



LAO PEOPLE'S DEMOCRATIC REPUBLIC
PEACE INDEPENDENCE DEMOCRACY UNITY PROSPERITY



Prime Minister's Office

Environment Protection Fund

Social Safeguard Documents

Social Impact Assessment (SIA)

PROTECTED AREA AND WILDLIFE PROJECT
(PAW)

Project No. P128393-IDA and P128392-GEF

Vientiane, December 9, 2013

NOTE

This Social Impact Assessment (SIA) has been prepared for the Protected Area and Wildlife Project (PAW). The project aims to strengthen the management systems for national protected areas conservation and for enforcement of wildlife laws.

PAW will be administered by the Environment Protection Fund (EPF) and implemented through a sub-project mechanism at national level and several provinces. Sub-projects are expected to range from institution building to human resource development and livelihood support for the protection of selected national protected areas. Two national protected areas (NPAs) have been selected for sub-project as part of an “initial” portfolio.

A Social Impact Assessment (SIA) has been undertaken to describe the social make up, issues and risks of communities living in those two NPAs; an Environmental and Social Management Framework (ESMF), including Environmental Code of Practice (ECOP), and a simplified Pest Management Plan (PMP) has been prepared to address possible environmental and social impacts of all sub-projects. A Community Engagement Framework (CEF) has been developed to consolidate a Process Framework, a Resettlement Policy Framework and an Ethnic Group Framework into a single document; and an EMP will be developed for all NPA subprojects. All these documents provide operational guidance on implementation of environmental and social safeguards.

This draft has been disclosed in country and consulted with stakeholders in line with OP 4.01 requirements.

ABBREVIATIONS AND ACRONYMS

ASEAN	Association of South East Asian Nations
APL	Adaptable Programme Loan
CAP	Community Action Plan
CEF	Community Engagement Framework
CITES	Convention on International Trade in Endangered Species
CLiPAD	Climate Protection through Avoided Deforestation Project
DAFO	District Agriculture and Forestry Office
DESIA	Department of Environmental and Social Impact Assessment
DFRM	Department of Forest Resources Management
DoF	Department of Forestry
DoFI	Department of Forest Inspection
DoNRE	District Office of Natural Resources and Environment
DPC	Department of Planning and Cooperation
ECOP	Environment Code of Practice
EGPF	Ethnic Group Planning Framework
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMP	Environmental Management Plan
SIA	Environmental and Social Impact Assessment
FLEG/T	Forest Law Enforcement, Governance/ and Trade
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
GIZ	Deutsche Gessellschaft fur Internationale Zusammenarbeit
GoL	Government of Lao PDR
HCVF	High Conservation Value Forest
IUCN	International Union for Conservation of Nature

IEE	Initial Environmental Examination
KDP	Khammouane Development Project
Lao-WEN	Lao Wildlife Enforcement Network
LDC	Livelihood Development for Conservation
LEnS	Lao Environment and Social Project
LFNC	Lao Front for National Construction
LWU	Lao Women's Union
MAF	Ministry of Agriculture and Forestry
MEM	Ministry of Energy and Mines
MoHA	Ministry of Home Affairs
MoNRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
NEPL NPA	Nam Et-Phou Louey National Protected Area
NNT NPA	Nakai Nam Theun National Protected Area
NPA	National Protected Area
NPSC	National Project Steering Committee
NREIC	National Resources and Environmental Information Centre
NT2	Nam Theun 2
NUOL	National University of Laos
PAFO	Provincial Agriculture and Forestry Office
PAW	Protected Area and Wildlife Project
PCR	Physical Cultural Resources
PDO	Project Development Objective
PICAD	Participatory Integrated Conservation and Development
PMP	Pest Management Plan
PoFI	Provincial Office of Forest Inspection
PoNRE	Provincial Office of Natural Resources and Environment

PPAM	Participatory Protected Area Management
PRF	Poverty Reduction Fund
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RPF	Resettlement Policy Framework
SDA	Subproject Delivery Agency
SEMFOF	Social and Environmental Management Framework and Operational Plan
SRCWP	Strengthening Regional Cooperation in Wildlife Protection in Asia
SUFORD	Sustainable Forestry for Rural Development Project
SUPSPM	Scaling Up Participatory Sustainable Forest Management
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
VDC	Village Development Committee
VICAD	Village Integrated Conservation and Development Committee
WB	World Bank
WCS	Wildlife Conservation Society
WMPA	Watershed Management and Protection Authority NNT

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

Lao PDR is one of the least developed countries in Southeast Asia. The country has considerable natural resources in forests, water resources, and minerals and these are significant for cultural development, environment protection, and economic development. Its forests cover about 40% of the country, the highest percentage in Southeast Asia, but the total area of forest has declined dramatically from 70% of the land area of 26.5 million ha in 1940, to 49% in 1982, and to only 40% or about 9.5 million ha in 2010. Data on changes in forest cover suggest that during the 1990s the annual loss of forest cover was around 1.4% annually, giving an average annual loss of forest cover of about 134,000 ha.

Lao PDR lies in the Indo-Burma Biodiversity hotspot; and government has designated 20% of the country's land area as protected (including 21 national protected areas, plus a number of provincial and district protected areas), and produced the Biodiversity Strategy to 2020. At the same time, poverty reduction is a key priority of the government as it targets poverty eradication by 2020. The project design is aligned with the Bank Country Assistance Strategy (CAS) pillar one which aims to sustain growth through managing key growth drivers and pillar four providing support to the implementation of NT2 as an example of area-based, sustainable natural resources development program that contributes significantly to NGPES/NSEDP objectives.¹

The key goal of the Government of Lao PDR (GoL), as outlined in the 7th National Socio-Economic Development Strategy (NSEDP) for Lao PDR, is to graduate from the group of Least Developed Countries by 2020. The 7th NSEDP (2011-2015) includes measures on rural development, poverty eradication and environmental protection to achieve sustainable development, with an overall direction towards ensuring that socio-economic development is fully aligned with the protection of the environment and forest resources. The Lao government recognizes that graduating from Least Developed Country status, and continuation of an 8% annual GDP growth rate, requires a secure natural resource base.

Over three million hectares (or 14% of the land area of Lao PDR) is declared as National Protected Areas (NPAs). The National Protected Area System, made up of 18 NPAs and a number of provincial and district PAs was designated in 1993 (PM Decree 164), and four NPAs and two corridors have been added since then. Establishment of the NPA system followed extensive data collection to determine sites of high conservation value and to include 5-20% of every ecosystem of Laos. Around half of the NPAs share a border with Viet Nam, Cambodia, Thailand or China, and a number of these form (or have the potential to be) trans-boundary protected areas.

¹Source: Lao PDR and the Global Environmental Facility (GEF)

The total investment in the World Bank financing will be US\$23.83 million, of which US\$6.83 million will come from GEF, US\$9.00 million from national IDA allocation, and US\$8.00 million from regional IDA. Co-financing is being mobilized.

The proposed project constitutes Phase III of the horizontal Regional Adaptable Program Loan (APL) on Strengthening Regional Cooperation for Wildlife Protection in Asia (SRCWP).

1.2 PROJECT DEVELOPMENT OBJECTIVE

The **Protected Area and Wildlife (PAW) Project** seeks to strengthen the participatory management system NPAs conservation and for enforcement of wildlife laws. It will be implemented in three main components.

1.3 PROJECT DESCRIPTION AND AREAS

The PAW Project will achieve its goals through a sub-project mechanism by building capacities and developing the institutions responsible for NPA management and wildlife protection at the national level (DFRM and DOFI), while also providing targeted support to NPAs at the site level. Already two NPAs are selected: the Nakai Nam Theun (NNT) and Nam Et Phou Louey (NEPL) NPAs. Others may be added during the project implementation if such Sub-projects are proposed. Support will also be provided to key provincial stakeholders engaged in wildlife and NPA management in 5 provinces: Xiengkouang, Luang Prabang, Houaphan, Bolikhamxay and Khammouane.

The project will focus on *in-situ* conservation of wildlife and habitat at select highly bio-diverse and at threat NPAs. Further, at the national and regional level the project will create harmonized wildlife/PA related enforcement standards, develop good practice applications, and share successful schemes towards protected area management and reduction of illegal wildlife trade. The project would build on the ongoing bilateral initiatives between Lao PDR and Vietnam² to promote cooperation on controlling illegal forest products and wildlife trade as well as strengthen Lao PDR capacity to enhance its collaboration with global efforts with international organizations involved in the fight against illegal wildlife trade.

The proposed Project aims to contribute to global, regional, national, and local public goods, as well as direct benefits to Government agencies and village communities. Regional and global benefits would also be derived from the national public benefits already described. Furthermore, with more effective trans-boundary protected area management in NNT and NE-PL, Vietnam's wildlife and protected areas would also be beneficiaries. With greater regional wildlife law enforcement, convictions and arrests, regional security would be improved by removing criminal networks (also involved in narcotics and arms trafficking). The project provides some exclusively global environmental benefits, such as in preserving unique biological resources and reduced carbon emissions through avoided deforestation.

² An MOU on "cooperation in controlling, preventing illegal trading and transporting of timber, forest products and wildlife" was signed for 2009-2012 and an extension was signed in June 2012.

Direct institutional beneficiaries include a number of Government agencies and their staff. These would include MoNRE, especially DFRM; MAF, especially DoFI and PoFI. The WMPA, NNT NPA and the Management Unit, NEPL NPA would be key beneficiaries as Sub-project Delivery Agencies (SDA). In addition District Staff, Department of Justice, Customs Department, and district and provincial law enforcement agencies would benefit.

The proposed NNT sub-projects may support about 70 villages, possibly more, including peripheral and enclave villages. The proposed NEPL sub-project may support about 50 villages, possibly more, in and around NEPL NPA to be beneficiaries of project activities. The approximate number of beneficiaries would be between 80,000 and 100,000. The final list of villages will be identified during implementation through a mixture of technical and consultation process. Precise data on the villages, location, population, gender, ethnicity, natural resource dependence, forest and habitat quality, and, wildlife resources and poaching, will be accessed early during the project preparation process. Funds will be provided for a diversity of conservation and livelihood activities.

The Project activities will be implemented through the following 3 components:

1.4 PROJECT IMPLEMENTATION ARRANGEMENTS

The Environment Protection Fund (EPF) administers the Project funds and the sub-project mechanism and the beneficiaries of sub-grants are called Sub-project Delivery Agencies (SDA).

The EPF Board of Director chaired by the Deputy Prime Minister, vice-chaired by Minister of Finance, and membered by Minister of Ministry of Natural Resources and Environment (MoNRE), Minister of Ministry of Energy and Mines (MEM), Vice President of Science and Technology Council, President of Lao Women Union, Vice Governor of Bolikhamxay province, Vice President of Chamber of Commerce and Industry, and President of the Association for Agricultural Production and Processing will act as Steering Committee to provide policy guidance to the Project and enhance inter-ministerial coordination. The Board meets regularly twice a year (every six months) to review and approve Annual Reports and AWPB of EPF as well as attend to other EPF matters. The Sub-projects above US\$50,000 to US\$100,000 is approved by the Vice-chair, and the Chair is approved the sub-project above US\$100,000.

To facilitate the work of the EPF Board, a Technical Committee (TC) be established. This committee will be chaired by the Executive Director of EPF and comprised of Department of Planning and Cooperation and Department of Forest Resources Management (DFRM) of MoNRE, Department of Forest Resources Inspection (DOFI) of MAF, Ministry of Finance (MOF), and National University of Lao (NoUL). The TC will review sub-project proposals, reports and plans as well as prepare the agenda of the EPF Board meetings.

According to the EPF Decree a variety of institutions are eligible for EPF financing, as SDAs, for sub-project financing such as (a) public agencies, departments, offices, etc. (b) public education institutions, (c) NGO and Non-Profit Associations. Each of the SDAs will need to demonstrate capacity to implement their sub-project.

Initially identified SDAs are the Department of Planning and Cooperation (DPC), Department of Forest Resources Management (DFRM), Department of Environmental Quality Promotion (DEQP) of the Ministry of Natural Resources and Environment (MONRE); Department of Forest Inspection (DOFI) of the Ministry of Agriculture and Forestry (MAF); Faculty of Forestry of the National University of Lao (NUOL); Provincial Office of Natural Resources and Environment (PONRE), and Provincial office of Forest Inspection (POFI) of selected provinces.

The implementation arrangements for communities are described in details in Chapter 7 of the CEF.

1.5 SUB-PROJECT MANAGEMENT PROCESS

All PAW sub-projects will meet the following criteria (a) support a GoL policy and an officially approved plan, (b) contribute to at least one outcome indicator and at least one intermediary outcome indicator, (c) contribute to a regional outcome such as cross-border cooperation, knowledge transfer or prevention of cross-border wildlife trade.

Under PAWP, the sub-project cycle will be as follows: (a) SDA will submit a short concept to be reviewed by the EPF Secretariat for eligibility, (b) if the concept is deemed eligible, the SDA will be invited to prepare a full proposal using the PAWP OM sub-project template (the EPF will provide assistance to the SDA to ensure quality of the proposal and build SDA capacity), (c) when the SDA submit its proposal, the EPF will appraise it using a check list from the PAWP-OM and, if necessary help the SDA improve its proposal, (d) when EPF Secretariat is satisfied that the sub-project meets all relevant criteria, it will be submitted at the same time to the TC and to the World Bank for review, comments and no objection, (e) at that stage, SDA of sub-project less than US\$50,000 can sign a Sub-project Contract with EPF and begin implementation; sub-project above US\$50,000 to US\$100,000 are submitted to Vice-Chair of the EPF Board for approval, and Sub-projects above US\$100,000 are approved by Chairperson and a Sub-project contract can be signed with EPF and begin implementation.

The PAWP initial portfolio of 15 sub-project have already completed steps (a) and (b). It is expected that they will progress through the steps from (c) to (e) during the first year of the Project implementation with some sub-project starting as early as three months after Project effectiveness.

1.6 PROJECT COMPONENTS

Component 1: Institution development and capacity building

This component seeks the following Intermediary Outcome: To improve the DFRM-MONRE, DOFI, MAF and other institutions' partnership and capacity to implement and monitor national conservation laws and regional/international commitments, and operate according to a clear national plan.

This component is implemented through the EPF Window PICE (Policy, Institution and Capacity Enhancement). It will build capacity in Lao PDR for wildlife conservation by enhancing Lao's capacity for regional engagement in illegal wildlife

trade control initiatives. This will be implemented through strengthened legislative and regulatory frameworks, well-equipped specialized agencies and systems, operational support, as well as relevant training and awareness programs for staff across the agencies that contribute to the management of the protected areas system and enforcement of wildlife laws and regulations.

- 1) Sub-project 1.1 Capacity building for national biodiversity planning
- 2) Sub-project 1.2 Capacity and institution building for protected area management.
- 3) Sub-project 1.3 Capacity building for addressing regional wildlife trafficking
- 4) Sub-project 1.4 Human resources development for protected area management.
- 5) Sub-project 1.5 Awareness raising among decision makers

Component 2: Management of Wildlife and Protected Areas³

The sub-projects for Component 2 can be categorized into 5 comprising management of NPAs; coordination of NPA management; support to NPA management; support to wildlife enforcement; and implementation of the Lao National Plan for Tiger. The first sub-project category involves activities aimed at establishing/strengthening management of NPAs. Two are selected at the beginning of PAW Project: the Nakai Nam Theun (NNT) and Nam Et Phou Louey (NEPL) NPAs. Common initiatives for NPAs include: (a) protected area management such as design of management plan, patrolling, biodiversity monitoring, macro zoning, awareness raising, and (b) village and livelihood development linked to land use planning and compliance to conservation agreements. The NEPL SDA is the NEPL NPA Management Unit (which emanates from the Provincial office of Natural Resources and Environment, PONREs, from 3 provinces) and the NNT SDA is the Watershed Management and Protection Authority (WMPA).

The second sub-project category covers coordination of NPA management in Bolikhamxay, Khammouane, Houaphan, and Luang Prabang provinces. The aim of this intervention is to help PFRM and DONRE in respective specific Districts receive training, acquire equipment and logistic support to provide assistance to WMPA for management of the NPAs. Meanwhile, support to NPA management in Houaphanh Province, the third sub-project category, will likewise involve similar activities as in the other provinces as a form of assistance to the NPA MU for management of the NEPL NPA.

The next sub-project category relates to the provision of support to wildlife trafficking law enforcement in Bolikhamxay, Khammouane and Houaphanh provinces. This sub-project will help the respective POFIs, and some of its partner institutions such as the provincial environment police, the judiciary and the customs department receive training, acquire equipment and logistic support to scale up wildlife trade law

³ The NEPL NPA overlaps with 2 other provinces: Luang Prabang (Phonethong, Viengkham and Phonexay Districts) and Xiengkhouang (Phoukout District). At appraisal, we will assess if these should also be included in the original list of sub-projects.

enforcement in their province and support the relevant DAFO teams in its effort to protect wildlife and prevent timber extraction in the NPAs.

Component 3: Project Administration and Technical Assistance

This component seeks the following Intermediary Result: To deliver the Project's outcomes within the allocated time frame through excellence in planning, procurement, financial management, monitoring, and communication.

Component 3 will support the administration of the sub-project mechanism by EPF/DPC. It will include: ensuring capacity building of EPF/DPC staff and systems, compliance with the World Bank's fiduciary requirements, especially procurement, and environment and social safeguards, monitoring and evaluation, communicating with stakeholders, and facilitating effective coordination and cooperation among beneficiaries.

2. POLICY AND LEGAL FRAMEWORK

The project will operate under a national, regional and international framework of policies, laws, guidelines, and agreements.

2.1 NATIONAL POLICY, DECREES, AND GUIDELINES

Prime Minister's Decree No. 112 on Environmental Impact Assessment (16 February 2010). This decree outlines the requirements for all development projects that potentially cause environmental and social impacts to undertake an Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) as relevant; as well as having appropriate project design, mitigation measures and monitoring plan and resources to address the possible impacts. Guidelines for Public Involvement in SIA's were approved in February 2013. Guideline for Ethic Group Consultation were developed in 2013 (not yet approved).

Environmental Protection Law (26 April 1999). This law specifies necessary principles, regulations and measures for managing, monitoring, restoring and protecting the environment to protect human health, including the protection of natural resources and the richness of nature, and to ensure the sustainable socio-economic development of the nation.

Prime Minister's Decree No. 146 on Environment Protection Fund (6 June 2005). This decree established the EPF, sets its mandate, objective, governance, windows through which it can implement sub-projects and sources of financing.

Regulation No. 0360 on Management of National Protected Areas, Aquatic Animals and Wildlife (Ministry of Agriculture and Forestry, 2003). This regulation describes the zoning of national protected areas into core, managed, and corridor zones and specifies activities in these areas, prohibits hunting of all wildlife and aquatic animals in the core zone, prohibits trade in wildlife, and specifies that guns must be registered with special licenses.

Wildlife Law (24 December 2007). This law determines principles, regulations and measures on wildlife and aquatic life in nature to promote the sustainable regeneration

and utilization of wildlife and aquatic life, without any harmful impact on natural resources or habitats and to restrict anthropogenic pressure on decreasing species and the extinction of wildlife and aquatic life. The law outlines guidelines for managing, monitoring, conserving, protecting, developing and utilizing wildlife and aquatic life in a sustainable manner; to guarantee richness of ecological natural equilibrium systems, and to contribute to upgrading livelihoods for multi-ethnic people, which has the potential to develop and realize national social-economic goals.

Lao Tiger National Action Plan 2010-2015. The government of Lao PDR endorsed this plan as part of the Global Tiger Initiative to secure the tiger habitat in its network of national protected areas. Two out of five priority actions programmes to achieve long term strategic goals for tiger conservation, as outlined in the Summary National Tiger Recovery Program will be supported under this project and includes: establishing an inviolate core zone at NEPL NPA through law enforcement, outreach and education, land use planning, and capacity building; establishing and maintaining connectivity between the NEPL source site of tigers with other neighbouring tiger conservation landscapes; and by demarcating an established corridor and collaborating with other forest managers to create a connected forest landscape.

Decree on Associations (9 April 2009). This Decree sets the rules and regulations governing the establishment, operation and management of associations registered as legal entities in Lao PDR for the purposes of promoting the Lao people's right of freedom, creativity and ownership in the organization of associations aiming at national protection and development; providing guidelines to individuals or organizations intending to set up associations; and providing guidelines to government organizations in managing, facilitating and encouraging lawful activities by associations, promoting associations' contributions towards socio-economic development and poverty eradication, as well as countering and restricting activities affecting national stability, social order and individual rights of freedom.

