practice it becomes top-down. A case study of Virachey National Park shows that CPA were chosen through a top-down process (Baird, 2008). This case study is similar to what was observed in CPAs in PKWS. The author argues that decentralization as a hybrid governance system for mangrove conservation and protection is the optimal system of management. CPA development is an institutional structure which is now recognized and supported by the national government's Ministry

of Environment (MoE). CPA development provides entities such as local state authorities, the CPA, the Participatory Management of Coastal Resources of MoE (PMCR-MoE), the International Union for Conservation of Nature and Natural Resource-Mangrove for the Future/Development Khmer Center (IUCN-MFF/DKC) projects, and local businesses the ability to secure better local livelihood opportunities through advocacy for eco-tourism services, and improve mangrove conservation and protection. However, despite this advocacy and support, it remains difficult to precisely define the most effective roles for actors involved in mangrove conservation and protection. This holds true especially for early stage CPA development of ecosystem services and livelihoods for local people.

3.1 Key Institutions, Policies Reforms and Achievements: Challenges in Natural Resource Management in Cambodia

This section touches on issues including national policies and operations; various important major drivers leading to depletion or degradation of natural resources; key factors influencing gross domestic product (GDP); key achievements and challenges; natural resource governance agencies; prime goals driving the establishment and operations of protected areas; and the expansion of Community Protected Areas in Cambodia.

National policy invariably influences governmental performance at all levels in Cambodia. Each government institution must consider its actions in accordance with national policy. Cambodia has adopted the long-term and comprehensive Rectangular Strategy (RS) master plan which blueprints specific stated goals, strategies, policies, plans and programs for sustainable development and poverty reduction. The Rectangular Strategy Phase I (RS P I) has been operationalized through the National Strategic Development Plan (NSDP), and Cambodia has thus far implemented three NSDP iterations: NSDP 2006-2010, NSDP 2009-2013, and NSDP 2014-2018. Major policies have been reformed including those applicable to forestry reform, fishery reform, land reform and clearance of mines (RS PI 2006-2010-RS PII 2009-2013); and

additionally land reform, reform of armed forces, public administration reform and legal land judicial reform (RS PII 2014-2018).

In Cambodia many factors contribute to the degradation and destruction of natural resources. Major issues have been identified which are internally and externally driven by financial crisis, poverty, declining natural resources, climate change, and natural disaster. Contributing factors to climate change in Cambodia include population growth, urbanization, expansion and intensification of agriculture, as well as development of transport, energy and other sectors (Royal Government of Cambodia, 2014). These factors are among the more significant to the local people, especially as contributors to poverty, as they combine with rapid degradation of natural resources crucial to improving local livelihoods.

Important GDP sectors in Cambodia rely on labor productivity in the non-farm sectors and include manufacturing, tourism, construction, and services (Royal Government of Cambodia, 2014). Since 2000, Cambodia has experienced rapid economic growth resulting in a reduction of the poverty rate from 47.8% in 2007 to 19.8% in 2011. Poverty reduction in Cambodia has occurred quickly however accurate metrics for real situations in Cambodia are yet not entirely clear. There is a large divide between the rich and poor in Cambodia. The state is poor but rich individuals gain wealth through corruption. The rich flaunt their status through open expression of materialism and consumption, such as through purchases of cars, motorbikes, and smart phones. The poor, in an attempt to gain status, engage in borrowing from banks to purchase status items. And in some cases, overseas workers remit funds to their parents for spending money and for purchasing better houses and cars.

Key achievements of the years between 2009 and 2013 include the successful guidance of the country through the global financial crash of 2008, restoration of economic stability, and achievement of poverty reduction through meeting the Cambodian Millennium Development Goal. Moreover, key issues are being addressed under NSDP 2014-2018 to further promote growth, diversify the economy, improve the human capital base, further reduce poverty and inequality, and successfully integrate the

Cambodian economy into ASEAN (Royal Government of Cambodia, 2014). Key national government policies are now subject to performance and achievement evaluation at all levels.

Natural resource governance in Cambodia occurs across multiple levels of government and involves cooperation with non-state actors and stakeholders. Stakeholders include the development partner community, the private sector and civil society.

Table 3.1 Key institutions, roles/responsibilities, legal framework of natural resource management

Institutions	Role/responsibilities	Legal framework
Ministry of Environment	Protected areas, wildlife, environmental protection, all forestry conservation, community forestry areas and community protected areas	-The 2008 Law on Natural Protected Area -The 2008 Law on Bio-Safety -The 2007 Law on Water Resource Management -The 2003 Sub-decree on Community Forestry
Ministry of Land Management, Urban Planning and Construction	-Land use planning, land adjudication, land management -Land survey and granting land title to people in the community	-The sub-degree Social land concession -Participatory land use planning policy

Table 3.1 (Continued)

Institutions	Role/responsibilities	Legal framework
Ministry of Interior	- Management of sub-national public administration institutions; -Decentralization and De-concentration Reform Programme (D&D).	-The 2001 Law on Management and Administration of the commune -The 2008 Law on Administrative Management of Capital, Provincial, Municipality, District, Khan, Council
Ministry of Agriculture, Forestry and Fisheries	-Land concession areas, agriculture -Enforcement of laws for economic land concession companies -Climate change mitigation through development of agro-industries	-The 2001 Land Law
Forestry Administration	-Maximization of sustainable forest contribution to poverty alleviation, enhancement of livelihoods, and equitable economic growth - Adaptation to climate change and mitigation of its effects on forest-based livelihoods	-The 2002 Law on Forestry
Fisheries Administration	-Management, conservation and development for sustainable fishery resources	-The 2006 Law on Fisheries -The 2005 Sub-decree on Community Fishery Management -Ten Year Strategy Planning for Fisheries 2010-2019

Source: Royal government of Cambodia, 2014

Twenty-three Cambodian protected areas were recognized by the Royal decree in 1993 and there were 53 natural protected areas by the end of May, 2016 (Open development, 2016). These 53 natural protected areas come under the legal framework of the General Department of Administration for Nature Conservation and Protection (GDANCP), a part of the Ministry of Environment. There are five types of protected areas and four management zones in Cambodia. Five types of protected areas are national parks, wildlife sanctuaries, protected landscapes, multiple use, and Ramsar site. Four management zones are core zone, conservation zone, sustainable use zone, and community zone (Open Development, 2016). There previously were two protected area systems governed by the Ministry of Environment (MoE) and Forest Administration, Ministry of Agriculture, Forestry and Fisheries (MAFF) in Cambodia. By 2016, these two protected areas systems had been changed. All forest protected areas now are under the MAFF authority and have been transferred to management of the MoE. All economic land concessions under the MoE have been transferred to the MAFF. Thus, these two ministries are considered as contested transition. Transition is not fully clear and is still undergoing organization.

The MoE considers the Protected Area System to be a major contributor to the country's economy and sustainable development with goals including poverty reduction through the conservation and sustainable use of its biological, natural and cultural resources, and other ecosystem services (National Biodiversity Steering Committee, 2014). This has led to increasing development of CPAs both inland and around coastal areas under the legal framework of the GDANCP.

Between 2009 and 2012, 23 natural protected areas expanded from 3,100,199 ha. to 3,111,041 ha., having 115 protected-area communities, and 211 villages were identified in 2012 having a land area of 158,994 ha. (Royal Government of Cambodia, 2014). By early 2016, 129 CPAs had been recognized by the MoE. The MoE created a buffer zone to prevent encroachment on protected areas through the development of agro-industry projects and ecotourism projects. The MoE also created a green buffer zone by setting up protected area communities. The buffer zone represents a strategy in which forest lands within the protected areas are given to local communities and ethnic groups for sustainable management and (local) consumption of non-timber forest products.

Carbon-credit investments within the protected areas have also contributed to support for the economy. Moreover, the MoE has drawn up maps for 21 protected areas, erected 1,204 border posts, and set up 581 posts for the protected area communities. There have been increasing numbers of PAs and CPAs in Cambodia which seems to be a positive development for the country's economy and sustainable development with goals including poverty reduction through conservation and sustainable use of its biological, natural and cultural resources, and other ecosystem services. All of the above mentioned are linked in this study of the Community Protected Area in PKWS. Additionally, past practices in mangrove conservation and protection are presented.

3.2 Past Practices of Natural Resource Management at the Sub-National Level

This section focuses on natural resource conservation benefits and support; ecosystem services derived from mangrove forests; mangrove conservation; state and projected response to mangrove decline, and natural resource conservation performance evaluations.

The involvement of sub-national authorities in natural resource management in Cambodia began in the mid-1990s with support from external donors of the Community-based Natural Resource Management (CBNRM) program, as well as assistance from the Seila program (Marschke, 2004a). Decentralization and natural resource management in Cambodia mostly relied on external donor funding (Marschke and Sovann, 2010). Since the mid-1990s, donors, including the German Development Agency GTZ, Canada's IDRC, UNDP and the Swedish development agency, tried to address the illegal cutting of trees and mangroves. Financial and technical support from external sources related to natural resource management still continues, especially by providing assistance to new communities in development. Most community protected areas within PKWS were established with financial and technical assistance from various NGOs and related projects from local and provincial level authorities, as well as coordination and intervention to provide conflict resolution (Marschke, 1999; 2005; and Kim et al., 2015).

Figure 3.1 shows the important ecosystem services derived from mangrove forests which provide shelter and food for birds and fish, pollution reduction, flood abatement, erosion minimization, and reduction of climate change related impact. The mangrove forest must be seen in the context of its role in the interaction between humans, biodiversity and birds. Thus, mangrove forest conservation and protection is an endeavor requiring social interaction and cooperation between multiple actors in PKWS.

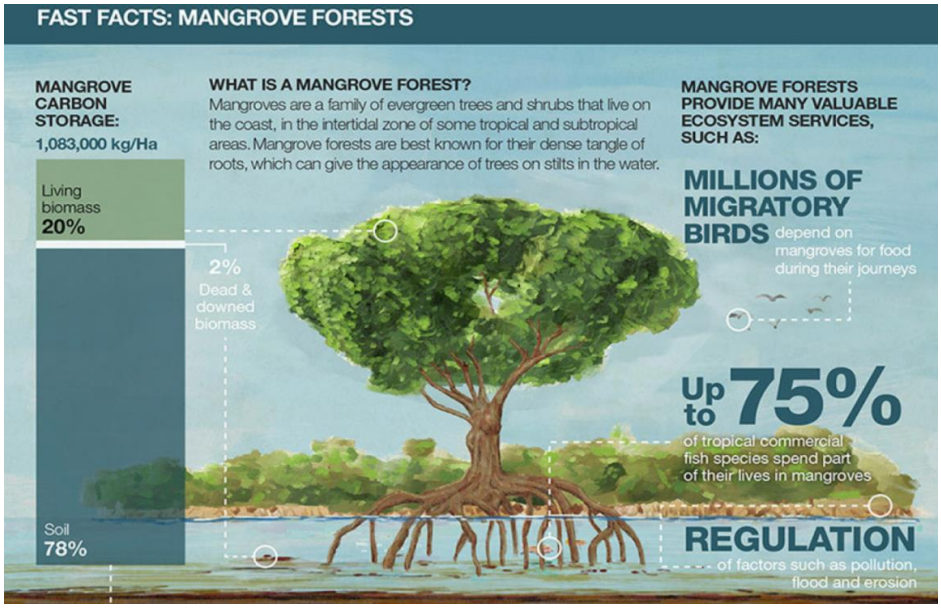

Figure 3.1 Ecosystem services of mangrove forests
http://blog.cifor.org/31193/indonesian-mangroves-special-millions-of-reasons-to-love-mangroves#.VeJns3JlTa8.gmail

Table 3.2 provides a short timeline of events important to mangrove conservation and the effectiveness institutions working in PKWS, Cambodia. Mangrove conservation and protection was characterized by strong management in PKWS during the King Sihanouk Period 1953-1970 (Marschke, 1999). During that period, there existed strong management of mangrove forests which relied on close cooperation among national government officials and local sub-national authorities, especially elder commune chiefs and village chiefs, and even school children in Toul Korki (Marschke, 1999). After the end of former King Sihanouk's regime, three successive regimes took power in Cambodia causing shock to the Cambodian people. Millions of Cambodians were killed and tortured during the rule of Lon Nol 1970-1975, the Khmer Rouge period 1975-1979, and during the Communist period 1979-1991. A large mangrove forest cutting

occurred between 1993 and 1998 at a time when Cambodia had just emerged from decades of war. 1998 became an opportunity to begin re-establishing institutions of government and marked the first national election supported by the United Nations Transnational Authority in Cambodia (UNTAC).

The Ministry of Environment was established in 1993, followed in 1997 by the formation of the PMCR project. The PMCR project was supported by the IDRC and formed in Koh Kong province by a group of researchers at the national level who pursued a new approach to managing mangrove resources, one in which village chiefs sought to build trust and involvement for the project among local villagers. The project focused on developing ways for villagers to use natural resources for sustainable use to augment livelihoods. Project activities related to mangrove plantation, introduction of small scale fishing strategies, and experimentation with aquaculture (Lisa, 2001). And during the late 1990s, mangrove forest conservation and protection as well as mangrove forest replanting programs became successful as a result of the work supported by the IDRC which enabled key national government officials to cooperate more closely with sub-national authorities, and to introduce the Community-Based Natural Resources Management (CBNRM) concept and pilot project. Moreover, the people who had once destroyed the mangroves became conservationists. And through the informal CBNRM pilot, the project helped to inform national government officials on policy to protect natural resources more effectively while utilizing the involvement of local villagers and offering them community rights to access and manage their natural resources.

Table 3.2 Past mangrove conservation and protection in Cambodia

Year	**Events/impact/ Illegal Activities**	**Conservation and Protection Activities**	**Institutions**
Sihanouk 1953-1970	Not many mangrove cutting	-Destroyed charcoal kilns -Replantation program	The Department of Fishing, Farming, and Hunting and strong engagement with elders, the commune and village chiefs and school children
Lon Nol 1970-1975	United States bombed on Cambodia	N/A	N/A
Khmer Rouge 1975-1979	Many people were killed	N/A	N/A
Communist period 1989-1991	Vietnamese troops	N/A	N/A
1993-1998	-Re-established institutions and national election -475 charcoal kilns in 1996 -500 small charcoal kilns in 1998	-25 charcoal kilns were destroyed in 1996 -Mangrove replantation -Training awareness	-MoE -GDANCP -DoE in KK -Anti-Charcoal working group -PKWS-rangers -PMMR/PMCR-IDRC engaged with village chief and residents
UNTAC stopped after 1993	-National election -Large mangrove cutting for charcoal and shrimp farming	-Stopped illegal activities -Mangrove replantation -Training awareness	-MoE -GDANCP -DoE in KK -PKWS-rangers -PMCR-IDRC did pilot CBNRM
2002	-1st commune election	-Stopped illegal activities -Mangrove replantation -Training awareness	-MoE -GDANCP -DoE in KK -PKWS-rangers -PMCR-MoE did pilot CBNRM, CF, & CFi

Source: Marschke, 1999, PMMR/PMCR, 2000

Figure 3.2, page 55, shows that mangrove forest coverage was approximately 50,000 ha in 2015 and has since steadily declined. Current management conservation practices are demonstrably ineffective.

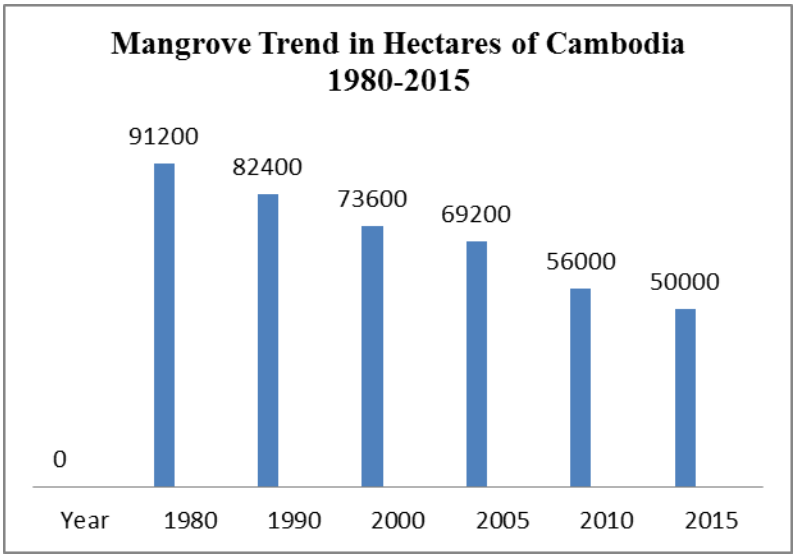

Figure 3.2 Mangrove trend in Cambodia 1980-2015

Source: WWF, 2013 and FAO, 2015

3.3 Current Practice of Natural Resources Management at Sub-National

This section discusses the administrative reforms which produced decentralization and deconcentration; commune council elections; collaboration between CPA and CBNRM; natural conservation state agencies; boundaries; and altered perceptions of local people regarding land titling and planning by state agencies.

The goal of the Sub-National Authorities' administration reform has been to ensure better accountability of the performance of local authorities. Current commitments of the Royal Government of Cambodia's (RGC) Rectangular Strategy Plan (RS P III 2014-2018) focusing on decentralization and deconcentration are: (1) a policy and legal environment that shapes and supports the reforms set out in the 2008 Organic Law; (2) the encouragement of autonomous and capable Sub-National Authorities (SNAs) (both financial and human resources); and (3) a framework and system of oversight, including legal, regulatory and strategic instruments, exercised by national authorities with the

capacity to enforce them, and one which replaces the current system of administrative control, thereby allowing SNAs to exercise their autonomy and become accountable for their actions within an overall national framework.

Commune council elections in Cambodia have been held three times (five-year mandate) since 2002 to 2012, and the fourth commune council election is planned for 2017. The 2002 commune election supported by the Seila program aimed to contribute to poverty alleviation in rural areas through the implementation of a decentralization policy related to planning, financing, and management. Since 2003, local state government agencies have become more involved in natural resources conservation and protection through CBNRM. Recently, development of Community Protected Areas (CPAs) has been driven by the CBNRM.

The process of the CBNRM is similar to that of the CPA. Marschke (2005) identified key factors related to CBNRM operations, such as promulgation of rules and regulations, formation of resource management committees to guide community-based management initiatives, thumb printing of villagers who worked in the program, establishment of demarcated areas for management, and collection of official signatures from the commune at district and provincial or national levels, as appropriate. CPA development is seen as a tool to encourage multiple actors to participate in mangrove conservation and protection. It is bottom-up in language but top-down in practice. The author's study of the Community Protected Area in Toul Korki was initiated under the projects (PMCR) and IUCN/MFF/DKC to determine how local people and commune authorities were involved in mangrove conservation and protection to safeguard livelihoods and promote sustainable use for next generations.

The CPA is overseen by the GDANCP owing to mangrove forestry management being part of the legal framework of the Ministry of Environment. Moreover, the state government's role in redistribution and responsibility for centralization is being transferred to provincial departments and local state governments. According to the director of the PKWS, late 2015 the MoE staff attended short course training concerning protected area conservation and monitoring through effective patrolling

techniques. In addition, the MoE promoted PA rangers to the level of quasi-military officers with MoE uniforms that facilitated their identification by people in conservation areas. In 2016, the MoE began providing a limited budget for SNAs to become responsible for soft-solid waste management, and the director of Pas was required to raise the annual budget for patrols and awareness training for natural resource conservation and protection.