Decree on Compensation and Resettlement of people affected by Development Projects (7 July 2005). This decree defines principles, rules, and measures to mitigate adverse social impacts and to compensate damages that result from involuntary acquisition or repossession of land and fixed or movable assets, including changes in land use, restriction of access to community or natural resources affecting community livelihood and income sources. This decree aims to ensure that project affected people are compensated and assisted to improve or maintain their pre-project incomes and living standards, and are not worse off than they would have been without the project. Regulations and Technical Guidelines for this Decree were both approved in 2010.

Politburo Resolution on Formulation of Provinces as Strategic Units, Districts as Comprehensively Strong Units, and Villages as Development Units (15 February 2012). This resolution provides general guidelines for decentralization in the country. Province, district and village level governments are requested to explore new roles and responsibilities for enhanced integrated leadership to improve ownership and accountability.

Forestry Law (24 December 2007). This law determines basic principles, regulations and measures on sustainable management, preservation, development, utilization and inspection of forest resources and forestland; promotion of regeneration and tree planting; and increase of forest resources in the country. The principles of the law aim

to maintain balance of nature, making forest and forestland a stable source of resources, ensuring sustainable preservation of water sources, prevention of soil erosion and maintenance of soil quality, conserving plant and tree species, and wildlife for the purpose of environmental conservation and contribution to national socio-economic development.

Land Law (21 November 2003) The objectives of the Land Law are to determine the management, protection and use of land to ensure efficiency and conformity with land-use objectives and with laws and regulations, and to contribute to national socio-economic development and the protection of the environment.

Legislations on land and forestry are currently under revision in Lao PDR. The National Assembly has oversight over a process that will lead to a land policy followed by a land use master plan, and a revised land law. The current draft of the land policy provides recognition to customary land management rights, collective management and community management rights. The design of PAW is based on the existing land and forestry laws but the project will update the design and implementation plan if required, depending on the opportunities presented by the revised laws on land and forestry.

Regulation number 0886/MAF, recently updated in June 11, 2010 into the regulation number 2860/MAF on Pest Management in Lao PDR. The regulation was developed based on the WHO recommended Classification of Pesticide by Hazard and Guideline to Classification 1994-1995. The GoL had registered in January 2010 the companies who import pesticides, fertilizers and seeds into Lao PDR. Registered pesticide has been adjusted in May 2010 based on the new regulation. The Department of Agriculture (DoA) under MAF is mandated to oversight all the usage of pesticide (see also Annexure 4).

2.2 INTERNATIONAL AND REGIONAL AGREEMENTS AND CONVENTIONS

ASEAN Agreement on the Conservation of Nature and Natural Resources (1985). Lao PDR as Party to this agreement has agreed on development planning, the sustainable use of species, conservation of genetic diversity, endangered species, forest resources, soil, water, air and address environmental degradation and pollution.

United Nations Convention on Biodiversity (CBD 1996). Under this convention, Lao PDR has agreed to conduct an Environmental Assessment of proposed development projects to minimize harmful effects.

Convention on International Trade in the Endangered Species of Fauna and Flora (CITES 2004). Provides an international umbrella for management and control of trade in endangered fauna and flora. Tiger is listed as CITES Appendix 1 species for which all international trade is prohibited.

United Nations Framework Convention on Climate Change (UNFCCC 1995). The Government of Lao PDR joined the global community to combat climate change by ratifying this Convention. As a developing country (non-Annex I), there is no requirement for Lao PDR to reduce its greenhouse gas emissions. The country also ratified the Kyoto Protocol in 2003 and thus may be eligible for involvement in

carbon trading through a compliance market of the Clean Development Mechanism as well as the international voluntary greenhouse gas emission trading.

Ramsar Convention (1982). The GoL officially joined the Convention in 2010. Two wetlands of international importance have been designed as Ramsar sites as part of the accession process which are the Xe Champhone Wetlands in Savannakhet Province, and the Beung Kiat Ngong Wetlands in Champasak Province.

3. ENVIRONMENTAL AND SOCIAL SAFEGUARDS

3.1 SAFEGUARDS POLICIES TRIGGERED

The environmental and social policies and procedures of the World Bank are widely regarded as de facto international standards for the environmental and social management of development projects.

The World Bank undertakes environmental screening of each of its proposed projects to determine the appropriate extent and type of assessment to be undertaken. The Bank classifies projects depending on its type, location, sensitivity and the nature and magnitude of impacts on communities and the environment.

While the PAW project is not expected to have adverse environmental impacts, it has been assigned Category "B" status. The category B is given because the types of possible impacts are mostly positive, and for the few potential negative impact, they are predictable and easy to mitigate if the environmental mitigation measures are followed promptly. This is a precautionary measure to ensure that all safeguards policies are given due attention, and to help the PAW preparation team identify approaches to enhance expected positive impacts.. As per Bank policy the borrower, the Government of Lao PDR is responsible for preparing all safeguards documents.

Category B project impacts are site-specific; few if any of the negative impacts are irreversible; and in most cases mitigation measures can be designed for such projects. The environmental and social assessment examines the project’s potential negative and positive environmental and social impacts and recommends measures to prevent, minimize, mitigate, and compensate for adverse impacts and improve environmental performance.

The PAW project is intended to improve overall protected area management capability in NPAs. However there is a risk that some sub-project activities may cause localized small scale negative impacts. The table below lists the World Bank safeguard policies, whether they are triggered, and provides an explanation of why and which instrument will guide mitigation.

Table 1: Project Environmental and Social Safeguards Triggered

Safeguard Policies	Triggered	Explanation
Environmental Assessment OP/BP 4.01	Yes	The project and sub-projects will not involve any major civil works and/or generate any adverse impacts on the local environment and people. Sub-project includes the following three types of interventions that would have safeguards

		<p>implications: (i) sub-projects in support the formulation, and/or capacity building for implementation, of studies, surveys, strategies, policies, regulations, decrees and laws on protected area conservation and wildlife protection at regional, national, and local level; (ii) sub-projects to strengthen the forest and wildlife conservation practices in NPAs starting with NE-PL and NNT NPAs (NPA site level) by supporting the preparation and implementation of NPA management plans and annual plans, participatory demarcation of NPA boundaries and internal zoning; and supporting community livelihood development activities (community level) in the selected NPAs. These impacts are expected to be minor, known and readily mitigated through implementation of mitigation measures and proper monitoring activities. Given the unknown location of the proposed subprojects before project appraisal, an ESMF has been prepared to describe the process and guidance to address environmental impacts once investments are selected and their location defined during project implementation. The ESMF includes screening criteria for selecting investments that could be financed by the project; lists possible impacts and relevant mitigation measures (Environmental Code of Practice (ECOP)s and PCR chance find forms are annexed); describes implementation arrangements for environmental management aspects; and includes the project consultation and disclosure process. During project preparation, stakeholders of the two NPAs have been regularly consulted on sub-project proposed design, potential impact and procedure toward sub-projects preparation and implementation. [and the draft ESMF has been disclosed in country with local stakeholders on December 9, 2013 and has been publicly consulted on December 17, 2013, and disclosed in English at the Bank Infoshop on 18 December 2013.]</p>
Natural Habitats OP/BP 4.04	Yes	<p>Project or sub-project activities will not create significant degradation of natural habitats but will provide positive benefits (strengthening combating illegal logging) to NPAs including the two initially selected NE-PL and NNT NPAs. However, minor disturbance and site specific impact may occur during the construction and operation of small conservation facilities, such as substations and checkpoints construction proposed for financing under the project. However, the impact is expected to be minor and site specific and it can be mitigated through measures incorporated in the ECOP (annexed to the ESMF). Also, participatory land use plans (PLUP) will be developed to clearly delegate areas of critical natural habitats and incentives for protection of critical and non-critical natural habitats are provided through community grants based on community compliance with forest conservation contracts. The ESMF includes screening procedure to (i) determine whether the proposed facilities are in a critical or non-critical natural habitat and (ii) avoid any significant conversion or degradation of any critical natural habitat.</p>
Forests OP/BP 4.36	Yes	<p>This policy is triggered as the proposed activities involve changes in management of forest areas in NPAs (financing NPA management plans), which may then affect the rights and welfare of people and their dependence on the forests (i.e. the NPAs). The project is expected to have beneficial impact and reduce the deforestation rates of targeted NPAs. The ESMF</p>

		includes screening procedures (and negative list) for project investments so that interventions which could have the potential to impact upon forested areas are not eligible for financing under the project. Participatory Social Assessment and Participatory Land Use Planning under the CEF process will ensure relevant government agencies and communities work to delegate protection/ production forests from community use areas, and communities will be supported to develop alternative livelihoods to reduce dependency on forest resources for livelihood. Conservation Agreements will be made with communities that include restriction of forest resource use and incentives for community compliance are provided through community grants.
Pest Management OP 4.09	Yes	The project will not finance procurement of pesticides. However, support to agriculture activities compatible to NPA purposes is eligible as a community grant that might increase the use of pesticides or present pest management practices. Impacts of pesticide use will be assessed during each subproject screening. If pesticides will be used, the project impact is expected to be minor and can be mitigated through a simplified Pest Management Plan (PMP) (developed and annexed to the ESMF). The plan includes criteria to ensure that the pesticides used have negligible or minimal impact on environment and are listed as allowed to be used in country in line with WHO.
Indigenous Peoples OP/BP 4.10	Yes	Many project beneficiaries are expected to be ethnic minorities who are known in Lao PDR as Ethnic Groups and meet eligibility criteria under OP 4.10. For example, Hmong, Khmu, Mien, Makong, Bru and others are living in and around the two pre-selected NE-PL and NNT NPAs. These are considered to be vulnerable ethnic groups in Lao PDR as their livelihood is heavily based on subsistence agriculture and forest. The presence and involvement of these ethnic groups triggers this safeguard policy. The impact of the project on these communities is generally positive, however, any negative impacts that may occur are addressed under the Community Engagement Framework that includes Ethnic Group Planning Framework. Where their broad community support is not ascertained based on free, prior and informed consultations, subprojects will not be implemented.
Physical Cultural Resources OP/BP 4.11	Yes	The project will not affect any known PCRs (e.g., historical, cultural, and/or archaeological, paleontological, , religious, or unique natural values of national and/or regional cultural importance). However, the project area covers ethnic minority groups such as Hmong, Mien, Lao Tai and Khmu; there could be a limited number of graves, village cemeteries, and/or communal properties in spiritual forests in the subproject sites that may be affected by project activities. ESMF includes provisions for screening of PCRs during subproject investments and sites' location as well as "chance find" procedures, so that suitable mitigation measures are implemented and incorporated into the corresponding NPA management plan(s).

Involuntary Resettlement 4.12	OP/BP	Yes	The policy is triggered because the project will support a stricter enforcement of protected areas management which will restrict the current access of local people to natural resources inside protected areas. Local people affected by the project will benefit from more sustainable access to forest and other natural resources and project support for alternative livelihoods which seeks to enhance their livelihoods sustainably. Nonetheless, short-term loss of livelihood could be unavoidable because adaptation to changes in resource allocation and livelihoods may be a longer-term process. In line with OP 4.12, The Community Engagement Framework (CEF) was developed to allow meaningful participation of affected people in developing a plan of action (Community Action Plan - CAP) to enhance livelihood in the long run and mitigate short-term livelihood losses, and grant financing will be provided to support implementing the CAP. The project will not involve physical relocation. However, minor land acquisition may be required under community livelihood activities and/or small repair, rehabilitation or new construction of office buildings and other facilities on public land. The Resettlement Policy Framework (RPF) was also developed that set out policies and procedures for the limited land acquisition. RPF is attached to CEF. During the project implementation, if land acquisition is required, an abbreviated Resettlement Action Plan(s) (RAP) will be prepared and implemented for any activities that require involuntary land acquisition.
Safety of Dams 4.37	OP/BP	Yes	Although the Project will not finance construction/rehabilitation of dams, one protected area (NNT) that will receive funds under this project is located in the area of the NT2 dam and hydropower station. The project will provide for enhancement of protection measures that will strengthen the NNT NPA management addressing any potential damages linked to NT2 operation (P076445). Due diligence on the dam safety would be presented in the EMP for this NPA developed during project implementation. The POE and the financiers, including the World Bank, for the NT2 dam monitors regularly the integrity and operation of the dam and information. None of the project activity is dependent of any existing dam or dam under construction.
Projects on International Waterways 7.50	OP/BP	No	The project interventions will not affect the quality or quantity of any international waterways.
Projects in Disputed Areas 7.60	OP/BP	No	The project is not located in disputed areas

4. SIA METHODOLOGY

4.1 BACKGROUND TO PAW SOCIAL ASSESSMENT

The SIA is restricted to the two NPAs preselected for sub-projects: NEPL NPA and NNT NPA. It assess project social risks, identify negative impacts and positive social benefits expected of the PAW project, and recommend measures to mitigate negative impacts and enhance positive benefits. The assessment reviewed project activities, targeted beneficiaries, the social and environment context of project location, and beneficiary communities.

4.2 METHODOLOGY AND APPROACH TO THE SIA

A preliminary scoping exercise was conducted at the beginning of the SIA process. A key finding of this exercise was the importance of continuous learning and adjustments throughout the project implementation process, and of active participation of beneficiary communities, in order to adequately address the significant diversity of cultural and socioeconomic conditions across project areas as well as the rapidly changing operational environment.

It found that critical determinants of successful NPA management such as monitoring and enforcement capacity of protected areas management authorities, exposure to external markets, existing natural habitats and wildlife, ownership of community members to the conservation agenda, reliance of community livelihoods on natural resources and their access to external markets, and absorption capacity of conservation officials and communities, vary across NPAs and even within the same NPAs, and could even change during project implementation. The scoping exercise also highlighted likely impact of external infrastructure such as mining, hydropower, and road construction that could have an impact on project activities and the rapid pace of developments.

The project therefore decided to use a process-oriented rather than a blueprint approach. Specifically, this SIA focuses on identifying social issues and challenges relevant to the project through literature review and key informant interview, as well as socioeconomic assessment of a limited scale in order to supplement secondary data collected through literature review. Data were collected through three sources: (i) literature review and key informant interviews, both on NEPL and NNL and for all NPA in Laos in general, to identify challenges faced and lessons learnt for NPA management, and relevant issues such as social and biophysical diversity, community livelihoods, institutional arrangements around NPA management, capacity of NPA management units and evolving policy framework on land and forests; (ii) stakeholder consultations conducted in selected villages that include free, prior and informed consultations with affected communities inside NEPL and NNT NPAs; and (iii) detailed socioeconomic assessment conducted in selected villages in NEPL and NNT NPAs with the aim to supplement secondary data collected through literature review. The SIA also makes recommendations on institutional mechanisms that would assist in risk management from external development.

For those impacts that are readily identified under SIA, mitigation measures are recommended, however, for those impacts that are not readily identifiable or that will differ across specific locations or change over time, guidance and processes are

developed to carry out further assessment and develop mitigation measures during implementation. An Environmental and Social Management Framework (ESMF) has been developed to propose a process to screen all sub-project activities, identify potential negative impacts and mitigate these during implementation. Processes and procedures for participatory Social Assessment and Community Action Plan to assess project social impacts, mitigate negative impacts and enhance positive benefits have also been developed in the Community Engagement Framework (CEF).

4.3 LITERATURE REVIEW

A literature review was undertaken as there is a reasonable amount of documentation available for both the NPAs. The list of literature reviewed is attached to this SIA. Not many data were found to be available that indicate detailed and current situations in project NPAs, however, a limited number of surveys and reports was found to provide historical trends of environmental management as well as socioeconomic, cultural and demographic conditions in NPAs.

Even though this is an SIA, the physical and biological as well as development context is key to community livelihoods and is therefore included. A NPA Data Template was created as for the purpose of the ESMF. It was disseminated to MoNRE staff, and through them to the heads of the two NPAs. The NPA Data Template was developed to enhance organised and timely data collection in the project area of impact. It also aims to obtain comparable data to allow a relative comparison of issues and approaches in the two NPAs, and to be able to utilize this disaggregated data for the SIA. The NPA Data Template is available at Annexure 5 of the ESMF.

Information was also sourced from the public domain, especially on several Government of Lao PDR websites. These were in the form of decrees, policy documents, regulations, guidelines, plans, and presentations by senior GoL staff at national, regional and international forums. These included information related to mining and agriculture concessions and land leases, location of existing and proposed hydropower projects, studies on land leases and concessions on selected provinces in Lao PDR, and maps that outline rural electrification plans for the future. This information has been incorporated in the SIA and other documents and should be updated and checked for accuracy during implementation.

Recently approved World Bank project documents related to the Scaling Up Participatory Sustainable Forest Management (SUPSFM) project were also reviewed. In addition, environmental and social safeguard documents related to Bank projects in poverty alleviation, community development, environment, and forestry were also reviewed. These included the Poverty Reduction Fund (PRF), Khammouane Development Project (KDP), and LEnS (Lao Environment and Social Project).

4.3 PRELIMINARY SOCIOECONOMIC ASSESSMENT

The socioeconomic assessments of a limited scale were conducted in NEPL and in NNT in order to supplement the secondary data collected under this SIA. Since the two assessments were carried out independently, different survey instruments and methodology were used. In both NPAs, more in-depth socioeconomic assessment will be conducted as part of participatory Social Assessment during implementation.

In NNT NPA, a socioeconomic assessment conducted by the WMPA covering 31 villages in 2012. The villages, with a population of 238 families, are situated in the NPA. The population in these villages is comprised of several ethnic minority groups, including Makong, Kaleung, Salang, Alao, Aten, and Lao. The WMPA Livelihood Development for Conservation (LDC) team developed the survey instrument, with support from a technical consultant. The questionnaire was pre-tested during the training of enumerators and refined based on pre-testing results. During the actual survey, a team of two enumerators interviewed the head of each household, a man or woman above 18 year's age. To supplement the survey, a participatory rural appraisal was also undertaken in each village to validate information initially gathered, discuss village resource use, activities, and clarify issues identified by the community.

A socioeconomic assessment was also conducted as part of the original SIA by Lao-Asie Consultants Group in June 2012. It covered 6 villages in the NEPL NPA, namely, Nachak, Huaymeuy, Sopka/Nathong, Huayma, Meuangyeud and Kohai villages. Interviews were also held in some sanams, including Sanong1 and Sanong 2. While the considerable diversity in socioeconomic, demographic and cultural conditions in NEPL cannot be fully captured by the limited survey of six villages, it nonetheless identified typical issues and characteristics of residents in NEPL. The population of these 6 sample villages, numbering 5,237 in total including 2,813 women, traces their ethnic roots from Hmong, Khmu and Lao groups. Consultation meetings were also held with villagers to supplement and validate the information collected through surveys, was undertaken by two teams.

4.4 FREE, PRIOR AND INFORMED CONSULTATIONS

Stakeholder consultations were conducted that included free, prior, and informed consultations with affected communities in NEPL and NNT NPAs.

In NEPL NPA, consultation meetings were held in the Phathi village cluster with villagers from Kohai, Meuang Yeud, Huay Ma, and Sopka villages from 19 to 21 June 2012, and with two villages of Nachak district from 18 to 20 June 2012. Another meeting was also held in Buamphat village of Viengthong District with participants from village leadership of six villages on 16 June 2012, and at Sakok kumban on 17 June 2012. The objective of these meetings was to provide information about the proposed project and collect socioeconomic data from participants, and sought for inputs on project design, identify potential negative impacts and measures to enhance positive benefits. Participants of community meetings expressed broad community support to project activities.

In NNT NPA, consultation meetings were conducted in Ban Nong Boua, Ban Lang Khang and Ban Thong Kham in Boualapha district; and Ban Na Bor, Ban Thong Kong, and Ban Kham Hae in Ngom Malath district, Khammouane province. Meetings were also had with village leaders and representatives of DAFO and DoNRE of Boualapha, Ngommalath, and Khamkeut districts. Similar to NEPL, the meetings aimed to provide information about the proposed project and collect socioeconomic data from participants, and sought for inputs on project design, potential negative impacts and measures to enhance positive benefits. Participants of community meetings expressed broad community support to project activities.

The main concern of local communities in both NPAs was restriction access to forest resources, including timber, NTFPs, and grazing area. Suggestions were made by communities on alternative livelihood activities such as livestock (pasture development), fish farming (fishpond development), cash crops production (cassava), water supply system, and village development fund and input to start up their livelihood activities.

5. SOCIO ECONOMIC SETTING OF SELECTED NPA AREAS: BASELINE CONDITIONS

5.1 NAM ET-PHOU LOUEY NATIONAL PROTECTED AREA

5.1.1 Current Biophysical Status

The project area consists of selected zones of the Nam Et-Phou Louey National Protected Area (NEPL NPA) that is operated under the authority of the Nam Et-Phou Louey Protected Area Management Unit with technical support from WCS. Map 11 provides the location and boundaries of the NEPL NPA. The NPA is located in north eastern Lao PDR covering an area of 595,000 ha of mountainous terrain and is representative of the Northern Indochina Subtropical Forests Eco-region. The NEPL NPA ranks high in the Lao PDR's national protected area system for contributing with the highest biological diversity of any protected area in this Northern Highlands region (Davidson 1998; Ling 1999), and is best known for harbouring the last known breeding wild tiger population remaining in Indochina (Walston et al., 2010).

The Northern boundary of the NPA borders Vietnam; the southern part covers part of Xiengkhuang Province; and the western side of the NPA shares a boundary with parts of Luangprabang Province. Altitudes in the NPA range from 400-2257 metres above sea level with over 60% of the land area above 1000 metres, and 91% of the area along slopes being greater than 12%.

The NPA is located in the upland areas of the Nam Et river that is one of the biggest rivers on the North Eastern part and flows to the Nam Ma and Nam Neun rivers on the south eastern part, and further to the Nam Ka river in Vietnam. This river system has numerous smaller tributaries.

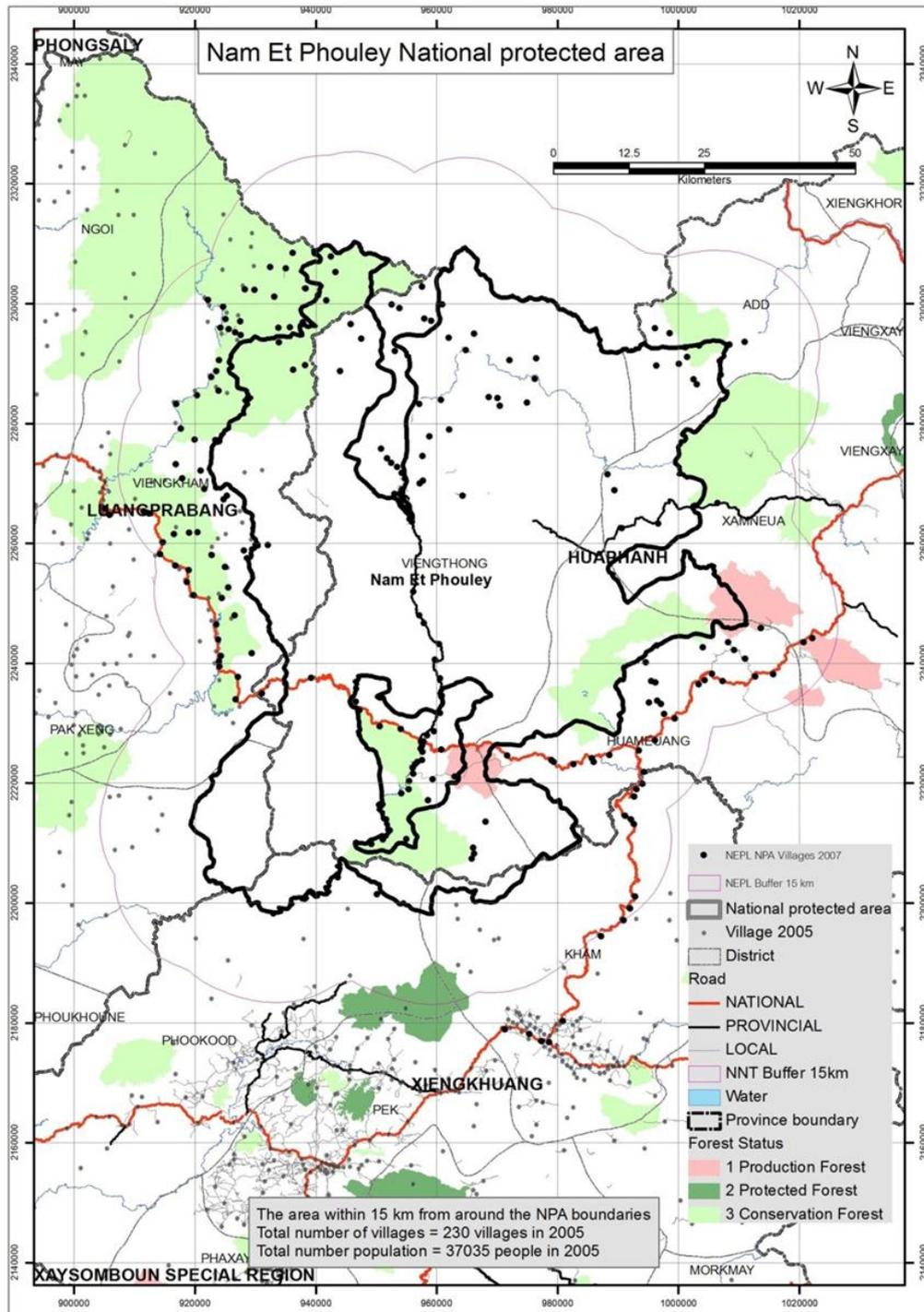
5.1.2 Biodiversity Values

The original vegetation of the region where the NEPL NPA is located was primarily dry evergreen forest mixed with large areas of deciduous forest (Duckworth et al. 1999). Today, mature forest defined, as “areas with at least 20% canopy cover and a 30 metre canopy” are uncommon in the Northern Highlands. In many areas, prolonged shifting cultivation and fire have resulted in forests being replaced by large areas of Imperata grass, bamboo and other secondary vegetation. Amidst this landscape, 72% of the NEPL NPA is covered in mixed evergreen deciduous forest up to 1500 metres transitioning into evergreen forest from 1500 to 1800 metres, which is interspersed with beech forest and rhododendron species above 1800 metres (Davidson 1998). These forested areas are embedded in a mosaic of old shifting cultivation fallow and bamboo groves

5.1.3 Wildlife Resources

NEPL is probably best known for its mammals and most notably for harbouring one of the most important tiger populations remaining in Indochina (Johnson et al. 2006; Dinerstein et al., 2006). In addition, the NPA also lies within the second most important core area in the world for supporting small carnivore taxa – mustelids and viverrids – of conservation concern (Johnson et al., 2009; Schreiber et al. 1989). WCS has conducted a series of mammal surveys in the NPA since 1998 (Davidson 1998, 1999; Guillen and Francis 1998; Vongkhamheng 2002) and also undertakes ongoing annual monitoring of tiger and prey populations (Johnson et al. 2006; WCS-Lao PDR unpublished data). Surveys during March 2003 - May 2004 (Johnson *et al.*, 2006) confirmed the presence of a low-density population (<1 tiger/100 km) of tigers numbering 7–23 individuals in a 952–3548 km sampling area.

Map 1: Nam et Phou Louey NPA



The NPA contains an outstanding diversity of carnivores that includes six cat species, dhole, two bear species, and 11 species of small carnivores, including civets, mustelids and mongoose. A small Asian elephant population persists along the Nam Et river. Guillen and Francis (1998) also described over 40 species of bats from the NPA, three of which were new records for Lao PDR. Nineteen species of mammals recorded from the NPA during camera trap surveys (Johnson et al. 2006; Johnson et al., 2009; WCS unpublished survey data) or during sign surveys (Johnson et al., 2008; WCS unpublished survey data) are listed as globally threatened or data deficient (IUCN 2009), as shown in Table 2.

Much of the wildlife of the Northern Highlands is akin to that of the Himalayan Palaearctic region (MacKinnon and MacKinnon 1986, in Duckworth et al. 1999). Among the wildlife of Laos, relatively little is known about the reptile and amphibian diversity. A field survey coupled with interviews resulted in a preliminary list of 30 species that included six species of turtles, two species of pythons, several species of frogs, toads, lizards that included two species of monitor lizards, typical snakes, vipers, and an elapid snake (krait). Of the known herpetofauna in the NPA, it is notable that most of the turtles are listed as IUCN endangered (EN), vulnerable (VU) or data deficient (DD), including the Southeast Asian soft-shell turtle *Amydcartilaginia*(VU), the big-headed turtle *Platysternonmegacephalum*(EN), the four-eyed turtle *Sacaliaquadriocellata*(EN), and the tortoise *Manouriaimpressa*(VU) (IUCN 2009).

Preliminary surveys of the avifauna in the NPA were first undertaken in 1998 (Davidson 1998) and resulted in a list of 299 species. Of these, three species are listed as endangered or near threatened (NT), including rufous-necked hornbill *Acerosnipalensis*(VU), the beautiful nuthatch *Sitta Formosa* (VU) and Blyth's kingfisher (NT) (IUCN 2009). PhouLouey mountain is identified as especially important as it contains a distinctive montane bird community with ten species.

The core population of gibbons is located in the western part of the NPA while only one group has been sighted in the whole of the eastern part of the NPA. These records are sourced from ground patrols and no scientific surveys of gibbons have been conducted in the NPA. The gibbons prefer primary forests but can persist in degraded forests if not heavily hunted. If gibbon groups are located through surveys then efforts are made to augment canopy-crossing opportunities such as rope crossings.

Table 2: Globally threatened or data deficient species recorded by camera trap or during sign surveys in the Nam Et-Phou Louey NPA between 2003 and 2008

Species	Scientific name	Camera trap surveys (2003-2007)	Sign surveys (2003-2008)	Status – global ⁽ⁱ⁾
Stump-tailed macaque	<i>Macacaarctoides</i>	X	X	VU
Assamese macaque	<i>Macacaassamensis</i>	X		NT
Phayre's leaf monkey	<i>Tracypithecusphayrei</i>	X		EN
Northern white-cheeked gibbon	<i>Nomascusleucogenys</i>		X	CR
Dhole	<i>Cuon alpines</i>	X		EN
Asiatic black bear	<i>Ursusthibetanus</i>	X		VU
Sun bear	<i>Helarctosmalayanus</i>	X		VU
Hog badger	<i>Arctonyxcollaris</i>	X		NT
Oriental small-clawed otter	<i>Aonyxcinerea</i>	X		VU
Large Indian civet	<i>Viverrazibetha</i>	X		NT
Owston's civet	<i>Chrotogaleowstoni</i>	X		VU
Asian golden cat	<i>Pardofelistemminckii</i>	X		NT
Marbled cat	<i>Pardofelismarmorata</i>	X		VU
Clouded leopard	<i>Neofelisnebulosa</i>	X		VU
Tiger	<i>Pantheratigris</i>	X	X	EN
Asian elephant	<i>Elephasmaximus</i>		X	EN
Gaur	<i>Bosgaurus</i>	X	X	VU
Small dark muntjac	<i>Muntiacusrooservetorum/truongsonensis</i>	X		DD

Southwest serow	China	Capricornismilneedwardsii	X	X	NT
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Globally threatened-critically endangered (CR); Globally threatened-endangered (EN); Globally threatened-vulnerable (VU); Globally near threatened (NT); Data deficient (DD). (IUCN 2009). Source: Johnson et al., 2006; Johnson et al., 2008; Johnson et al., 2009, WCS Lao PDR unpublished survey data.

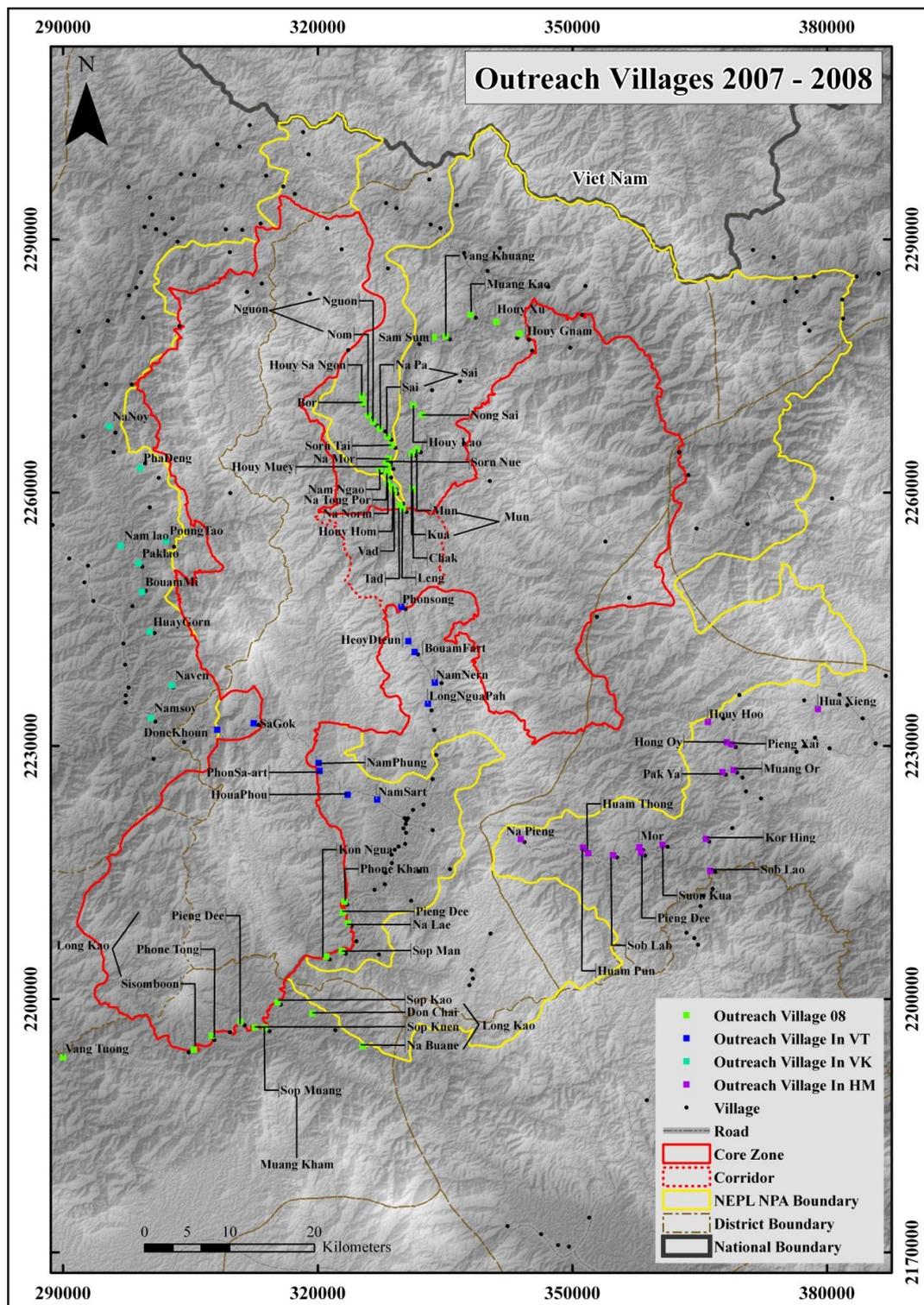
5.1.4 Land Use, Tenure and Conservation

The NPA is divided into two zones, a 300,000 hectares core zone where access and harvest is prohibited, and a 300,000 hectares village use area, where pre-existing villages are allocated land for subsistence (Johnson 2009). The core zone is also known as the prohibited zone and has forests and forestland providing habitat, living and reproduction sites for animals and a wealth of plant species, where forestry activities, forest produce gathering, including the removal of animal and plant species are strictly forbidden unless specially authorized by the park authority. The village use area is forest area or forestland adjoining neighbouring restricted areas, which the population may make, limited use in wood exploitation, gathering of forest products and hunting. The population previously inhabiting the reserve forests may carry out different activities and use forest resources in accordance with management plans and specific rules aimed at ensuring the sustainable use of forestry resources in such areas and the efficient preservation of forest and biodiversity resources. Land is the sole property of GoL and is managed by the NPA. Land and Forestry Laws of Lao PDR state that local community members have the right to use the land in an appropriate manner under the NPA management. NPA management provides the land to local communities by allocation and with agreements on land use. Map 1 provides an overview of the core zone and location of villages.

The process of forest and land use zoning was completed during the 1990s for most villages in and near the NPA. Supported by the government's Land and Forest Allocation Program, village maps have been produced to indicate overall village area; agricultural land including livestock grazing areas; forest areas including forest use and conservation areas. Villagers are authorized to use the area for agriculture activity, wood collection for construction and firewood, collection of NTFP and sometimes wild meat of managed species for their own consumption.

GiZ, CliPAD, WCS and the government have provided assistance in land zoning however all the villages in and adjacent to the NEPL NPA have not been covered by land zoning. Macro zoning that delineates village area, agriculture land, forest use land, village conservation land, and residential land etc. has been undertaken. No form of land tenure has been provided to these villages. Given the lack of monitoring budget and resources, land use has not been effectively monitored in the past, thus, encroachment into the NPA boundary remained an unsolved challenge in the NEPL NPA.

Map 1: NEPL NPA Core Zone and Villages



Between 90 and 98 per cent of households have access to agricultural land. The average landholding size is the smallest in Houaphanh (1.09 ha per household), followed by Xiengkhouang (1.38 ha per household,) with the largest area being in Luangprabang Province (1.76 ha per household). Over half the households in Houaphanh and Xiengkhouang have access to irrigated land, and own cattle and buffalo. Shifting agriculture practice is higher than the national average in Houaphanh practiced by 76 per cent of villages, and Luangprabang practiced by 89 per cent of villages.

The NEPL PAMU implements the conservation agenda in the NPA; the PAMU has received assistance from WCS, and patrolling staff are drawn mainly from the district military in Viengthong. The patrolling staff is based at eight substations and carry out patrolling regularly. A reporting network has also been established in some villages to inform the PAMU of cases of illegal activities. However, no village patrolling system has been established in the NPA.

5.1.5 Population and Ethnicity

There are 14 villages inside the NEPL NPA management zone and 110 villages bordering the NPA boundary, with a mean population of 428 people per village (NEPL-MU 2012). A socio-economic and environment survey was conducted in June 2012 in 6 villages inside the NPA. Ethnically, these villages are Hmong, Khmu and Lao and the total population of these six villages is 5,237 including 2,813 women.

The Hmong are one of the primary groups inhabiting the higher elevations of NEPL NPA in the past. Of the three ethnic minority groups, the Hmong historically have been more engaged in hunting. They grow rice and corn using the swidden agriculture system, raise livestock and have limited paddy fields in the valleys. The Hmong speak a language in the Hmong-Iu-Mien family.

The Khmu people traditionally lived on the mountain slopes and to some extent along the rivers of NEPL NPA. The Khmu have traditionally been swidden farmers, who practice shifting upland paddy cultivation, hunting and gathering NTFPs in the lands near their communities. Fishing is a common practice for the Khmu people. These people speak a language in the Austro-Asiatic language group of the Mon-Khmer family.

The very smallest ethnic group represented in NEPL NPA area is the Iu-Mien people, or “Yao” people. These colorful people utilize land in a similar way to other groups specializing in shifting cultivation. In years with low production the villages often rely on hunting and gathering NTFPs for their subsistence. These people speak a language from the Sino-Tibetan ethno-linguistic family and are distantly related to the Hmong language.

The Lao Tai ethnic group establish communities along rivers flowing from the NEPL NPA and base agriculture production on paddy rice primarily in low land with swidden upland second. Rice cultivation in low paddy land normally gives a higher yield than that in upland or on steep mountainous slopes. The majority of Lao Tai people are able to better cope with socio-economic developments and integration to the market economy with their more marketing knowledge and skills as compared to the three ethnic minorities: Khmu, Hmong and Iu-Mien. They speak languages categorized in the Tai-Kadai family, which is predominantly used as the official language. They have dominated Laos numerically, politically and economically for centuries. While the Lao are a significant portion of the population living in the controlled use zone of the NPA and around the periphery, they would not be considered as IP in this EPP for the above reasons. All these ethnic groups have a close association with the forest for their subsistence. However since the Indo-Chinese conflict, the Lao government has encouraged sedentary villages, preferably along roads with easy access. Many villagers were relocated during the war and years following the war.