The CBNRM, Community Fishery, Community Forestry and Community Protected Areas are composed of participatory communities, state actors, and NGOs/projects (Marschke, 2005) with a co-management structure to involve communities and state actors (Diepart, 2015). Both strengths and weaknesses of the co-management scheme were identified. Weaknesses included limitations on regulations, management planning, and restrictions on devolution to the local level which preclude communities from becoming the real owners and stewards of their resources to generate their own income, and further it excluded marginalized groups (Diepart, 2015). Some CBNRM are active and recognized by appropriate national government institutions, while other CBNRM also remain active even in the absence of higher level official recognition (Marschke, 2005). Kim et. al. (2015) identified one such positive co-management scheme engaged in mangrove conservation and protection through CPAs within the PKWS area. In this case, mangrove cutting decreased as a consequence of CPA people becoming engaged in eco-tourism services. However, not all CPAs within PKWS exhibited such progress, especially newly established CPAs. Newly established CPAs were challenged by poor internal leadership, financial issues and discouragement felt by some community members causing them to want to "give up" their cooperative efforts. The leadership continued to strongly rely on external sources of technical support and funding even after the development of their CPA.

According to the 2011 Royal Decree on determination and zoning administration in PKWS, PKWS covers 25,897 ha. of land area, and is divided into four zones referred to as the core zone, conservation zone, sustainable use zone, and community zone. Table 3.3 on page 59 shows the management zone Toul Korki commune, PKWS including Toul Korki Leu is located in the core zone which contains high conservancy values regarding threatened and endangered species, and fragile ecosystems. Toul Korki Leu

and Tachat are located in a conservation zone having high conservancy values related to natural resources, ecosystems, watershed areas, and natural landscape which is linked by proximity to the core zone. In addition, Toul Korki Krom, Koh Chak, and Tachat are located in a community zone which is designated as a management area for socio-economic development of the local communities. And further, the community zone contains existing residential lands, paddy field, and field garden or swidden agriculture (Chamkar). With respect to the community zone, villagers had no land certification, however they expected that through subsequent involvement of the MoE and other institutions certification would eventually be forthcoming. Some villagers were concerned by uncertainty regarding precisely how the MoE would demarcate their land. The villagers worried that the MoE would rely on the Global Positioning System (GPS), and accordingly feared the possibility of losing their land through the MoE demarcation process.

Table 3.3 Management Zone of PKWS

Zoning	**Land cover areas in ha.**	**Characteristic**	**Territory**
Core zone	1,588	High conservation values For existing threatened and critically endangered species, and fragile ecosystems.	-Phum II, Koh Kapic commune, Koh Kong district -Koh Andaet, Tatai commune, Koh Kong district -Phum I & II, Peam Krasoap commune, Mondol Seima district -**Toul Korki Leu**, Toul Korki commune, Mondol Seima district
Conservation zone	4,873	High conservation values for existing natural resources, ecosystems, watershed areas, and natural landscape located link to the core zone	-Phum I & II, Peam Krasoap commune, Mondol Seima district -**Tachat and Toul Korki Leu**, Toul Korki commune, Mondol Seima district -Phum II, Koh Kapic commune, Koh Kong district -Koh Andaet, Anlong Vak, Tatai commune, Koh Kong district
Sustainable use zone	15,413	High economic values for national and management, and conservation of the PAs itself thus contributing to the local community's livelihood	Peam Krasaop Wildlife Sanctuary
Community zone	4,023	Management area for socio-economic development of the local communities. Community zone containing existing residential lands, paddy field and field garden or swidden agriculture (Chamkar).	-Prek Svay, Steng Veng village, Krong Khemarak Phumen, Phum II, Peam Krasaop commune -**Toul Korki Krom, Koh Chak, Tachat,** Toul Korki commune, Mondol Seima district -Beong Kachang, Baklong commune -Phum I, Phum II, Koh Sralao, Koh Kapic commune -Koh Andaet, Tatai commune

Source: Management Zone of PKWS, 2011

3.4 The Engagement of State and Non-State Actors in Community Protected Area Development

This section illustrates key factors which have resulted in the engagement of state and non-state actors involved in mangrove conservation and protection through the processes of CPA development. In PKWS there are several key factors that have led to increased state and non-state actor awareness of CPA related mangrove conservation and protection. These factors include declining mangrove forests, weakness of national state agencies, recognition of neighboring community success in eco-tourism development, and opportunities to capitalize on more diversity toward the enhancement of livelihoods. According to respondents asked about CPA development in PKWS, people recognized existing problems related to degradation of mangroves, changes in fish, crab, and shrimp populations, and warming temperatures. Some CPA members expected to take more collective action among themselves to mutually decide planning and action. Some CPA members expected financial support would be used for conservation and protection of mangroves and to mutually engage in other activities to enhance their livelihoods.

Motivated by observing the CPA development in Toul Korki, the commune chief, village chiefs, key persons and local people discussed among themselves the issues relating to regulations and rules concerning conservation programs and rights to access, as well as allocation of community money for CPA activities. Agreement relating to CPA development was achieved among residents, the commune chief, village chiefs and key persons, yet there remained many unsettled concerns involving the election of CPA committees, the CPA chief and his assistant; as well as the concern of CPA demarcation methodology, and recognition from the MoE. It required nearly a year with PMCR assistance to engage residents and provide initiatives for establishing the CPA. In due course, the CPA in TKK was recognized by the MoE in 2013. The MoE provided 1813 ha. of forest cover land area (520 ha. of mangrove forest) for local people to access and conserve according to the regulations and rules of the CPA development agreement. The relationships of multiple actors were determined through CPA interaction with state and local authorities, the CPA, and the private sector, all of which were seen as actors operating separately on different levels, and acting in

accordance with their different interests and purposes, each with different perceptions of an ideal CPA development project outcome.

3.5 Relationships and Roles of Community Protected Area, State Local Authorities and Private Sector

This section describes the local people and languages spoken in TKK; CPA levels and identities; selection processes; the flow of information and resources; and functions in the CPA.

The author observed interpersonal communication, social organization, interpersonal relationships and way of life among the people of TKK to better understand local context and links to the CPA. Most residents, especially elder residents living in Toul Korki Krom and Koh Chak villages spoke Thai in daily communication, but with a markedly different pronunciation compared to the Thai language common in Thailand. The researcher was informed that residents of TKK speak a Thai dialect known as Thai Kong Kang (Thai Mangrove) or Thai Koh Kong (Marschke, 1999). The people were not wealthy and some local residents, especially adults who had children and families, were living and working in Thailand, and a number had been granted Thai citizenship.

Through observations and discussions in TKK the author noted that residents exhibited helping behavior during cultural ceremonies. One example was observed during a one-hundred-day funeral at a village pagoda where residents of TKK assisted in the preparation of vegetables, fruit, fish, meat and other food. Residents were able to speak Thai. Due to lower pricing of goods in Thailand, as well as having relatives living in Thailand, they crossed the Thailand-Koh Kong border to purchase vegetables, fruit, fish and meat in Hat Lek, Thailand. These people were Cambodian spoke Thai as a result of having lived in Thailand during the Khmer Rouge period 1975-1979, and because they lived close to the Koh Kong-Thailand border. Most of their relatives who attended the ceremonies were from Thailand. They were wealthy enough to afford cars. The sermon given by the monk was conducted in Thai.

The identities of CPA people in Toul Korki are partially the result of influences from local and state authorities, as well as kinship. Through focus groups and interviews of key informants, along with participant observations of both formal and informal behavior, the author determined that local state authorities were members of the CPA committee or the CPA sub-committee, and were also CPA members, and each level possessed different knowledge and capabilities. The CPA committees included village chiefs' assistants, village vice-chiefs, and two unofficial rangers based in TKK.

Other CPA sub-committee members included a teacher, illiterate farmers who were gifted at public speaking, a fisher who lived close to the mangrove area, a broker (selling and buying sea food), a younger brother of a ranger, a labor broker who provided labor for tending rubber trees, and a farmer. Other CPA members included a commune council member, a wife of a commune council member, the families of village chiefs (wives and husbands), and one a poorer farmer who could not attend FGD longer because she was in a rush to return home to cook for her children. Each household had more than two members, with most family members having been registered by their parents as CPA members despite their not living and working in their villages. Some CPA committees and CPA sub-committee members were selected through voting and others were directly appointed. Regarding patrol groups, some were motor bike drivers, or volunteers of *Phum-Khom Mean Sovathapheap* (commune-village security guards), and some were military personnel who occasionally received financial support from a wealthy government official who was born in Koh Kong province. Also included were village chief assistants, and a fisher. Some patrol groups were voluntary and others directly appointed by village chiefs. Some patrol groups were unable to communicate in Khmer.

Table 3.4, page 66, shows two flows of information and resources with seven different levels, and three different interactions of actors in mangrove conservation and protection in the Toul Korki Community Protected Area. The author realized that flow of information and resources frequently occurred between CPA chief and patrol groups, between village chiefs and patrol groups, and between CPA members or non-CPA members and patrol groups.

The flow of information and resources between the CPA chief and patrol groups passed primarily via training and conservation activities. Patrol groups in each village monitored and patrolled mangrove areas twice per month. They were required to write a report of their activities and provide photos to record what they observed in the mangrove areas which they patrolled. They forwarded their reports and photos to the CPA chief in return for which they could receive money for meals and petrol for their fast boat. The financial support they received, in exchange for their patrol activities, was minimal, 5,000 riels per person ($1.25USD). Reports were delivered to unofficial rangers of the PKWS located in TKK, and passed by two rangers of the PKWS to the director of the PKWS. In one observed example, a ranger in TKK stated to the author that he had been required to write a report for his director concerning his meeting with the author. This report was not the only attempt to gather information about the author's activities. The Deputy Directory of the Provincial DoE also telephoned the author to clarify the nature of the meeting between the author and the ranger. The author presumed that the flow of information to authorities regarding interactions between the author and informants was quite rapid and that the authorities were aware of any activities involving external investigations being conducted by the author. In terms of flow of resources between the CPA chief and patrol groups, the CPA chief received funding from the MFF for mangrove plantation. Some of this money could be utilized by the CPA chief to support mangrove plantation patrol activities. In one observed case, the CPA chief received 5,000,000 riels ($1,250 USD) from the MFF project coordinator for mangrove plantation and of this amount 2,500,000 riels ($625USD) was channeled to support patrol activities. The remaining 2,500,000 riels was held by the CPA chief to meet expenditures incurred by the patrol groups who monitored mangrove areas.

Another example of flow of information and resources was noted by observing the relationship between patrol groups and village chiefs relevant to facilitation. The village chiefs maintained a close relationship with patrol groups. Village chiefs could request help from patrol groups by asking them to accompany NGO and project teams during visits to the mangrove areas. Another frequent flow of information and resources was observed in the relationship between patrol groups and CPA members and non-CPA members when formulating proposals for limited mangrove cutting to build chicken cages and for meal cooking. Some CPA members and non-CPA members had more

distant relationships with the CPA chief. CPA members and non-CPA members seemed more at ease with the patrol groups due to their being located in their villages. They appeared more willing to request permission from patrol groups. The author noted that villagers rarely asked permission from the CPA chief to cut mangroves for chicken cage building and meal cooking. Normally, the CPA members and CPA non-members required a limited supply of mangroves for building chicken cages and meal cooking fuel. The author observed that close relationship with authority was directly linked to the basic needs of residents.

Less frequent flows of information, resources and interaction were seen between village chiefs and the CPA chief, the CPA chief and CPA committees, village chiefs and CPA committees, and between the CPA and CPA sub-committees, and were related to decision-making and facilitation. These less frequent flows of information and resources between the village chiefs and the CPA chief were related to decision-making and facilitation. Also noted, the CPA chief deliberated with the village chiefs to select suitable areas for mangrove plantation in their villages, and to select households to receive mangrove seedlings. These less frequent flows did not often occur due to the fact that they were dependent upon external sources of support from projects and NGOs.

Less frequent flows of information and resources were identified by observing interactions among the CPA chief, the CPA sub-committees, and CPA members; and additionally, between village chiefs and CPA members. These groups appeared to have poor quality internal leadership. For example, most CPA sub-committees did not realize that they were in fact considered to be CPA sub-committees. They only identified with being CPA members. Both CPA sub-committees and CPA members did not often hold meetings with the CPA chief, and they had held only four meetings since the establishment of the CPA. Consequently, they did not feel themselves to be part of the CPA process, and their interactions in meetings were primarily with NGOs and external projects. This resembled an outsider system which had been imposed, rather than a solution provided by local people to reach their own workable system. The existing system is top-down, even though in theory it was intended to be bottom-up.

The function of each actor was observed in the different outcomes concerning their different assigned tasks, different capacities, and different expectations of costs and benefits. This provided understanding of regulatory systems, knowledge and management practices. The initiatives of the CPA development in TKK were seen to be serving different interests with the exception of cases in which they had the opportunity to come together to discuss processes which involved their own individual interests, ideas and goals.

Table 3.4 Different actors and levels of interaction in mangrove conservation and protection in TKK-CPA

Level of actors	Level of interaction	Information	Resources	Result of interactions
-Level 1 CPA chief and CPA chief assistant -Level 2 4 village chiefs -Level 3 CPA committee -Level 4 Patrol groups -Level 5 CPA sub-committee -Level 6 CPA members and non-CPA member -Level 7 IUCN (MFF & DKC)	-L 1 with L 4 -L 2 with L4 -L 6 with L 4	- Oral /writing report & meeting -Oral proposal/ permission	-Money support -Fast-boat in kind -Accessing to mangrove -photos	More interaction and relationship
	-L 1 with L 2 -L 1 with L 3 -L 2 with L 3, L 5 , & L 7	-Meeting and discussion -Training on regulation and skills related to chicken raising and croup cultivation	-Chicken -Crops	Less interaction and relationship
	-L 1 with L 5 with L 6 -L 2 with L 6 & L 7	-Internal Meeting and discussion	-Roles and responsibilities	Poor interaction

The operational relationships of commune and villages authorities, CPA people, and the owner of the guesthouse in Tachat village were observed during meetings and discussions concerning public services, political aspects, mangrove conservation and protection planning sessions, and was for the purpose of helping to local people seek work, and minimize mangrove cutting in their areas.

> "We have engaged with the owner of the tourism site to prepare documents and to get agreement from CPA people which is under the name of CPA, so the that the MoE and the Ministry of Tourism will approve it as an eco-tourism area in TKK" (commune chief in TKK, October, 2015.)

It was learned at one point that the owner of a guesthouse had tried to communicate with the CPA and SNAs to discuss his plan to convert a tourism site for eco-tourism purposes in the name of the CPA. Support is needed from the CPA before the MoE and MoT will register and reclassify a tourism site as an eco-tourism site, and then widely promote it to the public. Moreover, the author formed the impression that the manager of the tourism site in Tachat village had similar ideas and that he planned to help local people gain more income through tourism services in the local area. When local people are able to earn more income from tourism services, there is a resulting reduction in the cutting of mangroves, and a reshaping of the behavior of local people, thereby creating more sustainable resource use. However, it was also observed that the location of the guesthouse was very close to the sea. This proximity of the guesthouse to the sea meant that mangroves were cut and kept for guesthouse building. The manager of the tourism site in Tachat stated that development invariably negatively impacts the environment and that this cannot be avoided. Tourism businesses and infrastructure has been constructed on both state land and land which had been purchased from residents. This had the appearance of being illegal possession of state land for the purpose of conversion to private land to establish and operate a business.

Figure 3.3, page 70, shows the administrative structure of a commune council in TKK for the third mandate. It is a hierarchical structure consisting of a commune councilor; four commune council members; a commune chief; two commune deputies; four commune council committees who address gender and child issues, disaster

management, planning and financial issues, village development, and procurement; a clerk; four village chiefs; four sub-village chiefs; and four village chief assistants. Most commune council members acted as mediators. A new commune chief in TKK was elected in 2012 replacing the old commune chief who became a commune council member. At the time, administrative structure permitted overlap and the same person was permitted to hold more than one position. Examples of this were the commune councilor who also acted as the commune chief, and two commune council members who were also the first and second commune deputies. Individuals in the structure were knowledgeable enough and capable of holding more than one position, and often a CPA member or a commune chief was sufficiently conversant with all facets of CPA work to the extent that even though he may not have been a CPA chief he was still qualified to fill any role in the leadership structure. Kinship also played a role such that one commune chief happened to be the younger brother of a CPA chief. Responsibilities of a CPA chief could be transferred to CPA chief assistants or commune chiefs when a CPA chief temporarily left to work in Thailand. It was evident from this that decentralization at the commune level in TKK was integral to the CPA structure. Some disaster management related work was administered at the commune level. Positions at the commune level were acknowledged by CPA authorities, and individuals holding these positions were engaged in natural resource conservation and protection. It was difficult to distinguish CPA people from sub-national authorities, however it was argued that CPA people were partially SNAs, and that many CPA members originated from within the SNAs.

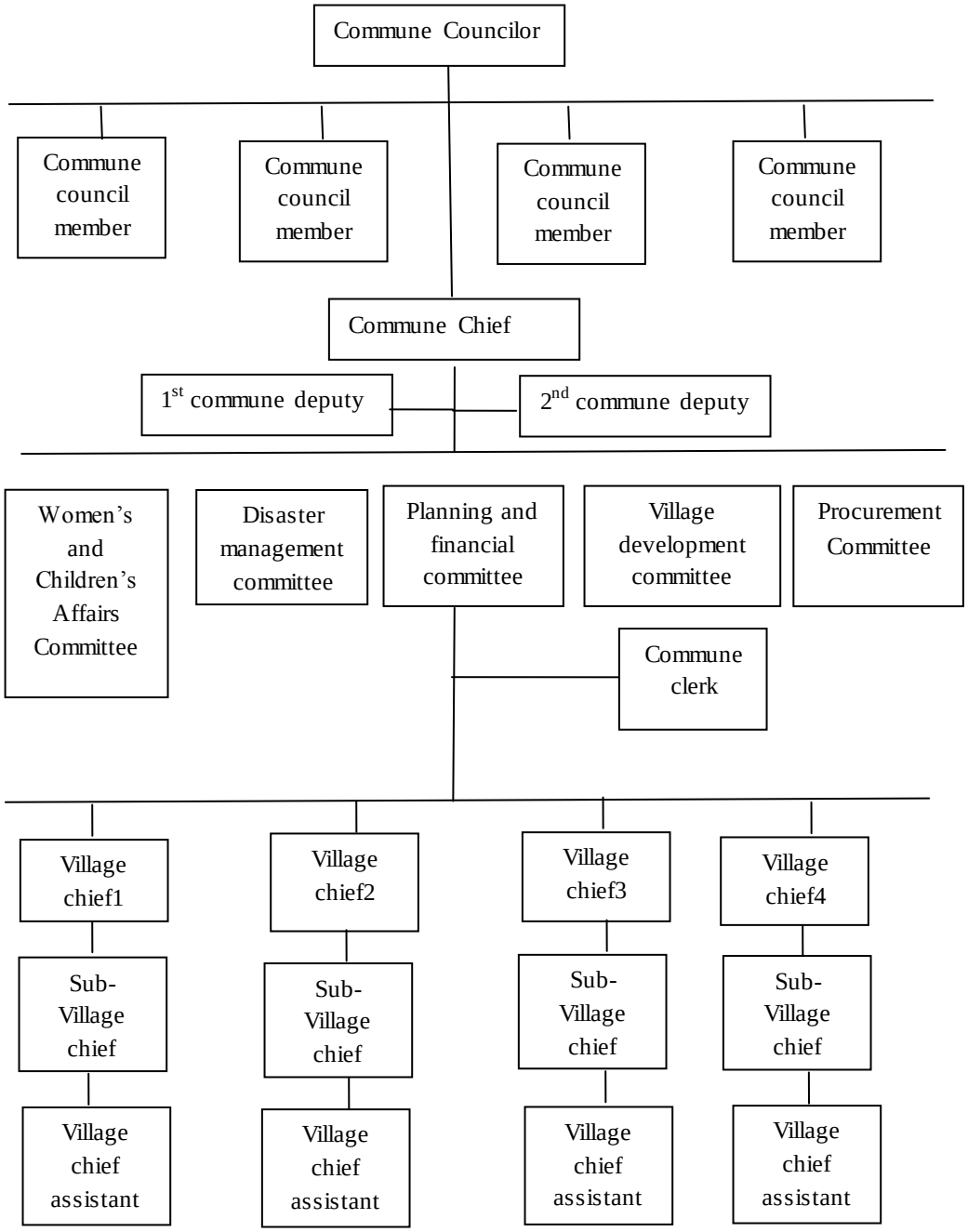

Figure 3.3 Administrative Structure of Commune Council in TKK, 3rd Mandate, 2012.