Table 3: Gender break up of population and availability of labour

Village	No. of HHs	No. of Families	Total Population						Average HH Size			Available Labor		
			Female		Male		Total		Female	Male	Total	Female	Male	Total
			No.	%	No.	%	No.	%						
1 Nachak	60	82	256	5	313	6	569	11	4	5	9	3	4	7
2 Huay Meuay	141	172	525	10	576	11	1,101	21	4	4	8	3	3	6
3 Sopka	65	76	246	5	204	4	450	9	4	3	7	3	3	6
4 Huay ma	205	255	791	15	763	15	1,554	30	4	4	8	3	3	6
5 Meungyued	130	163	363	7	414	8	777	15	3	3	6	2	3	5
5 Kohai	104	141	243	5	543	10	786	15	2	5	8	2	4	6
Total	705	889	2,424	46	2,813	54	5,237	100	3	4	7	3	3	6

Two main ethnic groups, namely, Hmong (4 villages) and Lao (2 villages), were found to live in the 6 villages where a detailed socioeconomic assessment was conducted. Of the six villages, Huay Ma village has the highest population with a total of 205 households (255 families). The total population reaching 1,554 people include 791 women. The village with the smallest population is Sopka, which comprises 65 households (76 households) equivalent to a total population of 450 people, of which, 246 are women.

The average population per household is 8 persons with 4 women for Hmong group, 6 persons with 3 women for Lao group and 7 persons per household with 3 women for Kmu ethnic.

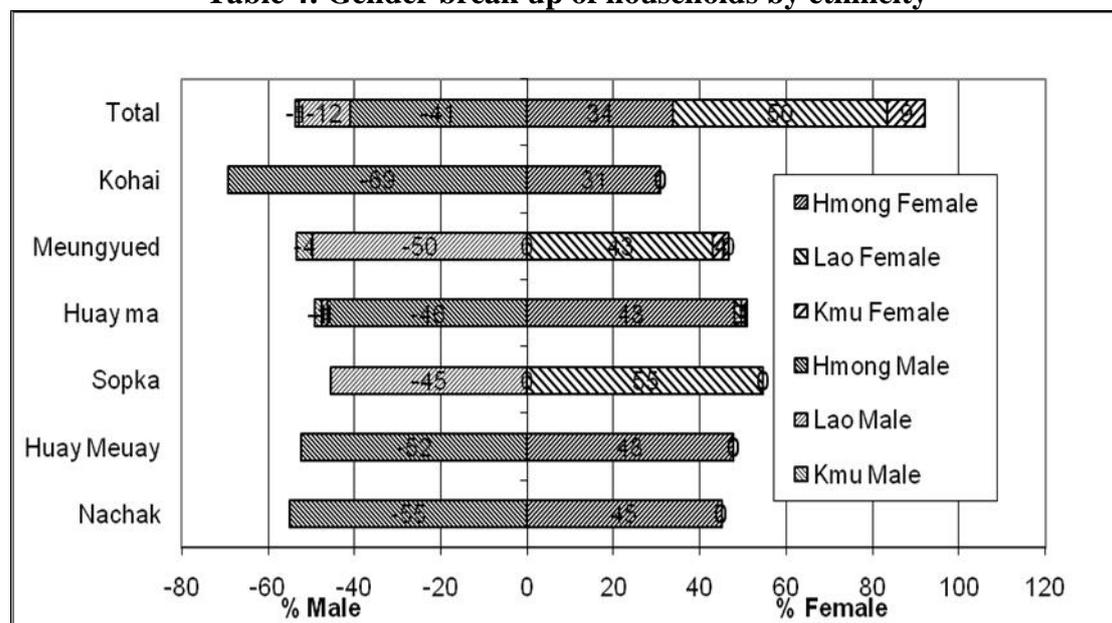
The Kmu ethnic group has the smallest population among the three groups. Its population is composed of 101 people mixed with Hmong village at Huay Ma and Lao Village at Meuang Yeud village. There are 9 families with 44 people at Huay Ma village and 11 families with 57 people at Meuang Yeud village.

The in-migration population during the last 3 years was 84 persons with 38 women in 2009, 59 persons with 26 women were in 2010 and in 2011 a number of in-migration population were decreased to 35 persons with 22 women. About half of the in-migration population was Hmong who moved into Huay Ma, Nachak and Huay Meuay villages while only 20 Kmu migrated to Meuang Yeud village in 2009. Most of the households migrated from nearby villages and elsewhere in the region seeking for new settlements near relatives and all are accepted by the host villages. The average household size of the in-migration population is 7 persons with 3 females.

The out-migration population was only 22 persons in 2009, of which, 12 females moved out from Nachak, Huay Meuay and Kohai villages. Reasons for out-migration include insufficient water and electricity, lack of market, and desire to settle near their relatives in other places.

There are 10 women-headed households of Hmong ethnicity in 4 villages and 23 women-headed households of Lao ethnicity, mainly in Sopka and Meuang Yeud villages.

Table 4: Gender break up of households by ethnicity



5.1.6 Local economy and livelihoods

No data are available that indicate the overall livelihood and economic conditions in NEPL. The data available from the detailed socioeconomic assessment conducted in six villages indicate that the livelihood of local population is very much associated with the natural environment by way of agricultural production and shifting cultivation. There are few sources of alternative employment and settlements are highly scattered and in remote and inaccessible areas.

Most families are engaged in subsistence activities with little integration in the market economy. Rice is the staple food and is primarily produced through rotations of upland, shifting cultivation on steep mountainous slopes. Shifting cultivation accounts for more than 80% of cultivation, which is evident by many cleared hillsides along roads in the village use zone. The most common cash crops grown by villagers are soya beans, makdeuai, sesame, and chili. The most common livestock are cattle, pigs, goats, and poultry. NTFPs such as cardamom, sugar palm, rattan, mulberry fibre, chewing bark, bamboo shoots, and edible shoots and roots are other income sources that are estimated to generate 22% of total income. The villages in the area are traditionally involved in such revenue generating activities such as weaving, distilling, pottery and bamboo/rattan weaving. They also commonly manufacture brick and furniture for domestic use and occasionally for selling. Trading and services are not yet well developed in the area although there are small shops providing goods for domestic consumption. According to the 2001 Poverty Assessment, the three main districts in NEPL, Houameuang, Viengkham, and Viengthong, fall into the second highest poverty bracket with poor villages making up more than 90% of the total (the poorest districts have 100% poor villages).

Meat and vegetables are raised or harvested from the forest. Although Laos has over 40% forest cover and less than 22 people per km² (ICEM 2003), hunting and fishing techniques are diverse and extensive, including traps, snares, bows and guns that are used to capture a wide range of animals (Duckworth et al. 1999). In a 2005 village survey in NEPL, squirrels, deer, fish, pigs, pheasants and partridges were reported to be the most commonly consumed on a monthly basis (Johnson unpublished data). Another study estimated that each household in the NPA annually consumed 141kg of wild meat of which 20% was deer and pigs (ICEM 2003). Given an average of 35 households per village in the 98 villages in or near the NPA, this is a minimum estimated off-take of 96,000 kg of ungulates annually.

The total permanent paddy area among all 6 villages and 2 sanam of sanong 1 & 2 is only 57 ha that can produce about 150 tons a year for 188 households and the rest are all upland rice cultivation area covering about 790 ha for 654 households. Huayma village can produce surplus upland rice of about 80 tons a year but that required a large piece of land (over 500 ha annually). The villagers are reliant on upland rice, corn production and some livestock for their income, but these products are not regularly sold, except those produced under contract farming for corn with private investors.

About 95% of household income come from rice and other agricultural production including livestock and poultry-raising. Only a few people earn income from employment as village chief, teacher, among others, while 20% of the total households earn income from farm labour for other farmers and only 10 to 20% collect NTFP for sale. A small number of villages also manufacture handicrafts and perform simple services.

5.1.7 Rice Sufficiency

Rice deficiency in the area is very high as evidenced by the difference between average rice production of about 1,190 tons/year against the rice requirement of 2,072 tons/year based on information provided by authorities in the villages. It means that, annually, there is shortage of over 880 tons of rice. To address this deficit, villagers search for other sources of income in order to buy more rice for their consumption. For instance, they sell animals, corn and other NTFPs or collect wild roots and shoots as rice substitutes.

The table below compares the total rice production against rice requirement between the years of 2009 to 2011. The table also shows that an average annual percentage of rice deficiencies are 84% in 2009, 76% in 2010 and 74% in 2011 and an average rice shortage during last 3 year is over 880 tons annually.

Table 5: Status of rice sufficiency

Villages	2009			2010			2011			Average		
	Total Production, Tons	Estimated Rice Requirement, tons/year	Rice Surplus or (Deficit), tons/year	Total Production, Tons	Estimated Rice Requirement, tons/year	Rice Surplus or (Deficit), tons/year	Total Production, Tons	Estimated Rice Requirement, tons/year	Rice Surplus or (Deficit), tons/year	Total Production, Tons	Estimated Rice Requirement, tons/year	Rice Surplus or (Deficit), tons/year
1 Nachak	69.00	204.84	-135.84	69.00	204.84	-135.84	69.00	204.84	-135.84	69.00	204.84	-135.84
2 Huay Meuy	116.00	396.36	-280.36	115.00	396.36	-281.36	120.00	396.36	-276.36	117.00	396.36	-279.36
3 Sopka	60.00	162.00	-102.00	60.00	162.00	-102.00	84.00	162.00	-78.00	68.00	162.00	-94.00
4 Huay ma	620.00	559.44	60.56	650.00	559.44	90.56	650.00	559.44	90.56	640.00	559.44	80.56
5 Meungyued	160.00	559.44	-399.44	185.00	559.44	-374.44	213.00	279.72	-66.72	186.00	466.20	-280.20
6 Kohai	110.00	282.96	-172.96	100.00	282.96	-182.96	120.00	282.96	-162.96	110.00	282.96	-172.96
Total	1,135	2,165	-1,030	1,179	2,165	-986	1,256	1,885	-629	1,190	2,072	-882

Source : Village Agro-Socio-Economic Survey Questionnaire

5.1.8 Problems in the Villages

The most common problems experienced in the villages covered by the socio-economic survey relate to livestock-raising issues and agricultural production. It was pointed out that the animals get affected by diseases, while there are specific limitations to higher productivity such as low soil quality, lack of land for planting and need for agricultural techniques. There are also issues with regard the condition of infrastructure which affects the transport of produce to the market. With such clear problems identified, the possible solutions were likewise clearly determined such as the availability of a veterinarian, funding support, technical advice on agricultural technique, and improvements in infrastructure, among others.

Table 6: Problems and Issues on Agriculture

Villages	Problems/Issues	Suggested Mitigation Measure
1 Nachak	- Animal died due to seasonal infected diseases	- need to improve road condition
	- Poor road for transportation	- need technical training on agriculture and livestock
2 Huay Meuy	- difficult to transport Agriculture products & animal for sale due to bad road condition	- request fund for construct access road to production areas
	- serious seasonal animal diseases affection	- Need technical training (cropping, animal husbandry)
	- Limited grazing land	- Need fund to promote cropping and animal husbandry
	- Low soil quality	
	- Low productivity	
3 Sopka	- no paddy land and no potential for development	- potential for livestock raising
4 Huay ma	- no potential land for Paddy	- cash crop
	- no fund for buying animal for multiplication	- find fund for support
5 Meungyued	- Animal died every year	- need to be trained veterinary
	- no agricultural techniques	- need advice from DAFO on agricultural technique
6 Kohai	- no agricultural land	- look for agricultural land
	- no capital for investment	- find some fund for investment

Source : Village Agro-Socio-Economic Survey Questionnaire

5.1.9 Tradition

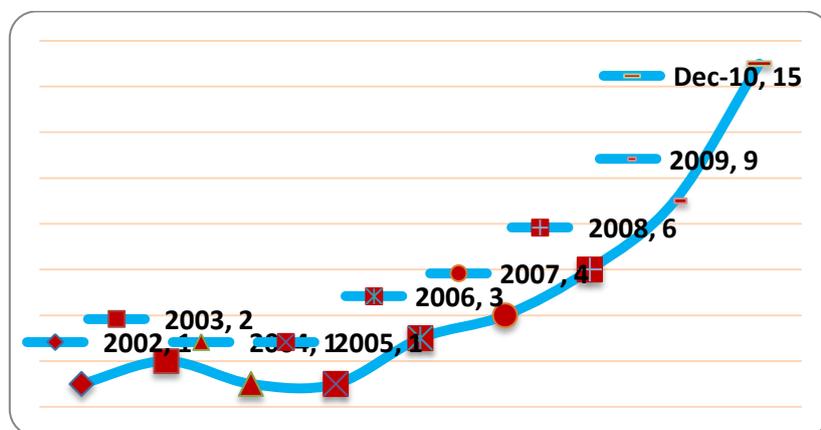
The traditions of the villagers in the area mainly stem from animist beliefs, with New Year celebrated in January and villagers following the lunar calendar. However, the 12 rules and 14 principles from Buddhism are commonly followed (*heep sip song, khong sip sii*). The religious beliefs of the different groups, e.g., spirit forest, cemeteries and animal veneration, have an important bearing on conservation due to the restrictions they impose. Other beliefs may have negative impacts, such as burning of vegetation to improve land productivity and hunting prospects, as well as prolonged celebrations and belief in the healing powers of spirits to the exclusion of modern medicine.

5.1.10 Land Lease and Concessions for Mining and Agriculture

Concessions are not permitted inside NPAs although the law is sometimes unclear on this. However, due to unclear jurisdictional concession granting mandates, particularly between district, province and central tiers, and weak monitoring and compliance enforcement, NPAs have experienced incompatible land lease, and concession granting for mining, agriculture and other requirements. A review of the state land lease and concession inventory 2010 in Houaphanh province reveals a total of 85 projects of which 53 per cent were lease and 47 per cent were land concession projects. The highest number of projects was located in Samneau and Viengxay districts. Investments in state land involve industry, service, trade, communication, construction, mining and tourism. No lease or concession projects were implemented in the agriculture sector possibly due to remote and inaccessible upland terrain in the province.

An analysis of the number of approvals on an annual basis during the period 2002 – 2010 shows a sharp increase with 2009 and 2010 showing significant approvals. Figure X illustrates this data and trend. Further analysis indicates that 53 per cent of these projects received approval at the district level while 42 per cent were approved at the provincial level.

Figure X: Number of projects approved in Houaphanh province 2002-2010

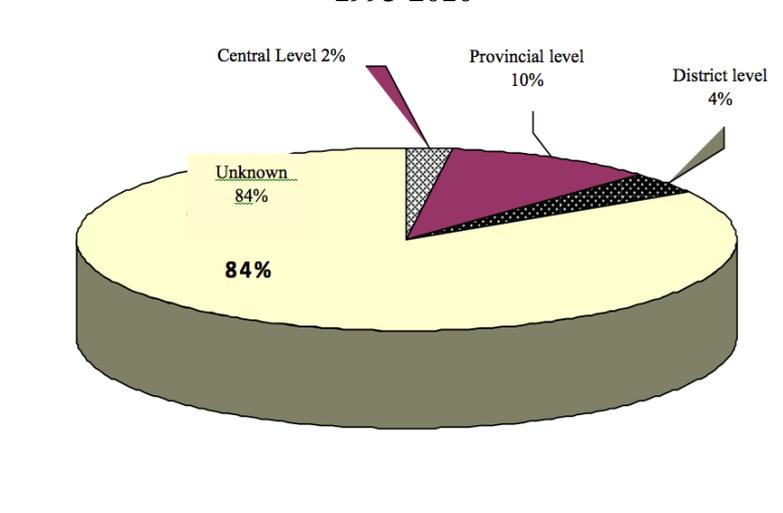


Field visits report that there were 19 potential mining sites reported in July 2010 in Viengthong district of which nine were located inside the NPA. Based on notifications from GoL and in consideration of the value of the NPA, the District

cancelled all the mining survey and exploration proposals in July 2010. District authorities further confirmed that no mining operations would be allowed in and near the NEPL NPA. This needs to be verified during project preparation with District authorities.

A review of the inventory for Luangprabang province confirms that approvals have risen, and in fact from three in 2008 rose sharply to 35 in 2009. Xiengkhuang province saw approvals rise from one in 2001 to 12 in 2008, thereafter dropping to six and seven in 2009 and 2010 respectively. The SIA notes that the most important aspect of these approvals lies in the administrative level of the approval. In Luangprabang province only four per cent of the approvals were provided at the District level and 10 per cent at the provincial level with 84 percent being provided by Unknown Approval Authority as revealed by Figure 7. Sixty per cent of approvals in Xiengkhuang province were at the provincial level with districts only approving seven per cent while 27 per cent approvals were by Unknown Approval Authority.

Figure 7: Number of Projects by level of approval in Luangprabang province 1993-2010



5.1.11 Roads

The NEPL NPA is being disturbed by past and on-going development activities including, (i) an existing national road 1C runs east-west to the south of the NEPL NPA connects Luangprabang and Houaphanh provinces (ii) Road No. 3204 runs north-south of the NEPL NPA from Viengthong District centre to Sone Zone and further connecting with presently re-opening Phathi road leading Samneau (Houaphanh Provincial Centre) through Huay Ma village at the eastern end of the road in Phathi village cluster, and (iii) development of Phathi road 61 km east-west to the north of NEPL NPA of which 31 km runs through the Total Protected Zone (TPZ). There exists a co management plan for the Phathi road based on the social assessment of the Phathi road that was undertaken in 2012. Construction of the Phathi road is proceeding but slower than anticipated. The PAW project needs to include monitoring of the co management plan into its annual work plan; familiarize itself with the key elements of the social assessment; and seek active engagement in the institutional mechanisms that will oversee the Phathi road co management with its MoNRE collegiate Department of Environmental Impact Assessment (DESIA).

5.1.12 Existing Approach to Conservation and Wildlife Protection

There are 124 villages located in and near the NE-PL NPA; these are multiethnic groups and practicing mainly upland agriculture for their subsistence. Since the establishment of NPA in 1993, sustainable agriculture activity, livestock and cash crops are replacing the overharvesting of wildlife and forest resources including NTFP and wood of local communities. By the support of NGOs (IUCN from 2000 to 2002 and WCS from 2003 to present) conservation activities were widely introduced to NE-PL NPA. However, not all villages have engaged and participated in conservation activities, due to inadequate resources that cannot cover the entire NPA. Main conservation activities engaged with local communities include awareness raising on importance of biodiversity in the NPA. A small number of local communities participate in the forest patrolling activities, and forest and land use zoning have been completed in three villages in Viangkham district in Louangphrabang province. Under the support of German CLiPAD project, the forest and land use zoning is currently ongoing in Houamuang district and will be extended to Samneua district in Houphanh province. The ecotourism activity (under WCS supported program) is benefiting 14 villages in Viengthong district, Houphanh province. Some share of income from tourism activities are shared with the village development funds to fund village development activities as well as forest protection activities in participating villages.

Some conservation activities have been initiated with local communities, however, more efforts are clearly needed by all parties to boost participation of local communities into the conservation of the NE-PL NPA.

5.1.13 Physical Cultural Resources

Project activities will cover diverse ethnicities, cultures, and spiritual practices that have the potential to impact on Physical Cultural Resources (PCR). PCR are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.

The NEPL NPA Management Unit has a mechanism that integrates consideration of local cultural values and ethnic group into its village development plan. Areas that are important to local people, such as sacred forest areas, burial grounds, or spirit trees, are designated on the plans, and managed according to customary practices. Communities develop local rules for management of such areas that are endorsed by the Management Unit and the local district authority. Other project activities that may affect local ethnic communities, such as tourism, are also developed in consultation with them so that they are able to participate and receive a share of benefits.

5.1.14 Institutional Framework

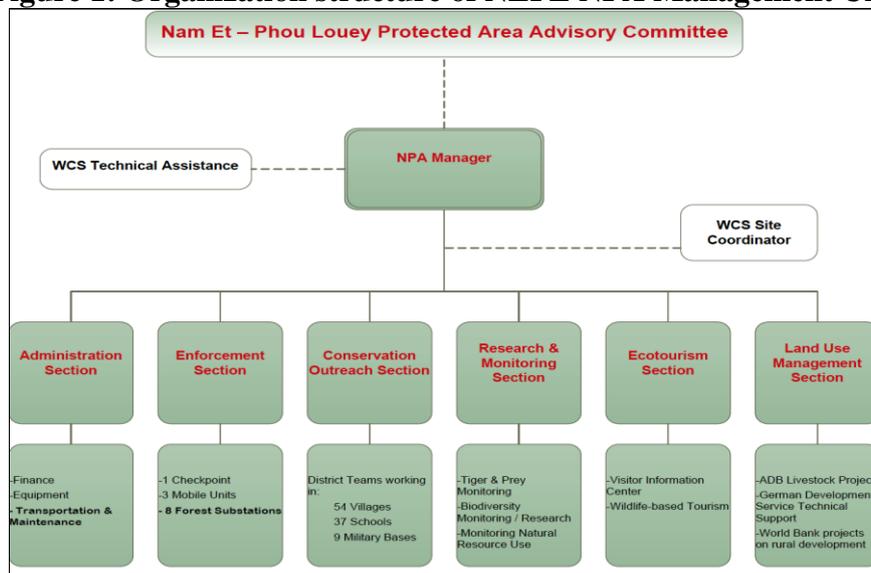
The NEPL NPA was established under Prime Minister's Decree 164 on October 29, 1993 as two contiguous National Biodiversity Conservation Areas (NPAs; Nam Et and Phou Louey) that together covered 422,900 ha (Robichaud et al., 2001). At the same time, the decree designated 16 other protected areas throughout the country, which represented the beginning of the nation's protected area system. All protected areas in Laos are characterized as IUCN Category VI Managed Resource Areas

(Robichaud et al. 2001). The most recent version of the Forestry Law 2007 further designates that protected areas should contain two zones, a *totally protected zone*, also referred to as a *core zone*, where access and harvest is prohibited, and a *controlled use zone*, also referred to as a *management zone*, where pre-existing villages are allocated land for subsistence purposes. The Wildlife Law (2007) establishes three categories of wildlife, which include Category 1 species, which are those that are prohibited for harvest, and Category 2 and Category 3 species, which can be hunted for subsistence by the villages in the management zone, following specific guidelines on gear and seasons for harvest.