One observed example of an emerging hybrid governance system was the interactions among the CPA, the commune authorities, and a private business owner as they cooperated to establish a tourism site in Tachat under the authority of a CPA. At the time of data collection, the process was under negotiation and appeared to be structured in a top-down hierarchy with only higher level authorities and the owner of the tourism site taking part in the decision process. During the process of negotiation, it was

observed that the process was governed by the interplay and relationship between knowledge and power. This created new natural resource governance strategies to regulate local people's behaviors which likely benefited the wealthy more than the entire community. The author attributed these unintended consequences to investors who invested more capital expecting to receive more benefit in return for their larger investment. This resulted in a paradigm in which actors had dual intentions related to individual self-interest coupled with the larger goal of natural resource conservation and protection. Local people appeared pleased with the prospect of having a tourism site in their area because they had seen how this can lead to improved road conditions, introduction of electrification, and hope for more prosperity in villages. In fact, the introduction of electric power and other improvements to the local infrastructure was already occurring in order to meet the expectations of tourists.

3.6 Perceptions of CPA and Non-CPA Members on Tourism

This section describes eco-tourism's role in conservation; emerging tourism in protected areas; analysis of the perceptions of local people and CPA people; and includes participant observations.

Eco-tourism is increasingly seen as a tool for natural resource conservation and protection through community based organizations (Cater and Lowman, 1994; Young, 2003). Eco-tourism is defined by the Eco-tourism Society as travel to natural areas that reduces ecosystem impact and provides local people with financial benefits and economic opportunities while promoting conservation (Wood, 1991). Many studies have examined eco-tourism as an option to generate revenue for protected areas and residents (Wood, 1991; Cater and Lowman, 1994; Young, 2003).

In Cambodia, national state governments, especially the MoE, have recently become more vigilant in assessing the success of eco-tourism projects in national parks and protected areas to minimize ecosystem impact and to generate incentives for residents. Recently, Toul Korki began to introduce improved roadways, electrification; tourism, and a large fresh water reservoir used by local people during the dry season. A newly

constructed tourism building in Tachat village was under consideration at the local level and national level for launching the building as part of the Community Protected Area in Toul Korki. The owner of the tourism site was a higher level government official born in Koh Kong province. Toul Korki was at the time benefitting from a major investment in *Chamkar* (Fruit trees such as durian, mango, etc.). The Chamkar growing enterprise was owned by Okha, a wealthy individual who also enjoyed a business relationship with the owner of the local tourism site. Although Okha had already invested in Chamkar growing, he was interested in tourism and it was reasonable to expect that mutual cooperation between Okha and the tourism site owner would likely yield financial success and become a boon to tourism development in the area. It was observed that local and outside people were working for *Okha* and that these workers were paid wages for both reservoir construction as well as *Chamkar* work. Moreover, in Toul Korki an organization (WCS) was building a conservation office on 10 ha. of land, costing $70,000USD, and planned to dig tortoise and crocodile ponds, hire local people to protect and conserve wildlife. Combining conservation and tourism development in TKK was returning more than solely conservation benefits and expansion was focused on industrial tourism, both in mountainous areas (upland) and mangrove sites (low land). The linking of these two enterprises was deemed important to conservation efforts in the area because it would offer alternative ways for local people to generate income without engaging in unsustainable activities, and would attract eco-tourism investment which could yield environmentally sustainable growth while also meeting conservation goals.

The response from residents and the CPA toward tourism in TKK showed positive expectations.

> "I am very happy to see my village has tourism, good roads, and electricity. If has no support from the tourism owner, we might have no good road like this. Now there is running electricity to our village, we are very happy. There will be more tourists come here, our village will be not quiet and villagers will have more job opportunities through tourism services" (a middle man who lives on the land of his son who is married and works in Thailand, December, 2015).

Local people in TKK appeared to be very happy to have good roads and electrification in their village and seemed to link these improvements to the efforts of the tourism site owner to promote tourism in Tachat. They anticipated new job opportunities as a result of tourism related business in the village and expressed positive views that the village would no longer be "so quiet". Other local people made the comparison between their present village conditions and what some recalled to have existed 20 years prior when they had no road access. They recalled a time when they travelled to KK town by boat. Some of the residents stated that they did not have motorbikes because they preferred going to KK town by fast-boat. Other reasons given for not having a motorbike included that of the village chief in Koh Chak who did not choose to buy a motorbike for her daughter to commute to school due to the remoteness of the area which caused her concern for her daughter's security. Instead, her husband accompanied his daughter on weekends to study for her bachelor's degree in administration.

> "We have been invited by the owner of tourism to discuss on ticket selling, selling local products (sea food, chicken, vegetables, fruit, water melon), benefit sharing related to how much percent go to commune development fund and conservation activities. Moreover, the local people will have more job opportunities and the mangrove cutting will be decreased" (a focus grouped discussion from CPA committee members, November, 2015.)

Benefit sharing was planned under the aegis of a tourism business owned by a higher government official. State and local authorities, as well as the CPA chief seemed to have positive perceptions toward the tourism project owned by this elite person. State and local authorities, the CPA chief, as well as CPA members were invited by the owner of the tourism project to discuss benefit sharing through ticket selling and selling local goods.

It was difficult to determine if this hybrid governance system would be truly effective in promoting mangrove conservation and protection. Although, if mangrove areas were to decline the obvious conclusion would be that measures were not effective. The actions and efforts of the CPA still relied on third-party sources of financial support for CPA project creation and management. The internal leadership in the Toul Korki CPA was poor. The willingness of residents and SNAs to be actively involved in natural

conservation was based on financial extrinsic incentives earned working at ongoing projects, rewards which were invariably only forthcoming while the project was being created and built. However, as a remedy and to create longer term income generating opportunities the CPA planned to establish its own eco-tourism enterprise which would require that conservation and protection be a fundamental objective. The CPA had learned by observing the success of a neighboring community that the neighboring community had successfully developed its site with support from NGOs, and that they had been able to successfully derive income which benefitted the entire community. It was believed that valuable lessons could be learned from their neighbors which would help TKK to effectively plan and design an eco-tourism operation that would generate income for their own community.

3.7 Conclusion

Inclusive natural resource governance at the decentralized local level employing community protected area development can enable multiple actors to engage and interact, and result in positive outcomes including minimized mangrove cutting. Local level management can initiate innovative strategies to gain CPA recognition for eco-tourism enterprises which provide improved local livelihoods. The author argues that sub-national authorities, community protected areas, and emerging tourism enterprises, encouraged by external assistance from projects in the CPA, can combine to form effective hybrid governance system for mangrove conservation and protection in Toul Korki, Peam Krasaop Wildlife Sanctuary. This hybrid governance system is bottom-up in language but top-down in practice. The following chapter will illustrate negotiating livelihoods through one CPA example. It will address the processes of gaining rights to access, use and manage mangrove forests, as well as taking control, empowerment, and benefit sharing, both inside the CPA and outside the CPA boundaries.

CHAPTER 4

Negotiating Livelihoods through a Community Protected Area

In this chapter the author further examines the hybrid governance system and links topics introduced in chapter three, including relationships among local state and non-state actors engaged within an inclusive mangrove conservation structure of the Community Protected Area development in Toul Korki. The involved actors originate from within and without the CPA's boundaries; each had unique negotiating strategies driven by different goals, agendas and interagency relationships. The Toul Korki CPA development project, although recognized and acknowledged by the Ministry of Environment (MoE), still awaited pending legal and structural agreements. Ongoing negotiations proceeded locally and outside TKK to satisfy the concerns of CPA people, local authorities, the owner of a tourism enterprise, and national government agencies. These TKK-CPA development related agreements concerned social, economic, and legal aspects of eco-tourism site management and recognition.

Negotiating livelihoods as applied in the author's research refers to the process of negotiating access to natural resources (Bebbington et al, 2001). Previously stated in chapter three, negotiating livelihoods in the context of this TKK-CPA study assumes various forms and includes multiple actors engaged at different levels motivated by demands for information and resources. Each actor, including NGOs and community projects, employed unique strategies to negotiate individual objectives. Negotiations involved local authorities and diverse actors functioning both cooperatively and in competition to further both individual and common interests. Motivating factors which encouraged communities to engage in conservation included a desire to preserve traditional low environmental impact practices, the need to implement adaptive responses to degraded or declining critical resources, incentives related to project funding opportunities, coercion and force, and the wish to secure additional rights

(Agrawal and Gibson, 1999). The TKK-CPA acquired land through the CPA development process, relying on governmental supervision to conserve and manage access to natural resources, and facilitate cooperation with other projects and actors to achieve diversification of livelihoods. The general overarching purpose of these negotiations among local authorities, villagers and key dominant agencies was to obtain recognition from the MoE.

Communities in Cambodia can be classified in two categories. The first type *organic community* refers to a community where indigenous associations and committees have long existed and are collectively initiated by residents. The second type *mandated community* refers to a community where associations are initiated by governmental regulations and policies taking the form of co-management systems, examples of which are the CBNRM, CFi, CF, and the CPA, viewed as top-down and state/donor driven (Kim and Ann, 2005 and Meng, 2008, fieldwork, 2015). The concept of "community" can be characterized using more than one definition, including community as small spatial unit in which people occupy a specific locality or territory; community as homogeneity in which people reside in one location and share the same religion and beliefs, as well as engage in similar resource sharing and occupations; community as common interests and shared norms in which the community itself becomes an institution for organizing collective action to enforce shared norms (Agrawal and Gibson, 2001).

Community members tend to be defined by diversity of livelihood, wealth, political influence, and ethnicity. These differences can give enlargement to different sets of morals and benefits, and create ranking of interactions, association, and engagement (Agrawal and Gibson, 1999). According to Ferrari (2003), a community is a human group sharing a territory, involved in different but related aspects of livelihood such as managing natural resources, producing knowledge and culture, and developing productive technologies and practices. The TKK-CPA is a mandated community characterized by involvement of the national government, local authorities, villagers, and projects, combined with governing rules and regulations both stipulated in PA Law

2008 and created by the TKK-CPA itself. However, a mandated community by its nature lacks the flexibility and inclusion which a CPA development requires to succeed. The CPA development in Cambodia is similar in function to Vandergeest's CBNRM. Vandergeest (2006) identified CBNRM communities as trans-local [1] networks communicating with the local network or community, and having collective actors in a non-local network. In this paradigm strengthening of the relationships with states and markets is partially achieved through such networking interactions and not outside them. In this sense, CPA developments represent a means of increasing community participation in the NRM at the local level. The CPA in TKK is viewed as a good mechanism which failed in practice due to insufficient long term collective action. While CPA development efforts have sometimes been perceived as approaching true collective action, yet any collective support is generally too short term to ensure the CPA community is provided with necessary skills and strong internal leadership necessary to generate its own income.

Vandergeest (2006) and Berkes (2009) showed that communities can become self-willing actors (right-bearing agents) in the process of development rather than simply trustees of agencies (bringing together specialists in a variety of fields all sharing expertise to advance the voice of the community) that act on their behalf. And indeed, self-willing actors in TKK were strong during the beginning phase of the CPA development process, due to the recognition by key local people that natural resources were in decline. This understanding motivated community decision makers to contribute ideas and strategies to create the type of CPA development which could effectively prevent illegal cutting of mangroves. The key people in the community understood the connections between healthy mangrove growth, the resulting ecosystem services which mangroves provide, and the final derived benefit to their livelihoods including natural disaster mitigation. They had observed that, through CPA development, a neighboring community in PKWS was able to generate income from eco-tourism services. Although

[1] Trans-local refers to institutions or networks stretching outside the localities in which these institutions are working with no external prior links to these localities (Vandergeest, 2006).

the TKK-CPA had not yet generated income from eco-tourism, the success of their TKKS neighbors became a similar goal for the TKK-CPA.

This chapter is divided into four sections: 1) characteristics of communities in PKWS; 2) engagement of state and non-state actors as forms for taking over control, empowerment, and benefit sharing; 3) regulations and rules of the community protected area on paper and in practice; and 4) diversification of livelihood activities. In the following sections, the author argues that livelihoods are negotiated through a process of CPA development in which beneficial outcomes include gaining rights to access, use and manage mangrove forests, taking over control, empowerment and benefit sharing.

Power is achieving of legitimacy through the application of institutions. Third parties can successfully use projects (e.g. MFF/DKC) to empower local state authorities and the CPA by increasing awareness of natural resource benefits, revealing the consequences of mangrove forest decline, instituting regulations and rules, and organizing training and exchange programs for key leaders. But the internal leadership of the TKK-CPA development was inadequate and required stronger internal empowerment of its members. Benefit sharing in the TKK-CPA was also unequal, and this resulted in imperfect financial support distribution, as well as diminished rights to both access and manage natural resources. Examples of this inequality and poorly qualified leadership could be observed in communities inside and outside the CPA by assessing the engagement of state and non-state actors, the ways laws work on paper and in practice, and by evaluating achieved livelihood benefits.

4.1 Characteristics of Communities in PKWS

This section presents a comparison between the Community Based Natural Resource Management (CBNRM) concept and the observed management practices at the Community Protected Area (CPA) in Toul Korki, concerning natural resource management, claiming and exercising property rights, transforming power relations, equality, participation of sub-national authorities, and rules and regulations of the CPA.

CBNRM is a structure for managing resources through property rights (Vandergeest, 2006, Jentoft, 2007) which is initiated by creating projects that are characterized by formal management planning, wealth ranking and gender analysis. Formal management plans serve to emphasize the importance of local participatory processes that involve communities which are driven by local priorities. Such participatory management schemes are implemented across Asia today, examples being forest management in the Philippines, Bhutan, Cambodia, Vietnam and China; water supply management for irrigation and household use in China and Bhutan; and protection of grazing lands in Mongolia. Although these early CBNRM cases were not formally recognized, some resource management plans do receive governmental recognition with formal legitimacy in the realm of community resource rights in countries such as Cambodia, Mongolia and the Philippines. Moreover, geography and power relations among diverse actors play a decisive role in obtaining recognition and legitimacy.

The Community Protected Area in Toul Korki qualifies as a resource management (CBNRM) example specific to mangrove forest conservation in PKWS. There the CPA development was established in 1997 with a system of management similar to the CBNRM and was supported by the IDRC through a PMCR project. CPA committees were elected to create a management plan according to existing rules and regulations of Protected Area Law 2008. And in 2011, the CPA created zoning with clear boundaries for PKWS (see chapter 3). Within these zones, Tachat (conservation zone), Toul Korki Krom, Koh Chak, and Tachat villages (community zone), the villagers had not yet been granted land titles. It can be seen from the CPA development process in PKWS that this development structure is a mechanism for resource management which involves both relevant state agencies across all levels and combines external support from projects. In addition, within the TKK-CPA development area an emerging tourism site enterprise owned by a local elite was created on both private and state land controlled by higher level actors. The author observed that the land on which the tourism site was situated should reasonably be considered state land due to its close proximity to the mangrove forest area, and this interpretation was further confirmed by a survey showing that the tourism site physically cut directly into the mangrove forest. This circumstance clearly underscores the unintended consequence whereby a CPA development can enable the

strengthening of state control, and demonstrates capture of interests by an elite. However, it is also often the case that wealthy landowners and other elite understandably see subsistence villagers as destroyers of the forest and surrounding natural resources, which has provided the motivation for local elite in TKK to include provisioning for subsistence livelihoods as an integral part of ecotourism planning for the TKK-CPA development. Providing ecotourism job opportunities to villagers can reduce the need for mangrove cutting as well as minimize villager impact on other natural resources in the area. In reality, the required preliminary marketing and planning for the ecotourism area had not reached a sufficient level, causing the tourism enterprise owner to lose momentum and to divert his efforts toward continuing the development of a different section of land with a water fall that he considered the best location for tourists.

CBNRM is a process of claiming and exercising property rights by creating collective or common property management strategies designed to exclude others while preserving distribution rights, obligations and benefits for the intended beneficiaries (Vandergeest, 2006, Jentoft, 2007). Property rights require both legitimacy and enforcement, and consequently successful community-based property claims must reliably exclude neighboring communities and other more powerful penitential claimants including loggers, palm oil companies and the military. In reality, the TKK-CPA does not legally or otherwise enjoy the means to exclude the aforementioned potential competitors, and all Cambodian citizens can access natural resources according to the rules and regulations stated in the PA Law of 2008. Nonetheless, local villagers in TKK shared kinship with elite local people, and newcomers to TKK were usually members of the military that would be unlikely to compete for available natural resources. Beyond these enforceable rights, the status quo of recognized customary crabbing, fishing and shrimping areas tended to restrict intrusion from outsiders into areas which were considered local natural resource sites traditionally reserved for use by TKK villagers.

The desired and needed participation of local authorities, local people, and forest users inside and outside the CPA remained limited by the perception among these interest

groups that their cooperation would not produce sufficient reward in return. Land and mangrove forest was considered common property allocated to the TKK-CPA by the Ministry of the Environment to manage and benefit the entire CPA development community. Poorer households continued to cut mangrove forest for charcoal production selling both wood and charcoal to the local village market while taking turns to avoid arrest by the DoE, a strategy which was negotiated among themselves in the villages. In reality, the author observed some households engaging in mangrove cutting for charcoal production were not relatively poor, and had already been singled out by the CPA to discontinue this illegal behavior. The CPA had instituted a policy whereby households which discontinued mangrove cutting could instead work to patrol local mangrove forests to enforce the exclusion of unwelcome outsiders, yet in reality the benefits did not get paid and the villagers returned to cutting mangroves to support their livelihoods. The author observed that the CPA seemed captured by key local actors who were using the development to benefit their own projects and private tourism enterprises. Those who were not receiving expected benefits began to feel the CPA was not necessary and that it was a "waste of their time" to attend meetings and training sessions. Moreover, during the meetings and training sessions the author observed disgruntled talk in reaction to the rules and regulations being implemented by the CPA, as well as complaints by villagers to outsiders regarding the cutting of mangroves by residents of neighboring CPAs who cut mangroves while engaging in fishing and crabbing at night.

CBNRM has been proposed as an approach though which transformation of power relations and reduced inequality can take place (Vandergeest, 2006). Vandergeest argued that not only does CBNRM often fail to recognize inequality and differences within a community, but the concept can give rise to project based interventions which in practice increase these inequalities. An illustrative example of this effect was the (MFF and DKC) projects which engaged multiple actors at various levels in PKWS for the purpose of establishing projects within the TKK-CPA. The goals of the DKC project were to: 1) encourage community-wide use of sustainable alternative energy sources to reduce the conversion of mangroves to meet the villagers' energy demand; 2) encourage use of firewood saving stoves, coal and bio-gas digesters that could annually reduce the

cutting of mangroves by 242.28 tons (DKC, 2015). And the beneficial goals of the MFF effort were to: 1) increase awareness and knowledge within the community about the value of mangrove forests, including forest related biodiversity and ecosystems which directly improved local livelihoods; 2) protect the condition of 520 ha. of existing mangrove forest area and restore to health 10 ha. of degraded mangrove forest area to increase fisheries and marine biodiversity, and improve the area as a more effective carbon sink. These two IUCN sponsored projects alone provided subsistence livelihoods (chicken raising and crop cultivation), mangrove forest plantation enhancement, and alternative technologies such as wood saving stoves and a bio-gas digester to the TKK-CPA development. Yet despite these goals, inequities within the CPA development were observed.

The inequities within the CPA development relating to MFF and DKC projects were apparent as some wealthier households received project support for chicken raising, crop cultivation, installation of wood saving stoves, and bio-gas generation, while poorer households received only wages related to working with mangrove forest seedlings. Some households receive no assistance from projects due to inability to follow project-stipulated chicken raising and crop cultivation techniques, or as a result of fresh water constraints, or because they did not raise animals suitable for bio-gas generation. The author attributed these consequences to less than adequate project support as well as concern among some local households they would be unable to follow newer methods of chicken raising by keeping chickens in clean cages. It was observed that project support benefited only a few of the households having families that were qualified to take advantage of the proffered support. There is evidence that intra-community differences can be crucial for CBNRM success and involve land-use systems/land use transaction (market-customary law versus statutory law) and sociopolitical relations (Vandergeest, 2006). Such differences result from government policies in Cambodia which impact distinct groups in different ways, especially indigenous people that may possess limited knowledge or the capacity to benefit from support offered by government policies, most notably in the important cash crop agricultural sector which additionally relies on marketing skills or experience.

The CBNRM structure is capable of creating a voice for local villagers (Vandergeest, 2006). Projects can provide a collective[2] and effective voice with which to influence government policy and practice. The TKK-CPA was initiated by the PMCR-MoE project, a group of researchers working for the national government and agencies in Koh Kong, to make the community's voice heard by national policy makers as the community demanded CPA collective rights to access, manage and use community forests as well as mangrove forests. The PMCR project also successfully assisted development in PKWS-CPAs empowering them to generate income through activities such as ticket sales for eco-tourism services. Vandergeest (2006) suggested that the voice created through community project intervention did not derive solely from within the community, but was a product of interaction between community and external actors.

The TKK-CPA is a sub-national authority (SNA) linking the state and village. In turn, the CPA projects capture grassroots actors willing to participate in long-term strategies which encourage the involvement of local residents in mangrove forest conservation and protection. This grassroots participation is important because project leadership is often committed to supporting more than one CPA, resulting in diversion of project effort to other communities. Some respondents in TKK stated that there were "plenty" of conservation projects aligned with forestry communities, yet project presence was not readily apparent due to community inactivity which was itself attributed to insufficient participation. This occurred when local communities remained active and involved only while the project work was ongoing, at a time when benefits could be derived from working for the project. However, upon completion of the project's building or active phase, community members felt "let down" when they received little or no benefits and disengaged from the project. And this seemed to explain why some forestry community efforts disappeared subsequent to discontinuation of work by community members or leaders. In a similar example of discouragement among leadership and community members, the author learned that the TKK-CPA chief nearly relinquished his position of authority as chief when he realized that he could not

[2] Collective concept refers to 'voluntary action taken by a group to achieve common interests', key community representatives speak on behalf of their members to other actors (Vandergeest, 2006)

improve CPA work performance, and that mangrove cutting continued despite his best efforts causing him to become further disheartened with his own leadership performance. Although he was able to maintain his strong belief in income generation through eco-tourism development, yet the chief simultaneously felt alone and powerless to act without first discussing with his CPA members to obtain contributions of money from their personal funds as stipulated in the CPA regulations and rules. He therefore unsurprisingly seemed reluctant to hold a meeting with members, realizing that members would not join due to lack of money to buy snacks or financing to support the community meeting in the same way other neighboring projects had done. The TKK-CPA did not exhibit strong collective action and appeared to be an entity in name only, with real and meaningful interactions taking place among CPA actors that operated outside the CPA as they pursued their independent interests (discussed in chapter 3). Some CPA members reported that attendance at meetings provided them a feeling of being in control of their actions empowering them to discontinue cutting mangroves, and other members who did not attend meetings continued to cut from mangrove forests.

Vandergeest (2006) found that CBNRM communities can easily transform into those which possess other types of collective action such as marketing collectives, service provisioning communities, political action communities empowered to demand citizenship rights, and others. Additionally, actors were able to coopt a CPA development to gain advantage in various forms, as appeared to have happened in the case of the TKK tourism site enterprise, whose owner was a member of the local elite, and who proceeded to promote his tourism enterprise as an eco-tourism project under the name of the TKK-CPA development. Similarly, the author observed that the Wildlife Conservation Society (WCS) was building its own center on 10 ha. of land in TKK for the purpose of raising tortoise and crocodile, and planned to hire local people to manage the farm. On 13 September 2016, WCS released 206 Royal turtles into the new raising pond located in Toul Korki and the WCS director expected that the center would become a tourism site (Radio Free Asia, 2016; Radio Australia, 2016). Although it was not the author's original intent to disclose what she had observed regarding WCS operations, however WCS activities were also focused on wildlife conservation in cooperation with the FiA which was located in TKK as part of the CPA development

there. This allowed the author an overall perspective on the TKK area relevant to actors and their roles. The author learned that WCS bought the 10 ha. of land through a Khmer representative, possibly in order to circumvent restrictions and gain authority to purchase the land. The 10 ha. of land was classified as a private protected area to ensure both conservation and local livelihood related efforts, and to demonstrate more accountability and reduce state jurisdiction or influence in the environmental sector. As a result of these and similar observations, the author questioned whether or not such enterprises genuinely benefited the entire CPA as a whole, especially the poorer households.

The attributes of the CBNRM structure in Cambodia as reported in previous studies of communities in Asia as well as the CPA development in TKK resemble the characteristics of a co-management approach (Diepart, 2015; Kim et al., 2015). The CBNRM in Cambodia is an effort by the state and communities to share power and responsibility for sustainable management of natural resources. Berkes (2009) provided a definition of co-management which included arrangements having recognizable degrees of power sharing for joint decision-making by the state and communities (user groups) with regard to resources or arena. Co-management cannot both remove conflict of interest that exists between diverse stakeholders and also eliminate "power games" played by stakeholders (Jentoft, 2007). Berkes (2009) combined the concepts of co-management and adaptive management into one of adaptive co-management which he judged to be a more effective natural resource management strategy. He identified and classified differences and similarities into three approaches: 1) co-management primary which referred to vertical institutional linkages that are short to medium term and which exist at the local community and government levels to provide a capacity building benefit to resource users and communities; 2) adaptive management which combines both science and management linkages to yield learning by doing, is medium to long term, and characterized by multiple cycles of learning and adaptation, with focus on managerial needs and relationships, and offers capacity building benefits to resource managers and decision makers; and 3) adaptive co-management which combines both horizontal and vertical linkages yielding joint learning-by-doing, is medium to long term, is characterized by multiple cycles of learning and adaptation, is multi-level with

self-organized networks, and provides a capacity building focus on the needs and relationships of all partners.

The CPA development in TKK should be viewed as an arrangement for sharing power and responsibility between the MoE and local residents which enhances mangrove forest conservation and protection effectiveness as well as improves the livelihoods of the people in the community. The TKK-CPA development is a functional co-management structure governed by national and local rules and regulations (CPA and PA Law of 2008), supported by different players having common goals. CPA member response seemed to indicate a mistrust of the CPA chief's leadership and a perception among members that they were not an important part of the CPA, nor did they appear to engage in collective action or social learning opportunities. In fact, villagers understood the meaning of collective action and demonstrated mutual support during ceremonies at a pagoda preparing a meal of fruit, dessert, and other food. Similarly, they cooperated to clean a road leading to a pagoda and cleaned grass from around the village temple. However, concerning inequality of benefit sharing and group politics, they experienced conflict at the pagoda as well. For example, a conflict occurred between monks and the *Achar* (an elder man residing in the pagoda responsible for pagoda management) during which an argument ensued concerning finances. A villager residing near the pagoda stated that the confrontation occurred following a disagreement relating to political issues.

The newly established TKK-CPA had been undergoing a preliminary process of sharing management rights and responsibility among members at the time of the author's research. Some CPA committees did not fully understand their roles and responsibilities and did not often hold meetings among themselves to discuss what roles and responsibilities each member should have within the CPA. Problem solving in the TKK community was related to mangrove forest conservation and protection. The TKK-CPA was tasked with reporting illegal activities involving mangrove forest cutting to PA rangers (PKWS), and those who were caught illegally cutting were fined in accordance with phase one of the rules and regulations of the CPA as well as PA law 2008. These regulations required three levels of fines for illegal activities, and households cutting

mangrove were usually given a first level fine and thumb printed. Local elites were overrepresented among those who engaged in TKK resource management decision process meetings, and the poorer residents remained at home or were busy with activities to support their livelihoods. And it was understood by the author that overrepresentation of elites had not produced better livelihoods for local people. Instead, it was observed that user participation and problem solving at the lowest community level of organization was not appropriate to meet the basic needs of community residents. For example, some households had no titled land ownership, although landlessness was regarded by local authorities as being caused by people themselves who had sold their land, migrated for a period of time and then returned to village life, only to claim that their land had been grabbed by others. It was the author's view that such situations were basically power issue related in which authorities could state "anything" without accountability, and that poorer community members were perceived by some local authorities as "always engaging in lying".

4.2 The Engagement of State and Non-State Actors as Forms of Taking over Control, Empowerment, and Benefit Sharing

Individual community members each are imbued with power and diverse knowledge which can be combined to attain individual and collective goals (Mohan and Stokke, 2000). This collective action relies on social capital[3], social support[4], collective and self-efficiency[5], and community leadership[6] (Meng, 2008). Power is created by applying legitimacy through institutions. Power exists in different forms including the power to

[3] Trust in community ladders, ability, willingness to pitch together, network with neighborhood association among neighbor, trust in neighbor, sense of community ownership, collaboration with government, collaboration with CSOs (Meng, 2008).
[4] Family and community support.
[5] Careers, skills development, group benefits and success, importance of personal influence, group unity, improved of quality of life.
[6] Leadership's honesty, accountability and transparency, understanding residential difficulties, residents' understanding of goals and mission, leadership relations with resident, fairness, sharing information, motivating resident, holding meeting, responsiveness, coordination, commitment, external network, community-CSOs partnership and ability to lead.

decide[7], enforce[8], and implement management systems. Power can also be disruptive and corruptive, and power can be used to block management initiatives or to compel management to serve special interests, creating inequity and injustice (Jentoft, 2007).

Actors within the CPA had both common and individual agendas and operated on multiple levels according to capacity, knowledge, and rank. The partially formed Sub National Authorities (SNAs) at all levels of the CPA (discussed in chapter 3) held monthly discussions at the commune office relating to CPA work. Monthly and quarterly meetings were also held by each village chief in TKK's four village commune offices to discuss mangrove forest cutting, patrol activities and project support. SNAs combined with the CPA to become powerful actors at the commune level. They constituted the principal local actors influencing both external and internal communication and acted as facilitators for projects and villagers. Some projects which overlooked the involvement of SNAs failed to effect sustainable benefits at the local level after completion, and due to this realization some projects began to enlist SNA support.

In the view of one deputy chief of the DoE in KK, projects, NGOs and state agencies need to identify suitable target areas to implement their agendas.

> "The criteria of projects/NGOs always want to know whether each community has supported laws/regulations and has been recognized by state agencies or not, aim to support local villagers and they can help themselves, easy for community people to find other support from projects/NGOs. Thus, we can also help local people to prepare some documents related regulations/rules for CPA development and to be recognized by the MoE" (a deputy chief of DoE in KK, October, 2015.)

[7] Power to decide what to do and where to go, including making things stay as they are and say no.The power of stakeholders to decide for themselves whether to resist or yield to state power(Jentoft, 2007).

[8] Power to enforce law, regulations, rules under legal framework of institutions of each country.

Generally, projects and NGOs wanted to know whether the community or CPA had means of legal support or was officially recognized by the government, and each had need to identify key major issues and target areas. Once a need was identified, and with participation from projects and NGOs, the CPA development provided a first step to enable local people to attain ownership, rights in the community, and the right to access and manage their natural resources. Similarly, the right to ownership became a motivating force to encourage participation in CPA activities, and it was observed that after TKK-CPA members understood their ownership of mangrove areas participation in mangrove conservation increased. Early 2015, two projects (MFF and DKC) gained IUCN approval to operate in the TKK-CPA. The Development Khmer Center (DKC) project implementation period lasted from March 2015 to February 2016 as a cooperative effort with stakeholders including: 1) department of agriculture, forestry and fishery; 2) department of environment; 3) PKWS; and 4) CPA committees in TKK. Stakeholders provided advice and proposal support to the project which had the goal of communicating knowledge of the potential of wood saving stoves and bio-gas use to local people in TKK. Additionally, after facilitating and implementing the project, stakeholders participated by helping to evaluate and solve unanticipated issues. Table 4.1 shows fund distribution for the DKC project among the above aforementioned stakeholders. As can be noted from this financial data, the dollar amount of funds reserved for the project is relatively small which resulted in complaints from some villagers involved in the project.

Table 4.1 Fund distribution among stakeholders of the KDC project

Total amount (one year project)	**Fund distribution among stakeholders**		
	MFF	DKC	Other institutions
133, 774,000.00 riels ($33,443.5USD) 100%	99,459,000.00 riels ($24,864.75USD) 74.35%	5,800,000.00 riels ($1,450USD) 4.34%	28,515,000.00 riels ($7,128.75USD) 21.31%

Source: DKC, 2015

Table 4.2 shows 20 households in the four TKK villages selected by the DKC project for crop cultivation and chicken raising based on their interests and existing resources in each household. Households having only chickens would receive 25$ to construct a cage with chicken net. Households having no chickens would receive 25$ to purchase chickens.

Table 4.2 Direct distribution of funds to households in TKK

DKC project support for crop cultivation and chicken raising in TKK				
Total DKC funds	Type	Households	Support	Total
$ 1,450.00	Crop cultivation	20	$ 25.00	$ 500.00
	Chicken raising	20	$ 25.00	$ 500.00
	Total expenditure			$ 1,000.00
	Balance			$450

The Mangrove for the Future (MFF) project implementation period in TKK lasted from March 2015 to February 2016 with four involved stakeholders: 1) the Department of Environmental Education of MoE provided suggestions for production/printing of materials/tools for education and regarding relevant law in the media; 2) Department of Environment in KK; 3) PKWS; and 4) The Commune Council in TKK (CPA in TKK), (Some villagers referred to this project as *Angka Kong Kang* (Mangrove organization)). Stakeholders offered advice on preparing project proposals, and supported and cooperated with the project to promote understanding among local people of PA Law of 2008, and other relevant rules and regulations (institutions) for environmental protection in the coastal areas. Stakeholders also participated and coordinated to help resolve issues while monitoring and evaluating the project.

Table 4.3 shows outgoing MFF fund distribution among stakeholders. Each project required stakeholders to support their projects which included both responsibility and benefit sharing among themselves and the TKK-CPA which was also involved in the projects. These stakeholders were viewed as actors in an adaptive co-management arrangement to share power, responsibility and benefit sharing across both horizontal and vertical levels of organization.

Table 4.3 Fund distribution among stakeholders of MFF

Total amount (one year project)	**Fund distribution among stakeholders**		
	MFF	CPA in TKK	DoE in KK
135,652,000.00 ($33,913USD) 100%	99,727,000.00 ($24,931.75USD) 74%	26,790,000.00 ($6,697.5USD) 19%	9,045,000.00 ($2,261.25USD) 7%

Source: CPA in TKK, 2015

Figure 4.1, page 89, shows some parts of existing mangrove degradation starting to re-grow by itself after road construction was finished in 2014. The village chief in Tachat stated that this mangrove degradation would be replanted this year (2016), supported by an MFF project. Mangrove seedlings have been provided already, and plantation will begin when lower tidal conditions prevail.

Figure 4.1 Mangroves degradation in Tachat village, fieldwork, November, 2015

Non-poor households which were able to afford a bio-digester were required to pay 600,000 riels (150$) to the CPA to obtain a bio-digester. Two households in TKK had a bio-digester.

Figure 4.2 Bio-digester building in Toul Korki, facebook: Vanny Lou, April, 2016.

The CPA chief planned to make wood saving stoves available to the community by selling the stoves in the local villages and markets, and would himself profit from these sales, although the related stove data was not yet available.

Figure 4.3 Wood-saving stoves in Toul Korki, facebook: Vanny Lou, April, 2016.

Table 4.4 shows TKK-CPA household fund distribution for planting of mangrove seedlings on 10 ha. of degraded mangrove land, requiring approximately 60,000 mangrove seedlings, and lists the cost of labor paid to households for planting. The author learned that poorer households could earn more income from mangrove planting than was possible working at other activities even with relatively low wages paid for seedling planting labor. A laborer was paid 0.05$ per mangrove seedling to pick up from the supplier and plant. Seedling planters worked in groups of 12 with several groups originating from each village in TKK. A local landless Tachat villager reported she planted 200-300 mangrove seedlings and was paid by the Tachat village chief 200 riels (0.05$) per mangrove seedling planting. The most significant benefit of planting mangroves may not be environmental, but payment for local people to plant mangroves. Plantation may also increase environmental awareness. Some mangrove experts have suggested that planting mangroves is not beneficial for the environment because only single species are planted, a strategy that does not duplicate the natural mangrove forest

growth. Also, it is believed by some that the best way to protect mangroves is to ensure that hydrological conditions are not damaged by dikes or levies (Mark, 2016 and Researcher's experiences with MAP and PMCR-MoE projects).

Table 4.4 Direct fund distribution to households in TKK

CPA funds (received)	Type	Amount	Unit	Total
$ 6,697.50	Mangrove seedlings	60000	$ 0.05	$ 3,000.00
	Bio-digester	2	$ 350.00	$ 700.00
	Wood saving stove	N/A	-	-
			Total expenditure	**$ 3,700.00**
			Total balance	**$2,997.50**

Source: CPA in TKK, 2015

Power sharing often makes partnership problematic (Berkes, 2009). Some partners have less power and gain less advantage or gain nothing. In TKK, capacity building was generally provided by projects but knowledge sharing at TKK-CPA rarely happened because knowledge sharing among CPA members usually occurred informally at such places as the pagoda or the primary school while attending other events (public forum), and from person to person. These methods were flexible with regard to circumstance and occurred at the local level. This, as well as the aforesaid financial constraints affecting organization of meetings, explains why there was often little capacity building by the CPA itself.

In a study relating to power sharing (Itzaki and York, 2000), it was demonstrated that the power sharing model does not work in the CPA development structure, and that education, knowledge, resources, and responsibilities are not equally shared within the CPA. CPA projects, in the absence of NGO assistance, do not always provide significant benefit to local people due to the short time frame of project operation, lack of authority, and insufficient understanding and action. Empowerment refers to measures taken by people to increase their autonomy, democratic participation and self-determination for themselves and their community, and includes a critical understanding of their environment. Empowerment also requires a participatory democracy enabling

the voice of marginal groups to reach policy-makers (Mason and Sahay, 2002). Empowerment entails working together collaboratively and collectively through decision-making and policy making processes to achieve accountability and to obtain better knowledge, and especially to facilitate understanding of the rights and duties of local people (Friedmann, 1992; Meng, 2008).

In the CPA context, empowerment requires both external and internal actors strongly focused on the basic needs of community members. With empowerment the community can overcome challenges, secure basic needs, and determine their community's development with assistance from the government, NGOs, and donors (Mohan and Stokke, 2000). Empowerment originating with external actors cannot ensure active community involvement, as has been seen with cases involving projects of limited duration which lose community participation when the external actor withdraws from the program. Self-organization (self-willingness) is important and relies on strong leadership to empower followers to achieve common goals to provide basic needs (Friedmann and Rangan, 1993, Vandergeest, 2006; Berkes, 2009).