The two protected areas that make up the NEPL NPA have been under active management since 2000 with ongoing international technical and financial support, first from IUCN until 2002, followed by WCS from 2003 to the present. Since their establishment, the two NPAs have been managed as a single protected area unit with its headquarters in Viengthong District. In 2001, WCS was invited by the NPA to help resolve reported problems of tiger attacks on livestock. Houaphanh and Luangprabang provinces drafted the first management plan for the NPA with support from the Ministry of Agriculture and Forestry in 2003.

From 2000 to 2002, the Houaphanh and Luangprabang provincial governments implemented, in Viengthong and Viengkham districts, the *Integrated Biodiversity Conservation and Community Development in the Nam Et–Phou Louey NBCAs* project, with support from the Department of Forestry, the Ministry of Agriculture and Forestry, and the IUCN Lao PDR office, and with funding from Danida (IUCN 2002). This initiative succeeded in establishing the protected area office and staff in Viengthong district. They undertook preliminary wildlife and botanical surveys, completed a baseline livelihood analysis, and conducted preliminary NPA boundary mapping as well as land use mapping. They also conducted village land allocation, community development and gun collections in target villages, and prepared the first NPA management plan.

Figure 1: Organization structure of NEPL NPA Management Unit



In 2005, the Viengthong district governor mandated that livestock be relocated to the villages, from where they were being grazed inside the NPA, in response to reported

links between livestock grazing and tiger poaching (WCS 2006). Building upon these pre-existing national laws, the first regulations specifically for the Nam Et-Phou Louey National Protected Area were drafted and endorsed by the governor of Houaphanh province and the governors of Viengthong, Houamuang and Viengkham districts in early 2008. The stated purpose of the regulations are to, i) set rules and measures to stop forest and wildlife crime, ii) to conserve biodiversity and the functioning ecology systems of wildlife and habitats, and iii) to establish the NPA as a model for conservation, sustainable use, ecotourism, education, culture and scientific research. The regulations specify the rights and duties of the NPA Management Unit to enforce these regulations and illustrate the expanded area of the NPA, now 595,000 ha in size, and the location of the 300,000 ha core zone, making the NEPL NPA the largest protected area in Lao PDR. Figure 1 provides the organisation structure of the NEPL NPA Management Unit.

5.2 NAKAI NAM THEUN NATIONAL PROTECTED AREA

5.2.1 Background to Nam Theun 2 Watershed and NNT NPA

The NNT NPA is located in the Nam Theun 2 watershed that has the Nam Theun 2 (NT2) hydroelectric project with an annual capacity of 1075 megawatts. The creation of the reservoir flooded an area of 450 square km and of this area approximately 130 square km was inside the original NNT NPA as designated by GoL in 1993. The boundary of the NPA was modified in 2000 to extend it by inclusion of two forested corridors linking it to the two national protected areas of Phou Hin Poun NPA and Hin Nam Nor NPA. These three areas together are known as the NT2 Watershed and cover approximately 427,700 ha. The NT2 Watershed also includes special conservation areas comprising of stream alignments and valleys between mountains in the northern and southern source areas of the reservoir, and islands on the northeastern side of the corridor between the NNT NPA and the Phou Hin Poun NPA. The NT2 Watershed is an offset for the NT2 hydroelectric project and continues to be monitored by the World Bank and international financial institutions. See Map 12.

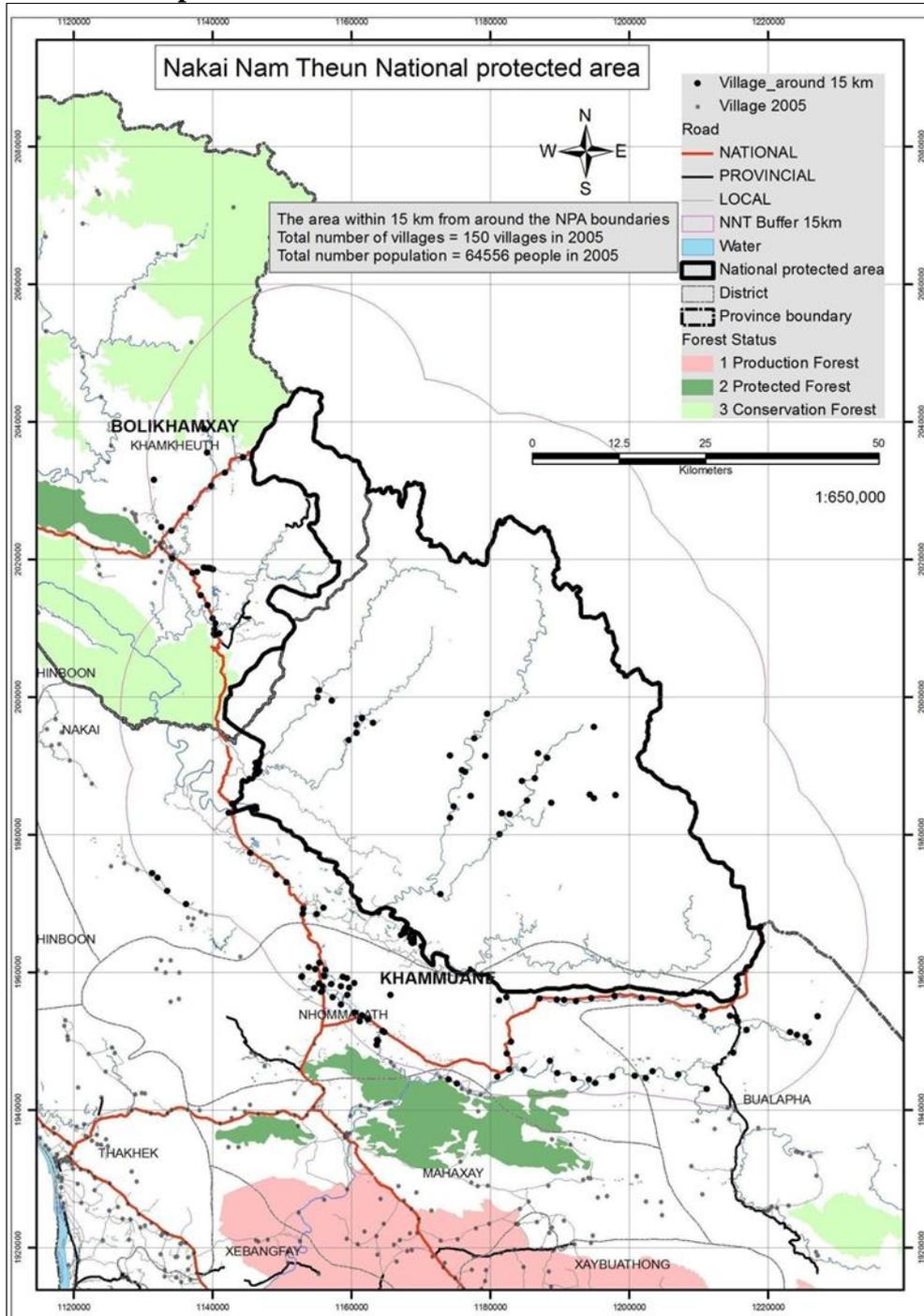
The NT2 Watershed Management and Protection Authority (WMPA) are mandated to manage the NT2 Watershed and the NNT NPA. This mandate includes responsibility for coordinating and implementing the conservation, maintenance and enhancement of the NPAs and the watershed. The key objectives of the WMPA are to guarantee adequate volume of water with low sediment load and rehabilitation of forest areas in the NT2 Watershed; preserve and protect the natural biodiversity system particularly the conservation of habitat of rare, endangered or near extinct wildlife and aquatic life species; contribute towards and facilitate improvement of livelihoods of multiethnic communities; and strengthen capacity of the Authority and stakeholders for effective management of the Authority's objectives.

5.2.2 Current Biophysical Status

The Sai Phou Louang (Annamite) Mountains within the NPA running NW-SE dissected by NE-SW oriented river valleys form the bulk of the protected area. As these rivers emerge through gorges in the Dividing Hills onto the Nakai Plateau, the five main rivers (Nam Sot, Nam Mon, Nam Theun, Nam Noy and Nam One) widen and meander, creating rich riverine forest habitat. The Dividing Hills are a NW-SE oriented range up to 1,000 metres separating the Nakai Plateau from the Northern and

Central Mountains area. The Nam Theun leaves the plateau at its northwestern end, turns to the west and eventually joins the Mekong River as the Nam Kading. Elevations in the NPA range from 500-2,200 metres above sea level; with 500-580 metres on the Nakai Plateau, 600-1,100 metres in the Dividing Hills; and 600-2,200 metres in the Central and Southern Mountains.

Map 12: Nakai Nam Theun National Protected Area



A block of mountains covering around 800 square km forms the heart of the protected area. They are mostly above 1000 metres, with many peaks above 1,500 metres and the summit ridge rising to 2,200 metres at Phou Laoko. This is the catchment for the Nam Sot, Nam Mon and Nam Theun rivers. Established settlements in the lower,

flatter portions of these river valleys form two enclaves, named by their sub-districts as Taseng Navang around the Nam Sot and Nam Mon, and Taseng Thaphaiban around the Nam Theun. To the north, the very high ground is continuous with the Northern Mountains. South of the Central Mountains there is a stretch of slightly lower mountains, here named the Southern Mountains, which are the catchments of the Nam Noy and Nam Pheo.

The Nakai Plateau is the relatively flat area around the confluences of Nam Theun with Nam Sot, Nam One and Nam Noy. The rectangular plateau covers about 1,200 square kilometres and ranges from about 490 to 600 metres above sea level and merges into the Dividing Hills to the east and southeast. To the south, the plateau drops away sharply to the cultivated Gnommalat lowlands.

5.2.3 Biodiversity Values

There is a complex range of habitats in the NNT NPA that reflect pronounced gradients in soils, altitudes and microclimates. Habitat types usually blend into one another, and there is rarely a sharp divide between them.

Evergreen forest has plant families and genera typical for other parts of Southeast Asia. Commonly found are species of Dipterocarpus and Shorea in the Dipterocarpaceae, and species of Myristicaceae, Annonaceae, Rutaceae, Sapindaceae, and Fabaceae etc. The upper canopy reaches generally around 20 metres, with emergent trees reaching to about 30 metres. The diameter of larger trees is in the 50-60 cm class; with occasional emergent trees having diameters exceeding 120-cm. Undisturbed montane Fagaceous forest dominates the northern areas where it generally occurs at higher elevations. Ridges above 950 metres toward the Vietnam border in the southern part of the NPA have scattered and small populations of cypress. Like evergreen forest, Fagaceous forest shows a mosaic of species associations and distribution patterns. Within the Fagaceae and other families, some species are generalists, found everywhere, and others are highly localized.

Cloud forest exists on the summit of PhouChomvoy and the upper reaches of the mountains in the north and south. The transition between montane Fagaceous and cloud Ericaceous forest is sharp, occurring at about 1600 metres. Ericaceous species dominate this habitat, in particular *Rhododendron cf. veitchianum* Hooker.

One of the unique features of the NPA is the occurrence of highly restricted 'everwet forest'. This occurs only in narrow bands where there are low elevation saddles in the SaiPhouLouang (Annamite) chain. These saddles allow the Vietnamese northeast monsoon to penetrate across the border and consequently these areas receive rain for up to ten months of the year. These areas are typically very wet in January-February when adjacent areas of habitat are in the midst of harsh dry season. It is probable that the fauna and flora assemblages are unique, as the habitat occurs nowhere else in Lao PDR.

5.2.4 Wildlife Resources

The NNT NPA represents Lao PDR's largest and most diverse natural forest area of Lao PDR. Three of the last five large mammals to be discovered or re-discovered worldwide occur in the NNT NPA. The most distinct of these remarkable discoveries

is the Saola *Pseudoryx nghetinhensis* (Dung et al. 1993; Schaller & Rabinowitz 1994). Other newly discovered species, a small dark muntjac and Giant Muntjac *Megamuntiacus vuquangensis* (Tuoc et al. 1994; Schaller & Vrba 1996) also have restricted world ranges centred on the NNT NPA. The Indochinese Warty Pig *Sus bucculentus* was rediscovered in the area (Groves et al. 1997) after being considered extinct (Salter 1993). Field surveys indicate that mammal communities within the protected area are exceptionally diverse. At least nine species of primate occur, including four threatened taxa to which the NPA represents a global stronghold (Pygmy Loris *Nycticebus pygmaeus*, Douc Langur *Pygathrix nemaeus*, Francois' Langur *P. nemaeus francoisi* and White-cheeked Gibbon *Hylobates leucogenys*).

In addition 16 species of carnivore have been recorded, and further species have been found in the NPA. This is the highest diversity of mammalian predators reported at a single site in Lao PDR-Cambodia-Vietnam. Included amongst these are many rare cats (Fishing Cat *Prionailurus viverrinus*, Golden Cat *Catopumatemmincki*, Marbled Cat *Pardofelis marmorata*, Clouded Leopard *Pardofelis nebulosa* and Tiger Panther *tigris*), several of which have not been recently observed by biologists elsewhere in Lao PDR.

The NPA holds significant populations of many mammals including Asian Elephants *Elephas maximus*. Few Elephants are found elsewhere in the NPA and, moreover, few viable populations of elephants currently exist elsewhere in Lao PDR.

Surveys have found approximately 430 bird species in the NNT NPA (Timmins & Evans 1996, Tizard 1996, Tobias 1997). This is the highest diversity of any site yet surveyed in Lao PDR, and amongst the highest recorded in protected areas across Southeast Asia. In terms of key species of conservation concern, 56 have been found in the NPA. If it is accepted that birds provide an appropriate basis for evaluating the importance of an area to wildlife conservation (due to ease of specific identification, availability of detailed distributional data and globally standardized categories of threat), these totals establish the NNT NPA as the most important site yet surveyed in the Lao PDR-Cambodia-Vietnam region.

The Nakai Plateau supports many threatened birds (WCS 1995a, 1995b). The northern forests contain one of the largest populations ever recorded of Crested Argus *Rheinwardia ocellata*, an endangered pheasant.

Surveys in the Nam Theun and Xe Bang fai basins indicate diverse fish communities comprising many species with restricted ranges and high conservation importance (Kottelat 1996; Roberts 1996). Although the Nam Theun was found to be less diverse than the Xe Bang fai (60 as opposed to 131 species) it contained a higher proportion of endemic species (18% as opposed to 4%; Kottelat 1996).

Table 3 provides an overview of most threatened wildlife species recorded in the NNT NPA.

5.2.5 Land Use and Tenure

The total area of the NNT NPA is 456,305 ha. The area of the Totally Protected Zone and the Special Protected Zone is 275,705 ha while the Control Zone has an area of 87,606 ha. The buffer zone covers an area of 40,246 ha while the three corridors

together cover an area of 52,748 ha. Map 2 illustrates the different zones in NNT NPA. The zoning is done by the WMPA that follows GoL regulations to apply management plans in the different zones. All land in Lao PDR remains the property of the GoL and land allocation for agriculture and other uses is done through the process of land use planning and allocation.

SEMFOP II ensures land use planning and land allocation for villages inside NPA and PIZ are completed and effectively managed, and Conservation zones including Totally Protected Zones (TPZ) and Controlled Used Zones (CUZ) are identified, zoned, and effectively managed.

SEMFOP II supports Forest and Land Use Planning, Allocation and Management (FLUPAM) at the village and NPA levels. The identification of the functions and tasks of the SEMFOP II required to achieve the WMPA's goals is based on a balanced, integrated approach to protected area management. This approach focuses on the need to find a balance between regulation enforcement and community participation, between sustainable forest and land use planning and conservation and village development, and of building partnerships between local stakeholders in the management of the NPA. SEMFOP also recognize customary rights by providing villages with usufruct rights to their areas and improve the management of natural resources through realistic and effective land and forest use planning and management; and foster the diversification of livelihoods and land use patterns towards more sustainable livelihood and farming systems according to villager needs and aspirations.

The land area in the project site is being utilized based on the following categories: conservation forest, protection forest, control used forest, agricultural land, settlement land, cemetery area, and conservation ponds. The area covered by the Navang cluster is mainly allocated as conservation forest encompassing more than 21,000 hectares. Control used forest cover about 5,900 hectares, while around 4,700 hectares were designated as agricultural land. In a similar manner, the land area of Thaphayban cluster was allocated primarily as conservation forest (43,600 hectares), protection forest (7,100 hectares) and agricultural land (5,200 hectares). Meanwhile, in the jurisdiction of Teung cluster, about 20,500 hectares had been designated as conservation forest, 9,700 hectares as protection forest, and 8,700 hectares as control used forest.

With regard land ownership, landowners in the Navang cluster had titles to 134 plots equivalent to 110 hectares. However, land title owners also come from outside the cluster holding on to 20 plots or 16 hectares. There were owners of paddies within the cluster covering 201 plots, equal to 149 hectares. In terms of VICAD coverage, 69 persons were included and 35% were considered poor. Of the total, 8 were women.

Thaphayban cluster had 83 landowners with titles covering 35.5 hectares. Paddy owners hold on to 85 plots, equivalent to 51.5 hectares. There were 73 VICAD members in the area, of which 37% were poor. Among the total members, 11 were women.

In Teung cluster, land titles were on hand for 97 plots, equal to 58 hectares. An outsider held the title for one plot of land. Meanwhile, 250 plots or almost 120

hectares was paddy land. There were 101 persons under the VICAD umbrella, of which 10 were women. The proportion of poor in the VICAD was almost 37%.