While it was true that both projects of the MFF and DKC provided support to the TKK-CPA, the author learned there existed unawareness among leadership regarding the perceptions of local authorities and CPA members about the amount of financial support given. Additionally, CPA members believed they did not have authority to "do what they wanted to do" and they misunderstood that projects also gained benefits from the local community. This inadequate understanding of local people constituted an important factor in the relationship, and one CPA member complained that projects hire local people but provide very little support to engage in mangrove plantation work. This CPA member was paid 200 riels (0.05$) per mangrove seedling which he considered inadequate. It was also stated that poorer local area residents do in fact understand the value of mangrove forests and know ways to manage mangrove cutting with axes to avoid decline of mangrove forest growth. A respondent who had been a commune council member stated that he would like to record all mangrove cutting for charcoal production, by household, and organize a committee to manage cutting activity ensuring sustainable use and equitable distribution among the four villages in the area. He stated

that he suggested this plan to the DoE but received feedback informing that his was not a good plan. This sounds like a good plan. The author noted there seemed to be significant tension between mangrove producers and conservers, and believes, based on studies of communities which harvested mangroves for generations, there can be sustainable use. Some respondents, especially households cutting mangrove forests, stated that if mangrove forests were not cut properly they would not grow well.

It is the author's view that when there is strong empowerment provided by support from both external and internal actors then knowledge and capacity are easily built. However, empowerment without means of income generation in the context of natural resource conservation and protection is not a good predictor of success for ensuring effective conservation and improved livelihoods for local people. Furthermore, income generation requires fairness and accountability among CPA members themselves, and to achieve a working CPA development requires careful and equitable distribution of shared benefits.

4.3 Rules and Regulations of the Community Protected Area on Paper and in Practice

Ideally, the CPA's rules and regulations would seem an acceptable and appropriate way to enable local people to gain recognition and support from the national government. In practice however, these same rules and regulations were not fixed but negotiable among actors operating within the CPA boundaries. The CPA was established with conditions and rules according to an agreement that applied to local residents. The agreement was divided into 12 short sections: 1) purpose of CPA development; 2) general provisions; 3) name and location of CPA; 4) CPA member status, either being a CPA member or no longer a CPA member; 5) structure, roles and rights; 6) meeting and decision-making; 7) natural resource management, access and use; 8) principle of detainment; 9) damage compensation; 10) benefit sharing principle; 11) financial management; and 12) ending conditions. The CPA chief signed and acknowledged that all twelve sections were accepted by the local people. The agreement was then sent to a PKWS manager to be

acknowledged and receive support. It was then sent to a commune chief in TKK before being sent to the district governor, and finally delivered to the director of the provincial department of the environment in KK.

The five main objectives for the CPA development in TKK are 1) to preserve natural resources in PKWS to ensure availability of natural resources for local community sustainable use for present and future generations; 2) to improve natural resources in PKWS and to maintain a "balance of nature"; 3) to implement Government policy for the protection and preservation of natural resources for use by local communities to reduce poverty; 4) to strengthen collaboration between local authorities, institutions, relevant national and international organizations; and 5) to improve the livelihoods of local communities through eco-tourism development.

General provisions were divided into seven sections stipulating that: 1) CPA development in TKK was established by the unity of the people living in Toul Korki Leu, Toul Korki Krom, Koh Chak and Tachat villages to serve common interests, and not serve any one person or political party, and to respect Cambodian government law; 3) information about natural resources was to be made available to the CPA, compiled with technical coordination and assistance of the PKWS provincial Department of Environment and the General Department for Administration of Nature Conservation and Protection; 4) protected areas belong to the state and are to be managed under the effective management and use of the CPA, and not shared to individuals, rented, donated or leased; 5) roadways through the community must be under the supervision of the CPA and PKWS; 6) CPA members have a duty to prevent crimes inside and outside the CPA in Toul Korki; and 7) all general provisions are to be implemented by the CPA in Toul Korki.

Table 4.5 illustrates the roles and rights of the CPA in TKK; different levels of actors including the CPA chief, CPA committees and the CPA sub-committees and members; conditions, rules and regulations, collaboration with stakeholders, problems solving; monetary contributions to the CPA, financial holdings, meetings and training related to

rules and regulations; rights to resign CPA membership; and evaluation and monitoring of CPA work.

Table 4.5 Roles and rights of CPA in TKK

Roles/rights of CPA in TKK	
Roles/rights of CPA chief	-Follows rules and regulations of CPA -Leads and works well in CPA -Has a good relationship with CPA sub-committee -Communicates rules and regulations to CPA members -Has right to warn people about engaging in illegal activities - Has right to facilitate and register proposal for becoming a CPA member -Collects on-time contributions from CPA members for CPA sub-committees -Participates in meetings and evaluation of CPA work
Roles/rights of CPA committees, CPA sub-committees, and CPA patrol groups	-Implements and coordinates to deal with all issues related to the CPA in TKK -Contact and communicate with local authorities, stakeholders, NGOs and INGOs to support CPA work in terms of financial and technical support. -Maintain close relationship with PKWS and local authorities to evaluate illegal activities related to mangrove forests cutting -Prepare CPA management plan including decision-making by CPA members -Follow the rules and conditions of the CPA and other relevant regulations and rules -Responsibly manage the finances of the CPA with high accountability -Provide information to CPA members -Write reports covering CPA activities for distribution to the PKWS director and local authorities -Evaluate and monitor CPA work

Table 4.5 (Continued)

Roles/rights of CPA in TKK	
Roles/rights of CPA members	-Help to promote the CPA to other CPA members both inside and outside the CPA concerning the rules and regulations of the CPA in TKK -Active involvement in CPA work -Help to patrol and report illegal activities to CPA committees and stakeholders in TKK -Possesses the right of access to natural resources according to the rules and regulations of the CPA -Each household must contribute 500 riels (0.12$)/month for CPA work -Active involvement in meetings with CPA committees -CPA members have the right to resign according to the rules governing the CPA.

Source: CPA in TKK, 2013

According to the regulations governing the CPA in TKK, CPA members and the community may use only *Smach* (Papyrus), *Krahnub*, *Smae*, *Brasak*, *Tabonn*, *Kong Kang* (mangrove forest), *Korkoh*, *Chak* (Palm), and mountainous wood for household consumption. Should CPA members need these varieties for house construction, they were required to submit a proposal to the CPA committees at least one week in advance of the date they planned to do cutting. Those who were not CPA members had only the right to use not more than 5 trees per year. In the event that non-members needed more than 5 trees per year, they would be required to pay 50 percent of the fair market value to the CPA committees which would be reserved for use by the CPA group. Both non-CPA members as well as outsiders had the right to collect *Brong*, vines, mushrooms, engage in fishing with traditional materials such as by rod with live or artificial bait, trap fishing, fishing with line and hook, tubular bamboo trapping for catching eels, crabbing and fishing with a net of 4 maize and up. The non-CPA members and outsiders were required to ask permission from CPA committees, local authorities, the PKWS director, and the GDANCP of the MoE if they intended to harvest green mussels, fish, crab, or engage in shrimp aquaculture in the CPA area. According to the commune chief, some households once engaged in shrimp aquaculture however spent much capital to invest in this business yet earned low income. In some cases, the enterprises

lost money or received no income. In addition, shrimp aquaculture has a negative impact on the environment including a bad smell in area.

There was no restriction imposed by the TKK-CPA to prohibit outsiders from accessing the natural resources of the CPA development area. All people who followed CPA rules and regulations were permitted access to mangrove forests and fisheries. As a result, CPA members in TKK did not consider that their membership position provided any unique advantage or authority because it seemed to them that non-members also had the same rights of access to mangrove forests but without any need to participate in mangrove forest conservation and management activities. Additionally, in what was viewed as an issue of ownership, CPA members believed that non-CPA members should participate and cooperate in activities to prevent the cutting of mangroves by outsiders from neighboring communities. CPA members also voiced the desire to effect a more privileged ownership status which would exclude those who were not CPA members from exercising the same natural resource rights as those enjoyed by members. The response from the PKWS director to this suggestion was that villagers who were not CPA members still had the same rights of access to mangrove areas as CPA members, according to the rules and regulations of PA Law of 2008. The author agrees, if they were totally excluded it could lead to conflict. This has been the case elsewhere. A representative selection of various views expressed by CPA members regarding the topics of mangrove forest cutting for household charcoal use and house building is included here:

> "When I need mangrove for cooking meal and building house, I asked a permission from CPA patrol. I know how to cut mangrove well. I use axes and I cut only a mangrove tree among three mangrove trees or two mangrove trees per clump of mangrove area. The local people who cannot go to cut mangrove, they can hire another person to cut mangroves for them" (a villager in Tachat, January, 2016).

> "I bought mangrove charcoal from an old widow man. He is poor. He has two sons and they are married. One is living in TKK Krom and another one is living in Dong Toung. He has been advised how to cut mangrove. A bag of charcoal is 150,000 riels selling for local people in TKK" (a villager in TKK Leu, January, 2016).

> "We only go to patrol and monitor mangrove forest areas during the day and we are supported by the CPA chief some money for our fast-boat petroleum is 20,000riels (5$), meal and drinking water is 5,000 riels (1.25$). Sometimes the village chief lets us to take the fast-boat without paying the money but we have to pay for fast-boat 20,000riels. We do not have enough money support to enable us going to patrol and monitor mangrove at night time. So the most mangrove cutting happened during the night time from the outsiders going to fish by using fishing net, crab trap etc. And when they went back home they cut some mangrove taking on the fast-boat to their home" (A CPA patrol, November, 2015).

These responses help to illustrate that ongoing negotiations existed among the CPA members and non-CPA members related to the amount of mangroves being cut for cooking meals and building houses. Although there already were appropriate regulations and rules for CPA members to follow, it was observed that prohibited cutting still continued for charcoal production used in daily rice and food cooking and that this was overlooked by authorities due to villager need and the fact that the families doing the cutting were poor. It was believed that the use of axes to cut mangroves minimized harm to the mangrove forest and created sustainable use. However, the author observed that the cutting of mangroves by using axes in Tachat village left the original growth of mangroves almost entirely clearcut. Those who cut wood from mangrove forests tried to make as little noise as possible to avoid being discovered and detained by patrols. The author believes that it should be noted that local charcoal production benefits everyone except the mangroves, and that the local people who shared the state of being poor were therefore willing to help each other, believing that the traditional methods they used to cut mangroves was sustainable. They may be correct. Charcoal production is not a problem if done correctly, and will not cause deforestation, although it can lead to some degradation. Smallholder-driven forest and mangrove loss is not a serious problem. Major drivers of deforestation and degradation are sand mining, hydropower, infrastructure development, industrial tree plantations, and timber extraction (Dwyer and Ingalls, 2015).

The CPA committee and CPA chief had authority to allow or prohibit CPA members or non-members cutting mangroves for charcoal production. In practice however, CPA and non-CPA members were more comfortable seeking permission from CPA patrols rather

than obtaining permission from the CPA committees and the CPA chief due to the CPA members' closer proximity to patrol groups, and due to the fact that each village patrol group was comprised of four villagers. The CPA members appeared to feel that the patrol groups were more approachable, as the patrols groups were composed of villagers, and that the CPA chief was less approachable and more likely to refuse their requests, and that approaching the CPA chief, who some of the villagers did not know, would be too time consuming. Importantly, as earlier stated it was noted that while there already existed an approved system governing 'sustainable' resource use at the CPA development, yet this system was not being followed or enforced in practice.

The author observed that the effectiveness of mangrove forest patrolling and monitoring was generally insufficient, and that patrolling occurred only during the day, causing 'leakage' whereby protecting one area led to the destruction of another less protected area. It was observed that non-CPA members were not restrained from engaging in prohibited mangrove cutting at night while simultaneously exercising their right to catch fish, shrimp or crab. This lack of sufficient patrolling of the TKK-CPA mangrove forest encouraged people from neighboring communities, where forests were strictly and effectively protected, to cut from the less supervised TKK-CPA development areas. During focus group discussion (FGD), it was observed that CPA sub-committee members seemed unaware that they were indeed part of CPA sub-committees and consequently were unable to benefit from enhanced feelings of ownership or authority to manage their mangrove areas. A teacher and husband of a CPA sub-committee member reported that often when CPA sub-committee members were invited to a meeting they would express surprise with the sudden realization that they were de facto CPA sub-committee members.

4.4 Diversification of Livelihood Activities

TKK's local people pursued various activities in different locations throughout the year to secure their livelihoods. Activities were seasonal and villagers migrated from the uplands to the lowland coastal areas to farm seasonal crops. Table 4.6 shows the main livelihoods of local people in the four villages of TKK commune, rice farming and agriculture (Chamkar).

Table 4.6 Households and main livelihoods of local people in TKK

Village Name	Households	Main Livelihoods in Village
Toul Korki Leu (upper)	75	Rice farming and upland agriculture
Toul Korki Krom (lower)	39	Rice farming and upland agriculture
Tachat (Takat-Thai name)	114	Rice farming and upland agriculture
Koh Chak (lower)	50	Rice farming and fishing

Source: TKK commune data, 2014

Figure 4.4 Rice field in Toul Korki Krom, November, 2015

Figure 4.5 Rice field, Koh Chak, December, 2015

Table 4.7 illustrates the seasonal diversity of livelihoods related activities of the local people living in TKK. In addition to profiting from these activities, the CPA promised to provide incentives for mangrove re-forestation, yet there was little support forthcoming from the projects (MFF and DKC) for livelihoods of local people.

Villagers joined the TKK-CPA with the expectation of receiving new means of livelihood secured through CPA provided income from eco-tourism development, and from donors, NGOs and other opportunities. According to the observed response from CPA members, they genuinely anticipated that they would obtain financial support from project related work and CPA sponsored activities. They expected these benefits, but did not receive them.

Table 4.7 Timeline of livelihoods activities of local people in TKK

Products in TKK	**Month**											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Dried shrimp	■	■	■	■						■	■	■
Crab	■	■	■	■	■	■	■	■	■	■	■	■
Rice	■							■	■	■	■	■
Cabbage, wax gourd, luffa gourd, pumpkin, cucumber, water melon, yard-long bean, lemon grass	■	■	■									■
Rambutan, Jack fruit, durian, Burmese grape, logan					■	■	■					
Banana and coconut	■	■	■	■	■	■	■	■	■	■	■	■
Chicken, duck	■	■	■	■	■	■					■	■
NTPs-*Sdao* (Azadirachta indica), medicinal plants, herbs	■	■	■	■	■	■					■	■
Other (mangrove cuttings for charcoal production, mangrove forest plantation)												

Source: fieldwork, December, 2015

Figure 4.6 Dried shrimp in Koh Chak, December, 2015

Figure 4.7 Crop cultivation in Toul Korki Leu, December, 2015

Figure 4.8 Mangrove cutting in Tachat village November, 2015

Figure 4.9 Mangrove seedlings in Toul Korki Krom, November, 2015

4.5 Conclusion

For the local people of the PKWS area, negotiating livelihoods solely through a CPA development concept has not proven an effective strategy to ensure the dual purpose goal of providing sustainable conservation and environmental protection while simultaneously securing and improving local livelihoods. The PKWS area is an environment where diverse actors participate to further their individual and sometimes competing projects which do not always give first priority to livelihoods of those living

in the local community. Securing local livelihoods and furthering conservation goals are often at odds. However, the CPA development has gained rights to access, use and manage the mangrove forests, and hopes to receive further support from existing and future projects while indirectly benefiting from work being done by the owner of the tourism enterprise within the CPA development. As demonstrated in this chapter, participation of state and non-state actors can be viewed in the context of taking over control, empowerment, and benefit sharing, and exists both inside and outside CPA development boundaries.

The following chapter will illustrate alternative mechanisms for mangrove forest conservation and protection in PKWS. Conservation and carbon storage initiatives being considered by both the MFF and DKC is discussed in conjunction with national policy as these pertain to climate change mitigation; and the chapter presents an analysis of perceptions of local state authorities and the CPA in TKK, as well as an introduction to some of the existing studies concerning PES and REDD+ in Cambodia.

CHAPTER 5

Possible Mechanisms for Mangrove Conservation and Environmental Governance

This chapter examines the effectiveness of local state and non-state actors impacting governance of mangrove resources relevant to conservation strategies and management. As stated in Chapter four, existing processes in the CPA development community demonstrate inadequate will and leadership among state and non-state actors to reliably support improved livelihoods for local people. The same deficiencies which negatively impact local livelihoods can similarly influence conservation and environmental governance. These performance issues involving state and non-state actors raise the question whether mangrove forest management might be enhanced through implementation of supplementary ecosystem services to reduce net emissions of greenhouse gases. In this chapter the author examines examples of "payment for ecosystem services" (PES) and Reducing Emissions from Deforestation and Forest Degradation, 'plus' Conservation (REDD+) programs being introduced in Cambodia, as well as the resulting perceptions of PES and REDD+ programs among Community Protected Area members and local authorities.

Using the discussion topic of PES and REDD+ programs in areas of Cambodia, the author held focus group interviews comprised of actors at multiple levels to qualitatively analyze perceptions of 1) CPA committee and sub-committees, CPA members, and patrol groups; and 2) key informants (four village chiefs in TKK, a commune chief in TKK, CPA chief, four households engaged in cutting mangroves, a deputy of the DoE, a CPA REDD+ network consultant member, two rangers of PKWS, and a director of PKWS) Main subtopics included conservation and livelihoods of local people, benefit sharing, management system planning in the area, and knowledge of local people about PES/REDD+.

As previously addressed in Chapters three and four, the general nature of relationships among multiple state and non-state actors evolved due to common interests and competing goals, and was observed to be neither collective nor cooperative between different levels within groups. Lack of effective management and internal leadership, as well as insufficient financial support exacerbated and contributed to poor performance. The findings in this chapter explore possible mechanisms for mangrove conservation and environmental governance. State and non-state agencies seemed to have positive perceptions of non-state market-driven (NSMD) governance systems (purposed to implement environmentally and socially responsible management practices). An example is the positive perceptions of PES and REDD+ incentive programs shared by local state and non-state agencies, although a current literature review on existing REDD+ and PES programs in Cambodia shows widespread criticism. The criticism of existing REDD+ and PES programs resulted from fear of potential capture of natural capital by state actors. Some involved non-state actors held that engagement in unwanted forest extraction by outside enterprise can rob the local community of its rightful resource use and benefits (Poffenberger, 2009; Evans et al. 2012)

5.1 Existing non-state market driven mechanisms for environmental governance in Cambodia

Management of mangrove conservation and sustainable use is an important element of environmental governance. Mangroves protect Cambodia's coastal areas from flooding and erosion while reducing greenhouse gas net emissions by acting as a natural carbon sink to capture and store atmospheric CO2. REDD+ is a major global climate change mitigation initiative which focuses on emissions reduction and enhanced removal of greenhouse gasses through repair of degraded forest areas, decreased rates of deforestation, protection of natural forests and enhancement of forest carbon stocks. Cambodia was identified as one of several countries most at risk to climate change due to the country's low adaptive capacity (Yusuf and Fransico, 2009) and high economic risk (Standard and Poor's 2014). The vulnerable groups affected by climate change are people living near coastal areas.

Voluntary carbon market opportunities in Cambodia exist mainly in Protected Areas, conservation preserves and coastal areas, and are mostly government administered at both the national and sub-national levels. In 2016, the Disney company in the United States first purchased carbon credits through a program set up in Mondulkiri, Cambodia.

> "The government, in partnership with the Wildlife Conservation Society (WCS), sold its first carbon credits to billion-dollar media giant Disney for an undisclosed amount from Keo Seima Wildlife Sanctuary in the country's northeastern province last week." (Charles, Khmer Times, July25, 2016)

This program was designed to provide an incentive which would foster better forest conservation and yield economic benefit to the local community, and resulted from the conservation vision for Cambodia communicated by the new Minister of the Ministry of Environment:

> "This first large carbon sale for Cambodia is an important part of our vision for sustainable financing of protected areas. The agreement we have signed giving almost all the revenue to forest protection and community development shows our commitment to forests and people in Cambodia." (H.E Say Samal, a Minister of Ministry of Environment in Charles, Khmer Times, July25, 2016)

In addition to the voluntary carbon market, Payment for Ecosystem Services (PES) programs are being introduced in Cambodia which will incentivize farmers and landowners to manage land in ways that provide an ecological service or benefit. March 9, 2016, the Ministry of Environment (MoE) organized a workshop "Promoting Payment for Ecosystem Services" in partnership with the Asian Development Bank (ADB) to promote biodiversity conservation projects in Cambodia and consider relevant policy, strategy, and action planning. The Cambodian government is now engaged in implementing a Rectangular Strategy Phase III, with the stated goal of becoming a blueprint to foster economic growth, create jobs and equitable distribution of benefits derived from economic growth. Phase III, instituted in 2013, is the fourth of the government's strategic plans designed to strengthen institutional capacity and

governance at national and sub-national levels, and ensure improved effectiveness and efficiency of public services (RGC, 2014).

Cambodia has not, as of 2016, implemented REDD+ programs in mangrove areas. However, PES schemes in PKWS take the form of eco-tourism services in PKWS. REDD+ and PES programs are global initiatives shaped by internationally recognized policies and conditions. According to the UNFCCC's COP13 in 2007 and COP21 in 2015 addressing climate change, the REDD+ must 1) recognize the importance of land-use change and forestry; 2) achieve net-zero emission levels by 2100 to limit global warming from exceeding the 2º C Copenhagen Accord target; 3) establish a national entity for REDD+ funding; 4) establish national strategy, set a reference level to assess performance, create a monitoring system to report data; 5) devise environmental and social safeguards; 6) create funding for verified results-based activities; and 7) publish information of results and payments. Moreover, the CDM of the Kyoto Protocol states that industrialized countries (polluters) pay to have their CO2 emissions offset elsewhere through REDD+ programs (polluters pay) (Duggin, 2014).

The primary purpose of REDD+ is mitigation of climate change by reducing net emissions of CO2 to the atmosphere due to deforestation and forest degradation. PES and REDD+ are identified as bottom-up approaches which promote democratic governance, protect ecosystem services, poverty reduction, and improved livelihood well-being. The three main actors United Nations Development Programme (UNDP), Food and Agriculture of United Nations (FAO), and United Nations Environment Programme (UNEP) have jointly established the UN-REDD+ programme in Cambodia. The World Bank provided $300 million in funding for small projects through Forest Carbon Partnership Facility (FCPF). Additionally, funding for REDD+ preparedness projects is being considered throughout Asia and Latin America by the governments of Norway, Australia and the U.K (Ken, 2010). REDD+ was initiated in Cambodia by the UN-REDD+ program in 2009.

The concept of payment for ecosystem services (PES) became a viable consideration when Ferrari (2003) and Wounder (2007) demonstrated that PES is a mechanism to incentivize local community and governments to alter behavior in ways that more accurately reflect global costs and benefits. Ingram et al., (2014) PES was a strategy to encourage conservation and poverty reduction for poor land holders, farmers and the natural resource stewards who had been marginalized from markets with few other livelihood resources. However, PES is not a typical poverty reduction strategy. "Payments for ecosystem services are not designed to reduce poverty. Rather, PES programs offer primarily economic incentives to foster more efficient and sustainable use of ecosystem services" (The Katoomba Group, p10, 2008). Still, such programs often offer local people opportunities to earn money by restoring and conserving ecosystems. Milne and Chevier, (2014) envisioned PES as an innovative financing solution for natural resource management, as well as a distribution mechanism for REDD+ revenues, yet there exists no explicit mandate nor legal basis for PES in Cambodia. Poffenberger (2009) provided a core insight by showing that employing REDD+ programs can slow deforestation, save millions of tons of carbon emissions, as well as improve livelihoods in Cambodia. With these studies in mind, the author suggests that a 'hybrid' REDD+ combining the stated REDD+ purpose with appropriate national policy and sector coordination can protect and shelter local REDD+ projects from being captured by more powerful forces and thereby avoid some of the negative consequences of REDD+.

There are three non-state market driven schemes which have been implemented on the ground in Cambodia (Avtar and Kumar, 2013; Milne and Chervier, 2014). These are: 1) a biodiversity PES program implemented by the international non-government organizations Wildlife Conservation Society, Conservation International, and the World Wildlife for Nature in cooperation with FA; 2) a watershed PES program implemented by Flora Fauna International and Wildlife Alliance in cooperation with the Ministry of Environment, the Ministry of Economy and Finance, and the Supreme National Economic Council; 3) a REDD+ project fostered by national non-governmental organizations (WCS, PACT) and supported by the JICA, UN-REDD+, US-AID and the government partners FA and the MoE. REDD+ programs have been piloted in Oddar

Meanchey, Mondulkiri, and Kampong Thom provinces, yet as stated earlier there is today no finalized REDD+ legal framework in Cambodia (Ken, 2010; Avtar, 2013; Duggin, 2014; Sango and Milne, 2015).

The REDD+ pilot projects in Oddar Meanchey, Mondulkiri, Kampong Thom, Preah Vihear, Siem Reap, and Koh Kong province (Yeang, 2012, Avta et al, 2012) were run by NGOs and donors. And in 2015, a two year REDD+ project was begun in Botom Sakor National Park, Koh Kong province (Harbinson, 2016). Although not finalized, there still exists legal and national policies in Cambodia which regulate REDD+ and PES programs, and more specific rules and management regulations for REDD+ and PES programs are being prepared to meet the requirements of global REDD+ and PES cooperation. Table 5.1, page 110, illustrates the legal and policy framework related to REDD+ and PES programs in Cambodia. Table 5.2, page 112, lists the stakeholders involved in REDD+ in Cambodia.

Table 5.1 Existing legal and national policies of Cambodia related to REDD+

Policies	Descriptions
-Cambodian Millennium Development Goals (CMDG) -Rectangular Strategy (RS)-Phase II (2008-2013);	-To focus on the importance of improving forestry and NRM in the country -To achieve its national target of maintaining 60% forest cover -To ensure sustainable forest management, protect biodiversity and promote CF programs in the country. The key priorities for forestry reform include law enforcement, effective management of PAs, climate change actions and the promotion of CF programs.
National Strategic Development Plan (NSDP) 2009-2013	-To support the sustainable use of all natural resources in the country. -To enhance environmental sustainability, sustainable economic growth, poverty reduction, and improvements in the lives of rural communities -To recognize the importance of REDD+ and greenhouse gas mitigation projects in mitigating climate change.
National Forest Programme (2010 - 2029);	-To achieve sustainable forest management and also to alleviate poverty in Cambodia. -To develop and manage forests to improve livelihoods, environmental services and overall economic development -To ensure that the management and exploitation of forests generates benefits for government entities, local communities, the private sector and individuals. -To implement: 1)forest demarcation; 2) classification and registration; 3) forest conservation and development of forest resource and biodiversity;4) forest law enforcement and governance programme; 5) capacity and research development; 6) sustainable forest financing ; and 7) CF
Cambodia UN-REDD+ National Roadmap (2011);	-'REDD+ Readiness' activities -All forestlands are Public State Property (except forests under indigenous land titles and private forests) -The majority of forest carbon is owned by the State with the forest carbon in private forests belonging to their owners
National Policy and Strategic Plan for Green Growth (2013-2030);	Recognizes the role of REDD+ for sustainable forest management and conservation in Cambodia
Declaration on Land Policy (2009)	-Land administration -Land management -Land distribution
Sub-decree (Anu Kret) 188 (November 2008)	Authorized the FA to assess and determine the amount of the national forest carbon stock and to regulate and execute the trade of forest carbon and forest environmental services to generate income for effective forest management

Table 5.1 (Continued)

Policies	Descriptions
The PA law 2008	-To manage and implement the conservation of biological resources and the sustainable use of NR in the PA -Determines the responsibilities and participation of local communities, indigenous ethnic minorities, and the general public -Recognizes and secures access to traditional uses, local customs, beliefs, and religions of local communities and indigenous ethnic minority groups residing within and adjacent to the protected areas. -CPA: a 15-years renewable agreement between the local communities and the GDANCP - The CPA guidelines: the procedures and process of establishing CPAs has not yet been approved; this needs to be determined by Prakas (regulation) of the MoE -PAs:1) National Park, 2) Wildlife sanctuary, 3) Protected landscape, 4) Multiple use area, 5) Ramsar site, 6) Biosphere reserve, 7) Natural heritage site, and 8) Marine park. Each PA: core zone, conservation zone, sustainable use zone, and community zone
Government Decision (Sar. Chor. Nor) No.699 (May 2008)	-To endorse the OM CF REDD+ Project -Designated the FA as the seller of forest carbon for the project. -Defines how revenue from the OM CF REDD+ carbon credit sales: 1) improve the quality of the forest, 2) maximize the benefit flows to local communities who are participating in the project, and 3) study potential sites for the new forest carbon credit REDD+ projects

Source: RGC,2014

Table 5.2 Stakeholders in REDD+ in Cambodia

Stakeholders	Roles/responsibilities
First audience for the evaluation REDD+	
-The Royal Government of Cambodia -UN organization of the UN- REDD+ program (FAO, UNDP, UNEP)	-Work closely with World Bank's Forest Carbon Partnership Facility (FCPF) and the GEF Tropical Forest Account -Evaluate the relevance and effectiveness of intervention, and measure the development impact of the results achieved.
-Governments: FA, FiA, GDANCP/MoE -NGOs and program resource partners	Implementer
Second audience for the evaluation REDD+	
-UN- REDD+ Policy Board -National REDD+ stakeholders: development partners, representative from the REDD+ taskeforce, the REDD+ Taskforce Secretariat, the Consultation Group and the Gender Group.	Evaluate the relevance and effectiveness of intervention, and measure the development impact of the results achieved.
Cambodia REDD+ consultation Group	
-Academia -INGOs -NGOs -IPs -CSOs -The private sector -A community forest network -A community protected area network -A community fishery network	Each group was represented by two members

Source: UN-REDD Cambodia,

See more at: http://www.cambodia-redd.org/un-redd-and-fcpf-project-executive-board-meeting-concluded.html#sthash.EZoiFJPe.dpuf

Land tenure is a central component of REDD+ implementation in Cambodia as well as other countries, and Evans et al. (2012) provided two relevant hypotheses 1) REDD+ would stimulate improvements in land tenure and forest resource access rights for local communities; and 2) REDD+ would increase the feasibility of protecting forest and land areas against growing threats, a crucial precondition for exercising access and tenure rights. Yeang (2012) examined the first REDD+ pilot project established by Oddar Meanchey Community Forestry and found that, although carbon rights remained in the

control of government, still communities were granted the right to use and access forest resources. These rights to use and access were not the result of the REDD+ project, however this demonstrated that no rights had been lost. The government agreed that 50 percent of the revenue derived from trading of carbon credits would flow to participating communities (Ministry of Environment Facebook Page, 24 July 2016). Milne and Adams (2012) established that 1) in the context of land and forest resources, "property relations" are altered through the process of 'producing' avoided deforestation (protecting land earmarked for clearing) in terms of land-use planning, opportunity cost calculations and agreement negotiation and signing; 2) paradoxical property effects are created through the payment for avoided deforestation because this mechanism recognizes and removes local resource rights and claims; 3) different initial conditions in property relations can lead to different outcomes in practice, meaning that 'the product' of avoided deforestation is embedded and contingent upon local processes. Thus Milne and Adams (2012) argued that forest carbon emerges as a fictitious and ephemeral commodity, calling into question the fundamental assumptions and requirements inherent in the operation of REDD+ markets.

Thoun and Karhunmaa (2013) found that two cases of REDD+ pilot projects in the Seima Biodiversity Conservation Area (SBCA), Mondulkiri involving the Oddar Meanchey Community Forestry program (OM-REDD+), Oddar Meanchey province, contributed to 1) land tenure through legalization of community forestry areas and securing collective land ownership and access rights; and 2) producing communities that are strongly motivated to stop illegal forest logging and protect community land from economic land concession capture. Thoun and Karhunmaa (2013) analyzed the extent of knowledge related to REDD+ programs among local people and found that locals understood only the importance of forest protection and potential limited project support for local livelihood activities but did not fully comprehend a more nuanced grasp of REDD+ processes or implications. Baird (2014) demonstrated that REDD+ could be used as an incentive for government to provide strong land and forest tenure to local people if the opportunity were utilized. Moreover, co-benefits of REDD+ are linked to biodiversity conservation, alleviation of poverty, improving governance, improving environmental services, and dealing with land tenure issues. Work (2015)

provided perspectives of international donors, the government, and villagers regarding REDD+ implementation in Cambodia. Initially, international donors see REDD+ as a tool to reduce climate change through compensation for forest conservation. The next action will be for government to view REDD+ as a method to enable demarcation of specific protected areas and subsequently establish claim to all forest areas with access to potential carbon capture funds. The third stage will promote village community understanding of REDD+ programs to protect against encroachment of powerful outsiders wishing to establish economic land concessions and illegal logging activities. Similarly, the Forest trend report (2015) stated that the government's National Forest Programme treated REDD+ primarily as an alternative source of funding, and not as a catalyst to promote effective land-use allocation and planning at the national and sub-national levels in the public's best interest.

Brewster et al. (2012) suggested that REDD+ programs as they relate to technical and human resources in Cambodia require community-based monitoring (CBM). This study discussed the importance of reporting and verification to the Oddar Meanchey Community Forestry (OMCF) management process. OMCF was an REDD+ site which aimed to promote inclusion of local knowledge related to community-based monitoring within an REDD+ readiness plan in Cambodia. The monitoring requirements for the OMCF REDD+ project included social assessment, biomass inventory, land-use and land-cover change, biodiversity assessment and project documentation. Brewster et al. (2012) identified both strengths and weaknesses of CBM. The weaknesses of community-based monitoring within the REDD+ concept include gender inequities, imperfect design of implementation monitoring, and unreliable reporting and verification mechanism (MRV) systems related to gender roles. However, the major important issue involves tension between Community Forest communities and both the military and local officials who encroach on REDD+ zones. The potential obstacles to linkage between CBM and national MRV include technical, social, financial, and communication barriers.

Sasaki and Yoshimoto (2010) looked at REDD+ in conjunction with competition options and classified six options: annual values management options including

business-as-usual timber harvesting (BAU-timber); forest-to-teak plantation; forest to acacia plantation; forest-to-rubber plantation; forest-to-oil palm plantation; and REDD+. They found that annual equivalent value of the BAU-timber and REDD+ were highest, with both options influenced by logging costs and timber price. They suggested that financial incentives should be provided at levels allowing continuation of sustainable logging attractive to REDD+ project developers. But this also assumes that carbon credits from REDD+ areas can be sold at a reasonable price, which has not proven so easy in reality.

Cambodia has begun to evaluate other strategies similar to REDD+ but which involve PES approaches to conservation and livelihood management. Clements et al. (2010) compared three programs in Preah Vihea, Cambodia related to payment for biodiversity conservation which can remain effective in an environment with weak institutions. Clements et al. (2010) argued that a majority of existing PES programs require a good institutional framework with clear property rights, and that Cambodia's available institutional framework as well as conditions involving property rights were not strong. These three PES programs involved community-based ecotourism, agri-environment payments, and bird nest protection, and were assessed according to institutional arrangements, distribution of costs and benefits, and conservation results. The authors found that direct payment for biodiversity conservation (bird nest protection) was effective at the individual and village level, and increased bird nest productivity. However, the program was negatively impacted by a shortage of funds to sustain bird nest protection, and the requirement of clear land tenure. In contrast, eco-tourism and agri-environment programs have more complex institutional arrangements. These two programs required strong institutional frameworks to deal with land tenure, and were multi-layered requiring an external agency, PA authorities and external organizations for support. It can therefore be inferred from the experience in Preah Vihea that PES programs can lead to increase in biodiversity resources value for local people, both directly through individual payments and indirectly by providing funds for village development.

Ingram et al. (2014) studied the effect of PES programs on community-based ecotourism and 'wildlife friendly' agricultural production in Cambodia. This study provided evidence related to ecosystem impact and community benefit. The study concluded that PES programs effectively support conservation and provide poverty reduction for poorer land holders, farmers and natural resource stewards who are marginalized from markets and have few alternative sources of livelihood. Buyers are able to benefit from services both directly and indirectly, directly through hunting, bird watching and rice consumption, and indirectly through protection of habitat and wildlife for tourism. Thus, Ingram et al. (2014) argued that community-based and user-financed PES schemes can be effective tools for conserving biodiversity and incentives for rural livelihoods. However, the authors acknowledged that community-based PES schemes can be difficult to establish in places where the rule of law is weak and where people have little experience making decisions at political levels outside the household.

Milne and Adams (2012) studied PES programs related to decision making in Cambodia finding that community decisions affecting PES program regulation may not be voluntary for all, since market-inspired ideas involving 'community choice' can deny local agency and silence community voices. Thus, Milne and Adams (2012) argued that PES as a form of intervention masquerades as a market, using market discourses and practices to shape human behavior.

Chinh and Kong (2013) studied PES programs related to location in Cambodia to determine possible factors resulting in both successful and unsuccessful outcomes for the PES project in the Chambak area. Factors contributing to success included simple and local program organization, low administrative cost, transparent benefit sharing to service providers, and active participation from villagers in complying with regulation programs. Negative factors influencing the PES programs in Cambodia were identified as inequity of benefit sharing, lack of management committee capacity to monitor participants and carry out punitive measures, poor quality of services, and insufficient communication skills.

The aforementioned studies in Cambodia involving PES and REDD+ programs all examined these programs and projects from the perspective of regulation, funding and revenue, human resources, land tenure and competition options. Regarding regulatory aspects of the schemes, the issues involving overlapping jurisdiction and legislation governing ownership and sale of carbon rights were not well defined, and further project site identification, documentation for buyers, and regulations for REDD+ remain uncertain. These issues must be resolved before it will become fully possible to identify which forests are good candidates to become REDD+ sites. Information on forest stand structure and scheduled regular resource assessments must be collected. It is also necessary to identify the roles and responsibilities of all stakeholders at all levels to define benefit-sharing among stakeholders across the country. Development and adherence to land-use and management plans is also necessary. Concerning financial issues, REDD+ and PES programs are tied to transaction costs (the cost for pre-project assessments remains uncertain). Direct monetary and development benefits accruing from REDD+ in the Seima Protection Forest is uncertain, both from the global regulatory bodies and RGC (Evans et al., 2012). These many issues suggest that professionals from existing experienced environmental NGOs and local communities are needed to develop alternative strategies to secure livelihoods which fit well with deforestation programs. The land tenure reality in Cambodia shows that it lacks clarity in remote areas relevant to rights differences, property relations, paradoxical property rights, and differences involving initial conditions in property relations (Evans et al, 2012; Milne and Adams, 2012). Phelps et al. (2010) from Science in relation to concerns that REDD+ could lead to the centralization of forests, and less power for local people. Baird (2014) also addressed this issue, arguing that REDD+ could be used to provide greater tenure for local people. It was suggested that Cambodia must clarify forest user rights and formalize village land tenure rights. REDD+ is very competitive in the field of industrial crop plantations (Sasaki and Yoshimoto 2010; Baird, 2014). The Sasaki and Yoshimoto (2010) study suggested the importance of sustained financial commitment and competitive carbon price comparison, and recommended employment of alternative land use options such as business-as-usual timber harvesting of teak, eucalyptus or acacia and oil palm, which might avoid increasing deforestation outside the project area. Plantations are not forests. Therefore, plantation development should

be considered a key cause of deforestation, even though governments sometimes consider industrial tree plantations to be forests. From a biodiversity conservation perspective, they are not.