Map 2: NNT NPA Zones

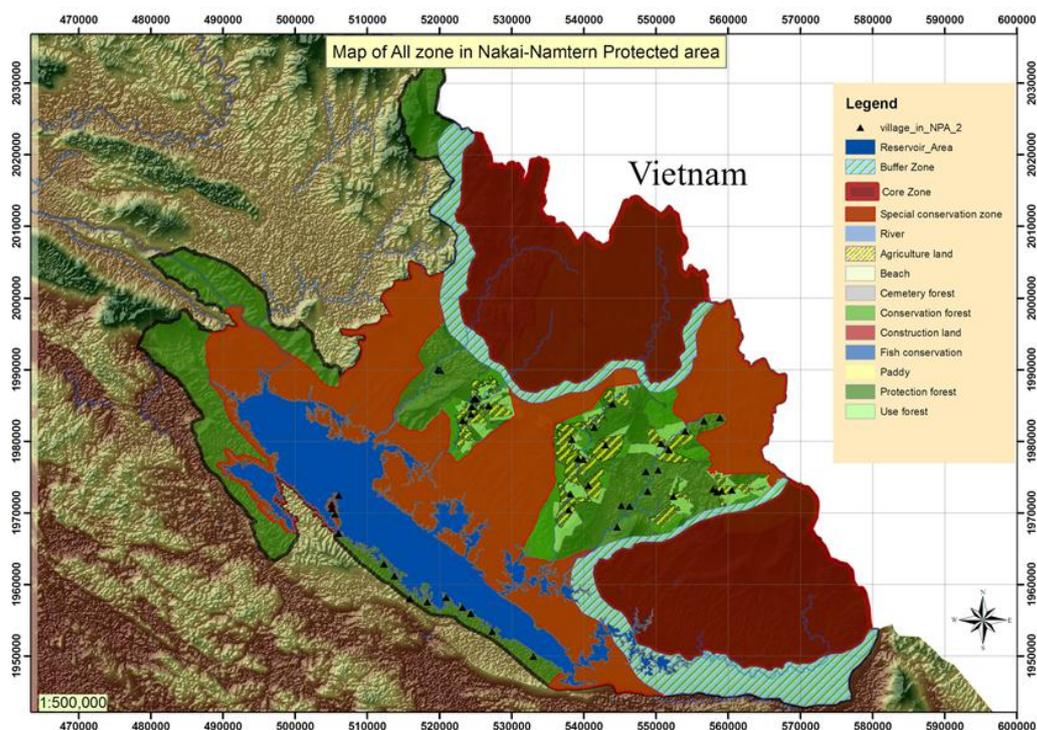


Table 7: Most threatened wildlife species recorded in the NNT NPA

Scientific Name	Common Name	Global Threat Status		At Risk in Lao PDR
		Critically Endangered	Endangered	
<i>Amblonyxcinereus</i>	Oriental Small-Clawed Otter	-	-	√
<i>Arctictis binturong</i>	Binturong	-	-	√
<i>Bosgaurus</i>	Gaur	-	-	√
<i>BosJavanicus</i>	Banteng	-	√	√
<i>Cuonalpinus</i>	Dhale	-	-	√
<i>Elephasmaximus</i>	Asian Elephant	-	√	√
<i>Felischaus</i>	Jungle cat	-	-	√
<i>Lutrogaleperspicillata</i>	Smooth-Coated Otter	-	-	√
<i>Manisjavanica</i>	Sunda Pangolin	-	-	√
<i>Manispentadactyla</i>	Chinese Pangolin	-	-	√
<i>Miniopterusschreibersii</i>	Common Bent-Winged Bat	-	-	√
<i>Neofelisnebulosa</i>	Clouded Leopard	-	-	√
<i>Pantherapardus</i>	Leopard	-	-	√
<i>Pantheratigris</i>	Tiger	-	√	√
<i>Pseudoryxnghetinhensis</i>	Soala	-	√	√
<i>Pygathrixnamaeus</i>	Douc Langur	-	√	√
<i>Rhinoceros sondaicus/ Dicerorhinussumatraensis</i>	Rhinoceros sp.	√	-	-
<i>Ursusmalayanus</i>	Sun Bear	-	-	√
<i>Ursusthibetanus</i>	Asiatic Black Bear	-	-	√

<i>Acerosnipalensis</i>	Rufous-necked hornbill	-	-	√
<i>Aceros undulates</i>	Wreathed hornbill	-	-	√
<i>Anseranser</i>	Greylag goose	-	-	√
<i>Bucerosbicornis</i>	Great hornbill	-	-	√
<i>Cairinascutulata</i>	White-winged Duck	-	√	√
<i>Ciconianigra</i>	Black stork	-	-	√
<i>Duculaaenea</i>	Green imperial pigeon	-	-	√
<i>Ichthyophagahumilis</i>	Lesser fish eagle	-	-	√
<i>Ichthyophagaichthyaetus</i>	Grey-headed Fish Eagle	-	-	√
<i>Milvusmigrans</i>	Black kite	-	-	√
<i>Pavomuticus</i>	Green Peafowl	-	-	√
<i>Rheinardiaocellata</i>	Crested argus	-	-	√
<i>Vanellusduvaucelii</i>	River lapwing	-	-	√
<i>Cuoragalbinifrons</i>	Indochinese box turtle	√	-	√
<i>Cuoratrifasciata</i>	Chinese three-striped box turtle	√	-	-
<i>Indotestudoelongata</i>	Elongated tortoise	-	√	√
<i>Manouriaimpressa</i>	Impressed tortoise	-		√
<i>Platysternonmegacephalum</i>	Big-headed turtle	-	√	√
<i>Pyxideamouhotii</i>	Keeled box turtle	-	√	√
<i>Sacaliaquadriocellata</i>	Four-eyed turtle	-	√	-
Notes:				
i) Species falling into IUCN categories "Vulnerable" or "Near Threatened" are not marked or included in this summary table.				
ii) Global Threat Status is recorded in IUCN 2003 Red List of Threatened Animals. National status follows <i>Duckworth et al. 1999</i> .				

5.2.6 Population and Ethnicity

About 6,900 people presently live in NNT clustered in 31 villages with a density of about 1.95 persons/km². More than 28 languages from four major linguistic groups have been identified in the watershed, three of which have only been described by ethnographers since 1996, and are endemic to NNT. Linguistic and anthropological evidence suggests that NNT is one of the longest continually inhabited upland areas of Laos or Vietnam. In addition to its ethnic diversity, NNT is also distinctive in that Lao, the national language originating from the country's dominant ethnic group Lao Loum, is not the first language of NNT's residents. The four major ethnic groups that reside in or use the area are:

1. Vietic (a branch of the Austroasiatic or Mon-Khmer ethnic groups) with at least 12 relatively small sub- groups of languages;
2. Brou (Western Katuic branch of Austroasiatic), also known as Soô or Makong;
3. Tai-Kadai, including the Sek, an archaic language that differs from the rest of the Tai groups; and
4. Hmong (members of the Hmong-Mien ethno-linguistic family), recent arrivals from the north, inhabiting the peripheral impact zone but not the NT2 Watershed Area.

A detailed socioeconomic assessment was conducted in three villages in NNT. The population in the three villages totaled 238 families. As can be seen in the Table 7,

Thamoeuang village is significantly more populated than the other two villages. Over a three year period covering 2010-2012, the total population in the three villages did not increase considerably and even declined in 2012. The number of females in the village comprised nearly half of the population on a per village basis.

Table 8: Gender break up of population

No	Village	Total Household	Total Families	Population					
				2010		2011		2012	
				Total	Female	Total	Female	Total	Female
1	Nahao	51	61	267	141	284	136	292	143
2	Thamoeuang	92	125	473	230	601	285	566	290
3	Songkhone	48	52	222	86	209	100	220	109
Total:		191	238	926	457	1,094	521	1,078	542

As Table 8 shows, all three villages where a detailed socioeconomic assessment was conducted consist of more than one ethnic group. Most of the people in Thamoeuang and Songkhone villages come from the Makong ethnic heritage, while the Nahao village is composed of Saek and Salang people. Buddhism is the predominant religion in all of the villages, but in Thamoeuang, Animism closely follows as the next most common belief practiced by the populace.

Table 9: Ethnicity of villages

No	Village	Ethnic minority			Religion/belief		
		Saek	Makong	Salang	Buddhism	Christian	Animism
1	Nahao	41	0	10	42	2	7
2	Thamoeuang	6	64	22	52	0	40
3	Songkhone	9	32	7	30	0	18
Total		56	96	39	124	2	65

5.2.7 Education

In terms of educational profile, it was noted in all three villages that as the grade level becomes higher, that is from Grades 1 to 5, the lesser the number of female participation becomes. The only grade level where there was a relatively high number of female participation was in grade 2.

Table 10: Participation in primary education

No	Village	# Teachers (F)	Primary School (Students)									
			Grade 1		Grade 2		Grade 3		Grade 4		Grade 5	
			Total	Female	Total	Female	Total	Female	Total	Female	Total	Female
1	Nahao\ Songkhone	2\1	35	10	23	13	20	8	8	3	7	0
2	Thamoeuang	2	36	15	16	7	3	0	0	0	0	0
Total:		4	71	25	39	20	23	8	8	3	7	0

5.2.8 Agriculture

In all three villages, upland rice is most commonly produced. Paddy rice is practiced, though in a much smaller scale, especially in Songkhone village which has only about 3ha of paddy fields as opposed to more than 30ha of land used for upland rice. The predominance of upland rice production may also be due to the geographic characteristics of the area.

Table 11: Type of agricultural land (ha)

No	Village	Paddy rice		Dry field	Upland rice		Garden		Fish pond	
		Plot(s)	Area	Area	Plot(s)	Area	Plot(s)	Area	Plot(s)	Area
1	Nahao	23	16,3	0	50	44,4	33	5,05	0	0
2	Thamoeuang	23	13,8	0	104	70,0	39	6,9	0	0
3	Songkhone	4	3,1	0	53	37,8	28	1,33	0	0

As is shown in Table 12, productivity of paddy production is generally low, which may have to do with heavier dependence of local people on shifting cultivation; for instance, Songkhone village where paddy productivity is very low has a relatively higher productivity of upland rice production than the other villages. Corn, cassava and other root vegetables are also produced in villages of NNT NPA.

Table 12: Productivity of agricultural land

No	Village	Paddy field (seeds 60kg/ha)		Dry field (seeds 70kg/ha)		Upland field (seeds 80kg/ha)		Total yield
		Ha	Yield	Ha	Yield	Ha	Yield	
1	Nahao	11,6	13,750	0	0	35,2	37,758	51,508
2	Thamoeuang	8,8	6,615	0	0	55,7	43,375	49,990
3	Songkhone	0,5	1,050	0	0	22,8	45,600	46,650

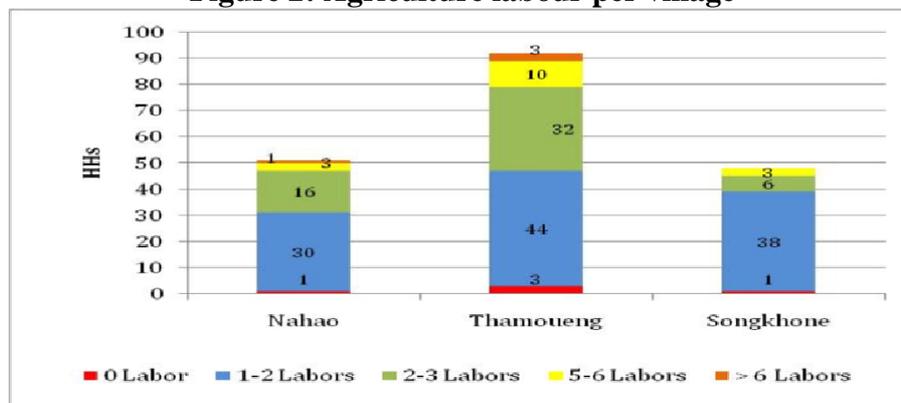
In all three villages, rice sufficiency was an issue as there remained substantial deficiencies in terms of the rice/carbohydrate requirement of the populace compared with the production yield. With its higher population, Thamoeuang village had the highest deficit for rice. Meanwhile, in Songkhone, despite its high productivity in rice relative to the area dedicated for its production, the need remained substantial.

Table 13: Rice deficiency

No	Village	Population	Labor				*Annual Rice need (350kg/pers./yr)	Rice deficit
			Primary		Secondary			
			Total	Female	Total	Female		
1	Nahao	292	134	64	26	14	102,200	- 50,692
2	Thamoeuang	566	266	133	38	24	198,100	- 148,110
3	Songkhone	220	101	47	20	8	77,000	-30,350

The labor force in the agriculture sector in all three villages was mostly composed of people belonging to primary labor - those belonging to the younger age category and thus, the more productive segment of the population. The participation of females in agriculture at this labor category may be considered substantial in all three villages, reaching almost, if not half, of the total number of laborers. This seeming equality when it comes to working in agricultural labor indicates that female villagers have a stake in the future activities and prospects in the area, particularly in terms of their productive pursuits.

Figure 2: Agriculture labour per village



Hand tractors are available in all three villages however, they are not sufficient in number to cover the area under production. Less than 20% of households in the three villages own motorbikes. The number of boats available in the three villages is relatively large; overall, one boat is available for four households.

Table 14: Availability of agricultural tools and transportation

No	Village	Agriculture tools		Vehicles		
		Hand tractor	Rice mill	Motorbike	Bicycle	Boat (engine)
1	Nahao	11	4	19	8	16
2	Thamoeuang	12	5	10	1	31
3	Songkhone	3	2	8	8	40
Total:		25	11	37	17	87

5.2.9 Property and Assets

Many households live in semi-permanent/ or temporary residential structures. Interestingly, in Songkhone village, more households tend to live in permanent structures than in other villages. This is so despite that the reported income level is not significantly high in Songkhone village, as is shown in Table 15. It is not clear whether the better dwelling structures observed in Songkhone village have to do with higher security in land tenure.

Table 15: Property and assets in villages

No	Village	Property			Assets								
		Permanent	Semi permanent	Temporary	Hand tractor	Television	Music instrument	Motorbike	Bicycle	Rice mill	Sunlight E	Phone (H)	Generator
1	Nahao	14	10	27	11	8	8	19	8	4	45	3	3
2	Thamoeuang	15	16	61	12	3	5	8	8	5	33	1	0
3	Songkhone	25	10	13	3	8	12	10	1	2	52	3	3
Total		54	36	101	26	19	25	37	17	11	130	7	6

5.2.9 Income Sources

While crops remained to be the biggest source of income in Nahao, livestock was the larger source of income in both Thamoeuang and Songkhone villages compared to crops. The higher income generated by these two villages from livestock could be challenged by the epidemic that occurs among the livestock. Services also prove to be a significant source of income in all three hamlets given its share in the total income generated. Survey results likewise indicate that the residents derive income from NTFPs but its contribution to total income is more evident in Thamoeuang and Songkhone than in Nahao. Among the three hamlets, villagers in Thamoeuang appears to earn more than the other two, while Songkhone residents generate higher income compared to Nahao. While villagers in Nahao earn higher from crops, Songkhone people derives more income than their counterparts in Nahao from livestock and NTFPs. This indicates that Songkhone villagers depend more on NTFPs compared to Nahao village.

Table 16: Income Sources

No	Village	Income sources (x1000 kip)						Total
		Crops	Livestock	NTFP	Services	Others	NPA	
1	Nahao	94,391	73,771	4,933	78,000	27,700	12,906	291,701
2	Thamoeuang	115,026	210,940	46,742	110,657	25,440	15,965	524,770
3	Songkhone	91,925	101,654	34,507	77,425	9,810	8,059	323,380

5.2.10 Household Expenditure

Food predominates household expenditure. In Nahao and Thamoeuang hamlets, food accounts for nearly 40% of household expenditure. In Songkhone, however, the equivalent ratio is 19%. For the latter, the main expenditure item is services accounting for almost 29% of total. While it is not the top priority, services account for a significant share of household expenditure in Nahao and Thamoeuang villages. Meanwhile, health accounts for about 22% of expenditure in Nahao villager, whereas in other villages, its share in household expenditure is much smaller. Agricultural expenses come first for Songkhone residents before clothes, education and health. Assuming these expense items make up all the significant needs of the households in the three hamlets, it is noted that the amount expended are less than income, which could allow the villagers to set aside some amount for savings and/or investment

Table 17: Household expenditure

No	Villages	Expenses (x 1,000)							Total
		Food	Health	Edu	Clothes	Supplies	Agri	Serv	
1	Nahao	74,533	48,725	6,055	13,390	8,800	12,767	61,955	226,225
2	Thamoeuang	65,590	17,425	5,013	21,938	6,773	13,641	40,655	171,035
3	Songkhone	50,199	25,895	25,981	33,795	7,285	42,371	74,895	260,421

5.2.11 Utilisation of Natural Resources

In terms of NTFPs, the people of Nahao village collected bamboo, rattan shoots, and resin more to sell than consume, while bitter rattan shoots and small palm shoots were equally harvested for both purposes. Only males collect the bitter rattan shoots while knife was the main tool used for all types of products. The harvest of bamboo, resin and bitter rattan shoots is noted to be in decline.

In Thameouang, bamboo, honey and bitter rattan shoots were the NTFPs mostly gathered by the residents. However, only males collected palm leaves, bitter rattan shoots and honey. Knife was the main tool of trade. With the exception of palm leaves and small palm shoots, the harvest of other products is in decline.

Bamboo, bitter rattan shoots and rattan shoots were the main NTFP harvest in Songkhone village. Only males gathered the palm leaves and bitter rattan shoots, while knife was the most common tool used. Among the five products typically harvested, the yield from bamboo and bitter rattan shoots is indicated to be in decline.

Based on the results, some of the NTFPs are now on the decline that was part of the resources in the area being used by the residents, either to sell or to consume. Such occurrence threatens the sustainability of these resources, as well as the sources of livelihood for some villagers.

Table 18: Utilisation of NTFPs in Nahao Village

No.	Types	Tools used	Who collect (male/female)	Rank		Harvest season	Status
				Food	Sell		
1	Resin	Knife	Male/female	0	3	Nov-Mar	Decline
2	Bitter rattan shoots	Knife, axe	Male	2	2	Dry season	Decline
3	Rattan shoots	Knife	Male/female	3	4	Year round	Stable
4	Small palm shoots	Knife	Male/female	1	1	Year round	Stable
5	Bamboo	Knife	Male/female	4	5	Year round	Decline

Table 19: Utilisation of NTFPs in Thamoeuang village

No.	Species	Tools used	Who collect (male/female)	Rank		Harvest season	Status
				Food	Sell		
1	Bamboo	Knife	Male/female	5	6	Year round	Decline
2	Palm leaves	Knife, axe	Male	-	1	Dry season	Stable
3	Bitter rattan shoots	Knife	Male	3	4	Year round	Decline
4	Rattan shoots	Knife	Male/female	2	3	Year round	Decline
5	Small palm shoots	Knife	Male/female	1	2	Year round	Stable
6	Honey	Knife	Male	4	5	Mar-April	Decline

Table 20: Utilisation of NTFPs in Songkhone village

No.	Species	Tools used	Who collect (male/female)	Rank		Harvest season	Status
				Food	Sell		
1	Bamboo	Knife	Male/female	5	2	Year round	Decline
2	Palm leaves	Knife, axe	Male	4	1	Dry season	Stable
3	Bitter rattan shoots	Knife	Male	3	5	Year round	Decline
4	Rattan shoots	Knife	Male/female	2	4	Year round	Stable
5	Small palm shoots	Knife	Male/female	1	3	Year round	Stable

Villagers report that dry dipterocarp was still in abundance. In terms of wildlife, only wild pigs are reportedly to be abundant in all three villages used both for food and to sell. Montjac, monkey and fish were in decline. Compared to the NTFPs above, the situation in terms of the utilization of wildlife in the area was more of a concern as three of the four common species hunted by the residents were noted to be on the decline. The rate of utilization of NTFPs and wildlife in the area (year-round for some of these), leading to the decline in some of the species, implies the need for stricter regulation, monitoring and enforcement.

Table 21: Utilisation of Timber

No.	Species	Tools used for harvest	Rank		Harvest season	Status
			Food	Sell		
1	Dry dipterocarp	Saw, axes	2	4	Nov-May	Abundance
2	KanBouang	Saw, axes	3	3	Nov-May	Abundance in Tamoeung
3	Rosewood	Saw, axes	1	1	Nov-May	Abundance in Songkhone
4	Mai Peuy	Saw, axes	5	5	Nov-May	fewer
5	Mai Pii	Saw, axes	4	2	Nov-May	Abundance in Tamoeung

Table 22: Utilisation of Wildlife

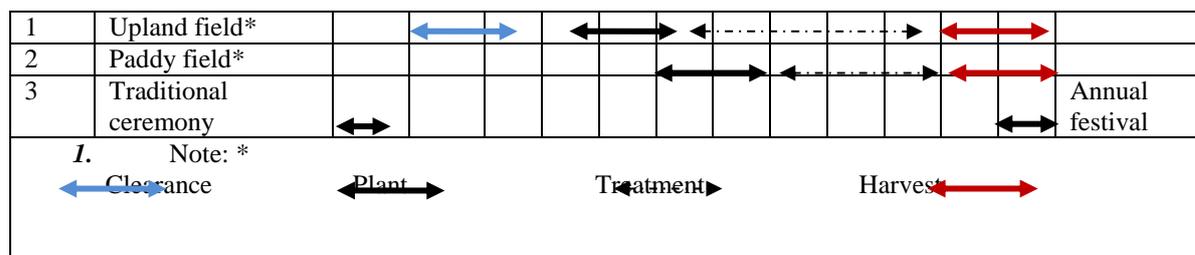
No.	Species	Tools used	Rank		Harvest season	Status
			Food	Sell		
1	Wild pig	Snare, gun	2	2	Dec-May	Still abundant
2	Muntjac	Snare, gun	3	3	Dec-May	Decline
3	Monkey	Gun	4	4	Year round	Decline
4	Fish	Fishing net	1	1	Year round	Decline

5.2.12 Village Activities

Harvest time in the three villages came in the 11th and 12th months, while traditional ceremonies like the annual festival were held in the 1st and 12th months. These are important information to consider particularly since it relates to culture and way of life that needs to be considered when adjustments will be proposed.