5.2 Using PES and REDD+ Programs for Mangrove Conservation and Protection

Key considerations for PES and REDD+ programs influencing mangrove protection in Cambodia center on regulations, financial aspects, human resources, land tenure and competition options. Broadhead (2011) suggested that fundamental concerns involved with using the REDD+ mechanism in mangrove areas are high setup cost, insufficient methodological development, incomplete knowledge of carbon cycling in mangrove ecosystems, and low carbon price. Broadhead (2011) suggested that REDD+ programs for mangroves require 1) identifying potential mangrove areas and consulting with stakeholders to determine interest; 2) providing livelihood support through traditional mangrove related activities and alternative means, such as disaster risk reduction in cooperation with national NGOs and local governments; 3) facilitating agreement between authorities and local communities over mangrove restoration and conservation; 4) identifying corporate entities willing to provide sponsorship and facilitate agreements among the local community and involved authorities regarding payment for mangrove conservation; and working with consultants on carbon accreditation, including methodological issues, social and environmental standards; and developing an alternative lower cost accreditation framework that does not depend on carbon credits, but instead provides a socially and environmentally sound 'sustainable development product,' one which creates payment for mangrove protection and aimed at corporate buyers.

5.3 Existing Sources and Actors in the CPA, Perceptions of State Local Authorities in CPA and PES: Challenges and Opportunities

Table 5.3 Existing sources and actors in TKK-CPA

Existing sources and actors in CPA	**Description**
Regulatory framework	-CPA was recognized by the MoE in 2013 -CPA received 1813 ha. of land forest covers (520 ha. of mangrove forests) -CPA in TKK is surrounded by: 1)The north is next to FA 2)The south is next to Koh Sraloa CPA 3)The ease is next to PKWS 4)The west is next to Stung Veng CPA
Actors	1) CPA:4 villages (TKK Leu, TKK Krom, Koh Chak, and Tachat) -CPA committees -CPA chief and assistant of CPA chief -CPA sub-committees -Four groups of CPA patrol -CPA members and Non-CPA members 2) SNAs:TKK commune chief and 4 village chiefs 3) PKWS-->DoE-->GDANCP/MoE 4) FA 5) FiA 6) IUCN: MFF/DKC and WCS 7) Private tourism and agriculture development (Chamkar-fruit tree) 8) In-immigrants from other provinces: some of the have no land (TKK Leu, TKK Krom, Koh Chak, and Tachat)
Ecosystem Services (payment for mangrove conservation and protection)	1-Private tourism 2-Upper (forests and water fall) and lower land (mangrove forest)

Source: CPA in TKK, 2013 and fieldwork data, 2015

Key concerns are conservation and livelihoods of local people, benefit sharing and management system planning in the area, and knowledge of local people about PES and REDD+ programs. A CPA chief in TKK voiced the following concern:

> "I also have some knowledge of REDD+ because I have been invited to attend the workshop about REDD+ but I did not understand well. It is about carbon stocks. When you provide me the example of bird nest protection through payment I can understand more about this. So I think mangrove cutting households will stop cutting mangroves if there is a program implementation in this area. I hope that after this program is finished, I and other CPA people can have an eco-tourism development and continue to sustain our CPA with conservation activities," (a CPA chief in TKK, October, 2015).

REDD+ has not been widely promoted at the local level. The method of REDD+ promotion involves holding workshops in Phnom Penh or in the provinces. The CPA chief in TKK initially did not seem to understand the concept of REDD+ even though he had attended a workshop which presented an REDD+ overview. It was only after the author approached the CPA chief and used the example of an REDD+ program involving payment for bird nest protection operating elsewhere in Cambodia that the chief understood REDD+ builds carbon stocks and mitigates climate change through forest conservation and protection. The chief knew that mangrove forest cutting continued in the TKK-CPA; and he was able to envision the possibility of instituting a similar project to decrease mangrove cutting in TKK. The author asked the CPA chief for suggestions regarding potential action to ensure long-term participation of CPA members after project completion. The chief stated that he planned to establish eco-tourism, thereby generating income for the CPA by selling tickets, as he had seen done at a neighboring CPA (Beong Kayak CPA). The chief thought such a solution would generate income for CPA members and sustain TKK-CPA work.

> "I never heard about REDD+ and PES but I understand through your example. I think it is a good program to contribute in mangrove conservation and protection. We will discuss with our CPA committees about our management system and talk to the commune chief as well because we do not want other new comers come and setup a new settlement for benefit from this program. These new comers will try to cut mangroves and cause trouble in different ways" (a CPA member in TKK, November, 2015.)

One TKK-CPA member was unaware of existing REDD+ and PES programs but could grasp the REDD+ concept when the author provided him an explanation of the bird nest protection example. He concluded it was a good conservation program which would protect mangrove forests. The author inquired what he would do if the project were implemented in his area? He stated he would discuss the topic with the CPA oversight committee which manages systems related to benefit sharing in his CPA to verify suitability for project implementation. He informed that new migrants continued to settle in the TKK commune, and stated that he would consult the commune chief regarding this issue in order to avoid new conflicts between residents and migrants entering the community. He referred to in-migrants as being people who had recently become residents of his village. It is the author's impression that he feared implementation of such a project, or news of the possibility to create such a project, would influence relatives or friends of villagers causing them to consider settling in the village. And further, if new-immigrants were to not receive benefits from such a project, they would try to cut mangroves for their livelihoods.

> "There are three levels of REDD+ implementation in Cambodia. And two levels are seen as through a project and a community level. These two levels have been implemented and found many risks in terms of exclusion the poor, social impact and environment issues. REDD+ at the national level is being discussed with many different actors such as representatives from international and national level, INGOs, NGOs, universities, CFis, CFs, CPAs and IPs. REDD+ will be implemented in the whole country" (A CPA REDD Consultant Network Member in PKWS, December, 2015).

One CPA REDD+ consultant network member in PKWS suggested that REDD+ implementation in Cambodia requires multiple actors to avoid exclusion, negative social

impact, and environmental issues. Further, implementers of a REDD+ project at the community level elsewhere in Cambodia learned that two levels of REDD+ were only effective during the REDD+ implementation phase. Villagers who were involved in REDD+ projects gained benefits and acted to prevent illegal forest cutting, however REDD+ projects were not as effective for poorer members of the community. Benefit sharing was also not equally distributed among all villagers, especially for those who were not involved in REDD+, and those villagers who depended on forest cutting moved to neighboring communities that did not restrict mangrove forest cutting. This explains why REDD+ program planning is being negotiated at the national level, so that planning can involve multiple stakeholders such as INGOs, NGOs, universities, CFis, CFs, CPAs and IPs. The consultant predicted that REDD+ will be implemented across Cambodia, including in mangrove areas.

There has been media debate involving REDD+, and UN-REDD+ Cambodia responded to published misinterpretations of REDD+ implementation in Cambodia. These key concerns (Figure 5.1) focus on whether local people or marginalized groups can access NTFPs or not; whether traditional use of forests by local people is allowed; whether local communities have roles in REDD+ and whether benefit sharing is equitable; whether community rights are respected; and if REDD+ implementation will have negative impact on biodiversity (wildlife); and whether the government would refuse to sell carbon credits. UN-REDD+ Cambodia considered that all of these issues misrepresent the reality of REDD+ in Cambodia. UN-REDD+ Cambodia stated that the issues raised had already been resolved, or that some of the concerns were long-term and would require long-term solutions.

Figure 5.1 UN-REDD+ Cambodia responds to misperceptions on REDD+ implementation in Cambodia.

The first argument responded to the first miss-perception "when the country implementing REDD + people who live in and near forests or other citizens will not take NTPs such as vegetables, fruits, hunting, mushrooms, potato vines wild bees from resinous wood chips". REDD+ Cambodia argued that REDD + is a mechanism of sustainable forest management and sustainable support for local livelihoods. Local people are still allowed to access to collect NTPs even though the areas are under implementation of REDD+. Second miss-perception is "in the implementation of REDD+ in Cambodia trees are not allowed to possess". REDD+ Cambodia argued that REDD+ is implemented to support forest management for sustainable does not mean not allowed to use the forest if the trees were cut technically and does not exceed the rate of forest set.

Third misperception is "communities have no role in the implementation of REDD+". REDD+ Cambodia responds to this miss-perception that communities have roles, community rights, and legitimate in the management and sustainable use of forest resources. Since the implementation of REDD+ is covered all of the country's forests, including the forest community, so the community has a major role in the implementation of REDD+.

Forth miss perception is "any benefits from the implementation of REDD + will go only for the government". REDD+ Cambodia argues that equitable distribution of benefits and efficiency is key in the implementation of REDD +. The late 2015, donors to support on the process ready to implement REDD + and they are demanding and requiring a process clear and effective enough to ensure that all the stakeholders who are helping reduce greenhouse gas emissions from deforestation and degradation of forestry will benefit.

Fifth miss-perception is "it's impossible to stop deforestation or illegal occupation of land by those in power, particularly in the poor communities". REDD+ Cambodia realizes that it is not easy to deal with forest logging or illegal occupation of land by those in power. However, they commit that based on existing Forestry Law, Protected Law, and Fishery Law and continuing performance of power institutions. These laws will ensure transparency in the reporting system and management system with sustainable forestry and to tackle offenses.

Sixth miss-perception is "if the local community rights are not respected, they cannot do it". According to the demand of many developed countries require that Cambodia to ensure the full and effective participation of all stakeholders. And dispute resolution mechanism will be created that will allow stakeholders to report any cases where their rights are respected.

Figure 5.1 (Continued)

Seventh miss-perception is "the implementation of REDD + will have a bad impact on biodiversity (wildlife)". REDD+ Cambodia believes that if forests are managed to put only effective implementation of REDD + is a good quality forest biodiversity enhancements that will make the stability and development.

And the last miss-perception is "REDD+ will not be implemented in the Cambodia, because the government will refuse to sell carbon credits". REDD+ Cambodia responds that the implementation of REDD+ is different from the voluntary market. The government will receive funding from developed countries if the Cambodia can reduce greenhouse gas emissions. And the government has spent in preparing ready to implement REDD + because the government has given high priority to get an agreement on the payment of funds from developed countries to reduce greenhouse gas emissions through the implementation of REDD +.

Source: UN-REDD+ Brochure, n.d (Translated from the original Khmer)

According to the above arguments, UN-REDD+ projects in Cambodia are related to rights, roles, and benefit sharing among stakeholders, especially community residents; law enforcement; natural resource conservation leakage; carbon market (buyers); and challenges to deal with powerful elite engaged in forest logging. These issues have actually not been resolved in Cambodia. Benefit sharing has not been formalized clearly for any projects. These are real challenges facing REDD+ in Cambodia.

5.4 Conclusion

There has been no REDD+ implementation in mangrove areas in Cambodia yet. This chapter examined various REDD+ and PES programs which have potential to improve mangrove forest governance, and contribute to lower carbon emissions through protecting and keeping intact mangrove forests along the coastal areas of Cambodia. These schemes are Non-State Market Driven (NSMD) systems. The deficiencies of local state actors and CPA performance in mangrove conservation and protection management can be supplemented by using NSMD systems to ensure ecosystem services, carbon sequestration and improved livelihoods for local people. Focus group

discussions and key informant interviews revealed key concerns about conservation, the sustainability of local livelihoods, benefit sharing and management planning in the area, and the contribution of local knowledge to PES/REDD+. Perceptions of PES and REDD+ expressed by local state actors, CPA members and project documents in TKK were positive. Generally, there existed the desire to see PES and REDD+ programs implemented in their areas. Some projects supported local subsistence livelihoods including chicken raising and mangrove plantation which limited mangrove cutting in the local area. REDD+ implementation in mangrove areas was hindered by high setup costs, insufficient methodological development, inadequate knowledge of carbon cycling in mangrove ecosystems, and low carbon price. Chapter six concerns research results, discussions, and conclusions based upon chapters three, four, and five.

CHAPTER 6

Conclusions and Discussions

Conclusion of research results have been shown in chapters three, four and five address the central questions which motivated the author's research including 1) Is the Community Protected Area (CPA) concept and implementation in the Toul Korki community sufficient to adequately secure improved livelihoods for its people?; 2) In reality, is the observed functioning and implementation of the CPA development in TKK more reflective of the competing agendas among agencies in and outside the community, such as those of state and non-state authorities, and other entities including NGOs, which may not be genuinely driven by goals that adequately benefit the livelihoods of local people?; 3) Are existing or anticipated REDD+ and PES mechanisms and systems adequate to guarantee conservation and protection of mangrove related natural resources in TKK, or do these programs require supplementation and modification to provide local people fair use and sustainable management of the natural resources in the TKK community?; 4) Are there viable systems and processes now working in the community to foster and encourage the empowerment processes necessary to allow local people to self-determine the future of their community, relevant to resources around and in the community, and for future generations? The author set out to answer these questions through conducting original research in the TKK community which was informed by recent studies of the local area and governmental policy of Cambodia, both at the local and state level, and by global policy decisions affecting REDD+ and PES implementation at the local level in Cambodia.

In this concluding chapter, the author presents findings and conclusions that answer these questions, and makes suggestions concerning ways that environmental policy and governance might be supplemented in the context of improving livelihoods for the local community and its people.

The author found that non-state actors in the Toul Korki Community Protected Area provided the key reasons and justification which led to establishment of the CPA development in the community. These included declining mangrove forests, weakness of national state agencies, witnessing a neighboring community's success with eco-tourism development, and the potential opportunity to diversify and improve local livelihoods.

Chapter three argues that decentralization takes the form of a hybrid governance system operating at the local level to manage mangrove conservation and protection. However, currently the Cambodian government is pursuing its own form of decentralization with the introduction a hybrid governance system. The author argues that this is not really decentralization, and as a result natural resource conservation and the co-management arrangements they generate do not really work to improve resource stocks. CPA actors in Toul Korki are partially involved through local state authorities and kinship. CPA development is a type of institution recognized and supported by the Ministry of Environment (MoE) as the representative national government authority. CPA development was intended to enable local state authorities, CPA, PMCR-MoE/IUCN-MFF/DKC projects, and businesses to cooperate to provide residents better livelihoods through eco-tourism and improved mangrove conservation and protection. Yet, it is difficult to identify how the inclusion of these TKK actors in mangrove conservation and protection ensures sustainable ecosystem services and livelihoods for local people in the early stages of CPA development.

Chapter four links the outcomes resulting from relationships of local state and non-state actors acting as a hybrid governance system formed through inclusive mangrove forest conservation and CPA development in TKK. In practice, state and non-state actors have different goals, agendas and relationships as well as different negotiating processes among actors within and outside the CPA boundaries. The TKK-CPA development was successfully completed and acknowledged by the MoE. However, ongoing negotiations continue to address issues involving structural, social and legal boundaries for eco-tourism among CPA members, local state authorities, a tourist site owner, and national government agencies. Findings in chapter four show that benefit sharing is unequal as seen in communities inside and outside the CPA, and observed in the engagement of state

and non-state actors, as well as differences between how laws work on paper and in practice. The TKK-CPA is a mandated community structured to include national government agencies, local state authorities, villagers, and projects, all governed by a combination of regulations and rules common to PA Law 2008 and the CPA in TKK. One consequence of this legal structure is that the CPA as a mandated community does not have flexibility and inclusion needed to be successful. When there exists strong empowerment from both external and internal actors, knowledge and capacity are easily built. Yet, empowerment without any means of income generation in a natural resource conservation and protection context does not reflect success in effective conservation management and improvement of local livelihoods.

Chapter five illustrates alternative mechanisms for mangrove forest conservation and protection in Peam Krasaop Wildlife Sanctuary (PKWS). The author examined the MFF and DKC projects which are under consideration as prospective conservation and carbon storage initiatives. This, in conjunction with national policy addressing climate change mitigation and perceptions of local state authorities involved with the TKK-CPA, contributes to the discourse of REDD+ and PES programs in Cambodia. Focus group discussions and key informant interviews revealed serious concerns about conservation, sustainability of local livelihoods, benefit sharing, management planning in the area and the contribution of local knowledge to PES/REDD+. Key considerations for PES and REDD+ programs in Cambodian mangrove areas are related to regulations, financial and human resources, land tenure and competition options.

The four sections of this chapter address the objectives of the study and attempt to answer the questions which drove the original research: 1) major results; 2) theoretical discussions; 3) recommendations; and 4) research limitations.

6.1 Major Results

First objective was *"To examine how institutional structures and strategies involving state and non-state actors determine the success of decentralization in decisions with respect to halting the decline of mangrove resources in the coastal area in PKWS"*.

Four findings relate to the first objective and are combined in decentralization as hybrid governance system in mangrove conservation and protection. The first key finding is that PMCR-MoE and IUCN-MFF/KDC projects are third party programs which assist CPA development. The second key finding is that Toul Korki commune authority is partially formed from the TKK-CPA leadership. The third finding is that attempts to convert private tourism into eco-tourism were aimed at reducing mangrove cutting and local job creation. The fourth is that REDD+ and PES promotion in the CPAs in PKWS is another emerging non-state market driven system aiming to reduce climate change and ensure local livelihoods.

Second objective was *"To find out how policy and regulation (related to mangrove forest policy, coastal zone management, and protected areas) have been created and implemented at the local level to manage and protect mangrove resources and the resulting impact on livelihoods of the local community".*

Fifth key finding in response to the second question and objective is that livelihoods are negotiated and occur through the process of CPA development. Through this process is seen the engagement of state and non-state actors competing for power, empowerment, and benefit sharing. This includes power grabbing by people who make rules and regulations. The rules and regulations of the TKK-CPA were created by key villagers who combined and adapted existing PA law 2008. Additionally, there existed a dynamic in which those without power negotiated to "get what they could". Resource users well understood the regulations and rules of the CPA but they ignored them and cut mangroves for charcoal selling in villages and the local market. They engaged in this cutting because they did not set rules and regulations and they were poor, landless, in-migrants and new

comers. Another key issue is that many of the villagers seemed not to agree with the plan and believed there were alternative ways to protect mangroves while still allowing some cutting. Local knowledge does not appear to have been adequately considered in the development planning. The author's observation is that some of the people who disregarded restrictions on mangrove cutting were actually not poor but only claimed to be poor.

Third objective was *"To explore the perceptions of state actors, villagers and NGOs regarding new ideas and methods of mangrove forest management in PKWS"*. The sixth finding is related to possible mechanisms for mangrove conservation and environmental governance. The perceptions of a Non-State Market Driven (NSMD) scheme related to PES/REDD+ recorded among local state agencies and non-state agencies in PKWS pertain to issues involving conservation, sustainability of local livelihoods, benefit sharing and management planning in the area, and contribution of local knowledge to PES/REDD+.

6.2 Theoretical Discussions

The author used a political ecology frame of reference, informed by social-environmental interactions, to analyze decentralization, negotiated livelihoods and environmental governance (Zimmerer and Bassett, 2003).

Applying a political ecology approach to the discussion of decentralized mangrove conservation projects demonstrates the means through which mangroves shape human-environmental dynamics. Mangrove conservation and management in Peam Krasaop Wildlife Sanctuary employs multiple stakeholders in the local-national process of CPA formation. The commune chief and village chiefs in TKK were responsible for coordinators who engaged with projects and local residents concerning ideas relating to the CPA development. The Community Protected Area development was initiated by a PMCR-MoE project, supported by IUCN-MFF/KDC projects, and partially realized its objective which was to provide locals control over community natural resources and

promote sustainable use of mangroves. The CPA strategy supported community will to achieve control over mangrove areas by excluding outsiders from illegally cutting mangroves for charcoal making.