Table 23: Calendar of village activities

No	Activities	Time (month)												Remark
		1	2	3	4	5	6	7	8	9	10	11	12	



5.2.13 Perceived Problems Facing Villages

There were four major problems experienced by the residents in the three villages as follows: insufficient rice; poaching of wildlife and timbers; erosion of the stream bank; and livestock disease epidemic. These issues threaten the livelihood of the villagers in the villages. The insufficiency of rice was caused by limited paddy fields and thus, lower yields, insufficiency of water and natural disaster. Children were mainly affected by this problem affecting their education. Possible interventions include introduction of new concepts and model for production groups particularly to optimize the yield in the paddy fields.

Table 24: Causes of problems in the village

No	Problems	Causes	Impacts	Interventions
1	Insufficient rice	- Limited paddy fields - Natural disaster - Insufficient water - Low yield	- Children education	- Introduce new techniques - A model for production group
2	Poaching of wildlife and timber	- Outside request - High price - Easy access	- Meat shortage	- Reg. dissemination - Restrict outsiders
3	Stream bank erosion	- Riparian forest clearance - Irregular water level		- Dissemination of regulation on shifting cultivation clearance - Replantation
4	Livestock disease epidemic	- Release livestock into forest - No regular vaccination	- Loss of income	- Education for villagers about the importance of disease on livestock

Meanwhile, the perceived causes of poaching were external demand, high price and easy access. Poaching led to meat shortage. Possible interventions are regular dissemination of information regarding this illegal activity and restriction to outsiders.

Stream bank erosion was due to riparian forest clearance and irregular water level. There is need to disseminate regulation on shifting cultivation clearance and replantation.

Releasing livestock into the forest and lack of regular vaccination were the root causes of the disease epidemic among livestock leading to loss of income. There should be efforts to educate villagers regarding the epidemic.

Common to all these problems, the responsibility for determining and implementing solutions lies with the District, WMPA and the village.

5.2.14 Land Lease and Concessions for Mining and Agriculture

Concessions are not permitted inside NPAs although the law is not unequivocal. However, due to unclear jurisdictional concession granting mandates, particularly between district, province and central tiers, and weak monitoring and compliance enforcement, NPAs have experienced incompatible land lease, and concession granting for mining, agriculture and other requirements.

Data for the provinces of Khammouane and Bholikhamxay is not available, as the inventory was not undertaken in these two provinces. As a proxy the SIA has reviewed the findings of the report published in 2012 that takes stock of concessions and leases in Lao PDR (see annexed the ESMF). While data tables by province are not available in the report, maps do provide an overview of investments by type, country, sector and size. The SIA observes that in the two provinces of Houaphanh and Khammouane there are investments from Vietnam and given the regional component of the PAW project information on investments from Vietnam can be integrated into the trans boundary discussion and plans with counterpart institutions in Vietnam.

5.2.15 Existing Approach to Conservation and Wildlife Protection

The Social and Environmental Management Framework and Operational Plan (SEMFOP) programs are designed to meet the objectives of the Prime Minister Decree 471 and the GOL obligations under the Concessional Agreement (CA). The SEMFOP is funded by NTPC via the transfer of funds over a 31.5 year period representing payment for the environmental services (water) provided to the Nam Theun 2 (NT2) project. The priority objective of SEMFOP is to enhance the long term protection and conservation of the NNT NPA and corridors. SEMFOP seeks to achieve the objective through the following: (1) protect and rehabilitate the forest cover in the NT2 Watershed/NPA to assure adequate water flows with low sedimentation to the Nam Theun 2 Reservoir; (2) conserve, maintain and promote biological diversity coupled with the development of culturally-rich, national park appropriate for tourism and scientific research; (3) build and strengthen capacity of the Authority and those Stakeholders contributing to management and implementation of the Authority's activities; (4) facilitate improved livelihoods for inhabitants of the NT2 Watershed-NPA by focusing on poverty reduction through environmentally sustainable development; and, (5) carry out a prudent management and effective use of funds for the purpose of furthering the above objectives.

The Participatory Integrated Conservation and Development approach (PICAD) was adopted under the SEMFOP to provide details on the participatory approach used for the implementation of SEMFOP. Specifically, it provides the following: (a) Forest Resources & Land Use Planning, Allocation and Management (FLUPAM); (b) Participatory Protected Area Management (PPAM); and, (c) Livelihood Development for Conservation (LDC). PICAD is generally accepted and widely used by relevant GoL agencies for resource management throughout the country. It taps interdisciplinary and multi-agency teams to facilitate the cooperation between and among government departments. The PICAD makes use of user-oriented manuals and training materials that are available in the Lao language. It is also inherently flexible which makes it responsive to the needs of SEMFOP. The PICAD approach developed for the SEMFOP draws heavily on both the positive and negative lessons learned

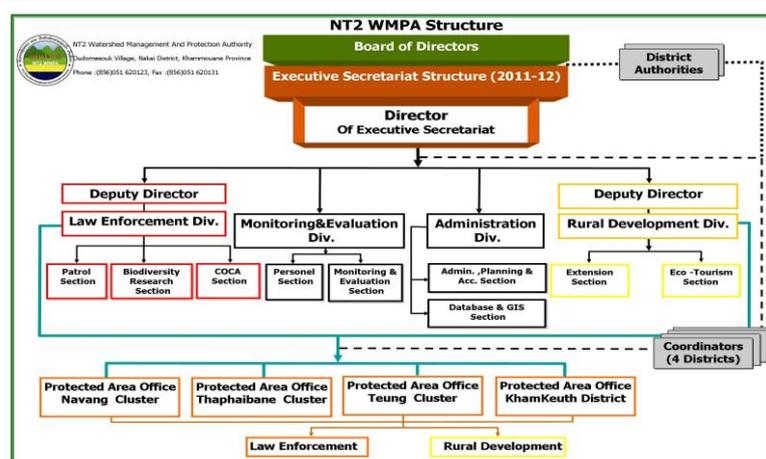
apply mitigation measures per the NT2 Environmental Assessment and Management Plan (EAMP). Map 3 lists locations of PCR sites in the NT2 Nakai Plateau.

5.2.17 Institutional Framework

The management of the NNT NPA and the NT2 Watershed is under the NT2 WMPA, a unique conservation organization first established under the Prime Ministerial Decree 25 in 2001, but operated under the mandate provided by PM’s decree 471. This mandate includes responsibility for coordinating and implementing the conservation, maintenance and enhancement of the NPA. Decree 471 is the enabling legislation for the continued management and operation of the NT2 WMPA and as such is the principle document that shapes the content of its Social and Environmental Management Framework and Operational Plan (SEMFOP II). The decree empowers the WMPA to strengthen “protection, conservation and management of the Nakai Nam Theun 2 watershed and its rich biodiversity and forest to supply enough water with low sedimentation to the multi-purpose project”, through working partnerships with local communities and other stakeholders. Figure 3 provides the WMPA organisation structure.

SEMFOP II has been prepared in accordance with the provisions of the legislation set up to manage the watershed area. The current SEMFOP II is the interpretation and integration of a range of policies, treaties, strategies, commitments, contracts and legislative requirements into a folio that provides a framework to guide management of NNT NPA and the NT2 Watershed. The WMPA’ staff arrangement and recruitment, and capacity building – re-orientation of WMPA’ staff is the first priority, some well trained government staff that have long experience with WMPA will be transferred to relevant district implementing agencies to increase both staff numbers and effective implementation of SEMFOP II. The WMPA will reduce its staff members from currently more than 69 staff to a minimum of 35 staff including one WMPA director and two deputies. Some current staff with high qualification and different capacities will be maintained and other new qualified staff will be recruited if necessary. Additionally, both national and international consultants will be periodically recruited to support and provide technical supervision and training for the WMPA’ staff.

Figure 3: WMPA Organization Structure



Other legislations, such as Forestry Law, Wildlife and Aquatics Law, also provide additional direction for conserving, protecting and promoting biodiversity values of the NNT NPA and the NT2 Watershed.

6. PROJECT BENEFICIARIES

The proposed NPA Sub-projects contribute to the wellbeing of communities inside NPAs and those surrounding NPAs, enhance capacity of provincial and national governments, and provide both direct and indirect benefits, especially to Government agencies and village communities. The PAW project will also contribute to effective protected area management at the regional level, and in doing so contribute to sustenance of global biodiversity values.

Recent economic analysis demonstrates that natural capital grow this vital for fueling sustainable increases in national wealth, suggesting the scope for national benefits. Lao PDRs natural habitats provide a diversity of services that enrich and sustain human life with both tangible and intangible economic and social value, including clean air, useable water, watershed protection, biological control of pests, and crop pollination. The project aims to preserve biodiversity and natural landscapes that are irreplaceable in Lao PDR and its ethnic group cultures that depend on these resources.

Regional and global benefits would be derived from the national public benefits and as an outcome of effective trans-boundary protected area management in NNT and NEPL. Vietnam's wildlife and protected areas would also benefit from trans-boundary cooperation and management. Given the importance and ecological role of tigers, their conservation is vital to the conservation of many other species and to sustain ecosystem services. As wildlife and habitats cross national boundaries and as knowledge and capacity varies widely across and within countries, a regional approach will help address cross-border issues, build synergies, share skills, knowledge and experiences, and strengthen regional collaboration. Given that Lao PDR is both a source and transit country in the regional illegal wildlife trade, a regional approach is an effective response to address the illegal wildlife trade.

Direct institutional beneficiaries include a number of Government agencies and their staff. These would include MoNRE, especially DFRM; MAF, especially DoFI and PoFI. The WMPA, NNT NPA and the Management Unit, NEPL NPA would be key beneficiaries as implementing partners. In addition District Staff, Department of Justice, Customs Department, and district and provincial law enforcement agencies would benefit.

6.1 COMMUNITY BENEFICIARIES

Beneficiary communities will participate in the management of NPAs through land use planning, marking of NPA boundaries, joining and organizing village patrolling, rehabilitation of protected forest and land areas, prevention of forest fire, and facilitation of awareness raising and other related activities. Relevant members of Village Development Committees, together with village chiefs, will take the lead in the process.

The project will evolve selection criteria for villages to be beneficiaries of project activities. The selection criteria will place due emphasis on rural community

involvement in conservation with approximately 90 communities receiving direct livelihood support, and active participation in capacity building activities. The specific project villages will be identified during implementation. Communities will be selected from the two NPAs and funds will be provided for a diversity of conservation and livelihood activities. Villages inside and surrounding NPAs will be project beneficiaries and the approximate number of beneficiaries will be 90,000.

Priority in selection of villages will be given to ethnic and minority communities, especially those that are most vulnerable in socio economic and health status; villages that have a dominant practice of shifting cultivation/grazing inside the NPA and without paddy land; villages that are located in or near fragile habitats; proximity to the international border and location near identified poaching and logging activities will also be used to select beneficiary villages. In addition institutional issues such as presence of village leadership, and institutions will also be factored into the selection process. Precise data on the villages, location, population, gender, ethnicity, natural resource dependence, forest and habitat quality, and, wildlife resources and poaching, will be accessed early during the project preparation process. This data will be mapped and the selection criterion will be used to select beneficiary villages.

6.2 COVERAGE OF FIELD IMPLEMENTATION

Field implementation will be concentrated in the selected areas of the two NPAs and villages adjacent to the NPAs. Trans boundary field implementation will include NNT NPA (covers part of Khammouane and Bholikahmxay provinces) boundary overlapping with the Vietnam Vu Quang National Park, and overlapping boundaries in Vietnam with the NEPL NPA (covers parts of Houaphanh, Luangprabang, and Xiengkhuang provinces).

The subprojects supporting NPA management and livelihood development will verify whether existing village structures are adequate to support the implementation of the Community Engagement Framework (CEF). If this were not the case, Village Development Committees (VDC) or equivalent institutional mechanism would be established in participating villages. The VDC will become the key institutional mechanism for all project activities at the community level. VDC members would be representative of the village community and include a Chairperson, a Deputy Chairperson, Secretary, Treasurer, and representatives of women, elders, youth, and other village sub-sectors as members.

6.2.1 NEPL NPA

The implementation arrangement for NEPL will essentially involve two key institutions -- the NEPL-PAMU and the Wildlife Conservation Society (WCS). The NEPL-PAMU is physically located within the NEPL NPA Protected Area Office, and will be responsible for day-to-day coordination and administration of the project on behalf of GoL while receiving a technical assistance from the WCS. NEPL-PAMU in corroboration with concerned sectors in all related districts will implement all project activities and ensure that the project is implemented in a timely manner and in line with agreements between the Bank and the GoL, including on safeguards

Specifically, NEPL-PAMU will undertake the following activities: preparation of work and budget plans; record keeping, accounting and reporting; drafting of terms of

reference; identification and supervision of project consultants and coordination with suppliers; and, continuous liaison with project partners at both the central and local levels. In doing so, NEPL-PAMU will ensure that all activities are implemented in line with this ESMF. NEPL-PAMU will also coordinate of donors active in the NEPL NPA, such as WCS, CliPAD, WB (PRF) and ADB, to ensure that donor activities are complementary and implemented in a cost effective manner. NEPL-PAMU will also be responsible for ensuring that activities carried out in NEPL by other donors are compatible with provisions of this SIA, the ESMF and the CEF.

6.2.2 NNT NPA

The implementation arrangement for NNT NPA will essentially involve these institutions -- the NNT WMPA and the DONRE and DAFO of the relevant districts. The WMPA will be responsible for day-to-day coordination and administration of the project on behalf of GoL. WMPA will implement all project activities and ensure that the project is implemented in a timely manner and in line with agreements between the Bank and the GoL, including on safeguards

Specifically WMPA will undertake the following activities: preparation of work and budget plans; record keeping, accounting and reporting; drafting of terms of reference; identification and supervision of project consultants and coordination with suppliers; and, continuous liaison with project partners at both the central and local levels. In doing so, WMPA will ensure that all activities are implemented in line with this SIA, the ESMF and the CEF. WMPA will also coordinate donors active in the NNT NPA, to ensure that they are complementary and implemented in a cost effective manner.

6.2.3 Other implementation arrangements

Technical Teams are posted in Kumban (a cluster of villagers recognized by GoL) and carry out, under the support of qualified consultants, community consultation and engagement activities under the CEF. Called also as the Cluster Teams, they are based at the kumban level, which is conveniently located between communities and main offices of WMPA in NNT and PAMU in NEPL. They will support community participation and consultation processes, provide technical support to communities on conservation and alternative livelihood, advise technical solutions to potential grievances, and overall serve as liaison between communities and respective SDA. The Technical teams will report directly to the SDAs who will coordinate all project activities to be conducted in respective districts, and will be coordinated by a Technical Advisor who will report to the SDA and cover several districts. Each Technical Team will consist of at least three persons, whose members should, in principle, be permanently assigned to the team throughout the life of the project. This will facilitate building rapport with villagers since the same team members will be assigned to a permanent set of villages. The team would include representatives of the Lao Women's Union (LWU) or the Lao Front National Construction (LFNC), as well as at least one female members who will ensure inclusion of women in the participatory and consultation processes under the project. The project will strengthen their capacity both in technical matters as well as in community engagement.

Community members are the ultimate participants and beneficiaries of NPA subprojects as sustainable management of NPAs and conservation of wildlife and

habitats will depend on the preservation of resources for the benefit of future generations. Community members will have all the opportunity to play a role, either as VDC members or as members of other committees or action groups.

Village Development Committees (VDC) is the key representative of the villages in the preparation PAMP, CAP and CA which also includes participation in grievance committee meetings and monitoring and evaluation. The VDC will serve as the main local institution supporting the project at the village level. VDC will be in charge of organizing village teams to work with the Technical team and SDAs. Each VDC is headed by a Village Head (as the Chairperson) and will include a Deputy Chairperson, Secretary, and Treasurer. Village representatives of LWU and LFNC will also participate in the VDC. The VDC is the subproject entry point at the village level. It will be in charge of organizing village sub-committees to work with SDA, for example on: a) Law Enforcement; b) Livelihood Fund; c) Monitoring and Evaluation; and d) Village Development Fund. Two villagers appointed by the VDC will be responsible for the village-level monitoring of subproject implementation and participate in village level meetings for participatory M&E.

Village Mediation Units (VMUs) were established in 1997 under a Decision of the Minister of Justice (No. 304/MOJ). New guidelines for the VMUs were issued by Decision No. 08/MOJ, dated 22 February 2005. The VMU is a village level institution that plays a role in resolving disputes. VMUs seek to mediate disputes based on negotiations and consensus, in line with both the state legal framework and acceptable local traditions. The VMUs have jurisdiction to resolve civil and family disputes, and minor criminal cases.

7. PROJECT IMPACTS, EXTERNAL RISKS AND MITIGATION MEASURES

7.1 INTRODUCTION

The overall impact of the project is positive. The project will not involve potential large scale, significant and/or irreversible negative impacts on environment or natural habitat. Most of the subprojects are to provide training and capacity building of government agencies at national and provincial levels to increase their ability to effectively i) implement and monitor the NPA management system, and conservation of wildlife, and ii) conservation and protection of forest resources and wildlife in NEPL and NNT NPAs. Activities under Component 1 will also trigger safeguard issues but the impact is expected to be positive. The subprojects under Component 2 aim at strengthening provincial capacity and effectiveness of protected area management and seek to enhance income streams of local population sustainably. No major land acquisition will be necessary. Although negative short-term impacts may occur, it is expected that measures to enhance positive impacts would more than mitigate them.

Risk remains, however, that positive impacts created of the project are not sufficiently or adequately mitigate negative impacts, at least on a short term. Also, local people including ethnic groups and other vulnerable people may not be adequately and sufficiently consulted, and their broad community support, critical to achieve the project objective of strengthening participatory management of protected areas, may

not be fully established. In order to minimize negative impacts and enhance positive benefits, and to ensure that all affected people are consulted with and given opportunities to participate in developing participatory protected areas management and benefiting from enhanced income streams, an SIA was conducted during preparation. SIA identified and assessed potential negative impacts and risks, and recommends appropriate mitigation measures. Mitigation of project impacts is well within the management capability and design of the project. In addition to risks that may arise directly from project activities, external risks that could have an impact on project areas have been identified and mitigation measures have been recommended.

SIA also assessed risks that are external to the project but may pose risks to the ability of the project in meeting its objective. External risks can be caused by a diversity of infrastructure developments that could be located within NPAs or adjacent to NPAs and could have a direct and/or indirect impact on project interventions. External risks would include mining and agriculture concessions, land leases, hydropower, roads, and rural electrification.

In assessing the risks the “no project” scenario was given due consideration and the SIA recommends that the project merits implementation as the absence of project interventions would lead to continued degradation of biodiversity and wildlife resources. Internal and external risks and mitigation recommendations are described in further detail.

7.2. ANTICIPATED SOCIAL IMPACTS AND RISKS

Overall, SIA did not find significant or irreversible negative impacts that are likely to occur to the project beneficiaries and affected people, however, the following were identified as potential impacts and risks that, if not managed or mitigated properly, may create negative impacts on local communities:

7.2.1 Limited government capacity to engage with people, particularly ethnic minorities; women and vulnerable groups

The government officials in charge of day-to-day project implementation may not have adequate capacity or sufficient experience to engage with and involve stakeholders, particularly those at the community level and with ethnic minorities, women and vulnerable groups. The limited capacity poses risks that the development of measures for access restriction and income enhancement may not be carried out inclusive enough to mainstream the concerns, issues and perspectives of these stakeholders in the process.

Mitigation Measures

Detailed guidance is provided under CEF to relevant government officials with regard to community participation and consultations. Also, significant capacity development activities are planned under the project to increase their capacity to meaningfully engage with community members.

7.2.2 Livelihood support insufficient to enhance income streams of affected people

If communities are not adequately consulted, some of the alternative livelihood activities that will be developed for target communities may not be able to adequately enhance their income streams, and the project may not be able to fully restore the income streams of affected people, or help them develop environmentally and socially sustainable livelihood.

Mitigation Measures

To address the risks, technical advice will be provided to communities at their arm's length and enhanced consultation processes will be conducted with them under this CEF.

7.2.3 Incorrect NPA Demarcation

NPA boundaries may not be demarcated with appropriate consultation with affected villages and communities. Free, prior and informed consultations may not be adequately carried out leading to ambiguity about the degree to which broad community support is achieved. Lands to which local population including ethnic groups have indigenous claims and which they have used for livelihood may be demarcated and classified as core zones where continued engagement of such livelihood activities is restricted.

Mitigation Measures

Participatory Land Use Planning (PLUP) will be strictly followed through under this project to address the risk that will allow preserving current land use to the extent that is technically viable and environmentally sustainable.