TKK-CPA development is a mechanism to encourage local participation in mangrove conservation and to restrict local CPA people (residents, in-migrants and new comers) from cutting mangroves for charcoal production. However, this objective was not achieved because 1) not all CPA people realized that mangrove resources belonged to them; they believed that mangroves belonged to anyone inside or outside the community, and that anyone could access mangrove areas according to the rules and regulations of PA law 2008 and the TKK-CPA; 2) all local people in four villages in Toul Korki were included in the CPA development, yet they knew little about the CPA. They were not often invited to CPA meetings, although CPA people sometimes did attend meetings and training sessions on natural resource conservation and techniques of crop cultivation and chicken raising which were provided by DKC and MFF projects; 3) Not all CPA people were happy to receive support from the DKC for chicken raising believing the support was insufficient for the 20 households selected in the pilot project. The support from the DKC provided either chickens or cost of netting for chicken cages which equaled 100,000riels (25USD) per household. Those who were dissatisfied with project support did not attend meetings or training sessions. Instead, they engaged in other activities to improve their livelihoods such as collecting non-timber products, fishing, and cutting mangroves for charcoal production; and 4) key CPA people including patrol groups, CPA chief, and village chiefs understood the basic needs of poorer CPA members, and allowed more flexibility in the enforcement of existing rules and regulations within the TKK-CPA for poorer community members. It was the informal policy of patrols to only provide advice to poorer CPA members informing them of mangrove cutting methods for charcoal production to meet their subsistence livelihood needs. Consequently, patrol groups, the CPA chief, and village chiefs rarely reported to the DoE any illegal activities engaged in by poorer CPA members.

The position of the local state authorities in TKK was that they respected *Thomacheat* (nature) and appealed to local people (residents, in-immigrants, and new comers) for

participation in mangrove conservation and management activities. The perspective of local people involved in CPA work was that they aimed to access mangrove resources directly and indirectly. CPA people responded stating that all people should respect *Thomacheat (*nature) because mangroves provided people with fish, crabs, shrimp, and prevented wind and storm surge. Some CPA people expected to receive additional financial support from the projects.

Regarding its decision-making process, the CPA development did not actively involve local people as a priority. CPA development decisions were made only by key villagers, local state authorities, and projects. Howitt (2000) and Lemos and Agrawal (2006) identified the decentralization of management structure as having different management units, viewing it as a bottom-up approach guiding the flow of negotiation process and its context. In Cambodia, government administration is bottom-up and top-down according to the will of local level, provincial level, and national level planners to achieve a result. Decentralization is the devolution of power of decision-making to a lower administrative level. The RGC does not actually operate this way, as it always maintains a top-down, central control through its decentralized and deconcentrated administrative and managerial bodies. It avoids the "subsidiarity principle" (Anderson, 2000), where management decisions are made at the most effective governance level. What the Royal Government of Cambodia (RGC) does is to enter into different forms of co-management arrangements, donor-friendly, but where costs are devolved more than decision making powers. Decentralization is confused or masked by deconcentrating of government power to a provincial managerial unit with little or no real decision making power given to people and local governance. It is argued that CFi and CF projects do not represent true co-management institutions with inherent equal sharing of both costs (responsibilities) and benefits of decision making.

In this case, CPA development resembles an in-between approach, and projects engage local state authorities and key villagers first before inviting local people to participate in agreements of the CPA development. However, some local people active in CPA work did not clearly understand the purpose of CPA development. Some of the poorer local people involved viewed CPA work as wasting their time attending meetings. They instead

fished, caught shrimps, collected herbs, became vehicle drivers in Koh Kong Town, and became labor brokers for the local elite.

The CPA development in TKK enabled a private tourism owner to engage with CPA people to reach agreement on converting a tourism business into an eco-tourism site using the TKK-CPA's name. Bottom-up negotiation is an appropriate way to articulate interests which are common to the entire CPA community making it possible to seek recognition by the national government's MoE and MoT. However, it is understood that political considerations are more critical to development activities inside the protected area, such as political connections to top level authorities and actors aiming to convert coastal areas into tourism sites which usually benefit only the already wealthy stakeholders. However, in one exceptional case the owner of a private tourism enterprise planned to provide job opportunities to local TKK people thereby reducing mangrove cutting by community residents. Still, private tourism development also can have negative impact on mangroves as was true of the TKK tourist site which was built on mangrove area land, although it was difficult for the author to obtain data quantifying exactly how much mangrove was cut during the tourism site establishment process. On the other hand, there still remains among the community the common belief that the MoE plans to ensure both conservation and livelihoods for local people through eco-tourism. Thus, if CPA people agree with the objectives of the private tourism owner, then this private tourism site could be converted to eco-tourism, with all CPA people permitted to work at the site as well as sell their local products there, including chicken, sea food, water melon, and vegetables.

REDD+ has been informally promoted in Toul Korki by CPA network member of PKWS through a publication titled "REDD+ Booklet Guideline". The CPA network member is also a representative of CPAs in PKWS, and sometimes is invited to attend the workshop and meetings in Phnom Penh on REDD+. UN-REDD+ Cambodia has provided several boxes of REDD+ booklets as guidelines to the CPA network member in PKWS. The REDD+ booklet guideline is printed in Khmer with photos illustrating the meaning, including purpose of REDD+, REDD+ processes, transaction costs, benefit sharing, and procedural steps. On the day the author completed interviewing the CPA network member in PKWS, he suggested delivering a box of REDD+ booklets to the CPA chief in TKK to

provide continued assistance to CPA people in TKK by promoting a deeper understanding of REDD+. Additionally, the author learned through observations and queries posed to construction workers that the Wildlife Conservation Society (WCS) was building its conservation center in TKK on 10 ha. of land costing USD70,000, and planned to hire local people to raise tortoise and crocodiles. The author believes that state and non-state actors should be more inclusive actors and power actors aiming to conserve and protect mangroves, wildlife, and enhance livelihoods of local people. Doing so would help WCS contribute to the PES initiative in TKK.

The second discussion relates to the political ecology of negotiating livelihoods. Negotiating livelihoods is a collection of techniques and choices to ensure survival and welfare, where social, economic and environmental forces work together and overlap (Bebbington and Simon, 2001). Negotiating livelihoods in Toul Korki is about power, empowerment, and benefit sharing. Negotiating livelihoods in Toul Korki enabled CPA people in TKK to gain collective ownership over 1813 ha. of forest land area (520 ha. of mangrove area) provided by the MoE. No individual in TKK-CPA is permitted to sell or share forest area. CPA people exercise decision-making authority over forest areas to decide sustainable use and must report illegal forest cutting to the DoE.

CPA people did not fully understand the nature of CPA work. They required guidance and intervention from conservation projects and state agencies. The DoE and conservation projects provided knowledge related to report writing, budget management, and protected area law. Some key CPA members were empowered through training and meetings but remained limited in knowledge transference to different levels of actors in the CPA. A small number of CPA members were active in mangrove conservation and protection. The CPA chief and assistants were knowledgeable in administration procedures and conservation activities, however leadership skills were poor and their effectiveness was further hampered by the cost of holding meetings, both of money and time.

Negotiating livelihoods in the TKK-CPA community can be classified as access/use of forest areas, and generating income. Regarding use and access, CPA people set rules and regulations, while adhering to the existing PA law 2008, to use, access and manage forest areas in the TKK-CPA development community. Some CPA people believe they do not have ownership of forest land areas because CPA non-members have the same rights to access and use forest areas as CPA members. This causes CPA non-members to refuse to patrol or protect forests from outsiders who cut mangroves, or ensure that CPA non-member residents of TKK do not cut mangroves at night. The TKK-CPA chief responded by instructing the community that all local people were CPA members, yet local people remained convinced they were not CPA members due to the CPA chief's failure to hold frequent CPA meetings. Moreover, CPA people created rules and regulations governing financial contributions to be used for sustaining CPA work. CPA members agreed to contribute 500 riels (0.12USD) per month to support CPA work, yet in practice these rules and regulations were not enforced. Non-enforcement was influenced by the TKK-CPA's lack any income. Although it was the case that TKK-CPA people planned to establish eco-tourism sites to generate income from services, the CPA chief was reluctant to invite CPA members to discuss eco-tourism development. This reluctance was presumably due to the chief's estimation of investment costs for eco-tourism site development, 2,000,000 baht (57,142.85 USD), and he consequently realized that this plan would be infeasible without sufficient funding possibilities. As an alternative, he suggested CPA people should seek support from outside agency projects to be combined with monetary contributions from CPA members for establishment of eco-tourism development. Moreover, a private tourism enterprise owner in TKK negotiated with CPA people to convert his private tourism business into an eco-tourism site within TKK-CPA. The perceptions of the commune chief, village chiefs, the CPA chief, and CPA members regarding the owner's objectives seemed positive. State local authorities and CPA people were invited by the owner of the private tourism enterprise to discuss benefit sharing through selling tickets and local products. From these examples, it can be seen that livelihoods were negotiated through the process of developing the TKK-CPA, and represent exercising power, empowerment of local people, and benefit sharing.

The perceptions of local state authorities in TKK about conservation and livelihoods of local people demonstrate they believed the CPA helped to provide materiel, exclusive of money, to meet the needs of patrol groups in each village, however some poorer households still cut mangrove for charcoal production because they were jobless. However, most of the mangrove cutting was done at night, and by members of neighboring communities and communes.

Response from mangrove cutting households demonstrated they were in-migrants and new comers from Prey Veng, Takeo, Kampong Speu, and Svay Rieng provinces. In-migrants had been living in TKK for at least five years. Some households occupied land belonging to relatives, had no rice farms, and were laborers working on rubber tree plantations. Some landed households could receive loans with which to buy crab catching gear. These mangrove cutting households were CPA members but rarely attended meetings because they gained no benefit from CPA work.

CPA committee members' perceptions of benefit sharing and management planning were influenced by MoE's recognition of the TKK-CPA. Villagers were all CPA members. If CPA support were to exist for conservation projects as well as livelihoods of CPA members, the CPA committee would invite CPA members to discussions and ensuring that local people stop cutting mangroves, and protecting mangroves from being cut by neighboring communities and communes. Response from mangrove cutting households demonstrated they anticipated no support from projects after prior experiences with other projects where benefits flowed to a small group of elite people, and further some projects offered little money causing reluctance to accept any proffered support. Some mangrove cutting households informed they would stop cutting mangroves and involve themselves in CPA activities to stop mangrove cutting by outsiders if projects supported them financially and provided other appropriate options for them. A few households were landless and therefore wished to have land allocated for their use by the government for rice farming and crop cultivation.

Regarding perceptions of local livelihood sustainability, focus group discussions and key informant interviews suggest members of both groups anticipated the CPA would establish eco-tourism sites in their area. TKK-CPA members learned that a neighboring CPA in Beong Kayak, PKWS received support from a Thailand based NGO project which helped to establish eco-tourism. The Thai project enabled neighboring community members to earn income by selling tickets to tourists as well as benefits shared among CPA members. The generated income and benefit sharing resulted in more villager involvement in mangrove conservation and protection programs. Thus, because of lessons learned through witnessing the success of their neighbors' CPA development program, CPA members in TKK strongly expected similar assistance from projects to establish eco-tourism in their area. They knew that a private tourism owner had negotiated with their CPA to set up an eco-tourism site, yet the TKK-CPA members still hoped to establish their own eco-tourism site providing alternative choices to potential tourists.

In brief, CPA and local state authorities in TKK had not previously known about the operations or benefits of PES and REDD+, however through examples such as the bird nest protection program they quickly grasped the way such a program could limit mangrove cutting activity in their area, both from inside and outside the CPA. The expectations of CPA members and local state authorities regarding an NGO project were different. These differing expectations concerned basic needs of local people directly related to financial support, appropriate options for their livelihoods (eco-tourism development), and individual land allocation by the government. However, some local people complained that support received from previous projects did not meet their basic needs and that most of the support went to a small local elite. The author suggests that these interactions and expectations represent examples of the dynamic described by Lemos and Agrawal (2006, p298), "Environmental governance is synonymous with interventions aiming at changes in environment-related incentives, knowledge, institutions, decision making, and behaviors."

Key considerations for operations of PES and REDD+ programs in Cambodia's mangrove forests are related to regulations, financial factors, human resource, land tenure and competition options. Regarding CPA regulations, the 2008 PA law is most

fundamental, and the CPA agreement with the MoE is valid for 15 years. These regulations and agreements apply to the 2011 management zone of PKWS which is sectioned into core zones with a conservation zone, a sustainable land use zone, and a community zone (see Table 3 in Chapter 3). The TKK-CPA has agribusinesses including rubber tree plantations, Chamkar fruit trees, as well as a private tourism business within TKK-CPA boundaries, all being options which would present competition for future PES and REDD+ programs in TKK.

6.3 Recommendations

This research studied mangrove conservation management through the mechanism of CPA development. The structure of management which consisted of multiple stakeholders at the local level in PKWS suggests that the conservation versus livelihood compromise and discourse still excludes necessary participation of poorer members of the CPA development community. The researcher's recommendations apply to both state and non-state actors.

CPA member participation in mangrove conservation and protection is limited. CPA development participation of local people was limited exclusively to making assertions on relevant documents claiming to be volunteers who spent their own money in order to sustain CPA work. This behavior can be attributed to the perception among those dependent upon mangroves for livelihoods that the CPA was for them relatively unimportant. The notion of "conservation" had been explained to them as "rights of future generations" rather than a concept important to their present-day livelihoods. Fundamentally, the basic needs of poorer community members are land and job opportunities. IUCN (MFF and DKC) projects enhanced livelihoods of local people and conservation management effectiveness. The MFF and DKC projects supported local people through chicken raising, crop cultivation, mangrove plantation, and bio-gas digester use to limit or stop mangrove cutting by local people. However, less or no support was extended to a small number of people who lacked requisite skills or financial resources.

Regarding technical support such as bio-digester units, CPA members who opted to accept bio-digesters for their households were required to contribute financial support to the CPA. A CPA member who owned a bio-digester was required to contribute 600,000 riels (150USD) to the CPA development. Moreover, chicken raising and crop cultivation required following prescribed technical methods. It was observed that poorer members were disadvantaged due to inability to follow required technical instructions needed to qualify for project supported chicken raising and crop cultivation. This research suggests that conservation and alternative livelihood projects do not effectively support poorer community members and that poorer members accordingly remained dependent on mangrove cutting. This factor demonstrates that support must be directly distributed to poorer members of the community, and crucially it must be tailored to fit their needs.

Good governance of natural resource conservation and protection requires both effectiveness of resource management and provisioning of sustainable livelihoods. State actors must exercise due diligence when working with private sector businesses, particularly with enterprises operating inside a state managed (public) Protected Area. Arrangements between government and private businesses must be discussed relevant to the creation of effective oversight institutions providing regulation, environmental impact assessment, and development of rules and regulations guiding benefit sharing among local PA stakeholders. There must be stronger commitment by local people and their "legitimate" representatives actively involved in the conservation of sustainable natural resources rather than reliance on a small group of people who benefit from conservation and tourism sites. The rich, as well as poor, must be required to conserve resources. The use of NSMD, another type of private sector initiative, for mangrove conservation and environmental governance may be a livelihood activity of interest for local people.

6.4 Research Limitations

There were obstacles and limitations to the author's research concerning data collection, data interpretations, and analysis. When the researcher first entered TKK village and after informing the TKK commune chief regarding this research, the commune clerk in TKK

asked, "Why do you choose CPA here for your study?" The CPA previously had few activities related to CPA work and this research seemed new to them. The TKK-CPA lacked effective management leadership, and the clerk asked, "How can you learn good things here?" The author was happy and willing to let him know that "Yes! Because of these reasons, and that's why I want to find out what are the strengths and weaknesses of CPA work here so that I can contribute positive input and suggestions in the future." Another village chief, "being honest", let the author know that she was initially suspicious of the author and this research. Although she acted in a friendly way, the chief volunteered her continuing suspicions, and telephoned to the commune chief for clarification of the researcher's status.

The researcher was challenged by the spoken language of local people in TKK which was predominantly Thai. The author's Thai language ability is limited and communication including questioning of respondents was conducted in the Khmer language. It became evident that in-migrants were not comfortable associating with longtime community residents who were ethnically half Thai, and who in-migrants referred to as *Krom Ahh Bai Nai* (Thai kinship and parentage). Moreover, since the author's data collection was conducted in Khmer requiring translation into English there existed the possibility for misinterpretations. However, the author affirms all translated data reported by informants is accurately presented.

Potential new research directions include eco-tourism site acceptance and national promotion by line ministries; potential eco-tourism related programs in PKWS which might support conservation activities for the local CPA; identification of mechanisms used to create local participation in PA zoning; determination of whether any zoning mechanisms presently exist, and if yes identification of entities in control of the zoning process; and improved definition of land titling processes for villagers, including whether titling is affected by the presence or absence of "their" Protected Area.

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2014 "Turning the tide on mangrove loss: The status of mangroves and their associated fauna". Symposium Zoological Society of London, November 6-7, 2014.

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Name Ms. Sary Mom

Date of Birth 12 May 1987

Education

- 2014-2016: Master of Arts Social Science, Chiang Mai University, Thailand.
- 2009-2013: Bachelor of English Literature from University of Cambodia
- 2005-2008: Bac II from Hun Sen Kampong Chork High School, Svay Rieng.
- 2002-2005: Hun Sen Kampong Chorck Secondary School, Svay Rieng.
- 1991-2002: Kaov Samout Kampong Chorck Primary School, Svay Rieng.

Scholarships

- 2014-2016: Fellowship World Wide Fund for Nature (EFN/WWF)
- Mid-October 2015-Mid-January 2016: Three Months Fieldwork Funding from New Directions in Environmental Governance (Mainland Southeast Asia), Canada.
- 17-22 September, 2014: Poster "Engaging Communities with Social Enterprise" at 1st Students Symposium Community Engagement and Social Enterprise, National University of Singapore.

Experiences

- 2014-present: Employed by Department of Administration, Financial and Planning of General Doctorate of Environmental Knowledge and Information, Ministry of Environment, Phnom Penh, Cambodia
- 2011-2013: Project Assistant for the Participatory Management of Coastal Resources, Ministry of Environment, Phnom Penh, Cambodia. Position required

preparing financial budgets, training facilitator, data collection, keeping in/out letter, typing/copying documents, and translation from Khmer into English/English into Khmer, and preparing report.

- 2008-2011: Administrator's Assistant for Department of Environment Education and Communication, Ministry of Environment, Phnom Penh, Cambodia. Position required keeping in/out letter records, typing/copying, prepare financial expenditures for events, organizing campaigns.

Research Work

- Three months fieldwork research from mid-October 2015-mid January 2016 on the interactions of state and non-state actors in resource governance: A Case Study in a Community Protected Area (CPA) in Peam Krasoap Wildlife Sanctuary, Koh Kong, Cambodia.
- Five days field visit to Chiang Mai on Cambodia-Thailand Cross Visit Program: Participatory and Accountable Governance of Land and Natural Resources, Thailand, 13-18 September, 2015
- Five days field visit to the Mangrove Action Project on Community-based Ecological Mangrove Restoration in Krabi province, Thailand, 16-22 May, 2015
- Project Assistant for Participatory Management of Coastal Resources (PMCR) I assisted data collection and note taking.
- Five day field trip to Vietnam to learn and exchange ideas with local communities on the coastal management and conservation in Gha Trang, 2012.

Conferences

- 24-25 September 2016: The 13th Asian Pacific Sociological Association (APSA) Conference on "Globalization, Mobility and Borders: Challenges and Opportunities", Cambodia-Korea Cooperation Center (CKCC), Royal University of Phnom Penh, Cambodia.
- 23-25 August 2016: International Congress on Economy, Finance and Business (ICEFB), Chiang Mai, Thailand.
- 2-3 July 2016: Regionalization of Development: The Dynamics of Inclusion and Exclusion in Southwest China and Southeast Asia, Chiang Mai University, Thailand.
- 4-8 March 2016: Collaborative Research Seminar-Local Knowledge, Livelihood and Development, Research Center, Mandalay University, Myanmar.
- 5-6 June 2015: Land grabbing, conflict and agrarian-environmental transformation: Perspectives from East and Southeast Asia, UNISERV Hotel, Chiang Mai University, Thailand.
- 7-8 March 2015: Rethinking Development Studies in Southeast Asia: State of Knowledge and Challenges, Chiang Mai University.
- 29-30 August, 2014: International Conference on Tourism and Development: Growth and Diversity, Chiang Mai, Thailand.