7.2.4 Short-term negative impacts on vulnerable people, including ethnic groups and women

Even though livelihood support to sustainably enhance income streams is well designed technically and NPA demarcation conducted properly, risk remains that vulnerable people including ethnic groups and female headed households face difficulties adapting to new restrictions in access to natural resources, at least on a short run. In particular, people may find it difficult to adapt to loss of access to land for shifting cultivation, grazing of livestock and collection of firewood, if they are unavoidable, because they provide importance sources of livelihood for people inside and adjacent to NPAs. Fresh limitations on wildlife hunting will also affect already poor nutrition levels of households.

The issue is particularly critical for sanam⁴ users who engage in shifting cultivation, collect timber, non-timber forest products, medicinal herbs in and near NPAs. Shifting cultivation has traditionally been widely practiced in many parts of Lao PDR and is a dominant agriculture system in project NPAs. Shifting cultivation (rotational) practices are under stress as conversion of land for concessions and other forms of development such as mining, hydropower etc. is making even less land available for farming and food production. This is having a two-fold affect. The first is that it is

⁴ A sanam is an area where slash and burn agriculture is carried out

forcing communities to reduce the fallow period that reduces yield rates relative to longer fallow. An associated response to falling yields is to expand shifting cultivation to new areas vis. pioneer shifting cultivation. The dilemma that will be faced by the project is that should it pursue stronger enforcement to protect forest resources, it may have negative consequences in reducing people's food resources.

Although the project will allow them to continue using sanams to the extent that is technically viable and environmentally sustainable and provide support to develop alternative income streams, risks remain that transition to alternative, sustainable livelihoods may be particularly challenging to them.

Mitigation Measures

Through participatory land use planning, the project will ensure that adequate lands, both quality and quantity, are retained for the purposes of food security, including shifting cultivation. Livelihood grants will be provided to affected people to develop alternative livelihood to offset dependency on shifting cultivation. The SDAs will continue to monitor livelihood situations of affected people through regular project monitoring and participatory Monitoring and Evaluation, and take steps if it is found that their livelihood is not fully restored.

7.2.5 Restriction of access to and damage on physical and cultural resources

The NPAs are important locations for community residents not only as a source of livelihood and products for consumption but as an integral part of their culture and beliefs. Some residents continue to practise Animism and there are cultural events celebrated in relation to or because of their relationship with natural resources. Regulations and strict enforcement of law could, in a worst-case scenario, negatively affect cultural norms and beliefs, and/or discourage the residents to support or participate in the project activities.

Mitigation Measures

The CEF process will ensure that important physical and cultural resources are identified and that a continued access of communities is secured.

7.2.6 Perception of Ethnic Minorities about the Project

Since ethnic minorities have traditionally gained significant livelihood from natural resources, they may view any efforts to restrict their access to such natural resources with suspicion and become unwilling to participate. As the project components also affect their sources of livelihood, it is possible that ethnic minorities will find the project terms unacceptable and be resistant to change.

Mitigation Measures

CEF process will ensure that broad community support will be established to CAP and Conservation agreement (CA) that will seek to enhance their livelihood sustainably. Where such a broad community support is not established, the project will not be implemented.

7.2.7 Weak Law Enforcement and Irregular Monitoring and Evaluation

Monitoring and evaluation (M&E) of conservation activities has proven to be a weakness in the existing approach to conservation partly because many villages are located so distant from where government conservation agencies are located.

Mitigation Measures

Sound M&E is particularly important for this project as it seeks to support a gradual transition of peoples' livelihoods away from unsustainable use of natural resources to their sustainable alternatives. The project will employ strong participatory M&E mechanisms based on the principle of community participation.

7.2.8 Small Infrastructure

No major civil works will be supported under the project. However, minor civil works may be conducted including the construction or repair of office buildings, stores, check points, and other modest structures that will contribute to an effective management and implementation of project activities. Most such construction will be conducted within public lands without requiring acquisition of or loss of access to private land. Since exact locations where such civil works are to be conducted will be determined only during implementation, the possible minor land acquisition cannot be fully ruled out.

Mitigation Measures

This Resettlement Policy Framework (RPF) was developed to set out policies and procedures to be applied when private land has to be acquired. Any loss of land or assets affixed to it will be compensated at replacement costs. No civil works that requires physical relocation of households are allowed.

8. OTHER SOCIAL SAFEGUARD ISSUES OR PROCESSES

8.1. VILLAGE CONSOLIDATION AND RELOCATION

For more complete reference, see the CEF.

National policies relating to poverty reduction have been revised several times over the past ten years in Laos. Although many of these are well intentioned, poor implementation has instead led to marginalisation of many communities, particularly from smaller ethnic groups. One of the most significant is the 8th Party Congress and Directive Order No. 9 of the Politburo, 8 June 2004 that instructs the merging of villages in order to maximise the distribution of poverty reduction activities and accelerating economic development. It is also the principal policy document cited by local authorities to develop land concessions with the stated objective of turning land into economic opportunities whereby national development may be speeded up. This policy means that in upland areas where villages are comprised of less than 200 persons, and of less than 500 persons in lowland areas, they must be amalgamated administratively with another village to meet the minimum population requirement.

Often times, the consequence of this has been an increase in land and natural resource disputes, as unfortunately village merging may not take account of the ethnicity of villages, nor of pre-existing customary use rights. Each ethnic group has different

languages, land use practices, perspectives on gender equity, property and inheritance practices, etc. Village headmen from one ethnic group appointed by the local government may have no authority from the perspective of another group. Once a village has been consolidated, typically a more dominant group will see the land of the "new" village as legitimately theirs to use, leading to disputes between themselves and the previous users, as well as unwanted pressure on land productivity able to support a smaller population, but not a larger one.

The consolidation and relocation elements of the national policy are also problematic from the WB's perspective. The WB has stated policies that do not allow it to support this kind of relocation or loss of resource access, nor to permit project funds to be used to facilitate the national policy. In ongoing projects the WB has instituted exclusion criteria disallowing villages that have been consolidated in recent years, or slated for consolidation within the next several years, from being included in project financing. The relocation of villages from the highlands to the lowlands or within the highlands is linked to strategies to reduce shifting cultivation, eradicate opium production, improve access to government services, and consolidate villages into larger, more easily administered units. While government relocation policy aims to contribute to the development of the target population, to provide remote populations access to basic services such as health, education, water or electricity, and to guarantee them a better livelihood, resettlement is reported in many cases to have led to increased poverty, food insecurity, and leads to high mortality rates. As a result, the issue has raised concerns among a number of government agencies, donors and international organizations. Resettlement has also accelerated the dissolution of customary law and practices.

Many ethnic group villages in the project area are no longer found in their original habitat, but have been resettled because of GoL policy to persuade the groups to give up shifting cultivation and migrate out from the highlands. Villages are also resettled because of infrastructure development such as dams. In resettlement cases villages often end up consisting of more than one ethnic group. In such villages communication needs to take place in Lao or otherwise there is limited communication. Where some ethnic groups 'came first' land rights and forest access of newcomers may be somewhat curtailed. The resettlements, which are intended to promote the 'settling' of the highland populations by enforcing a restriction on (pioneer) slash-and-burn agriculture, may actually cause increased and diversified rural mobility, where people move back to their old areas to cultivate the land due to the limited land where they were resettled.

The resettlements are seen by GoL to facilitate the implementation of a rural development policy — new roads, schools, sanitation works, the implementation of land tenure reform, intensification of agriculture, preservation and exploitation of timber resources (the primary source of income for the country) are all designed to accompany this new dynamic of population settlement. The resettlement means that many ethnic groups no longer have a long experience with the forests around them. They may no longer have a spirit forest area and the burial forest would be a new area. Also the indigenous knowledge of plants and trees may be lost if they are moved to lower altitudes. In the lowlands some lowland Lao villages are very old with well-established cultural traditions and rules for protection of forest resources.

A further impact of relocation is diminished status for women. When major upheavals in communities are experienced, as in the relocation of villages, or when access to natural resources is denied, women lose control of agricultural land. This may cause them to cease to participate in rituals for ancestors or to preside over agrarian rites. Women's power to preserve culture may be lost as a result; thus, denying them a key source of power and status in their communities and widening existing gaps of gender inequality.

The project will apply the following criteria in relation to resettlement and consolidation of villages:

Villages consolidated in the past

Identify such villages and determine through participatory consultation, and on the basis of such consultations:

- Include villages if (i) land and tenure issues associated with the consolidation have been resolved to the satisfaction of communities, (ii) adequate land for agriculture or other means of livelihood to improve, or at least maintain their livelihoods, has been made available, and (iii) communities provide their broad community support for participating in PAW project.
- Exclude villages if outstanding issues related to land for agriculture and natural resource are identified, and convey findings to Provincial Authorities for appropriate action. Such villages can subsequently become project beneficiaries if, (i) Provincial Authorities demonstrate that issues have been resolved, (ii) communities confirm such resolution met standards of free, prior and informed consultation, and (iii) communities provide their broad community support for participating in PAW Project.

Villages scheduled for consolidation

- Exclude all villages scheduled or proposed for consolidation.

8.2 INSTITUTIONAL MECHANISM TO MANAGE RISKS

The SIA recommends that the PAW project considers the setting up of an Information Management team, or at least a focal point, that will access, analyse, and disseminate useful data and information on a timely and regular basis that will inform decision making, provide an early warning mechanism, contribute to risk management, and allow for an effective response to external risks to the project. Discussions on establishing a national mechanism to address overlaps and improve inter-ministerial coordination is within the mandate of the sector working groups on natural resources and the project should remain informed of the deliberations of these working groups.

8.3 OTHER MECHANISM FROM THE CEF

The CEF provides detailed guidance on several processes which are not repeated here and therefore need to be consulted for:

- Grievance procedures
- Monitoring and evaluation, including participatory monitoring

- Reviews and audits

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ANNEXURE 1 - SOCIO ECONOMIC SURVEY QUESTIONNAIRE

SOCIO-ECONOMIC SURVEY QUESTIONNAIRE SA-1 Village Level Social Assessment

Interview Code Number: _____

Village: _____ District: _____ Province: _____

Interviewer: _____ Interviewee: _____ Signature: _____

Date (day/month/year): _____ and Stamp _____

I. General Information

1. **Village Establishment:** Year

2. **Village Structure**

Positions	Female	Male		
1) Village Chief			(Check in the box if female or male)	
2) Deputy village chief-1				
3) Deputy village chief-2				
4) Heads and members of village committees	Head/Chief ("Huana") (check if male or female)		Committee Members ("kana kamakan")	
	Male	Female	Male	Female
a) Lao National Front or Senior Citizen				
b) Lao Women Union				
c) Village Security				
d) Village Army				
e) Youth				
f) Village Forest guard				
g) Road Management committee member				

3. **Total households, families and population in the village.**

Ethnic Group	HH	Families	Population			Available Labor in Village (18 to 60 years old)			Religion
			Female	Male	Total	Female	Male	Total	
1)									
2)									
3)									
4)									
(Total)									

4. **Migration Patterns for the last three (3) Years**

a In-Migration (People who came to live/reside in the village)

Ethnic Group	2009			2010			2011		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
1)									
2)									
3)									
4)									
(Total)									

What are the reasons for In-Migration? _____

b Out-Migration (People who left the village to live/reside in another place)

Ethnic Group	2009			2010			2011		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
1)									
2)									
3)									
4)									
(Total)									

What are the reasons for Out-Migration? _____

5. **Vulnerable Groups**

Ethnic Group	Female Headed Households			Female Headed HH With No Lands			Poor Female Headed Households		
	HH	Families	Members	HH	Families	Members	HH	Families	Members
1)									
2)									
3)									
4)									
(Total)									

Ethnic Group	Total Poor HH in the Village (Below Poverty Line)			Landless Households					
	HH	Families	Members	HH	Families	Members	HH	Families	Members
1)									
2)									
3)									
4)									
(Total)									

What assistance and support are given or planned/done by the government to women-headed, landless and poor Households? _____

What are the sources of income of female headed households? _____

What are the sources of income of landless households? _____

6. **Children going to school**

a Primary to Secondary or High School

Ethnic Group	Primary to Elementary School Age Children			Children Actually Going to School		
	Female	Male	Total	Female	Male	Total

b College/University

Ethnic Group	College/University School Age Children			Children Actually Going to School		
	Female	Male	Total	Female	Male	Total

7. **Literacy situation (Number of adult people who can read and write the Lao National Language)**

Ethnic Group	Literate Population		
	Female	Male	Total
1)			
2)			
3)			
Total			

8. **Technical skills available within the village**

Particulars	Number/Persons

1) Teachers	
2) Doctor/Medicine/Primary Health Care	
3) Construction	
4) Irrigation	
5) Agriculture	
6) Veterinary	
7) Forestry	
8) Carpentry	
9) Handicraft (weaving, furniture, etc.)	
10) Masonry	
12)	

9. **Occupation of People in the Village**

Particulars	HH	Male	Female	Remarks
Agriculture				
1) Agricultural Crop Production				
2) Livestock Production				
3) Poultry Production				
4) Fish Production (Fish Ponds)				
5)				
Occupation Outside Farm	HH	Male	Female	Work Location
1) Employment (private and government)				
2) Business (sales, food shop, repair shop, etc.)				
3) Handicraft (weaving, furniture marking, etc.)				
4) Farm Labor (hired by other farmers)				
5) Labor outside farm and village (off-farm labor such as carpentry, labor for construction, etc.)				
6) other(s):				

What do households do or work when not busy in farming activities: (after transplanting or before harvesting or when dry season crop is not planted)? _____

II. **Village Facilities/Infrastructures/Equipments**

10. **Does the village have the following facilities?**

Particulars	Check if available	Describe Status (usable; not usable; good condition; or need repair)
1) Village Access Road		
2) Primary school		
3) Elementary school		
4) High school		
5) Domestic water supply		
6) Dispensary/Health Clinic/Hospital		
7) Post office		
8) Market		
9) Electricity		
10) Temple ("Wat")		
11) Telephone: a) Land line		
b) Mobile cell site coverage		

11. **Village accesses**

Place	Distance, (km)	Name of road, type and status	Available Transport
1) Village to district center			
2) Village to provincial center			
3) Nearest main/paved road			
4) Access to nearest education facilities			
Primary School			
Elementary School			
High School			
Vocational School			
College/University			

5) Access to nearest health facilities			
Pharmacy			
Dispensary			
Health clinic			
Hospital			

12. Accessible markets for agricultural and other products

Market Name/Location	Distance, (km)	Name of road, type and status	Available Transport
1)			
2)			
3)			
4)			
5)			

13. Equipments owned by households

Equipments	Total No.of Units	HH owning	Use purpose (if applicable)
1) 4-Wheeled tractors			
2) 2-Wheeled tractors			
3) Threshers			
4) Rice mills			
5) Car/Pick-up			
6) Trucks			
7) Tricycles (tuktuk, jumbo)			
8) Television			
9) Refrigerator			
10) Water pump for house			
11) Water pump for farm			
12)			

14. Types of houses in the village

Type of house	No.of HHs
1) Type1: Houses purely made of bamboo, wood, roof of grasses and other local materials	
2) Type 2: Houses made of combination of concrete, wood, bamboo, and grass/iron roofing	
3) Type 3: Modern houses made of concrete and iron or tile roofing	

III. Health Issues

15. Source of drinking water (some households maybe getting water from more than 1 source)

Particulars	Number of Household	Average distance from houses (m)
1) Village domestic water supply		
2) Hand pump ("nambadan")		
3) Open well		
4) River, stream, spring		
5) Irrigation canal		

16. Sanitary latrines/toilets

1) Households/families with latrines (toilets)

Households

Families

2) Village Public Toilet

Toilets

3) Household with no toilet

What do they do

IV. **AGRO-ECONOMIC**

17. **Household owned and cultivated agricultural lands (same with area in Masterlist of Villagers)**

Particulars	Total Area (ha)	No. of HHs	Type of documents for land ownership			
			Land Title Ownership "bai yang yeun kammassit ti din"		Right to Use - "bai pasi ti din"	
			HH	Name(s) in Document	HH	Name(s) in Document
1) Irrigated Lowland - "na tee hap nam sonlapathan"						
2) Rainfed Lowland - "na tee hap nam fon"						
3) Upland - "neun soung", "na hai", "na peut"						
4) Home garden - "suan koua"						
5) Fish pond - "Nong Pa"						
6) Fruit trees - "suan ton mai hay mak"						
7) Trees for Lumber/wood - "suan pook mai"						
Total						

Note: "Name(s) in Document can be answered by H = "head of family or husband only" or H & W "both husband and wife"

18. **Crops grown by villagers during wet season**

Crops	No. of HHs	Total Area (ha)	Total Production (ton)	Average Yield (ton/ha)
1) Irrigated rice				
2) Rainfed rice				
3) Upland rice				
4)				
5)				

19. **Crops grown by villagers during dry season**

Crops	No. of HHs	Total Area (ha)	Total Production (ton)	Average Yield (ton/ha)
1) Irrigated rice				
2)				
3)				
4)				
5)				

20. **Rice Production for the last 3 years**

Crop year	Wet Season			Dry Season			Total Prod'n, tons
	Area	Prod'n, tons	Ave. Yield, tons/ha.	Area	Prod'n, tons	Ave. Yield, tons/ha.	
2009							
2010							
2011							

21. **Rice Sufficiency situation for the last 3 years**

Situation	Number of Households		
	2009	2010	2011
1) With surplus rice			
2) Rice sufficient families (0 surplus 0 deficit)			
3) Less than 1 month deficit			
4) 1 - 2 months deficit			
5) >2 to 3 months deficit			
6) >3 to 4 months deficit			
7) >4 months deficit			

22. **Livestock production**

Livestock	No. of heads	No. of HHs
1) Buffaloes		
2) Cattle		
3) Pig		
4) Goat		
5)		

23. **Poultry production**

Poultry	No. of heads	No. of HHs
1) Chicken		
2) Duck		
3) Turkey		

22. **Livestock production**

	Livestock	No.of heads	No.of HHs
1)	Buffaloes		
2)	Cattle		
3)	Pig		
4)	Goat		
5)			

23. **Poultry production**

	Poultry	No.of heads	No.of HHs
1)	Chicken		
2)	Duck		
3)	Turkey		

23. **Fish production**

	Poultry	Area (ha)	No.of HHs
1)	Fish		
2)	Integrated fish in rice paddy		
3)			

25. Price and Buyers of crops in the village in crop Year 2011.

Crop	Price of crops in kips/kilogram		Buyers of Crops Produced by Farmers in the Village					
	2011		Village Trader/ Market	Traders from Outside Vilage	Contract Farming	Markets Outside Village	Others: _____	Others: _____
	Wet	Dry						
1) Rice								
2) Corn								
3) Cucumber								
4) Cabbage								
5) Chicken								
6) Duck								
7) Pig								
8) Cattle								
9) Buffaloes								
10) Goat								
11)								
12)								

V. **General Problems and Issues and Future Action Plans**

26. List problems/issues of people in the village

1) Agriculture

Problems/Issues	Suggested Mitigation Measure

2) Health

Problems/Issues	Suggested Mitigation Measure

3) Education

Problems/Issues	Suggested Mitigation Measure

4) Industry - Trade

Problems/Issues	Suggested Mitigation Measure

4) Others

Problems/Issues	Suggested Mitigation Measure

27. What Action plan that village is implementing, preparing, complete and what next _____

VI. Village Response to the impact of Phathi road upgrading

27. Does the village support re-upgrade the road ? Yes No

28. Perceived benefits from the project

29. Peceived negative impacts of the Project

Impact	Suggested Mitigation Measure

VII. Village Response to the implemetation of Co-management Plan

30. Does the village support the CMP? Yes No

Reason: _____

31. Perceived benefits from the CMP

32. Peceived negative impacts of the CMP

Impact	Suggested Mitigation Measure

VIII. Village Response to the Final Draft of EPP

33. Does the village support the EPP? Yes No

34. Perceived benefits from the EPP

35. Perceived negative impacts of the EPP

Impact	Suggested Mitigation Measure

IX. Village Response to the Final Draft of RPF

36. Does the village support the RPF? Yes No

37. Perceived benefits from the RPF

38. Perceived negative impacts of the RPF

Impact	Suggested Mitigation Measure

X. Village Chief idea/comment on Forest Resources and wildlife conservation and Illegal wildlife trade Control (National & Regional)

Impact or Actual situation	Suggested Mitigation Measure

XI. Village Chief idea/comment on Forest Resources and wildlife Patrolling within and around NPA

Impact	Suggested Mitigation Measure

